



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 910<sup>TH</sup> AIRLIFT WING



28 May 2004

**MEMORANDUM FOR HQ AFRC/DOOM (FAX: 497-0198)**

**FROM:** 757 AS/DOS ((b) (6)) ; FAX 346-1616)

**SUBJECT:** Capability and Concept of Operations for Aerial Spray Characterization at Langley AFB

1. **Purpose/Objectives/Benefits:** Characterize Ultra Low Volume (ULV) spray with fuselage configuration for control of mosquitoes operating at Langley AFB VA.

2. **Capability:** Spray Aircraft Available 1-5 June 2004.

3. **Concept of Operations:**

**01 JUN (Tuesday):**

1000: Show at KYNG  
1200: Depart KYNG  
1330: Land KLF1  
1345: Safety Briefing  
1400: Weather Decision  
1430: Load Dibrom  
1800: Spray Sortie  
2030: Land

**2 JUN (Wednesday):**

TBA: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1800: Spray Sortie  
2030: Land

**3 JUN (Thursday):**

TBA: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1800: Spray Sortie  
2030: Land

**4 JUN (Friday):**

TBA: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1800: Spray Sortie  
2030: Land



**5 JUN (Saturday):**

0800: Report

TBA: Outbrief

1000: Depart KLFI

1130: Land KYNG

**4. Spray Parameters:**

**4. Spray Parameters:**

- a. Booms -- Fuselage only.
- b. Nozzles -- 8008 TeeJet
- c. Number of Nozzles -- 4 on left side and 3 on right side ( 7 total) oriented straight down
- d. Airspeed -- 200 knots ground speed.
- e. Altitude -- 150' above ground level.
- f. Wind --Crosswind component.
- g. Flow Rate -- 3.6 gallons/minute
- j. Aircraft Tail Number: 99105; Mission Identifier: QZNRKA153
- k. Deploy/Re-Deploy Time: 3.2 hrs
- l. Spray Time: 3.50 hrs (or as called by PMP)

**5. Aircraft/Mission Commander: Major (b) (6)**

**6. Support required at Langley AFB has been requested via FAX message.**

**7. If you have any questions concerning this mission please contact the Aerial Spray Office, DSN (b) (6) .**

//Signed//

(b) (6)

Capt, USAFR  
Aerial Spray Flight, Chief Entomologist  
757 AS/DOS

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 01 - 05 JUN 2004

**Purpose/Objectives/Benefits:** Characterize Ultra Low Volume (ULV) spray with fuselage configuration for control of mosquitoes operating at Langley AFB VA

#### 1. 910 AW PARTICIPANTS:

- a. **Aircrew:**
  - (1) Mission Commander: MAJ (b) (6)
  - (2) Pilots: MAJ (b) (6) , MAJ (b) (6)
  - (3) Navigators: MAJ (b) (6)
  - (4) Flight Engineers: MSG (b) (6)
  - (5) Spray Operators: MSG (b) (6) , MSG (b) (6) , TSG (b) (6)
- b. **Maintenance:**
  - (1) Spray Maintenance: MSG (b) (6) , TSG (b) (6) , TSG (b) (6)
  - (2) Crew Chiefs: SSG (b) (6) , SRA (b) (6)
- c. **Certified Pest Management Professionals:** LTC (b) (6) , MAJ (b) (6) , CPT (b) (6)  
(b) (6) , CPT (b) (6)

**Gov Vehicles: 2 ea 9 pax van, 1 staff, 1 pick-up truck provided by Langley AFB**

#### 2. SCHEDULE: (All times local)

##### 01 JUN (Tuesday):

**PPR # 0601AL03**

1000: Show at KYNG  
1200: Depart KYNG  
1330: Land KLFJ  
1345: Safety Briefing  
1400: Weather Decision  
1430: Load Dibrom  
1800: Spray Sortie  
2020: Sunset  
2030: Land

##### 2 JUN (Wednesday):

TBA: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1800: Spray Sortie  
2020: Sunset  
2030: Land

##### 3 JUN (Thursday):

TBA: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1800: Spray Sortie  
2021: Sunset  
2030: Land

**4 JUN (Friday):**

TBA: Daily meeting for PMP/MC in the hotel lobby

1400: Show Time / Weather Decision

1430: Load Dibrom

1800: Spray Sortie

2022: Sunset

2030: Land

**5 JUN (Saturday):**

0800: Report

TBA: Outbrief

1000: Depart KLFI

1130: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Kestrel Weather Monitor, Compass,  
Pest Safety Binder, UHF Radio,  
Satloc Ground Tracker and Laptop Computer
- b. **Navigator:** Maps/Map Bag, Validation Map, Laptop Computer
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Langley Tower:** DSN 574-5326
- b. **Langley Base Ops:** DSN 574-2504

**5. PARKING PLAN:** Langley Aero Club ramp or as directed.

**6. RADIO FREQUENCIES:**

- a. **Felker AAF Tower (Ft Eustis): 126.3, 248.2, 241.0**
  - (1) Ops phone 878-3588
  - (2) Tower phone 878-3530
  - (3) Flight Service 122.2
- b. **Newport News-Williamsburg Int:** (Operating Hours 1000Z-0200Z)
  - (1) Ground – **121.9 or 348.6** (phone 877-0221 ops)
  - (2) Tower – **124.9 or 280.1** (phone 877-2962)
  - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
  - (4) CTAF – **118.7**
- c. **Langley AFB:** Tower OIC MSG (b) (6) Lt (b) (6) 1st OSS SQ
  - (1) Tower - **125.0 or 253.5** (phone 4-5326)
  - (2) Ground - **121.7 or 275.8**
  - (3) Clearance – **118.85 or 271.3**
  - (4) Metro - **239.8**
- d. **Norfolk NAS (Chambers Fld):** Tower - **124.3, 126.375, 340.2, 318.7**
- e. **Spray Ground:** Primary 392.2; Secondary: 308.6

**7. IN-BRIEFING:** TBA

**8. SPRAY CONFIGURATION:**



- a. **System:** SP2G - MASS ULV
- b. **Nozzle Tips/Orientation:**
- c. **Aircraft:** 99105

**9. SPRAY PARAMETERS:** See section 11

**10. PESTICIDE LOADING:**

- a. **How Much Pesticide:** see entomologist
- b. **Where:** Aero Club Ramp
- c. **When:** 1430 hrs each day.
- d. **Furnished by Installation:**
  - (1) Pesticide
  - (2) Loading Equipment/Crew
  - (3) Hazardous Waste Disposal
  - (4) Two B-5 or B-1 Stands

**11. SPRAY TEST:**

Mission Protocols:

- a. Purpose: Swath Characterization as delivered for a simulated mosquito adulticide spray using the fuselage ULV configuration. Glass slides will be used to collect droplets bioassays of live mosquitoes for efficacy testing. Ten sampling stations will be setup on Craney Island. Direction of sampling line will depend on wind direction, we will adjust our fly over (spray) point to be perpendicular to the prevailing wind. Additionally, we need the average winds to be below 10 mph.
- b. Aircrew: We need the system to have stabilized prior to reaching the sampling points. Twenty seconds prior to the sampling point and 20 seconds after should be sufficient (40 seconds total), please be advised that this value could change. Spray Operators: Please record the MASS pressure at 5 second intervals and of course total spray-on time (when spray is on). Navigator: Please record winds at altitude every ten seconds during the spray-on period.
- c. Microscope slides will be retrieved 20 minutes after the plane has passed. If conditions allow, please give ground crew up to 40 minutes to set up for a second pass. Number and size of the droplets will be determined as well as mosquito mortality, the following day.
- d. If the of 8008 size nozzle test is completed, 8005s will be examined.

**12. CONTACTS:** LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX

- a. **LANGLEY AFB VA:**
  - Wing Commander: , DSN 574-5321
  - Mission Support Group Commander: DSN 574-7995
  - Civil Engineer:
  - Deputy Chief/Civil Engineer: (b) (6)
  - Environmental Coordinator: (b) (6) , DSN (b) (6) ; FAX 3503
  - Base Operations: DSN 574-2504
  - Langley Control Tower: , DSN 574-5326
  - Weather: Langley AFB, DSN 574-5907
  - Ft Eustis: DSN 297-5300/3343
  - Command Post: DSN 574-5411
  - Pest Control Foreman: (b) (6) , DSN (b) (6)

Pest Control/Environmental NCOIC: MSG (b) (6)  
Public Affairs: Lt (b) (6) , DSN (b) (6)  
Fuels: DSN 574-4312/3623/4224  
Motor Pool: 574-7505/5712 (3 vans and 1 staff vehicle were requested)  
ACC PMP: (b) (6) , DSN (b) (6) , cell phone (b) (6)

**b. Billeting Office: COM: (757) 764-4667 EXT 2519**  
**DSN 574-4667, EXT 2519; FAX 574-3038**

- Contract Quarters TBA
- (JTR L/\$99 M/\$40 Max \$141)

c. **FT EUSTIS VA:** Environmental Coordinator: (b) (6) , DSN (b) (6) )

d. **Hampton Mosquito Control:** (b) (6)

e. **York County Control:** (b) (6)

f. **Poquoson:** (b) (6)

g. **City of Portsmouth Biologist:** (b) (6)

h. **Newport News Mosq. Control:** (b) (6)

i. **Newport News/Williamsburg Int.:**

- (1) Fixed Base Operator: Flight Int 877-6401
- (2) Flight Service: 877-0209
- (3) Tower: 877-2962
- (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

j. **Norfolk NAS VA:** DSN 564-2442/7598 or COM (757)-444-2442/7598

k. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Lt (b) (6) ; FAX 1022
- (4) 910 OG/CC: LtC (b) (6) , (b) (6) (b) (6)
- (5) 910 OS/OSA: Airfield Manager, (b) (6)
- (6) 757 AS/DO: LtC (b) (6) , (b) (6)
- (7) 910 OSF Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (8) 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
- (9) 757 AS/DOS: Aerial Spray Office, (b) (6) ; FAX 1616
- (10) 910 LG/CC: Ext 1225
- (11) 910 LG/LGM: CMS (b) (6)
- (12) Maintenance Control: Ext 1327
- (13) 910 LG/LGMS: Spray Maintenance, Ext 1132/1586
- (14) 910 LG/LGL: CMS (b) (6)
- (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (16) Cellular Spray Phones:
  - Mission Commander:
  - Entomologist: (b) (6) (b) (6) cell (b) (6)
  - Spray Maintenance: (b) (6)



# AFRC Setup Sheet Mission ID # QZNRKA653213

Original: Y	Rev #: 0	Rejected: N	Schdlr Name: (b) (6)	Wing: 910AW	Squad: 757AS	MDS: C130H
Msn Type: SPRAY			OG/CC: (b) (6)	As of Date: 14/Jul/2005 12:20:09		ICAO: KYNG

PA Approval #:	Air Show #:	Allocation #:	NRA/Denton #:
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Acft Cmdr:	Last 4 SSN:	Call Sign: (b) (6)	Crew Type: BASIC
Close Watch: N	GDSS Input By:	Tail #:	SRT:
Crew [MO/FO]: 0 / 0	Crew [ME/FE]: 0 / 0	JCS Pri: 5A1	GDSS Input Date:

Departure Date: 01/Aug/2005	Mission ID: QZNRKA653213	AMC Mission ID:
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LINE	ICAO	FLY TIME	ARRIVE	arr actual	AP	GRND TIME	DEPART	dep actual	DP	REMARKS	airdrop actual		airland actual	
1	KYNG	00:00				000:00	5213/1500		O	DEPLOY SPRAY	pax:	cargo:	pax:	cargo:
2	KGFK	03:00	5213/1800		S	030:00	5215/0001		S	SPRAY GRAND FORKS	pax:	cargo:	pax:	cargo:
3	KGFK	02:00	5215/0200		S	022:00	5216/0001		S	SPRAY GRAND FORKS	pax:	cargo:	pax:	cargo:
4	KGFK	02:00	5216/0200		S	022:00	5217/0001		S	SPRAY GRAND FORKS	pax:	cargo:	pax:	cargo:
5	KGFK	02:00	5217/0200		S	016:00	5217/1800		S	REDEPLOY	pax:	cargo:	pax:	cargo:
6	KYNG	03:00	5217/2100		U	000:00				MISSION COMPLETE	pax:	cargo:	pax:	cargo:

MISSION JUSTIFICATION: GRAND FORKS AFB AERIAL SPRAY REQUEST.

CIVIL/ANG JUSTIFICATION: THIS IS THE CIVILIAN JUSTIFICATION

AIRCRAFT SECURITY STATEMENT/FORCE PROTECTION: AIRCRAFT SECURITY AT GRAND FORKS INTERNATIONAL PROVIDING BY GRAND FORKS AFB SECURITY FORCES, 24 HR COVERAGE.

INCENTIVE, ORIENTATION, MEDIA, AND FAMILIARIZATION FLIGHTS:

JEPPESEN'S APPROVED:

VERBATIM GDSS REMARK: AFRC COMMAND CENTER: 1-800-223-1784 EXT. 7-0680

Wing Notified By:	TWG Approval: N	OG/CC Approval: N	NAF/CC Approval: N
Wing Notification Date:	AFRC/DO Approval: N	DOOM Approval: N	Sequence #: 190672



07/14/2005

**19 March 2002**

**MEMORANDUM FOR HQ AFRC/DOOM** (FAX: 497-0198)

**FROM:** 757 AS/DOS (b) (6) ; FAX 346-1616)

**SUBJECT:** Capability and Concept of Operations for Aerial Spray Mission (1-5 Apr 02)

1. **Purpose/Objective:** Oil spill exercise and training with the West Coast US Coast Guard Oil Spill Response Team at Santa Barbara Municipal Airport, Santa Barbara CA.
2. **Capability:** Spray aircraft 105 available 1-5 April 2002
3. **Concept of Operations:**
  - a. **1 Apr (Monday):**
    - 0800 Show at KYNG
    - 1000 Take-Off KYNG
    - 1600 Land KAST
    - A/R Safety Brief
  - b. **2 Apr (Tuesday): (Meeting/Ground Training Day)**
    - 0830 In-Flight Safety Briefings/MS will Configure A/C
    - 1600-1700 Show and Tell
    - 1730-1900 Social Hour
  - c. **3 Apr (Wednesday):**
    - 0830 Show Time
    - 1000-1130 1<sup>st</sup> Sortie
    - 1200-1300 2<sup>nd</sup> Sortie
    - 1400-1530 3<sup>rd</sup> Sortie
  - d. **4 Apr (Thursday): Training/Clean Up Day**
  - e. **5 Apr (Friday):**
    - 0800 Show Time
    - 1000 Depart KAST
    - 1700 Land KYNG

4. **Spray Parameters for Over Water Exercise:**
  - a. Nozzles – Raindrop nozzles oriented straight back
  - b. 8 (16 total) on each fuselage boom; evenly spaced
  - c. Booms – fuselage only
  - d. Airspeed – 170 knots ground speed
  - e. Altitude – 100 feet above water
  - f. Application Rate – 7 Gal/Acre
  - g. Flow Rate – 277 Gal/Min
  - h. Spray – water only
  - i. Number of passes – 6 per sortie. Do not decrease flow rate in order to increase passes
  - j. Pressure – 40 psi
5. **Mission Commander:** Capt (b) (6)
6. Support required at Santa Barbara CA is provided by the West Coast US Coast Guard Oil Spill Response Team.
7. If you have any questions concerning this mission please contact DSN (b) (6) .

(b) (6) , Major, USAFR  
Chief, Aerial Spray

Attachment  
Aerial Spray Operation Schedule



# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **SANTA BARBARA CA**

## **OIL SPILL EXERCISE**

### **1-5 APRIL 2002**

PURPOSE/OBJECTIVE: Oil spill exercise and training with the West Coast USCG

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Mission Commander:
- (2) Pilots: Capt (b) (6) , Capt (b) (6)
- (3) Navigators: Maj (b) (6) ,
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: CMS (b) (6) , TSG (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: MSG (b) (6) , TSG (b) (6)  
TSG (b) (6) , SSG (b) (6)
- (2) Crew Chiefs: TSG (b) (6) , SRA (b) (6)
- (3) Avionics: TSG (b) (6) (b) (6) SRA (b) (6)

##### **c. Ground Support/Certified PMP: Lt Col (b) (6)**

##### **d. Communications Flight Sq: MSG (b) (6) , TSG (b) (6) ,** **TSG (b) (6) , SSG (b) (6)**

##### **e. SPF: TSG Lawrence Firmi, TSG (b) (6) , SSG (b) (6) , SRA (b) (6)**

#### **2. SCHEDULE: (All time Local)**

##### **1 Apr (Monday):**

##### **PPR # 21**

0800: Show Time  
1000: Depart KYNG  
1600: Land KAST  
1630: Safety Briefing

##### **2 Apr (Tuesday): Meeting/Ground Training Day**

0830: In-Flight Safety Briefings; MX Will Configure A/C  
1600-1700: Show & Tell  
1730-1900: Social Hour

##### **3 Apr (Wednesday):**

0830: Show Time  
1000-1130: 1<sup>st</sup> Sortie  
1200-1300: 2<sup>nd</sup> Sortie  
1400-1530: 3<sup>rd</sup> Sortie  
1600: De-Brief

##### **4 Apr (Thursday): Training/Clean Up Day**

##### **5 Apr (Friday):**

0800: Show Time  
1000: Depart  
1700: Land

#### **3. ITEMS TO TAKE:**

##### **a. Entomologist:**

Cellular Phone, Wind Gauge, Compass,  
Pest Safety Binder, Signal Mirrors, UHF Radio,

- |    |                           |   |
|----|---------------------------|---|
|    |                           | Satloc Ground Tracker   |
| b. | <b>Navigator:</b>         | Maps/Map Bag, Validation Map, Laptop Computer   |
| c. | <b>Spray Operator:</b>    | Safety Gear, Calibration Tables   |
| d. | <b>Spray Maintenance:</b> | Deployment Kit, Ground Loading Station,<br>Spray Booms for Testing and Oil Spill Exercise |

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Tower:** (805) 681-0534
- b. **Base Ops:** (503) 861-6201

**5. PARKING PLAN:** The Forest Service Ramp, west end of Santa Barbara Regional Airport

**6. RADIO FREQUENCIES Call Sign:**

- a. **US Coast Guard Air Station Ops Center Radio Frequency:**
- b. **US Coast Guard Air Station Ops Center Call Sign:**
- c. **Spray Ground: Primary / Secondary**

**7. IN-BRIEFING:** Required. See the Schedule, or as determined by Mission Commander.

**8. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 105
- c. Mission Identifier: QZNRKA

**9. SPRAY PARAMETERS:**

**FOR OVERWATER EXERCISE**

- a. Nozzles – Raindrop nozzles oriented straight back.
- b. 8 (16 total) on each fuselage boom; evenly spaced.
- c. Booms – fuselage only
- d. Airspeed – 170 knots ground speed.
- e. Altitude – 100 feet above water.
- f. Application Rate – 7 Gal/Acre
- g. Flow Rate – 277 Gal/Min
- h. Spray -- water only.
- i. Number of passes – 6 per sortie. Do not decrease flow rate in order to increase passes.
- j. Pressure – 40 psi

**10. LOADING: Water**

- a. How Much:** To be determined
- b. Where:** Forest Service Ramp
- c. When:** 3 Apr 02
- d. Furnished by Installation:**
  - (1) Water
  - (2) Truck
  - (3) Two B-5 or B-1 Stands

**11. TRANSPORTATION: BUDGET RENTAL CAR AGENCY**

2 Mini-Vans \$51 a day: SSG (b) (6)/RES #10758149US3, TSG (b) (6) /RES #10761155US6  
2 Full Size \$40 a day: TSG (b) (6) RES #10828541US3, MSG (b) (6)/RES#10828399US1  
4 Mid-Size/\$37 a day: Capt (b) (6) /RES #10991619US2, CMS (b) (6) /RES #10760765US2  
TSG (b) (6)/RES #10760920US2, LTC (b) (6) /RES #10761054US3

**12. QUARTERS: JTR Lodging/\$114, Meals/\$36, Max/\$152**

- Holiday Inn (805) 964-6241; FAX (805) 964-8467

**13. CONTACTS:**

- a. Santa Barbara CA:**
  - (1) Santa Barbara Regional Airport: (805) 964-6025, FAX (805) 964-1380
  - (2) Airport Security Center: (805) 681-4803
  - (3) Air Traffic Manager: (805) 681-0534, FAX (805) 681-9055
  - (4) Airport Noise/Operations Department: (805) 692-6005, FAX (805) 964-1380
  - (5) Sheriff's Department of Santa Barbara: (805) 692-5750, FAX (805) 692-5751
  - (6) Clean Seas, Operations Mgr, (b) (6) (b) (6)
  - (7) 11<sup>th</sup> US Coast Guard District, Coast Guard Island Bldg 514, Alameda CA 94501  
-- Chief Response Branch: Lt Cmdr (b) (6) , (b) (6) , FAX 3989
- b. Seattle WA:** USCG 915 Second Ave, Room 3506, Seattle WA 98174-1067  
FAX (206) 220-7225
  - (1) (b) (6) , USCG D13 (DRAT) (b) (6)  
e-mail (b) (6)
  - (2) (b) (6) , USCG D13 (DRAT 1) (b) (6)  
e-mail (b) (6)





# AERIAL SPRAY OPERATIONAL SCHEDULE

## SANTA BARBARA CA

## OIL SPILL EXERCISE

### 1-5 APRIL 2002

PURPOSE/OBJECTIVE: Oil spill exercise and training with the West Coast USCG

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander:
- (2) Pilots: Capt (b) (6) , Capt (b) (6)
- (3) Navigators: Maj (b) (6) , Maj (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: CMS (b) (6) , TSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: MSG (b) (6) , TSG (b) (6)  
TSG (b) (6) , SSG (b) (6)
- (2) Crew Chiefs: TSG (b) (6) , SRA (b) (6)
- (3) Avionics: TSG (b) (6) , SRA (b) (6)

##### c. Ground Support/Certified Pest Management Professionals: Lt Col (b) (6)

##### d. Communications Flight Sq: MSG (b) (6) , TSG (b) (6) , TSG (b) (6) , SSG (b) (6)

2 Van \$51: SSG (b) (6) / MSG (b) (6)

4 Mid Size \$37: Capt (b) (6) /CMS (b) (6) /TSG (b) (6) / LtC (b) (6)

#### 2. SCHEDULE: (All time Local)

##### 1 Apr (Monday):

##### PPR # 21

0800: Show Time  
1000: Depart KYNG  
1600: Land KSBA  
1630: Safety Briefing

##### 2 Apr (Tuesday): Meeting/Ground Training Day

0830: In-Flight Safety Briefings; MX Will Configure A/C  
1600-1700: Show & Tell  
1730-1900: Social Hour

##### 3 Apr (Wednesday):

0830: Show Time  
1000-1130: 1<sup>st</sup> Sortie  
1200-1300: 2<sup>nd</sup> Sortie  
1400-1530: 3<sup>rd</sup> Sortie  
1600: De-Brief

##### 4 Apr (Thursday): Training/Clean Up Day

##### 5 Apr (Friday):

0800: Show Time  
1000: Depart  
1700: Land

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Cellular Phone, Wind Gauge, Compass, Pest Safety Binder, Signal Mirrors, UHF Radio, Satloc Ground Tracker
- b. **Navigator:** Maps/Map Bag, Validation Map, Laptop Computer
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit, Ground Loading Station, Spray Booms for Testing and Oil Spill Exercise

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Tower:** (805) 681-0534
- b. **Base Ops:** (503) 861-6201

**5. PARKING PLAN:** The Forest Service Ramp, west end of Santa Barbara Regional Airport

**6. RADIO FREQUENCIES Call Sign:**

- a. **US Coast Guard Air Station Ops Center Radio Frequency:**
- b. **US Coast Guard Air Station Ops Center Call Sign:**
- c. **Spray Ground: Primary / Secondary**

**7. IN-BRIEFING:** Required. See the Schedule, or as determined by Mission Commander.

**8. SPRAY CONFIGURATION:**

- a. **MASS – SP2G**
- b. **Aircraft Number: 105**
- c. **Mission Identifier: QZNRKA**

**9. SPRAY PARAMETERS:**

**FOR OVERWATER EXERCISE**

- a. **Nozzles –** Raindrop nozzles oriented straight back.
- b. **8 (16 total) on each fuselage boom; evenly spaced.**
- c. **Booms –** fuselage only
- d. **Airspeed –** 170 knots ground speed.
- e. **Altitude –** 100 feet above water.
- f. **Application Rate –** 7 Gal/Acre
- g. **Flow Rate –** 277 Gal/Min
- h. **Spray --** water only.
- i. **Number of passes –** 6 per sortie. Do not decrease flow rate in order to increase passes.
- j. **Pressure –** 40 psi

**10. LOADING: Water**

- a. How Much:** To be determined
- b. Where:** Forest Service Ramp
- c. When:** 3 Apr 02
- d. Furnished by Installation:**
  - (1) Water
  - (2) Truck
  - (3) Two B-5 or B-1 Stands

**11. TRANSPORTATION: BUDGET RENTAL CAR AGENCY**

2 Mini-Vans \$51 a day: SSG (b) (6)/RES #10758149US3, TSG (b) (6) /RES #10761155US6  
2 Full Size \$40 a day: TSG (b) (6) / RES #10828541US3, MSG (b) (6)/RES #10828399US1  
4 Mid-Size/\$37 a day: Capt (b) (6) /RES #10991619US2, CMS (b) (6) /RES #10760765US2  
TSG (b) (6)/RES #10760920US2, LTC (b) (6) /RES #10761054US3

**12. QUARTERS: JTR Lodging/\$114, Meals/\$36, Max/\$152**

- Holiday Inn (805) 964-6241; FAX (805) 964-8467

**13. CONTACTS:**

**a. Santa Barbara CA:**

- (1) Santa Barbara Regional Airport: (805) 964-6025, FAX (805) 964-1380
- (2) Airport Security Center: (805) 681-4803
- (3) Air Traffic Manager: (805) 681-0534, FAX (805) 681-9055
- (4) Airport Noise/Operations Department: (805) 692-6005, FAX (805) 964-1380
- (5) Sheriff's Department of Santa Barbara: (805) 692-5750, FAX (805) 692-5751
- (6) Clean Seas, Operations Mgr, (b) (6) ; Cell (b) (6)
- (7) 11<sup>th</sup> US Coast Guard District, Coast Guard Island Bldg 514, Alameda CA 94501  
-- Chief Response Branch: Lt Cmdr (b) (6) , FAX 3989

**b. Seattle WA:** USCG 915 Second Ave, Room 3506, Seattle WA 98174-1067  
FAX (206) 220-7225

- (1) (b) (6) USCG D13 (DRAT) (b) (6)  
e-mail (b) (6)
- (2) (b) (6) USCG D13 (DRAT 1) (b) (6) (b) (6)  
e-mail (b) (6)

**c. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: BGEN Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315, FAX 1161
- (3) 910 AW/PA: Lt (b) (6), (b) (6), (b) (6)
- (4) 910 OG/CC: Ext 1257 / 1179, FAX 1172
- (5) 910 OSF/OSA Airfield Manager: (b) (6)
- (6) 757 AS/DO Operations Officer: LTC (b) (6), (b) (6)
- (7) 757 AS/DOO Ops Admin: SMS (b) (6), FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Ext 1111, FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: CMS (b) (6)
- (11) Maintenance Control: Ext 1348
- (12) 910 LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL: CMS (b) (6)
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Cellular Phones:
  - Mission Commander (b) (6)
  - PMP Ground Support (b) (6)
  - Spray Maintenance (b) (6)







DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



14 Jul 05

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Grand Forks AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks AFB ND.

**2. Capability:** Spray Aircraft 89-9108 available 1-5 Aug 05

**3. Concept of Operations:**

**1 Aug (Monday)**

0900: Showtime

1100: Depart KYNG

1300: Land KGFK/Safety Briefing

1500: Spray In Brief (CPMP, MC, AC) Customs Bldg, where plane is parked.

**2 Aug (Tuesday):**

1630: Show time

1700 Load Chemical

1830: Take off KGFK (Adulticide Spray Sortie)

2102: Sunset

**3 Aug (Wednesday):**

1630: Show time

1700 Load Chemical

1830: Take off KGFK (Adulticide Spray Sortie)

2101: Sunset

**4 Aug (Thursday):**

1630: Show time

1700 Load Chemical

1830: Take off KGFK (Adulticide Spray Sortie)

2100: Sunset

**5 Aug (Friday):**

1000: Show time

1200: Take off KGFK

1500: Land KYNG

**1 Jul (Friday):**

0900: Show time

1100: Take off KGFK

1500: Land KYNG

**4. Spray Parameters:**

- a. **Altitude:** 150' AGL for Adulticide swaths when no trees are present.
- b. **Swath Width.** 2000 feet for ULV or as determined by the CPMP
- c. **Flow Rate.** 4.36 gallons/minute ULV
- d. **Application Rate.** 0.60 oz/acre Trumpet
- e. **Ground Speed:** 200 Knots
- f. **Proposed spray area:** Approximately 21,767 acres

**5. Mission Commander:**

**6. Aircraft Commander:**

7. Support including Security Forces for the aircraft parking at Grand Forks Intl Airport due to Grand Forks AFB runway closure required at Grand Forks AFB ND is coordinated with the organization's Environmental/Spray Coordinator Ms Linda Olson, DSN 362-4655.

// Signed //

(b) (6), Maj, USAFR  
AERIAL SPRAY CHIEF



# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 1-5 Aug 05

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: MAJ (b) (6)
- (2) Pilots: CPT (b) (6), LTC (b) (6)
- (3) Navigators: LTC (b) (6)
- (3) Flight Engineers: MSG (b) (6)
- (4) Spray Operators: MSG (b) (6), MSG (b) (6), MSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: SMS (b) (6), TSG (b) (6), TSG (b) (6)
- (2) Crew Chief(s): TSG (b) (6), SSG (b) (6)
- (3) Avionics: MSG (b) (6)

##### c. Entomologists/Ground Support: CPT (b) (6)

#### 2. PPR: Not Required, landing/parking at Grand Forks Intl in front of Fire Dept and Customs.

#### 3. SCHEDULE: (All Local Times)

##### 1 Aug (Monday)

0900: Showtime  
1100: Depart KYNG  
1300: Land KGFK/Safety Briefing  
1500: Spray In Brief (CPMP, MC, AC) Customs Bldg, where plane is parked.

##### 2 Aug (Tuesday):

1630: Show time  
1700 Load Chemical  
1830: Take off KGFK (Adulticide Spray Sortie)  
2102: Sunset

##### 3 Aug (Wednesday):

1630: Show time  
1700 Load Chemical  
1830: Take off KGFK (Adulticide Spray Sortie)  
2101: Sunset

##### 4 Aug (Thursday):

1630: Show time  
1700 Load Chemical  
1830: Take off KGFK (Adulticide Spray Sortie)  
2100: Sunset

##### 5 Aug (Friday):

1000: Show time  
1200: Take off KGFK  
1500: Land KYNG

#### 4. ITEMS TO TAKE

- a. **Mission Commander:** Cellular Phone, Mission Folder
- b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder, 1 UHF Radio, 1 Measuring wheel, Project Notebook, Entomologist's Tool Kit
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment

**5. RADIO FREQUENCIES: Air To Ground Primary** UHF 392.2; VHF 123.45  
KRDR Tower 124.9 V; Grand Forks International 118.4 V

**6. CONFIGURATION: SP2G**

- a. System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. Nozzle Tips/Orientation:** ULV (adulicide): 8005 Tee Jet oriented straight down
- c. Number:** ULV: 11 8005s total (6 left; 5 right)
- e. Aircraft:** 89-9108
- f. Mission Identifier:** QZNRKA653213

**7. SPRAY PARAMETERS:**

**a. Adulicide**

- (1) **Area to be treated:** 36,806 acres (Grand Forks AFB, City of GF, East Grand Forks)
- (2) **Altitude:** 150' for Adulicide application
- (3) **Swath Width.** 2000 feet
- (4) **Flow Rate.** 4.72 gallons/minute ULV
- (5) **Application Rate.** 0.65 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots
- (7) **Flush:** With water, triple rinse, then air purge

**8. SPRAY MIXING AND LOADING:** The amount of Trumpet to load will be determined on site

**9. TRANSPORTATION:** Some 5 vehicle combination of vans and 6 packs provided by 319 CES. Transportation provided to lodging, vehicles will be picked up there.

**10. LODGING: On Base Billeting:** DSN 362-3070/6189 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844  
**Alternate** Holiday Inn, 701-772-7131/Fax 701-780-9112

**11. CONTACTS:**

**a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**

- (1) **Base Operations:** Airfield Manager DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx
- (2) **Environmental Officer:** (b) (6) DSN 3(b) (6) , Cel (b) (6) (6) , FAX 6155
- (3) **Base Civil Engineer:**
- (4) **Pest Management:** DSN 362-4289, FAX 3432
- (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
- (6) **Weather:** DSN 362-4396, Com 701-747-4396, closes at 1600L
- (7) **Billeting:** DSN 362-7200 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844
- (8) **Transient Alert:** DSN 362-4256, Com 701-747-4256 or Cel (b) (6) or (b) (6)

**b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 Base Ops: Airfield Manager: (b) (6)  
- Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Ext 1652; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL:Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - PMP/Entomologist: (b) (6)
  - Spray Maintenance: (b) (6)
  - Mission Commander: (b) (6)

**910 AW AERIAL SPRAY  
PMP'S POST-MISSION REPORT  
Grand Forks AFB, ND (1-5 August 2005)**

**1. MISSION BASICS:**

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: August 2005
- c. Purpose of Application: Control nuisance and vector mosquitoes (adult stage)
- d. Application Date: 2 August 2005
- e. Time of Application (Local): 1915- 2150
- f. Acres Treated: 10,332
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) , Environmental Officer,  
DSN (b) (6)
- h. Date Spray Map Last Approved: 1 August 2005
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): 1 August 2005; GF International Airport  
MAJ (b) (6) , CAPT (b) (6) , (b) (6) , (b) (6) .

**2. OPERATIONAL:**

- a. Mission Commander: MAJ(b) (6)
- b. Certified PMP/s (Category 11): CAPT (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander: CAPT (b) (6)
  - (2) CoPilot: LTC (b) (6)
  - (3) Navigator: LTC (b) (6) (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
- d. Spray Operators: MSG (b) (6) , MSG (b) (6) , MSG (b) (6)
- e. Safety Briefer: CAPT (b) (6)
- f. Spray Maintenance: SMS (b) (6) , SSG (b) (6) TSG (b) (6)
- g. Spray Ground Monitors: CAPT (b) (6)
- h. Crew Chiefs: TSG (b) (6) , SSG (b) (6)
- h. Flying Data:
  - (1) Spray Sorties/Hours: 1/1.8 Ferry Sorties/Hours: 2/5.8

**3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-548127
- c. Gallons Pesticide Loaded: 70 (2 August)
- d. Pesticide Applied: 67 (2 August)
- e. Other Additives Used: none
- f. Gallons and Name of Flush Used: 150 gallons water
- g. Application Rate: 0.83 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 89-9108
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: TeeJet 8005
- e. Nozzle Orientation & Number Used: 14 straight down
- f. Pressure (PSI): 19-24
- g. Flow Rate: 6.0 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 feet
- b. Spray Off Set: 2000 feet
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 knots (338 feet/second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 170°/3-7 knots
  - (2) Altitude: 170°/14 knots
- b. Temperature: 85-89 °F
- c. Dew Point: 52-55 °F
- d. Cloud Cover: Clear
- e. Source: Ground/altitude observations

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Techniques and results:

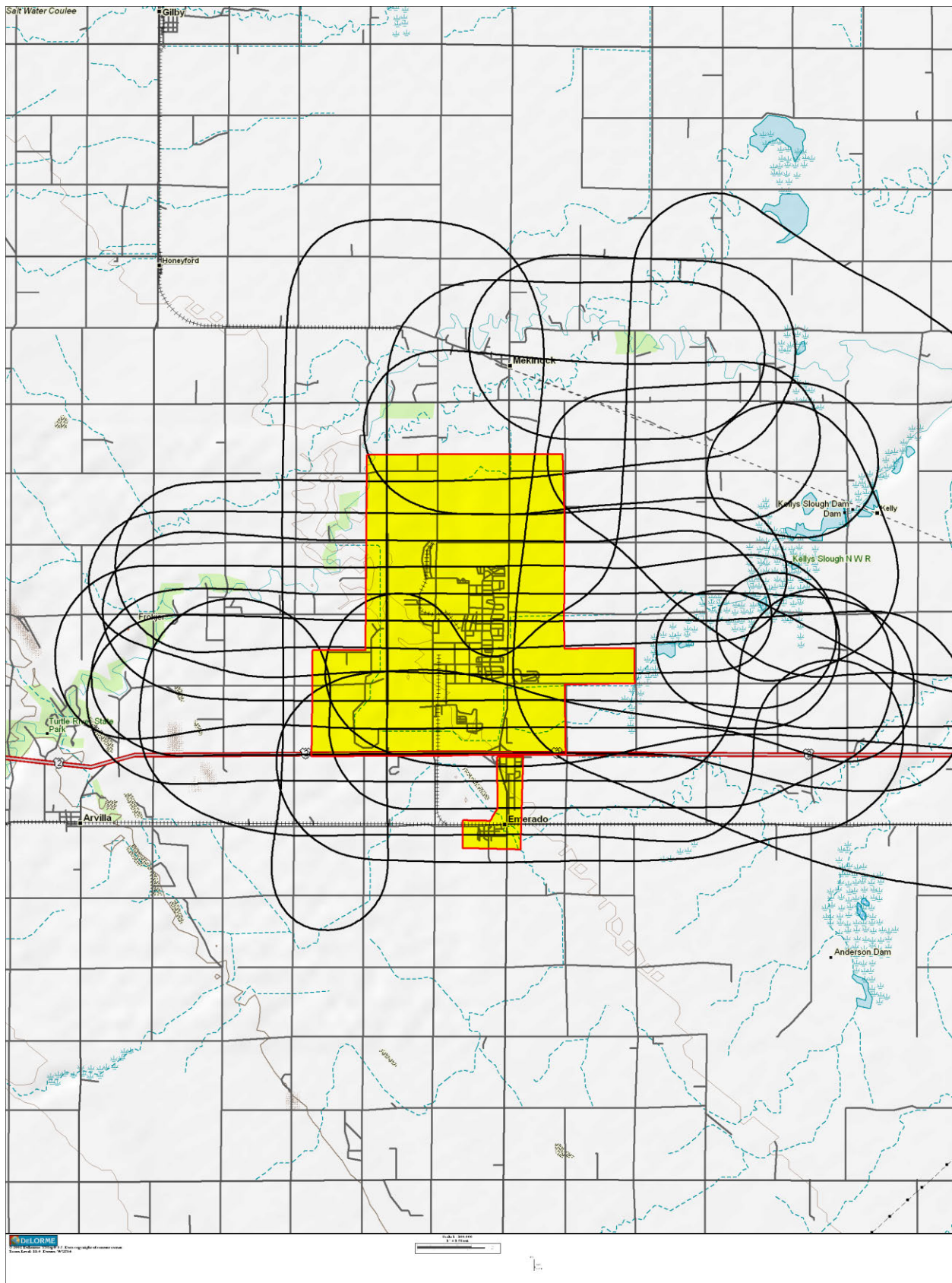
The Air Force Base (GFAFB) conducts adult mosquito trapping. Daily trap counts were 2690 on August 2, prior to the aerial spray, and 357, 2158, and 1928 one, three and four days respectively following the aerial spray.

**8. REMARKS:** Originally planned as a 2 night spray including both the Air Force base and the city of Grand Forks, only the AirForce base was successfully sprayed because the winds for the remainder of the week exceeded label maximums. Control was not as successful as in past missions, despite the increase in application rate. Speculation abounds as to the reason(s), but probably most prominent was the fact that the insecticide was sprayed when it was quite warm and humid when mosquito activity may have been reduced, and that the spray date was followed by days with high winds, potentially blowing mosquitoes in from outside the treatment zones.

//Signed//

(b) (6) , CAPT, USAFR  
DoD Certified Pest Management Professional

**Attachment 1. Application of 0.83 oz trumpet over spray blocks at Grand Forks AFB on 2 August 2005. Spray blocks are in yellow and the C-130 flight path is shown in black.**







DEPARTMENT OF THE AIR FORCE  
YOUNGSTOWN AIR RESERVE STATION  
AERIAL SPRAY SQUADRON  
VIENNA OH 44473-5924

910 AW AERIAL SPRAY SQUADRON  
CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT  
PARRIS ISLAND MCRD, SC 1-5 MAY 2006

1. MISSION BASICS:

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 1-5 May 2006
- c. Purpose of Application: Biting Midge (*Culicoides* spp.) Mosquito Control. Evaluation of pyrethroid class insecticide (Anvil) for biting midge control.
- d. Application Date: 3 May 2006
- e. Time/s of Application (Local): 1835-1940 hrs
- f. Acres Treated: 7,600
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6)  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 18 Apr 2006
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 1 May: Assistant Chief of Staff, Installations and Logistics, COL (b) (6) briefed by Maj (b) (6)

2. OPERATIONAL:

- a. **Aircrew:**
  - (1) Pilots: MC-MAJ (b) (6) MAJ (b) (6) CPT (b) (6)
  - (2) Navigators: MAJ (b) (6)
  - (3) Flight Engineers: MSG (b) (6)
  - (4) Spray Operators: SMS (b) (6) Msg (b) (6) Msg (b) (6) Tsg (b) (6)
- b. **Maintenance:**
  - (1) Spray Maintenance: TSG (b) (6) MSG (b) (6) TSG (b) (6)
  - (2) Crew Chiefs: MSG (b) (6) SSG (b) (6)
  - (3) Avionics: MSG (b) (6)
- c. **Entomologist:** MAJ (b) (6)
- d. **Flying Data:**
  - (1) Spray Sorties/Hours: 1/2.0
  - (2) Ferry Sorties/Hours: 2/4.5

3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Anvil® 10+10 (10% Sumithrin and 10% Piperonyl Butoxide)
- b. EPA Registration Number: 1021-1688-8329
- c. Gallons Pesticide Loaded: 49 gal Anvil® (3 May)
- d. Gallons Pesticide Applied: 47 gal (3 May)
- e. Gallons and Name of Flush Used: 8 gal/marvel oil
- f. Application Rate: 0.62 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99108
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 6 oriented straight down
- f. Pressure: 30-55 p.s.i.
- g. Flow Rate: 2.25 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 3000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS (19 Apr):**

- a. Winds (Direction/Speed):
  - (1) Ground: 280-320°/4-7 Knots
  - (2) Release Altitude: 310° /12 Knots
- b. Temperature (Degrees Fahrenheit): 86° F dropping to 83° F
- c. Relative Humidity: 38-45%
- d. Cloud Cover: Partly Cloudy
- e. Source: Ground observations at the MCRD Rifle Range/Aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Techniques used: oil sensitive cards; bioassay cages of mosquitoes; visual observation of aircraft course (GPS)
  - (2) Results: Best coverage achieved on downwind side of the spray block. Good coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: Weekly and daily collections of midges and mosquitoes with carbon-dioxide
  - (2) Results: Midge populations were very low following the spray but may have been decreasing naturally.

**8. REMARKS AND RECOMMENDATIONS:** This application was the second evaluation of the insecticide, Anvil 10+10, for biting midge and mosquito control (see report for 17-20 April 06 for background info). To determine efficacy of this insecticide, wild mosquitoes were collected the night before the scheduled mission and separated into bioassay cages to be exposed in open locations during the spray (approximately 20 mosquitoes per cage). The compound's functionality against biting midges was assessed using weekly and daily trapping before and after the application. Percent mortality for bioassays is shown by location in attachment 1. Daily trap collections are shown in attachment 2. Unfortunately, mission events and naturally decreasing midge populations made a final definitive analysis on the impact of the insecticide impossible. An aircraft repair issue cancelled the scheduled spray flight the evening of 2 May, and while quick action on the part of maintenance personnel remedied the situation by the next evening, low numbers of wild mosquitoes on the evening of 2 May made it necessary to use the previous nights' mosquito collections. These mosquitoes were likely stressed from holding conditions because mortality in the control groups averaged 29%. High control group mortality nullifies the validity of observed mortality in the treatment groups (see attachment 1). Furthermore, overall biting midge densities decreased naturally in both the treatment and control areas from 25 April through the spray date (3 May) and remained low

throughout the remainder of the sampling period (7 May) [attachment 2]. No statistical difference was found between spray/no-spray areas prior to spray areas prior to spray [(F.05 [3.43]) F=2.04] or following spray [(F.05 [9.28]) F=1.26].

Recommendation: Since the results of this test were inconclusive, an additional application of Anvil is recommended to further evaluate the value of this insecticide for biting midge control at Parris Island MCRD.

The next spray mission is tentatively scheduled for later September early October timeframe with an option for an application during the summer months dependant on pest populations and aircraft availability.

//signed//

(b) (6)

, MAJ, USAFR

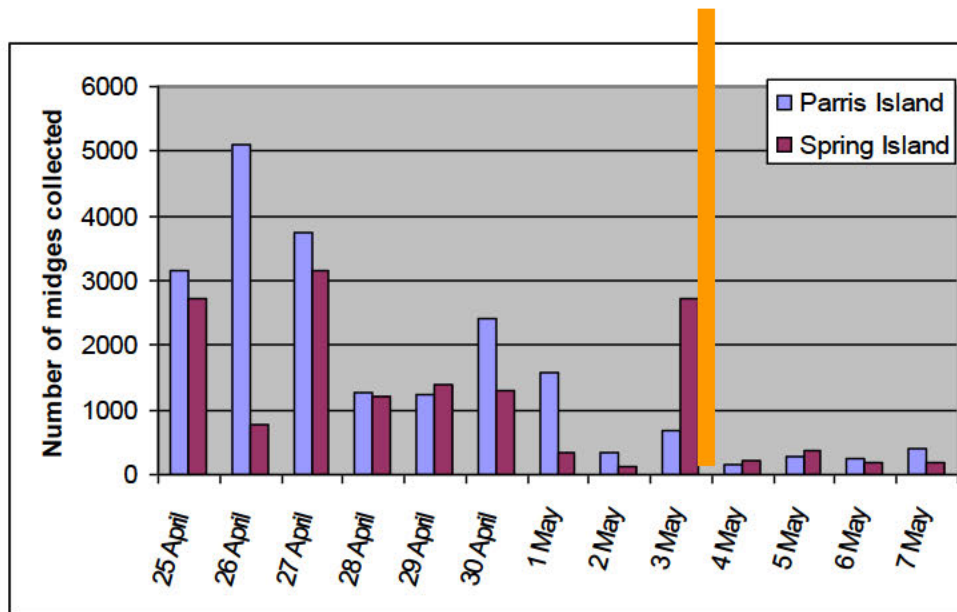
**DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL**



**Attachment 1. Flight path of aircraft while making an Anvil insecticide application, 3 May 06. Percent markers indicate percent mortality of caged mosquitoes exposed during the application.**



**Attachment 2.** Daily midge density monitored on Parris Island and a non-spray area (Spring Island). Orange vertical line indicates spray date (3 May 2006). Midge numbers decreased naturally from 25 April through the spray date (3 May) and remained low throughout the remaining sampling period. No statistical difference was found between spray/no-spray areas and relative midge densities.







DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926

19 APR 06

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Parris Island MCRD SC

1. Objective/Purpose/Benefits of the Spray Mission. Spray Parris Island MCRD SC for control of biting midges and mosquitoes. Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCDR SC at the request of the Parris Island MCRD/MCAS Environmental Coordinator.

2. Capability: Spray Aircraft 89-9105 available on 1-4 May 2006

3. Concept of Operations:

**1 May (Monday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

0800: Show Time

1000 Take Off YNG

1200\* Arrive Dobbins ARB

1500\*\* Depart MGE

1630 Land KNBC

1700: Safety Briefing

\*CDC will present award to 757AS for the work performed during Hurricane relief

\*\*Departure time will be dependent upon completion of CDC Award presentation

**2 May (Tuesday):**

1500: Showtime

1530: Load Chemical/Wx Decision

1700: Take off KNBC

2005: Sunset

**3 May (Wednesday):** Wx back up, training flight or redeploy to YNG

1500: Showtime

1530: Load Chemical/Wx Decision

1700: Take off KNBC

2005: Sunset

**4 May (Thursday): Return to YNG**

1000: Show Time

1200: Take off KNBC

1400: Land KYNG

4. Spray Parameters:

a. Acreage: 7,500 Acres (Only areas determined by PMP)

b. Altitude: 150 Ft AGL

c. Pesticide: Anvil® 10+10

d. Deploy: 2.0 Hrs

e. Re-Deploy: 2.0 Hrs

f. Spray Time: 16 Minutes per Sortie (or as called by PMP)

5. Aircraft Commander: Maj (b) (6)

6. Mission Commander: Maj (b) (6)

7. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator (b) (6) DSN (b) (6)

// SIGNED //

(b) (6), Major, USAFR  
Chief of Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## PARRIS ISLAND MCRD, SC

### 1-5 May 2006

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: MC-MAJ (b) (6) , MAJ (b) (6) , CPT (b) (6) ,
- (2) Navigators: MAJ (b) (6)
- (3) Flight Engineers: MSG (b) (6)
- (4) Spray Operators: SMS (b) (6) , Msg (b) (6) , Msg (b) (6) , Tsg (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSG (b) (6) , MSG (b) (6) , TSG (b) (6) ,
- (2) Crew Chiefs: MSG (b) (6) , SSG (b) (6)
- (3) Avionics: MSG (b) (6)

##### c. Pest Management Professionals/Entomologist: CPT (b) (6) (In place)

Gov Vehicles provided by Parris Island MCRD: 2 Crew Vans & 1 Staff Car keys and vehicles at Base Ops.

#### 2. PPR REQUIREMENTS: 121-01

#### 3. PLANNED SEQUENCE OF EVENTS: (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

##### 1 May (Monday): see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

1330: Show Time  
1530 Take Off YNG  
1700 Land KNBC  
1800: Safety Briefing

Rifle Range No night fire planned any evenings

##### 2 May (Tuesday):

1430: Showtime  
1500: Load Chemical/Wx Decision  
1700: Take off KNBC  
2005: Sunset

Rifle Range: None

##### 3 May (Wednesday): Wx back up, training, or redeploy to YNG

1430: Showtime  
1500: Load Chemical/Wx Decision  
1700: Take off KNBC  
2006: Sunset

Rifle Range None

##### 4 May (Thursday): Wx back up, training, or redeploy to YNG

1430: Showtime  
1500: Load Chemical/Wx Decision  
1700: Take off KNBC  
2006: Sunset

Rifle Range None

##### 5 May (Friday):

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

- (1) 20 Rooms reserved at Hampton Inn, ensure no rooms charged on Current Ops Credit card.
- (2) Mission Commander Cell Phone

- b. **Entomologist/CPMP:**
  - (1) Wind Gauge & Compass
  - (2) UHF/VHF Radios and Cellular Phone
  - (3) Pesticide Safety Binder
- c. **Navigators:**
  - (1) Maps
  - (2) Templates
- d. **Spray Maintenance:**
  - (1) Spill Kit
  - (2) Safety Equipment
  - (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** 6 open for ULV spray; 6 8003's oriented straight down (3 per side)
- d. **Differential GPS:** Installed
- e. **Aircraft:** 89-9108
- f. **Mission Identifier:** QZNRKA296121

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Anvil® 10+10
  - Sumithrin (synthetic pyrethrin) and Piperonyl Butoxide
  - Signal Word: Caution
  - Antidote: not applicable
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 0.62 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,400 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 2.25 gallons/Minute

- 7. AMOUNT OF SPRAY MATERIAL AVAILABLE: :** There are approx. 50 gallons of Anvil available for this mission. We will spray 35 gallons per application. See entomologist for amount to load, it is possible that we may have to retreat the area during the mission.

- 8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
 Hilton Head Arpt: 118.8 CTAF  
 Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 392.2; Secondary 340.8**

- 10. TRANSPORTATION:** Parris Island will provide two vans and staff car for transportation to and from quarters and for messing.

- 11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP & Parris Island MCRD Project Coordinator.

**12. CONTACTS:**

- a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX
  - (1) Environmental Coordinator (Spray Coordinator):

- (b) (6) , DSN (b) (6) , Cel (b) (6) ; (b) (6) , Cel (b) (6)  
 FAX (843) 228-2616; (b) (6)
- (2) Assistant Chief of Staff I & L: (b) (6) , DSN (b) (6)  
 (3) Pest Control Foreman: DSN 335-3663  
 (4) P.I. Motor Pool: (b) (6) , DSN (b) (6) (b)  
 (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)  
 (6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)  
 (7) P.I. Rifle Range: DSN: 335-3183/3624
- b. Beaufort MCAS SC:** (Commercial (843) 228-XXXX)  
 (1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6) ; (b) (6) , DSN (b) (6)  
 (2) Fuels: DSN: 335-7049/7448/7168  
 (3) MCAS Beaufort Airfield MGR: (b) (6)  
 DSN: (b) (6) . Base Ops is ext 7301/2/3  
 (After duty hours: (b) (6) DSN: (b) (6) )  
 (4) Trans Alert/VAL: DSN: 335-7110  
 (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)
- c. Beaufort County Mosquito Control:** (b) (6)
- d. Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) , DSN: (b) (6)
- e. Quarters:**  
**17 Rooms at Hampton Inn (\$114/Night) , Group Res: Youngstown,**  
 (843)986-0600 (FAX 0494)  
 Ramada Inn (843) 524-2144/Fax 1704  
 Hampton Inn (843) 986-0600 (FAX 0494)  
 Sleep Inn (843) 522-3361 FAX (843) 522-9929  
 Parris Island Billeting DSN: 335-2744 (FAX: 3815); (843) 228-3960  
 Comfort Inn (843) 525-9366 (FAX 1529)  
 Best Western (Sea Island Motel) (843) 524- 4121  
 Port Royal Days Inn (843) 524-1551  
 Best Western Pt South (I-95) (843) 726-8101
- f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
 Toll Free 1 - 800 - 278 - 7046,+2 + Ext
- (1) 910 AW/CC: Col (b) (6)  
 (2) 910 AW Command Post: Ext 1315; FAX 1161  
 (3) 910 AW/PA: Capt (b) (6) , (b) (6) ; FAX 1022  
 (4) 910 OG/CC: Col (b) (6) , (b) (6)  
 (4) 910 OG: Airfield Manager, (b) (6) , (b) (6)  
 (5) 757 AS/DO: Maj (b) (6)  
 (6) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371  
 (7) 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657  
 (8) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) ; FAX 1616  
 (9) 910 LG/CC: Ext 1225  
 (10) 910 LG/LGM: CMS (b) (6) (b) (6)  
 (11) Maintenance Control: Ext 1327  
 (12) 910 LG/LGMS: Spray Maintenance, SMS (b) (6)  
 (13) Omega/SATO Travel: Ext 1772; 1-800-285-6342  
 (14) Cellular Spray Phones:  
 - Mission Commander: (b) (6)  
 - Entomologist: Mark's (b) (6)

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**PARRIS ISLAND MCRD, SC 1-5 OCT 2007**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 1-5 OCT 2007
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 1 Oct 2007
- e. Time/s of Application (Local): 2125-2320
- f. Acres Treated: 5967
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) (b) (6)  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 1 Oct 2007
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 1 Oct; Assistant Chief of Staff,  
Installations and Logistics, Maj (b) (6), Major (b) (6), LTC (b) (6)  
Maj (b) (6)

**2. OPERATIONAL:**

- a. **Mission Commander:** MAJ (b) (6)
- b. **Aircrew:**
  - (1) Pilots: LTC (b) (6), Maj (b) (6)
  - (2) Navigators: Maj (b) (6)
  - (3) Flight Engineers: MSG (b) (6) (b) (6)
  - (4) Spray Operators: Msgt (b) (6), Msgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSG (b) (6), TSG (b) (6), SSGT (b) (6)
  - (2) Crew Chiefs: TSG (b) (6), A1C (b) (6)
  - (3) Avionics: SRA (b) (6)
- d. **Entomologist:** MAJ (b) (6)
- e. **Flying Data:**
  - (1) Spray Sorties/Hours: 1/1.9
  - (2) Ferry Sorties/Hours: 2/4.7

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 60 Gal Dibrom<sup>®</sup> (10 Oct)
- e. Gallons Pesticide Applied: 36 Gal (10 Oct)
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 8 gal/marvel oil
- h. Other Additives Used: None
- i. Application Rate: 0.77 oz/acre



**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 909107
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 8 oriented straight down
- f. Pressure: 41 p.s.i.
- g. Flow Rate: 2.72 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 3000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS (1 Oct):**

- a. Winds (Direction/Speed):
  - (1) Ground: 060°/Average 7.6; gusts to 12 knots
  - (2) Release Altitude: 060° /13-18 knots
- b. Temperature (Degrees Fahrenheit): 78° F
- c. Relative Humidity: 56%
- d. Cloud Cover: Scattered Clouds
- e. Source: Ground observations at the MCRD Rifle Range/Aircraft

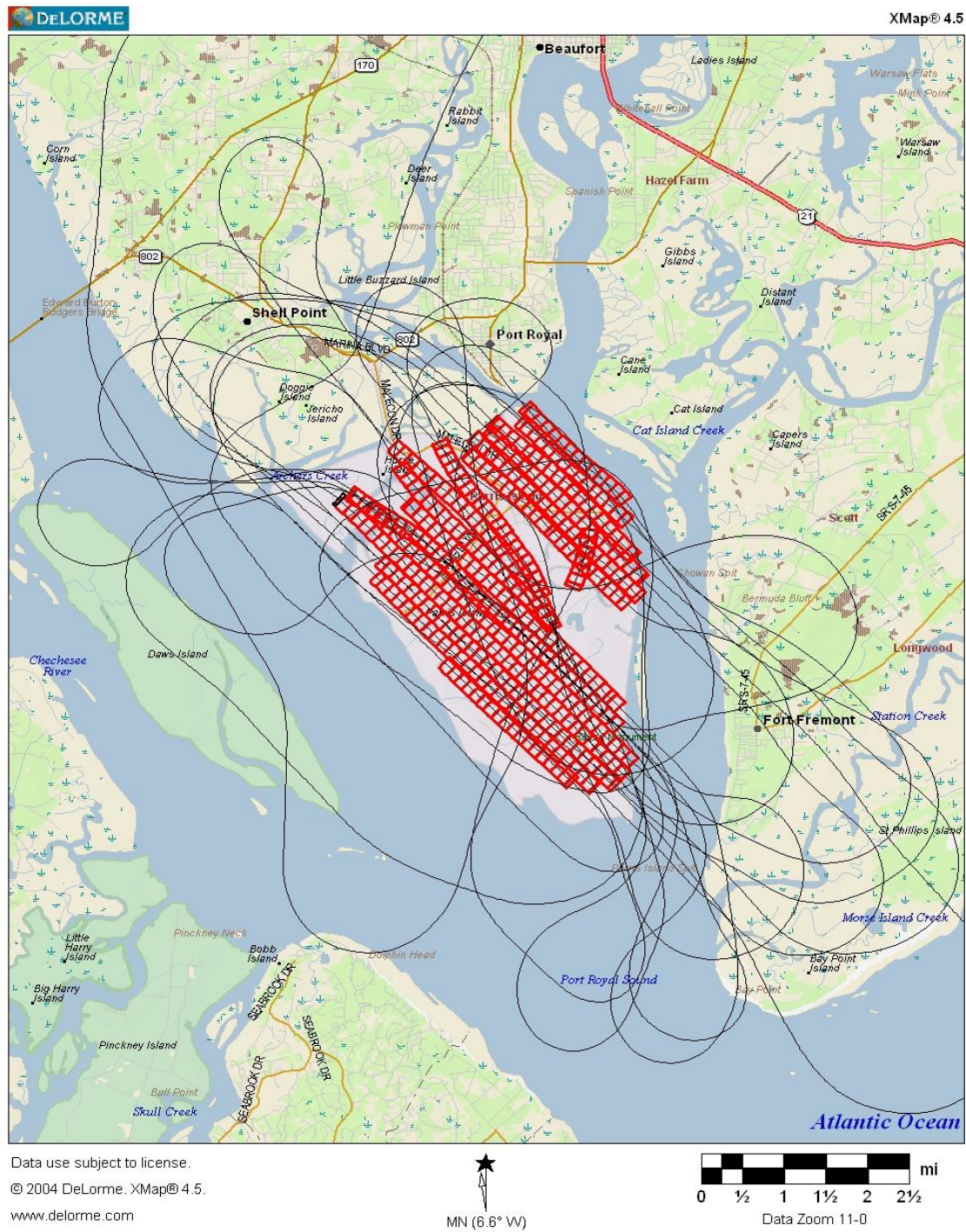
**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: visual observation of aircraft course (GPS)
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: Weekly collections of gravid mosquitoes with attractant-baited traps and landing rates in regions frequented by recruits involved in training.
  - (2) Results: Good control was noted in all areas sampled.

**8. REMARKS:** A single application was made over the Parris Island MCRD on 1 Oct 07 for control of biting midges (sandfleas) and mosquitoes. The application began approximately 2 hours prior to sunset to correspond with the peak activity period of the pests. The actual application required about 1.9 hours. Meteorological conditions at the time of application were suboptimal. Wind speeds were relatively high (approximately 7.6 knots at the surface). However, Parris island reported low trap counts the day following the spray application, and immediately after the spray, toxic effects of the pesticide were noted on mosquitoes and several other species of flying insects at various locations on the island. This mission was to originally coincide with a mission to Kings' Bay Georgia. However, spray activities had to be cancelled for the remainder of the week because of extremely poor weather conditions. The path of the aircraft is shown in attachment 1. The next and Parris Island mission is project to take place in the middle of October, 2007, with mission parameters remaining unchanged.

//signed//  
(b) (6) , MAJ, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

**Attachment 1. Flight path of aircraft while making Dibrom application, 1 Oct 07. Red boxes indicates active spraying.**



# AERIAL SPRAY OPERATIONAL SCHEDULE

## PARRIS ISLAND MCRD, SC

### 1-6 APR 2001

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCRD, SC.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: LtC (b) (6)
- (2) Pilots: Maj (b) (6), Capt (b) (6)
- (3) Navigators: LtC (b) (6) is, LtC (b) (6)
- (4) Flight Engineers: CMS (b) (6)
- (5) Spray Operators: MSG (b) (6), MSG (b) (6), TSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: SMS (b) (6), TSG (b) (6), MSG (b) (6), TSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6), SSG (b) (6)
- (3) Avionics: SSG (b) (6)

##### c. Pest Management Professionals/Entomologist: LtC (b) (6), 1Lt (b) (6)

#### 2. PLANNED SEQUENCE OF EVENTS: (All times local)

##### 01 APR (Sunday):

- 1500: Take off KYNG
- 1700: Land KNBC
- 1730: Safety Briefing

**PPR # 091-01**

##### 02 APR (Monday):

- 1400: Load Chemical
- 1630: Take off KNBC
- 1900: Land KNBC
- 1943: Sunset

“First sortie of the year” HAN pre-spray boom flush.

##### 03 APR (Tuesday):

- 1400: Load Chemical
- 1630: Take off KNBC
- 1900: Land KNBC
- 1944: Sunset

##### 04 APR (Wednesday):

- 1400: Load Chemical
- 1630: Take off KNBC
- 1900: Land KNBC
- 1945: Sunset

##### 05 APR (Thursday):

- 1400: Load Chemical
- 1630: Take off KNBC
- 1900: Land KNBC
- 1946: Sunset

##### 06 APR (Friday):

- 1200: Take off KNBC
- 1400: Land KYNG

#### 3. ITEMS TO TAKE:

##### a. Entomologist/CPMP:

- (1) Wind Gauge, Compass, and Signal Mirrors
- (2) UHF/VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder
- (4) Calibration Tables
- (5) DGPS Computers & Maps
- (6) Oil Sensitive Papers
- (7) Trackstar Equipment

##### b. Navigators:

- (1) Maps
- (2) Templates
- (3) Laptop Computer
- c. **Spray Maintenance:**
  - (1) Spill Kit
  - (2) Safety Equipment
  - (3) Loading and Clean-up Equipment and Supplies

**4. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Wing Booms
- c. **Nozzles:** Open for ULV spray; 6, 8008's oriented straight down
- d. **Differential GPS:** Installed
- e. **Aircraft Tail #:** 09108
- f. **Mission Identifier:** QZNRKA783091

**5. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: HAN
- b. **Application:** 1 Ounce Dibrom®/Acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 3.634 Gallons/Minute

**6. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Load 60 gallons of Dibrom® Concentrate per sortie and 25 gallons HAN in flush tank.

**7. PPR REQUIREMENTS:** Required: PPR # 091-01

**8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
 Hilton Head Arpt: 123.0 UNI  
 Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 392.2; Secondary 340.8**

**10. TRANSPORTATION:** Parris Island will provide two vans for transportation to/from quarters and dining. An additional vehicle will be available for the CPMP/Entomologists/Ground Support personnel.

**11. SPRAY MONITORING OR TESTING:** CPMP and Parris Island MCRD Project Coordinator.

## 12. CONTACTS:

**a. Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX

- (1) Environmental Coordinator (Spray Coordinator):  
(b) (6) , DSN (b) (6) ; (cellular) (b) (6) (b) (6) , DSN (b) (6) ;  
FAX (843) 228-2616; (b) (6) , (b) (6) ; (b) (6) , (b) (6)
- (2) Assistant Chief of Staff I & L: Col (b) (6) & Cpt (b) (6) , DSN (b) (6)
- (3) Pest Control Foreman: (b) (6) , DSN (b) (6) (b) (6)
- (4) P.I. Motor Pool: (b) (6) , DSN (b) (6)
- (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
- (5) Thrifty Car Rental: (843) 525-9996
- (6) P.I. Rifle Range: DSN: 335-3183/3624

**b. Beaufort MCAS SC:**

- (1) Beaufort MCAS Environmental: (b) (6) , DSN (b) (6) ; (b) (6) , DSN (b) (6)
- (2) Fuels: DSN: 335-7049/7448/7168
- (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
DSN: (b) (6) Base Ops is ext 7301/2/3  
(After duty hours: (b) (6) , (b) (6))
- (4) Trans Alert/VAL: DSN: 335-7110
- (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)

**c. Beaufort County Mosquito Control:** (b) (6)

**d. Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) , DSN: (b) (6)

**e. Quarters:**

**Sleep Inn, \$60.00, (Joy), 843-522-3361, FAX: 843-522-9929**

Hampton Inn, 2342 Boundary St, Beaufort SC, (843) 986-0600 (FAX 0494)

Parris Island Billeting (Linda Davidson) DSN: 335-2744 (FAX: 3815); (843) 228-3960

Comfort Inn (843) 525-9366 (FAX 1529)(b) (6)

Best Western (Sea Island Motel) (843) 524- 4121

Port Royal Days Inn (843) 524-1551

Beaufort Ramada 1-800-272-6232

Holiday Inn (843) 524-2144 (\$60.23)

Best Western Pt South (1-95) 1-843-726-8101

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257
- (5) 910 OSF/OSA: Airfield Manager: (b) (6) , (b) (6)  
- Assistant Air Field Manager (ACAM), (b) (6)
- (6) 757 AS/DO: LtC (b) (6) , (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMSgt (b) (6) ; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, (b) (6) ; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: CMSgt (b) (6)
- (11) Maintenance Control: Ext 1348
- (12) 910 LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL: CMSgt (b) (6)
- (14) Omega/SATO Travel: Ext 1772; (800) 285 – 6342
- (15) LG: Taxi Service to/from Airport: (b) (6) , FAX 1768
- (16) Supervisor of Flight Desk: 1069, FAX: 1371
- (17) Cellular Phones:
  - PMP/Entomologist Cellular Spray Phone: (b) (6)
  - Mission Commander: (b) (6) (b)
  - Spray Maintenance: (b) (6) ; Pager (b) (6)



# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT

### 1. MISSION BASICS:

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 1-6 April 2001
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 2, 4-5 April 2001
- e. Time/s of Application (Local): 1610-1915 (02 Apr); 1615-1927 (04 Apr); 1629-1811 (05 Apr)
- f. Acres Treated: 8,460 (2 Apr) & 7,680 (4 Apr), 1,536 (5 Apr)
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6) (b) (6) Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 2 April 2001
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-briefing: (When/Where/Briefer/s): 2 Apr; Assistant Chief of Staff, Installation and Logistics, COL (b) (6) (Office); Mr. (b) (6) LTC (b) (6) LTC (b) (6) CAPT (b) (6) & 1LT (b) (6)
- k. Installation Out-briefing: 6 Apr; Beaufort MCAS, COL (b) (6) LTC (b) (6) LTC (b) (6) Mr. (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: LTC (b) (6)
- b. Certified PMP/s (Category 11): LTC (b) (6) & 1LT (b) (6)
- c. Aircrew:
  - (1) Pilots: MAJ (b) (6) (A/C), CAPT (b) (6)
  - (2) Navigator(s): LTC (b) (6) & LTC (b) (6)
  - (3) Flight Engineer(s): CMS (b) (6)
  - (5) Spray Operators: MSG (b) (6) MSG (b) (6) , & TSG (b) (6)
- d. Safety Briefer: LTC (b) (6)
- e. Spray Maintenance: SMS (b) (6) , MSG (b) (6) , TSG (b) (6) , SSG (b) (6)
- f. Spray Ground Monitors: LTC (b) (6) , LTC (b) (6) , 1LT (b) (6)
- g. Crew Chiefs: MSG (b) (6) , SSG (b) (6)
- h. Avionics: SSG (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 3/8.0
  - (2) Ferry Sorties/Hours: 3/4.7

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate
- d. Gallons Pesticide Loaded: 60 Gal Dibrom<sup>®</sup> (2 & 4 Apr); 120 gallons total
- e. Gallons Pesticide Applied: 60 Gal (2 Apr); 50 Gal (4 Apr); 12 Gal (5 Apr)
- f. Gallons and Name Diluent Used: None
- g. Gallons and Name of Flush Used: VM & P NAPHTHA
- h. Other Additives Used: None
- i. Application Rate: 1 Oz/Acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99108
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8008 Flat Fan
- e. Nozzle Orientation & Number Used: 6 oriented straight down
- f. Pressure: 40 (02 Apr), 40 (04 Apr) & 40 (05 Apr) PSI
- g. Flow Rate: 3.6 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off Set: 2500' (02 Apr); 2500' (04 Apr); 2500' (05 Apr)
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 172° (02 Apr); 87° (04 Apr) & 97° (05 Apr)
  - (1) Ground (Knots): 2-5 (02 Apr); 2-8 (04 Apr) & 5-9 (05 Apr)
  - (2) Release Altitude: 6-12 Knots (02-05 Apr)
- b. Temperature (Degrees Fahrenheit): 61° (2 Apr); 63° (04 Apr); 64° (05 Apr)
- c. Relative Humidity: 52% (02 Apr); 76% (04 Apr); 63% (05 Apr)
- d. Cloud Cover: Partly Cloudy (02-05 Apr)
- e. Source: Ground observations at the MCRD rifle range using weather station.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Oil Sensitive Cards (OSC) wrapped on 1 meter dowels, OSC used in vertical test, also; spinners (rotating microscope slides)
  - (2) Results: Good coverage throughout spray area.
- b. Effectiveness:
  - (1) Technique/s Used: Landing counts taken at 5 localities during a two-hour period that corresponded with the previous day's spray sortie (Apr 3).
  - (2) Results: Reduced midge activity was confirmed in the locations sampled with a zero to 2 midges/min landing rate observed. One location, (Horse Island) had 4 midge/min landing rate. This portion of the spray block is directly behind the eagle's nest and difficult to treat. The efficacy of the second sortie was determined by the MCRD's Environmental Coordinator who reported finding much lower midge numbers on the Depot relative to the surrounding areas (e.g., Beaufort Marine Corps Air Station).

**8. REMARKS:** During the application we carried out a characterization study of the droplet spectrum distributed by the MASS. This test showed that our volume median diameter using Dibrom® is 32 microns (10-25 microns is the target size for mosquito control), this is approximately 20 microns below the industry average. These data are being used to construct a more accurate model to predict droplet dynamics dispensed at different parameters. We also tested the effective swath width of our application under field conditions to verify proper application practices. The next actual spray mission is scheduled 28 April - 04 May, 2001.

(b) (6) , 1LT, USAFR  
CERTIFIED PEST MANAGEMENT PROFESSIONAL



**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON-AERIAL SPRAY**  
**3976 King Graves Rd Unit 26**  
**Vienna OH 44473-5926**

21 September 2007

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM: 757 AS/DOS**

**SUBJECT: Concept of Operations for Aerial Spray at Naval Submarine Base Kings Bay, GA and Parris Island MCRD SC to control mosquitoes**

1. Objective/Purpose/Benefits of the Spray Mission. Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Kings Bay NSB, GA and Parris Island MCRD SC.

2. Capability: Spray Aircraft available on 1-6 OCT 07

3. Concept of Operations:

**1 OCT (Monday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

Check Rifle Range: None

0900: Show Time  
1100: Take Off YNG  
1300: Land KNBC  
1300: Safety Briefing  
1430: Installation in-brief  
1530: Load chemical/Wx decision (2 drums)  
1745: Take off KNBC for spray sortie  
1911: Sunset

**2 OCT (Tuesday):** Adulticide spray at King's Bay:

1500: Showtime  
1530: Load Chemical/Wx Decision  
1745: Take off KNBC  
1910: Sunset

**3 OCT (Wednesday):** Swapout MASS for larvicide tanks

0800: Show Time  
1000: Take off KNBC  
1200: Land KYNG  
1400: Take off KYNG  
1600: Land KNBC

**4 OCT (Thursday):** Larvicide of Kings Bay

0530: Show time  
0700: Take off KNBC  
0721: Sunrise  
2 Lifts needed to complete spray area

**5 OCT (Friday):** Wx back up for larvicide of Kings Bay, or redeploy to YNG

0530: Show time  
0700: Take off KNBC  
0721: Sunrise  
2 Lifts needed to complete spray area

**6 OCT (Saturday):** Redeploy to Youngstown



0800: Show time  
1000: Take off KNBC  
12001:Land KYNG

4. Spray Parameters:
  - a. Acreage: 27,500 Acres (Only areas determined by PMP)
  - b. Altitude: 150 Ft AGL
  - c. Pesticide: Dibrom® Concentrate; Vectobac
  - d. Deploy: 2.0 Hrs
  - e. Re-Deploy: 2.0 Hrs
  - f. Spray Time: 16 Minutes per Sortie at PI; 20 minutes at Kings Bay
5. Aircraft Commander: Lt Col (b) (6)
6. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator Mr. (b) (6) , DSN (b) (6) . Support required at NSB, Kings Bay has been coordinated with Mr. (b) (6) , DSN (b) (6) and SWFLANT Security via Mr. (b) (6) , DSN(b) (6) .

// SIGNED //

(b) (6) , MAJ, USAFR  
Chief Entomologist, Aerial Spray Unit



**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
**AERIAL SPRAY OPERATIONS**  
**3976 King Graves Rd Unit 32**  
**Vienna OH 44473-5932**



21 Oct 2004

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray of Musk Thistle Weed at Smoky Hill Air National Guard Range, Salina KS.

1. Purpose/Objective/Benefit: To control musk thistle weed at the Smoky Hill ANGR KS, to improve grazing areas, to eliminate the Range as a source of infestation to neighboring farms from wind-blown musk thistle seeds and to support state and local noxious weed control efforts.

2. Capability. Spray Aircraft Tail Number 99108 Available 1-7 Nov 2004 in addition to one support aircraft at the beginning and end of the mission.

3. Concept of Operations:

**a. SCHEDULE: (All Local) Times**

**1 NOV (Monday)**

1000: Show at KYNG

1200: Depart KYNG

1445: Land KSLN/Safety Briefing

A/R: Maintenance configures aircraft; Aircrew plan next day's mission

**2 NOV (Tuesday): 2 Spray Sorties**

0530: Show time

0658: Sunrise

0700: Take Off KSLN

: Range time (Coordinate MARSA as needed after 1100)

0900: Land KSLN

**3 NOV (Wednesday): 2 Spray Sorties**

0530: Show time

0659: Sunrise

0700: Take Off KSLN

: Range time (Coordinate MARSA as needed after 1100)

0900: Land KSLN

**4 NOV (Thursday): 1 or 2 Spray Sorties**

0530: Show time  
0700: Sunrise  
0700: Take Off KSLN  
: Range time (Coordinate MARSA as needed after 1100)  
0900: Land KSLN

**5 NOV (Friday): 1 or 2 Spray Sorties**

0530: Show time  
0701: Sunrise  
0700: Take Off KSLN  
: Range time (Coordinate MARSA as needed after 1100)  
0900: Land KSLN

**6 NOV (Saturday): 1 or 2 Spray Sorties**

0530: Show time  
0701: Sunrise  
0700: Take Off KSLN  
: Range time (Coordinate MARSA as needed after 1100)  
0900: Land KSLN

**7 NOV (Sunday):**

0712: Sunrise  
0730: Show time  
0900: Take Off KSLN  
1345: Land KYNG

**4. Spray Parameters:**

- a. Acreage: 4,608 Acres (approximately) (Only areas determined by PMP)
- b. Altitude: 100' AGL
- c. Ground Speed: 200 Knots
- d. Swath Width: 330 Feet
- e. Pesticide: Tordon® 22K
- f. Flow Rate: 307 Gallon/Minute
- g. Application Rate: 2 Gal spray/Acre (water with 1 Oz Control® & 10 Oz Tordon® 22K)
- h. Deploy: 3.4 Hrs
- i. Re-Deploy: 2.8 Hrs
- j. Spray Time: 10 Hrs (or as called by PMP)

**5. Mission Commander: Lt Col (b) (6)**

**6. Certified Pest Management Professional(s): LtC (b) (6) , Capt (b) (6) , and Capt (b) (6)**

**7. Support required at Smoky Hill ANGR KS has been coordinated with MSG (b) (6) , Smoky Hill ANGR Spray Coordinator, DSN (b) (6) , (b) (6) and Lt Col (b) (6) , Range Commander, DSN (b) (6) .**

8. HQ AFRC/DOOM approval along with AFMAN 24-204 Chap 3 waiver (see note) can be sent by email: (b) (6)

NOTE: The Aerial Spray team will be deploying to Salina Kansas from 1-7 November to conduct aerial spraying operations which will aide Smokey Hill Bombing range in the control/eradication of musk thistle. This mission is imperative to the Air Force as we are mandated by the state of Kansas to control the musk thistle on the range or be fined.

The mission requires us to deploy our own support equipment and a Raven security team as we park on a civilian airport ramp which provides no support or security. With this being said, this mission requires a support aircraft to airlift our support equipment and personnel necessary for the mission. Upon reviewing requirements for the equipment which will be loaded on the support aircraft it was discovered that unless this mission is determined to be a Chapter 3 mission IAW AFMAN 24-204 we experience the need for additional airlift support and personnel to prepare the equipment (draining and purging) for the return trip home. The following explains the 2 scenarios which are possible to support this mission and as you can see the added costs and manpower.

### **Chapter 3 AFMAN 24-204**

**Aircraft 1-** (spray aircraft) is loaded with: a full spray system (3 modules), 1 mob bin and fill station. Aircraft will have 7 aircrew personnel and 2 crew chiefs. NOTE: No additional room available for pax or equip.

**Aircraft 2-** Support aircraft is loaded with: 1ea -86 power cart with TR pack, 1ea nitrogen generator, 2ea heaters, 2ea B1 stands stacked and a small mobility kit for raven team. Aircraft will carry 8ea mx personnel, 4ea Raven team members and 2ea Entomologists.

Both aircraft depart KYNG 1 Nov 2004 for Salina. Support aircraft returns KYNG 2 Nov 2004. Support aircraft departs KYNG for Salina 6 Nov 2004. Both aircraft return to KYNG 7 Nov 2004.

### **Non- Chapter 3**

**Aircraft 1-** (spray aircraft) is loaded with: a full spray system (3 modules), 1 mob bin and fill station. Aircraft will have aircrew of 7 personnel and 2 crew chiefs. NOTE: No additional room available for pax or equip.

**Aircraft 2-** Support aircraft is loaded with: 1ea -86 power cart with TR pack, 1ea nitrogen generator, 2ea heaters, 2ea B1 stands stacked and a small mobility kit for raven team. Aircraft will carry 9ea mx personnel, 4ea Raven team members and 2ea Entomologists. NOTE: ALL EQUIPMENT DRAINED AND PURGED

Both aircraft depart KYNG 1 Nov 2004 for Salina. Support aircraft returns KYNG 2 Nov 2004. Support aircraft departs KYNG for Salina 6 Nov 2004. Both aircraft return to KYNG 7 Nov 2004. NOTE: SUPPORT AIRCRAFT WILL ONLY HAVE 13 PERSONNEL AND 1 RAVEN MOBILITY KIT AS SUPPORT EQUIPMENT IS BEING DRAINED AND PURGED ON THE 7<sup>TH</sup> AND 8<sup>TH</sup> by 2 mx personnel.

**Aircraft 3-** Support aircraft departs KYNG on 8 Nov 2004 for Salina, arrives Salina and loads all support equipment and 2 pax. Support aircraft returns to KYNG 8 or 9 Nov 2004. If aircraft returns the 9<sup>th</sup> we will need a raven team again for overnight security.

As you can see if this mission is not designated a contingency the units costs will escalate significantly due to additional manpower, time and aircraft needed to support this mission. By getting the Chap 3 waiver, saves money, manpower, need for third aircraft, and time. We do not have the capability to support a third aircraft.

// SIGNED //

(b) (6) , Major, USAFR  
Chief, Aerial Spray Operations (757 AS/DOS)

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT

### SMOKY HILL ANGR, KS 1-7 NOV 2004

#### 1. MISSION BASICS:

- a. **Installation Sprayed:** Smoky Hill ANGR, Salina KS
- b. **Mission Duration:** 1-7 Nov 04
- c. **Purpose of Application:** Control of Musk Thistle (*Cardus nutans*) on Smoky Hill, ANGR.
- d. **Application Date/s:** 3-6 Nov 04  
**Time/s of Application (Local):** 0910-1025 (3 Nov); 0830-1020 (4 Nov); 0810-0935, 1030-1055, 1105-1225 (5 Nov); 0735-0935 (6 Nov)
- e. **Acres Treated:** 3,072 (See attachment 1)
- f. **Project Coordinator/s (Name/Rank, Title, Phone #):** MSG (b) (6), Aerial Spray Coordinator, Smoky Hill ANGR, DSN (b) (6)
- g. **Date Spray Map Last Approved:** 1 Nov 04
- h. **Date of Waste Generation Letter:** N/A
- i. **Installation In-Briefing: (When/Where/Briefer/s):** 1000 hrs, 1 Nov 04; Smoky Hill ANGR; LTC (b) (6)

#### 2. OPERATIONAL:

- a. **Mission Commander:** LTC (b) (6)
- b. **Certified PMP (Category 11):** LTC (b) (6), CPT (b) (6)
- c. **Aircrew:**
  - (1) Aircraft Commander/Pilot: MAJ (b) (6)
  - (2) Co-Pilot: CPT (b) (6)
  - (3) Navigator: MAJ (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
  - (5) Spray Operators: MSG (b) (6), MSG (b) (6)
- d. **Safety Briefer:** CPT (b) (6)
- e. **Spray Maintenance/Pesticide Loaders:** SMS (b) (6), TSG (b) (6), TSG (b) (6)
- f. **Spray Ground Monitors:** LTC (b) (6), LTC (b) (6); CPT (b) (6)
- g. **Crew Chief(s):** MSG (b) (6), A1C (b) (6)
- h. **Avionics:** TSG (b) (6)
- i. **AGE:** TSG (b) (6)
- j. **Engine:** MSG (b) (6)
- k. **Ground Support/CPM Professionals:** LTC (b) (6), CPT (b) (6)
- l. **Security Police:** MSG (b) (6), SSG (b) (6), SRA (b) (6) and SSG (b) (6)
- m. **Flying Data:**
  - 1. Spray Sorties/Hours: 1/1.3 (3 Nov); 1/1.8 (4 Nov); 3/3.1 (5 Nov); 1/2.0 (6 Nov); total 6/8.2
  - 2. Ferry Sorties/Hours:
    - (a) Spray A/C 909108 Ferry Sorties/Hours: 1/3.7 (1 Nov); 1/2.7 (7 Nov)
    - (b) Support A/C 899101 Sorties/Hours: 2/6.4 (1 Nov);
    - (c) Support A/C 909106 Sorties/Hours: 2/5.7 (6,7 Nov)

#### 3. PESTICIDE:

- a. **Trade Name (% Active Ingredient):** Tordon® 22K
- b. **EPA Registration Number:** 62719-6
- c. **Formulation Sprayed:** Tordon® 22K mixed with water and Control®
- d. **Gallons Pesticide Loaded:** 240 gallons Tordon® 22K
- e. **Gallons Pesticide Applied:** 240 gallons Tordon® 22K



- f. **Gallons and Name Diluent Used:** 5,856 gallons of water
- g. **Gallons and Name of Flush Used:** 200 gallons of water
- h. **Other Additives Used:** 24 gallons of AirexDC®
- i. **Application Rate:** 2 gallons spray/acre (water with 1 oz. of Control® & 10 oz. of Tordon®)

**4. APPLICATION EQUIPMENT:**

- a. **Aircraft Type (Tail Number):** 909108
- b. **Spray System (Modules Used) and System ID #:** 3-Module system
- c. **Spray System Configuration:** Full Wing and Fuselage Booms
- d. **Nozzle Type/Size:** 8070 Flat Fan TeeJet®
- e. **Nozzle Orientation & Number Used:** 60 (15 each side/Fuselage +15 each side/Wing);  
After 3 Nov, 40 fuselage (20 each side)
- f. **Pressure:** 28-58 PSI
- g. **Flow Rate:** 307 GPM (3 Nov); 279 GPM (4-5 Nov); 186 GPM/279 GPM (6 Nov)

**5. APPLICATION PARAMETERS:**

- a. **Swath Width Flown:** 330' (3 Nov), 300' (4-5 Nov); 200'/300' (6 Nov)
- b. **Spray Off Set:** 1-2 swath widths
- c. **Spray Release Altitude:** 100-150 depending on wind speed
- d. **Ground Speed:** 200 Knots

**6. WEATHER OBSERVATIONS:**

- a. **Winds (Direction/Speed):**  
Ground: 330°/4-5 KT (3 Nov); 360/10-12 KT (4-5 Nov); 270/5-10 KT (6 Nov)
- b. **Temperature Range During Application (°F):** 44°- 60°
- c. **Cloud Cover:** 95% (3 Nov); 0% (4-6 Nov)
- d. **Source:** Ground observations

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. **Deposition Pattern:**  
(1) Ground monitors observed/confirmed swath width from ground positions
- b. **Effectiveness:**  
(1) Technique/s Used: Visual field observations will be carried out in the spring by the Smoky Hill Staff.

- 8. REMARKS:** This mission marks the return of aerial applications at the Smoky Hill Range. Musk thistle has been reduced to the point that spray flights are not required every year; which speaks highly of the effectiveness of prior missions in controlling thistles. Early morning frost forced relatively late take-offs for most of our sorties. Consequently, this cut into our range times and protracted the mission. Additionally, a spot weld failed (3 Nov) on the diverter box which allows for shifting flow between the left and right wing booms. This resulted in a spray mixture leak inside the airframe of approximately 10 gallons. The airframe was landed and Spray Maintenance cleaned the MASS surfaces. The majority of the spill was limited to the MASS secondary containment pan. After drying any residual product we continued with the mission on 4 Nov, using only the fuselage booms with the maximum available nozzle sites which reduced our flow rate and swath width (see above). Our current POC for Smoky Hill ANGR will be retiring and Mr. (b) (6) (b) (6) will be overseeing the spray project henceforth. It is unknown whether they will request a spray next year but the range is still an option for spray training throughout the year.

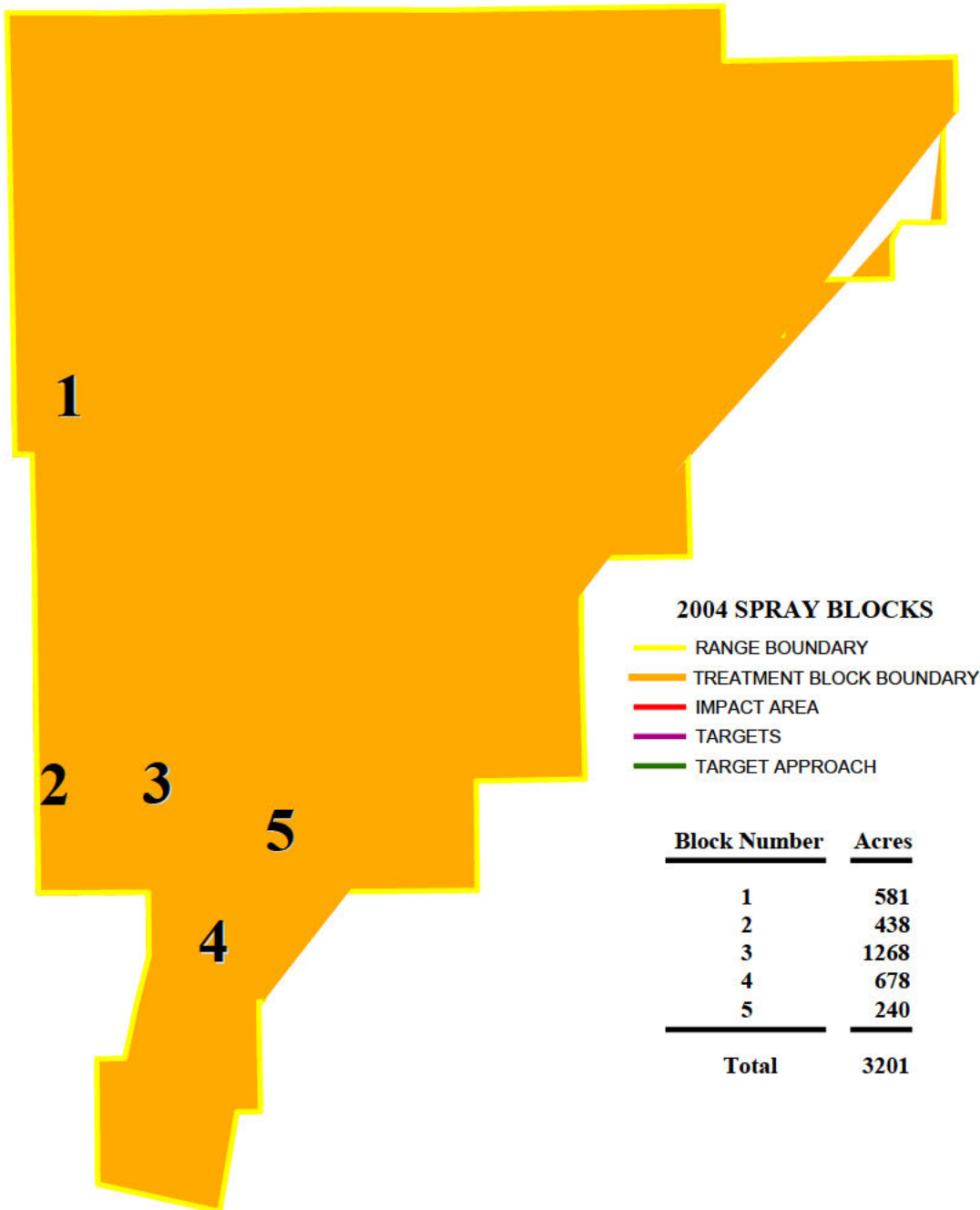
//Signed//

(b) (6)

CAPT, USAFR  
CERTIFIED PEST MANAGEMENT PROFESSIONAL

Attachment 1. Spray Blocks for Smoky Hill mission 2004

## SMOKY HILL ANG RANGE



# AERIAL SPRAY OPERATIONAL SCHEDULE

## SMOKY HILL ANG RANGE, KS

### 1-7 NOV 2004

**PURPOSE/OBJECTIVE/BENEFIT:** to control musk thistle at the Smoky Hill ANGR, to improve grazing areas, to eliminate the Range as a source of infestation to neighboring farms from wind-blown musk thistle seeds and to support state and local noxious weed control efforts.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: LTC (b) (6)
- (2) Pilots: MAJ (b) (6) , CPT (b) (6) (b) (6)
- (3) Navigators: MAJ (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: MSG (b) (6) , MSG (b) (6)

##### b. Maintenance:

- (1) Spray MX: SMS (b) (6) , TSG (b) (6) , TSG (b) (6) , TSG (b) (6) ,  
TSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6) , A1C (b) (6)
- (3) Avionics: TSG (b) (6)
- (4) Age: TSG (b) (6)
- (5) Engine: MSG (b) (6)

##### c. Ground Support/CPM Professionals: Capt (b) (6) , LtCol (b) (6)

##### d. Security Police: MSG (b) (6) , SSG(b) (6) , SRA (b) (6) and SSG(b) (6)

#### 2. SCHEDULE: (All Local) Times

##### 1 NOV (Monday)

0800: Show at KYNG  
1000: Depart KYNG  
1430: Land KSLN/Safety Briefing  
A/R: Maintenance configures aircraft; Aircrew plan next day's mission

##### 2 NOV (Tuesday): 2 Spray Sorties

0530: Show time  
0658: Sunrise  
0700: Take Off KSLN  
: Range time (Coordinate MARSA as needed after 1100)  
0900: Land KSLN

##### 3 NOV (Wednesday): 2 Spray Sorties

0530: Show time  
0659: Sunrise  
0700: Take Off KSLN  
: Range time (Coordinate MARSA as needed after 1100)  
0900: Land KSLN

##### 4 NOV (Thursday): 1 or 2 Spray Sorties

0530: Show time  
0700: Sunrise  
0700: Take Off KSLN  
: Range time (Coordinate MARSA as needed after 1100)  
0900: Land KSLN

**5 NOV (Friday): 1 or 2 Spray Sorties**

0530: Show time

0701: Sunrise

0700: Take Off KSLN

: Range time (Coordinate MARSA as needed after 1100)

0900: Land KSLN

**6 NOV (Saturday): 1 or 2 Spray Sorties**

0530: Show time

0701: Sunrise

0700: Take Off KSLN

: Range time (Coordinate MARSA as needed after 1100)

0900: Land KSLN

**7 NOV (Sunday):**

0712: Sunrise

0730: Show time

0900: Take Off KSLN

1345: Land KYNG

**3. ITEMS TO TAKE:**

**a. Mission Commander:** Hand Held GPS, 1 Cellular Phone

**b. Entomologist:** 1 Cellular Phone, Wind Gauge, 2 Compasses, 1 UHF Radio,  
Pest Safety Binder, 2 Signal Mirrors, 10 Packs Water Sensitive Cards,  
3 Boxes Card Holders with Index Cards, 2 Spotlights, 1 Measuring wheel  
2 Toshiba Computers, 1 SATLOC Manual, Project Notebook,  
2 Anemometers, Entomologist's Tool Kit, Trakstar Receiver and Antenna, Batteries

**c. Navigator:** Maps/Map Bag, Validation Map,

**d. Spray Operator:** Safety Gear, Calibration Tables

**e. Spray Maintenance:** Deployment Kit, Stake Bed Truck, Support Equipment

**4. NOTIFICATION NECESSARY FOR THIS MISSION:** None Required.

**5. PARKING PLAN:** North Ramp (same as last time) Highway Patrol Ramp (by the Civil Air Patrol Hangar). A10s will be using same ramp area.

**6. RADIO FREQUENCIES:**

**a. Air To Ground:** Primary 392.2

**b. Salina:** CTAF: 119.3, UNICOM: 122.95, ATIS: 120.15, TWR: 119.3 / 257.7, GND: 121.9 /  
397.9, NG OPS: 49.95 / 304.6

**c. Smoky Hill:** Primary 316.9, Secondary 304.9; Victor Freq: 139.7 Smoky Hill departure. Expect IFR clearance from KCC on 363.2 UHF 134.9 VHF. Advise them you are departing R3601

**7. IN-BRIEFING:** Upon Arrival.

**8. SPRAY CONFIGURATION:** (Note: File support a/c Chap 3 to AFJI 24-204)

**a. System:** SP-3G

**b. Nozzle Tips/Orientation:** 8070 Flat Fan TeeJet/90° straight back

**c. Number:** Wing. 30 Total (15 each side)/Fuselage. 30 Total (15 each side)

**d. Booms:** Full Wing and Fuselage Booms with ball valves so downwind wing boom can be turned off.

**e. Aircraft:** 89-9108 **Mission Identifier:** QZNRKA140306

**f. Profile:** Planned LV Profile

## 9. SPRAY PARAMETERS:

- a. **Altitude:** 100' AGL
- b. **Swath Width.** 330 feet.
- c. **Flow Rate.** 307 Gallons/Minute (approximately 3,201 acres to be sprayed)
- d. **Application Rate.** 2 Gal spray/Acre (water with 1 Oz of Control® & 10 Oz of Tordon®)
- e. **Ground Speed:** 200 Knots

## 10. SPRAY MIXING AND LOADING:

- a. **Composition of Each Gallon:**
  - (1) 5 Ounces of Tordon® 22K
  - (2) 1 Ounce of AirexDC® Drift Retardant
  - (3) 122 Ounces of Water
- b. **First Load (4 Tanks of 425 Gallons Each + Sump of 70 Gallons)**
  - (1) Fill to 425 Gal Water/Tank using the pump on the water tanker truck.  
This is done by putting the filler hose into the rear tank with all tanks open to the common sump.  
Total water in tanks = 1700 Gal.
  - (2) 70 Gal/Water in Sump
  - (3) Total Water Added = 1,770 Gallons
  - (4) Upload 17.25 Gal/Tordon® 22K/Tank (69 Gallons Total for 4 Tanks + sump) with the ULV uploading system.
  - (5) Add 3.5 GalAirexDC®/Tank (14 Gallons Total for 4 Tanks + sump) while agitating approximately 15 min
  - (6) Total Quantity Mix. 1853 Gallons
- c. **Subsequent Loads (2)**
  - (1) Fill to 425 Gal/Water/Tank. Total Water = 1700 Gal
  - (2) Add 16.5 Gal/Tordon 22K/Tank. Total Tordon 22K = 66 Gal
  - (3) Add 3.25 Gal AirexDC®/Tank. Total AirexDC® = 13 Gal
  - (4) Total quantity Mix. 1779 Gallons (does not include 70 Gal already mixed in Sump)
- d. **Final (fourth) Load**
  - (1) Fill to 253 Gal/Water/Tank. Total Water = 1012 Gal
  - (2) Add 10 Gal/Tordon 22K/Tank. Total Tordon 22K = 40 Gal
  - (3) Add 2 Gal AirexDC®/Tank. Total AirexDC® = 8 Gal
  - (4) Total quantity Mix. 1060 Gallons (does not include 70 Gal already mixed in Sump)
- e. **Total gallons of spray mixture for the spray project is 6471. Tordon 22K required is 241 Gal. AirexDC® required is 48 Gal.**
- f. **Mixing Time/Load.** Agitate by recirculating each mix for approximately 15 minutes.

## 11. SPRAY MONITORING OR TESTING: Performed by the CPMPs

### NOTES:

- Ideal to have westerly wind to spray west boundary.
- Ideal to have easterly wind to spray east boundary.
- (November winds expected to be predominately from the north)

## 12. CONTACTS:

- a. **Quarters:** JTR Rate Lodging/\$60 Meals/\$28
  - Holiday Inn, I70, \$55, Gp Reservations/Gala 785-823-5606/8574 fax**
  - Fairfield Inn \$55+tax, (785) 823-6900 FAX (785) 823-0996)
  - Comfort Inn, (785) 826-1711
  - Ramada inn, (785) 825-8211
  - Hampton Inn (on Schilling Rd.); Phone (785) 823-9800
  - Red Coach Inn, (785) 825-2111

**b. Transportation:** Hertz Rental Agency (Jason) (785)-827-7237; Fax (785)-827-3160  
Vehicles will be at America Jet FBO

- OPS 2 Full Size-(b) (6)
- MX 3 Full Size- (b) (6)
- SF 2 mid Size- (b) (6)
- Support 2 Full Size on 6-7 Nov (Support A/C) -

**c. Smoky Hill Range, Salina, KS** (DSN 743- Com 785)

- RANGE COMMANDER, LTC (b) (6) : DSN (b) (6) COM (b) (6)

- Scheduling DSN 743-7600 ext 147 or (b) (6) Tsgt. (b) (6)

(1) HQ ANGRC/CEVP:

- (b) (6) : DSN (b) (6) (b) (6)

- (b) (6) : DSN (b) (6)

(2) NATURAL RESOURCES MGR/ SPRAY COORDINATOR:

- (b) (6)

(3) **SALINA AIRPORT: SALINA AIRPORT AUTHORITY: (785) 827-8077**

- (b) (6) and (b) (6) -Operations Manager will supply gate security cards to MX/OPS/SF enter the north ramp. Parking will be on North Ramp by big Hanger, same as previous missions.

(4) ARMY NATL GUARD HELO UNIT:

- OPS OFFICER, CW4 (b) (6) : DSN (b) (6) ; COM (b) (6)

(5) **FBO: AMERICA JET, (b) (6)**

(b) (6) -File Flight Plans and fuel

(6) STATE WILDLIFE REP:

- (b) (6) (DIST FISHERY BIOLOGIST), (b) (6)

(7) DOW ELANCO REP: (b) (6)

(8) SALINE COUNTY FARM/ NOXIOUS WEED DIR:

- (b) (6) FAX (913) 826-6534

**d. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, + Ext

(1) 910 AW/CC: Col (b) (6) , (b) (6)

(2) 910 AW Command Post: Ext 1315; FAX 1161

(3) 910 AW/PA: Capt (b) (6) , (b) (6) ; FAX 1022

(4) 910 OG/CC: LtC (b) (6) , Ext (b) (6)

(4) 910 OS/OSA: Airfield Manager, (b) (6)

(5) 757 AS/DO: LtC (b) (6)

(6) 910 OSF Supervisor of Flight Desk (SOF): 1069; FAX 1371

(7) 757 AS/DOO: Ops Admin: SMS(b) (6) ; FAX 1657

(8) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) ; FAX 1616

(9) 910 LG/CC: Ext 1225

(10) 910 LG/LGM: CMS (b) (6)

(11) Maintenance Control: Ext 1327

(12) 910 LG/LGMS: Spray Maintenance, Ext 1132/1586

(13) Omega/SATO Travel: Ext 1772; 1-800-285-6342

(14) Cellular Spray Phones:

- Mission Commander: (b) (6)

- Entomologist: (b) (6) cell (b) (6)

- Spray Maintenance: (b) (6)



# 910 AW AERIAL SPRAY PMP'S POST-MISSION REPORT

## 1. MISSION BASICS:

- a. Area Sprayed: Eastern Virginia and Eastern North Carolina
- b. Mission Duration: 1-27 OCT 99
- c. Purpose of Application: Mosquito control following Hurricane Floyd
- d. Application Date(s) and time(s): see Attachment A
- e. Acres Treated: see Attachment A
- f. Project Coordinator/s (Name/Rank, Title, Phone #):  
FEMA, State of North Carolina, Commonwealth of Virginia
- g. Installation In-Briefing: (When/Where/Briefer/s): 2 Oct 99, 1100/Conference Room of the  
FEMA Operations, Hampton, VA; LTC Davis & LTC Terry Biery

## 2. OPERATIONAL:

- a. Mission Commander: LTC (b) (6)
- b. Certified PMP/s (Category 11) and Entomologists: LTC (b) (6) , LTC (b) (6) , MAJ (b) (6) , CPT (b) (6) & 1LT (b) (6)
- c. Aircrew:
  - (1) Pilots: MAJ (b) (6) , LTC (b) (6) , CPT (b) (6) , MAJ (b) (6) , MAJ (b) (6) , 1LT (b) (6) , CPT (b) (6) , MAJ (b) (6) , MAJ (b) (6)
  - (2) Navigators: MAJ (b) (6) , MAJ (b) (6) , LTC (b) (6) , MAJ (b) (6)
  - (3) Flight Engineers: MSG (b) (6) , CMS (b) (6) (b) (6) MSG (b) (6) , MSG (b) (6) , MSG (b) (6) , SMS (b) (6)
  - (4) Spray Operators: MSG (b) (6) (b) (6) , MSG (b) (6) , MSG (b) (6) , MSG (b) (6) , TSG (b) (6) , MSG (b) (6) , TSG (b) (6) , MSG (b) (6) , & MSG (b) (6)
- d. Safety Briefer: LTC (b) (6)
- e. Liaison Officer: MSG (b) (6)
- f. Spray Maintenance/Pesticide Loaders: TSG (b) (6) , SSG (b) (6) , TSG (b) (6) , SSG (b) (6) , SSG (b) (6) , SSG (b) (6) , & MSG (b) (6)
- g. Crew Chief(s): SSG (b) (6) , TSG (b) (6) , TSG (b) (6) , TSG (b) (6) , SRA (b) (6) , TSG (b) (6) , TSG (b) (6) , SRA (b) (6) & SSG (b) (6)
- h. Flying Data:
  - (1) Spray Sorties/Hours : 31 sorties; 112.1 hours
  - (2) Ferry Sorties/Hours: 7 ferries; 7.1 hours

## 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled; EPA Registration
- b. Number: 59639-16-2A), Anvil<sup>®</sup> (10% Sumithrin, 10% Piperonyl Butoxide; EPA Registration Number 1021-1688-8329)
- c. Formulation Sprayed: Concentrate
- d. Gallons Pesticide Applied: 2,607 gallons of Dibrom<sup>®</sup>; 5,453 gallons of Anvil<sup>®</sup>
- e. Gallons and Name of Flush Used: 55 Gal of HAN
- f. Application Rate: 0.5-1.0 oz/acre (Dibrom<sup>®</sup>); 0.62 oz/acre (Anvil<sup>®</sup>)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): C-130 (909105, 909106, 909108)
- b. Spray System (Modules Used) and System ID #: SP2G Modules 1 and 2
- c. Spray System Configuration: ULV Wing Booms
- d. Nozzle Type/Size: TeeJet<sup>®</sup> Flat Fan 8008s (Dibrom<sup>®</sup>); TeeJet<sup>®</sup> Flat Fan 8003s (Anvil<sup>®</sup>)
- e. Nozzle Orientation & Number Used: Straight down, 8 (Dibrom<sup>®</sup>), 16 (Anvil<sup>®</sup>)
- f. Pressure: 40 psi
- g. Flow Rate: 4.5 gpm (Dibrom<sup>®</sup>) and 5.6 gpm (Anvil<sup>®</sup>)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2500 feet
- b. Spray Off Set: varied with wind speed
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 Knots

**6. WEATHER OBSERVATIONS:** Within spray parameters when spraying was conducted.**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Oil-sensitive cards were used in Virginia to verify deposition and determine offset. Deposition tests were carried out in North Carolina, at the Tarboro Airport, with Anvil<sup>®</sup> using spinners and live caged mosquitoes.
  - (2) Results: Deposition was appropriate for mosquito control using ultra-low volume techniques.
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito populations were sampled using landing rates as an indicator of abundance. Spray blocks were sampled for mosquitoes one day prior to pesticide application and again approximately 12-24 hours afterward. Sampling was done by Air Force and State entomologists.
  - (2) Results: Some variation in efficacy was encountered as would be expected given the mixed terrain, use of two products, and fluctuating weather patterns over the duration of the mission. Mosquito control professionals from both states were pleased with the level of control.

**8. REMARKS:** Our participation in the relief effort was particularly exciting for us in that this was our largest spray effort to date. Three C-130 aircraft working in two different states provided our unit a chance to effectively control mosquitoes over a large area (1.7 million acres) in a short time frame (less than 3 weeks).

**CERTIFIED PEST MANAGEMENT PROFESSIONAL**

(b) (6) , PhD, MAJ, USAFR

D:\My Documents\Reports\Hurricane Floyd PMP Report

OPR: June Brewer

**3– 27 October 1999**  
**SPRAY OPERATIONS SUMMARY FOR ULV MOSQUITO CONTROL IN SUPPORT OF**  
**HURRICANE FLOYD RELIEF EFFORT**

DATE	LOCATION	AIRCRAFT #	SORTIE DURATION	SPRAY-ON TIME (seconds)	FLIGHT HOURS	MATERIAL SPRAYED	GALLONS SPRAYED	ACRES
3 Oct 99	Ferry YARS to Langley	106	0704-0825	n/a	1.4	n/a	n/a	n/a
5 Oct 99	Virginia	106	1130-1300	Reconnaissance Flight	1.5	n/a	n/a	n/a
6 Oct 99	Virginia	106	1447-1821	2292	3.6	Dibrom <sup>®</sup>	182	46,592
7 Oct 99	Ferry Langley to YARS	106	0812-0939	n/a	1.5	n/a	n/a	n/a
7 Oct 99	Ferry YARS to Langley	108	1105-1230	n/a	1.4	n/a	n/a	n/a
7 Oct 99	North Carolina	108	1550-1840	1446	2.8	Anvil <sup>®</sup>	113	28,016
7 Oct 99	Ferry YARS to Langley	105	0905-1035	n/a	1.5	n/a	n/a	n/a
8 Oct 99	North Carolina	108	1420-1740	4805	3.3	Anvil <sup>®</sup>	320	64,400
9 Oct 99	Virginia	105	1420-1758	3194	3.6	Dibrom <sup>®</sup>	247	63,232
9 Oct 99	North Carolina	108	1420-1755	4496	3.6	Anvil <sup>®</sup>	415	86,300
11 Oct 99	Virginia	105	1358-1420	Weather Cancellation	0.4	n/a	n/a	n/a
12 Oct 99	North Carolina	108	1335-1810	4120	4.6	Anvil <sup>®</sup>	397	85,576
12 Oct 99	North Carolina	106	1405-1732	1064	3.5	Anvil <sup>®</sup>	111	20,620
12 Oct 99	Virginia	105	1332-1641	4298	3.2	Dibrom <sup>®</sup>	303	75,520
13 Oct 99	Virginia	105	1328-1749	5083	4.4	Dibrom <sup>®</sup>	402	104,960
14 Oct 99	North Carolina	108	1345-1815	5401	4.5	Anvil <sup>®</sup>	523	104,644
14 Oct 99	North Carolina	106	1435-1802	1681	3.5	Anvil <sup>®</sup>	163	32,560
14 Oct 99	Virginia	105	1342-1742	5597	4.0	Dibrom <sup>®</sup>	434	111,104

15 Oct 99	North Carolina	108	1335-1815	6146	4.7	Anvil <sup>®</sup>	475	95,255
15 Oct 99	North Carolina	106	1405-1805	1417	4.0	Anvil <sup>®</sup>	44	27,454
15 Oct 99	Virginia	105	1340-1752	3941	4.2	Dibrom <sup>®</sup>	314	93,440
16 Oct 99	North Carolina	108	1345-1531	318	1.8	Anvil <sup>®</sup>	260	5,231
16 Oct 99	North Carolina	106	1340-1720	1717	3.7	Anvil <sup>®</sup>	165	33,267
16 Oct 99	Virginia	105	1337-1742	4301	4.1	Dibrom <sup>®</sup>	366	84,480
18 Oct 99	North Carolina	108	1345-1807	3566	4.4	Anvil <sup>®</sup>	341	69,700
18 Oct 99	North Carolina	106	1405-1535, 1600-1746	723	3.3	Anvil <sup>®</sup>	71	14,008
18 Oct 99	Virginia	105	1328-1705	4305	3.6	Dibrom <sup>®</sup>	359	46,848
19 Oct 99	North Carolina	108	1340-1755	3632	4.3	Anvil <sup>®</sup>	341	70,300
19 Oct 99	North Carolina	106	1345-1525, 1615-1807	1027	3.6	Anvil <sup>®</sup>	98	19,897
19 Oct 99	North Carolina	105	1340-1757	4721	4.3	Anvil <sup>®</sup>	454	92,979
21 Oct 99	North Carolina	108	1340-1715	4260	3.6	Anvil <sup>®</sup>	412	83,750
21 Oct 99	North Carolina	106	1405-1720	1435	3.3	Anvil <sup>®</sup>	135	27,810
21 Oct 99	North Carolina	105	1340-1753	10104	4.2	Anvil <sup>®</sup>	346	70,861
22 Oct 99	North Carolina	108	1350-1635	1131	2.7	Anvil <sup>®</sup>	111	22,568
22 Oct 99	North Carolina	105	1345-1607	1600	2.4	Anvil <sup>®</sup>	158	30,999
24 Oct 99	Ferry Langley to YARS	108	0945-1115	n/a	1.5	n/a	n/a	n/a
24 Oct 99	Ferry Langley to YARS	105	0940-1115	n/a	1.6	n/a	n/a	n/a
27 Oct 99	Ferry Langley to YARS	106	1300-1438	n/a	1.6	n/a	n/a	n/a
TOTALS	38 Sorties 7 Ferries 31 Spray Sorties				119.2 hours	8,060 total gallons	5,453 gal Anvil 2,607 gal Dibrom	1,712,371 Acres NC=1,086,195 VA= 626,176

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**PARRIS ISLAND MCRD, SC 17-20 APR 2006**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 2-3 OCT 2006
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 2 Oct 2006
- e. Time/s of Application (Local): 1815-1920
- f. Acres Treated: 7,400
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6)  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 2 Oct 2006
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 2 Oct; Assistant Chief of Staff, Installations and Logistics, COL (b) (6) ; briefed by Maj (b) (6) /Maj (b) (6)

**2. OPERATIONAL:**

- a. **Mission Commander:** Maj (b) (6)
- a. **Aircrew:**
  - (1) Pilots: Capt (b) (6) , Maj (b) (6)
  - (2) Navigators: LTC (b) (6)
  - (3) Flight Engineers: MSG (b) (6)
  - (4) Spray Operators: MSG (b) (6) , MSG (b) (6) , SRA (b) (6)
- b. **Maintenance:**
  - (1) Spray Maintenance: TSG (b) (6) , TSG (b) (6) , TSG (b) (6)
  - (2) Crew Chiefs: MSG (b) (6) , TSG (b) (6)
  - (3) Avionics: MSG (b) (6)
- c. **Pest Management Professionals/Entomologist:** Maj (b) (6)
- d. **Flying Data:**
  - (1) Spray Sorties/Hours: 1/1.1
  - (2) Ferry Sorties/Hours: 2/4.2

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 60 Gal Dibrom<sup>®</sup> (2 Oct)
- e. Gallons Pesticide Applied: 44 Gal (19 Oct) (approximately 12 gallons downloaded)
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 8 gal/marvel oil
- h. Other Additives Used: None
- i. Application Rate: 0.75 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99108
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 10 oriented straight down
- f. Pressure: 55 p.s.i.
- g. Flow Rate: 5.4 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: none
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS (2Oct):**

- a. Winds (Direction/Speed):
  - (1) Ground: 110°/2-5 Knots ; variable
  - (2) Release Altitude: 085-115° /5-10 Knots
- b. Temperature (Degrees Fahrenheit): 69° F dropping to 63° F
- c. Relative Humidity: 60-67%
- d. Cloud Cover: Partly Cloudy
- e. Source: Ground observations at the MCRD Rifle Range/Aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: visual observation of aircraft course (GPS)
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: Weekly collections of gravid mosquitoes with attractant-baited traps and landing rates in regions frequented by recruits involved in training.
  - (2) Results: Excellent control was noted in all areas sampled.

**8. REMARKS:** A single application was made over the Parris Island MCRD on 2 Oct 06. Mosquito populations were high and *Aedes taeniorhynchus* was the target pest for this application. Biting midge (sandflea) activity levels were moderate-low based on personal observations. This spray sortie was confined to 1.25 hours prior to sunset to correspond with peak flight period of the pests. The path of the aircraft is shown in attachment 1. The relative efficacy will be determined by trap collections the following week. Mosquito landing rates the morning following the application were zero, thus the initial interpretation of the results of this spray are quite favorable. The next Parris Island mission is scheduled for 10-12 October 2006.

//signed//

(b) (6) , MAJ, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL



**Attachment 1. Flight path of aircraft while making Dibrom application, 2 Oct 06. Green indicates active spraying. Black lines just south of the eagle's nest (black circle) was a touch-up pass but did not show spray on.**





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON-AERIAL SPRAY  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926

23 OCT 2007

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at King's Bay NSB, GA

1. Objective/Purpose/Benefits of the Spray Mission. Contingency spray controlling biting midge and mosquito populations with aerial spray insecticide application reducing the negative impact of insect bites on outdoor training King's Bay NSB.

2. Capability: Spray Aircraft available on 2-4 NOV

3. Concept of Operations:

**2 NOV (Friday)**

1600 Show  
1800 Depart YNG  
2100 Land KNIP  
2130 Safety Brief

**3 NOV (Saturday)**

TBD Brief  
1430 Weather call/Crew show  
1500 Load Chemical  
1630 Depart KNIP  
Sunset: 1839

**4 NOV (Sunday)** \*\*If weather cancellation on Saturday, Sunday schedule will mirror Saturday, everything else will slip to Monday.

1030 Show time  
1230 Depart KNIP  
1530 Land YNG

4. Spray Parameters:

- a. Acreage: 15000 Acres (Only areas determined by PMP)
- b. Altitude: 150 Ft AGL
- c. Pesticide: Dibrom® Concentrate;
- d. Deploy: 3.0 Hrs/ Redeploy: 3.0
- f. Spray Time: 30 Minutes

5. Aircraft Commander TBD

6. Support required at Kings Bay NSB has been coordinated with Mr. Billy Griner 573-4651.

// SIGNED //

(b) (6)

CAPT, USAFR  
Assistant Chief of Aerial Spray

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **KINGS BAY NSB, GA**

### **2-4 NOV 2007**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Kings Bay NSB, GA.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Pilots: LTC (b) (6) , Capt (b) (6) , LTC (b) (6) (MC)
- (2) Navigators: Maj (b) (6)
- (3) Flight Engineers: Msgt (b) (6)
- (4) Spray Operators: Msgt (b) (6) , MSgt (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , Msgt (b) (6)
- (2) Crew Chiefs: Ssgt (b) (6) , Amn (b) (6)
- (3) Avionics: TSgt (b) (6)

##### **c. Pest Management Professionals/Entomologist: Maj (b) (6) (Kings Bay)**

#### **2. PPR REQUIREMENTS: 110202**

#### **3. PLANNED SEQUENCE OF EVENTS:** (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

##### **2 NOV (Friday)**

1600 Show  
1800 Depart YNG  
2100 Land KNIP  
2130 Safety Brief

##### **3 NOV (Saturday) :** Aircraft will squawk 5107 prior to entering P-50. Ensure pilots are given this squawk from ATC!!

TBD Brief  
1430 Weather call/Crew show  
1500 Load Chemical  
1630 Depart KNIP  
Sunset: 1839

##### **4 NOV (Sunday) \*\*If weather cancellation on Saturday, Sunday schedule will mirror Saturday only 1 hour earlier due to time change, everything else will slip to Monday.**

1000 Show time  
1200 Depart KNIP  
1500 Land YNG

#### **4. ITEMS TO TAKE/NOTES:**

##### **a. Mission Commander:**

- (1) Mission Commander Cell Phone

##### **b. Entomologist/CPMP:**

- (1) Wind Gauge & Compass
- (2) UHF/VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder

##### **c. Navigators:**

- (1) Maps

(2) Templates

**d. Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** size = 8005; 10 open for 3.72 FR; 8 open for 2.72 FR); oriented straight down.
- d. **Differential GPS:** Installed
- e. **Aircraft:** 90-9107
- f. **Mission Identifier:** QZNRKA193306

**6. Adult Spray Parameters: (Kings Bay)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 1.0 oz/acre or 0.75 oz/acre see entomologist
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 15000 Acres
- g. **Spray-On Time:** 32 Minutes
- h. **Flow Rate:** 3.72 gallons/Minute or 2.72 see entomologist

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading 5 drums of Dibrom for Kings Bay.

**8. PARKING PLAN NAS Jacksonville, FL**

**9. AIR TO GROUND RADIO FREQUENCIES:**

Navy Jax Ops-	310.2	Tower	120.0/340.2
Ground	128.6/336.4	<b>Spray Ground:</b>	<b>123.45 VHF</b>
ATIS	281.0		

**10. TRANSPORTATION:**

Enterprise Car Rental: 904-772-7007	Hubert
3 FS Cars (1 Ops O's, 1 MC/Ent, 1 Crew Chiefs)	\$38/day+5gov policy
2 Mini Vans (1 Ops E's, 1 Maint)	\$59/day+5gov policy

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP and by NSB Kings Bay pest control.

**12.. Quarters:**

Hampton Inn Jacksonville-Orange Park (904)-777-5351 \$77/night  
6135 Youngerman Circle, Jacksonville, FL 32244

**13. CONTACTS:**

- a. **Naval Submarine Base Kings Bay, GA (Com: (912) 573-xxxx; DSN 573-xxxx)**
  - (1) Spray Coordinator: (b) (6)



(2) Strategic Weapons Facility Atlantic (SWFLANT) x0551

**b. Naval Air Station Jacksonville, FL (NAS JAX)**

(1) For requesting PPR: DSN 942-2511

(2) Transient line office, LT (b) (6), DSN (b) (6)

(3) Weather ??

(4) Tower – 942-2516

**c. FAA JAX Center.** Mr. (b) (6), Mission Specialist (b) (6)

**d. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC:, Ext 1243
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Capt (b) (6); FAX 1022
4. 910 OG/CC: Col (b) (6) (b) (6) (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Lt Col (b) (6) (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6); FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1348/1344
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6) (b) (6)
  - Entomologists: (b) (6) cell, (b) (6) Maj (b) (6)
  -

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**NAVAL SUBMARINE BASE, KINGS BAY, GA 2-4 NOV 2007**

**1. MISSION BASICS:**

- a. Installation Sprayed: Naval Submarine Base, Kings Bay, Georgia
- b. Mission Duration: 2-4 Nov 2007
- c. Purpose of Application: To control pestiferous populations of mosquitoes (specifically salt marsh mosquitoes) and biting midges (*Culicoides* spp.)
- d. Application Date: 3 November 2007
- e. Time/s of Application (Local): 1640-1840 hrs
- f. Acres Treated: 15,360 acres
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) Public Works, Aerial Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 2 October 2007
- i. Date of Waste Generation Letter: 30 October 2007
- j. Installation In-Briefing: (When/Where/Briefer/s): via telephone with CMR (b) (6) briefed by Maj (b) (6) <sup>(b)</sup>

**2. OPERATIONAL:**

- a. **Mission Commander:** LTC (b) (6)
- b. **Aircrew:**
  - (1) Pilots: LTC (b) (6) , Capt (b) (6)
  - (2) Navigators: Maj (b) (6)
  - (3) Flight Engineers: Msgt (b) (6)
  - (4) Spray Operators: Msgt (b) (6) , MSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) , Tsgt (b) (6) , Msgt (b) (6)
  - (2) Crew Chiefs: Ssgt (b) (6)
  - (3) Avionics: Tsgt (b) (6)
- d. **Entomologists:** Maj (b) (6) (safety briefer), LTC (b) (6)
- e. **Flying Data:**
  - (1) Spray Sorties/Hours: 2.0
  - (2) Ferry Sorties/Hours: 2/5.3

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 120 Gal Dibrom<sup>®</sup>
- e. Gallons Pesticide Applied: 120 Gal Dibrom<sup>®</sup>
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 8 gal/marvel oil
- h. Other Additives Used: None
- i. Application Rate: 1.0 oz/acre



**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 20 oriented straight down
- f. Pressure: 35-40 p.s.i.
- g. Flow Rate: 7.4 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: 2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 220°/3-8 knots
  - (2) Release Altitude: 230°/8 knots
- b. Temperature (Degrees Fahrenheit): 70°F
- c. Relative Humidity: 41%-50%
- d. Cloud Cover: clear – slightly hazy
- e. Source: Ground observations and the aircraft self-contained navigational system.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

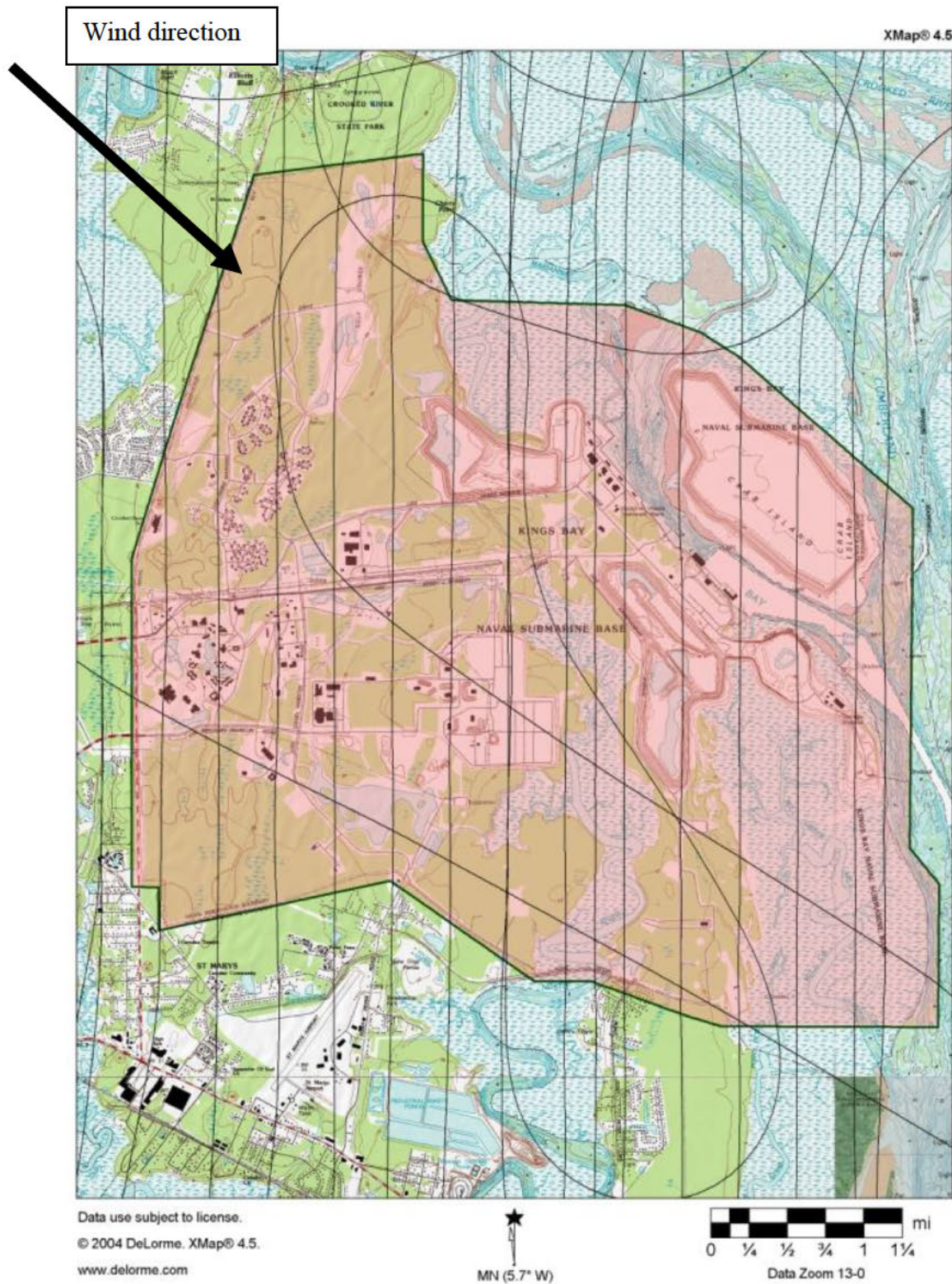
- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring of aircraft flight pattern (see Attachment 1).
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: Navy Entomology Center of Excellence (NECE) has been conducting mosquito surveillance and reported trap counts high enough to warrant aerial mosquito control.
  - (2) Results: When available NECE will forward post-spray surveillance results. (b) (6) reported zero mosquito complaints and no noticeable mosquito activity, the week following the application.

8. **REMARKS:** This mission was conducted at the request of NSB Kings Bay for emergency mosquito control (Attachment 2) and subsequently approved by the Air Force Reserve Command (Attachment 3). Dredge spoils on the Sub-base are hypothesized to be producing large numbers of mosquitoes when rainwater collects in these nutrient rich areas. Additionally, the salt marsh habitat which surrounds the eastern side of the installation is a natural breeding ground for mosquitoes and biting midges. Extremely large numbers of mosquitoes have plagued Sub-base operations on many levels including posing a threat to public health, morale, and quality of life. The high security of the area makes civilian aerial mosquito control difficult (prohibited airspace, P-50) and lends this mission to military spray operations. A previous attempt at aerial spray operations was foiled by poor weather conditions (1-5 Oct) but the 3 November spray had excellent spray conditions and the application went precisely as planned. Spray operations were conducted out of Naval Air Station Jacksonville (NAS JAX). Many thanks to the individuals and agencies which gave excellent support to make this mission, not only happen, but a roaring success: NAS JAX flight line, NECE (esp. (b) (6)), FAA, and JAX Center (b) (6). It is our understanding that NSB Kings Bay is in the process of completing the paperwork to become established as a pre-approved aerial spray mission for larval and adult mosquito control. The Air Force Spray Flight looks forward to this excellent training opportunity and hopefully a continuing professional relationship. Considering all environmental requirements are met, we project a return to NSB Kings Bay in early spring 2008.

//signed//

(b) (6), MAJ, USAFR  
**DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

**Attachment 1. Flight path of aircraft (black lines) while making Dibrom application, 3 Nov 07.**



Attachment 2. Request for Contingency Aerial Spray Application.



DEPARTMENT OF THE NAVY

NAVAL SUBMARINE BASE  
1063 USS TENNESSEE AVENUE  
KINGS BAY, GEORGIA 31547-2606

IN REPLY REFER TO:

6250  
Ser PRKB23/1443  
13 Sep 2007

From: Commanding Officer, Naval Submarine Base, Kings Bay  
To: Air Force Reserve Command Headquarters/A2A3

Subj: AERIAL SPRAY REQUEST

1. Request contingency aerial spray to control adult and larval mosquitoes to be scheduled for Naval Submarine Base (NSB), Kings Bay, GA on or about October 1 through 4, 2007.

2. The adulticide Trumpet will be applied according to label instructions. The mosquito larvicide Vectobac 12AS or Vectobac DWG will be applied to specified locations according to label instructions. Pesticide applications will be predicated on local weather conditions and target insect population levels.

3. Naval Submarine Base, Kings Bay is processing environmental assessment and statement of need for pre-approved routine mosquito and midge control by Air Force Spray Flight (757AS) in FY08. Logistical coordination for the aerial spray is proceeding at NSB Kings Bay.

4. Security concerns and permission to over fly the Strategic Weapons Facility, Atlantic (SWFLANT) area must be addressed by your command with SWFLANT Security prior to the over flight. The point of contact for this matter is (b) (6) Supervisory Security Specialist, Strategic Weapons Facility, Atlantic at (b) (6) DSN (b) (6) or email (b) (6)

5. My point of contact is (b) (6) at (b) (6), or email (b) (6)

(b) (6)

By direction

Copy to:  
Major General (b) (6) AFRC/A2A3  
Col (b) (6) AFRC/A30  
Lt Col (b) (6) AFRC/A3XX  
Col (b) (6) 22AF/A2A3  
Lt Col (b) (6) 757AS/DO  
Mr. (b) (6) AFRC/A3XX



### **Attachment 3. Contingency Spray Request Approved**

**From:** AFRC/A2A3(uc) Intelligence, Air, Space, and Info Ops

**Sent:** Thursday, September 20, 2007 2:44 PM

**To:** (b) (6)

**Cc:** AFRC/A3O Current Operations; AFRC/A3OO Air Operations; 22 AF Aerial Event Requests; (b) (6)  
A LtCol AFRC/A3XX; (b) (6) Col 22 AF/A2/A3; (b) (6) W LtCol 757  
AS/DO; (b) (6) Civ AFRC/A3XX; (b) (6) AFRC/A3OO; AFRC/A2A3(uc) Intelligence, Air,  
Space, and Info Ops

**Subject:** Spray request Naval Sub Base Kings Bay, Ga. 1-6 Oct 07

20 Sep 2007

#### **MEMORANDUM FOR COMMAIDING OFFICER NAVAL SUB BASE KINGS BAY GA**

**FROM:** AFRC/A2A3

155 Richard Ray Blvd

Robins AFB GA 31098-1635

**SUBJECT:** Aerial Spray Request

1. Your request for Aerial Spray support to control adult and larval mosquitoes at Naval Submarine Base (NSB), King Bay, Ga. is approved. The 910AW Aerial Spray Unit at Youngstown, OH will provide support. The spray support will be run in conjunction with other mosquito control sorties conducted at Paris Island, 1-6 Oct 07. Details regarding this mission are being worked between the 910AW Chief Entomologist, Maj (b) (6), and (b) (6) at Kings Bay.

2. My POC for additional questions regarding this support is SMSgt (b) (6) at DSN:(b) (6) or Com: (b) (6) and Maj (b) (6), Entomologist DSN (b) (6).

//Signed//For: (b) (6)

(b) (6) Col, USAF

Deputy Director of Intelligence, Air, Space and Information Operations

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **KINGS BAY NSB & PARRIS ISLAND MCRD, SC**

### **1-6 OCT 2007**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Kings Bay NSB, GA and Parris Island MCRD SC.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Pilots: LtCol (b) (6) , Maj (b) (6) ; Maj (b) (6)
- (2) Navigators: Maj (b) (6)
- (3) Flight Engineers: CMSgt (b) (6)
- (4) Spray Operators: Msgt (b) (6) , MSgt (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , SSgt (b) (6)
- (2) Crew Chiefs: TSgt (b) (6) , AIC (b) (6)
- (3) Avionics: SrA (b) (6)

##### **c. Pest Management Professionals/Entomologist:** Maj (b) (6) (Kings Bay) & Maj (b) (6) (PI)

#### **2. PPR REQUIREMENTS: 274-01**

**3. PLANNED SEQUENCE OF EVENTS:** (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

**1 OCT (Monday):** see www.beaufort.usmc.mil for weather, etc

Check Rifle Range: Ck live fire status

0900: Show Time  
1100: Take Off KYNG  
1300: Land KNBC  
1300: Safety Briefing  
1430: Installation in-brief  
1530: Load chemical/Wx decision (2 drums)  
1745: Take off KNBC for spray sortie  
1911: Sunset

**2 OCT (Tuesday):** Adulticide spray at King's Bay: Coordinate with FAA@JAX Center 24 hrs in advance (Mr. Patrick Powers, 904-549-1542). This must occur every day!! File as Spray 01. Must use the discrete squawk of 5101 per JAX center

1400: Showtime  
1500: Load Chemical/Wx Decision  
1630: Take off KNBC  
1910: Sunset

**3 OCT (Wednesday):** Swap out MASS for larvicide tanks \*\*Note that this is a weather backup for Kings Bay adulticide spray and swap out may occur on Thurs.

0800: Show Time  
1000: Take off KNBC  
1200: Land KYNG  
1400: Take off KYNG  
1600: Land KNBC

**4 OCT (Thursday):** Larvicide of Kings Bay

0530: Show time



0700: Take off KNBC  
0721: Sunrise  
1200: Operations must be terminated

2 Lifts needed to complete spray area

**5 OCT (Friday):** Wx back up for larvicide of Kings Bay, or redeploy to YNG

0530: Show time  
0700: Take off KNBC  
0721: Sunrise  
1200: Operations must be terminated  
2 Lifts needed to complete spray area

**6 OCT (Saturday):** Redeploy to Youngstown (Beaufort MCAS is closed on Sat, we must request the airfield open for a Saturday launch.

0800: Show time  
1000: Take off KNBC  
1200: Land KYNG

**4. ITEMS TO TAKE/NOTES:**

**a. Mission Commander:**

(1) Mission Commander Cell Phone

**b. Entomologist/CPMP:**

(1) Wind Gauge & Compass  
(2) UHF/VHF Radios and Cellular Phone  
(3) Pesticide Safety Binder

**c. Navigators:**

(1) Maps  
(2) Templates

**d. Spray Maintenance:**

(1) Spill Kit  
(2) Safety Equipment  
(3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. Mass:** 2-Module System (PI)
- b. Booms:** Stainless Steel ULV Fuselage Booms
- c. Nozzles:** size = 8005; 10 open for 3.72 FR; 8 open for 2.72 FR); oriented straight down. For Larvicide: Raindrop nozzles; 15 nozzles
- d. Differential GPS:** Installed
- e. Aircraft:** 90-9108
- f. Mission Identifier:** QZNRKA026274

**6. Adult Spray Parameters: (Parris Island MCRD SC & Kings Bay)**

**a. Pesticide:**

Dibrom® Concentrate (naled)  
Organophosphate Insecticide  
Signal Word: Danger  
Antidote: Atropine, 2-PAM  
Flushing Agent: Marvel Mystery Oil

- b. Application:** 1.0 oz/acre or 0.75 oz/acre see entomologist
- c. Spray Altitude:** 150 Feet
- d. Swath Width:** 1,000 Feet
- e. Ground Speed:** 200 Knots (338 Feet/Second)
- f. Acreage:** 7,500 Acres

- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 3.72 gallons/Minute or 2.72 see entomologist

**a. Larvicide**

- (1) **Area to be treated:** approx. 1,060 acres
- (2) **Altitude:** 100' for Larvicide application
- (3) **Swath Width.** 200 feet
- (4) **Flow Rate.** 280 gallons/minute

**b. Application Rate.** 3 gallons/acre (water with 24 oz of Vectobac®)

**c. Ground Speed:** 200 Knots

**8. SPRAY MIXING AND LOADING: (For Larvicide Spray Sorties)**

**a. Composition of each Gallon:**

- (1) 24 ounces of Vectobac®
- (2) 0.64 ounces of AirexDC™ drift retardant
- (3) Water

**b. Typical load:** (2 tanks of 400 gallons each)

- (1) Fill with 400 gallons of water/tank. Total water in tanks = 800 gal.
- (2) Total water added = 800 gallons
- (3) Add 28 gallons of Vectobac® per tank (56 gallons total).
- (4) Total quantity mix. Approx. 856 gallons

**c. Final Load for complete flush**

- (1) Fill tanks with the amount of water necessary for a proper system flush

**d. Mixing Instructions:**

SHAKE WELL BEFORE USING. Vectobac® may separate on standing and must be thoroughly agitated prior to dilution.

PRECAUTIONARY STATEMENT: Spray solution should be used within 72 hours; always agitate before spraying.

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading two drums of Dibrom for PI and 5 drums for Kings Bay; 100 gallons of Vectobac should be on hand.

**8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
 Hilton Head Arpt: 118.8 CTAF  
 Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: 123.45 VHF**

**10. TRANSPORTATION:**

Enterprise Car Rental: contact Laura for pick-up upon arrival

Rental vehicles: 2 mini-vans; 1 full-size; 1-compact (entomologist).

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP &Parris Island MCRD Project Coordinator and by NSB Kings Bay pest control.

**12. CONTACTS:**

**a. Parris Island MCRD SC: (MCRD/MCAS Com: (843) 228-XXXX); DSN 335-xxxx**

- (1) Environmental Coordinator (Spray Coordinator):  
 (b) (6) , DSN (b) (6) ; (b) (6)  
 FAX (843) 228-2616; (b) (6)
- (2) Assistant Chief of Staff I & L: Lt Col (b) (6) DSN (b) (6)
- (3) Pest Control Foreman: DSN 335-3663
- (4) P.I. Motor Pool: (b) (6) , DSN (b) (6)
- (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)



# AERIAL SPRAY OPERATIONAL SCHEDULE

## PARRIS ISLAND MCRD, SC

### 2-5 OCT 2007 DRAFT

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: LtCol Richard Elder, Maj (b) (6)
- (2) Navigators: LTC (b) (6)
- (3) Flight Engineers: Msgt (b) (6)
- (4) Spray Operators: Msgt (b) (6), Msgt (b) (6), SRA (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSG (b) (6), TSG (b) (6), TSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6), TSG (b) (6)
- (3) Avionics: MSG (b) (6)

##### c. Pest Management Professionals/Entomologist: Maj (b) (6)

Gov Vehicles provided by Parris Island MCRD: 2 Crew Vans & 1 Staff Car keys and vehicles at Base Ops.

#### 2. PPR REQUIREMENTS: 275-01

#### 3. PLANNED SEQUENCE OF EVENTS: (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

**10 SEP (Monday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc Check Rifle Range: None

0900: Show Time  
1100: Take Off YNG  
1300: Land KNBC  
1300: Safety Briefing  
1430: Installation in-brief  
1530: Load chemical/Wx decision  
1745: Take off KNBC for spray sortie (begin spraying 1.5 hrs prior to sunset)  
1937: Sunset

**11 SEP (Tuesday):** Wx back up, training, or redeploy to YNG

1500: Showtime  
1530: Load Chemical/Wx Decision  
1745: Take off KNBC  
1936: Sunset

**12 SEP (Wednesday):** Wx back up, training, or redeploy to YNG

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

- (1) Mission Commander Cell Phone

##### b. Entomologist/CPMP:

- (1) Wind Gauge & Compass
- (2) UHF/VHF Radios and Cellular Phone

(3) Pesticide Safety Binder

**c. Navigators:**

- (1) Maps
- (2) Templates

**d. Sprav Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** 9 open for 8005's oriented straight down
- d. **Differential GPS:** Installed
- e. **Aircraft:** 90-9107
- f. **Mission Identifier:** QZNRKA756253

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 0.75 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 2.72 gallons/Minute

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading two drums of Dibrom

**8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
Hilton Head Arpt: 118.8 CTAF  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 392.2; Secondary 340.8**

**10. TRANSPORTATION:** Parris Island will provide two vans and staff car for transportation to and from quarters and for messing.

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP & Parris Island MCRD Project Coordinator.

**12. CONTACTS:**

**a. Parris Island MCRD SC: (MCRD/MCAS Com: (843) 228-XXXX; Off Station Com: (843) 525-XXXX)**

- (1) Environmental Coordinator (Spray Coordinator): (b) (6), DSN (b) (6), (b) (6)  
FAX (843) 228-2616; (b) (6)
- (2) Assistant Chief of Staff I & L: Col (b) (6), DSN (b) (6)
- (3) Pest Control Foreman: DSN (b) (6)
- (4) P.I. Motor Pool: (b) (6), DSN (b) (6)
- (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)

(6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; Anthony

(7) P.I. Rifle Range: DSN: (b) (6)

**b. Beaufort MCAS SC:** (Commercial (843) 228-XXXX)

(1) Beaufort MCAS Environmental: (b) (6), DSN (b) (6); (b) (6), DSN (b) (6)

(2) Fuels: DSN: (b) (6)

(3) MCAS Beaufort Airfield MGR: Lt Col (b) (6) (Ops Officer) Airfield manager (b) (6)

DSN: (b) (6) . Base Ops is ext 7301/2/3

(Airfield Manager is (b) (6), DSN: (b) (6) ) approves after hrs requests

(4) Trans Alert/VAL: DSN: 335-7110

(5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)

**c. Beaufort County Mosquito Control:** (b) (6)

**d. Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) DSN (b) (6)

**e. Quarters:**

**14 Rooms Comfort Inn and Suites (New hotel) \$94.99/night (843) 379-9400**

Ramada Inn (843) 524-2144/Fax 1704

Hampton Inn (843) 986-0600 (FAX 0494)

Sleep Inn (843) 522-3361 FAX (843) 522-9929

Parris Island Billeting DSN: 335-2744 (FAX: 3815); (843) 228-3960

Comfort Inn (843) 525-9366 (FAX 1529)

Best Western (Sea Island Motel) (843) 524- 4121

Port Royal Days Inn (843) 524-1551

Best Western Pt South (I-95) (843) 726-8101

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC:, Ext 1243

2. 910 AW Command Post: Ext 1315; FAX 1161

3. 910 AW/PA: Capt (b) (6), (b) (6) FAX 1022

4. 910 OG/CC: Col (b) (6) / 1179

5. 910 OG: Airfield Manager, Ext 1186/1526

6. 757 AS/DO: Maj (b) (6)

7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371

8. 757 AS/DOO: Ops Admin: SMS (b) (6); FAX 1657

9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) FAX 1616

10. 910 LG/CC: Ext 1225

11. 910 LG/LGM: Ext 1352

12. Maintenance Control: Ext 1327

13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)

14. Omega/SATO Travel: Ext 1772; 1-800-285-6342

15. Cellular Spray Phones:

- Mission Commander: (b) (6)

- Entomologist: (b) (6)



# AERIAL SPRAY OPERATIONAL SCHEDULE

NSB, KINGS BAY, GA

2-5 October 2008

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at NSB, Kings Bay, GA.

## 1. 910 AW PARTICIPANTS:

### a. Aircrew:

- (1) Pilots: LTC (b) (6) Capt (b) (6)
- (2) Navigators: Maj (b) (6) , Maj (b) (6)
- (3) Flight Engineers: TSgt (b) (6)
- (4) Spray Operators: SMSgt (b) (6) MSgt (b) (6) , MSgt (b) (6)

### b. Maintenance:

- (1) Spray Maintenance: TSgt (b) (6) TSgt (b) (6) MSgt (b) (6)
- (2) Crew Chiefs: MSgt (b) (6) , SRA (b) (6)
- (3) Avionics: SSgt (b) (6)

### c. Entomologist: Maj (b) (6) (MC), LTC (b) (6)

## 2. PPR REQUIREMENTS: 81401 \*\*Must squawk 5107 before entering P-50\*\*

**3. PLANNED SEQUENCE OF EVENTS:** (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

14 AUG (Thursday)

1600: Show

1800: Depart KYNG

2030: Land KNIP/Safety brief

15 AUG (Friday)

TBD: In-Brief with Kings Bay Personnel

1500: Weather call/Crew show

1530: Load Chemical

1800: Depart KNIP

Sunset: 2008

16 AUG (Saturday) WX Backup

1500: Weather call/Crew show

1530: Load Chemical

1800: Depart KNIP

Sunset: 2007

17 AUG (Sunday)

1000: Show time

1200: Depart KNIP

1430: Land KYNG

## 4. ITEMS TO TAKE/NOTES:

### a. Mission Commander:

- (1) Mission Commander – use Breidenbaugh's cell phone: 330-360-1936

### b. Entomologist:

- (1) Wind Gauge & Compass
- (2) VHF Radios
- (3) Pesticide Safety Binder

### c. Navigators:

- (1) Maps
- (2) Templates

- d. **Spray Maintenance:**  
(1) Spill Kit  
(2) Safety Equipment  
(3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System  
b. **Booms:** Stainless Steel ULV Fuselage Booms  
c. **Nozzles:** size = 8005; 20 open for 7.4 flow rate; 15 open for 5.5; oriented straight down.  
d. **Differential GPS:** Wingman Installed  
e. **Aircraft:** 89-9105  
f. **Mission Identifier:** QZNRKA151227

**6. Adult mosquito control spray Parameters: (Kings Bay)**

- a. **Pesticide:**  
Dibrom® Concentrate (naled)  
Organophosphate Insecticide  
Signal Word: Danger  
Antidote: Atropine, 2-PAM  
Flushing Agent: Marvel Mystery Oil  
b. **Application:** 1.0 oz/acre or 0.75 oz/acre see entomologist  
c. **Spray Altitude:** 150 Feet  
d. **Swath Width:** 2,000 Feet  
e. **Ground Speed:** 200 Knots (338 Feet/Second)  
f. **Acreage:** 15,000 Acres  
g. **Spray-On Time:** 32 Minutes  
h. **Flow Rate:** 7.4 gallons/minute or 5.55 gal/min see entomologist

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading 3 or 4 drums of Dibrom for Kings Bay (see entomologist).

**8. PARKING PLAN:** Parking will be on the T-33 Line at NAS Jacksonville, FL.

**9. AIR TO GROUND RADIO FREQUENCIES:**

Navy Jax Ops-	310.2/134.775	Tower	120.0/340.2
Ground	128.6/336.4	Spray Ground:	123.45 VHF
ATIS	281.0	St Marys:	122.8 VHF

**10. TRANSPORTATION:** Enterprise Car Rental: 904-772-7007 \$40/day+5gov policy  
5 Full Size Cars ((b) (6)) Keys will be at base ops.

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP and by NSB Kings Bay pest control.

**12. BILLETING:** Hampton Inn Jacksonville-Orange Park, 6135 Youngerman Circle, 904-777-5313  
16 rooms blocked confirmation # 85742030 \$79/night

**13. CONTACTS:**

- a. **Naval Submarine Base Kings Bay, GA (Com: (912) 573-xxxx; DSN 573-xxxx)**  
(1) **Spray Coordinator:** ((b) (6))  
(2) Strategic Weapons Facility Atlantic (SWFLANT) x0551  
b. **Naval Air Station Jacksonville, FL (NAS JAX)**  
(1) For requesting PPR: DSN 942-2511  
(2) Transient line office: DSN 942-3843  
(3) Weather: DSN 942-2535

(4) Tower: DSN 942-2516

c. **FAA JAX Center:** (b) (6), Mission Specialist (b) (6)

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Capt (b) (6) (b) (6)
4. 910 OG/CC: Col (b) (6), (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6) (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6); FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - (b) (6) (b) (6)

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **PARRIS ISLAND MCRD, SC**

### **2-5 OCT 2006**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Pilots: Mission Commander: MAJ (b) (6) , Capt (b) (6) , Maj (b) (6)
- (2) Navigators: LTC (b) (6)
- (3) Flight Engineers: Msgt (b) (6)
- (4) Spray Operators: Msgt (b) (6) , Msgt (b) (6) , SRA (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: TSG (b) (6) , TSG (b) (6) , TSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6) , TSG (b) (6)
- (3) Avionics: MSG (b) (6)

##### **c. Pest Management Professionals/Entomologist: Maj (b) (6)**

Gov Vehicles provided by Parris Island MCRD: 2 Crew Vans & 1 Staff Car keys and vehicles at Base Ops.

#### **2. PPR REQUIREMENTS: 275-01**

#### **3. PLANNED SEQUENCE OF EVENTS:** (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

**2 OCT (Monday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc Check Rifle Range: None

0900: Show Time  
1100: Take Off YNG  
1300: Land KNBC  
1300: Safety Briefing  
1430: Installation in-brief  
1530: Load chemical/Wx decision  
1745: Take off KNBC for spray sortie (begin spraying 1.5 hrs prior to sunset)  
1914: Sunset

**3 OCT (Tuesday):** Wx back up, training, or redeploy to YNG

1500: Showtime  
1530: Load Chemical/Wx Decision  
1745: Take off KNBC  
1914: Sunset

**4 OCT (Wednesday):** Wx back up, training, or redeploy to YNG

1500: Showtime  
1530: Load Chemical/Wx Decision  
1745: Take off KNBC  
1914: Sunset

**5 OCT (Thursday):**

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

#### **4. ITEMS TO TAKE/NOTES:**

##### **a. Mission Commander:**

- (1) Mission Commander Cell Phone

**b. Entomologist/CPMP:**

- (1) Wind Gauge & Compass
- (2) UHF/VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder

**c. Navigators:**

- (1) Maps
- (2) Templates

**d. Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** 9 open for 8005's oriented straight down
- d. **Differential GPS:** Installed
- e. **Aircraft:** 90-9107
- f. **Mission Identifier:** QZNRKA008275

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 0.75 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 2.72 gallons/Minute

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading two drums of Dibrom

**8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

- Air Traffic Control: 119.05 Beaufort MCAS TWR
- Hilton Head Arpt: 118.8 CTAF
- Beaufort Co Arpt: 122.7 UNI
- Spray Ground: Primary 392.2; Secondary 340.8**

**10. TRANSPORTATION:** Parris Island will provide two vans and staff car for transportation to and from quarters and for messing.

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP & Parris Island MCRD Project Coordinator.

**12. CONTACTS:**

- a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX

- (1) Environmental Coordinator (Spray Coordinator):  
(b) (6)  
FAX (843) 228-2616; (b) (6)
  - (2) Assistant Chief of Staff I & L: Col (b) (6)
  - (3) Pest Control Foreman: DSN (b) (6)
  - (4) P.I. Motor Pool: (b) (6) DSN (b) (6)
  - (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
  - (6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)
  - (7) P.I. Rifle Range: DSN: 335-3183/3624
- b. Beaufort MCAS SC:** (Commercial (843) 228-XXXX)
- (1) Beaufort MCAS Environmental: (b) (6)
  - (2) Fuels: DSN: (b) (6)
  - (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
DSN: (b) (6) Base Ops is ext 7301/2/3  
(After duty hours: (b) (6) )
  - (4) Trans Alert/VAL: DSN: 335-7110
  - (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)
- c. Beaufort County Mosquito Control:** (b) (6)
- d. Naval Occupational Health/Preventive Medicine:** Lt Cdr Dexter Kimsey, DSN: 335-2551, ext 5509
- e. Quarters:**
- Ramada Inn \$65/night (Reservation number: P.533302.00)**
- |                                 |   |
|---------------------------------|---|
| Ramada Inn                      | (843) 524-2144/Fax 1704                   |
| Hampton Inn                     | (843) 986-0600 (FAX 0494)                 |
| Sleep Inn                       | (843) 522-3361 FAX (843) 522-9929         |
| Parris Island Billeting         | DSN: 335-2744 (FAX: 3815); (843) 228-3960 |
| Comfort Inn                     | (843) 525-9366 (FAX 1529)                 |
| Best Western (Sea Island Motel) | (843) 524- 4121                           |
| Port Royal Days Inn             | (843) 524-1551                            |
| Best Western Pt South (I-95)    | (843) 726-8101                            |

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Capt (b) (6) , (b) (6) FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6)





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON-AERIAL SPRAY  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926

5 Sep 2008

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at King's Bay NSB, GA

1. Objective/Purpose/Benefits of the Spray Mission. Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Kings Bay NSB, GA.

2. Capability: Spray Aircraft available on 2-5 October 2008

3. Concept of Operations:

2 OCT (Thursday)

1000: Show

1200: Depart KYNG

1430: Land KNIP/Safety brief

3 OCT (Friday)

TBD: In-Brief with Kings Bay Personnel

1430: Weather call/Crew show

1500: Load Chemical

1700: Depart KNIP

Sunset: 1909

4 OCT (Saturday) WX Backup

1430: Weather call/Crew show

1500: Load Chemical

1700: Depart KNIP

Sunset: 1908

5 OCT (Sunday)

1000: Show time

1200: Depart KNIP

1430: Land KYNG

4. Spray Parameters:

a. Acreage: 15000 Acres (Only areas determined by PMP)

b. Altitude: 150 Ft AGL

c. Pesticide: Dibrom® Concentrate;

d. Deploy: 3.0 Hrs/ Redeploy: 3.0

f. Spray Time: 30 Minutes

5. Aircraft Commander: Maj (b) (6)

6. Support required at Kings Bay NSB has been coordinated.

// SIGNED //  
(b) (6) CAPT, USAFR  
757 Aerial Spray



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



29 August 2003

MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497 -0198)

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Grand Forks AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks AFB ND.

**2. Capability:** Spray Aircraft Available 2 – 5 September 2003

**3. Concept of Operations:**

**2 Sep (Tuesday)**

0730: Show at KYNG  
0930: Depart KYNG  
1200: Land KRDR/Safety Briefing  
1430: In-brief

**3 Sep (Wednesday):**

0611: Sunrise  
1630: Show time  
1830: Take off KRDR (Adulticide Spray Sortie)  
2056: Sunset

**4 Sep (Thursday):**

0612: Sunrise  
1630: Show time  
1830: Take off KRDR (Adulticide Spray Sortie)  
2055: Sunset

**5 Sep (Friday):**

TBA: Out-brief  
1100: Take Off KRDR  
1500: Land KYNG

**4. Spray Parameters:**

- a. **Altitude:** 150' AGL for Adulticide swath when no trees are present.
- b. **Swath Width.** 2000 feet for ULV or as determined by the PMP
- c. **Flow Rate.** 4.35 gallons/minute ULV
- d. **Application Rate.** 0.60 oz/acre Trumpet<sup>®</sup>), ULV
- e. **Ground Speed:** 200 Knots
- f. **Proposed spray area:** Approximately 40,000 acres

**5. Mission Commander/Aircraft Commander:** Major (b) (6)

6. Support required at Grand Forks AFB ND has been coordinated with the organization's Environmental/Spray Coordinator Ms (b) (6), DSN (b) (6)
8. HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616, ATTN: 757 AS/DOS.

(b) (6), Major, USAFR  
Aerial Spray Operations Scheduler

# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 2-5 SEPTEMBER 2003

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: Maj (b) (6)
- (2) Pilots: Capt (b) (6)
- (3) Navigators: LTC (b) (6)
- (4) Flight Engineers:
- (5) Spray Operators: MSG (b) (6) , MSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: MSG (b) (6) iels, TSG (b) (6) , SSG (b) (6) , TSG (b) (6)
- (2) Crew Chief(s):
- (3) Avionics:
- (4) Com/Nav: MSG (b) (6)

##### c. Entomologists/Ground Support: Capt (b) (6) , (b) (6)

#### 2. SCHEDULE: (All Local Times)

##### 2 SEP (Tuesday)

0730: Show at KYNG  
0930: Depart KYNG  
1200: Land KRDR/Safety Briefing  
1430: In-brief

##### 3 SEP (Wednesday):

0611: Sunrise  
1530: Show time  
1700: Take off KRDR (Adulticide Spray Sortie)  
2006: Sunset

##### 4 SEP (Thursday):

0612: Sunrise  
1500: Show time  
1700: Take off KRDR (Adulticide Spray Sortie)  
2004: Sunset

##### 5 SEP (Friday):

TBA: Out-brief  
1100: Take Off KRDR  
1500: Land KYNG

### 3. ITEMS TO TAKE:

- a. **Mission Commander:** Hand Held GPS, 1 Cellular Phone
- b. **Entomologist:** 1 Cellular Phones, Wind Gauge, 2 Compasses, Pest Safety Binder, 1 UHF Radio, 10 Packs Water Sensitive Cards, 3 Boxes Card Holders with Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors, 2 Toshiba Computers, 1 SATLOC Manual, Project Notebook, 2 Anemometers, Entomologist's Tool Kit, Trakstar Receiver and Antenna, Batteries, Kodak Camera
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

4. **PPR:** 0730-01

5. **RADIO FREQUENCIES:** Air To Ground Primary 392.2; VHF 123.45  
KRDR Tower 124.9 V; Grand Forks Int'l 118.4 V

### 6. CONFIGURATION: SP2G

- a. **System:** 2-Module System/Stainless Steel ULV Wing Booms and Fuselage Booms
- b. **Nozzle Tips/Orientation:**  
ULV (adulticide): 8008 TeeJet oriented straight down  
Larvicide: Raindrop nozzles straight back
- c. **Number:**  
ULV: wing only, 8 8008s total (4 each side)  
Larvicide: fuselage only, 10 total (5 each side) straight back
- d. **Booms:** Full Wing and fuselage
- e. **Aircraft:** #9107
- f. **Mission Identifier:** QZNRKA243217

### 7. SPRAY PARAMETERS:

- a. **Adulticide**
  - (1) **Area to be treated:** 40,000 acres (Approximately)
  - (2) **Altitude:** 150' for Adulticide application
  - (3) **Swath Width.** 2000 feet for ULV or as determined by the PMP
  - (4) **Flow Rate.** 4.35 gallons/minute ULV
  - (5) **Application Rate.** 0.60 oz/acre Trumpet, ULV
  - (6) **Ground Speed:** 200 Knots
- b. **Larvicide**
  - (1) **Area to be treated:**
  - (2) **Altitude:** 100' for Larvicide application
  - (3) **Swath Width.** 200 feet
  - (4) **Flow Rate.** 186 gallons/minute
- c. **Application Rate.** 2 gallons/acre (water with 0.75 oz of Altosid®)
- d. **Ground Speed:** 200 Knots

### 8. SPRAY MIXING AND LOADING: (For Larvicide Spray Sorties)

- a. **Composition of each Gallon:**
  - (1) 0.375 ounces of Altosid® 20
  - (2) 0.08 ounces of Control® drift retardant
  - (3) Water
- b. **Typical load:** (2 tanks of 450 gallons each)
  - (1) Fill with 445.3 gallons of water/tank. Total water in tanks = 890.6 gal.
  - (2) Total water added = 890.6 gallons
  - (3) Add 1.32 gallons of Altosid® per tank (2.64 gallons total).
  - (4) 3.375 gal AirexDC per tank (6.75 Gal total) while agitating approximately 15 min
  - (5) Total quantity mix. 903 gallons

**c. Final Load for complete flush**

- (1) Fill tanks with the amount of water necessary for a proper system flush

**d. Mixing Instructions:**

SHAKE WELL BEFORE USING. Altosid® may separate on standing and must be thoroughly agitated prior to dilution.

PRECAUTIONARY STATEMENT: Spray solution should be used within 48 hours; always agitate before spraying.

**9. TRANSPORTATION: 2 Vans & 1 Staff provided by 319 CES**

**10. CONTACTS:**

**a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**

- (1) **Base Operations:** (b) (6) Airfield Manager or 1 LT (b) (6) , DSN (b) (6)  
-- DSN 362-xxxx or (701) 747-xxxx

- (2) **Environmental Officer:** (b) (6) DSN (b) (6) , FAX 6155

- (3) **Base Civil Engineer:** LTC (b) (6)

- (4) **Pest Management:** SSG (b) (6) , DSN (b) (6) , FAX 3432

- (5) **Public Affairs:** Capt (b) (6) DSN (b) (6) (off duty (b) (6) )

- (6) **Billeting:** DSN 362-3070/6189 or (701) 594-8431, FAX 362-3069

-- Prime Knight DSN 362-3844 or (701) 747-3844

**b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243

- (2) 910 AW Command Post: Ext 1315; FAX 1161

- (3) 910 AW/PA: Ext 1236; FAX 1022

- (4) 910 OG/CC: Ext 1257 / 1179

- (5) 910 OSF/OSA: Airfield Manager: (b) (6)

- Assistant Air Field Manager (ACAM), Ext 1181

- (6) 757 AS/DO: LTC (b) (6)

- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) FAX 1657

- (8) 757 AS/DOS: Aerial Spray Office, Ext 1111; FAX 1616

- (9) 910 LG/CC: Ext 1225

- (10) 910 LG/LGM: CMS (b) (6)

- (11) Maintenance Control: Ext 1348

- (12) LG/LGMS: Spray Maintenance: Ext 1132/1586

- (13) 910 LG/LGL: CMS (b) (6)

- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342

- (15) Supervisor of Flight Desk: 1069, FAX: 1371

- (16) Cellular Spray Phones:

- PMP/Entomologist: (b) (6)

- Mission Commander: (b) (6)

- Spray Maintenance: (b) (6)





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



12 MAY 2008

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray MEXUS Oil Spill Exercise

**1. Objective/Purpose/Benefit:** Joint Operational Exercise with the US Coast Guard and Mexican Navy simulating an Oil Spill Clean up operation near the boundary of our 2 countries. Aerial application of simulated oil dispersant using water will be performed working with both US CG and Mexican Navy ships and aircraft. Exercise activities should result in further refinement of MOU's between Mexico and US, as well as enhance the working relationship between the Mexican Navy, US Coast Guard, Border Control Authorities (both US and Mexican), and the USAFR in border environmental/disaster relief operations.

**2. Capability:** Spray Aircraft available 2-6 JUN 2008

**3. Concept of Operations:**

**2 JUNE (Monday)**

1300: Showtime

1500: Depart KYNG

1730: Land KBRO/Safety Briefing

**3 JUN (Tuesday):**

Briefings 0800-1600: Dispersants, JRC Set up, ICS

**4 JUN (Wednesday):**

\*\*0800: Alert/Show time

ASAP after show: Load Chemical

2 Hours after Show: Take off KBRO

1.5 Hours after Take off/Reload for next flight

**5 JUN (Thursday):**

0800: Show time

0830 Load Chemical

0930: Take off KBRO

1100 Land KBRO

1300-1700: Debrief with all exercise personnel

**6 JUN (Friday):**

0800 Show

1000 Depart KRBO

1630 Land KYNG

**4. Spray Parameters:**

- a. Altitude:** 100' AGL
- b. Swath Width.** 100 feet for UHV or as determined by the CPMP
- c. Flow Rate.** 277 gallons/minute
- d. Application Rate.** 7/acre
- e. Ground Speed:** 200 Knots
- f. Proposed spray area:** Exercise area TBD by CG

**5. Mission Commander:** CAPT (b) (6)

6. Coordination between US State Department and Mexican Government are being worked by the Coast Guard for approval to disperse water over Mexican Coastal Water Territory. In the event approval is not obtained prior to mission, the spray will be confined to US territory only. Please contact me if you have any questions.

// Signed //

(b) (6), CAPT, USAFR  
Assistant Chief Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## MEXUS OIL SPILL

### 2-6 JUN 2008

**Purpose/Objectives and Proposed Benefits:** Joint Operational Exercise with the US Coast Guard and Mexican Navy simulating an Oil Spill Clean up operation near the boundaries of our 2 countries. Aerial application of simulated oil dispersant using water will be performed working with both US CG and Mexican Navy ships and aircraft.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) MC: Capt (b) (6)
- 2) Pilots: LTC (b) (6) , Capt (b) (6) , Capt (b) (6)
- 3) Navigators: LTC (b) (6)
- 4) Flight Engineers: Msgt (b) (6) , Tsgt (b) (6)
- 5) Spray Operators: Msgt (b) (6) , Msgt (b) (6)

##### b. Maintenance:

- 1) Spray Maintenance: Msgt (b) (6) , Msgt (b) (6) , Msgt (b) (6) Ssgt (b) (6)
- 2) Crew Chief(s): Ssgt (b) (6) , Ssgt (b) (6)
- 3) Avionics: Msgt (b) (6)

##### c. Scientific Advisor: Maj (b) (6)

#### 2. SCHEDULE: (All Local Times) \*\*Spray Flight Times Subject to Change depending upon the Oil Spill Scenario

##### 2 JUNE (Monday)

1200: Showtime  
1400: Depart KYNG  
1730: Land KBRO/Safety Briefing

##### 3 JUN (Tuesday):

Briefings 0800-1600: Dispersants, JRC Set up, ICS

##### 4 JUN (Wednesday):

\*\*0700: Alert/Show time  
ASAP after show: Load Chemical  
0845 Take off KBRO to be at spill location at 0900  
Mexican site times TBD.  
1.5 Hours after Take off/Reload for next flight

##### 5 JUN (Thursday):

0800: Show time  
0830 Load Chemical  
0930: Take off KBRO  
1100 Land KBRO  
1300-1700: Debrief and Hotwash with entire exercise group

##### 6 JUN (Friday):

0800 Show  
1000 Depart KRBO  
1530 Land KYNG

#### 3. ITEMS TO TAKE

- a. **Mission Commander:** Cell Phone, Mission Folder
- b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder,  
1 VHF Radio, Project Notebook, Entomologist's Tool Kit
- c. **Navigator:** Maps/Map Bag, Laptop
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment

#### 4. Spray Planning: Currently there are 2 spray locations planned: 1 in the US and 1 in Mexico.

US site will be ½ nm off the shore near N26 07.00/W097 10.0. Location will be viewable from the JRC beach. Ships should be in position near the simulated spill location. Plan to be at spray location at 0900.

Mexico Site will be ½ nm off the shore at N25 14 19.10/W 097 24 41.05 (N25 14.32/W097 24.68) Mexican Identification of zone and ground radio contact TBD.

**5. RADIO FREQUENCIES: TBD by the Air Operations Planner at the JRC**

Air To Ground Primary VHF 123.45; secondary UHF 392.2;  
KBRO TWR 118.9V

**6. CONFIGURATION: SP2G**

- a. **System:** 2-Module System/ Fuselage Booms
- b. **Aircraft:** 899107
- c. **Mission Identifier:** QZNRKA485154

**7. SPRAY PARAMETERS:**

- a. **Nozzles – Raindrop nozzles oriented straight back.**
- b. **8 (16 total) on each fuselage boom; evenly spaced.**
- c. **Booms – fuselage only**
- d. **Airspeed – 200 knots ground speed.**
- e. **Altitude – 100 feet above water.**
- f. **Application Rate – 7 Gal/Acre**
- g. **Flow Rate – 277 Gal/Min**
- h. **Spray -- water only.**
- i. **Number of passes – 6 per sortie. Do not decrease flow rate in order to increase passes.**
- j. **Pressure – 40 psi**

**8. LOADING:**

- a. **900 -1000 gallons of water to be loaded for each lift. Loading process still TBD. Still uncertain of Hydrant availability and Fire Department support. Plan on hot turns if the Hydrant is available. At least 1 hot turn for practice should be planned.**

**9. TRANSPORTATION: 5 full size cars from Dollar (956-982-2027) at a rate of \$21 + tax and fees. Pick them up at M terminal.**

**Reservations: T2964064, T2964110, T2964141, T2964155, T2964165, all under Capt Townsend's name.**

- 1-MC Townsend**
- 2-Aircrew (Whittenberger, Young, Adams)**
- 1-Spray MX (Hefner)**
- 1-Crew Chiefs & Specialists (Torba)**

**10. LODGING:**

Holiday Inn Express Brownsville \$99/night  
(956)550-0666  
1985 N Expressway  
Brownsville, TX 78520

**11. CONTACTS:**

See MEXUS planning guide for contact information.

MSRC is bringing people only, no assets; however, here are their POCs for MEXUS.

(b) (6)

Marine Spill Response Corporation (MSRC) 3838 N. Sam Houston Parkway East. Suite 400  
Houston, TX 77032 (b) (6)

(b) (6)

Marine Spill Response Corporation (MSRC) 3838 N. Sam Houston Parkway East. Suite 400  
Houston, TX 77032 (b) (6)

Brownsville Texas: Contact information TBD either upon reaching Brownsville, or if airfield contact responds prior to end of this week.

**b. 910 AW, Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 Base Ops: Airfield Manager, Ext 1182
  - Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6), (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS(b) (6); FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Ext 1503 or 1531, FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL:Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - (b) (6) cell phone (b) (6)
  - (b) (6) (b) (6)



**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
**3976 King Graves Rd Unit 26**  
**Vienna OH 44473-5926**

20 August 08

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Langley AFB, VA.

1. Objective/Purpose/Benefits of the Spray Mission: Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes around LFI and the surrounding communities.

2. Capability: Aerial Spray C-130 Aircraft available 2-6 SEP 08

3. Concept of Operations:

**02 SEP (Tuesday): Deploy to LFI**

1000: Show time  
1200: Takeoff YNG  
1330: Land LFI w/safety briefing immediately following  
1430: Installation briefing

**03 SEP (Wednesday): Spray LFI**

1530: Show time  
1600: WX decision, load Dibrom  
1730: Takeoff LFI  
1930: Sunset

**04 SEP (Thursday): Spray LFI**

1530: Show time  
1600: WX decision, load Dibrom  
1730: Takeoff LFI  
1929: Sunset

**05 SEP (Friday): Spray LFI**

1530: Show time  
1600: WX decision, load Dibrom  
1730: Takeoff LFI  
1927: Sunset

**06 SEP (Saturday): Redeploy to YNG**

1000: Show time  
1200: Takeoff LFI  
1400: Land KYNG



4. Spray Parameters:

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom<sup>®</sup> Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.6 Gallons/Minute
- f. **Acreage:** Approximately 125,000 acres on the peninsula
- g. **Swath Width:** 2000 foot

5. Aircraft Commander: Capt (b) (6)

If there are any questions, please contact me at DSN(b) (6)

// SIGNED //

(b) (6)

757 Aerial Spray

, CAPT, USAFR

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 2-6 SEP 08

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes at LFI and the surrounding communities.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander:
- (2) Pilots: Capt (b) (6) , Capt (b) (6)
- (3) Navigator: LTC (b) (6)
- (4) Flight Engineers: SSgt (b) (6)
- (5) Spray Operators: TSgt (b) (6)

##### b. Maintenance:

1. Spray Maintenance: TSgt (b) (6) MSgt (b) (6) TSgt (b) (6) SRA (b) (6)
2. Crew Chiefs: TSgt (b) (6) , AIC (b) (6)
3. Avionics: SSgt (b) (6)

##### c. Entomologists: Maj (b) (6)

##### d. Vehicles:

- Vehicle Dispatch: Will supply us with 2x9pax vans and 2 cars
- MC / Entomologist: One Car
- Ops: One van (9 pax), one car
- Mx: One Van (9 Pax)

##### e. Billeting Office: (757) 764-4667 DSN 574-4667, EXT 2528; FAX 574-3038 POC TSgt (b) (6)

#### 2. PPR: 0827SF02

#### 3. SCHEDULE: (All times local)

##### 02 SEP (Tuesday): Deploy to LFI

- 1000: Show time
- 1200: Takeoff YNG
- 1330: Land LFI w/safety briefing immediately following
- 1430: Installation briefing

##### 03 SEP (Wednesday): Spray LFI

- 1530: Show time
- 1600: WX decision, load Dibrom
- 1730: Takeoff LFI
- 1930: Sunset

##### 04 SEP (Thursday): Spray LFI

- 1530: Show time
- 1600: WX decision, load Dibrom
- 1730: Takeoff LFI
- 1929: Sunset

##### 05 SEP (Friday): Spray LFI

- 1530: Show time
- 1600: WX decision, load Dibrom
- 1730: Takeoff LFI
- 1927: Sunset

##### 06 SEP (Saturday): Redeploy to YNG

- 1000: Show time
- 1200: Takeoff LFI
- 1400: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Kestrel Weather Monitor, Compass, PCM Card, Pest Safety Binder, UHF Radios, Laptop Computer
- b. **Navigator:** Maps/Map Bag, Validation Map
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit/Supply Kit

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Langley Tower:** DSN 574-5326
- b. **Langley Base Ops:** DSN 574-2504

**5. PARKING PLAN:** Taxi Way Foxtrot or as directed by Transient Alert.

**6. RADIO FREQUENCIES:**

- a. **Felker AAF Tower (Ft Eustis): 126.3, 269.25, 248.2, 241.0**
  - (1) Ops phone DSN878-3588
  - (2) Tower phone DSN 878-3530
  - (3) Flight Service 122.2
- b. **Newport News-Williamsburg Int: CTAF – 118.7 or 257.9 (Operating Hours 1000Z-0200Z)**
  - (1) Ground – 121.9 or 348.6 (phone 877-0221 ops)
  - (2) Tower – 118.7 (phone DSN 877-2862) voice mail 7-2962
  - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
- c. **Langley AFB: Tower DSN 574-7999**
  - (1) Tower - 125.0 or 253.5
  - (2) Ground - 121.7 or 275.8
  - (3) Clearance – 118.85 or 257.625
  - (4) Metro - 239.8
  - (5) ATIS – 270.1
- d. **Norfolk NAS (Chambers Fld): Tower –124.3, 379.15, Tower Supervisor DSN 262-3443**
- e. **Norfolk Approach: 125.7 or 335.625**
- f. **Spray Ground: Primary 392.2; Secondary: 308.6**

**7. IN-BRIEFING:** 1430 hrs; CE Conference Room

**8. SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS ULV; Fuselage booms
- b. **Nozzle Tips/Orientation:** 9 8005 nozzles -- straight down (4 left - 5 right)
- c. **Aircraft:** 90-9107
- d. **Mission Identifier:** QZNRKA233246

**9. SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.6 Gallons/Minute
- f. **Acreage:** Potentially 125,000 acres on the peninsula but final acreage TBD
- g. **Swath Width:** 2000 foot

**10. PESTICIDE LOADING:**

- a. **How Much Pesticide:** see entomologist
- b. **Where:** Taxi Way F Aero Club Ramp
- c. **When:** 1530 hrs each day pending weather and heat index. \*\*Calibration performed unless otherwise directed by the Entomologist or Mission Commander

**d. Furnished by Installation:**

- (1) Pesticide
- (2) Loading Equipment/Crew
- (3) Hazardous Waste Disposal
- (4) Two B-5 or B-1 Stands

**11. CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**

**a. LANGLEY AFB VA:**

Wing Commander: DSN 574-5321  
Mission Support Group Commander: DSN 574-7995  
Civil Engineer: DSN 574-2025  
Deputy Chief/Civil Engineer: (b) (6)  
Environmental Coordinator: DSN 574-3987; FAX 3503  
Base Operations: DSN 574-2504  
Langley Control Tower: DSN 574-5326  
Weather: Langley AFB, DSN 574-5907  
Ft Eustis: DSN 297-5300/3343  
Command Post: DSN 574-5411  
Pest Control Foreman: (b) (6) DSN (b) (6) cell phone (b) (6)  
Pest Control/Environmental NCOIC: MSgt (b) (6)  
Public Affairs: DSN 574-2018/2010/2019  
Fuels: DSN 574-4312/3623/4224  
Motor Pool: 574-5714/5712

ACC PMP: (b) (6), DSN (b) (6), cell phone (b) (6)

Fire Department Comm: 757-764-2222

**a. FT EUSTIS VA: Environmental Coordinator: DSN (b) (6)**

**b. Hampton Mosquito Control: 757 850-3305**

**c. York County Mosquito Control: (757)-890-3780**

**d. Poquoson: Jerry Cagle (757) 868-3590**

**e. City of Portsmouth Biologist: (757) 393-8666**

**f. Newport News Mosq. Control: (757) 269-2750**

**g. Camp Peary: (757) 229-2121 (b) (6), (b) (6) or (b) (6)**

**h. Ft Monroe: ?**

**i. Newport News/Williamsburg Int.:**

- (1) Fixed Base Operator: Flight Int 877-6401
- (2) Flight Service: 877-0209
- (3) Tower: 877-2962
- (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

**j. Norfolk NAS VA: DSN 564-2442/7598 or COM (757)-444-2442/7598**

**k. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Col (b) (6), (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Capt (b) (6); FAX 1022
- (4) 910 OG/CC: Col (b) (6), (b) (6)
- (5) 910 OS/OSA: Airfield Manager (b) (6)
- (6) 757 AS/DO: Maj (b) (6)
- (7) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (8) 757 AS/DOO: Ops Admin: SMS (b) (6) FAX 1657
- (9) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) Capt (b) (6); FAX 1616
- (10) 910 LG/CC: Ext 1225
- (11) 910 LG/LGM: Ext 1352
- (12) Maintenance Control: Ext 1327
- (13) 910 LG/LGMS: Spray Maintenance, Ext 1132
- (14) 910 LG/LGL, Ext 1137
- (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6)

26 November 2001

MEMORANDUM FOR HQ AFRC/DOOM (FAX: 497-0198)

FROM: 757 AS/DOS (346-1111/1531; FAX 346-1616)

SUBJECT: Concept of Operations for Aerial Spray Training at Avon Park AFR/MacDill AFB FL

1. Purpose/Objectives/Benefits: To fulfill training requirements for squadron personnel and evaluate new drift control agent for enhanced application of aerially applied products.
2. Capability: Spray Aircraft Available 3-7 Dec 01.
3. Concept of Operations:
  - a. **3 Dec (Monday):**
    - 0930 Show at KYNG
    - 1100 Take-Off KYNG
    - 1400 Land KMCF
    - 1415 Safety Brief
  - b. **4 Dec (Tuesday):** 0730-0930 and 1100-1400 Range Times
    - 0600 Show Time/Weather Decision/Load Water
    - 0715 Depart KMCF/Call Tower & Fire Department at AGR
    - 0740-0930 Spray water over designated area of the Avon Park Bombing Range
    - 1000 Land KMCF
    - 1030 Depart KMCF/Call Tower & Fire Department at AGR
    - 1100-1400 Spray water over designated area of the Avon Park Bombing Range
    - 1445 Land KMCF
  - c. **5 Dec (Wednesday):** 0730-0930 and 1100-1400 Range Times
    - 0600 Show Time/Weather Decision/Load Water
    - 0715 Depart KMCF/Call Tower & Fire Department at AGR
    - 0740-0930 Spray water over designated area of the Avon Park Bombing Range
    - 1000 Land KMCF
    - 1030 Depart KMCF/Call Tower & Fire Department at AGR
    - 1100-1400 Spray water over designated area of the Avon Park Bombing Range
    - 1445 Land KMCF
  - d. **6 Dec (Thursday):** 0730-0930 and 1100-1400 Range Times
    - 0600 Show Time/Weather Decision/Load Water
    - 0715 Depart KMCF/Call Tower & Fire Department at AGR
    - 0740-0930 Spray water over designated area of the Avon Park Bombing Range
    - 1000 Land KMCF
    - 1030 Depart KMCF/Call Tower & Fire Department at AGR
    - 1100-1400 Spray water over designated area of the Avon Park Bombing Range
    - 1445 Land KMCF

**e. 7 Dec (Friday):**

0900: Report  
0930: Out-Briefing  
1000: Depart KMCF  
1200: Land KYNG

4. Spray Parameters:
  - a. Acreage: N/A
  - b. Altitude: 100 Ft AGL
  - c. Ground Speed: 200 Knots
  - d. Pesticide: N/A (Training with dyed water only)
  - e. Application Rate: 500 Gallons of water
  - f. Flow Rate: Approximately 200 Gallons per minute at psi 40
  - g. System: SP2G – MASS ULV; Modules 1 and 2
  - h. Nozzle Tips/Number/Orientation: 8070 Flat Fan oriented straight back
  - i. Aircraft Tail Number: 99106
  - j. Deploy/Re-Deploy Time: 3.5 hrs
  - k. Spray Time: 2 hrs (or as called by Mission Commander)
5. Mission Commander: Major Timothy Austin
6. Support required at MacDill AFB and Avon Park Bombing Range AFB have been approved via telephone conversations with MacDill AFB Ops and the Range Manager at Avon Park AFRB.
7. If you have any questions concerning this mission please contact DSN (b) (6)

(b) (6), Major, USAFR  
Chief, Aerial Spray  
757 AS/DOS



# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **MACDILL AFB / AVON PARK, FL**

### **TRAINING & EVALUATION**

#### **3 - 7 DEC 2001**

**PURPOSE/OBJECTIVE/BENEFIT:** To fulfill training requirements for squadron personnel and evaluate new drift control agent for enhanced application of aerially applied products.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Mission Commander: Maj (b) (6)
- (2) Pilots: Maj (b) (6) Capt (b) (6)
- (3) Navigators: Maj (b) (6) , Maj (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: MSG (b) (6) , TSG (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: MSG (b) (6) , MSG (b) (6) , TSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6) TSG (b) (6)
- (3) Avionics: MSG (b) (6)

##### **c. Certified Pest Management Professionals:** Lt Col (b) (6) , Capt (b) (6)

##### **d. Ground Support:** TSG (b) (6)

Enterprise #152170: \$75 Vans: (b) (6) ; \$45 Full Size: (b) (6) ; \$41 Mid Size: (b) (6)

#### **2. SCHEDULE: (All time Local)**

03 DEC (Monday): No range time.

**PPR # - 337 RJ1**

0800: Show at KYNG

1000: Depart YNG

1400: Land MCF

04 DEC (Tuesday): Range Times 0730-0930 and 1100-1400, call AGR Tower & Fire Dept

0600: Show Time

0715: Depart MCF Coordinated with CAPT (b) (6) / Sgt (b) (6)

0930: land MCF

1045: Depart MCF

1400: Land MCF

05 DEC (Wednesday): Range Times 0730-0930 and 1100-1400, call AGR Tower & Fire Dept

0600: Show Time

0715: Depart MCF Coordinated with CAPT (b) (6) / Sgt (b) (6)

0930: land MCF

1045: Depart MCF

1400: Land MCF

06 DEC (Thursday): Range Times 0730-0930 and 1100-1400, call AGR Tower & Fire Dept

0600: Show Time

0715: Depart MCF Coordinated with CAPT (b) (6) / Sgt (b) (6)

0930: land MCF

1045: Depart MCF

1400: Land MCF

07 DEC (Friday):

0900: Depart MCF

1200: Land YNG

#### **3. PURPOSE OF THIS MISSION.** Compare drift retardant capabilities of Garrco Control® with those of Airex DC™

#### **4. ITEMS TO TAKE:**

- a. **Navigator:** Maps with “No-Spray” Areas Marked and Laptop Computer
- b. **Certified Pest Management Professionals:**
  - (1) 18 Packs of Water-Sensitive Cards
  - (2) 5 Boxes of Plastic Card Holders & Index Cards
  - (3) 2 Signal Mirrors
  - (4) 2 Spot Lights
  - (5) 1 Engineer Wheel
  - (6) Swath Kit Weather Station and Image Analyzer
  - (7) UHF Radio with Antenna and VHF Radio
  - (8) Ground Maps
  - (9) Laptop Computer
  - (10) Digital Camera
  - (11) SATLOC Trackstar Equipment

#### **5. AIR TO GROUND FREQUENCIES:**

- a. Spray: Primary 392.2; Secondary 340.8
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. Avon Park: TWR-292.2 (p), 126.15, 276.6 (s)
- e. MacDill: TWR-123.7; GND-121.65; ATIS-133.825; CMD POST-311.0; PTD-372.2

#### **6. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 99106
- c. Mission Identifier: QZNRKA393337

#### **7. SPRAY PARAMETERS:**

- a. Booms -- Wing and fuselage with restrictor.
- b. Nozzles -- 8070 Flat Fan oriented straight back.
- c. Number of Nozzles -- 30 Total; 10 on each wing and 5 on each fuselage boom.
- d. Airspeed -- 200 knots ground speed.
- e. Altitude -- 100' above ground level 4-5 Dec; 6 Dec alternate between passes 150-175' AGL.
- f. Spray -- Water with either Garrco Control® or Airex DC™.
- g. Wind -- Headwind/tailwind.
- h. Flow Rate -- 200 Gallons per minute at 40 psi.

#### **8. LOADING, MIXING AND APPLICATION:**

- a. 4 DEC 01 – Sortie 1
  - Mix 8 ounces of Control® with 500 gallons of water.
  - Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.
- b. 4 DEC 01 – Sortie 2
  - Mix 4 ounces of Control® with 500 gallons of water.
  - Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.

- c. 5 DEC 01 – Sortie 1 – 0.5% solution  
Mix 2.5 gallons of Airex DC™ with 500 gallons of water.  
Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.
- d. 5 DEC 01 – Sortie 2 – 1.0% solution  
Mix 5 gallons of Airex DC™ with 500 gallons of water.  
Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.
- e. 6 DEC 01 – Sortie 1 – 0.5% solution  
Mix 2.5 gallons of Airex DC™ with 500 gallons of water.  
Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.  
Fly at 150' AGL on odd numbered passes and at 175' AGL on even numbered passes.
- f. 6 DEC 01 – Sortie 2  
Aircrew Training

## 9. CONTACTS:

- a. Quarters: **MacDill Lodging**: DSN: 968-4259, FAX 2660 (Gp 968-2617/2594)  
-- **Radisson Riverwalk Hotel, 200 North Ashley Dr Tampa FL (813) 223-2222**  
    **FAX (813) 273-0839**  
-- **Avon Park**: Quality Inn (863) 385-4500, FAX (863) 385-0250 , \$64/night
- b. Transportation: **MacDill**: Enterprise, (813)-840-2613 / 8310 FAX  
2 Vans \$75; 2 Full size car \$45; 1 Mid Size \$41 + \$2 state surcharge; Unlimited mileage  
**All vehicles Reserved under Number 152170; keys will be at Base Ops**
- c. **MacDill AFB**: DSN prefix 968   Comm. (813)-828-xxxx  
    Base Operations – Ext 2350
- d. **Patrick AFB**: Rescue Squadron: DSN prefix 854  
    LTC (b) (6) – CC - (b) (6)  
    LTC (b) (6) – DO – (b) (6)  
    LTC (b) (6) – Flight Ops – (b) (6)  
    CPT T.C. (b) (6) – Tactics – (b) (6)  
    Maintenance Ops Center - MOC – x2261, 2262, 2264 (b) (6)
- e. **Avon Park, Fla.** Commercial prefix (941) 452-4XXX  
    DSN 968-7+Avon Park Extension XXX)  
    DSN Access from Avon Range phones: 4+94+DSN  
    DSN 968-7176 or 7138 for Tower (b) (6) )  
    Local phone calls from Avon Range:  
        Sebring 82 + number  
        Avon Park 81 + number  
    (1) Installation Coordinator/Engineer: (b) (6) or (b) (6) (b) (6)  
        FAX 189/218; (b) (6) after hours: (b) (6)  
    (2) Pest Control: (b) (6)  
    (3) Forestry/Wildlife: (b) (6)  
    (4) Weather: MacDill Forecaster (DSN 968-2854)

- (5) Quarters:
  - Radisson Riverwalk Hotel (813) 223-2222, FAX (813) 273-0839
  - Quality Inn (863) 385-4500, FAX: (863) 385-0250
  - Jacaronda (941) 453-2211; 19 East Main St, Avon Park, FL 33825
  - \$ 27.29 / night
  - Inn On The Lakes (941) 471-9400
  - Econolodge (941) 453-2000
  - Oak Tree Inn (941) 453-3165
  - Days Inn (941) 382-1148, 800 329-7466
- (6) Fuels: (b) (6) or (b) (6)
- (7) Airfield Manager: (b) (6)
- (8) Asst Airfield Mgr: (b) (6) Fax (233)
- (9) Range/Tower NCOIC: (b) (6)
- (10) Range Manager: (b) (6)
- (11) Range Coordination Center: (Ext 138/242)
- (12) Range Scheduling MacDill: DSN **968-4641** (Current Ops Scheduling)
  - Sgt (b) (6) or Sgt (b) (6) FAX DSN 968-4098
- (13) Fire Department: (Ext 293) Mr (b) (6) (Chief)
- (14) Prison Snack Bar: Hours 0800-1100; 1300-1600)
- (15) Sebring AP:
  - Mgr: (b) (6) (fuel needs)
  - (1) BEEPER: (b) (6)
    - a) ENTER YOUR PHONE#
    - b) ENTER #
  - Asst Mgr: (b) (6) (b) (6)
- (16) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)
- (17) Range VHF: 126.15
- (18) MacDill AFB Ops Gp CC COL (b) (6)

f. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Ext 1243
- (2) 910 AW Command Post: Ext 1315, FAX 1161
- (3) 910 AW/PA: Ext 1236, FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 OG/OSA: Airfield Manager: (b) (6)
- (6) 757 AS/DO: LTC (b) (6)
- (7) 757 AS/DOO: Ops Admin, SMS (b) (6) , FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, (b) (6) , FAX 1616
- (9) 910 LG/CC: LTC (b) (6)
- (10) 910 LG/LGM: CMS (b) (6)
- (11) Maintenance Control: Ext 1348
- (12) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
- (13) 910 LG/LGL: CMS (b) (6)
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Cellular Spray Phones:
  - PMP: (b) (6)
  - Mission Cmdr: (b) (6)
  - Spray MX: (b) (6)

3 January 2002

**MEMORANDUM FOR 757 AS/DO**

**FROM: 757 AS/DOS (LtC Spears)**

**SUBJECT: Avon Park Drift Retardant Comparison Mission, 3-7 December 2001**

1. Purpose: Compare spray deposition from Garrco Control® and AirexDC™ drift retardants.
2. Traveler(s): The participants are listed in Attachment 1, the Avon Park Operational Schedule for 3-7 December 2001.
3. Itinerary: The itinerary is listed in the Avon Park Operational Schedule (Attachment 1).
4. Aerial Spray Flight Data:

a. 3 Dec 01: Ferry	KYNG-KMCF 1505-1805Z	Flight Hours: 3.0
b. 4 Dec 01: Spray Sortie	KMCF-KMCF1315-1502Z	Flight Hours: 1.8
c. 4 Dec 01: Spray Sortie	KMCF-KMCF1610-1710Z	Flight Hours: 1.5
d. 5 Dec 01: Spray Sortie	KMCF-KMCF1226-1446Z	Flight Hours: 2.4
e. 5 Dec 01: Spray Sortie	KMCF-KMCF1605-1726Z	Flight Hours: 1.4
f. 6 Dec 01: Spray Sortie	KMCF-KMCF1230-1600Z	Flight Hours: 3.5
g. 7 Dec 01: Ferry	KYNG-KMCF 1500-1800Z	Flight Hours: 3.0

5. Discussion:

a. StaPut® and Control® are drift retardants used previously, with Control® proving to be more effective than StaPut®. AirexDC™ is a new product that became available in mid-2001. It forms a protective coating around a spray droplet to prevent evaporation as opposed to the previous materials that mixed with and thickened the spray solution.

b. Trials of Control® were conducted at the rates of 4 ounces and 8 ounces per 500 gallons of water. Trials of AirexDC™ were conducted at the rates of 0.5% (2.5 gallons) and 1.0% (5 gallons) per 500 gallons of water. AirexDC™ was used at a higher rate because it is a much less concentrated material than Control®.

## 6. Results:

a. Using AirexDC™ resulted in more than twice as much recovery in ounces per acre as Control® (Figure 1). Although the number of droplets collected (drops/cm<sup>2</sup>) was similar, the volume median diameter (DV50) was larger accounting for increased deposition.

b. The higher rates for both materials showed less deposition than the lower rates. This is because they were flown during afternoon sorties when the temperature was higher and the humidity lower than when the lower rates were flown. This resulted in increased evaporation, and thus, less recovery.

## 7. Conclusions and Recommendations:

a. AirexDC™ proved to be the best material (Figure 2) resulting in more recovery on the ground, larger volume median diameter and, therefore, less drift. Using this material will give us better recovery and control of spray deposition in future missions.

b. We need to conduct additional characterization trials comparing a higher rate of Control® with AirexDC™. This will allow us to determine if we can improve results with Control®.

(b) (6) Lt Col, USAFR  
Research Entomologist

### Attachments

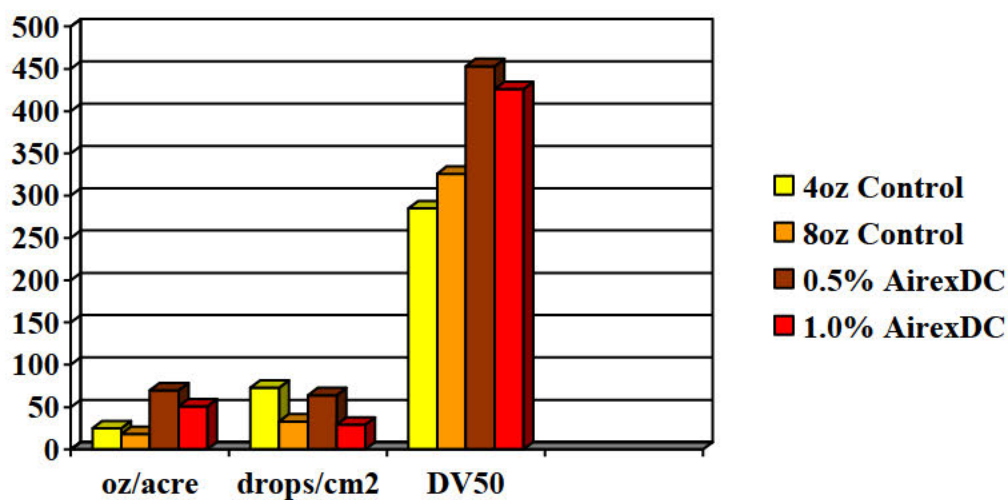
1. Operational Schedule
2. Figure 1, Comparison of deposition of Control® and AirexDC™ and Figure 2, Deposition patterns of Control® and AirexDC™

Distribution via e-mail:

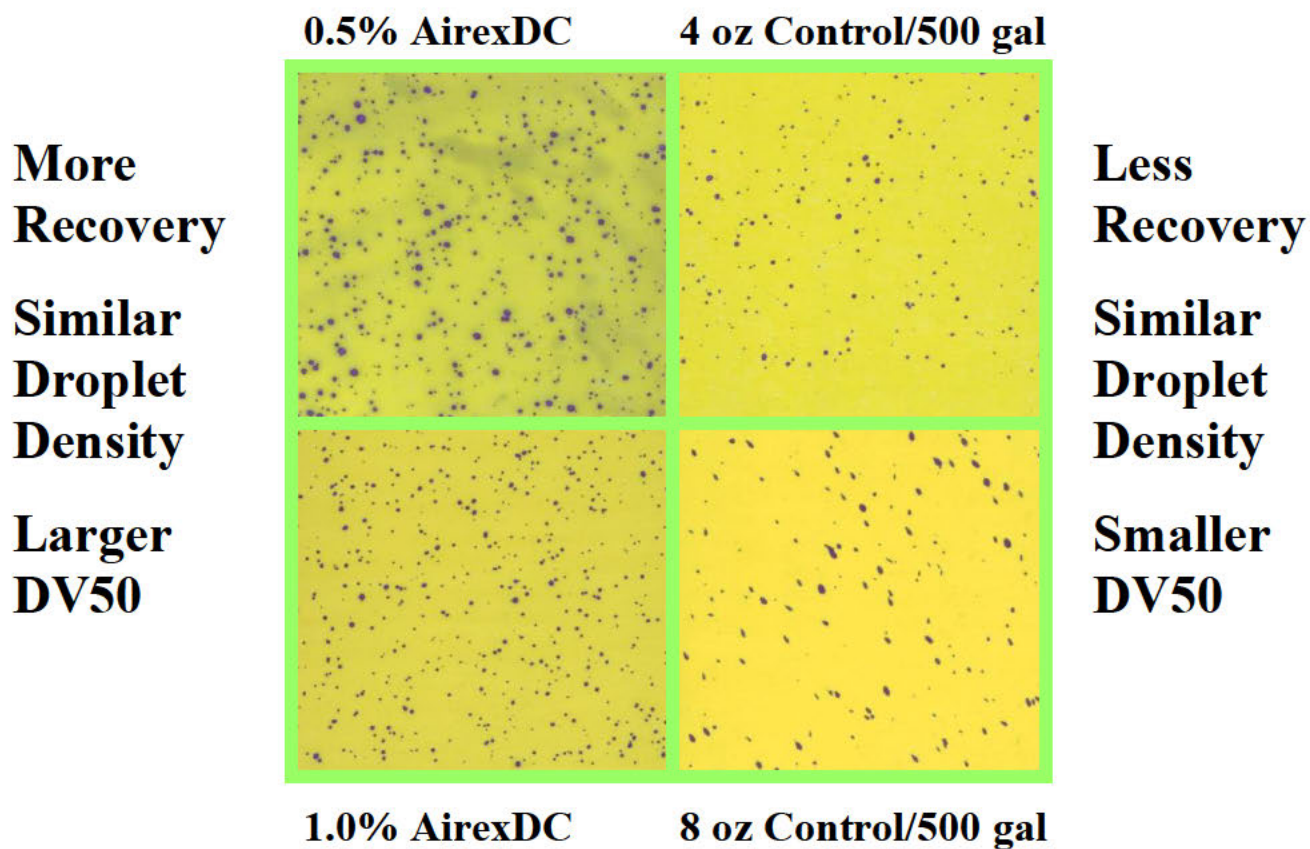
910 AW/CC, PA, LG, LGMS, OG/CC, DO/CC  
AFRC/DO/DOOM, XP, HO, PA

(Original copy of this report will be maintained by 757 AS/DOS)





**Figure 1.** Comparison of deposition of Control® and AirexDC™ drift retardants applied from a C-130 aerial spray aircraft.



**Figure 2.** Deposition patterns of Control® and AirexDC™ drift retardants applied from a C-130 aerial spray aircraft.

23 May 2002

MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497 -0198)

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Grand Forks AFB ND  
Control of Mosquitoes

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks AFB ND.

**2. Capability:** Spray Aircraft Available 3 Jun 2002

**3. Concept of Operations:**

**3 JUNE (Monday)**

0800: Show at KYNG  
1100: Depart KYNG  
1330: Land KRDR/Safety Briefing  
1430: In-brief

**4 JUNE (Tuesday):**

0530: Show time  
0532: Sunrise  
0640: Take off KRDR (Field opens at 0630); Larvicide spray -- aiming for two lifts  
2122: Sunset

**5 JUNE (Wednesday):**

0530: Show time  
0531: Sunrise  
0640: Take off KRDR (Field opens at 0630); Larvicide spray -- aiming for two lifts  
2123: Sunset/Land

**6 JUNE (Thursday):**

0530: Show time  
0531: Sunrise  
0640: Take off KRDR (Field opens at 0630); Larvicide spray  
2123: Sunset

**7 JUNE (Friday):**

0530: Show time  
0530: Sunrise  
0640: Take Off KRDR (Field opens at 0630); Larvicide spray  
2124: Sunset

**8 JUNE (Saturday)**

0530: Show time

0530: Sunrise

0640: Take off KRDR

2125: Sunset

**9 JUNE (Sunday)**

TBA: Out-brief

1100: Take Off KRDR

1500: Land KYNG

**4. Spray Parameters:**

- a. **Altitude:** 100' AGL for larvicide swath when no trees are present.
- b. **Swath Width.** 200 feet for larvicide
- c. **Flow Rate.** 186 gallons/minute larvicide
- d. **Application Rate.** 2 gal/acre (water with 0.75 oz of Altosid®)
- e. **Ground Speed:** 200 Knots
- f. **Proposed spray area:** Approximately 1790 acres (this size area will require 4 Sorties)
- g. **Spray-on time:** 19.5 minutes

**5. Mission Commander:** LtC (b) (6)

**6. Aircraft Commander:** LtC (b) (6)

**7.** Support required at Grand Forks AFB ND has been coordinated with the organization's Environmental/Spray Coordinator (b) (6), DSN (b) (6).

**8.** HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616, ATTN: 757 AS/DOS.

(b) (6), Major, USAFR  
Chief, Aerial Spray Operations

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **GRAND FORKS AFB, ND**

### **03-09 JUNE 2002**

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks AFB, North Dakota.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Mission Commander: LTC (b) (6)
- (2) Pilots: LTC (b) (6) , MAJ (b) (6)
- (3) Navigators: LTC (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: MSG (b) (6) , TSG (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: TSG (b) (6) , TSG (b) (6) , SSG (b) (6)
- (2) Crew Chief(s): TSG (b) (6) & SSG (b) (6) (b) (6)
- (3) Avionics: TSG (b) (6) , TSG (b) (6)

##### **c. Entomologists/Ground Support: LTC (b) (6) , LTC (b) (6)**

#### **2. SCHEDULE: (All Local Times)**

##### **3 JUNE (Monday)**

0800: Show at KYNG  
1100: Depart KYNG  
1330: Land KRDR/Safety Briefing  
1430: In-brief

##### **4 JUNE (Tuesday):**

0530: Show time  
0532: Sunrise  
0640: Take off KRDR (Field opens at 0630); Larvicide spray -- aiming for two lifts  
2122: Sunset

##### **5 JUNE (Wednesday):**

0530: Show time  
0531: Sunrise  
0640: Take off KRDR (Field opens at 0630); Larvicide spray -- aiming for two lifts  
2123: Sunset/Land

##### **6 JUNE (Thursday):**

0530: Show time  
0531: Sunrise  
0640: Take off KRDR (Field opens at 0630); Larvicide spray  
2123: Sunset

##### **7 JUNE (Friday):**

0530: Show time  
0530: Sunrise  
0640: Take Off KRDR (Field opens at 0630); Larvicide spray  
2124: Sunset

**Note: Four sorties are required for the spray block. Plus, a final sortie will be needed for a complete flush of the system followed by spray equipment inspection**

### **8 JUNE (Saturday)**

0530: Show time

0530: Sunrise

0640: Take off KRDR

2125: Sunset

### **9 JUNE (Sunday)**

TBA: Out-brief

1100: Take Off KRDR

1500: Land KYNG

### **3. ITEMS TO TAKE:**

- a. Mission Commander:** Hand Held GPS, 1 Cellular Phone
- b. Entomologist:** 1 Cellular Phones, Wind Gauge, 2 Compasses, Pest Safety Binder, 2 Signal Mirrors, 1 UHF Radio, 10 Packs Water Sensitive Cards, 3 Boxes Card Holders with Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Toshiba Computers, 1 SATLOC Manual, Project Notebook, 2 Anemometers, Entomologist's Tool Kit, Trakstar Receiver and Antenna, Batteries, Kodak Camera
- c. Navigator:** Maps/Map Bag, Validation Map
- d. Spray Operator:** Safety Gear, Calibration Tables
- e. Spray Maintenance:** Deployment Kit, Support Equipment, Control®

**4. PPR:** Not required weekdays

**5. RADIO FREQUENCIES:** Air To Ground Primary 392.2; VHF 123.45

### **6. CONFIGURATION:**

- a. System:** 2-Module System and Fuselage Booms
- b. Nozzle Tips/Orientation:**
  - (1) Larvicide: Raindrop nozzles straight back
- c. Number:**
  - (1) Larvicide: Fuselage only, 10 total (5 each side) straight back
- d. Booms:** Fuselage Booms
- e. Aircraft:** 107
- f. Mission Identifier:** **QZNRKA**

### **7. SPRAY PARAMETERS:**

- a. Altitude:** 100' AGL for larvicide swath when no trees are present
- b. Swath Width.** 200 feet
- c. Flow Rate.** 186 gallons/minute
- d. Application Rate.** 2 gal/acre (water with 0.75 oz of Altosid®)
- e. Ground Speed:** 200 Knots
- f. Proposed spray area:** Approximately 1790 acres (this size area will require 4 sorties)
- g. Spray-on time:** 19.5 minutes

## 8. SPRAY MIXING AND LOADING:

### a. Composition of each Gallon:

- (1) 0.375 ounces of Altosid® 20
- (2) 0.08 ounces of Control® drift retardant
- (3) Water

### b. Typical load: (2 tanks of 450 gallons each)

- (1) Fill with 450 gallons of water/tank. Total water in tanks = 900 gal.
- (2) Total water added = 900 gallons
- (3) Add 1.32 gallons of Altosid® per tank (2.64 gallons total).
- (4) Add 1 bottle of Control®/tank while agitating approximately 15 min
- (5) Total quantity mix. 903 gallons

### c. Final Load for complete flush

- (1) Fill tanks with the amount of water necessary for a proper system flush

### d. Mixing Instructions:

SHAKE WELL BEFORE USING. Altosid® may separate on standing and must be thoroughly agitated prior to dilution.

PRECAUTIONARY STATEMENT: Spray solution should be used within 48 hours; always agitate before spraying.

## 9. TRANSPORTATION: 2 Vans & 1 Staff provided by 319 CES

## 10. CONTACTS:

### a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205

- (1) **Base Operations:** Gene Crouse Airfield Manager or 1 LT Fielder, DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx
- (2) **Environmental Officer:** (b) (6) DSN (b) (6) , FAX 6155
- (3) **Base Civil Engineer:** LTC (b) (6)
- (4) **Pest Management:** SSG (b) (6) DSN (b) (6) , FAX 3432
- (5) **Public Affairs:** Capt (b) (6), DSN (b) (6) (off duty CP ext (b) (6))
- (6) **Billeting:** DSN 362-3070/6189 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844

### b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 OSF/OSA: Airfield Manager: (b) (6)  
- Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: LTC (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Ext 1111; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: CMS (b) (6)
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL: CMS (b) (6)
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - PMP/Entomologist: (b) (6)
  - Mission Commander: (b) (6)
  - Spray Maintenance: (b) (6)



# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT

### 1. MISSION BASICS:

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 3-7 June 2002
- c. Purpose of Application: Control nuisance and vector mosquitoes (larval stages)
- d. Application Date/s: 4 and 5 Jun 02
- e. Time/s of Application (Zulu): 1155-1605Z (4 Jun); 2230-0105Z (5 Jun); 1810-1910Z (6 Jun)
- f. Acres Treated: 893
- g. Project Coordinator/s (Name/Rank, Title, Phone #):(b) (6) , Environmental Officer, DSN (b) (6) and SSG (b) (6) , NCOIC Pest Management Shop, DSN (b) (6)
- h. Date Spray Map Last Approved: 3 Jun 02
- i. Installation In-Briefing: (When/Where/Briefer/s): 1600 local 3 Jun 02/Grand Forks AFB CE Conference Room/LTC (b) (6) and LTC (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: LTC (b) (6)
- b. Certified PMP/s (Category 11): LTC (b) (6) , LTC (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander: LTC (b) (6)
  - (2) CoPilot: Maj (b) (6)
  - (3) Navigator(s): LTC (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
  - (5) Spray Operators: MSG (b) (6) , TSG(b) (6)
- d. Safety Briefer: LTC (b) (6)
- e. Spray Maintenance: TSG (b) (6) , TSG(b) (6) , SSG (b) (6)
- f. Spray Ground Monitors: LTC (b) (6) , LTC (b) (6)
- g. Crew Chiefs: TSG (b) (6) , SSG (b) (6)
- h. Avionics: TSG (b) (6) , TSG (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 3/7.8
  - (2) Ferry Sorties/Hours: 2/6.9

### 3. PESTICIDES:

- a. Trade Name (% Active Ingredient): Altosid® Liquid Larvicide Concentrate (20% methoprene)
- b. EPA Registration Number: 272446
- c. Gallons Pesticide Loaded: 5
- d. Gallons Pesticide Applied: 5
- e. Gallons and Name of Flush Used: 198 gallons of water and 2 gallons of Remove®.
- f. Other Additives Used: 1850 gallons water and 1 gallon of Control® drift retardant.
- g. Application Rate: 2 gallons per acre (water with 0.75 oz Altosid®)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 909107
- b. Spray System (Modules Used) and System ID #: 3
- c. Spray System Configuration: 2-Module System/Stainless Steel Fuselage Booms
- d. Nozzle Type/Size: Raindrop nozzles rated at 20 gallons per minute.
- e. Nozzle Orientation & Number Used: Fuselage only oriented straight back; 5 each side
- f. Pressure (PSI): 40
- g. Flow Rate: 93 GPM on 4 Jun 02 and 186 GPM on 5 Jun 02

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 100 Feet on 4 Jun 02 and 200 Feet on 5 Jun 02
- b. Spray Off Set: None on 4 Jun 02 and 600 Feet on 5 Jun 02
- c. Spray Release Altitude: 150 Feet on 4 Jun 02 and 100 Feet on 5 Jun 02
- d. Ground Speed: 200 Knots (337.5 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: Light and variable on 4 Jun 02 and 240° at 5 knots on 5 Jun 02
  - (2) Release Altitude: Calm on 4 Jun 02 and 190° at 8 knots on 5 Jun 02
- b. Temperature (Degrees Fahrenheit): 60° on 4 Jun 02 and 74° on 5 Jun 02
- c. Humidity (percent): 55 % on 4 Jun 02 and 28 % on 5 Jun 02.
- d. Cloud Cover: 40 % on 4 Jun 02 and 15 % on 5 Jun 02.
- e. Source: Ground observations and Aircraft Radar

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Visual observation of aircraft spray pattern.
  - (2) Results: Excellent.
- b. Effectiveness:
  - (1) Technique/s Used: Bioassay of mosquito larvae.
  - (2) Results: The insecticide is a growth regulator and will take several days to produce results. Therefore, results will be determined later.

**8. REMARKS:** There was not enough wind on 4 Jun 02 to produce a 200' wide swath, so a 100' swath was used. The 5 Jun 02 sortie was flown in the evening rather than in the morning because the aircraft was being repaired in the morning. The flush sortie was flown in the morning on 6 Jun 02. The original acreage of 1790 acres planned for spraying was reduced to 893 acres because of drought conditions causing lack of larval mosquito habitat. Therefore, two spray sorties were flown rather than four.

(b) (6) , Lt Col, USAFR  
Certified Pest Management Professional

# AERIAL SPRAY OPERATIONAL SCHEDULE

## AVON PARK, FL

### 3-10 Dec 04

**PURPOSE/OBJECTIVE/BENEFIT:** Characterize the droplet spectrum for several TeeJet flat fan nozzles using the ULV fuselage configuration and a pyrethroid stimulant

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: \*MAJ (b) (6), MAJ (b) (6)
- (2) Navigators: LTC (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: \*MSG (b) (6), SMS (b) (6), MSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSG (b) (6), \*TSG (b) (6), MSG(b) (6)
- (2) Avionics: TSG (b) (6)
- (3) Crew Chiefs: SSG (b) (6), \*TSG (b) (6)

##### c. Entomologists: \*\*\*Capt (b) (6), Capt (b) (6)

**Enterprise (Sebring) (b) (6) (863) 385-6969; FAX (863) 385-3416, Vehicles: 4 \*Full size/\$44; \*\*\*1 SUV/\$57  
Vehicles will be dropped off at the control tower, they will have the keys.**

#### 2. SCHEDULE: (All time Local)

3 DEC (Friday): PPR # - Not Req

0900: Show Time KYNG

1100: Depart KYNG

1400: Land KAGR

4 DEC (Saturday): Range Times 0900-1200, call AGR Tower & Fire Dept

0730: Show Time

0730: Fuel

0900: Depart

1200: Land

5 DEC (Sunday): Range Times 0900-1200, call AGR Tower & Fire Dept

0730: Show Time

0900: Depart

1200: Land

6 DEC (Monday): Range Times 0900-1200, call AGR Tower & Fire Dept

0730: Show Time

0900: Depart

1200: Land

7 DEC (Tuesday): Range Times 0900-1200, call AGR Tower & Fire Dept

0730: Show Time

0900: Depart

1200: Land

8 DEC (Wednesday): Range Times 0900-1200, call AGR Tower & Fire Dept

0730: Show Time

0900: Depart

1200: Land

9 DEC (Thursday): Range Times 0900-1200, call AGR Tower & Fire Dept

0730: Show Time

0900: Depart

1200: Land

10 DEC (Friday):

0800: Show Time

1000: Depart

1300: Land KYNG

### 3. ITEMS TO TAKE:

- a. **Navigator:** Maps with “No-Spray” Areas Marked
- b. **Certified Pest Management Professionals:**
  - (1) Water-Sensitive Cards
  - (2) 1 Signal Mirror
  - (3) 1 Spot Light
  - (4) 1 Engineer Wheel
  - (5) Ground Maps
  - (6) Laptop Computer
  - (7) Digital Camera
  - (8) Oil-sensitive cards
  - (9) Spinners
  - (10) Wooden dowels

### 4. AIR TO GROUND FREQUENCIES:

- a. Spray: Primary 392.2; Secondary 340.8
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. Avon Park: TWR-292.2 (p), 126.15, 276.6 (s) Hrs 0700-2300 M-F, S-S per flying schedule  
DSN 968-7138
- e. MacDill: TWR-123.7; GND-121.65; ATIS-133.825; CMD POST-311.0; PTD-372.2

### 5. SPRAY CONFIGURATION:

- a. MASS – SP2G
- b. Aircraft Number: 99105
- c. Mission Identifier: QZNRKA288388

### 6. MISSION PROTOCOLS:

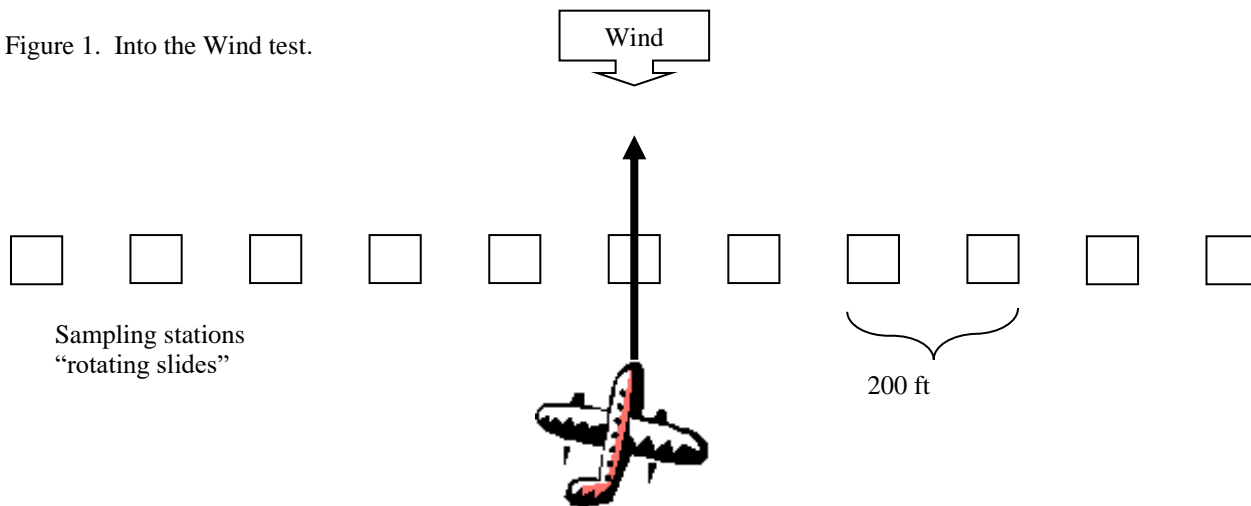
#### Avon Park Spray Testing Itinerary 3-10 Dec 04

- a. Purpose: Characterization of droplet spectrum produced using fuselage ULV configuration with different nozzle types. We propose to characterize the following TeeJet flat fan nozzles: 8008, 8005, 8003, and 8001.
- b. Spray Parameters (Please note that only the number and type of nozzle will change during this mission):
  - 1. Booms -- Fuselage only
  - 2. Nozzles – 8008 = 6 nozzles/3 per side; 8005 = 8 nozzles/4 per side; 8003 = 14 nozzles/7 per side; 8001 = 42 nozzles/21 per side
  - 3. Number of Nozzles – 8 nozzles 4 per side
  - 4. Airspeed -- 200 knots ground speed
  - 5. Altitude -- 100’ above ground level
  - 6. Wind – Into the wind test
  - 7. Flow Rate – 4.5 gallons/minute

c. Mission Protocols:

1. Purpose: Determine droplet spectrum as delivered for a simulated mosquito adulticide spray using the fuselage ULV configuration. Teflon-coated microscope slides will be used to collect droplets. Eleven sampling stations will be setup along a stretch of road in the Avon Park Bombing Range. Depending on wind direction, the likely locations will be Smith Road (east-west) or Oliver Road (north-south). Other options are possible but will be determined on-site. Additionally, we need the average winds to be below 10 mph.
2. Aircrew: We need the system to have stabilized prior to reaching the sampling points. This is an into the wind test (see figure 1 below). Please turn the spray system on 20 seconds prior to the sampling point and until 10 seconds. **Spray Operators:** Please record the spray-on time and pressure at 5 second intervals. **Navigator:** Please record winds at altitude every ten seconds. If conditions are stable (little variation in wind direction and speed) two spray-on passes will be used for each test (e.g. nozzle configuration).

Figure 1. Into the Wind test.



3. Microscope slides will be retrieved 20 minutes after the plane has passed. Number and size of the droplets will be determined. Please depart the area or land so as to avoid contamination of the slides.

7. **CONTACTS:**

- a. Quarters: (JTR Lodging/\$64)  
-- **Sebring/Avon Park: Quality Inn** (863) 385-4500 (\$64 w/Tax Exempt Form)  
    **- Grp Reservation: 910 AW: 4520**  
    ((b) (6)) FAX (863) 385-8436  
-- MacDill Lodging: DSN: 968-4259, FAX 2660 (Gp 968-2617/2594)
- b. Transportation:  
    **Sebring Enterprise POC Gina (863) 385-6969; Fax (863) 385-3416**  
    Avon Park Enterprise (863) 452-5483; Fax (863) 452-5947  
    1 SUV \$; 2 Full size car \$45; 2 Mid Size \$41 + \$2 state surcharge; Unlimited mileage  
    (All vehicles will be at Avon Park Flight Ramp)
- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350  
    (1) Weather: MacDill AFB Forecaster (DSN 968-2854)  
    (2) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)

Sgt (b) (6) or Sgt(b) (6) ; FAX DSN 968-4098  
(3) MacDill AFB Ops Gp CC: COL (b) (6) , (b) (6)

d. **Patrick AFB:** Rescue Squadron: DSN prefix 854

Commander - Ext 2217/2218

Director of Operations – Ext 2974

Flight Ops – Ext 2200/2250

Maintenance Ops Center - MOC – Ext 2261/2262/2264 (Juan)

e. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX

DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN

Avon Control Tower & Range Control Scheduling DSN 968-7176

Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number

(1) Range Operations Manager: (b) (6) , Bldg 236, (b) (6)

(2) Avon Range Control Tower: ext 176

(4) Flight Chief of Civ Engineer: (b) (6) Bldg 29, (b) (6)

(5) Chief, Environmental Flight: (b) (6) , Bldg 29, (b) (6) also Wildlife

Biologist (b) (6)

(6) Fuels: ext 118 or Cel (b) (6)

(7) Range Support Manager: (b) (6) Bldg 29, (b) (6)

(8) Range Control/Schedule: (b) (6) , Bldg 41, (b) (6)

**See Attached Avon Park Org directory for additional listings**

(8) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)

Range VHF: 126.15

f. **Sebring AP:** Mgr: (b) (6) (fuel needs)

BEEPER: 1 (863) 999-8622 ENTER YOUR PHONE# ENTER #

Asst Mgr: (b) (6)

g. **Other Quarters:**

Sebring FL: Chateau Elan Sebring Airport Inn (863) 655-6252

Inn on the Lakes (863) 471-9400

Avon Park: (JTR Lodging \$64/Meals \$28)

Chateau Elan Airport Inn \$64, (863) 655-6252

**Quality Inn (863) 385-4500, FAX: (863) 385-0250**

Jacaronda (863) 453-2211; 19 East Main St, Avon Park, FL \$ 27.29

Oak Tree Inn (863) 453-3165

Days Inn (863) 382-1148, 800 329-7466

h. **Youngstown ARS:** DSN: 346-XXXX; (330) 609-XXXX; 1 - 800 - 278 - 7046, + Ext

(1) 910 AW/CC: Ext 1243

(2) 910 AW Command Post: Ext 1315, FAX 1161

(3) 910 AW/PA: Ext 1236, FAX 1022

(4) 910 OG/CC: Ext 1257 / 1179

(5) 910 OG/OSA: Airfield Manager: (b) (6) ; Ext 1526

(6) 757 AS/DO: LTC (b) (6)

(7) 757 AS/DOO: Ops Admin, SMS (b) (6) , FAX 1657

(8) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) , FAX 1616

(9) 910 LG/CC: LTC (b) (6)

(10) 910 LG/LGM: Ext 1352

(11) Maintenance Control: Ext 1348

(12) 910 LG/LGMS: (b) (6)

(13) Omega/SATO Travel: Ext 1772; (800) 285-6342

(14) Cellular Spray Phones:



Entomologist (b) (6)

(b) (6) cell phone (b) (6)

Mission Cmdr: (b) (6)

Spray MX: (b) (6)

# AVON PARK AIR FORCE RANGE ORGANIZATIONAL DIRECTORY

## FIRE/EMERGENCY REPORTING - 117

(Building numbers are shown next to group name or listed in ( ) after specific offices. Last update – 22 Sep 03)

### COMMANDER (DET 1/CC) - Bldg 29

Commander (b) (6) (b) (6)

### RANGE OPERATIONS FLIGHT (RO) – Bldg 236

Range Operations Manager (b) (6) (b) (6)  
Admin Support (b) (6)  
Operations Supervisor /QAE (b) (6)  
Ground Operations (77) (b) (6)

Public Affairs/Radio Maint  
Training Monitor

### RANGE SUPPORT (RS) - Bldg 29

Range Support Manager (b) (6)  
Secretary/Admin Spt (b) (6)

### SUPPORT FLIGHT (RS)

Funds Manager (FM) (29) (b) (6)  
Computer Spt (RSC) (29) (b) (6)  
Telephone Syst (RST) (28) (b) (6)  
Supply Supervisor (RSS) (28) (b) (6)  
Fuels (RSS) (28) (b) (6)  
Supply (RSS) (28) (b) (6)  
Vehicle Maint Supvr (RSV) (28) (b) (6)  
Veh Maint Control (RSV) (28) (b) (6)

### OPERATIONS (AHNTECH) - Bldg 41

Site Manager  
Alternate Site Mgr/RCO (b) (6)  
Range Control/Scheduling (b) (6)  
Avon Control Tower (b) (6) )

Toss Maintenance (b) (6)  
Charlie Center Tower (Bldg 1059) (b) (6)  
Bravo Center Tower (Bldg 1052) (b) (6)

### CIVIL ENGINEERING (CEO) - Bldg 29

Flight Chief (CEO) (b) (6) (b) (6)  
Maintenance Controller (b) (6)  
Structural Maint. (CEOV) (b) (6)

Target Maint. (CEOX) (b) (6)  
Barrier Maint. (b) (6)  
Service Call Desk (b) (6)

### FAX NUMBERS

Range Support Manager/Administration (29)  
Environmental Flight (Natural Resources) (29)  
Outdoor Recreation Program.Fish & Wildlife (600)  
Transportation (28)  
Fire Department (43)  
Operations (236)  
Operations Officer (236)  
Ground Operations (236) (b) (6)  
Telephone Systems (28)  
Avon Tower (ANTECH) (41)  
Charlie/Bravo Range CT (1059/1052)

### RESOURCE PROTECTION (CEF) - Bldg 43

Fire Reporting/Emergency Dispatcher 117  
Fire Chief/Ground Safety (b) (6) (b) (6)  
Fire Operations (Bldg 43) (b) (6)

### ENVIRONMENTAL FLIGHT (CEV) - Bldg 29

Chief (b) (6) (b) (6)  
Secretary (b) (6) (b) (6)

### NATURAL RESOURCES (CEVN) - Bldg 29 (except as noted)

Archeology (Vacant) (b) (6)  
Endangered Species/ (b) (6) (Bldg 600) (b) (6)  
Fish and Wildlife Mgmt  
Forest Management (b) (6) (b) (6)  
Fire Mgmt/Operations (b) (6)  
GIS Lab (b) (6)  
Grazing (b) (6)

(b) (6)  
Outdoor Rec/Game Mgt (Bldg 600)  
Supervisory Wildlife Biologist (b) (6)  
Outdoor Rec Pgrm Mgr (b) (6)  
" " /Maintenance (b) (6)  
" " /Law Enforcement (b) (6)  
Plant Ecology/Natural Areas (b) (6)  
Environmental Engr. - NEPA (b) (6)  
Environmental Flight Warehouse (809)  
Outdoor Rec Range Status (recorded message)  
Public Area  
Military Area

Multi-Storage Bldg 445 (CEVN area)

### COMPLIANCE (CEVC) - Bldg 29

Environmental Coordinator (b) (6)  
Environmental Engineer (b) (6)  
Environmental Engineer (b) (6)  
Hazardous Waste (b) (6)

### RESTORATION (CEVR) - Bldg 29

Program Manager (b) (6)  
Environmental Protection Spec. (b) (6)

### FLORIDA ARMY NATIONAL GUARD

Range Control (Bldg 236) (b) (6)  
UTES (UTES Bldg) (b) (6) (b)  
Red Leg Maintenance (Bldg 800) (b) (6)

### OTHER UNITS ... MISC.

Main Gate Guard Shack  
APCI Operator  
Avon Park Youth Academy  
Deployed Unit Complex (DUC) (44)  
DUC (77)  
Warehouse - MacDill Supply (77)  
Union Representative (26)

All phone numbers are dialed 452-4XXX (XXX = the extension number). All "119" extension numbers also require an additional individual's extension number be dialed after the 119 number has answered.



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



14 December 2004

MEMORANDUM FOR 757 AS/DO

FROM: 757 AS/DOS

SUBJECT: Swath Characterization Test and Training Mission

**1. Purpose:** The purpose of this series of tests was to characterize the droplet spectrum for several TeeJet flat fan nozzles using the ULV fuselage configuration and a pyrethroid stimulant (BVA oil is the carrier for the product Anvil, thus, the application was essentially Anvil minus the active ingredient). Knowledge of the different droplet sizes produced from the fuselage booms when using different nozzle sizes confirms the functionality of this configuration and will help us choose the most appropriate nozzles when spraying a pyrethroid insecticide operationally. These tests were flown "into the wind" (e.g. zero cross-wind component if possible), which gives the minimum swath width and allows the entire droplet spectrum to be measured. The accepted convention states that droplets in the 10 – 25 micron size range are most effective at adhering to mosquitoes. TeeJet nozzles used by the Aerial Spray Flight produce droplets in a wide range. This work determined the range of droplet sizes as well as the median size for two nozzle types.

**2. Participants:** A list of test participants are included in attachment I.

**3. Spray Configuration:**

Mass-SP2G  
Aircraft Number: 99105  
Mission Identifier: QZNRKA288388

**4. Spray Parameters:**

Booms—Fuselage only.  
Nozzles—8005, 8001 TeeJet  
Number of Nozzles—4 per side (8005); 20 per side (8001), oriented straight down  
Airspeed—200 knots ground speed  
Altitude—150'  
Wind—Applied directly into the wind

**5. Itinerary:**

3 December: Personnel Arrive at Avon Park Air Force Range, FL. Total ferry time was 3.1 hours.

4 December: One testing sortie was flown for a total flight time of 1.4 hours. Nine spinning impingers ("spinners") were placed in an east-west orientation on Smith Road which is south of Bravo Range (Figure 1). Spinners stations were positioned in an array with each station separated 200 feet apart and spanning 800 feet left of the center station and 800 feet right of

the center spinner station. Each station was equipped with Teflon-coated microscope slides to document droplet size. The center station served as the flight line for the aircraft which flew into the wind at an altitude of 150 feet, perpendicular to the line of spinners, using 8005 size TeeJet nozzles. Two passes were made to increase the number of droplets collected. Spray-on time for the oil was 26 seconds, 15 seconds which was dispensed prior to the aircrafts' point of intersection with Smith Road. The purpose of the lead in spray-on time was to allow the MASS pressure and flow rate to equilibrate. Microscope slides were collected 15 minutes after the second pass. Ground wind conditions were 2.0 knots at 010° while winds were recorded at altitude as 8-9 knots at 010°. Flow rate was 4.5 gpm and 26 psi. Drops were counted and measured under compound microscopes. A target of 100 drops per slide or 200 drops per station were measured. Volume median diameter (VMD) was calculated using the method described by Yeomans (1949), and droplet density was determined by dividing the number of drops counted by the number of microscope fields viewed times the area of each field (=drops per centimeter squared), and finally divided by the number of spray passes.

5 December: One training sortie was flown/data collection continued from previous day's test.

6 December: One testing sortie was flown with 3 passes over target area. Test emulated the scenario described for 4 December (i.e., served as a replication) except that the sampling line was setup on Old Bravo Road in a north-south orientation. Microscope slides were collected 15 minutes after the third pass. Ground wind conditions were light and variable making the test difficult. A hand held anemometer showed 0-4.0 knots at 070-130° and winds were recorded at altitude as consistent with 11 knots at 120°. Flow rates were recorded and ranged from 4.4 to 6.4 gpm at 85 to 95 psi. Temperature was 78°F and relative humidity 59%. Total flight time was 1.2 hours.

7 December: One training sortie was flown and data was collected from previous day's test.

8 December: One testing sortie was flown with 3 passes over target area. Test parameters and set-up were identical to that on 4 December except that the 8-8005 nozzles were replaced by 40-8001 nozzles. Flight trajectory was from north to south, intercepting Smith Road at the center data station. Microscope slides were collected 15 minutes after conclusion of the third spray pass. Winds at altitude were 170-184° at 7-9 knots. System flow rates for both passes ranged from 4.3 to 4.4 gpm at 90 to 95 psi. Winds on the ground were steady and recorded as 180° at 2-6 knots. Temperature was 76°F and relative humidity 79%. Total flight time was 1.0 hours.

9 December: One training sortie was flown and data was collected from previous day's test.

10 December: Mission complete. Personnel return to Youngstown ARS. Total ferry time 3.2 hours.

**6. Results:** A total of 5,400 drops were measured during the data analysis portion of this mission. Two "into the wind" tests were completed using 8005 size nozzles along with a single test with 8001 nozzles. Volume median diameter (VMD) is defined as the diameter of the droplet that divides the entire spray spectrum in half by volume. In other words, it is the size droplet where 50% of the total volume of spray is in droplets larger

than the VMD and 50% in droplets with a diameter less than the VMD. This calculation allows the industry to discuss droplet size using a standard convention. Volume median diameter ranged from 3.73 - 62.16 microns for 8005 size nozzles, with an overall average of 23.32 microns. For the 8001 nozzles, VMD ranged from 5.59 - 40.11 microns, with an overall average of 18.42 microns. Figures 2 & 3 show VMD values obtained at each station for 8005 and 8001 nozzle droplet spectra along with associated droplet densities.

**7. Conclusions:** Inside a wind tunnel with controlled environmental parameters, the relative VMD values obtained at each station would be expected to emulate a normal distribution. Working outdoors with varying wind speeds and direction, we did not record such a perfect distribution during these tests. However, since mosquito sprays are carried out in the real world, our work reported here should be indicative of what actually takes place in an operational setting. The product label for Anvil states that applications will be made with equipment which produce a median diameter droplet of 50 microns or less and where fewer than 2% of the drops are larger than 100 microns. Both nozzle configurations tested here meet this condition.

Following the determinations made here, 8001 nozzles would be most suitable choice to deliver droplets in the appropriate size range for mosquito control. However, the smaller nozzles are prone to clogging. In the 08 December test, 3 of the 40 nozzles clogged almost immediately after spray commenced. While this did not appear to negatively affect the test, if additional nozzles clogged, decreased flow or excessive pressure could force an incomplete spray sortie. Another replication with the 8001 nozzles is needed and whether the nozzles clog again will be noted. Furthermore, an evaluation of the performance of 8003 nozzles is also needed, since this size may serve as a medium between the large drops produced by 8005 nozzles and the clogging prone 8001 nozzles. Such a test is planned at Avon Park during February 05'. The next spray mission is scheduled for 10-16 January 2005 at Avon Park. Downwind drift of droplets released from an altitude of 300' altitude will be measured, as part of the development of a profile for nighttime aerial spray sorties.

//Signed//

(b) (6)

Research Entomologist

, CAPT, USAFR

Attachments:

1. List of Participants, Figure 1
2. Figures 2 & 3



## 910 AW PARTICIPANTS

a. **Aircrew:**

- (1) Pilots: MAJ (b) (6), MAJ (b) (6)
- (2) Navigators: LTC (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: MSG (b) (6), SMS (b) (6), MSG (b) (6)

b. **Maintenance:**

- (1) Spray Maintenance: TSG (b) (6), TSG (b) (6), MSG (b) (6)
- (2) Avionics: TSG (b) (6)
- (3) Crew Chiefs: SSG (b) (6), SSG (b) (6)

c. **Entomologists:** Capt (b) (6), Capt (b) (6)



Figure 1. Looking west on Smith Road, Avon Park AF Range, Florida



## Attachment 2.

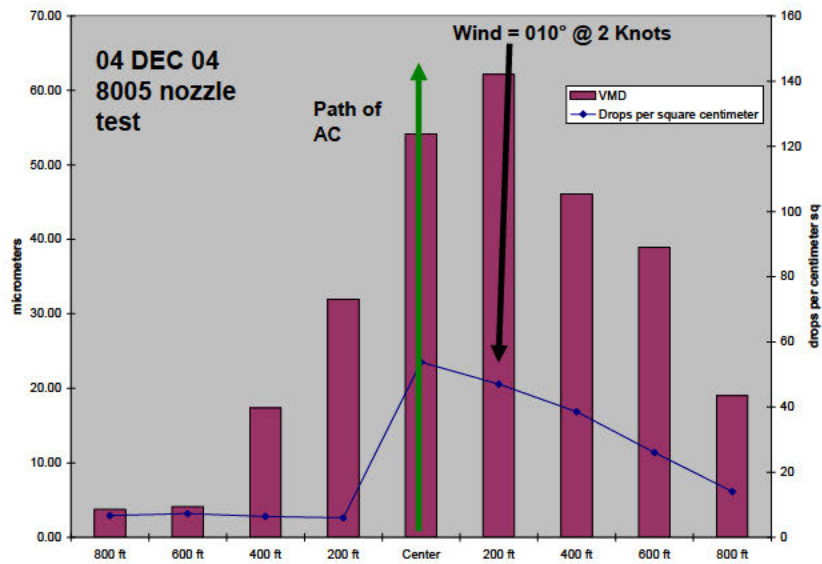


Figure 1. Results of spray test 4 Dec 04. Size 8005 nozzles.

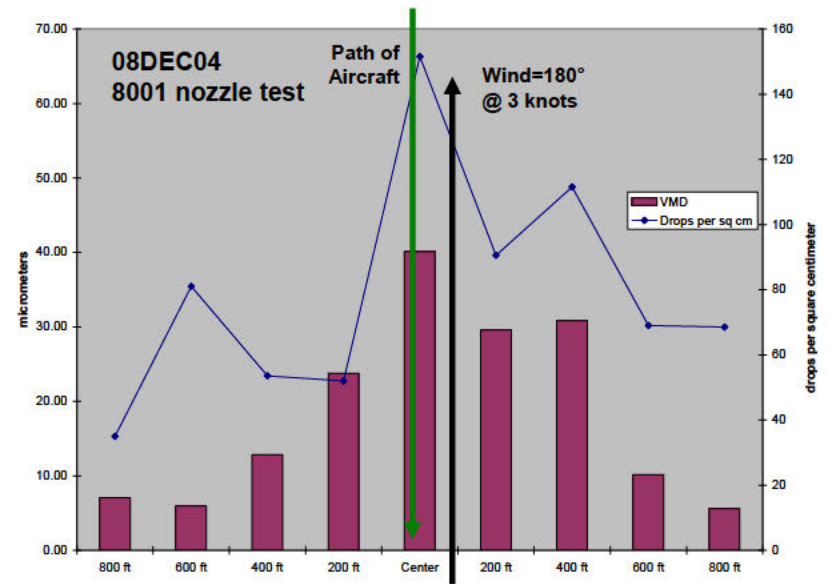


Figure 2. Results of spray test 8 Dec 04. Size 8001 nozzles.



**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
**3976 King Graves Rd Unit 26**  
**Vienna OH 44473-5926**



23 Nov 2004

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray Test and Training at Avon Park, FL

1. Purpose/Objectives/Benefits: Determine effective swath widths for various altitudes of fuselage spray and to provide continuous training for aerial spray air and ground crews.
2. Capability: Spray Aircraft Available 3-10 Dec 2004.
3. Concept of Operations:
  - 3 DEC (Friday): PPR # - Not Req  
0900: Show Time KYNG  
1100: Depart KYNG  
1400: Land KAGR
  - 4 DEC (Saturday): Range Times 0900-1200, call AGR Tower & Fire Dept  
0730: Show Time  
0730: Fuel  
0900: Depart  
1200: Land
  - 5 DEC (Sunday): Range Times 0900-1200, call AGR Tower & Fire Dept  
0730: Show Time  
0900: Depart  
1200: Land
  - 6 DEC (Monday): Range Times 0900-1200, call AGR Tower & Fire Dept  
0730: Show Time  
0900: Depart  
1200: Land
  - 7 DEC (Tuesday): Range Times 0900-1200, call AGR Tower & Fire Dept  
0730: Show Time  
0900: Depart  
1200: Land
  - 8 DEC (Wednesday): Range Times 0900-1200, call AGR Tower & Fire Dept  
0730: Show Time  
0900: Depart  
1200: Land

9 DEC (Thursday): Range Times 0900-1200, call AGR Tower & Fire Dept  
0730: Show Time  
0900: Depart  
1200: Land

10 DEC (Friday):  
0800: Show Time  
1000: Depart  
1300: Land KYNG

4. Spray Configuration:
  - a. MASS – SP2G
  - a. Aircraft Number: 89-9105
  - b. Mission Identifier: QZNRKA288388
5. Mission Protocols: Avon Park Spray Testing Itinerary  
3-10 Dec 04
  - a. Purpose: Characterization of droplet spectrum produced using fuselage ULV configuration with different nozzle types. We propose to characterize the following Tee Jet flat fan nozzles: 8008, 8005, 8003, and 8001.
  - b. Spray Parameters: (Please note that only the number and type of nozzle will change during this mission):
    1. Booms -- Fuselage only
    2. Nozzles – 8008 = 6 nozzles/3 per side; 8005 = 8 nozzles/4 per side; 8003 = 14 nozzles/7 per side; 8001 = 42 nozzles/21 per side
    3. Number of Nozzles – 8 nozzles 4 per side
    4. Airspeed -- 200 knots ground speed
    5. Altitude -- 100' above ground level
    6. Wind – Into the wind test
    7. Flow Rate – 4.5 gallons/minute
  - c. Protocols:
    1. Purpose: Determine droplet spectrum as delivered for a simulated mosquito adulticide spray using the fuselage ULV configuration. Teflon-coated microscope slides will be used to collect droplets. Eleven sampling stations will be setup along a stretch of road in the Avon Park Bombing Range. Depending on wind direction, the likely locations will be Smith Road (east-west) or Oliver Road (north-south). Other options are possible but will be determined on-site. Additionally, we need the average winds to be below 10 mph.
    2. Aircrew: We need the system to be stabilized prior to reaching the sampling points. This is an into the wind test. Turn the spray system on 20 seconds prior to the sampling point and until 10 seconds. **Spray Operators:** Record the spray-on time and pressure at 5 second intervals. **Navigator:** Record winds at altitude every ten seconds. If conditions are stable (little variation in wind direction and speed) two spray-on passes will be used for each test (e.g. nozzle

configuration).

3. Microscope slides will be retrieved 20 minutes after the plane has passed. Number and size of the droplets will be determined. Please depart the area or land so as to avoid contamination of the slides.
6. Aircraft Commander: Major (b) (6)
7. Support required at Avon Park Bombing Range is Range Manager at Avon Park.
8. If you have any questions concerning this mission please contact DSN (b) (6) .

//SIGNED//

(b) (6) , Maj, USAFR  
Aerial Spray Scheduler/Coordinator



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



3 NOV 2006

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray Test and Training at Avon Park, FL

1. Purpose/Objectives/Benefits: Perform flight test to verify the swath width generated at 500' AGL using dibrom on live mosquito traps supplied by the USDA. Secondary mission is to perform training and proficiency sorties for aircrew members as well as ground training for the aerial spray maintenance personnel.
- 2.
3. Capability: Spray Aircraft 90-9107 Available, 4-8 DEC 2006.
4. **Concept of Operations:**  
4 DEC (MONDAY):  
PPR # - Not Req since scheduled for range  
0900: Show Time KYNG  
1100: Depart KYNG  
1400: Land KAGR  
1500 FUEL (20K requested each day)  
  
5 DEC (TUESDAY): Range Times 0730-1130  
0600: Show Time  
0730: T/O KARG  
1130: Land KAGR  
1200 Fuel  
  
6 DEC (WEDNESDAY): Range Times 0730-1130  
0600: Show Time  
0730: T/O KARG  
1130: Land KAGR  
1200 Fuel  
  
7 DEC (THURSDAY): Range Times 0730-1130  
0600: Show Time  
0730: T/O KARG  
1130: Land KAGR  
1200 FUEL  
  
8 DEC (FRIDAY): Range Times 0730-1130  
0600: Show Time  
0730: Depart  
1130: Land  
1200 Fuel  
1300 Depart for YNG

1600 Land YNG

4. Spray Configuration:
  - a. MASS – SP2G
  - b. Aircraft Number: 90-9107
  - c. Mission Identifier: QZNRKA273331
5. Mission Protocols: Avon Park Spray Flight Training
6. Support required at Avon Park Bombing Range is thru the Range Manager.
7. If you have any questions concerning this mission please contact me at DSN (b) (6) .

//SIGNED//

(b) (6) , CPT, USAFR  
Assistant Chief of Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## AVON PARK, FL

### 4-8 DEC 06 CH 1

**PURPOSE/OBJECTIVE/BENEFIT:** Flight testing of 500' modified contour effective swath width. Test will be conducted with Dibrom. Testing will monitor drop activity via slide readings and effect on live mosquitoes in traps.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

1. Pilots: Maj (b) (6), Cpt (b) (6), 1LT (b) (6)
2. Navigators: Maj (b) (6)
3. Flight Engineers: Msgt(b) (6), Ssgt (b) (6)
4. Spray Operators: Cmsgt (b) (6), Msgt (b) (6), Msgt (b) (6)

##### b. Maintenance:

1. Spray Maintenance: (b) (6)
2. Avionics: None
3. Crew Chiefs: Tsgt (b) (6), Tsgt(b) (6)

##### c. Entomologist/Ground Support: Maj (b) (6), Capt (b) (6), LtCol (b) (6) (b) (6) Smsgt (b) (6)

#### 2. SCHEDULE: (All time Local) All times and sequence of events are subject to change depending upon the needs of the testing and training.

##### 4 DEC (MONDAY):

PPR # - Not Req since scheduled for range  
0900: Show Time KYNG  
1100: Depart KYNG  
1400: Land KAGR  
1500 FUEL (20K requested each day)

##### 5 DEC (TUESDAY): Range Times 0730-1130

0600: Show Time  
0730: T/O KARG  
1130: Land KAGR  
1200 Fuel

##### 6 DEC (WEDNESDAY): Range Times 0730-1130

0600: Show Time  
0730: T/O KARG  
1130: Land KAGR  
1200 Fuel

##### 7 DEC (THURSDAY): Range Times 0730-1130

0600: Show Time  
0730: T/O KARG  
1130: Land KAGR  
1200 FUEL

##### 8 DEC (FRIDAY): Range Times 0730-1130

0600: Show Time  
0730: Depart  
1130: Land  
1200 Fuel  
1300 Depart for YNG  
1600 Land YNG



**3. ITEMS TO TAKE:**

- a. **Navigator:** Maps with “No-Spray” Areas Marked

**4. AIR TO GROUND FREQUENCIES:**

- a. **Spray: Primary 392.2;** Secondary 340.8  
b. Interplane: Primary 123.45; Secondary 122.9  
c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2  
d. **Avon Park: TWR-292.2 (p), 126.15, 276.6 (s) Hrs 0700-2300 M-F, S-S per flying schedule DSN 968-7138**  
e. MacDill: TWR-123.7; GND-118.575; ATIS-133.825; CMD POST-311.0; PTD-372.2

**5. SPRAY CONFIGURATION:**

- a. MASS – SP2G  
b. **Aircraft Number: 99106**  
c. Nozzle Tips/Orientation: Twenty 8005 nozzles -- straight down  
d. Mission Identifier: QZNRKA274338

**6. MISSION PROTOCOLS:**

- a. **Altitude:** 500’ Modified flight effective swath characteristic testing/evaluation  
b. **Ground Speed:** 200 KNOTS  
c. **Pesticide:** Dibrom® Concentrate  
d. **Application Rate:** 1.0 oz/acre  
e. **Flow Rate:** 7.2 Gallons/Minute  
f. **Acreage:** Configuration for testing only.  
g. **Swath Width:** 2000 foot  
h. **\*\*\*See last page for details on mission protocols\*\*\***

**7. CONTACTS:**

- a. Quarters: (JTR Max Lodging rate \$92)  
-- **Quality Inn (863) 385-4500 FAX (863) 382-4793**  
-- Sebring/Avon Park: Inn on the Lakes, (863) 471-9400, Group Reservation:  
<http://www.innonthelakessebring.com> POC is (b) (6)  
-- Jacaronda (863) 453-2211; 19 East Main St, Avon Park, FL \$ 27.29  
-- Oak Tree Inn (863) 453-3165  
-- Days Inn (863) 382-1148, 800 329-7466
- b. Transportation:  
**Avon Park Enterprise POC Bianco (863) 452-5483; Fax (863) 452-5947**  
Sebring Enterprise POC Gina (863) 385-6969; Fax (863) 385-3416  
3 Van \$61.99; 2 Full size car \$40.99 (+ TAXES); Unlimited mileage  
(All vehicles will be at Avon Park Flight Ramp, keys will be with tower)  
(b) (6) , 3 Van  
(b) (6) , – 2 Full Size
- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350  
(1) Weather: MacDill AFB Forecaster (DSN 968-2854)  
(2) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)  
(3) MacDill AFB Ops Gp CC 968-3014
- d. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX  
DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN  
Avon Control Tower & Range Control Scheduling DSN 968-7176  
Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number

- (1) Range Operations Manager: (b) (6) , Bldg 236, (b) (6)
- (2) Avon Range Control Tower: ext 176
- (1) Flight Chief of Civ Engineer: (b) (6) , Bldg 29, (b) (6)
- (2) Chief, Environmental Flight: (b) (6) , Bldg 29, (b) (6) also Wildlife Biologist (b) (6)
- (3) Fuels: ext 118 or Cel (b) (6)
- (4) Range Support Manager: (b) (6) Bldg 29, (b) (6)
- (5) Range Control/Schedule: (b) (6) , Bldg 41, (b) (6)
- See Attached Avon Park Org directory for additional listings**
- (9) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)  
Range VHF: 126.15

f. **Sebring AP:** Mgr:(b) (6) (fuel needs)  
BEEPER: 1 (863) 999-8622 ENTER YOUR PHONE# ENTER #  
Asst Mgr: (b) (6) X-  
**Fuel is coordinated for 20k at 1200L every day except 1<sup>st</sup> day which is 1500**

g. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- 1. 910 AW/CC: Col (b) (6) , (b) (6)
- 2. 910 AW Command Post: Ext 1315; FAX 1161
- 3. 910 AW/PA: Capt (b) (6) ; FAX 1022
- 4. 910 OG/CC: Col (b) (6) / 1179
- 5. 910 OG: Airfield Manager, Ext 1186/1526
- 6. 757 AS/DO: Maj (b) (6)
- 7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- 8. 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
- 9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) ;(b) (6) FAX 1616
- 10. 910 LG/CC: Ext 1225
- 11. 910 LG/LGM: Ext 1352
- 12. Maintenance Control: Ext 1327
- 13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
- 14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
- 15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6)
  - Spray Maintenance: (b) (6)

## December 4-8 2006 Avon Park 500ft release with bioassays Mission Protocols

**Purpose:** To determine the effectiveness and swath characterization of a 500' release of adulticide (Dibrom) using a bioassay and droplet analysis. These tests will be a continuation of tests conducted in early 2006 at Avon Park, FL and continued in August at Langley AFB, to determine the proper methods for night spray operations at 500 feet.

### Proposed methods:

10 Sampling stations will be placed along a 5 mile transect. Sampling stations will be located approximately ½ mile apart. Each sampling station will be composed of a slide spinner mounted on a wood dowel pole, equipped with 2 teflon slides. In addition, each sampling station will be equipped with a mosquito cage containing 20 field collected adult mosquitoes.

Two trials will be conducted each consisting of a single pass application dispensed at a rate of 1.0 ounces per acre (based on a 2000 foot swath). This translates into a flow rate of 7.2 gallons per minute. The sampling transect will be positioned parallel to the prevailing wind and the flight path of the aircraft will be perpendicular to the transect. Depending on prevailing wind velocity, the flight path (offset) of the aircraft will be from 1000 to 2000 feet upwind of the first sampling station.

TeeJet nozzles (8005) will be used for both trials. In both tests, fluorescent dye will be added to the spray tanks (0.25% Uvitex OB) to facilitate droplet counting and sizing using UV microscopy. Spray will be turned on 30 seconds prior to coming abeam of the sampling line and will be turned off 30 seconds after coming abeam of the sampling line. Bioassay controls will be placed in a non-treated area for the duration of the test. 30 minutes after each application, cages and slides will be collected and returned to the laboratory. Caged mosquitoes will be transferred to clean holding containers furnished with sugar water. Mortality counts will be conducted at 2, 12, and 24 hour intervals. Spray droplets will be counted and sized with a UV microscope equipped with a reticle. 100 drops (if available) will be counted on each slide and the total area counted will be calculated.

### Materials/Resources required:

240 adult mosquitoes/trial. Total=480 mosquitoes

30 gallons Dibrom

Readily accessible, fairly open 5 mile long transects (N-S and E-W)

24 insect cages with hairclips

25 insect cups

10 spinners/20 teflon slides/10 wooden dowels

UV microscope

Mosquito aspirators (2)

5-10 collaborators

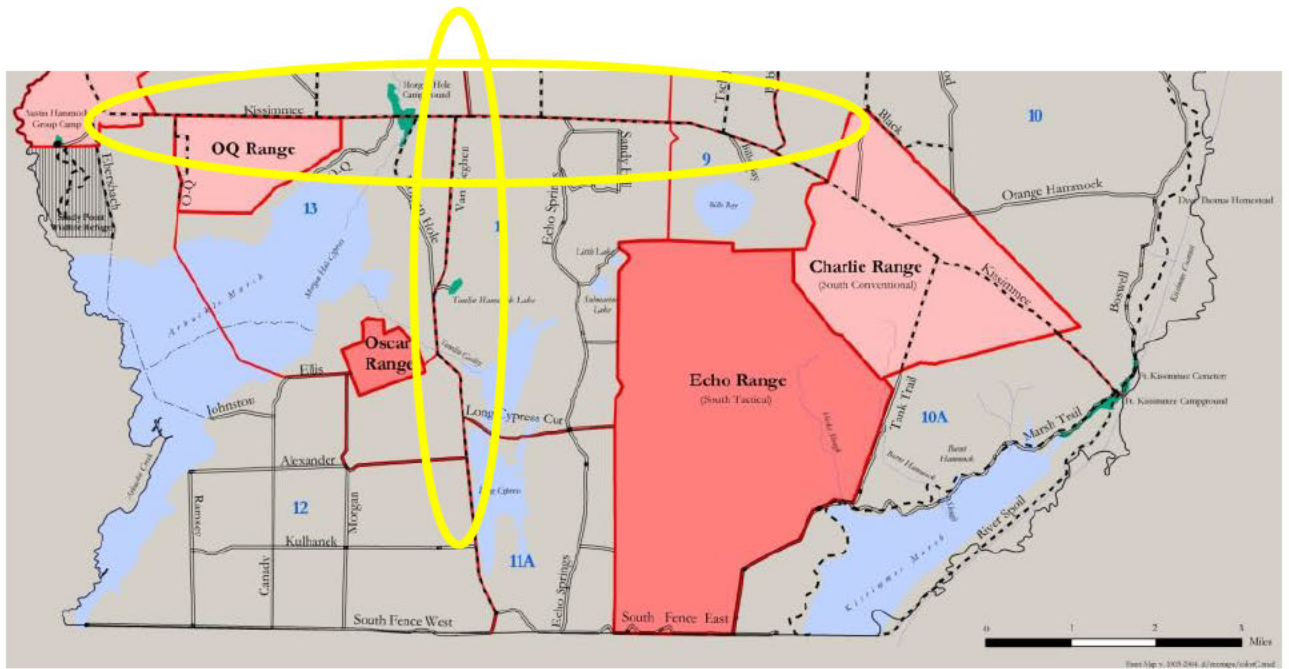
2-3 large ice chests

1 Signal Mirror

1 Spot Light

1 Engineer Wheel

Ground Maps



**TEST LOCATION:** Yellow ovals mark locations proposed for 500ft altitude sprays of Dibrom along Kissimmee Road and Van Eeghen Road on the south range. All traffic will be confined to established roads. Please note that sprays need to avoid the OQ range per our agreement with US Fish & Wildlife, in order to protect the Florida Grasshopper Sparrows.

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **AVON PARK, FL**

### **4-8 JAN 2010**

**PURPOSE/OBJECTIVE/BENEFIT:** Aerial Spray flight training for aircrews over Avon Park Bombing range. (Initial training for Capt (b) (6))

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

1. Pilots: Maj (b) (6) , Maj (b) (6) , Capt (b) (6)
2. Navigators: LtCol (b) (6)
3. Flight Engineers: MSgt (b) (6) , TSgt (b) (6)

##### **b. Spray Operators: MSgt (b) (6) , MSgt (b) (6) , SSgt (b) (6)**

##### **c. Maintenance:**

1. Spray Maintenance: TSgt (b) (6) , TSgt (b) (6)
2. Avionics: MSgt (b) (6)
3. Crew Chiefs: TSgt (b) (6) , SSgt (b) (6)

##### **d. Entomologist/Ground Support: None**

#### **2. SCHEDULE: (All time Local) All times and sequence of events are subject to change depending upon the needs of the training and range.**

##### **4 JAN (MON):**

1100: Show Time KYNG  
1300: Depart KYNG  
1600: Land KMCF (MCF PPR 004AB02)

##### **5 JAN (TUE): Range scheduled: 1130-1330**

0900: Show Time  
1100: Takeoff  
1400: Land

##### **6 JAN (WED): Range scheduled: 1130-1330**

0900: Show Time  
1100: Takeoff  
1400: Land

##### **7 JAN (THUR): Range Times 1130-1330**

0900: Show at aircraft  
1100: Takeoff  
1400: Land

##### **8 JAN (FRI): Range Times 1130-1330**

0900: Show  
1100: Takeoff KMCF  
1300: Land  
1400: Depart KMCF  
1700: Land KYNG

\*If using range time for training, otherwise departure TBD by MC/AC.

#### **3. ITEMS TO TAKE:**

- ##### **a. Navigator:**
- Maps with "No-Spray" Areas Marked  
Mission computer

**4. AIR TO GROUND FREQUENCIES:**

- a. **Spray: Primary ~~392.2~~; Secondary ~~340.8~~**
- b. **Interplane: Primary ~~123.45~~; Secondary ~~122.9~~**
- c. **Patrick: ~~TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2~~**
- d. **Avon Park: TWR-292.2 (p), 126.15, 276.6 (s) Hrs 0700-2300 M-F, S-S per flying schedule DSN 968-7138**
- e. **MacDill: TWR-123.7; GND-118.575; ATIS-133.825; CMD POST-311.0; PTD-372.2**

**5. SPRAY CONFIGURATION:**

- a. **MASS – SP2G**
- b. **Aircraft Number: 89-9105**
- c. **Nozzle Tips/Orientation: LV/HV 14 Raindrop nozzles oriented straight back**
- d. **Mission Identifier: QZNRKA468004**

**6. MISSION PROTOCOLS:**

- a. **Altitude:** 100 and 150 AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Chemical:** Water
- d. **Application Rate:** TBD based on spray operator training needs
- e. **Flow Rate:** TBD
- f. **Acreage:** Configuration for training only.
- g. **Swath Width:** TBD depending upon training profile each day

**7. CONTACTS:**

- a. **Quarters:** MacDill AFB Lodging DSN 968-4259 FAX 968-2660  
InterContinental Hotel \$120 per night  
4860 West Kennedy Blvd  
Tampa, FL 33609  
POC: (b) (6) , Senior Sales Manager  
(813) 286-4035
- b. **Transportation:**  
**3 Vans - \$75/day**  
Enterprise Rental MacDill AFB:  
(813) 840 2613 Attn: (b) (6)  
Van – (b) (6) (b) (6) (b) (6)
- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350
  - (1) Weather: MacDill AFB Forecaster (DSN 968-2854)
  - (2) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)
  - (3) MacDill AFB Ops Gp CC 968-3014
  - (4) MacDill AFB Fire Dept Call Dispatch, 968-3630 and ask for Assistant Chief on duty for water support; They will try to work out a Hydrant available; Only if needing additional support -Fire Dept, Chief (b) (6)

- d. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX  
DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN  
Avon Control Tower & Range Control Scheduling DSN 968-7176/7138  
Avon Airfield Manager: 968-2902  
Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number
- (1) Range Operations Manager: (b) (6) , Bldg 236,(b) (6)
  - (2) Avon Range Control Tower: (b) (6)
  - (1) Flight Chief of Civ Engineer: (b) (6) , Bldg 29, (b) (6)
  - (2) Chief, Environmental Flight: (b) (6) (b) (6) Bldg 29, ext (b) (6) also Wildlife Biologist (b) (6)
  - (3) Fuels: ext 118 or Cel (b) (6)
  - (4) Range Support Manager: (b) (6) Bldg 29, (b) (6)
  - (5) Range Control/Schedule: (b) (6) , Bldg 41, (b) (6)
- See Attached Avon Park Org directory for additional listings**
- (9) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)  
Range VHF: 126.15
- f. **Sebring AP:** Mgr: (b) (6) (b) (6) (fuel needs)  
BEEPER: 1 (863) 999-8622 ENTER YOUR PHONE# ENTER #  
Asst Mgr: (b) (6) , (b) (6) X-
- g. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext
- 1. 910 AW/CC: Col (b) (6) , (b) (6)
  - 2. 910 AW Command Post: Ext 1315; FAX 1161
  - 3. 910 AW/PA: Maj (b) (6)<sup>(b)</sup>, (b) (6) ; FAX 1022
  - 4. 910 OG/CC: LtCol (b) (6) (b) (6) (b) (6) (b) (6) / (b) (6)
  - 5. 910 OG: Airfield Manager, Ext 1186/1526
  - 6. 757 AS/DO: Maj (b) (6) (b) (6) (b) (6) (b) (6)
  - 7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
  - 8. 757 AS/DOO: Ops Admin: Ext 1239; FAX 1657
  - 9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) FAX 1616
  - 10. 910 LG/CC: Ext 1225
  - 11. 910 LG/LGM: Ext 1352
  - 12. Maintenance Control: Ext 1327
  - 13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6) , (b) (6)
  - 14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
  - 15. Cellular Spray Phones:
    - Mission Commander: (b) (6)





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 910<sup>TH</sup> AIRLIFT WING



28 Sep 2004

**MEMORANDUM FOR HQ AFRC/DOOM (FAX: 497-0198)**

**FROM:** 757 AS/DOS (346-1965/1412; FAX 346-1616)

**SUBJECT:** Capability and Concept of Operations for Aerial Spray Characterization at Langley AFB

1. **Purpose/Objectives/Benefits:** Characterize Ultra Low Volume (ULV) spray with fuselage configuration for control of mosquitoes operating at Langley AFB VA.

2. **Capability:** Spray Aircraft 89-9107 Available 4-8 Oct 2004.

3. **Concept of Operations:**

**4 Oct (Monday):**

**PPR: 1004PB02**

1000: Show at KYNG  
1200: Depart KYNG  
1315: Land KLFJ  
1400: In-brief with Langley Staff  
1500: Show Time / Weather Decision  
1530: Load Dibrom  
1630: Spray Sortie  
1843: Sunset  
1900: Land

**5 Oct (Tuesday):**

TBA: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1630: Spray Sortie  
1842: Sunset  
1900: Land

**6 Oct (Wednesday):**

TBA: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1630: Spray Sortie  
1840: Sunset  
1900: Land

**7 Oct (Thursday):**

TBA: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1630: Spray Sortie  
1839: Sunset

1900: Land

**8 Oct (Friday):**

1000: Show Time

1200: Depart Langley

1330: Land YNG

**4. Spray Parameters:**

- a. Booms -- Fuselage only.
- b. Nozzles -- 8008 TeeJet
- c. Number of Nozzles -- 4 on left side and 3 on right side ( 7 total) oriented straight down
- d. Airspeed -- 200 knots ground speed.
- e. Altitude -- 150' above ground level.
- f. Wind --Crosswind component.
- g. Flow Rate -- 3.6 gallons/minute
- j. Aircraft Tail Number: 89-9107; Mission Identifier: QZNRKA
- k. Deploy/Re-Deploy Time: 3.2 hrs
- l. Spray Time: 3.50 hrs (or as called by PMP)

**5. Aircraft/Mission Commander: LTC (b) (6)**

**6.** Support required at Langley AFB has been requested via FAX message.

**7.** If you have any questions concerning this mission please contact the Aerial Spray Office, DSN (b) (6) .

// SIGNED //

(b) (6) , Maj, USAFR  
AERIAL SPRAY CHIEF

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 4-8 Oct 2004

**Purpose/Objectives/Benefits:** Control nuisance and vector mosquitoes in order to improve working conditions and lower the incidence of arthropod borne illness for members operating at Langley AFB and surrounding communities. Characterize Ultra Low Volume (ULV) spray with fuselage configuration.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: LTC (b) (6)
- (2) Pilots: MAJ (b) (6), CPT (b) (6), CPT (b) (6)
- (3) Navigators: MAJ (b) (6), MAJ (b) (6)
- (4) Flight Engineers: MSG (b) (6),
- (5) Spray Operators: MSG (b) (6), TSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: SMS (b) (6), TSG (b) (6), TSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6) (b) (6) MSG (b) (6) (b) (6)
- (3) Com Nav: SSG (b) (6) (b) (6)

##### c. Certified Pest Management Professionals: MAJ (b) (6), CPT (b) (6) CPT (b) (6)

**Gov Vehicles: 2 ea 9 pax van, 1 staff, 1 pick-up truck provided by Langley AFB**

#### 2. SCHEDULE: (All times local)

##### 4 Oct (Monday):

**PPR: 1004PB02**

1000: Show at KYNG  
1200: Depart KYNG  
1315: Land KLF  
1400: In-brief with Langley Staff  
1500: Show Time / Weather Decision  
1530: Load Dibrom  
1630: Spray Sortie  
1843: Sunset  
1900: Land

##### 5 Oct (Tuesday):

TBA: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1630: Spray Sortie  
1842: Sunset  
1900: Land

##### 6 Oct (Wednesday):

TBA: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom

1630: Spray Sortie  
1840: Sunset  
1900: Land

**7 Oct (Thursday):**

TBA: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1630: Spray Sortie  
1839: Sunset  
1900: Land

**8 Oct (Friday):**

1000: Show Time  
1200: Depart Langley  
1330: Land YNG

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Kestrel Weather Monitor, Compass,  
Pest Safety Binder, UHF Radio,  
Satloc Ground Tracker and Laptop Computer
- b. **Navigator:** Maps/Map Bag, Validation Map, Laptop Computer
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Langley Tower:** DSN 574-5326
- b. **Langley Base Ops:** DSN 574-2504

**5. PARKING PLAN:** Taxi Way Foxtrot or as directed.

**6. RADIO FREQUENCIES:**

- a. **Felker AAF Tower (Ft Eustis): 126.3, 248.2, 241.0**
  - (1) Ops phone 878-3588
  - (2) Tower phone 878-3530
  - (3) Flight Service 122.2
- b. **Newport News-Williamsburg Int: CTAF – 118.7** (Operating Hours 1000Z-0200Z)
  - (1) Ground – **121.9** or 348.6 (phone 877-0221 ops)
  - (2) Tower – **124.9** or 280.1 (phone 877-2962)
  - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
- c. **Langley AFB: Tower SMSgt. (b) (6) (b) (6)**
  - (1) Tower - **125.0** or 253.5 (phone 4-5326)
  - (2) Ground - **121.7** or 275.8
  - (3) Clearance – **118.85** or 271.3
  - (4) Metro - **239.8**
- d. **Norfolk NAS (Chambers Fld): Tower – 125.7 or 124.3**
- e. **Spray Ground: Primary 392.2; Secondary: 308.6**

**7. IN-BRIEFING:** 1400 Base CE Building

**8. SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS ULV; Fuselage booms
- b. **Nozzle Tips/Orientation:** Eight (8) 8008's oriented straight down
- c. **Aircraft:** 89-9107
- d. **Mission Identifier:** QZNRKA045278

## 9. **SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.6 Gallons/Minute at Langley and Craney island areas
- f. **Acreage:** 125008 Ac peninsulas; 4904 Ac Craney Island
- g. **Swath Width:** 2,000 Feet

## 10. **PESTICIDE LOADING:**

- a. **How Much Pesticide:** see entomologist
- b. **Where:** Taxi Way F Aero Club Ramp
- c. **When:** 1430 hrs each day.
- d. **Furnished by Installation:**
  - (1) Pesticide
  - (2) Loading Equipment/Crew
  - (3) Hazardous Waste Disposal
  - (4) Two B-5 or B-1 Stands

## 11. **SPRAY TEST (Please note that this test will be accomplished concurrently or after peninsula is sprayed):**

### Mission Protocols:

- a. Purpose: Swath Characterization as delivered for a simulated mosquito adulticide spray using the fuselage ULV configuration. Glass slides will be used to collect droplets coupled with bioassays of live mosquitoes for efficacy testing. Ten sampling stations will be setup on Craney Island. Direction of sampling line will depend on wind direction; we will adjust our fly over (spray) point to be perpendicular to the prevailing wind. Additionally, we need the average winds to be below 10 mph.
- b. Navigator: We need the system to have stabilized prior to reaching the sampling points. Ten seconds prior to the sampling point and 10 seconds after should be sufficient (20 seconds total), please be advised that this value could change. Please record winds at altitude every ten seconds during the spray-on period. Spray Operators: Please record the MASS pressure at 5 second intervals and of course total spray-on time (when spray is on).
- c. Microscope slides will be retrieved 20 minutes after the plane has passed. If conditions allow, please give ground crew up to 40 minutes to set up for a second pass. Number and size of the droplets will be determined as well as mosquito mortality, the following day.
- d. If the of 8008 size nozzle test is completed, 8005s will be examined.

## 12. **CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**

- a. **LANGLEY AFB VA:**

Wing Commander: Col. (b) (6) DSN (b) (6)  
 Mission Support Group Commander: Col. (b) (6) DSN (b) (6)  
 Civil Engineer: Col. (b) (6) DSN (b) (6)  
 Deputy Chief/Civil Engineer: (b) (6)  
 Environmental Coordinator: (b) (6), DSN (b) (6); FAX 3503  
 Base Operations: SMSgt. (b) (6) DSN (b) (6)  
 Langley Control Tower: DSN 574-5326  
 Weather: Langley AFB, DSN 574-5907  
 Ft Eustis: DSN 297-5300/3343  
 Command Post: DSN 574-5411  
 Pest Control Foreman: (b) (6), DSN (b) (6)  
 Pest Control/Environmental NCOIC: SSgt (b) (6)  
 Public Affairs: Lt (b) (6) DSN (b) (6)  
 Fuels: DSN 574-4312/3623/4224  
 Motor Pool: 574-7505/5712 (2 vans and 2 staff vehicle were requested)  
 ACC PMP: (b) (6) DSN (b) (6) cell phone (b) (6)

**b. Billeting Office: (b) (6) COM: (757) 764-4667 EXT 2519**  
**DSN 574-4667, EXT 2519; FAX 574-3038**

- Holiday Inn Hampton-Pick up Non Available Slips at Langley Billeting
- Individual Confirmation numbers, see mission folder
- POC Tracy Pollard, COM 757-896-3344/3353 fax

c. **FT EUSTIS VA:** Environmental Coordinator: (b) (6), DSN (b) (6)

d. **Hampton Mosquito Control:** (b) (6), (b) (6), home; (b) (6), cell

e. **York County Control:** (b) (6) or (b) (6) (b) (6)

f. **Poquoson:** (b) (6)

g. **City of Portsmouth Biologist:** (b) (6)

h. **Newport News Mosq. Control** (b) (6)

i. **Newport News/Williamsburg Int.:**

- (1) Fixed Base Operator: Flight Int 877-6401
- (2) Flight Service: 877-0209
- (3) Tower: 877-2962
- (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

j. **Norfolk NAS VA:** DSN 564-2442/7598 or COM (757)-444-2442/7598

k. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Capt (b) (6); FAX 1022
- (4) 910 OG/CC: LtC (b) (6) / 1179
- (5) 910 OS/OSA: Airfield Manager, (b) (6)
- (6) 757 AS/DO: LtC (b) (6)
- (7) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (8) 757 AS/DOO: Ops Admin: SMS (b) (6); FAX 1657
- (9) 757 AS/DOS: Aerial Spray Office, Maj (b) (6); FAX 1616
- (10) 910 LG/CC: Ext 1225
- (11) 910 LG/LGM: CMS (b) (6)
- (12) Maintenance Control: Ext 1327
- (13) 910 LG/LGMS: Spray Maintenance, Ext 1132/1586
- (14) 910 LG/LGL: CMS (b) (6)
- (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342

- (16) Cellular Spray Phones:
- Mission Commander: (b) (6)
  - Entomologist: (b) (6)
  - Spray Maintenance: (b) (6)



# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT LANGLEY AFB, 4-8 OCT 2004

### 1. MISSION BASICS:

- a. Installation Sprayed: Langley AFB
- b. Mission Duration: 4-8 Oct 2004
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date(s) and time(s) (Local): 6 Oct (1605-1835); 7 Oct (1545-1800)
- e. Acres Treated: 6 Oct, 33,792; 7 Oct, 22,272 (Total = 56,064 acres)
- f. Project Coordinator/s (Name/Title, Phone #): (b) (6), (b) (6)
- g. Date Spray Map Last Approved: 4 Oct 2004
- h. Date of Waste Generation Letter: 4 April 1996
- i. Installation In-Briefing: 1 CE Conference Room, Langley AFB; Lt Col (b) (6) & Maj (b) (6)
- j. Mission identifier: QZNRKA045278

### 2. OPERATIONAL:

- a. Mission Commander: LTC (b) (6)
- b. Certified PMP/s (Category 11): MAJ (b) (6), Capt (b) (6), Capt (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander/Pilot: CAPT (b) (6)
  - (2) Co-Pilot(s): MAJ (b) (6), Capt (b) (6)
  - (3) Navigator: MAJ (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
  - (5) Spray Operators: MSG (b) (6), (b) (6)
- d. Safety Briefer: Capt (b) (6)
- e. Spray Maintenance/Pesticide Loaders: SMS (b) (6), TSG (b) (6), TSG (b) (6)
- f. Crew Chief(s): MSG (b) (6), MSG (b) (6)
- g. Avonics: SSG (b) (6)
- h. Flying Data:
  - (1) Spray Sorties/Hours: 2/4.8
  - (2) Ferry Sorties/Hours: 2/3.0

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 154 (6 Oct); 90 (7 Oct)
- e. Gallons Pesticide Applied: 132 (6 Oct); 87 (7 Oct)
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 18 gallons marvel oil
- h. Other Additives Used: n/a
- i. Application Rate: 0.5 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): C-130 (99108)
- b. Spray System (Modules Used) and System ID #: System SP2G - MASS ULV; Modules 1 and 2
- c. Spray System Configuration: ULV Wing Booms; Modules 1 and 2/MASS ULV
- d. Nozzle Type/Size: 8008 TeeJet<sup>®</sup> Flat Fan
- e. Nozzle Orientation & Number Used: 8 8008's oriented straight down
- f. Pressure: 20-33 psi
- g. Flow Rate: 3.6 gallons/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 ft on Langley Peninsula
- b. Spray Off Set: 2000 feet
- c. Spray Release Altitude: 150 feet AGL
- d. Ground Speed: 200 knots

**6. WEATHER OBSERVATIONS:**

- a. Winds (Speed/Direction): 8 mph/050 (6 Oct); 7 mph/050 (7 Oct)
- b. Temperature (Degrees Fahrenheit): 64°F (6 Oct); 68°F (7 Oct)
- c. Relative Humidity: 45%, 29 Sep; 46%, 7 Oct;
- d. Cloud Cover: sunny/Haze 6-7 Oct
- e. Source: Ground observations/aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Normal projected off-sets based on MASS system characterization
  - (2) Results: DGPS shows spray block completed.
- b. Effectiveness:
  - (1) Technique/s Used: carbon dioxide-baited traps were used to monitor mosquito densities pre- and post-treatment
  - (2) Results: Communities did not report numerical figures but reported that mosquito densities had dropped significantly.

**8. REMARKS:**

This was the last project spray of the season at Langley AFB. While this has been a record year in regard to the number of Hurricanes to hit the U.S. mainland the Tidewater region has not reported unusually high mosquito counts. In fact, some areas reported low numbers of mosquitoes and consequently were not sprayed during this mission. The east side of the peninsula still had high numbers of saltmarsh mosquitoes and these areas were sprayed along with "hotspots around the area. Continuing fuselage swath width characterization was done at Craney Island with excellent support from the Portsmouth Mosquito Control Staff. The communities of York Co. and Hampton City reported that mosquito counts were significantly depressed following the applications.

//Signed//

(b) (6) , CAPT, USAFR  
CERTIFIED PEST MANAGEMENT PROFESSIONAL

# AERIAL SPRAY OPERATIONAL SCHEDULE

## MACDILL AFB / AVON PARK, FL

### TRAINING AND TEST

### 3 - 7 DEC 2001

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander:
- (2) Pilots:
- (3) Navigators:
- (4) Flight Engineers:
- (5) Spray Operators:

##### b. Maintenance:

- (1) Spray Maintenance:
- (2) Crew Chiefs:
- (3) Avionics:
- (4) Comm Shop:

##### c. Certified Pest Management Professionals: LTC Brian Spears

##### d. Ground Support:

#### 2. SCHEDULE: (All time Local)

03 DEC (Monday): No range time.

**PPR # -**

0930: Show at KYNG

1100: Depart YNG

1400: Land MCF

04 DEC (Tuesday)

0900-1100: Range Time

0845: Depart MCF

1115: Land MCF

Call Tower and Fire Dept at AGR

General lands at 0900, range time begins after

Coordinated with CAPT(b) (6) / Sgt (b) (6) <sup>(b)</sup>

05 DEC (Wednesday):

0900-1200: Range Time

0845: Depart MCF

1200: Land MCF

06 DEC (Thursday):

1100-1300: Range Time

1045: Depart MCF

1315: Land MCF

07 DEC (Friday):

0900: Depart MCF

1200: Land YNG

#### 3. PURPOSE OF THIS MISSION. To determine spray pattern and drift in light crosswinds from different spray boom sections mounted on a C-130 aircraft

#### 4. ITEMS TO TAKE:

- a. **Navigator:** Maps with “No-Spray” Areas Marked and Laptop Computer
- b. **Certified Pest Management Professionals:**
- (1) 18 Packs of Water-Sensitive Cards
  - (2) 3 Boxes of Plastic Card Holders & Index Cards
  - (3) 2 Signal Mirrors
  - (4) 2 Spot Lights
  - (5) 1 Measuring Wheels
  - (6) Swath Kit Weather Station and Image Analyzer
  - (7) UHF Radio with Antenna and VHF Radio
  - (8) Ground Maps
  - (9) Laptop Computer
  - (10) Digital Camera
  - (11) SATLOC Trackstar Equipment

## 5. AIR TO GROUND FREQUENCIES:

- a. Spray: Primary 392.2; Secondary 340.8
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. Avon Park: TWR-292.2 (p), 126.15, 276.6 (s)
- e. MacDill: TWR-123.7; GND-121.65; ATIS-133.825; CMD POST-311.0; PTD-372.2

## 6. SPRAY CONFIGURATION:

- a. MASS – SP2G  
b. Aircraft Number: Mission Identifier:

## 7. SPRAY PARAMETERS:

- Nozzles – Raindrop oriented straight back.
- Number of Nozzles:
- Airspeed – 200 knots ground speed.
- Altitude – 100 feet above ground level
- Spray -- water only.

**8. LOADING AND MIXING:** Water only; 1000 gallons each day.

**9. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Unlimited.

## 10. CONTACTS:

- a. Quarters: **MacDill** Billeting: DSN: 968-4259, FAX 2660 (Gp 968-2617/2594)  
**Avon:** Quality Inn (863) 385-4500 (385-0250 FAX) \$64/night
- b. Transportation: **MacDill:** Enterprise, (813)-840-2613 / 8310 FAX ((b) (6))  
4 Vans (\$73 + \$2 state surcharge) and 1 Full size car (\$43 + \$2 state surcharge)  
Unlimited mileage. **Reservation # - 792-431**
- c. **MacDill AFB:** DSN prefix 968 Comm. (813)-828-xxxx  
Base Operations – Ext 2350
- d. **Patrick AFB:** Rescue Squadron: DSN prefix 854  
LTC ((b) (6)) – CC -((b) (6))  
LTC ((b) (6)) – DO – ((b) (6))  
LTC ((b) (6)) – Flight Ops – ((b) (6))  
CPT ((b) (6)) – Tactics – ((b) (6))  
Maintenance Ops Center - MOC – x2261, 2262, 2264 ((b) (6))

- e. **Avon Park, Fla.** Commercial prefix (941) 452-4XXX  
DSN 968-7+Avon Park Extension XXX)  
DSN Access from Avon Range phones: 4+94+DSN  
DSN 968-7176 or 7138 for Tower (b) (6) )  
Local phone calls from Avon Range:  
Sebring 82 + number  
Avon Park 81 + number
- (1) Installation Coordinator/Engineer: (b) (6) or (b) (6) ((b) (6) )  
FAX 189/218; (b) (6) ) after hours: (b) (6)
  - (2) Pest Control: (b) (6) )
  - (3) Forestry/Wildlife: (b) (6) (b) (6) or (b) (6)
  - (4) Weather: MacDill Forecaster (DSN 968-2854)
  - (5) Quarters:  
Jacaronda (941) 453-2211; 19 East Main St, Avon Park, FL 33825  
\$ 27.29 / night  
Inn On The Lakes (941) 471-9400  
**Quality Inn (863) 385-4500, FAX: (863) 385-0250**  
Econolodge (941) 453-2000  
Oak Tree Inn (941) 453-3165  
Days Inn (941) 382-1148, 800 329-7466
  - (6) Fuels: (b) (6) ((b) (6) ) or (b) (6) )
  - (7) Airfield Manager: (b) (6) )
  - (8) Asst Airfield Mgr: (b) (6) Fax (233)
  - (9) Range/Tower NCOIC: (b) (6) )
  - (10) Range Manager: (b) (6) )
  - (11) Range Coordination Center: (b) (6)
  - (12) Range Scheduling MacDill: DSN (b) (6) (Current Ops Scheduling)  
Sgt (b) (6) or Sgt (b) (6) FAX DSN 968-4098
  - (13) Fire Department: (Ext (b) (6)) (b) (6) (Chief)
  - (14) Prison Snack Bar: Hours 0800-1100; 1300-1600)
  - (15) Sebring AP:  
Mgr: (b) (6) (fuel needs)  
(1) BEEPER: 1 (941) 999-8622  
a) ENTER YOUR PHONE#  
b) ENTER #  
Asst Mgr: (b) (6) (b) (6)
  - (16) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)
  - (17) Range VHF: 126.15
  - (18) MacDill AFB Ops Gp CC COL(b) (6)
- f. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046, + Ext
- (1) 910 AW/CC: Ext 1243
  - (2) 910 AW Command Post: Ext 1315, FAX 1161
  - (3) 910 AW/PA: Ext 1236, FAX 1022
  - (4) 910 OG/CC: Ext 1257 / 1179
  - (5) 910 OG/OSA: Airfield Manager: (b) (6) ; Ext 1526
  - (6) 757 AS/DO: LTC (b) (6)
  - (7) 757 AS/DOO: Ops Admin, (b) (6) , FAX 1657
  - (8) 757 AS/DOS: Aerial Spray Office, (b) (6) , FAX 1616
  - (9) 910 LG/CC: (b) (6)
  - (10) 910 LG/LGM: CMS (b) (6)
  - (11) Maintenance Control: Ext 1348
  - (12) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586

- (13) 910 LG/LGL: CMS (b) (6)
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Cellular Spray Phones:
  - PMP: (b) (6)
  - Mission Cmdr:(b) (6)
  - Spray MX: (b) (6)

3 January 2001

**MEMORANDUM FOR 757 AS/DO**

**FROM: 757 AS/DOS (LtC (b) (6) )**

**SUBJECT: Avon Park High Volume Test Mission, 4-10 December 2000**

1. Purpose: Compare spray deposition from upwind wing, downwind wing, inboard wing, outboard wing, and fuselage booms of a C-130 aircraft configured for aerial spray. Five spray sorties totaling 11.5 hours and two ferry sorties totaling 6.1 hours were flown for the comparisons.
2. Traveler(s): The participants are listed in Attachment 1, the Avon Park Operational Schedule for 4-10 December 2000.
3. Itinerary: The itinerary is listed in the Avon Park Operational Schedule (Attachment 1).
4. Discussion:
  - a. Previous spray characterization tests were done without separating boom sections. Uneven patterns and gaps in crosswind spray deposition along with observations of spray falling from aircraft spray booms indicated that spray from different sections of our spray booms deposited in different areas downwind of the aircraft. Therefore, spray passes were flown with different sections of the booms turned on, and the deposition was collected on the ground using water sensitive cards.
  - b. Previous experience also indicated that spray volume from fuselage booms was more than from wing booms. All nozzle sites were open for each boom section, and 40 psi of pressure was used in all boom sections. High volume raindrop nozzles rated at 20 gallons per minute at 40 psi were used in order to determine maximum flow rate with each boom section.
5. Conclusions and Recommendations:
  - a. The use of the upwind wing boom for high volume deposition sprays does not provide for a wider swath width in a crosswind than using fuselage booms alone. The upwind wing booms could be used to provide more volume if more is needed than can be produced from the fuselage booms. All spray droplets from wing booms were pulled into the wingtip vortices whether the boom was inboard or outboard. The vortice lifts spray above the airplane and makes it more susceptible to wind drift. Spray from both the upwind inboard and upwind outboard booms began to deposit downwind in the same place as that from the fuselage booms (Table 1). The winds were 10 mph for the test conducted on 5 December 2000. In this case, part of the spray from the upwind wing booms deposited farther downwind than the downwind end of the spray



deposition from the fuselage booms, but the amount was not enough for good spray coverage in an actual spray project. Therefore, this would have been unwanted spray drift. Most of the spray deposited in the same place as that of the fuselage booms. In wind speeds of 5 mph and below, the spray from the upwind wing boom deposited in the same place as spray from the fuselage booms.

- b. Spray from downwind wing booms drifted downwind further before it began to deposit than spray from the fuselage booms or upwind wing booms. (Table 1). In a 10 mph crosswind there is no gap in spray deposition between the upwind and downwind booms. However, the deposition is lighter on the downwind side of the swath. In wind speeds of 5 mph and less, there is a decrease in deposition between that from the upwind wing boom and fuselage booms and that from the downwind wing boom. Figure 1 shows three water sensitive cards. The first shows the beginning of deposition from the upwind wing boom, 100 feet from the aircraft centerline. The second shows small droplets from the upwind wing boom 350 feet downwind from the aircraft centerline. The third shows small droplets from the upwind wing boom and large droplets from the most upwind deposition from the downwind wing boom 400 feet from the aircraft centerline.
- c. The furthest deposition from both upwind and downwind wing booms appeared to be similar in all wind speeds. However, more total spray appeared to be recovered from the downwind wing boom, the droplet density appeared to be higher, and the volume median diameter appeared to be larger, particularly the farther downwind the deposition. The crosswind blows spray from upwind wing booms towards prop wash winds and engine exhaust. Perhaps the prop wash drives spray from the upwind booms downward so that most of it deposits in the same area as that of the fuselage booms. Also, the heat from the engine exhaust could cause higher evaporation of the droplets, resulting in less spray recovered and smaller droplets than spray from the downwind wing booms blown away from prop wash and engine exhaust by the crosswind. Figure 2 shows spray from the upwind wing boom trailing nearly straight back from the airplane in a 5 mph crosswind while that from the downwind wing boom trails at an angle down wind.
- d. The effective swath width for each of the different boom sections was 300-350 feet with a 10 mph crosswind, and 150 feet with a 5 mph crosswind. With a crosswind of less than 1 mph, the effective swath for each of the different spray boom sections was less than 100 feet. The card spacing for this test was 50 feet, so it was difficult to determine effective swath for the lowest wind speed, but results from a previous test indicate that it is 60 to 75 feet.
- e. Flow rates for inboard and outboard sections of the wing boom averaged 125 gallons per minute per wing. The flow rate for the number of nozzles open should have been 440 gallons per minute. This indicates that the spray line through the wings is not large enough in diameter to carry the amount of liquid that could flow through the nozzle

openings. When both inboard and outboard booms were used at the same time, the flow rate was only increased to 135 gallons per minute. The nozzles would have supported 920 gallons per minute. With both wing booms open, the flow rate was 270 gallons per minute. The nozzles would have supported 1840 gallons per minute. Flow rate from the fuselage booms was over 500 gallons per minute. The nozzles on the fuselage booms should have supported 800 gallons per minute.

- f. We need to repeat the test using a drift retardant. The same test also needs to be done at 150 feet above ground level instead of 100 feet, in a head wind as opposed to a crosswind, and with wider fuselage booms.
- g. Plumbing and pump capacity may need to be upgraded to support high volume missions such as those for mosquito larviciding and oil spill dispersal. If changes are made for increased flow rates, tank capacity would need to be increased also.

(b) (6), Lt Col, USAFR  
Research Entomologist

#### Attachments

- 1. Operational Schedule
- 2. Table 1, Spray Deposit Comparison
- 3. Figure 1, Three Water Sensitive Cards
- 4. Figure 2, Spray From Up-Wind Wing Boom

Distribution via e-mail:

910 AW/CC, PA, LG, LGMS, OG/CC, DO/CC  
AFRC/DO/DOOM, XP, HO, PA

(Original copy of this report will be maintained by 757 AS/DOS)

**AERIAL SPRAY OPERATIONAL SCHEDULE  
MACDILL AFB / AVON PARK, FL  
TRAINING AND TEST  
4 - 10 DEC 2000**

**1. 910 AW PARTICIPANTS:**

**a. Aircrew:**

- (1) Mission Commander: LTC (b) (6)
- (2) Pilots:
  - (a) 4-7 Dec: LTC (b) (6)
  - (b) 4-10 Dec: MAJ (b) (6)
  - (c) 7-10 Dec: CAPT (b) (6)
- (3) Navigators: MAJ (b) (6) , MAJ (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators:
  - (a) 4-7 Dec: MSG (b) (6)
  - (b) 4-10 Dec: MSG (b) (6) , TSG (b) (6)

**b. Maintenance:**

- (1) Spray Maintenance: SMS (b) (6) , TSG (b) (6)  
TSG (b) (6)
- (2) Crew Chiefs: TSG (b) (6) , A1C (b) (6)
- (3) Avionics: MSG (b) (6)
- (4) Comm Shop: TSG (b) (6) , TSG (b) (6)  
TSG (b) (6) , SSG (b) (6)

**c. Certified Pest Management Professionals: LTC (b) (6)**

**d. Ground Support: SSG Rick McGill**

**2. SCHEDULE: (All time Local)**

04 DEC (Monday): No range time.

**PPR # - 339 JC 01**

0930: Show at KYNG

1100: Depart YNG

1400: Land MCF

05 DEC (Tuesday)

0900-1100: Range Time Call Tower and Fire Dept at AGR

0845: Depart MCF

General lands at 0900, range time begins after

1115: Land MCF

Coordinated with CAPT (b) (6) / Sgt (b) (6)

06 DEC (Wednesday):

0900-1200: Range Time

0845: Depart MCF

1200: Land MCF

07 DEC (Thursday):

1000: Depart MCF

Swap-out

1300: Land YNG

1700: Depart YNG

2000: Land MCF

08 DEC (Friday):

1100-1300: Range Time

1045: Depart MCF

1315: Land MCF

09 DEC (Saturday):

0900-1200: Range Time

0845: Depart MCF

1200: Land MCF

10 DEC (Sunday):

0900: Depart MCF

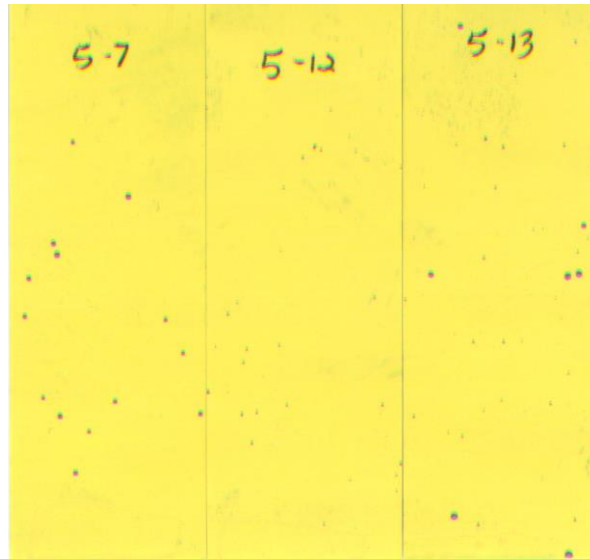
1200: Land YNG

3. **PURPOSE OF THIS MISSION.** To determine spray pattern and drift in light crosswinds from different spray boom sections mounted on a C-130 aircraft
4. **ITEMS TO TAKE:**
  - a. **Navigator:** Maps with "No-Spray" Areas Marked and Laptop Computer
  - b. **Certified Pest Management Professionals:**
    - (1) 18 Packs of Water-Sensitive Cards
    - (2) 3 Boxes of Plastic Card Holders & Index Cards
    - (3) 2 Signal Mirrors
    - (4) 2 Spot Lights
    - (5) 1 Measuring Wheels
    - (6) Swath Kit Weather Station and Image Analyzer
    - (7) UHF Radio with Antenna and VHF Radio
    - (8) Ground Maps
    - (9) Laptop Computers
    - (10) Digital Camera
    - (11) SATLOC Trackstar Equipment
5. **AIR TO GROUND FREQUENCIES:**
  - a. Spray: Primary 392.2; Secondary 340.8
  - b. Interplane: Primary 123.45; Secondary 122.9
  - c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
  - d. Avon Park: TWR-292.2 (p), 126.15, 276.6 (s)
  - e. MacDill: TWR-123.7; GND-121.65; ATIS-133.825; CMD POST-311.0; PTD-372.2
6. **SPRAY CONFIGURATION:**
  - a. MASS – SP2G
  - b. Aircraft Number: 09105
7. **SPRAY PARAMETERS:**
  - a. Nozzles – Raindrop oriented straight back.
  - b. Number of Nozzles; **December 5-6;** 25 on ULV boom on one wing 21 on LV boom on opposite wing; 20 on each fuselage boom. **December 8-9;** 46 on each wing boom; 20 on fuselage booms.
  - c. Ball valve configuration to isolate booms; adapter for high volume spray.
  - d. Airspeed – 200 knots ground speed.
  - e. Altitude – 100 feet above ground level
  - f. Spray -- water only.
8. **LOADING AND MIXING:** Water only; 1000 gallons each day.
9. **AMOUNT OF SPRAY MATERIAL AVAILABLE:** Unlimited.
10. **CONTACTS:**
  - a. Quarters: **MacDill** Billeting: DSN: 968-4259, FAX 2660 (Gp 968-2617/2594)  
**Avon:** Quality Inn (863) 385-4500 (385-0250 FAX) \$64/night
  - b. Transportation: **MacDill:** Enterprise, (813)-840-2613 / 8310 FAX (b) (6)  
4 Vans (\$73 + \$2 state surcharge) and 1 Full size car (\$43 + \$2 state surcharge)  
Unlimited mileage. **Reservation # - 792-431**
  - c. **MacDill AFB:** DSN prefix 968 Comm. (813)-828-xxxx  
Base Operations – Ext 2350
  - d. **Patrick AFB:** Rescue Squadron: DSN prefix 854, LtC (b) (6) – CC - (b) (6)  
LTC (b) (6) – DO – x(b) (6)  
LTC (b) (6) – Flight Ops – (b) (6)  
CPT (b) (6) – Tactics – (b) (6)  
Maintenance Ops Center - MOC – x2261, 2262, 2264 (b) (6)

- e. **Avon Park, Fla.** Commercial prefix (941) 452-4XXX  
DSN 968-7+Avon Park Extension XXX)  
DSN Access from Avon Range phones: 4+94+DSN  
DSN 968-7176 or 7138 for Tower ((b) (6) )  
Local phone calls from Avon Range:  
Sebring 82 + number; Avon Park 81 + number
- (1) Installation Coordinator/Engineer: ((b) (6) ) or ((b) (6) ) , ((b) (6) )  
FAX 189/218; ((b) (6) ) ((b) (6) ) after hours: ((b) (6) )
  - (2) Pest Control: ((b) (6) ) ((b) (6) )
  - (3) Forestry/Wildlife: ((b) (6) )
  - (4) Weather: MacDill Forecaster (DSN 968-2854)
  - (5) Quarters:  
**Quality Inn (863) 385-4500, FAX: (863) 385-0250**  
Econolodge (941) 453-2000  
Oak Tree Inn (941) 453-3165  
Days Inn (941) 382-1148, 800 329-7466
  - (6) Fuels: ((b) (6) ) ((b) (6) ) or ((b) (6) )
  - (7) Airfield Manager: ((b) (6) )
  - (8) Asst Airfield Mgr: ((b) (6) ) ); Fax (233)
  - (9) Range/Tower NCOIC: ((b) (6) )
  - (10) Range Manager: ((b) (6) )
  - (11) Range Coordination Center: (Ext 138/242)
  - (12) Range Scheduling MacDill: DSN **968-4641** (Current Ops Scheduling)  
Sgt ((b) (6) ) or Sgt ((b) (6) ) FAX DSN 968-4098
  - (13) Fire Department: ((b) (6) ) ((b) (6) )
  - (14) Prison Snack Bar: Hours 0800-1100; 1300-1600)
  - (15) Sebring AP:  
Mgr: ((b) (6) ) (fuel needs)  
(1) BEEPER: 1 (941) 999-8622  
a) ENTER YOUR PHONE#  
b) ENTER #  
Asst Mgr: ((b) (6) )
  - (16) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)
  - (17) Range VHF: 126.15
  - (18) MacDill AFB Ops Gp CC COL ((b) (6) ) ((b) (6) )
- f. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046, + Ext
- (1) 910 AW/CC: B GEN Michael Gjede, Ext 1243
  - (2) 910 AW Command Post: Ext 1315, FAX 1161
  - (3) 910 AW/PA: LT ((b) (6) ) , FAX 1022
  - (4) 910 OG/CC: COL ((b) (6) )
  - (5) 910 OG/OSA: Airfield Manager: ((b) (6) )
  - (6) 757 AS/DO: LTC ((b) (6) )
  - (7) 757 AS/DOO: Ops Admin: SMS ((b) (6) )
  - (8) 757 AS/DOS: Aerial Spray Office, ((b) (6) ) , FAX 1616
  - (9) 910 LG/CC: LTC ((b) (6) )
  - (10) 910 LG/LGM: CMS ((b) (6) )
  - (11) Maintenance Control: Ext 1348
  - (12) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
  - (13) 910 LG/LGL: CMS ((b) (6) )
  - (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
  - (15) Cellular Spray Phones: ((b) (6) )

**Table 1: Average width of spray swath downwind of aircraft centerline for different wind speeds.**

<b><u>Wind Speed</u></b>	<b><u>Upwind Wing</u></b>	<b><u>Downwind Wing</u></b>	<b><u>Fuselage</u></b>
10 MPH Crosswind	250 - 1500+	400 - 1500+	250 - 1300
5 MPH Crosswind	100 - 800	350 - 1050	100 - 700
1 MPH Crosswind	0 - 200	0 - 400	0 – 200



**Figure 1:** Comparison of spray deposition patterns from upwind and downwind wing booms on a C-130 aircraft configured for aerial spray. Card 5-7 shows upwind deposition 100 feet downwind of aircraft centerline. Card 5-12 shows upwind deposition 350 feet downwind of aircraft centerline. Card 5-13 shows small drops from the upwind boom and large drops from the downwind boom 400 feet downwind of the aircraft centerline.



**Figure 2:** Aerial spray from wing booms on a C-130 aircraft. The right wing is upwind and shows less spray movement downwind than spray from the left or downwind wing boom.



# **910 AW AERIAL SPRAY**

## **PMP'S POST-MISSION REPORT**

### **Grand Forks AFB, ND (5-6 July 2005)**

#### **1. MISSION BASICS:**

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 5-6 July 2005
- c. Purpose of Application: Control nuisance and vector mosquitoes (adult stage)
- d. Application Date: 5 July 2005
- e. Time of Application (Local): 1859- 2142
- f. Acres Treated: 25,600
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) , Environmental Officer,  
DSN (b) (6)
- h. Date Spray Map Last Approved: 27 June 2005
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): 27 June 2005; GF International Airport  
MAJ (b) (6) , CAPT (b) (6) , (b) (6)(b) (6) , (b) (6) .

#### **2. OPERATIONAL:**

- a. Mission Commander: MAJ (b) (6)
- b. Certified PMP/s (Category 11): CAPT (b) (6) , CAPT (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander: CAPT(b) (6)
  - (2) CoPilot: MAJ (b) (6)
  - (3) Navigator: MAJ (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
- d. Spray Operators: MSG (b) (6) , MSG (b) (6)
- e. Safety Briefer: CAPT (b) (6)
- f. Spray Maintenance: MSG (b) (6) fner, TSG (b) (6) , SSG (b) (6)
- g. Spray Ground Monitors: CAPT(b) (6)
- h. Crew Chiefs: TSG (b) (6)
- i. Avionics: TSG (b) (6)
- j. Flying Data:
  - (1) Spray Sorties/Hours: 2/3.4 (0.7 is a flush sortie on 6 July)
  - (2) Ferry Sorties/Hours: 2/6.2

#### **3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-548127
- c. Gallons Pesticide Loaded: 120 (5 July)
- d. Pesticide Applied: 120 (5 July)
- e. Other Additives Used: none
- f. Gallons and Name of Flush Used: 150 gallons water
- g. Application Rate: 0.60 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 909106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: TeeJet 8008
- e. Nozzle Orientation & Number Used: 8 straight down
- f. Pressure (PSI): 14-18
- g. Flow Rate: 4.4 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 feet
- b. Spray Off Set: 2000 feet
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 knots (338 feet/second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 150°/5 knots
  - (2) Altitude: 150°/7 knots
- b. Temperature: 76-71 °F
- c. Dew Point: 52-55 °F
- d. Cloud Cover: Clear
- e. Source: Ground/altitude observations

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Techniques and results:

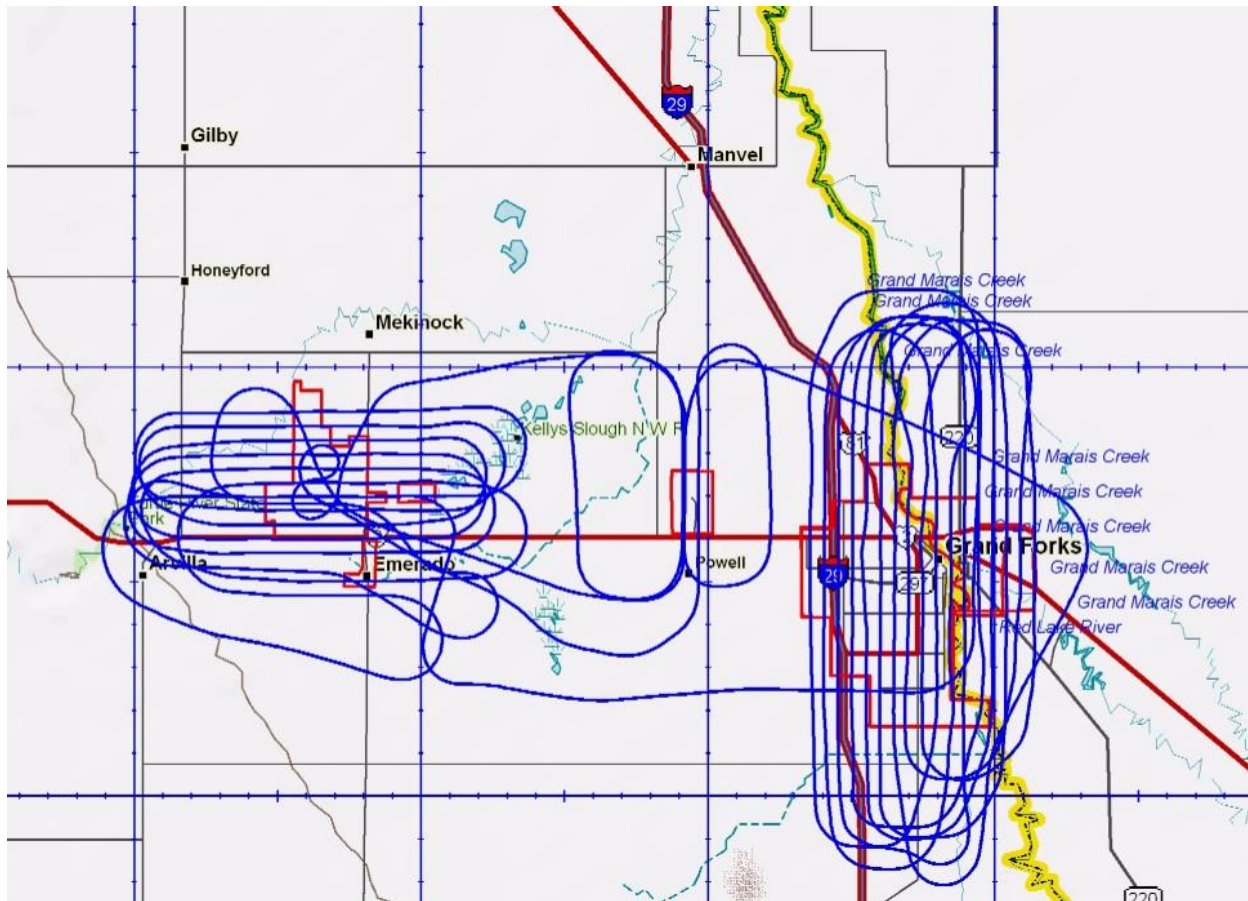
The City of Grand Forks (CGF) and the Air Force Base (GFAFB) conduct adult mosquito trapping. GFAFB public health reported trap counts 30, 330, 1125 mosquitoes respectively on the morning of 5 July in traps at locations on the base. Trap counts were not submitted for the day following the application. The CGF reported the following mosquito counts from a single trap: 4 July (159), 5 July (77), 6 Jul (43), 7 Jul (59).

**8. REMARKS:** This single evening spray follows a disappointing previous week of attempted sprays that were foiled first by a mechanical issue and then inclement spray weather. The 5 July application was executed as planned with the priority area of GFAFB covered first. Swaths were flown north-south over CGF because the setting sun, insects on the windshield, and GF international airport traffic combined to make an east-west application pattern potentially dangerous (Attachment 1). Efficacy reporting was less than desirable (see 7-a). (b) (6) from CGF reported that results within the City were much better than the single surveillance trap showed (see 7-a). We would like to see greater depressions of mosquito numbers, however, and propose to increase the application rate from the minimum label rate to near the mid-range rate. The next scheduled mission to Grand Forks AFB will be an adult mosquito control mission 1-5 August 2005.

//Signed//

(b) (6), CAPT, USAFR  
DoD Certified Pest Management Professional

**Attachment 1. Application of 0.60 oz trumpet over spray blocks at Grand Forks AFB, City of Grand Forks, ND, and East Grand Forks, MN and environs on 5 July 2005. Spray blocks are in red and the C-130 flight path is shown in blue.**





**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON-AERIAL SPRAY**  
**3976 King Graves Rd Unit 26**  
**Vienna OH 44473-5926**

29 APR 2008

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Parris Island MCRD

1. Objective/Purpose/Benefits of the Spray Mission. Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training Parris Island MCRD SC.

2. Capability: Spray Aircraft available on 5-8 MAY 08

3. Concept of Operations:

**5 May (Monday):**

1100: Show Time/Load system

1300: Take Off KYNG

1500: Land KNBC

1600: Safety Briefing

**6 May (Tuesday):** Adulticide/training sortie at Parris Island

1400 Installation Brief

1500: Showtime

1530: Load Chemical/Wx Decision

1800: Take off KNBC (Start Spray 1.5 hrs prior to Sunset)

1951: Sunset

**7 May (Wednesday)**

1500: Showtime

1530: Load Chemical/Wx Decision

1800: Take off KNBC (Start Spray 1.5 hrs prior to Sunset)

1951: Sunset

**8 May (Thursday) Redeploy to YNG**

1000: Show Time

1200: Take off KNBC

1400: Land KYNG

4. Spray Parameters:

a. Acreage: 7,500 Acres (Only areas determined by PMP)

b. Altitude: 150 Ft AGL

c. Pesticide: Dibrom® Concentrate;

d. Deploy: 2.0 Hrs

e. Re-Deploy: 2.0 Hrs

f. Spray Time: 32 Minutes

5. Aircraft Commander LTC (b) (6)

6. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator Mr. (b) (6), DSN (b) (6)

// SIGNED //

(b) (6), CAPT, USAFR  
Assistant Chief of Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## PARRIS ISLAND MCRD, SC

### 5-8 May 2008

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: LTC (b) (6) , CAPT (b) (6)
- (2) Navigator: LTC (b) (6) ,
- (3) Flight Engineer: Cmsgt(b) (6)
- (4) Spray Operators: Smsgt (b) (6) , MSgt (b) (6) , Tsgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: Msgt (b) (6) , Tsgt (b) (6) , Tsgt (b) (6) , SRA (b) (6)
- (2) Crew Chiefs: Tsgt (b) (6) , SRA (b) (6)
- (3) Avionics: Ssgt (b) (6)

##### c. Entomologist: Maj (b) (6)

#### 2. PPR REQUIREMENTS: 126-02

#### 3. PLANNED SEQUENCE OF EVENTS: (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

**5 May (Monday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

- 1100: Show Time/Load system
- 1300: Take Off KYNG
- 1400: Land KNBC
- 1430: Safety Briefing

**6 May (Tuesday):** Adulticide/training sortie at Parris Island Wx/backup

- 1400 Installation Brief---Brief CNX due to CC TDY
- 1500: Showtime
- 1530: Load Chemical/Wx Decision
- 1800: Take off KNBC (Start Spray 1.5 hrs prior to Sunset)
- 2008: Sunset

**7 May (Wednesday)**

- 1500: Showtime
- 1530: Load Chemical/Wx Decision
- 1800: Take off KNBC (Start Spray 1.5 hrs prior to Sunset)
- 2008: Sunset

**8 May (Thursday) Redeploy to YNG**

- 1000: Show Time
- 1200: Take off KNBC
- 1400: Land KYNG

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

- (1) Mission Commander Cell Phone

##### b. Entomologist/CPMP:

- (1) Wind Gauge & Compass
- (2) UHF/VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder

##### c. Navigators:

- (1) Maps
- (2) Templates



- d. **Spray Maintenance:**
  - (1) Spill Kit
  - (2) Safety Equipment
  - (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** 11 open for 8005's oriented straight down
- d. **Differential GPS:** Installed
- e. **Aircraft:** 90-9105
- f. **Mission Identifier:** QZNRKA253126

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 0.75 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 8 Minutes
- h. **Flow Rate:** 2.7 gallons/Minute

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading two drums of Dibrom

**8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

Beaufort Tower: 119.05 MCAS TWR  
 Beaufort Approach 123.7  
 Hilton Head Arpt: 118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)  
 Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 123.4 V**

**10. TRANSPORTATION:** Parris Island will provide vehicles for transportation to and from quarters and for messing. Vehicles will be at Base Operations.

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP &Parris Island MCRD Project Coordinator.

**12. CONTACTS:**

- a. **Parris Island MCRD SC: (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX**
  - (1) Environmental Coordinator (Spray Coordinator):  
Jim Clark, DSN 335-3102, Cel 843-321-6278; Robert Brodeur, 335-2611, Cel 843-321-6277  
FAX (843) 228-2616; Johnsie Nabors, 335-2630
  - (2) Assistant Chief of Staff I & L: COL (b) (6) , DSN (b) (6) <sup>(b)</sup>
  - (3) Pest Control: DSN (b) (6)
  - (4) P.I. Motor Pool: (b) (6) , DSN (b) (6)
  - (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
  - (6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; Anthony
  - (7) P.I. Rifle Range: DSN: 335-3183/3624
- b. **Beaufort MCAS SC:** (Commercial (843) 228-XXXX)
  - (1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6) , DSN (b) (6)
  - (2) Fuels: DSN: (b) (6)
  - (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
DSN: (b) (6)

Base Ops is ext 7301/2/3



- (4) Trans Alert/VAL: (After duty hours: (b) (6) , DSN: (b) (6)  
 DSN: 335-7110  
 (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)
- c. **Beaufort County Mosquito Control:** Elizabeth Hagar, 335-3913  
 d. **Naval Occupational Health/Preventive Medicine:** Lt (b) (6) , DSN: (b) (6)  
 e. **Quarters:**
- 16 Rooms Comfort Inn and Suites \$94.99/night (843) 379-9400**
- |                                 |   |
|---------------------------------|---|
| Ramada Inn                      | (843) 524-2144/Fax 1704                   |
| Hampton Inn                     | (843) 986-0600 (FAX 0494)                 |
| Sleep Inn                       | (843) 522-3361 FAX (843) 522-9929         |
| Parris Island Billeting         | DSN: 335-2744 (FAX: 3815); (843) 228-3960 |
| Comfort Inn                     | (843) 525-9366 (FAX 1529)                 |
| Best Western (Sea Island Motel) | (843) 524- 4121                           |
| Port Royal Days Inn             | (843) 524-1551                            |
| Best Western Pt South (I-95)    | (843) 726-8101                            |

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
 Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Capt (b) (6) , (b) (6) ; FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6) , (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - (b) (6) cell (b) (6)

**910 AW AERIAL SPRAY**  
**PMP'S POST-MISSION REPORT-PARRIS ISLAND MCRD**  
**5-8 May 2008**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island MCRD, South Carolina
- b. Mission Duration: 5-8 May 2008
- c. Purpose of Application: Control of biting midges and adult mosquitoes
- d. Application Dates: 6 May 2008
- e. Times of Application (Local): 1800-1930 Local
- f. Acres Treated: 6758
- g. Project Coordinator (Name, Phone #): (b) (6) (b) (6)
- h. Date Spray Map Last Approved: 06 May 2008
- i. Date of Waste Generation Letter: 10 April 2000.
- j. Installation In-Briefing: 06 May 2008; Maj (b) (6)
- k. Mission identifier: QZNRKA253126

**2. OPERATIONAL:**

- a. Mission Commander: LTC (b) (6)
- b. Certified PMPs (Category 11): MAJ (b) (6)
- c. Aircrew:
  - (1) Pilots: LTC (b) (6) , CPT (b) (6)
  - (2) Navigator(s): LTCOL (b) (6)
  - (3) Flight Engineer: CMS (b) (6)
  - (4) Spray Operators: SMS (b) (6) , SGT (b) (6) MSG (b) (6)
- d. Safety Briefer: Maj (b) (6)
- e. Spray Maintenance: TSG (b) (6) MSG (b) (6) , TSG (b) (6) , SRA (b) (6)
- f. Crew Chiefs: TSG (b) (6) , SRA (b) (6)
- g. Avionics: SSG (b) (6)
- h. Flying Data:
  - (1) Spray Sorties/Hours: 1/1.6 (6 May)
  - (2) Ferry Sorties/Hours: 2/2.1 (5 May), 2.0 (8 May)
  - (3) Training Sorties/Hours: 1/1.2 (7 May)

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 60
- e. Gallons Pesticide Applied: 37.0
- f. Gallons and Name Diluent Used: None
- g. Gallons and Name of Flush Used: 12 Gallons Marvel Oil
- h. Other Additives Used: n/a
- i. Application Rate: 0.70 oz/acre

#### **4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 90-9106
- b. Spray System (Modules Used) and System ID #: SP2G MASS ULV
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: TeeJet 8005 flat fan nozzles
- e. Nozzle Orientation & Number Used: 7 straight down; 4 left, 3 right
- f. Pressure (PSI): 40
- g. Flow Rate: approx 2.7 gpm

#### **5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000 feet
- b. Spray Off Set: 1000 feet
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 Knots (338 Feet/Second)

#### **6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed in knots): Ground; 121 @ 6.0 knots average; airplane 115 @ 10 knots average.
- b. Temperature (°F): Ground; 77° at 1800
- c. Humidity: Ground; 55% at 1800
- d. Cloud Cover: 30%
- e. Source: Ground observations/at altitude during spray

#### **7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Normal projected off-sets based on MASS system characterization.
- b. Effectiveness:
  - (1) Technique/s Used: light traps were used to monitor biting midge and mosquito densities pre- and post-treatment.
  - (2) Results: Post mission trap counts showed insignificant insect abundance as per Parris island Environmental staff.

#### **8. REMARKS**

**From a purely operational standpoint this mission was quite successful. Flying and application activities went smoothly. There was no loss of function in the MASS system, and actual rates (0.71 oz/acre) were very close to desired application rates (0.75 oz/acre), despite the difficulty of getting the system stabilized for such a low flow rate.**

**Though we have not received actual results yet, ground observers noticed a significant decrease in the number of midge bites received from pre to post application dates. Casual observers (golfers) also noticed a significant reduction in bites post-spray.**

**This mission did encounter several problems. First, we continued to have trouble with the new GPS system. No-spray areas did not display with the defined spray areas, making it difficult for the navigator to identify no spray/no fly areas. Also, upon successive “re-booting” of the system, other parts of the mission file disappeared from the display. While the reliability of the hardware seems quite good, the utility and reliability of the software seems questionable. The second problem encountered was a pesticide leak occurring during system calibration. Apparently, upon pressurization, the diaphragms on 2 nozzles failed, resulting in a small stream of Dibrom being discharged from both of these sites, which were located on the left fuselage boom.**

TSGT (b) (6) immediately shut down the system and took steps to control the leakage by applying absorbent material at both sites. TSGT (b) (6) was wearing full personal protective gear (PPG) at the time, including a full-face respirator, face shield, face protector, Tyvek suit, and pesticide-resistant gloves and shoes. However, while reaching up to contain the leak, several drops of Dibrom dripped down his glove into his Tyvek suit, contacting the skin on his forearm. TSGT (b) (6) immediately removed his PPG and thoroughly cleansed the affected area. From that time forward, TSGT (b) (6) was relieved from further chemical loading and calibration activities and placed under observation for any sign of observable pesticide exposure symptoms. TSGT (b) (6) claimed to feel fine, and did not exhibit any of the classic organophosphate (OP) poisoning symptoms such as sweating, nausea, or depressed motor activity. Although it is obvious TSGT (b) (6) received an insignificant dose, it would probably be prudent to have his cholinesterase levels checked against baseline, despite the fact that any OP adsorbed will have been enzymatically removed from his system at the time of bloodwork.

//signed//

(b) (6) , MAJ USAFR  
Certified Pest Management Professional

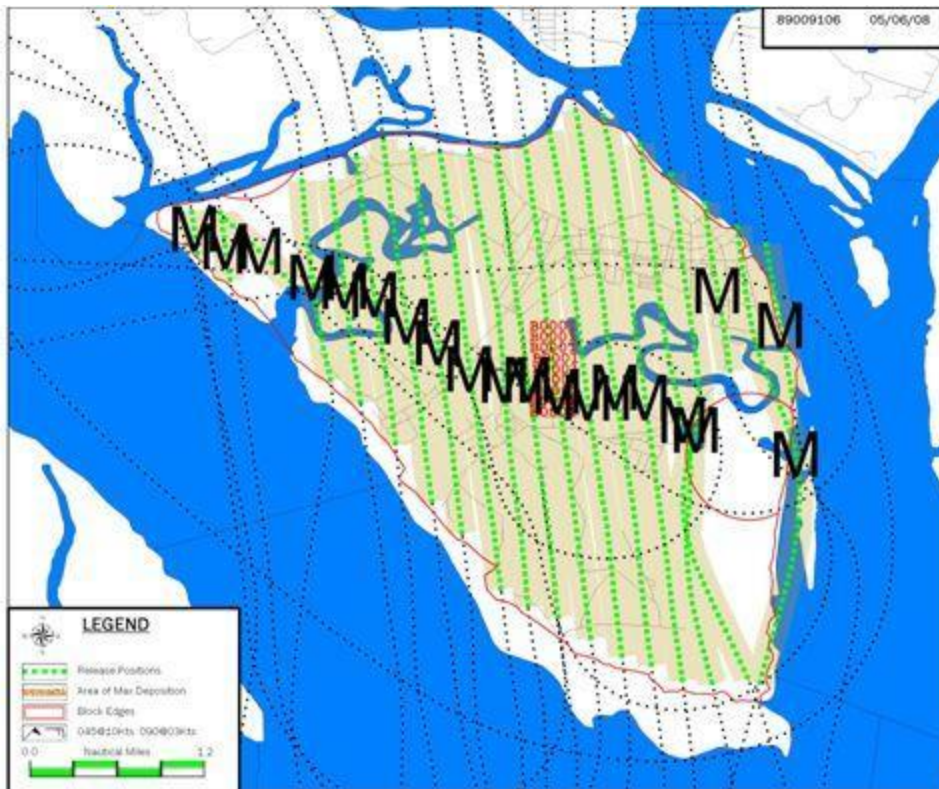


Figure 1. Map representation of area sprayed 6 May, 2008. Shaded areas represent application areas.

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT

### 1. MISSION BASICS:

- a. Installation Sprayed: Langley AFB, VA
- b. Mission Duration: 5-9 August 2001
- c. Purpose of Application: Control nuisance and vector mosquitoes
- d. Application Date/s: 6-9 August 2001
- e. Time/s of Application (Local): 1700-2010 (6 Aug); 818-2039 (7 Aug);  
1730-1940 (8 Aug); 1715-1915L (9 Aug)
- f. Acres Treated: 47,872 (6 Aug); 15,360 (7 Aug); 39,936 (8 Aug); 5,120 (9 Aug);  
108,288 acres total
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6), DSN (b) (6)
- h. Date Spray Map Last Approved: 6 Aug 2001
- i. Installation In-Briefing: (When/Where/Briefer/s): 6 Aug 2001; CE Conference Room, MAJ  
(b) (6) & MAJ (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: Maj (b) (6) (b) (6)
- b. Certified PMP/s (Category 11): Maj (b) (6) & 1Lt (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander: Maj (b) (6)
  - (2) CoPilot: Maj (b) (6)
  - (3) Navigator(s): LtC (b) (6), Capt (b) (6)
  - (4) Flight Engineer(s): SMS (b) (6), MSG (b) (6)
  - (5) Spray Operators: MSG (b) (6), MSG (b) (6), TSG (b) (6),  
TSG (b) (6) anken
- d. Safety Briefer: 1LT (b) (6)
- e. Spray Maintenance: MSG (b) (6), TSG (b) (6), TSG (b) (6)  
TSG (b) (6)
- f. Spray Ground Monitors: Maj (b) (6), 1LT (b) (6)
- g. Crew Chiefs: TSG (b) (6), TSG (b) (6)
- h. Avionics: : TSG (b) (6)

### 3. FLYING DATA:

- (1) Spray Sorties/Hours: 4/9.7
- (2) Ferry Sorties/Hours: 2/3.2

### 4. PESTICIDES:

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Gallons Pesticide Loaded: 423
- d. Gallons Pesticide Applied: 423
- e. Gallons and Name of Flush Used: VM & P NAPHTHA
- f. Application Rate: .50 oz/acre

**5. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 909108; Mission Identifier: QZNRKA809217
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8008 Flat Fan
- e. Nozzle Orientation & Number Used: 8008 7 straight down
- f. Pressure (PSI): 40-60 (6-9 Aug)
- g. Flow Rate: 3.6 GPM

**6. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000' ULV
- b. Spray Off Set: 2000' (6-7, 9 August); none (8 Aug)
- c. Spray Release Altitude: 150' ULV
- d. Ground Speed: 200 Knots (338 Feet/Second)

**7. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): SW-WSW (6-9 Aug)
  - 1) Ground: 4-6 knots (6 Aug); 2-6 knots (7-9 Aug)
  - 2) Release Altitude: 7-10 knots (6-7, 9 Aug); 5 Knots (8 Aug)
- b. Temperature (Degrees Fahrenheit): 88-97° (5-9 Aug)
- c. Cloud Cover: Partly Cloudy/Haze (6-9 Aug)
- d. Source: Ground observations and NAOA

**8. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Langley AFB Pest Management serves as the facilitator between local mosquito abatement districts by assimilating insect trap data gathered by these municipalities. Pre-treatment trap counts had exceeded the accepted nuisance levels for the peninsula, indicating a need for mosquito control.
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito traps; oil sensitive cards
  - (2) Results: All municipalities reported to Langley AFB that mosquito numbers were significantly reduced following the application.

- 9. REMARKS:** This is the first spray application at Langley AFB in 2001, unusually warm and dry weather conditions had reduced normal mosquito production negating the need for aerial spray earlier in the year. Warm temperatures did not appear to negatively affect the application as mosquito activity was depressed significantly following the spray. The Aerial Spray Group received excellent support from the Langley Pest Management Shop and Civil Engineer Squadron. The next application at Langley AFB, VA will be coordinated based on mosquito activity and 757 AS availability during the next two months.

(b) (6)

(b) (6) 1LT, USAFR  
CERTIFIED PEST MANAGEMENT PROFESSIONAL





**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
**3976 King Graves Rd Unit 26**  
**Vienna OH 44473-5926**



27 Feb 2007

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Avon Park, FL

1. Purpose/Objectives/Benefits: Warner Robbins C130 engineers want to review new Wingman DGPS mock up with a spray configured aircraft and deploy 910 AW maintenance specialists for Wingman evaluations. Aircrew training will commence at Avon Park.
2. Capability: Spray Aircraft Available, 5-9 March 2007
3. Concept of Operations:  
5 Mar (Monday)
  - 0700: Show Time KYNG
  - 0900: Depart KYNG
  - 1100: Land KWRB – WRB Engineers to review Wingman DGPS Evaluation.
  - 1620: Depart KWRB
  - 1800: Land KAGR  
6 Mar (Tuesday) Range Times 1130-1330
  - 1000: Show Time
  - 1130: Take off KAGR – Aircrew training
  - 1330: Land KAGR  
7 Mar (Wednesday) Range Times 1300-1500
  - 1130: Show Time
  - 1300: Take off KAGR – Aircrew training
  - 1500: Land KAGR  
8 Mar (Thursday) Range Time 1300-1500
  - 1130: Show Time
  - 1300: Take off KAGR – Aircrew training
  - 1500: Land KAGR  
9 Mar (Friday) Range Times 0900-1200
  - 0830: Show Time
  - 1000: Depart KAGR
  - 1300: Arrive KYNG
4. Spray Configuration:
  - a. MASS – SP2G
  - a. Aircraft Number: 90-9107
  - b. Mission Identifier: QZNRKA680064
5. Support required at Avon Park Bombing Range is thru the Range Manager.
6. If you have any questions concerning this mission please contact Maj (b) (6) at DSN (b) (6)

(b) (6) //SIGNED//  
MAJ, USAFR  
910 OSS Operations Officer



# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **AVON PARK, FL**

### **5-9 MAR 2007**

**PURPOSE/OBJECTIVE/BENEFIT:** Aircraft will deploy to Warner-Robbins for AFRC-ALC engineering to view aircraft SATLOC configuration and future Wingman configuration and determine equipment configuration essentials for aerial spray DGPS systems. Aircrew training will follow on to Avon Park for Copilot initial, navigator currency, and loadmaster qualification ULV, LV sorties. Mission commander/AC will determine the priority and training plan.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

1. Pilots: M/C-Maj (b) (6) , Maj (b) (6) , Maj (b) (6)
2. Navigators: LtCol (b) (6) , Maj (b) (6)
3. Flight Engineers: MSgt (b) (6)
4. Spray Operators: SMSgt (b) (6) , MSgt (b) (6) , MSgt (b) (6)

##### **b. Maintenance:**

1. Spray Maintenance: TSgt (b) (6) , MSgt (b) (6) , TSgt (b) (6) ,  
TSgt (b) (6)
2. Avionics: MSgt (b) (6)
3. Crew Chiefs: TSgt (b) (6) (b) (6) Sra (b) (6)

##### **c. Entomologists: None**

##### **d. Admin Support: None**

#### **2. SCHEDULE: (All time Local) All times and sequence of events are subject to change depending upon the needs of the testing and training.**

**SHAF-TAM 1:** Taxiway C closed. Use Taxiway A to main ramp in front of Tower. Construction and maintenance on end of Rwy 23, land and take off beyond the barrier. Tower will clear personnel when aircraft lands or take off. Rapid upload will commence using the fire hydrant next to the control tower, tower (Tom) authorized blocking the taxiway during upload.

**SHAF-TAM 2:** Golden Nights airdropping is de-conflicted with Tower. Their drop zone is the grassy field next to big hanger, runway side.

5 Mar (Monday)

0700: Show Time KYNG      **WRB PPR: LW05-01**  
0900: Depart KYNG  
1100: Land KWRB – WRB Engineers to review Wingman DGPS Evaluation.  
1620: Depart KWRB  
1800: Land KAGR

6 Mar (Tuesday) Range Times 1130-1330

1000: Show Time  
1130: Take off KAGR – Aircrew training  
1330: Land KAGR

7 Mar (Wednesday) Range Times 1300-1500

1130: Show Time  
1300: Take off KAGR – Aircrew training  
1500: Land KAGR

8 Mar (Thursday) Range Time 1300-1500  
1130: Show Time  
1300: Take off KAGR – Aircrew training  
1500: Land KAGR

9 Mar (Friday) Range Times 0900-1200  
0830: Show Time  
1000: Depart KAGR  
1300: Arrive KYNG

**3. ITEMS TO TAKE:**

- a. **Navigator:** Avon Park Range Maps

**4. AIR TO GROUND FREQUENCIES:**

- a. **Spray: Primary 392.2;** Secondary 340.8  
b. Interplane: Primary 123.45; Secondary 122.9  
c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2  
d. Avon Park: TWR-292.2 (p), 126.15, 276.6 (s) Hrs 0700-2300 M-F, S-S per flying schedule **DSN 968-7138**  
e. MacDill: TWR-123.7; GND-118.575; ATIS-133.825; CMD POST-311.0; PTD-372.2

**5. SPRAY CONFIGURATION:**

- a. MASS – SP2G  
b. Aircraft Number: 99107  
c. Mission Identifier: QZNRKA680064

**6. MISSION PROTOCOLS:**

- a. Mission Requirements: Wingman DGPS mock up for WRB-ALC and aircrew initial/currency, and continuing training.

**7. CONTACTS:**

- a. Quarters: (JTR Lodging/\$92)  
**\*Holiday Inn Express Sebring, (863) 386-1115, Fax (863) 386-4109**  
Quality Inn (863) 385-4500 FAX (863) 382-4793  
-- Sebring/Avon Park: Inn on the Lakes, (863) 471-9400  
<http://www.innonthelakessebring.com>  
-- Jacaronda (863) 453-2211; 19 East Main St, Avon Park, FL \$ 27.29  
-- Oak Tree Inn (863) 453-3165  
-- Days Inn (863) 382-1148, 800 329-7466
- b. Transportation:  
**Avon Park Enterprise POC (b) (6) (863) 452-5483; Fax (863) 452-5947**  
**'(b) (6) @erac.com'**  
**Vehicles Parked at Avon Park Tower**  
-(b) (6) SUV/Mini Van  
-(b) (6) SUV/Mini Van  
-(b) (6) SUV/Mini Van  
-(b) (6) Full Size  
  
Sebring Enterprise POC (b) (6) (863) 385-6969; Fax (863) 385-3416  
(All vehicles will be at Avon Park Flight Ramp, keys will be with tower)
- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350  
(1) Weather: MacDill AFB Forecaster DSN 968-2854  
(2) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)  
(3) MacDill AFB Ops Gp CC 968-3014  
(4) Range Manager, (b) (6) , DSN(b) (6)
- d. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX  
DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN

Avon Control Tower & Range Control Scheduling DSN 968-7176

Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number

- (1) Range Operations Manager: (b) (6) , Bldg 236, (b) (6)
  - (2) Avon Range Control Tower: ext 176
  - (3) Flight Chief of Civ Engineer: (b) (6) , Bldg 29, (b) (6)
  - (4) Chief, Environmental Flight: (b) (6) , Bldg 29, (b) (6) also Wildlife Biologist (b) (6)
  - (5) Fuels: (b) (6)
  - (6) Range Support Manager: (b) (6) , Bldg 29, (b) (6)
  - (7) Range Control/Schedule: (b) (6) , Bldg 41, (b) (6)
- See Attached Avon Park Org directory for additional listings**
- (8) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)  
Range VHF: 126.15

- f. **Sebring AP:** Mgr: (b) (6) ((b) (6)) (fuel needs)  
BEEPER: 1 (863) 999-8622 ENTER YOUR PHONE# ENTER #  
Asst Mgr: (b) (6) , (b) (6)  
**Fuel** 6 Mar 22K at 1000L  
8 Mar 28K at 1100L

- g. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046 +2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Capt (b) (6) , (b) (6) ; FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6)



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



29 September 2003

MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497 -0198)

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Parris Island  
MCRD SC for Control of Sandfly and Mosquitoes

1. Objective/Purpose/Benefits of the Spray Mission. Spray Parris Island MCRD SC for control of biting midges and mosquitoes. Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCDR SC at the request of the Parris Island MCRD/MCAS Environmental Coordinator.

2. Capability: Spray Aircraft Available on 5-9 October 2003

3. Concept of Operations:

a. 5 Oct 03 (Sunday):

1000 Show Time  
1200 Take Off KYNG  
1400 Land KNBC  
1430 Safety Briefing

b. 6 Oct 03 (Monday):

1400 Load Chemical  
1630 Take Off KNBC  
1900 Land KNBC

c. 7 Oct 03 (Tuesday):

1400 Load Chemical  
1645 Take Off KNBC  
1900 Land KNBC

d. 8 Oct 03 (Wednesday):

1400 Load Chemical  
1645 Take Off KNBC  
1900 Land KNBC

e. 9 Oct 03 (Thursday):

1200 Take Off KNBC  
1400 Land KYNG

4. Spray Parameters:

- a. Acreage: 7,500 Acres (Only areas determined by PMP)
- b. Altitude: 150 Ft AGL
- c. Pesticide: Dibrom® Concentrate (naled)
- d. Deploy: 1.6 Hrs
- e. Re-Deploy: 1.6 Hrs
- f. Spray Time: 16 Minutes per Sortie (or as called by PMP)

5. Aircraft Commander: LTC (b) (6)

6. Mission Commander: Major (b) (6)

7. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator (b) (6) , DSN (b) (6) .

8. HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616, ATTN: 757 AS/DOS.

(b) (6) , Major, USAFR  
Chief of Aerial Spray

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **PARRIS ISLAND MCRD, SC**

### **5-9 OCT 09**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Pilots: Maj (b) (6) , Maj (b) (6)
- (2) Navigators: Maj (b) (6)
- (3) Flight Engineers: CMSgt (b) (6)
- (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6) , MSgt (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , MSgt (b) (6)
- (2) Crew Chiefs: TSgt (b) (6) , SSgt (b) (6)
- (3) Avionics: TSgt (b) (6)

##### **c. Pest Management Professionals/Entomologist:** Maj (b) (6) , Maj (b) (6) (MC)

##### **d. Public Affairs:** Maj (b) (6) , TSgt (b) (6)

#### **2. PPR REQUIREMENTS: 278-01**

**3. PLANNED SEQUENCE OF EVENTS:** (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

##### **5 OCT (Monday): Deploy to KNBC**

0900: Show Time  
1100: Takeoff KYNG  
1300: Land KNBC  
1315: Safety Briefing

##### **6 OCT (Tuesday): Adulticide Spray**

TBD Installation Brief  
1600: Show Time/WX Decision  
1600: Load Chemical  
1730: Takeoff KNBC  
1901: Sunset

##### **7 OCT (Wednesday): WX Backup**

1600: Show Time/WX Decision  
1600: Load Chemical  
1730: Takeoff KNBC  
1859: Sunset

##### **8 OCT (Thursday): Adulticide Spray**

1600: Show Time/WX Decision  
1600: Load Chemical  
1730: Takeoff KNBC  
1858: Sunset

##### **9 OCT (Friday): Redeploy to KYNG**

1130: Show Time  
1330: Takeoff KNBC  
1530: Land KYNG

**4. ITEMS TO TAKE/NOTES:**

- a. **Mission Commander:**
  - (1) Mission Commander Cell Phone
  - (2) Blue Force Tracker
- b. **Entomologist/CPMP:**
  - (1) New and Improved Wind Gauge & Compass
  - (2) VHF Radios and Cellular Phone
  - (3) Pesticide Safety Binder
- c. **Navigators:**
  - (1) Maps
  - (2) Templates
- d. **Spray Maintenance:**
  - (1) Spill Kit
  - (2) Safety Equipment
  - (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** 15 open for 8003's oriented straight down
- d. **Differential GPS:** Installed
- e. **Aircraft:** 89-9106
- f. **Mission Identifier:** QZNRKA013278

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Duet -- Prallithrin (1%); Sumithrin (5%); Piperonyl Butoxide (5%)
  - Signal Word: Caution
  - Flushing Agent: BVA oil
- b. **Application:** 1.24 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 4.5 gallons/Minute

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading 2.5 drums of Duet

**8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
Hilton Head Arpt: 118.8 CTAF  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 123.45 Secondary 130.30**

**10. TRANSPORTATION:** Parris Island will provide two vans and staff car for transportation to and from quarters and for messing. (1 Van for MX, 1 Van for Aircrew E's, Staff Car for O's)

**11. SPRAY MONITORING/TESTING:** This is an evaluation test of Duet for control of mosquitoes and biting midges. Please see Entomologist for application parameters. There will be caged mosquitoes and droplet collection devices used. Ms. (b) (6) and Mr. (b) (6) of Clarke Mosquito Control will be participating.

**12. CONTACTS:**

- a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX



- (1) Environmental Coordinator (Spray Coordinator):  
(b) (6) DSN (b) (6) ; (b) (6)  
FAX (843) 228-2616; (b) (6)
  - (2) Assistant Chief of Staff I & L: Col (b) (6) , DSN (b) (6)
  - (3) Pest Control Foreman: DSN (b) (6)
  - (4) P.I. Motor Pool: (b) (6) , DSN (b) (6)
  - (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
  - (6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)
  - (7) P.I. Rifle Range: DSN: 335-3183/3624
- b. **Beaufort MCAS SC:** (Commercial (843) 228-XXXX)
- (1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6) ; (b) (6) , DSN (b) (6)
  - (2) Fuels: DSN: 335-7049/7448/7168
  - (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6) (Ops Officer) Airfield manager (b) (6)  
DSN: (b) (6) . Base Ops is ext 7301/2/3  
(Airfield Manager is (b) (6) , DSN: (b) (6) ) approves after hrs requests
  - (4) Trans Alert/VAL: DSN: 335-7110
  - (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)
- c. **Beaufort County Mosquito Control:** (b) (6)
- d. **Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) DSN: (b) (6)
- e. **Quarters:**

**Holiday Inn and Suites, 17 Rooms Holiday Inn and Suites**

**\$94/night (843) 379-3100 FAX (843) 379-3101 contact Phillip Carroway**

Ramada Inn	(843) 524-2144/Fax 1704
Hampton Inn	(843) 986-0600 (FAX 0494)
Sleep Inn	(843) 522-3361 FAX (843) 522-9929
Parris Island Billeting	DSN: 335-2744 (FAX: 3815); (843) 228-3960
Comfort Inn	(843) 525-9366 (FAX 1529)
Best Western (Sea Island Motel)	(843) 524- 4121
Port Royal Days Inn	(843) 524-1551
Best Western Pt South (I-95)	(843) 726-8101

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1-800-278-7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Maj (b) (6) (b) (6) ; FAX 1022
4. 910 OG/CC: LTC (b) (6)
5. 910 OG: Airfield Manager, (b) (6)
6. 757 AS/DO: Maj (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**PARRIS ISLAND MCRD, SC 5-9 Oct 2009**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 5-9 October 2009
- c. Purpose of Application: Biting midge control
- d. Application Date: 6 October 2009
- e. Time/s of Application (Local): 1730-1930
- f. Acres Treated: 6,013
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6)  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 6 October 2009
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 6 Oct; Assistant Chief of Staff,  
Installations and Logistics, COL (b) (6) briefed by Maj (b) (6) /Maj (b) (6)
- k. Mission Identifier: QZNRKA013278

**2. OPERATIONAL:**

- a. Mission Commander: Maj (b) (6)
- b. Aircrew:
  - (1) Pilots: Maj (b) (6) , Maj (b) (6)
  - (2) Navigators: Maj (b) (6)
  - (3) Flight Engineers: CMSgt (b) (6)
  - (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6) , MSgt (b) (6)
- c. Maintenance:
  - (1) Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , MSgt (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6) , SSgt (b) (6)
  - (3) Avionics: TSgt (b) (6)
- d. Entomologists: Maj (b) (6) , Maj (b) (6)
- e. Public Affairs: Maj (b) (6) TSgt (b) (6)
- f. Flying Data:
  - (1) Spray Sorties/Hours: 2.0
  - (2) Ferry Sorties/Hours: 2/4.2

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Duet®
- b. EPA Registration Number: 1021-1795-8329
- c. Formulation Sprayed: Prallithrin (1%); Sumithrin (5%); Piperonyl Butoxide (5%)
- d. Gallons Pesticide Loaded: 70 gal
- e. Gallons Pesticide Applied: 58 gal
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 10 gal/BVA oil
- h. Other Additives Used: None
- i. Application Rate: 1.24 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 16 oriented straight down
- f. Pressure: 35 p.s.i.
- g. Flow Rate: 4.5 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 270-330°/3-0 Knots
  - (2) Release Altitude: 300° /5-3 Knots
- b. Temperature (Degrees Fahrenheit): 75° F
- c. Relative Humidity: 76-87%
- d. Cloud Cover: Partly Cloudy
- e. Source: Ground observations at the MCRD Rifle Range/Aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: glass microscope slides; caged mosquitoes
  - (2) Results: coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito and midge numbers were determined prior to and after spraying using CO<sub>2</sub>-baited traps, landing counts, and caged mosquitoes.
  - (2) Results: Inconclusive based on poor sites (golf course & village housing) was 90% two days following application, marked improvement was reported by other personnel on the Depot.

**8. REMARKS:** A relatively new public health pesticide for mosquito control (Duet) was analyzed for its effect on biting midges. This insecticide boasts a low mammalian toxicity and contains an insect irritant that, in theory, will excite biting flies to take to the wing where contact with the active ingredient component is more likely. Considerable effort was input into this trial from the Marine Corps, Air Force, and the Manufacturer in regard to pre- and post-analysis of the spray. Mosquitoes and midge numbers were closely monitored and identified to species. Unfortunately, environmental conditions were extremely poor during the application. Wind speed was initially good but dropped to zero within 10 minutes of beginning the application. While there were reasonable mosquito mortalities in the exposed cages, trap collections and landing rates of biting midges showed little to no effect. It is important that this pesticide receive a thorough and fair examination, thus, one or two applications will be repeated in the spring.

//signed//

(b) (6) , MAJ, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

**31 July 2001**

**MEMORANDUM FOR HQ AFRC/DOOM** (FAX: 497-0198)

**FROM:** 757 AS/DOS (346-1111/1531; FAX 346-1616)

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Langley AFB

1. **Purpose/Objectives/Benefits:** Control nuisance and vector mosquitoes in order to improve working conditions for members operating at Langley AFB VA.
2. **Capability:** Spray Aircraft Available 5-10 August 2001.
3. **Concept of Operations:**
  - a. **5 Aug (Sunday):**
    - 1030 Show at KYNG
    - 1330 Take-Off KYNG
    - 1500 Land KLFI
    - 1515 Safety Brief
  - b. **6 Aug (Monday)**
    - 1000 Briefing with the Craney Island personnel
    - 1100 Briefing with Langley AFB, CE Conference Room
    - 1400 Show Time/Weather Decision
    - 1430 Load Chemical
    - 1700 Take-Off KLFI, Spray Areas Designated by PMP
    - 2000 Land KLFI
  - c. **7 Aug (Tuesday):**
    - 1400 Show Time/Weather Decision
    - 1430 Load Chemical
    - 1700 Take-Off KLFI, Spray Areas Designated by PMP
    - 2001 Land KLFI
  - d. **8 Aug (Wednesday):**
    - 1400 Show Time/Weather Decision
    - 1430 Load Dibrom
    - 1700 Depart KLFI, Spray Areas Designated by PMP
    - 2000 Land KLFI
  - e. **9 Aug (Thursday):**
    - 1400 Show Time/Weather Decision
    - 1430 Load Chemical
    - 1700 Take-Off KLFI, Spray Areas Designated by PMP
    - 1915 Enhanced Flush & Purge
    - 2000 Land KLFI

- f. **10 Aug (Friday):**  
0830: Report  
0900: Out-Briefing  
1000: Depart KLFI  
1130: Land KYNG

**4. Spray Parameters:**

- a. Acreage: approximately 114,000 Acres
- b. Altitude: 150 Ft AGL
- c. Ground Speed: 200 Knots
- d. Pesticide: Dibrom<sup>®</sup> Concentrate
- e. Application Rate: 0.5 Ounce per Acre
- f. Flow Rate: 1.8 Gal per Minute at Craney Island; 4.5 Gallons per Minute for 2500' swaths and 3.6 Gallons per Minute for 2000' swaths on the Peninsula
- g. Swath Width: 1000' swaths at Craney Island; 2000' to 2500' swaths at Langley AFB designated spray areas
- h. System: SP2G – MASS ULV; Modules 1 and 2
- i. Nozzle Tips/Number/Orientation: 8008/8 oriented straight down for 2500' swaths; 8008/7 oriented straight down for 2000' swaths; 8008/5 oriented straight down for 1000' swaths; if temperatures are above 85 degrees use 8010/6 for 2500' swaths and 2 – 3 for 1000' swaths all oriented straight down.
- j. Aircraft Tail Number: 99106
- k. Deploy/Re-Deploy Time: 3.2 hrs
- l. Spray Time: 3.50 hrs (or as called by PMP)

**5. Mission Commander:** Major (b) (6)

6. Support required at Langley AFB has been requested via FAX message.

7. If you have any questions concerning this mission please contact DSN (b) (6) .

(b) (6) , Major, USAFR  
Chief, Aerial Spray  
757 AS/DOS (DSN 346-1531)

10 August 2001

MEMORANDUM FOR 757 AS/DO

FROM: 757 AS/DOS

SUBJECT: Langley AFB/Craney Island VA Aerial Spray Mission After Action Report

**1. PURPOSE:** The purpose of this mission was to spray the designated areas of Langley AFB and Craney Island VA for mosquito control (6-9 Aug 01). The designated areas to be sprayed were to be determined by the Langley AFB Entomologists/Pest Management Professionals.

**2. SPRAY EVENTS:**

**a. 5 Aug 01 (Sun):** The C-130 departed KYNG 1814Z and landed at KLFJ 2000Z. Aircraft Serial #909108, Mission ID: QZNRKA809217. A total of 1.8 hrs of Flight Time was logged.

**b. 6 Aug 01 (Mon):** One Spray Sortie was conducted over Langley AFB. (2100Z-0010Z). A total of 31 spray swaths were flown over 50,150 acres and 187 gallons of pesticides were applied. A total of 3.2 hrs Flight Time was logged.

**c. 7 Aug 01 (Tues):** One Spray Sortie was conducted over the designated areas of Langley AFB and Portsmouth VA. (2218Z-0039Z). A total of 16 spray swaths were flown over 15,360 acres and 60 gallons of pesticides were applied. A total of 2.4 hrs Flight Time was logged.

**d. 8 Aug 01 (Wed):** One Spray Sortie was conducted over Langley AFB VA. (2135Z-2340). A total of 13 spray swaths were flown over 39,936 acres, and 156 gallons of pesticides were applied. A total of 2.1 hrs Flight Time was logged.

**e. 9 Aug 01 (Thurs):** One Spray Sortie was conducted over the designated areas of Portsmouth and Poquoson Counties VA. A total of 11 spray swaths were flown over 6,912 acres, and 27 gallons of pesticides were applied. A total of 2.0 hrs Flight Time was logged.

**f. 10 Aug 01 (Fri):** The mission was completed and the C-130 departed KLFJ 1400Z, arriving at KYNG 1530Z.

**g.** The DGPS was used throughout the mission and proved invaluable as we went from one designated spray target to the next.

**3. TRAINING.**

**a. Pilot Training.** Maj (b) (6) received currency ULV and LV training.

**b. Nav Training.** Capt (b) (6) received his first LFI orientation and survey flight over the targeted areas before actually performing the spray mission.

**c. Flight Engr Training.** SMS (b) (6) received recurrent training.

d. Loadmaster/Spray Operators Training. MSG (b) (6) , TSG (b) (6) and TSG (b) (6) received Spray Operator's/Loadmaster qualification training.

e. Spray Maintenance personnel wore their PPE during this mission with no problems and received continuous spray maintenance qualification training.

**4. QUARTERS/TRANSPORTATION:** Quarters were fine. Transportation was well coordinated.

(b) (6) , Major, USAFR  
Chief, Aerial Spray  
Mission Commander

Attachments

1. PMP Report
2. Operational Mission Plan

cc: Distribution via Staff Summary Sheet and e-mail distribution



# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 2-5 SEPTEMBER 2003

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander:
- (2) Pilots:
- (3) Navigators:
- (4) Flight Engineers:
- (5) Spray Operators:

##### b. Maintenance:

- (1) Spray Maintenance: MSG (b) (6) , TSG (b) (6) , SSG (b) (6) , TSG (b) (6)
- (2) Crew Chief(s):
- (3) Avionics:

##### c. Entomologists/Ground Support: Maj (b) (6) , Capt (b) (6)

#### 2. SCHEDULE: (All Local Times)

##### 2 SEP (Tuesday)

0730: Show at KYNG  
0930: Depart KYNG  
1200: Land KRDR/Safety Briefing  
1430: In-brief

##### 3 SEP (Wednesday):

0611: Sunrise  
1630: Show time  
1830: Take off KRDR (Adulticide Spray Sortie)  
2056: Sunset

##### 4 SEP (Thursday):

0612: Sunrise  
1630: Show time  
1830: Take off KRDR (Adulticide Spray Sortie)  
2055: Sunset

##### 5 SEP (Friday):

TBA: Out-brief  
1100: Take Off KRDR  
1500: Land KYNG

### 3. ITEMS TO TAKE:

- a. **Mission Commander:** Hand Held GPS, 1 Cellular Phone
- b. **Entomologist:** 1 Cellular Phones, Wind Gauge, 2 Compasses, Pest Safety Binder, 1 UHF Radio, 10 Packs Water Sensitive Cards, 3 Boxes Card Holders with Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors, 2 Toshiba Computers, 1 SATLOC Manual, Project Notebook, 2 Anemometers, Entomologist's Tool Kit, Trakstar Receiver and Antenna, Batteries, Kodak Camera
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

4. **PPR:** 0730-01

5. **RADIO FREQUENCIES:** Air To Ground Primary 392.2; VHF 123.45  
KRDR Tower 124.9 V; Grand Forks Int'l 118.4 V

### 6. CONFIGURATION: SP2G

- a. **System:** 2-Module System/Stainless Steel ULV Wing Booms and Fuselage Booms
- b. **Nozzle Tips/Orientation:**  
ULV (adulticide): 8008 TeeJet oriented straight down  
Larvicide: Raindrop nozzles straight back
- c. **Number:**  
ULV: wing only, 8 8008s total (4 each side)  
Larvicide: fuselage only, 10 total (5 each side) straight back
- d. **Booms:** Full Wing and fuselage
- e. **Aircraft:** #9107
- f. **Mission Identifier:** QZNRKA243217

### 7. SPRAY PARAMETERS:

- a. **Adulticide**
  - (1) **Area to be treated:** 40,000 acres (Approximately)
  - (2) **Altitude:** 150' for Adulticide application
  - (3) **Swath Width.** 2000 feet for ULV or as determined by the PMP
  - (4) **Flow Rate.** 4.35 gallons/minute ULV
  - (5) **Application Rate.** 0.60 oz/acre Trumpet, ULV
  - (6) **Ground Speed:** 200 Knots
- b. **Larvicide**
  - (1) **Area to be treated:**
  - (2) **Altitude:** 100' for Larvicide application
  - (3) **Swath Width.** 200 feet
  - (4) **Flow Rate.** 186 gallons/minute
- c. **Application Rate.** 2 gallons/acre (water with 0.75 oz of Altosid®)
- d. **Ground Speed:** 200 Knots

### 8. SPRAY MIXING AND LOADING: (For Larvicide Spray Sorties)

- a. **Composition of each Gallon:**
  - (1) 0.375 ounces of Altosid® 20
  - (2) 0.08 ounces of Control® drift retardant
  - (3) Water
- b. **Typical load:** (2 tanks of 450 gallons each)
  - (1) Fill with 445.3 gallons of water/tank. Total water in tanks = 890.6 gal.
  - (2) Total water added = 890.6 gallons
  - (3) Add 1.32 gallons of Altosid® per tank (2.64 gallons total).
  - (4) 3.375 gal AirexDC per tank (6.75 Gal total) while agitating approximately 15 min
  - (5) Total quantity mix. 903 gallons

**c. Final Load for complete flush**

- (1) Fill tanks with the amount of water necessary for a proper system flush

**d. Mixing Instructions:**

SHAKE WELL BEFORE USING. Altosid® may separate on standing and must be thoroughly agitated prior to dilution.

PRECAUTIONARY STATEMENT: Spray solution should be used within 48 hours; always agitate before spraying.

**9. TRANSPORTATION: 2 Vans & 1 Staff provided by 319 CES**

**10. CONTACTS:**

**a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**

- (1) **Base Operations:** (b) (6) Airfield Manager or 1 LT (b) (6) DSN (b) (6)  
-- DSN 362-xxxx or (701) 747-xxxx

- (2) **Environmental Officer:** (b) (6), DSN (b) (6) FAX 6155

- (3) **Base Civil Engineer:** LTC (b) (6)

- (4) **Pest Management:** SSG (b) (6), DSN (b) (6), FAX 3432

- (5) **Public Affairs:** Capt (b) (6), DSN 3(b) (6) (off duty CP (b) (6) (b) (6))

- (6) **Billeting:** DSN 362-3070/6189 or (701) 594-8431, FAX 362-3069

-- Prime Knight DSN 362-3844 or (701) 747-3844

**b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243

- (2) 910 AW Command Post: Ext 1315; FAX 1161

- (3) 910 AW/PA: Ext 1236; FAX 1022

- (4) 910 OG/CC: Ext 1257 / 1179

- (5) 910 OSF/OSA: Airfield Manager: (b) (6)

- Assistant Air Field Manager (ACAM), Ext 1181

- (6) 757 AS/DO: LTC (b) (6)

- (7) 757 AS/DOO: Ops Admin: SMS (b) (6); FAX 1657

- (8) 757 AS/DOS: Aerial Spray Office, Ext 1111; FAX 1616

- (9) 910 LG/CC: Ext 1225

- (10) 910 LG/LGM: CMS (b) (6), (b) (6)

- (11) Maintenance Control: Ext 1348

- (12) LG/LGMS: Spray Maintenance: Ext 1132/1586

- (13) 910 LG/LGL: CMS Bob Hart, Ext 1137

- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342

- (15) Supervisor of Flight Desk: 1069, FAX: 1371

- (16) Cellular Spray Phones:

- PMP/Entomologist: (b) (6)

- Mission Commander: (b) (6)

- Spray Maintenance: (b) (6)

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT

### 1. MISSION BASICS:

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 5-10 Aug 2002
- c. Purpose of Application: Control nuisance and vector mosquitoes
- d. Application Dates: 7 Aug 02 & 9 Aug 02
- e. Time/s of Application (Local): 1910-2120 (7 Aug); 1930-2100 (9 Aug)
- f. Acres Treated: 13,226 (7 Aug); 17,120 (9 Aug)
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6), Environmental Officer, DSN (b) (6) and (b) (6), NCOIC Pest Management Shop, DSN (b) (6)
- h. Date Spray Map Last Approved: 5 Aug 02
- i. Installation In-Briefing: (When/Where/Briefer/s): CE Conference Room, LtC (b) (6), Maj (b) (6), (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: LtC (b) (6)
- b. Certified PMP/s (Category 11): Maj (b) (6), Capt (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander: Maj (b) (6)
  - (2) Pilot(s): LtC (b) (6) Maj (b) (6)
  - (3) Navigator: LtC (b) (6)
  - (4) Flight Engineer: SMS (b) (6)
  - (5) Spray Operators: CMS (b) (6) (b) (6) MSG (b) (6) (b) (6) TSG (b) (6) (b) (6)
- d. Safety Briefer: Capt (b) (6)
- e. Spray Maintenance: MSG (b) (6) (b) (6) TSG (b) (6) (b) (6) SSG (b) (6) (b) (6)
- f. Spray Ground Monitors: Maj (b) (6) (b) (6) Capt (b) (6) (b) (6)
- g. Crew Chiefs: MSG (b) (6) (b) (6) SRA (b) (6) (b) (6)
- h. Avionics: MSG (b) (6) (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 2 sorties/ 4.4 hours
  - (2) Ferry Sorties/Hours: 2 sorties/6.3 hours

### 3. PESTICIDES:

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-548127
- c. Gallons Pesticide Loaded: 90 (7 Aug); 75 (9 Aug) Trumpet® EC
- d. Gallons Pesticide Applied: 62 (7 Aug); 103 (9 Aug) Trumpet® EC
- e. Gallons and Name of Flush Used: 48 gallons water
- f. Other Additives Used: none
- g. Application Rate: 0.6-0.7 oz/acre Trumpet® EC

### 4. APPLICATION EQUIPMENT:

- a. Aircraft Type (Tail Number): 909106 Mission Identification # QZNRKA243217
- b. Spray System (Modules Used) and System ID #: Modules 1 and 2 of SP2G ULV
- c. Spray System Configuration: 2-Module System/Stainless Steel Wing & Fuselage Booms
- d. Nozzle Number & Orientation Used: 8 nozzles (8008); straight down
- e. Pressure (PSI): 60 (7 Aug); 35-50 (9 Aug)
- f. Flow Rate: 4.35 gallons/minute 2000' swaths; 3.3 gallons/minute 1500' swaths

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1500' (7 Aug); 2000' (9 Aug)
- b. Spray Off Set: 4000' (7 Aug); 2000' (9 Aug)
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 Knots

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - 1) Ground: 150-168°/6-8 knots (7 Aug); 160-180°/3-6 knots (9 Aug)
  - 2) Release Altitude: 150-168°/12 knots;
- b. Temperature (Degrees Fahrenheit): 84-78°
- c. Cloud Cover: cloudy
- d. Relative humidity: 60-64%
- e. Source: Direct observation

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Validation of spray area:
  - (1) Technique/Used: PMP onboard aircraft verified spray area
- b. Effectiveness:
  - (1) Technique/s Used: Trapping of mosquitoes by Public Health and 757 AS personnel
  - (2) Results: Significant decrease in mosquito activity following application

**8. REMARKS:**

This was a regularly scheduled application at Grand Forks AFB to control adult mosquitoes. However, West Nile Virus has recently been confirmed in Grand Forks County by the death of two horses and one crow (8 Aug). West Nile Virus is an encephalitis which naturally infects birds but can also be transmitted to humans. Such infections have resulted in at least 15 deaths in the U.S. since the virus was first detected in New York in 1999. Adverse weather conditions prevented sprays on the 6<sup>th</sup> & 8<sup>th</sup> of August, but successful sprays were completed on 7 & 9 August. Mosquito trapping is carried out at 4 locations on base and by the City of Grand Forks. Concrete results are pending the next trap collection counts but are expected to be quite favorable based on a single trap managed by 757<sup>th</sup> entomologists, which showed a 90% reduction in mosquitoes collected before and after the 7 Aug spray.

(b) (6)

(b) (6), Capt, USAFR  
Certified Pest Management Professional

31 July 2002

MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497 -0198)

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Grand Forks AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks AFB ND.

**2. Capability:** Spray Aircraft Available 5 August 2002 (A/C #9107, MSN ID: QZNRKA243217)

**3. Concept of Operations:**

**5 August (Monday)**

0730: Show at KYNG  
0930: Depart KYNG  
1200: Land KRDR/Safety Briefing  
1430: In-brief

**6 August (Tuesday):**

0611: Sunrise  
1630: Show time  
1830: Take off KRDR (Adulticide Spray Sortie)  
2056: Sunset

**7 August (Wednesday):**

0612: Sunrise  
1630: Show time  
1830: Take off KRDR (Adulticide Spray Sortie)  
2055: Sunset

**8 August (Thursday):**

0614: Sunrise  
1630: Show time  
1830: Take off KRDR (Adulticide Spray Sortie)  
2053: Sunset

**9 August (Friday):**

0615: Sunrise  
1630: Show time  
1830: Take Off KRDR (Adulticide Spray Sortie)  
2051: Sunset

**10 August (Saturday) (Time permitting Schedule for Larvicide Spray Sorties)**

0616: Sunrise  
TBA: Show time To be determined by PMP or Mission Commander  
TBA: Take off KRDR

2050: Sunset  
**11 August (Sunday)**  
TBA: Out-brief  
1100: Take Off KRDR  
1500: Land KYNG

**4. Spray Parameters:**

- a. **Altitude:** 150' AGL for Adulicide swath when no trees are present.
- b. **Swath Width.** 2000 feet for ULV or as determined by the PMP
- c. **Flow Rate.** 4.35 gallons/minute ULV
- d. **Application Rate.** 0.60 oz/acre Trumpet<sup>®</sup>), ULV
- e. **Ground Speed:** 200 Knots
- f. **Proposed spray area:** Approximately 40,000 acres

**5. Mission Commander:** Lt Col (b) (6)

**6. Aircraft Commander:** Lt Col (b) (6)

**7.** Support required at Grand Forks AFB ND has been coordinated with the organization's Environmental/Spray Coordinator (b) (6), DSN (b) (6).

**8.** HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616, ATTN: 757 AS/DOS.

(b) (6), Major, USAFR  
Aerial Spray Operations Scheduler



30 October 2001

MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497-0198)

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray of Musk Thistle Weed at Smoky Hill Air National Guard Range, Salina KS.

1. Purpose/Objective/Benefit: To control musk thistle weed at the Smoky Hill ANGR KS, to improve grazing areas, to eliminate the Range as a source of infestation to neighboring farms from wind-blown musk thistle seeds and to support state and local noxious weed control efforts.
2. Capability. Spray Aircraft Tail Number 99106 Available 5-11 November 2001
3. Concept of Operations:
  - a. 5 Nov 01 (Monday):
    - 1200 Take Off YARS
    - 1445 Land Salina Airport KS
  - b. 6 Nov 01 (Tuesday): (Two spray sorties planned)
    - 0700 Take-Off
    - 0703-1100 Range Time (CSAR Exercise 1100-1500)
  - c. 7 Nov 01 (Wednesday): (Two spray sorties planned)
    - 0700 Take Off
    - 0704-1100 Range Time (CSAR Exercise 1100-1500)
  - d. 8 Nov 01 (Thursday): (One or two spray sorties planned)
    - 0700 Take-Off
    - 0705-1100 Range Time (CSAR Exercise 1100-1500)
  - e. 9 Nov 01 (Friday): WX Day/Flush Day
    - 0700 Take-Off YNG
    - 0706-1100 Range Time (CSAR Exercise 1100-1500)
  - f. 10 Nov 01 (Saturday): WX Day/Clean-Up/Pack
    - 0700 Take-Off
    - 0707-1100 Range Time (additional range times available on case-by-case basis)
  - g. 11 Nov 01 (Sunday):
    - 0730 Show Time
    - 0900 Take-Off

1345 Land KYNG

4. Spray Parameters:

- a. Acreage: 4,608 Acres (approximately) (Only areas determined by PMP)
- b. Altitude: 100' AGL
- c. Ground Speed: 200 Knots
- d. Swath Width: 330 Feet
- e. Pesticide: Tordon® 22K
- f. Flow Rate: 307 Gallon/Minute
- g. Application Rate: 2 Gal spray/Acre (water with 1 Oz Control® & 10 Oz Tordon® 22K)
- h. Deploy: 3.4 Hrs
- i. Re-Deploy: 2.8 Hrs
- j. Spray Time: 10 Hrs (or as called by PMP)

5. Mission Commander:

- a. 5 - 11 Nov 01: Lt Col (b) (6)
- b. Certified Pest Management Professional(s): LtC (b) (6) and LtC (b) (6)

6. Support required at Smoky Hill ANGR KS has been coordinated with MSG(b) (6), Smoky Hill ANGR Spray Coordinator, DSN (b) (6), (b) (6) and Lt Col (b) (6), Range Commander, DSN (b) (6).

7. HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616 or DSN 346-1161, ATTN: 757 AS/DOS.

(b) (6), Major, USAFR  
Chief, Aerial Spray Operations (757 AS/DOS)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## SMOKY HILL ANG RANGE, KS

### 5– 11 NOV 2001

**PURPOSE/OBJECTIVE/BENEFIT:** to control musk thistle at the Smoky Hill ANGR, to improve grazing areas, to eliminate the Range as a source of infestation to neighboring farms from wind-blown musk thistle seeds and to support state and local noxious weed control efforts.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: LTC (b) (6)
- (2) Pilots: \*LTC (b) (6) , Capt (b) (6)
- (3) Navigators: Maj (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: \*MSG (b) (6) , MSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: \*\*TSG (b) (6) , TSG (b) (6) ,  
SSG (b) (6) , SMS (b) (6)
- (2) Crew Chiefs: MSG (b) (6) , MSG (b) (6)
- (3) Avionics: SMS (b) (6)
- (4) AGE: TSG (b) (6)

##### c. Ground Support/CPM Professionals: LTC (b) (6) , \*\*\* LTC (b) (6)

##### d. Security Police: \*\*TSG (b) (6) , TSG (b) (6) , SRA (b) (6) , SRA (b) (6)

\* = 2 each Full-Size rental cars: Lt Col (b) (6) MSG (b) (6)

\*\* = 3 each rental vans: TSG (b) (6) TSG (b) (6) SMS (b) (6)

\*\*\*= 1 Mid-Size: LtC (b) (6)

#### 2. SCHEDULE: (All Local) Times

##### 5 NOV (Monday)

1000: Show at KYNG

1200: Depart KYNG

1445: Land KSLN/Safety Briefing

A/R: Maintenance configures aircraft; Aircrew plan next day's mission

##### 6 NOV (Tuesday): 2 Spray Sorties

0530: Show time

0703: Sunrise

0700: Take Off KSLN

0703-1100: Range time (CSAR Exercise 1100-1500: Coordinate MARSA as needed after 1100)

0900: Land KSLN

##### 7 NOV (Wednesday): 2 Spray Sorties

0530: Show time

0704: Sunrise

0700: Take Off KSLN

0704-1100: Range time) (CSAR Exercise 1100-1500: Coordinate MARSA as needed after 1100)

0900: Land KSLN

**8 NOV (Thursday): 1 or 2 Spray Sorties**

0530: Show time

0705: Sunrise

0700: Take Off KSLN

0705-1100: Range time (CSAR Exercise 1100-1500: Coordinate MARSA as needed after 1100)

0900: Land KSLN

**9 NOV (Friday): WX Day/Flush Day**

0530: Show time

0706: Sunrise

0700: Take Off KSLN

0706-1100: Range time (CSAR Exercise 1100-1500: Coordinate MARSA as need after 1100)

0900: Land KSLN

**10 NOV (Saturday): WX/Clean-Up/Pack**

0530: Show time

0707: Sunrise

0700: Take Off KSLN

0707-1100: Range time (additional range times available on case-by case basis)

0900: Land KSLN

**11 NOV (Sunday):**

0708: Sunrise

0730: Show time

0900: Take Off KSLN

1345: Land KYNG

**3. ITEMS TO TAKE:**

**a. Mission Commander:** Hand Held GPS, 1 Cellular Phone

**b. Entomologist:** 1 Cellular Phone, Wind Gauge, 2 Compasses, 1 UHF Radio, Kodak Camera, Pest Safety Binder, 2 Signal Mirrors, 10 Packs Water Sensitive Cards, 3 Boxes Card Holders with Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Toshiba Computers, 1 SATLOC Manual, Project Notebook, 2 Anemometers, Entomologist's Tool Kit, Trakstar Receiver and Antenna, Batteries

**c. Navigator:** Maps/Map Bag, Validation Map, 1 Panasonic Computer

**d. Spray Operator:** Safety Gear, Calibration Tables

**e. Spray Maintenance:** Deployment Kit, Stake Bed Truck, Support Equipment, Control®

**4. NOTIFICATION NECESSARY FOR THIS MISSION:** None Required.

**5. PARKING PLAN:** Highway Patrol Ramp (by the Civil Air Patrol Hangar).

**6. RADIO FREQUENCIES:**

**a. Air To Ground:** Primary 392.2

**b. Salina:** CTAF: 119.3, UNICOM: 122.95, ATIS: 120.15, TWR: 119.3 / 257.7, GND: 121.9 / 397.9, NG OPS: 49.95 / 304.6

**c. Smoky Hill:** Primary 316.9, Secondary 304.9; Victor Freq: 139.7

**7. IN-BRIEFING:** Upon Arrival.

**8. SPRAY CONFIGURATION:**

**a. System:** SP-3G

**b. Nozzle Tips/Orientation:** 8070 Flat Fan TeeJet/90° straight back

**c. Number:** Wing. 68 Total (34 each side)/Fuselage. 16 Total (8 each side) with 3" restrictor

- d. **Booms:** Full Wing and Fuselage Booms
- e. **Aircraft:** 106 **Mission Identifier:** QZNRKA201309
- f. **Profile:** Planned LV Profile

## 9. SPRAY PARAMETERS:

- a. **Altitude:** 100' AGL
- b. **Swath Width.** 330 feet.
- c. **Flow Rate.** 307 Gallons/Minute (approximately 4,608 acres to be sprayed)
- d. **Application Rate.** 2 Gal spray/Acre (water with 1 Oz of Control® & 10 Oz of Tordon®)
- e. **Ground Speed:** 200 Knots

## 10. SPRAY MIXING AND LOADING:

- a. **Composition of Each Gallon:**
  - (1) 5 Ounces of Tordon® 22K
  - (2) 0.08 Ounces of Control® Drift Retardant
  - (3) Water
- b. First Load (4 Tanks of 443.3 Gallons Each + Sump of 70 Gallons)
  - (1) Fill to 425.05 Gallons of Water/Tank using the pump on the water tanker truck.  
This is done by putting the filler hose into the rear tank with all tanks open to the common sump.  
Total water in tanks = 1700.2 Gal.
  - (2) 70 Gallons of Water in Sump
  - (3) Total Water Added = 1,770.2 Gallons
  - (4) Upload 18 Gallons of Tordon® 22K/Tank (72 Gallons Total for 4 Tanks) with the ULV uploading system.
  - (5) Add 1 Quart of Control®/Tank while agitating approximately 15 min  
(1 Gallon total for four tanks)
  - (6) Total Quantity Mix. 1843.2 Gallons
- c. Subsequent Loads (4)
  - (1) Fill to 442.55 Gallons of Water/Tank. Total Water = 1770.2 Gal
  - (2) Add 18 Gallons of Tordon 22K/Tank. Total Tordon 22K = 72 Gal
  - (3) Add 1 Quart of Control/Tank. Total Control = 1 Gal
  - (4) Total quantity Mix. 1,843.2 Gallons (does not include 70 Gal already mixed in Sump)
- d. **Mixing Time/Load.** Agitate by recirculating each mix for approximately 15 minutes.

## 11. SPRAY MONITORING OR TESTING: Performed by the CPMPs

### NOTES:

- Ideal to have westerly wind to spray west boundary.
- Ideal to have easterly wind to spray east boundary.
- (November winds expected to be predominately from the north)

## 12. CONTACTS:

- a. **Quarters:** JTR Rate Lodging/\$55 Meals/\$28
  - **Fairfield Inn \$55+tax, (785) 823-6900 FAX (785) 823-0996**
  - Holiday Inn Express, I70, \$55, Gp Reservations/(b) (6) 785-823-5606
  - Comfort Inn, (785) 826-1711
  - Ramada inn, (785) 825-8211
  - Hampton Inn (on Schilling Rd.); Phone (785) 823-9800

**b. Transportation:** Enterprise Rent-A-Car (Jennifer) 645 East Crawford Salina KS  
1-800-8007, (785) 825-1100 **Vehicles will be at Moore's Aviation**

- **3 Mini Vans (\$75):** TSG (b) (6) , TSG (b) (6) , SMS(b) (6)
- **2 Full Size (\$42):** LTC (b) (6), MSG (b) (6)
- **1 Mid-Size:** LtC (b) (6)

**c. Smoky Hill Range, Salina, KS:**

- (1) HQ ANGRC/CEVP:
  - (b) (6) : DSN (b) (6)
  - KEVIN MAREK: DSN (b) (6)
  - RANGE COMMANDER, LTC (b) (6) : DSN (b) (6) ; COM (b) (6)
  - Scheduling: DSN (b) (6) Ext (b) (6) **TSGT.** (b) (6)
- (2) NATURAL RESOURCES MGR/ SPRAY COORDINATOR:
  - MSG (b) (6) (b) (6) DSN (b) (6)(b) (6) (b) (6)
- (3) SALINA AIRPORT: SALINA AIRPORT AUTHORITY: (b) (6)
  - (b) (6) S and (b) (6)
- (4) ARMY NATL GUARD HELO UNIT:
  - OPS OFFICER, CW4 (b) (6) : DSN (b) (6) ; COM(b) (6)
- (5) FBO: JERRY MOORE'S MIDWAY AVIATION, (b) (6)
- (6) STATE WILDLIFE REP:
  - (b) (6) (DIST FISHERY BIOLOGIST).(b) (6)
- (7) DOW ELANCO REP: (b) (6) , (b) (6) or (b) (6)
- (8) SALINE COUNTY FARM/ NOXIOUS WEED DIR:
  - (b) (6) FAX (913) 826-6534

**d. Spray Maintenance Command Post at Salina KS** will be located in the Civil Air Patrol Office, (913) 825-0009.

**e. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046, 2, + Ext

- (1) 910 AW/CC: Brigadier General Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX Ext 1161
- (3) 910 AW/PA: LT (b) (6) ; FAX Ext 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 OG/OSA, Airfield Manager: (b) (6)
- (6) 757 AS/DO: LTC (b) (6)
- (7) 757 AS/DOO, Ops Admin: SMS (b) (6) FAX Ext 1657
- (8) 757 AS/DOS, Aerial Spray Office: (b) (6) FAX Ext 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: CMS (b) (6)
- (11) Maintenance Control: Ext 1348
- (12) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
- (13) 910 LG/LGL: CMS (b) (6)
- (14) Omega/SATO Travel: Ext 1772; 1 (800) 285 - 6342
- (15) Supervisor Of Flying desk (SOF): 1069; FAX Ext 1371
- (16) Cellular Spray Phones: PMP: (b) (6) ; MSN CMDR: (b) (6)

# 910 AW AERIAL SPRAY PMP'S POST-MISSION REPORT

## 1. MISSION BASICS:

- a. **Installation Sprayed:** Smoky Hill ANGR, Salina KS
- b. **Mission Duration:** 5-11 Nov 01
- c. **Purpose of Application:** Management of Musk Thistle on ANGR.
- d. **Application Date/s:** 6,7,9,10 Nov 01  
**Time/s of Application (Zulu):** 1300-1335 and 1355-1516 (6 Nov); 1315-1505 (7 Nov); 1405-1510 and 1600-1715 (9 Nov); 1515-1546, 1325-1440 and 1550-1725 (10 Nov)
- e. **Acres Treated:** 4572 (See attached map)
- f. **Project Coordinator/s (Name/Rank, Title, Phone #):** MSG (b) (6), Aerial Spray Coordinator, Smoky Hill ANGR, DSN (b) (6), x110; LTC (b) (6), LTC (b) (6)
- g. **Date Spray Map Last Approved:** 5 Nov 01
- h. **Date of Waste Generation Letter:** N/A
- i. **Installation In-Briefing: (When/Where/Briefer/s):** 0630, 6 Nov 01; Smoky Hill ANGR; LTC (b) (6)

## 2. OPERATIONAL:

- a. **Mission Commander:** LTC (b) (6)
- b. **Certified PMP (Category 11):** LTC (b) (6), LTC (b) (6)
- c. **Aircrew:**
  - (1) Aircraft Commander: Pilot: LTC (b) (6)
  - (2) Co-Pilot: CAPT (b) (6)
  - (3) Navigator: MAJ (b) (6) (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
  - (5) Spray Operators: MSG (b) (6), MSG (b) (6)
- d. **Safety Briefer:** LTC (b) (6)
- e. **Spray Maintenance/Pesticide Loaders:** TSG (b) (6); TSG (b) (6), SSG (b) (6), SMS (b) (6)
- f. **Spray Ground Monitors:** LTC (b) (6), LTC (b) (6)
- g. **Crew Chief(s):** MSG (b) (6), MSG (b) (6)
- h. **Avionics:** SMS (b) (6)
- i. **AGE:** TSG (b) (6)
- j. **Security Force:** TSG (b) (6), TSG (b) (6), SRA (b) (6), SRA (b) (6)
- k. **Flying Data:**
  - (1) Spray Sorties/Hours: 2/2.0 (6 Nov); 1/1.8 (7 Nov); 2/2.2 (9 Nov), 2/2.9 (10 Nov)
  - (2) Ferry Sorties/Hours:
    - (a) Spray A/C 899106 Ferry Sorties/Hours: 1/3 (5 Nov); 1/2.8 (11 Nov)
    - (b) Support A/C 899102 Sorties/Hours: 1/3 (5 Nov); 1/2.8 (11 Nov)

## 3. PESTICIDE:

- a. **Trade Name (% Active Ingredient):** Tordon® 22K
- b. **EPA Registration Number:** 62719-6
- c. **Formulation Sprayed:** Tordon® 22K mixed with water and Control®
- d. **Gallons Pesticide Loaded:** 9,214 gal of Tordon® 22K/water loaded (357 gal Tordon® 22K)
- e. **Gallons Pesticide Applied:** 357 gallons
- f. **Gallons and Name Diluent Used:** 8,854.5 gallons of water
- g. **Gallons and Name of Flush Used:** 595 gallons of water & 5 gallons Remove®
- h. **Other Additives Used:** 2.5 gallons of Control®
- i. **Application Rate:** 2 gallons spray/acre (water with 0.03 oz. of Control® & 10 oz. of Tordon®)



**4. APPLICATION EQUIPMENT:**

- a. **Aircraft Type (Tail Number):** 899106
- b. **Spray System (Modules Used) and System ID #:** 3-Module system
- c. **Spray System Configuration:** Full Wing and Fuselage Booms
- d. **Nozzle Type/Size:** 8070 Flat Fan TeeJet®
- e. **Nozzle Orientation & Number Used:** 68; Wing: 34 each side;  
Fuselage: 16 (8 each side) with 3" Restrictor
- f. **Pressure:** 40 PSI
- g. **Flow Rate:** 307 GPM

**5. APPLICATION PARAMETERS:**

- a. **Swath Width Flown:** 330'
- b. **Spray Off Set:** 990' (6 Nov); 1220' (7 Nov); 660' (9 Nov); 330' (10 Nov)
- c. **Spray Release Altitude:** 100'
- d. **Ground Speed:** 200 Knots

**6. WEATHER OBSERVATIONS:**

**(Ground Wind Direction (degrees)/Speed (knots)/Temperature °F/Humidity %/Cloud Cover %)**

- a. **6 Nov:** 190/7-8 with gusts to 10 at beginning; 12 gusts to 15 at end of spray/61/76/0
- b. **7 Nov:** 200/7-11/53/68/10
- c. **9 Nov:** 140/4-6.5/35/56/0 first sortie; 140/5-8/52/33/0 second sortie
- d. **10 Nov:** 245/4/42/54/0 first sortie; 260/4/54/33/0 second sortie

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

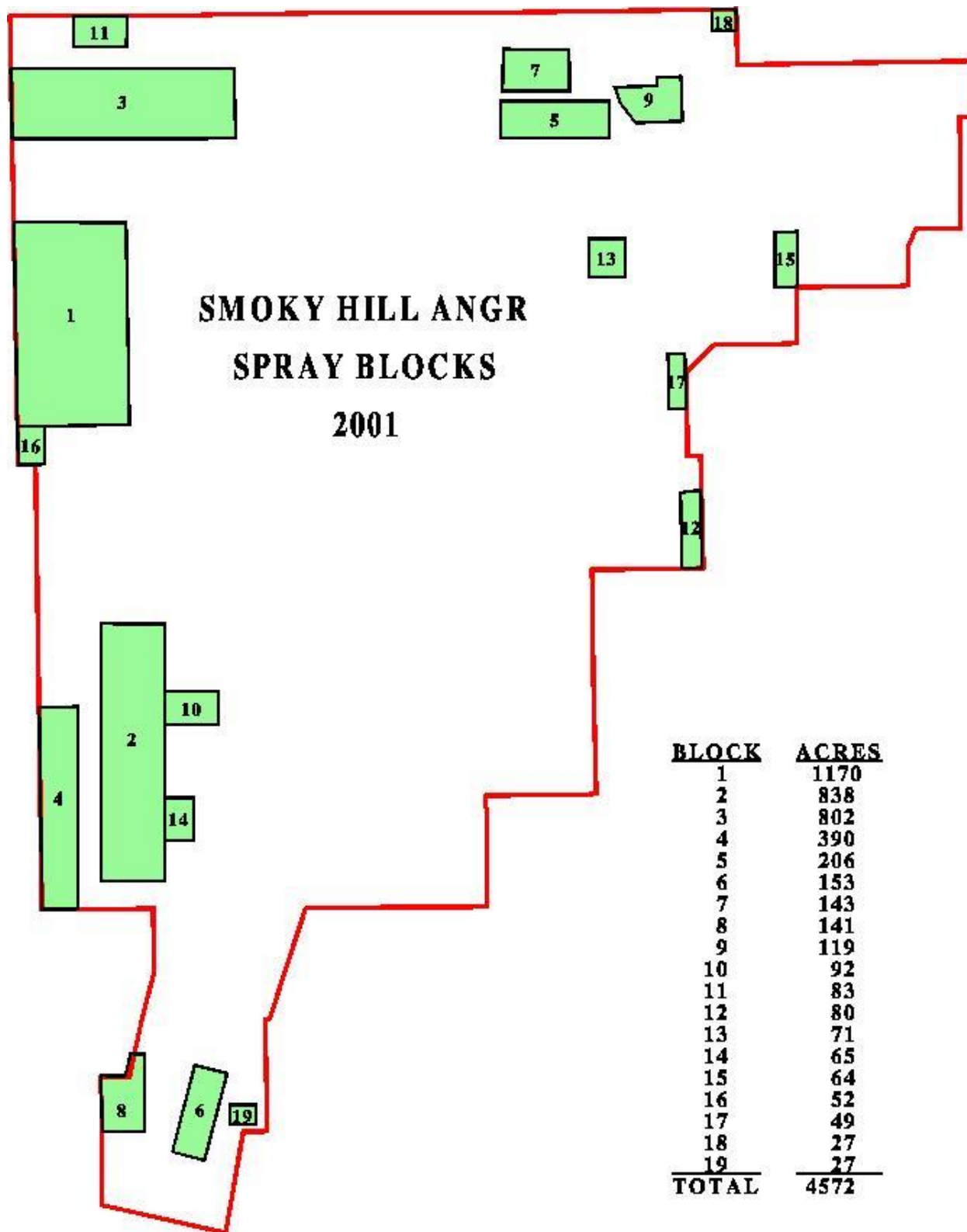
- a. **Deposition Pattern:**
  - (1) Technique/s Used: Ground Observation
  - (2) Results: Spray off-set determined each day
- b. **Effectiveness:**
  - (1) Technique/s Used: Visual field observations
  - (2) Results: (See Remarks)

- 8. REMARKS:** Results will be determined during the next growing season in the Spring of 2002 for musk thistle. The upwind wing boom and fuselage booms were used for application. The downwind wing boom was not used.

**CERTIFIED PEST MANAGEMENT PROFESSIONAL**

(b) (6) , PhD, Lt Col, USAFR

Filename: d:\mydocuments\reports\smoky\5-11 Nov 01 PMP Report



# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

5-10 August 2001

**Purpose/Objectives/Benefits:** Control nuisance and vector mosquitoes in order to improve working conditions for members operating at Langley AFB and Craney Island VA.

### 1. 910 AW PARTICIPANTS:

#### a. Aircrew:

- (1) Mission Commander/Co-Pilot: Maj (b) (6)
- (2) Aircraft Commander/Pilot: Maj (b) (6)
- (3) Navigator: Capt (b) (6), LtC (b) (6) (6-10)
- (4) Flight Engineer: MSG (b) (6), SMS (b) (6)
- (5) Spray Operator: MSG (b) (6), TSG (b) (6),  
MSG (b) (6), TSG (b) (6)

#### b. Maintenance:

- (1) Spray Maintenance: MSG (b) (6), MSG (b) (6), TSG (b) (6), TSG (b) (6)
- (2) Crew Chief: TSG (b) (6), TSG (b) (6)
- (3) Avionic: TSG (b) (6)

#### c. Ground Support/CPMP: Lt Mark (b) (6) <sup>(b)</sup> & Maj (b) (6)

### 2. SCHEDULE: (All times Local)

#### 5 AUG (Sunday):

1030: Show at KYNG  
1330: Depart KYNG  
1500: Land KLFI  
1515: Safety Briefing

PPR # 0805TM01

#### 6 AUG (Monday):

1000: Morning meeting with Craney Island personnel in the Pest Control Work Shop  
1100: In-Briefing with Langley CE personnel  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Depart KLFI  
2000: Land KLFI  
2007: Sunset

#### 7 AUG (Tuesday):

1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Depart KLFI  
2000: Land KLFI  
2006: Sunset

#### 8 AUG (Wednesday):

1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Depart KLFI  
2000: Land KLFI  
2005: Sunset

#### 9 AUG (Thursday):

1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Depart KLFI  
1915: Enhanced Flush & Purge  
2000: Land KLFI  
2004: Sunset

#### 10 AUG (Friday):

0830: Report  
0900: Out-Briefing  
1000: Depart KLFI  
1130: Land KYNG

### 3. ITEMS TO TAKE:

- a. **Entomologist:** Cellular Phones, Wind Gauge, Compass, UHF Radio, Pest Safety Binder, Signal Mirrors, Satloc Ground Tracker
  - b. **Navigator:** Maps/Map Bag, Validation Map, Laptop Computer
  - c. **Spray Operator:** Safety Gear, Calibration Tables
  - d. **Spray Maintenance:** Deployment Kit
4. **NOTIFICATION NECESSARY FOR THIS MISSION:**
  - a. **Langley Tower:** DSN 574-5326 (Contacted, DSN 574-2508)
  - b. **Langley Base Ops:** DSN 574-2504 (Contacted)
5. **PARKING PLAN:** as directed.
6. **RADIO FREQUENCIES:**
  - a. **Felker AAF Tower (Ft Eustis): 126.3, 248.2, 241.0**
    - (1) Ops phone 878-3588
    - (2) Tower phone 878-3530
    - (3) Flight Service 122.2
  - b. **Newport News-Williamsburg Int:** (Operating Hours 1000Z-0200Z)
    - (1) Ground - **121.9 or 348.6** (phone 877-0221 ops)
    - (2) Tower – **118.7 or 280.1** (phone 877-2962)
    - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
    - (4) CTAF – **118.7**
  - c. **Langley AFB:** Tower OIC MSG (b) (6) ; Lt(b) (6) 1st OSS SQ (23665)
    - (1) Tower - **125.0 or 253.5** (phone 4-5326)
    - (2) Ground - **121.7 or 275.8**
    - (3) Clearance – **118.85 or 271.3**
    - (4) Metro - **239.8**
  - d. **Norfolk NAS (Chambers Fld): Tower - 124.3, 126.375, 340.2, 318.7**
  - e. **Spray Ground: Primary 392.2 / 308.6** Secondary
7. **IN-BRIEFING:** Required; IAW the schedule above or as determined by PMP.
8. **SPRAY CONFIGURATION:**
  - a. **System:** SP2G - MASS ULV; Modules 1 and 2
  - b. **Nozzle Tips/Orientation:** 8 8008's for 2500' swaths; 7 8008's for 2000'; and 5 8008's for 1000' swaths (temperatures above 85 degrees then use 8010's – 6 for 2500' swaths and 2 or 3 for 1000' swaths); All oriented down.
  - c. **Aircraft:** 99108
9. **SPRAY PARAMETERS:**
  - a. **Altitude:** 150' AGL depending upon weather conditions
  - b. **Ground Speed:** 200 KNOTS
  - c. **Pesticide:** Dibrom® Concentrate
  - d. **Application Rate:** 0.5 Ounce/Acre
  - e. **Flow Rate:** 1.8 Gallons/Minute at Craney Island; 4.5 Gallons/Minute for 2500' swaths; 3.6 Gallons/Minute for 2000' swaths on the Peninsula
  - f. **Acreage:** Approximately 114,000 Acres
  - g. **Swath Width(s):** 1,000 Feet at Craney Island; 2,000 to 2,500 Feet at Langley AFB areas
10. **PESTICIDE LOADING:**
  - a. **How Much Pesticide:** Approx 460 Gallons required for 114,000 acres; daily amounts vary
  - b. **Where:** Aero Club Ramp
  - c. **When:** 1430 Hours each day
  - d. **Furnished by Installation:**
    - (1) Pesticide
    - (2) Loading Equipment/Crew
    - (3) Hazardous Waste Disposal
    - (5) Two B-5 or B-1 Stands

**11. SPRAY MONITORING OR TESTING:**

The local mosquito control districts will put out cages of live mosquitoes and oil-sensitive cards to monitor the control. Trap data and biting count data will be collected pre- and post-spray by LFI and the mosquito control districts' personnel to determine spray effectiveness.

**12. CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**

**a. LANGLEY AFB VA:**

Wing Commander: BG (b) (6) DSN (b) (6)  
Base Commander: Col (b) (6) , DSN (b) (6)  
Spray Coordinator: (b) (6) DSN (b) (6) ; Fax 3503  
Civil Engineer:  
Deputy Chief/Civil Engineer: (b) (6)  
Base Operations: DSN (b) (6)  
Langley Control Tower: Lt (b) (6) DSN (b) (6)  
Weather: Langley AFB, DSN (b) (6)  
Ft Eustis: DSN (b) (6)  
Command Post: Maj (b) (6) , DSN (b) (6)  
Pest Control Foreman: (b) (6) , DSN (b) (6) or Home (b) (6)  
Public Affairs: Capt (b) (6) , DSN (b) (6)  
Fuels: Capt (b) (6) , DSN (b) (6)  
Motor Pool: (b) (6) (3 vans and 1 staff vehicle supplied by (b) (6) )  
ACC PMP: (b) (6) DSN (b) (6) , cell phone (b) (6)

**b. Billeting Office: COM: (757) 764-4667 EXT 2519**

**DSN 574-4667, EXT 2519; FAX 574-3038**

**- Contract Quarters:**

**- Radisson Hotel, 700 Settler's Landing Hampton VA, \$99 per night, (757) 727-9700  
Group # 298207**

**c. FT EUSTIS VA:**

Environmental Coordinator: (b) (6) , DSN (b) (6) )  
Entomology Shop: DSN (b) (6) ; Com. (b) (6)

**d. Craney Island: see (b) (6) , (b) (6) or volunteer (b) (6) ((b) (6)  
home (b) (6)**

**e. Hampton Mosquito Control: (b) (6) home  
Beeper (b) (6)**

**f. York County Control: (b) (6)**

**g. City of Portsmouth Biologist: (b) (6)**

**h. Newport News Mosq. Control: (b) (6)**

**i. Newport News/Williamsburg Int.:**

- (1) Fixed Base Operator: Flight Int 877-6401
- (2) Flight Service: 877-0209
- (3) Tower: 877-2962
- (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

**j. Norfolk NAS VA: DSN 564-2442/7598 or COM (757)-444-2442/7598**

**k. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

**Toll Free 1 - 800 - 278 - 7046, + Ext**

- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Lt Davis, (b) (6) ; FAX 1022
- (4) 910 OG/CC: LtC (b) (6) / 1179
- (5) 910 OS/OSA: Airfield Manager, (b) (6)
- (6) 757 AS/DO: LtC (b) (6) (b) (6)
- (7) 910 OSF Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (8) 757 AS/DOO: Ops Admin: SMS (b) (6) FAX 1657
- (9) 757 AS/DOS: Aerial Spray Office, (b) (6) ; FAX 1616
- (10) 910 LG/CC: Ext 1225

- (11) 910 LG/LGM: CMS (b) (6)
- (12) Maintenance Control: Ext 1327
- (13) 910 LG/LGMS: Spray Maintenance: Ext 1132/1586
- (14) 910 LG/LGL: CMS (b) (6)
- (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6)
  - Spray Maintenance: (b) (6)                      Pager (b) (6)



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926

2 Sep 05

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: **CHANGE 1.** Capability and Concept of Operations for Aerial Spray at Parris Island MCRD SC for Control of Sand fly and Mosquitoes

1. Objective/Purpose/Benefits of the Spray Mission. Spray Parris Island MCRD SC for control of biting midges and mosquitoes..

2. Capability: Spray Aircraft 89-9107 available on 6-8 Sep 05

3. Concept of Operations:

**6 Sep (Tuesday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

1000: Show Time  
1200: Take off KYNG  
1400: Land KNBC  
1415: Safety Briefing  
1530: Load Chemical/Wx Decision  
1700: Take off KNBC  
1939: Sunset

**7 Sep (Wednesday):** Wx back up or redeploy to YNG

1500: Showtime  
1530: Load Chemical/Wx Decision  
1700: Take off KNBC  
1939: Sunset

**8 Sep (Thursday):** Return YNG

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

4. Spray Parameters:

- a. Acreage: 7,500 Acres (Only areas determined by PMP)
- b. Altitude: 150 Ft AGL
- c. Pesticide: Dibrom® Concentrate
- d. Deploy: 2.0 Hrs
- e. Re-Deploy: 2.0 Hrs
- f. Spray Time: 16 Minutes per Sortie (or as called by PMP)

5. Aircraft Commander: Maj (b) (6)

6. Mission Commander: Maj

7. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator (b) (6) DSN (b) (6)

// SIGNED //  
(b) (6), Major, USAFR  
Chief of Aerial Spray



# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **PARRIS ISLAND MCRD, SC**

### **6-8 Sep 2005**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCRD, SC.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Pilots: MC-MAJ (b) (6) , MAJ (b) (6)
- (2) Navigators: MAJ (b) (6)
- (3) Flight Engineers: CMS (b) (6) , SMS (b) (6)
- (4) Spray Operators: MSG (b) (6) , MSG (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: SMS (b) (6) , TSG (b) (6) , TSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6) , TSG (b) (6)
- (3) Avionics: MSG (b) (6)

##### **c. Pest Management Professionals/Entomologist:** CPT (b) (6)

Gov Vehicles provided by Parris Island MCRD: 2 Crew Vans & 1 Staff Car keys and vehicles at Base Ops.

#### **2. PPR REQUIREMENTS: 24901**

#### **3. PLANNED SEQUENCE OF EVENTS:** (All times local)

**6 Sep (Tuesday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

1000: Show Time  
1200: Take off KYNG  
1400: Land KNBC  
1415: Safety Briefing Rifle Range Clear  
1530: Load Chemical/Wx Decision  
1700: Take off KNBC  
1939: Sunset

**7 Sep (Wednesday):** Wx back up or redeploy to YNG Rifle Range Live Fire starting 2000L

1500: Showtime  
1530: Load Chemical/Wx Decision  
1700: Take off KNBC  
1939: Sunset

**8 Sep (Thursday):** Return YNG

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

#### **4. ITEMS TO TAKE:**

##### **a. Mission Commander:**

- (1) 14 Rooms reserved at Hampton Inn, ensure no rooms charged on Current Ops Credit card.

##### **b. Entomologist/CPMP:**

- (1) Wind Gauge & Compass
- (2) UHF/VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder
- (4) DGPS Computers & Maps

##### **c. Navigators:**

- (1) Maps

(2) Templates

d. **Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

5. **SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** Open for ULV spray; 8 8005's oriented straight down (4 per side)
- c. **Differential GPS:** Installed
- d. **Aircraft:** 89-9107
- e. **Mission Identifier:** QZNRKA911249

6. **SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 0.75 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 2.72 gallons/Minute

7. **AMOUNT OF SPRAY MATERIAL AVAILABLE:** Load 60 gallons of Dibrom® Concentrate per mission. Depending on coverage we will likely have some material left over. Spray maintenance will download; save for next mission.

8. **PARKING PLAN:** Beaufort MCAS Ramp

9. **AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
Hilton Head Arpt: 118.8 CTAF  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 392.2; Secondary 340.8**

10. **TRANSPORTATION:** Parris Island will provide two vans and staff car for transportation to and from quarters and for messing.

11. **SPRAY MONITORING/TESTING:** Ground monitoring by CPMP & Parris Island MCRD Project Coordinator.

12. **CONTACTS:**

- a. **Parris Island MCRD SC: (MCRD/MCAS Com: (843) 228-XXXX; Off Station Com: (843) 525-XXXX)**
  - (1) Environmental Coordinator (Spray Coordinator):  
Jim Clark, DSN 335-3102, Cel 843-321-6278; Robert Brodeur, 335-2611, Cel 843-321-6277  
FAX (843) 228-2616; Johnsie Nabors, 335-2630
  - (2) Assistant Chief of Staff I & L: Col (b) (6), DSN (b) (6)
  - (3) Pest Control Foreman: DSN (b) (6)
  - (4) P.I. Motor Pool: (b) (6), DSN (b) (6)
  - (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
  - (6) Thrifty Car Rental: (843) 522-9996
  - (7) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)

- (7) P.I. Rifle Range: DSN: 335-3183/3624
- b. **Beaufort MCAS SC:** (Commercial (843) 228-XXXX)
- (1) Beaufort MCAS Environmental: (b) (6), DSN (b) (6); (b) (6), DSN (b) (6)
- (2) Fuels: DSN: 335-7049/7448/7168
- (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
 DSN: (b) (6). Base Ops is ext 7301/2/3  
 (After duty hours: (b) (6) DSN: (b) (6)
- (4) Trans Alert/VAL: DSN: 335-7110
- (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)
- c. **Beaufort County Mosquito Control:** (b) (6)
- d. **Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6), DSN (b) (6), (b) (6)
- e. **Quarters:**  
**14 Rooms at Hampton Inn (\$114/Night) POC** (b) (6), **Group Res:** (b) (6) **Confirm #82300398**  
 (843)986-0600 (FAX 0494)
- |                                 |   |
|---------------------------------|---|
| Ramada Inn                      | (843) 524-2144/Fax 1704                   |
| Hampton Inn                     | (843) 986-0600 (FAX 0494)                 |
| Sleep Inn                       | (843) 522-3361 FAX (843) 522-9929         |
| Parris Island Billeting         | DSN: 335-2744 (FAX: 3815); (843) 228-3960 |
| Comfort Inn                     | (843) 525-9366 (FAX 1529)                 |
| Best Western (Sea Island Motel) | (843) 524- 4121                           |
| Port Royal Days Inn             | (843) 524-1551                            |
| Best Western Pt South (I-95)    | (843) 726-8101                            |
- f. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
 Toll Free 1 - 800 - 278 - 7046,+2 + Ext
- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Capt (b) (6); FAX 1022
- (4) 910 OG/CC: Col (b) (6)
- (4) 910 OG: Airfield Manager, (b) (6)
- (5) 757 AS/DO: Maj (b) (6)
- (6) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6); FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Maj (b) (6); FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: CMS (b) (6)
- (11) Maintenance Control: Ext 1327
- (12) 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
- (13) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (14) Cellular Spray Phones:
- Mission Commander: (b) (6)
  - Entomologist: (b) (6)

# Ellington Field/Galveston Texas Oil Spill Response Exercise

## AERIAL SPRAY OPERATIONAL SCHEDULE

**6-9 Nov 06**

**PURPOSE/OBJECTIVE:** Oil spill emergency response exercise and training with the Texas General Land Office, NOAA, USCG and MSRC.

### 1. 910 AW PARTICIPANTS:

#### a. Aircrew:

- (1) Mission Commander: MAJ (b) (6)
- (2) Pilots: MAJ (b) (6), CAPT (b) (6), 1LT (b) (6)
- (3) Navigators: MAJ (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: , MSG (b) (6), MSG (b) (6), MSG (b) (6)  
(b) (6)

#### b. Spray Maintenance:

- (1) Spray Maintenance: TSG (b) (6), TSG (b) (6), TSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6), TSG (b) (6)

#### c. CPMP: MAJ (b) (6), MAJ (b) (6)

#### d. Public Affairs: TSG (b) (6)

### 2. SCHEDULE: (All times Local)

#### 6 NOV (Monday):

1300: Show Time  
1500: Depart KYNG  
1900: Land KEFD

#### 7 NOV (Tuesday):

0800 Pilot Brief/planning  
1000 T/O EFD practice sortie  
1200 Land EFD  
1400-1600 Media events

#### 8 NOV (Wednesday):

0900: Show Time  
1145: Depart KEFD  
1200-1300 Oil Spill Response exercise  
1400: Land KEFD

#### 9 NOV (Thursday):

0800: Debrief, USCG, MSRC, and other participants  
1030 Show at KEFD  
1200 Depart KEFD  
1800 Arrive KYNG

**3. PARKING PLAN: Aircraft will park at Southwest FBO.**

**4. IN-BRIEFING:** Safety Brief upon landing, air operations plan brief to be determined but should take place Tues. evening,

**5. COMMUNICATIONS PLAN:**

TBD Upon Arrival with other members

**VHF** 143.85 / 142.6

**UHF** 349.35 / 305.225

**HF** 6872.35 / 9262.35

**6. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 909107
- c. Mission Identifier: QZNRKA220310

**7. SPRAY PARAMETERS:**

- a. Altitude: 100' AGL
- b. Ground Speed: 200 Knots (338 feet/second)
- c. Simulant: Water/Dyed Water
- d. Application Rate: 5 Gal/Acre
- e. Flow Rate. 307.0 GPM
- f. Nozzles – 16 Raindrop nozzles oriented straight back (eight per side); fuselage booms.
- g. Number of passes – approximately 3 passes requested for the exercise. All material must be sprayed from the tanks and flushed with water.

**8. LOADING:**

a. Plan to load 600 gallons of water. Additionally 1 gallon of Rhodamine will be provided by Texas A&M University and loaded at Ellington Field. Contact Ellington Fire Department upon arrival to coordinate water upload.

**b. Furnished by Installation:**

- (1) Power cart
- (2) B1 Stand

**9. TRANSPORTATION: ENTERPRISE RENTAL CAR AGENCY-pick up at Base Ops**

- #713452 confirmation, 2 minivans \$69.99 and 4 Full Size \$49.99 per day

281-922-6857, (b) (6) (Sp?)

- (b) (6) FS
- (b) (6) MV
- (b) (6) MV
- (b) (6) FS
- (b) (6) FS
- (b) (6) FS
- (b) (6) FS

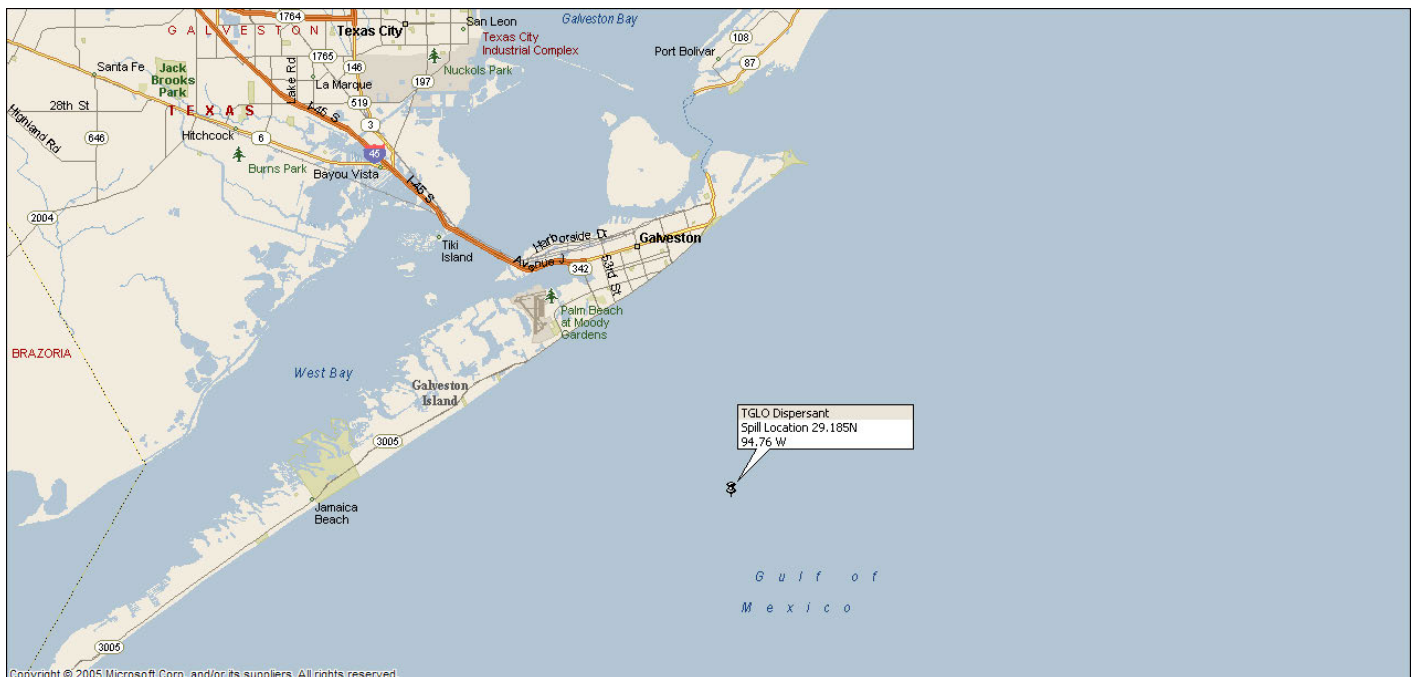
**10. QUARTERS: Lodging Rate \$65.**

Holiday Inn 713-946-8900 8611 Airport Blvd, Houston Tx

## 11. CONTACTS:

- a. SWS FBO, Gary Furst 1-800-426-5237
- b. Ellington ANG Fire Dept DSN: 454-2337
- b. **910AW / 757AS** Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046, 2+ Ext
  - (1) 910 AW/CC: COL (b) (6)
  - (2) 910 AW Command Post: Ext 1315, FAX 1161
  - (3) 910 AW/PA: Cpt (b) (6)
  - (4) 910 OG/CC: Ext 1257 / 1179, FAX 1172
  - (5) 910 OSF/OSA Airfield Manager: (b) (6)
  - (6) 757 AS/DO Operations Officer: Maj (b) (6)
  - (7) 757 AS/DOO Ops Admin: SMS (b) (6) , FAX 1657
  - (8) 757 AS/DOS: Aerial Spray Office: Capt (b) (6) Maj (b) (6)  
(b) (6) , FAX 1616
  - (9) 910 LG/CC: Ext 1225
  - (10) 910 LG/LGM: Ext 1352
  - (11) Maintenance Control: Ext 1348
  - (12) 910 LG/LGMS: Spray Maintenance: SMS (b) (6)
  - (13) 910 LG/LGL: Ext 1137
  - (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
  - (15) Cellular Phones:
    - Mission Commander (b) (6)
    - PMP Ground Support (b) (6)
    - Spray Maintenance (b) (6)
    - (b) (6) cell (b) (6)

Location of exercise. The location of the exercise will be at 29011.1'N latitude by 94045.6'W longitude. This would put us 6 miles off the beach, 5 miles from the nearest platform, and 10 miles SW of the channel. This position is also 2.5 miles outside the fairway anchorage so we should be clear of any ships that might be anchored offshore.





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 KING GRAVES RD UNIT 26  
VIENNA OH 44473-5926

26 OCT 2006

MEMORANDAM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Oil Spill exercise 6-9 NOV 2006

1. **Objective/Purpose/Benefit:** Oil spill response exercise and training 7-9 NOV 2006 with Texas Land Company in association with Marine Spill Response Corporation, US Coast Guard and Texas A&M University operating out of Ellington Field, TX. The 757AS will be participating in an aerial spray oil spill exercise performing High Volume (HV) spray sorties on 8 NOV 06 simulating an oil spill located off of the Gulf Coast of Texas.
2. **Capability:** Spray Aircraft 89-9106, Available 6-9 Nov 06.
3. **Concept of Operations:**
  - 6 NOV (Monday):
    - 1300: Show Time
    - 1500: Depart KYNG
    - 1900: Land KEFD
  - 7 NOV (Tuesday):
    - 1300-1700 Oil Spill exercise planning meeting and Media events
  - 8 NOV (Wednesday):
    - 0930: Show Time
    - 1130: Depart KEFD
    - 1200-1300 Oil Spill Response exercise
    - 1400: Land KEFD
  - 9 NOV (Thursday):
    - 0800: Debrief, USCG, MSRC, and other participants
    - 1030 Show at KEFD
    - 1200 Depart KEFD
    - 1800 Arrive KYNG
4. **Spray Parameters:**
  - a. Nozzles – Raindrop nozzles oriented straight back.
  - b. 8 (16 total) on each fuselage boom; evenly spaced.
  - c. Booms – fuselage only
  - d. Airspeed – 200 knots ground speed.
  - e. Altitude – 100 feet above water.
  - f. Application Rate – 5 Gal/Acre
  - g. Flow Rate – 225 Gal/Min
  - h. Spray – 600 gallons water combined with 1 gal Rhodamine
  - i. Number of passes – 3 per sortie. Do not decrease flow rate in order to increase passes.
  - j. Pressure – 40 psi
5. **Mission Commander:** Maj (b) (6)
6. **Aircraft Commander:** Capt (b) (6) Maj (b) (6)
7. Any questions concerning this mission please contact the Aerial Spray Office, DSN (b) (6)

(b) (6) // SIGNED //  
CAPT, USAFR  
Assistant Chief Aerial Spray



# AERIAL SPRAY OPERATIONAL SCHEDULE

## PARRIS ISLAND MCRD, SC

### 6-9 OCT 2003

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCRD, SC.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: Maj (b) (6)
- (2) Pilots: LTC (b) (6) , LTC (b) (6)
- (3) Navigators: LTC (b) (6)
  - (a) Flight Engineers: MSG (b) (6)
  - (a) Spray Operators: MSG (b) (6) , TSG (b) (6) , TSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: SMS (b) (6) , TSG (b) (6) , TSG (b) (6) , SSG (b) (6)
- (2) Crew Chiefs: TSG (b) (6) , TSG (b) (6)
- (3) Avionics: TSG (b) (6)

##### c. Pest Management Professionals/Entomologist: LTC (b) (6) , CPT (b) (6) (in place), (b) (6)

Gov Vehicles provided by Parris Island MCRD: 2 Crew Vans & 1 Staff Car

#### 2. PLANNED SEQUENCE OF EVENTS: (All times local)

##### 5 Oct (Sunday):

- 1300: Show Time
- 1500: Take off KYNG
- 1830: Land KNBC **PPR # 278-01**
- 1900: Safety Briefing

##### 6 OCT (Monday): see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

- 1300: Show Time
- 1400: Load Chemical
- 1600: Take off KNBC
- 1801: Sunset

##### 7 OCT (Tuesday):

- 1300: Show Time
- 1400: Load Chemical
- 1600: Take off KNBC
- 1800: Sunset

##### 8 OCT (Wednesday):

- 1300: Show Time
- 1400: Load Chemical
- 1600: Take off KNBC
- 1859: Sunset

##### 9 OCT (Thursday):

- 0800: Show Time
- 1000: Take off KNBC
- 1200: Land KYNG

**3. ITEMS TO TAKE:**

**a. Entomologist/CPMP:**

- (1) Wind Gauge & Compass
- (2) UHF/VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder
- (4) DGPS Computers & Maps
- (5) Oil Sensitive Papers
- (6) Trackstar Equipment

**b. Navigators:**

- (1) Maps
- (2) Templates
- (3) Laptop Computer

**c. Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

**4. SPRAY CONFIGURATION: SP-2G**

- a. Mass:** 2-Module System (PI)
- b. Booms:** Stainless Steel ULV Wing Booms
- c. Nozzles:** Open for ULV spray; 6, 8008's oriented straight down
- d. Differential GPS:** Installed
- e. Aircraft:** 108; **Mission Identifier:** QZNRKA 019 293

**5. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

**a. Pesticide:**

Dibrom® Concentrate (naled)  
Organophosphate Insecticide  
Signal Word: Danger  
Antidote: Atropine, 2-PAM  
Flushing Agent: HAN

**b. Application:** 1 Ounce Dibrom®/Acre

**c. Spray Altitude:** 150 Feet

**d. Swath Width:** 1,000 Feet

**e. Ground Speed:** 200 Knots (338 Feet/Second)

**f. Acreage:** 7,500 Acres

**g. Spray-On Time:** 16 Minutes

**h. Flow Rate:** 3.634 Gallons/Minute

**6. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Load 60 gallons of Dibrom® Concentrate per mission and 25 gallons HAN in flush tank.

**7. PPR REQUIREMENTS:** Required:

**8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
Hilton Head Arpt: 123.0 UNI  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 392.2; Secondary 340.8**

**10. TRANSPORTATION:** Parris Island will provide two vans and staff car for transportation to and from quarters and for messing.

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP & Parris Island MCRD Project Coordinator.

**12. CONTACTS :**

a. **Parris Island MCRD SC: (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX**

- (1) Environmental Coordinator (Spray Coordinator):  
(b) (6) DSN (b) (6) (cellular) (b) (6) DSN (b) (6)  
FAX (843) 228-2616; (b) (6) (b) (6)
- (2) Assistant Chief of Staff I & L: Col (b) (6) DSN (b) (6)
- (3) Pest Control Foreman: DSN 335-3663
- (4) P.I. Motor Pool: (b) (6), DSN (b) (6)
- (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
- (6) Thrifty Car Rental: (843) 522-9996
- (7) Enterprise Rental Agency: (843) 524-0194; FAX 9627; Anthony
- (7) P.I. Rifle Range: DSN: 335-3183/3624

b. **Beaufort MCAS SC:**

- (1) Beaufort MCAS Environmental: (b) (6), DSN (b) (6); (b) (6) DSN (b) (6)
- (2) Fuels: DSN: 335-7049/7448/7168
- (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
DSN: (b) (6). Base Ops is ext 7301/2/3  
(After duty hours: (b) (6), DSN: (b) (6))
- (4) Trans Alert/VAL: DSN: 335-7110
- (5) Weather: DSN 335-7001/7926/7/9 (www:beaufort.usmc.mil)

c. **Beaufort County Mosquito Control: (b) (6)**

d. **Naval Occupational Health/Preventive Medicine: Lt Cdr (b) (6) DSN: (b) (6)**

e. **Quarters: JTR Seasonal Rate 1 Oct-14 Mar L/\$75, M/\$44, MAX/\$121**

**Ramada Inn (\$59/Night) (843) 524-2144 (FAX 843-524-1704) Conf #**

**GP0000332**

Hampton Inn (843) 986-0600 (FAX 0494)

Sleep Inn, (Yolanda/Joy) (843) 522-3361 FAX (843) 522-9929  
Parris Island Billeting (Linda Davidson) DSN: 335-2744 (FAX: 3815); (843) 228-3960  
Comfort Inn (843) 525-9366 (FAX 1529)(b) (6)  
Best Western (Sea Island Motel) (843) 524- 4121  
Port Royal Days Inn (843) 524-1551  
Best Western Pt South (I-95) (843) 726-8101

f. **Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 OSF/OSA: Airfield Manager: (b) (6)  
- Assistant Air Field Manager (ACAM), (b) (6)
- (6) 757 AS/DO: Lt Col (b) (6)
- (7) 757 AS/DOO: Ops Admin, SMS (b) (6)
- (8) 757 AS/DOS: Aerial Spray Office, (b) (6) FAX 1616
- (9) Supervisor of Flight Desk: 1069, FAX: 1371
- (10) 910 LG/LGM: Ext 1352
- (11) 910 LG/CC: Ext 1225
- (12) 910 LG: Maintenance Control, Ext 1348
- (13) 910 LG/LGL: CMS (b) (6), (b) (6)
- (14) 910 LG/LGMS: Spray Maintenance, Ext 11321586
- (15) Omega/SATO Travel: Ext 1772; (800) 285 - 6342
- (16) Cellular Spray Phones:  
Mission Commander: (b) (6)  
Entomologist: (b) (6)  
Spray Maintenance: (b) (6)

(b) (6)

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT

### 1. MISSION BASICS:

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 6-9 Oct 2003
- c. Purpose of Application: Biting Midge (*Culicoides* spp.) and Mosquito Control
- d. Application Date/s: 6 & 8 October 2003
- e. Time/s of Application (Local): 1705-1845 (6 Oct 03); 1810-1905 (8 Oct 03)
- f. Acres Treated: 7,301 (6 Oct 03); 4,139 (8 Oct 03)
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6) ,  
Environmental/Spray Coordinator, DSN(b) (6)
- h. Date Spray Map Last Approved: 6 October 2003
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 6 Oct; Assistant Chief of Staff,  
Installation and Logistics, Capt (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: Maj (b) (6)
- b. Certified PMP/s (Category 11): Lt Col (b) (6) , Capt (b) (6)
- c. Entomologist: (b) (6)
- d. Aircrew:
  - Pilots: Lt Col (b) (6) , Lt Col (b) (6)
  - (2) Navigator: Lt Col (b) (6)
  - (3) Flight Engineer(s): MSG (b) (6)
  - (4) Spray Operators: MSG (b) (6) , TSG (b) (6) , TSG (b) (6)
- e. Safety Briefer: Lt Col (b) (6)
- f. Spray Maintenance: SMS (b) (6) , TSG (b) (6) , TSG (b) (6)(b) (6) TSG (b) (6)
- g. Spray Ground Monitor: Capt (b) (6)
- h. Crew Chiefs: TSG (b) (6) TSG (b) (6)
- i. Avionics: TSG (b) (6)
- j. Flying Data:
  - (1) Spray Sorties/Hours: 2 Sorties/3.2 Hrs
  - (2) Ferry Sorties/Hours: 2 Ferry(s)/4.3 Hrs

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate
- d. Gallons Pesticide Loaded: gal Dibrom<sup>®</sup> (6 Oct); 60 gallons (8 Oct) 30 gallons= 90 Total Gallons
- e. Gallons Pesticide Applied: 58 gal (6 Oct), 32 gal (8 Oct) = 90 Total Gallons
- f. Gallons and Name Diluent Used: None
- g. Gallons and Name of Flush Used: 50 gallons VM & P NAPHTHA
- h. Other Additives Used: None
- i. Application Rate: 1 Oz/Acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99108
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8008 Flat Fan
- e. Nozzle Orientation & Number Used: 6 oriented straight down
- f. Pressure: 40 PSI
- g. Flow Rate: 3.6 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000
- b. Spray Off Set: 3000 feet (6 Oct), 2000 feet (8 Oct)
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 95-105/6 MPH (6 Oct); 30-50/2 MPH (8 Oct)
  - (2) Release Altitude: 110/8 Knots (6 Oct); 47/7 Knots (8 Oct)
- b. Temperature (Degrees Fahrenheit): 76° F (6 Oct); 72° F (8 Oct)
- c. Humidity: 58 – 64 % (6 Oct); 77% (8 Oct)
- d. Cloud Cover: 75 % on both 6 and 8 Oct.
- e. Source: Ground observations at the MCRD Marina on 6 Oct and at the small arms range on 8 Oct. Observations at spray altitude are from Doppler radar on the aircraft.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - Technique/s Used: Oil Sensitive Cards (OSC) wrapped on 1-meter dowels.
  - (2) Results: Good coverage throughout spray area; swath determination was based on historical conditions.
- b. Effectiveness: (see remarks).

**8. REMARKS:** Both biting midges and mosquitoes were targets of this aerial spray. The mosquitoes were targets because of West Nile Virus positive mosquito pools. On October 6<sup>th</sup> conditions for aerial spray were excellent, and the entire island with the exception of the no-spray area around the eagle nest was treated. Thunderstorms were in the area on the afternoon of October 8<sup>th</sup>. Following the thunderstorm, spray conditions came within parameters, but there was only enough daylight left to spray half of the Island. Only priority areas including the rifle range, golf course, and areas around living quarters and offices were treated. Despite the abbreviated spray, the 757<sup>th</sup> Airlift Squadron achieved a 97% reduction in biting midge populations and an 87% reduction in mosquito populations overall.

(b) (6) , Lt Col, USAFR  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL**

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**LANGLEY AFB, VA 6-10 JUL 2009**

**1. MISSION BASICS:**

- a. Installation Sprayed: Langley AFB, VA and surrounding communities.
- b. Mission Duration: 6-10 Jul 2009
- c. Purpose of Application: Adult mosquito control
- d. Application Dates: 7 July 09
- e. Times of Application (Local): 1825-2036 (7 July); 1805-2030 (8 July); 1830-1942 (9 July)
- f. Acres Treated: 98,559 total: 41,472 (7 July); 51,175 (8 July); 5,912 (9 July)
- g. Project Coordinator (Name, Phone #): (b) (6)
- h. Date Spray Map Last Approved: 7 July 2009
- i. Date of Waste Generation Letter: 4 April 1996
- j. Installation In-Briefing: 1 CE Conference Room, Langley AFB; 6 Jul 09; Lt Col (b) (6), Maj (b) (6) Maj (b) (6)
- k. Mission identifier: QZNRKA543187

**2. OPERATIONAL:**

**910 AW PARTICIPANTS:**

**a. Aircrew:**

- (1) Mission Commander: Lt Col (b) (6)
- (2) Pilots: Lt Col (b) (6), Maj (b) (6)
- (3) Navigator: Lt Col (b) (6)
- (4) Flight Engineers: SSgt (b) (6)
- (5) Spray Operators: MSgt (b) (6), MSgt (b) (6), SSgt (b) (6)

**b. Maintenance:**

- 1. Spray Maintenance: TSgt (b) (6), TSgt (b) (6) SRA (b) (6)
- 2. Crew Chiefs: SSgt (b) (6)
- 3. Avionics: MSgt (b) (6)

**c. Entomologists: Maj (b) (6)**

**d. Flying Data:**

- (1) Spray Sorties/Hours: 3/6.0 [2.3 (7 July); 2.5 (8 July); 1.2 (9 July);
- (2) Ferry Sorties/Hours: 2/3.1 [1.6 (6 July); 1.6 (10 July)]

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 390 total; 240 (7 July); 150 (8 July)
- e. Gallons Pesticide Applied: 390 total; 164 (7 July); 200 (8 July); 26 (9 July);
- f. Gallons and Name Diluent Used: none
- g. Gallons and Name of Flush Used: 10 gallons marvel oil
- h. Other Additives Used: n/a
- i. Application Rate: 0.50 oz/acre (7-8 July); 0.56 (9 July)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 90-9107
- b. Spray System (Modules Used) and System ID #: SP2G MASS ULV
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: TeeJet 8005 flat fan nozzles
- e. Nozzle Orientation & Number Used: 9 straight down; 4 left, 5 right (7 July);  
11 (8-9 July)
- f. Pressure (PSI): 70 psi (7 July); 53 psi (8-9 July)
- g. Flow Rate: 3.6 gpm

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 feet
- b. Spray Off Set: 1000 ft (7 July); 4000 feet (8-9 July)
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed in knots): 140-220°/4-11 (7 July); 040-110°/7-11 (8 July) on Langley Peninsula, 060-080°/4 ground and 090-100 aircraft (9 July) on Craney Island
- b. Temperature (°F): 82-80 (7 July) 75 (8 July); 73-71 (9 July)
- c. Cloud Cover: mostly sunny (7-8 July), overcast (9 July)
- d. Source: Ground observations and at altitude during spray sorties

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:  
(1) n/a
- b. Effectiveness:



(1) Technique/s Used: carbon dioxide-baited traps were used to monitor mosquito densities pre- and post-treatment by the various community and Base mosquito control professionals.

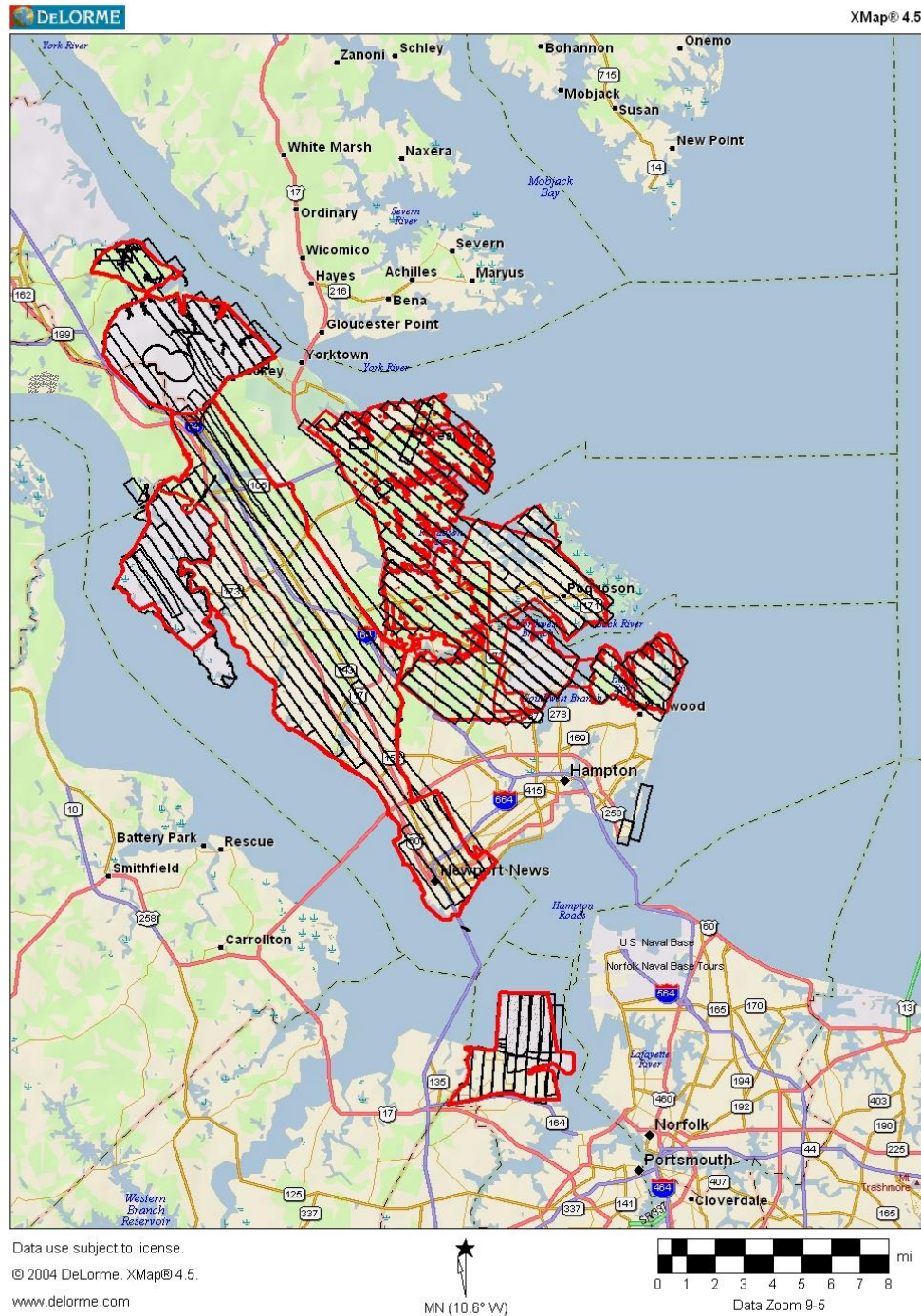
(2) Results: Langley pest management reported a 96% reduction post-spray; York Co. biologist reported no mosquitoes flying the day after the application and resident compliments. Ft. Eustis reported 151 females in traps pre-spray and 2 females in traps post-spray; no data was available from Portsmouth at time of publication.

8. **REMARKS:** Rainfall has produced significant mosquito problems along the Atlantic coast this year. A schedule cancellation by Homestead AFB allowed the Spray Flight to come to Langley AFB. Our thanks to (b) (6), of AMVAC (the manufacturers of Dibrom), who arrived before the flights and tested all drums of Dibrom for corrosion prior to any loading. Subsequently, we experienced no problems associated with Dibrom and we continue the multi-faceted approach to eliminating this issue: enhanced cleaning of the MASS and load station, filtering with 100-mesh screen, and using oldest stock first. Additionally, AMVAC is developing new closed-system delivery components to eliminate any potential corrosion issues. 910<sup>th</sup> Spray Operators received continuation training and upgrade training during this mission. (b) (6) has recently accepted the Entomology Shop Supervisor position (1 CES) at Langley AFB and is our new POC for this mission. We received excellent support from Langley AFB, 1 CES to make this mission a success. On a final note, Lt Col (b) (6) (b) (6) a former Chief of Spray, was navigator on this mission which will be, sadly, his final aerial spray operation as he is retiring in Aug 09. Thank you Lt Col (b) (6) for your excellent leadership to the Air Force and to the aerial spray mission! Lt Col (b) (6) received the coveted Air Force Entomology coin from the "Bug-Docs" as a symbol of our appreciation.

//Signed//

(b) (6), Maj, USAFR  
Entomologist and Certified Applicator

**Attachment 1. Map depicting sprayed areas over Langley AFB and surrounding communities, 7-9 July 2009. Red outline were spray areas directed by participating communities. Black shaded portions show actual areas treated; Ft. Monroe was sprayed using visual parameters. Some communities reduced their spray areas based on low mosquito presence for those regions.**



# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 6-10 JULY 09

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes at LFI and the surrounding communities.

**1. 910 AW PARTICIPANTS:**

**a. Aircrew:**

- (1) Pilots: Maj (b) (6) , LTC (b) (6) , MC LTC (b) (6)
- (2) Navigator: LTC (b) (6)
- (3) Flight Engineers: SSgt (b) (6)
- (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6) , SSgt (b) (6)

**b. Maintenance:**

- 1. Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , SRA (b) (6)
- 2. Crew Chiefs: MSgt (b) (6) , SSgt (b) (6)
- 3. Avionics: MSgt (b) (6)

**c. Entomologist: Maj (b) (6)**

**2. Vehicles:** Langley will supply us with 2x9pax vans and 2 cars

- **MC / Entomologist:** One Car
- **Ops:** One van (9 pax), One car
- **Mx:** One Van (9 pax)

**3. Billeting:** 15 rooms @ Holiday Inn, 1815 W Mercury Blvd, Hampton, VA (800)713-4219 POC: (b) (6)

**4. PPR:** 0706MT01

**5. SCHEDULE: (All times local)**

**6 Jul (Monday): Deploy to LFI**

- 1500: Show time
- 1700: Takeoff YNG
- 1830: Land LFI w/safety briefing immediately following

**7 Jul-9 Jul (Tuesday-Thursday): Spray LFI** \*keep these takeoff and land times for local flying deconfliction\*

- 1400: Station In-brief (Tuesday only)
- 1615: Show time
- 1645: WX decision, load Dibrom
- 1815: Takeoff LFI
- 2028: Sunset
- 2045: Land LFI

**10 Jul (Friday): Redeploy to YNG**

- 1000: Show time
- 1200: Takeoff LFI
- 1330: Land KYNG

**6. ITEMS TO TAKE:**

- a. Entomologist:** Kestrel Weather Monitor, Compass, PCM Card, Pest Safety Binder, UHF Radios, Laptop Computer
- b. Navigator:** Maps/Map Bag, Validation Map
- c. Spray Operator:** Safety Gear, Calibration Tables
- d. Spray Maintenance:** Deployment Kit/Supply Kit

**7. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. Langley Tower:** DSN 574-5326
- b. Langley Base Ops:** DSN 574-2504
- c. Camp Perry:** (757) 229-2121 ext 2263
- d. Consideration calls:**
  - i. Newport News
  - ii. Ft Eustis/Felker AAF Tower
  - iii. Norfolk NS/Chambers Tower

8. **PARKING PLAN:** Taxiway Foxtrot with the North Ramp as the alternate if construction is not complete
9. **RADIO FREQUENCIES:**
- a. **Felker AAF Tower (Ft Eustis): 126.3, 269.25, 248.2, 241.0**
    - (1) Ops phone DSN 826-3588
    - (2) Tower phone DSN 826-3530
    - (3) Flight Service 122.2
  - b. **Newport News-Williamsburg Int: CTAF – 118.7 or 257.9(Operating Hours 1000Z-0200Z)**
    - (1) Ground – **121.9** or 348.6 (phone 877-0221 ops)
    - (2) Tower – **118.7** (phone 877-2862) voice mail 7-2962
    - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
  - c. **Langley AFB: Tower DSN 574-7999**
    - (1) Tower - **125.0** or 253.5
    - (2) Ground - **121.7** or 275.8
    - (3) Clearance – **118.85** or 257.625
    - (4) Metro - **239.8**
    - (5) ATIS – 270.1
  - d. **Norfolk NAS (Chambers Fld): Tower –124.3, 379.15, Base Ops, DSN 262-3419, will transfer to TWR**
  - e. **Norfolk Approach: 118.9 or 353.7**
  - f. **Spray Ground: 123.4**
10. **IN-BRIEFING:** 1400 hrs on Tuesday in the CE Conference Room
11. **SPRAY CONFIGURATION:**
- a. **System:** SP2G - MASS ULV; Fuselage booms
  - b. **Nozzle Tips/Orientation:** 9 8005 nozzles -- straight down (4 left - 5 right)
  - c. **Aircraft:** 90-9107
  - d. **Mission Identifier:** QZNRKA543187
12. **SPRAY PARAMETERS:**
- a. **Altitude:** 150' AGL
  - b. **Ground Speed:** 200 KNOTS
  - c. **Pesticide:** Dibrom® Concentrate
  - d. **Application Rate:** 0.5 oz/acre
  - e. **Flow Rate:** 3.6 Gallons/Minute
  - f. **Acreage:** Potentially 125,000 acres on the peninsula but final acreage TBD
  - g. **Swath Width:** 2000 foot
13. **PESTICIDE LOADING:**
- a. **How Much Pesticide:** see entomologist
  - b. **Where:** Taxi Way F Aero Club Ramp or North Ramp if constructions isn't complete
  - c. **When:** 1645 hrs each day pending weather and heat index. \*\*Calibration performed unless otherwise directed by the Entomologist or Mission Commander
  - d. **Furnished by Installation:**
    - (1) Pesticide
    - (2) Loading Equipment/Crew
    - (3) Hazardous Waste Disposal
    - (4) Two B-5 or B-1 Stands

**14. CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**

**a. LANGLEY AFB VA:**

Wing Commander: DSN 574-5321  
Mission Support Group Commander: DSN 574-7995  
Civil Engineer: DSN 574-2025  
Deputy Chief/Civil Engineer: (b) (6)  
Environmental Coordinator: DSN 574-3987; FAX 3503  
Base Operations: DSN 574-2504  
Langley Control Tower: DSN 574-5326  
Weather: Langley AFB, DSN 574-5907  
Ft Eustis: DSN 297-5300/3343  
Command Post: DSN 574-5411  
Pest Control Foreman: (b) (6) , DSN (b) (6) , cell phone (b) (6)  
Pest Control NCOIC to TSgt (b) (6)  
Public Affairs: DSN 574-2018/2010/2019  
Fuels: DSN 574-4312/3623/4224  
Motor Pool: 574-7514/5712 (2 vans and 1 staff vehicle were requested)  
ACC PMP: (b) (6) , DSN (b) (6) cell phone (b) (6)  
Fire Department Comm: 757-764-2222

**a. FT EUSTIS VA:** Environmental Coordinator: DSN 927- 4152/2375

**b. Hampton Mosquito Control:** 757 850-3305

**c. York County Mosquito Control:** (757)-890-3780

**d. Poquoson:** (b) (6)

**e. City of Portsmouth Biologist:** (757) 393-8666

**f. Newport News Mosq. Control:** (757) 269-2750

**g. Camp Peary:** (b) (6) (b) (6) , (b) (6) or (b) (6)

**h. Ft Monroe: ?**

**i. Newport News/Williamsburg Int.:**

- (1) Fixed Base Operator: Flight Int 877-6401
- (2) Flight Service: 877-0209
- (3) Tower: 877-2962
- (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

**j. Norfolk NAS VA:** DSN 564-2442/7598 or COM (757)-444-2442/7598

- (1) Weather: DSN 565-2500

**k. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Maj (b) (6) ; FAX 1022
- (4) 910 OG/CC: LtCol (b) (6)
- (5) 910 OS/OSA: Airfield Manager, (b) (6)
- (6) 757 AS/DO: Maj (b) (6)
- (7) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (8) 757 AS/DOO: Ops Admin: SMSgt (b) (6) ; FAX 1657
- (9) 757 AS/DOS: Aerial Spray Office, LtCol (b) (6) , Maj (b) (6) ; FAX 1616
- (10) 910 LG/CC: Ext 1225
- (11) 910 LG/LGM: Ext 1352
- (12) Maintenance Control: Ext 1327
- (13) 910 LG/LGMS: Spray Maintenance, Ext 1132
- (14) 910 LG/LGL, Ext 1137
- (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6)





**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
**AERIAL SPRAY OPERATIONS**  
**3976 King Graves Rd Unit 32**  
**Vienna OH 44473-5932**



24 Oct 2005

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray of Musk Thistle Weed at Smoky Hill Air National Guard Range, Salina KS.

1. Purpose/Objective/Benefit: To control musk thistle weed at the Smoky Hill ANGR KS, to improve grazing areas, to eliminate the Range as a source of infestation to neighboring farms from wind-blown musk thistle seeds and to support state and local noxious weed control efforts.
2. Capability. Spray Aircraft Tail Number 90-9107 Available 6-11 Nov 2005 in addition to one support aircraft at the beginning and end of the mission.
3. Concept of Operations:

**SCHEDULE: (All Local) Times**

**6 NOV (Sunday)**

0800: Show at KYNG

1000: Depart KYNG

1430: Land KSLN/Safety Briefing

A/R: Maintenance configures aircraft; Aircrew plan next day's mission

**7 NOV (Monday): 2 Spray Sorties**

0530: Show time

0704: Sunrise

0705: Take Off KSLN

: Range time (Coordinate MARSA as needed after 1100)

1100: Land KSLN

**8 NOV (Tuesday): 2 Spray Sorties**

0530: Show time

0705: Sunrise

0705: Take Off KSLN

: Range time (Coordinate MARSA as needed after 1100)

1100: Land KSLN

**9 NOV (Wednesday): 1 or 2 Spray Sorties**

0530: Show time

0707: Sunrise

0710: Take Off KSLN

: Range time (Coordinate MARSA as needed after 1100)

1100: Land KSLN

**10 NOV (Thursday): 1 or 2 Spray Sorties**

0530: Show time

0708: Sunrise

0710: Take Off KSLN

: Range time (Coordinate MARSA as needed after 1100)

1100: Land KSLN

**11 NOV (Friday): Return**

0800: Show time

1000: Take Off KSLN

1230: Land KYNG

4. Spray Parameters:

a. Acreage: 2600 Acres (approximately) (Only areas determined by PMP)

b. Altitude: 100' AGL

c. Ground Speed: 200 Knots

d. Swath Width: 300 Feet

e. Pesticide: Tordon® 22K

f. Flow Rate: 279 Gallons/Minute

g. Application Rate: 2 Gal spray/Acre (water with 1 Oz Control® & 10 Oz Tordon® 22K)

5. Mission Commander: MAJ (b) (6)

6. Certified Pest Management Professional(s): LTC (b) (6) , LTC (b) (6) , and Capt (b) (6)

7. Support required at Smoky Hill ANGR KS has been coordinated with (b) (6) ,  
Smoky Hill ANGR Spray Coordinator, DSN (b) (6) , (b) (6) and LTC (b) (6) , Range  
Commander, DSN (b) (6) .

8. HQ AFRC/DOOM approval along with AFMAN 24-204 Chap 3 waiver (see note) can  
be sent by email: (b) (6)

// SIGNED //

(b) (6) , Major, USAFR  
Chief, Aerial Spray Operations (757 AS/DOS)





**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
**3976 KING GRAVES RD UNIT 26**  
**VIENNA OH 44473-5926**

21Jul 2006

**MEMORANDAM FOR HQ AFRC/DOOM**

**FROM:** 757 AS/DOS

**SUBJECT:** Concept of Operations for Safe Seas 2006 NOAA / USCG Oil Spill Exercise, 6-11 Aug 06

1. **Objective/Purpose/Benefit:** Oil spill exercise and training with NOAA, USCG, and California state environmental agencies at the USCG Station San Francisco. The 757AS will be dispersing water during a High Volume (HV) spray sortie on 9 Aug 06 for the exercise simulating an oil spill located on the below attachment.
2. **Capability:** Spray Aircraft 89-9106, Available 6-11 Aug 06.
3. **Concept of Operations:**
  - 6 Aug (Sunday):
    - 1000: Show Time
    - 1200: Depart KYNG
    - 1630: Land KNUQ (Moffitt Field NAS)
    - 1630: Safety Briefing
  - 7-8 Aug (Mon-Tues): Safe Seas NOAA / USCG Oil Spill Planning Meeting
    - 0900: Planning / Safety Briefings
    - 1100: 2 Day Dispersant Application Short Course, USCG San Francisco.
      - Entomologists, Pilots, Spray Maintenance
  - 9 Aug (Wednesday):
    - 1000: Show Time
    - 1200: Depart KNUQ - Safe Seas NOAA / USCG Oil Spill Exercise
    - 1500: Land KNUQ
  - 10 Aug (Thursday):
    - 0900: Safe Seas NOAA / USCG Debrief, USCG San Francisco
  - 11 Aug (Friday):
    - 0600: Show Time
    - 0800: Depart KNUQ
    - 1730: Land KYNG
4. **Spray Parameters:**
  - a. Nozzles – Raindrop nozzles oriented straight back.
  - b. 8 (16 total) on each fuselage boom; evenly spaced.
  - c. Booms – fuselage only
  - d. Airspeed – 170 knots ground speed.
  - e. Altitude – 100 feet above water.
  - f. Application Rate – 7 Gal/Acre
  - g. Flow Rate – 277 Gal/Min
  - h. Spray – water only.
  - i. Number of passes – 6 per sortie. Do not decrease flow rate in order to increase passes.
  - j. Pressure – 40 psi
5. **Mission Commander:** Maj (b) (6)
6. **Aircraft Commander:** Maj (b) (6)
7. **Reference Attachments:** Safe Seas 2006 Fact Sheet and below
8. Any questions concerning this mission please contact the Aerial Spray Office, DSN (b) (6)

// SIGNED //  
(b) (6), Maj, USAFR  
AERIAL SPRAY CHIEF

**R/V Mussel Point**

- Oceanographic Ops
- UAS Control

**P/B ALCO 85**

- AUV Ops
- POPEIE Buoy Recovery
- Drift Cards

**USCGC Aspen**

- SORS (Tech. Demo)
- VIP Escort

**Air OPS:**

- Lake Amphib Surveys
- HH65 Dolphin Surveys & POPEIE Buoy release
- C-130 Dispersant Ops

**R/V Shearwater**

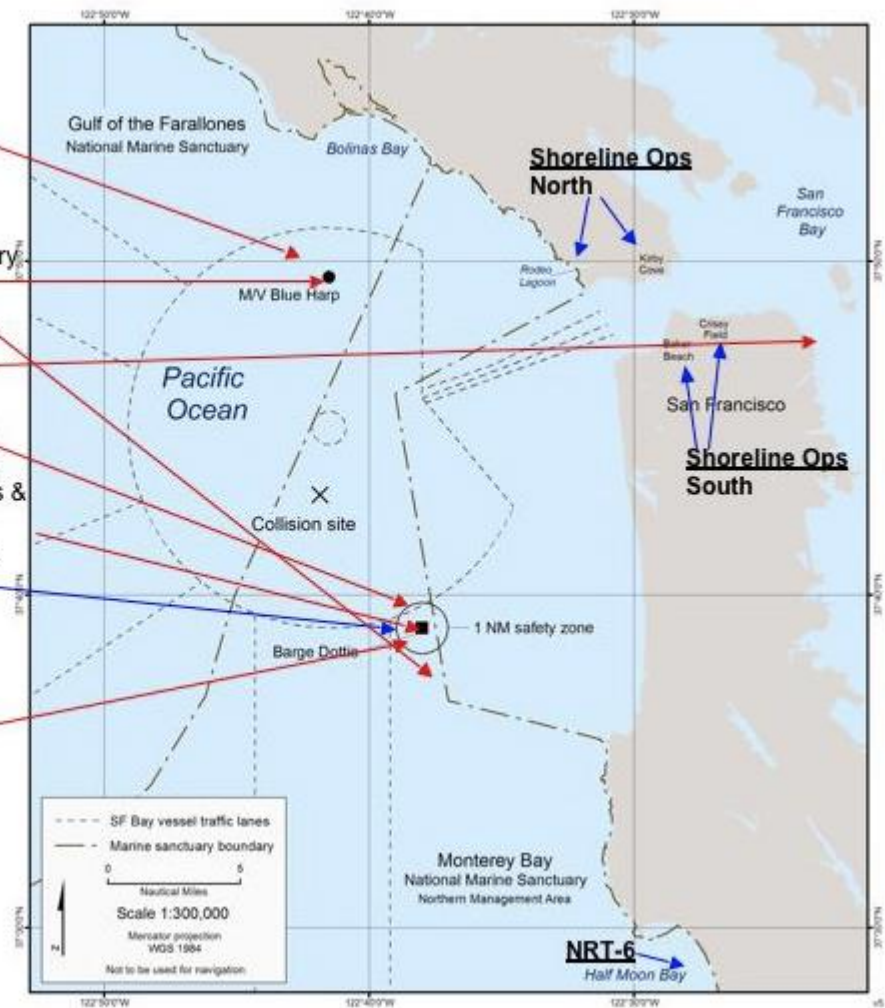
- Driftcards
- QREB
- SMART
- Oceanographic Ops

**W/C Pacific Responder**

- Skimming Ops
- Forward CMD Post

Barge Dottie:  
37° 39.0'N 122° 38.0'W

M/V Blue Harp:  
37°49.5' N 122°41.5'W



# SAFE SEAS 2006 EMERGENCY RESPONSE

## AERIAL SPRAY OPERATIONAL SCHEDULE

SAN FRANCISCO, CA

6-11 AUG 06

**PURPOSE/OBJECTIVE:** Oil spill emergency response exercise and training with NOAA / USCG.

### 1. 910 AW PARTICIPANTS:

#### a. Aircrew:

- (1) Mission Commander: MAJ (b) (6)
- (2) Pilots: MAJ (b) (6), MAJ (b) (6)
- (3) Navigators: LTC (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: MSG (b) (6)(b) (6), MSG (b) (6)

#### b. Spray Maintenance:

- (1) Spray Maintenance: TSG (b) (6), TSG (b) (6), TSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6), A1C (b) (6)

#### c. CPMP: MAJ (b) (6)

#### d. Public Affairs: CPT (b) (6)

### 2. SCHEDULE: (All times Local)

#### 6 Aug (Sunday): PPR 0702

1000: Show Time  
1200: Depart KYNG  
1630: Land KNUQ  
1630: Safety Briefing

#### 7 Aug (Monday):

1200-1500: Safe Seas Media Day, Piers 30-32 on Fisherman's Wharf  
(b) (6), (b) (6) (b) (6) (b) (6) —all YNG  
personnel invited to attend

#### 8 Aug (Tuesday):

1400: Safe Seas 2006 Emergency Response Exercise Planning Meeting  
USCG San Francisco Air Station, Hanger Admin Bldg

#### 9 Aug (Wednesday):

0900: Show Time  
1030: Depart KNUQ - Safe Seas 2006 Emergency Response Exercise  
1115: Disperse Applications over simulated oil spill  
1230: Land KNUQ  
1830: Safe Seas 2006 Reception at Ft Mason Officers Club—all invited to  
attend

#### 10 Aug (Thursday):

1230: Safe Seas 2006 Emergency Response Exercise Hot Wash  
USCG San Francisco Air Station, Command Post

**11 Aug (Friday):**

0600: Show Time

0800: Depart KNUQ

1730: Land KYNG

3. **PARKING PLAN:** Moffett Federal Airfield, parking north of tower.
4. **IN-BRIEFING:** Required. See the Schedule, or as determined by Mission Commander.
5. **COMMUNICATIONS PLAN: See also the exercise CONOPS**
  - a. USCG SFO OPS: San Fran Air 345.0
  - b. Exercise VHF 122.85, UHF 345.0
  - c. Golden Gate Common 124.3
  - d. NORCAL App 135.1
  - e. Alternate YNG/AFRC Freq for exercise area if needed

**VHF** 143.85 / 142.6  
**UHF** 349.35 / 305.225  
**HF** 6872.35 / 9262.35
6. **SPRAY CONFIGURATION:**
  - a. MASS – SP2G
  - b. Aircraft Number: 106
  - c. Mission Identifier: QZNRKA025218
7. **SPRAY PARAMETERS:**
  - a. Nozzles – Raindrop nozzles oriented straight back.
  - b. 8 (16 total) on each fuselage boom; evenly spaced.
  - c. Booms – fuselage only
  - d. Airspeed – 200 knots ground speed.
  - e. Altitude – 100 feet above water.
  - f. Application Rate – 7 Gal/Acre
  - g. Flow Rate – 277 Gal/Min
  - h. Spray -- water only.
  - i. Number of passes – 6 per sortie. Do not decrease flow rate in order to increase passes.
  - j. Pressure – 40 psi
8. **LOADING:**
  - a. 1000 gallons of water loaded at Moffett Field.
  - b. **Furnished by Installation:**
    - (1) Power cart
    - (2) B-1 Stands
9. **TRANSPORTATION: ENTERPRISE RENTAL CAR AGENCY-pick up at Base Ops**
  - #079918 confirmation, 5 Full Size @ \$47 per day or \$282 per week, 650-934-0760, poc (b) (6)
  - (b) (6)

- (b) (6)
- (b) (6)
- (b) (6)
- (b) (6)
- (b) (6)        -SUV

## 10. **QUARTERS: Lodging Rate \$99.50, per diem rate \$101.**

- Quality Inn Mountain View, 650-934-0155, (b) (6) , Confirmations 122081-122097

## 11. **CONTACTS:**

### a. **Safe Seas 2006 :**

- (1) Moffett Federal Airfield: 650-603-9213
- (2) Moffett Airport Police and Fire: 650-604-5416
- (3) USCG San Francisco: 650-808-2900  
Operations Center x 2901, 2902  
Commander x 2910  
Ops Officer x 2920/2921
- (4) USCG Com Officer: Ltjg (b) (6) : (b) (6) ,
- (5) USCG Air Boss: Lt (b) (6) : (b) (6) , Cel (b) (6)
- (6) NOAA Responder: (b) (6) : (b) (6) , Cel (b) (6)
- (7) USCG (b) (6) , Cel (b) (6)
- (8) Component Repair Branch Chief, (b) (6) : (b) (6)
- (9) NOAA 64, Lt (b) (6) : Cel (b) (6)
- (10) DFG Partnavia, (b) (6) , (b) (6)

### b. **910AW / 757AS Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX** Toll Free 1 - 800 - 278 - 7046, 2+ Ext

- (1) 910 AW/CC: COL (b) (6)
- (2) 910 AW Command Post: Ext 1315, FAX 1161
- (3) 910 AW/PA: Cpt (b) (6)
- (4) 910 OG/CC: Ext 1257 / 1179, FAX 1172
- (5) 910 OSF/OSA Airfield Manager: (b) (6)
- (6) 757 AS/DO Operations Officer: Maj (b) (6)
- (7) 757 AS/DOO Ops Admin: SMS (b) (6) , FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office: Capt (b) (6) , Maj (b) (6)  
Ext (b) (6)(b) (6), FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) 910 LG/LGMS: Spray Maintenance: SMS (b) (6)
- (13) 910 LG/LGL: Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Cellular Phones:
  - Mission Commander (b) (6) (b) (6)
  - PMP Ground Support (b) (6)
  - Spray Maintenance (b) (6)

### **R/V Mussel Point**

### **Bodega Bay Marine Lab**

- CenCOOS Oceanographic Ops
- Drift Card Release #1

### **Air OPS:**

- USCG HH65 Dolphin:



**Shoreline Ops**

30 October 2000

**MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 468-0198)**

**FROM: 757 AS/DOS**

**SUBJECT: Capability and Concept of Operations for Aerial Spray of Musk Thistle Weed at Smoky Hill Air National Guard Range, Salina KS.**

**1. Capability:** Spray Aircraft Tail Number 99107 Available 6-11 November 2000

**2. Concept of Operations:**

**a. 6 Nov 00 (Monday):**

1200 Take Off YARS

1400 Land Salina Airport KS

**b. 7 Nov 00 (Tuesday):**

**(additional times available on case-by-case basis)**

0700 Take-Off

0700-1040/1120-1220 Range available for Spray mission

**c. 8 Nov 00 (Wednesday):**

0700 Take Off

0700-1040/1120-1300 Range available for Spray mission

**d. 9 Nov 00 (Thursday):**

0700 Take-Off

0700-1040/1120-1300 Range available for Spray mission

**e. 10 Nov 00 (Friday): (Holiday)**

0700 Take-Off YNG

0700-1300 Range available for Spray mission

**f. 11 Nov 00 (Saturday):**

0730 Show Time

0900 Take-Off

1400 Land KYNG

**3. Spray Parameters:**

**a. Acreage:** 3,207 Acres (Only areas determined by PMP)

**b. Altitude:** 100' AGL

**c. Ground Speed:** 200 Knots

**d. Swath Width:** 330 Feet

**e. Pesticide:** Tordon® 22K

**f. Flow Rate:** 307 Gallon/Minute

**g. Application Rate:** 2 Gal spray/Acre (water with 1 Oz Control® & 10 Oz Tordon® 22K)

- h. Deploy:** 3.4 Hrs
- i. Re-Deploy:** 2.8 Hrs
- j. Spray Time:** 10 Hrs (or as called by PMP)

**4. Mission Commander:**

- a. 6 - 11 Nov 00:** Lt Col (b) (6)
- b. Certified Pest Management Professional(s):** LtC (b) (6) and LtC (b) (6)

**5.** Support required at Smoky Hill ANGR KS has been coordinated with TSG (b) (6) (b) (6) Smoky Hill ANGR Spray Coordinator, DSN (b) (6), ext (b) (6) and Lt Col (b) (6), Range Commander, DSN (b) (6)

**6.** HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616 or DSN 346-1161, ATTN: 757 AS/DOS.

(b) (6), Lt Col, USAFR  
Chief, Aerial Spray (757 AS/DOS)



# 910 AW AERIAL SPRAY PMP'S POST-MISSION REPORT

## 1. MISSION BASICS:

- a. **Installation Sprayed:** Smoky Hill ANGR, Salina KS
- b. **Mission Duration:** 6-11 Nov 00
- c. **Purpose of Application:** Management of Musk Thistle on ANGR.
- d. **Application Date/s:** 7-9 Nov 00  
**Time/s of Application (Zulu):** 1610-1745 (7 Nov); 1505-1630, 1810-1955 (8 Nov); 1715- 2025 (9 Nov); 1515-1546, 1855-2022 (10 Nov) Flush/Test
- e. **Acres Treated:** 3527 (See attached map)
- f. **Project Coordinator/s (Name/Rank, Title, Phone #):** MSG (b) (6) , Aerial Spray Coordinator, Smoky Hill ANGR, DSN (b) (6) ; LTC (b) (6) , LTC (b) (6)
- g. **Date Spray Map Last Approved:** 6 Nov 00
- h. **Date of Waste Generation Letter:** N/A
- i. **Installation In-Briefing: (When/Where/Briefer/s):** 0600, 6 Nov 00; Smoky Hill ANGR; LTC (b) (6)

## 2. OPERATIONAL:

- a. **Mission Commander:** LTC (b) (6)
- b. **Certified PMP (Category 11) and Entomologist:** LTC (b) (6) , LTC (b) (6)
- c. **Aircrew:**
  - (1) Aircraft Commander/Pilot: LTC (b) (6)
  - (2) Co-Pilot: CPT (b) (6)
  - (3) Navigator: LTC (b) (6) yle
  - (4) Flight Engineer(s): MSG (b) (6)
  - (5) Spray Operators: MSG (b) (6) , MSG (b) (6) TSG (b) (6)
- d. **Safety Briefer:** LTC (b) (6)
- e. **Spray Maintenance/Pesticide Loaders:** TSG (b) (6) , SSG (b) (6) , SSG (b) (6) , TSG (b) (6)
- f. **Spray Ground Monitors:** LTC (b) (6) , LTC (b) (6)
- g. **Crew Chief(s):** SRA (b) (6) , TSG (b) (6)
- h. **Avionics:** MSG (b) (6)
- i. **AGE:** TSG (b) (6)
- j. **Flying Data:**
  - (1) Spray Sorties/Hours: 1/1.9 (7 Nov); 2/3.9 (8 Nov); 1/3.5 (9 Nov), 2/2.3 (10 Nov) Flush/Test;
  - (2) Ferry Sorties/Hours:
    - (a) Spray A/C 909107 Ferry Sorties/Hours: 1/3.5 (6 Nov); 1/2.7 (11 Nov)
    - (b) Support A/C 899101 Sorties/Hours: 2/6.3 (6 Nov); 1/3.7 (11 Nov); 2/3.3 (12 Nov)

## 3. PESTICIDE:

- a. **Trade Name (% Active Ingredient):** Tordon® 22K
- b. **EPA Registration Number:** 62719-6
- c. **Formulation Sprayed:** Tordon® 22K mixed with water and Control®
- d. **Gallons Pesticide Loaded:** 7,190 gal of Tordon® 22K/water loaded (562 gal Tordon® 22K)
- e. **Gallons Pesticide Applied:** 562 gallons
- f. **Gallons and Name Diluent Used:** 6,625.25 gallons of water
- g. **Gallons and Name of Flush Used:** 590 gallons of water & 5 gallons Remove®
- h. **Other Additives Used:** 2.75 gallons of Control®
- i. **Application Rate:** 2 gallons spray/acre (water with 1 oz. of Control® & 10 oz. of Tordon®)

**4. APPLICATION EQUIPMENT:**

- a. **Aircraft Type (Tail Number):** 909107
- b. **Spray System (Modules Used) and System ID #:** 3-Module system
- c. **Spray System Configuration:** Full Wing and Fuselage Booms
- d. **Nozzle Type/Size:** 8070 Flat Fan TeeJet®
- e. **Nozzle Orientation & Number Used:** 68; Wing: 34 each side;  
Fuselage: 16 (8 each side) with 3" Restrictor
- f. **Pressure:** 40 PSI
- g. **Flow Rate:** 307 GPM

**5. APPLICATION PARAMETERS:**

- a. **Swath Width Flown:** 330'; spray blocks 10, 12, and 13 were flown with a 220' swath and flow rate of 204 GPM
- b. **Spray Off Set:** 660'
- c. **Spray Release Altitude:** 100'
- d. **Ground Speed:** 200 Knots

**6. WEATHER OBSERVATIONS:**

- a. **Winds (Direction/Speed):**  
Ground: W/8-12 mph (7 Nov); NE/6-8mph (8 Nov); N/4-8 mph (9 Nov)
- b. **Temperature Range During Application (°F):** 34°-42°
- c. **Cloud Cover:** 0%
- d. **Source:** Ground observations

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

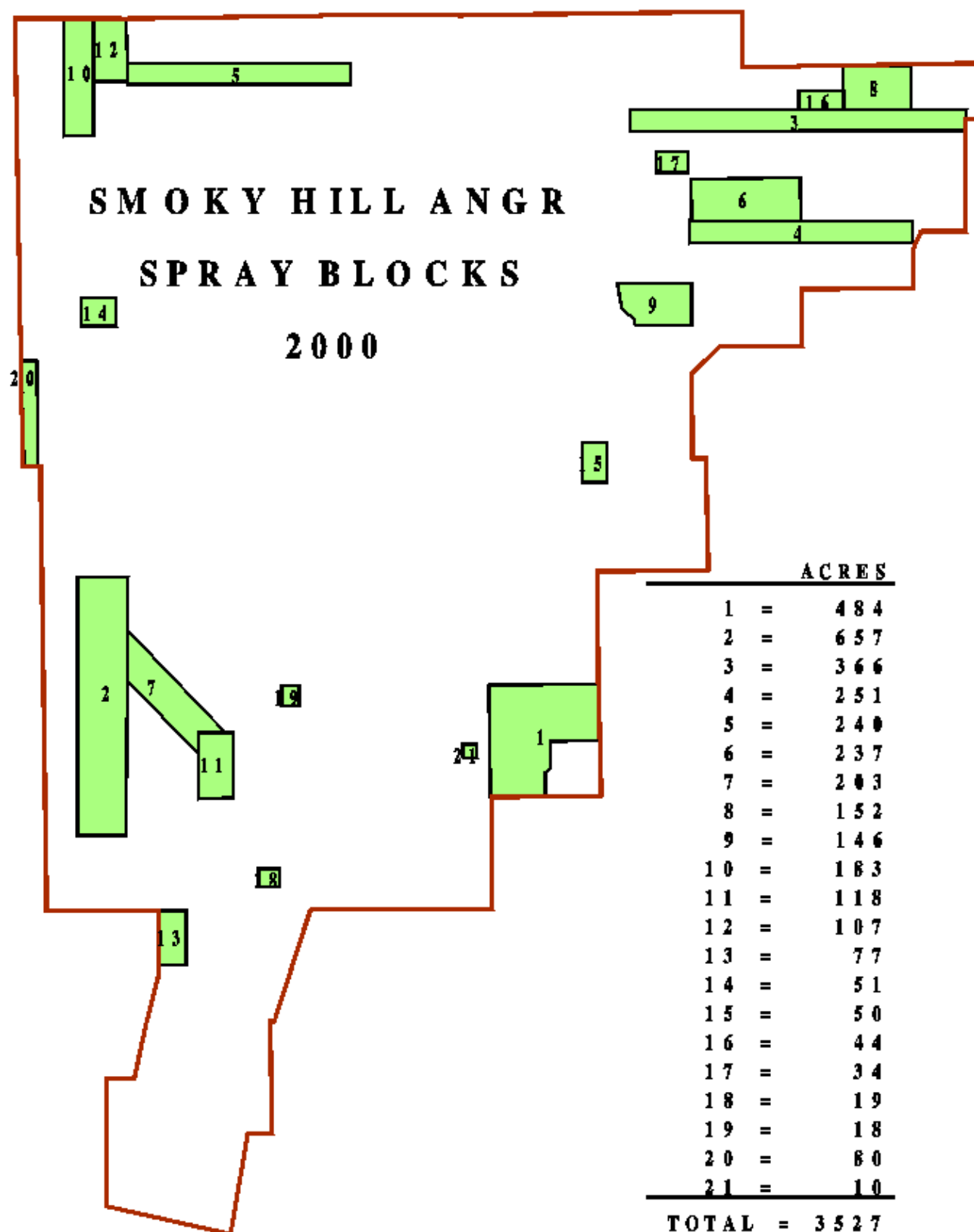
- a. **Deposition Pattern:**
  - (1) Technique/s Used: Ground Observation
  - (2) Results: Spray off-set determined each day
- b. **Effectiveness:**
  - (1) Technique/s Used: Visual field observations
  - (2) Results: (See Remarks)

- 8. REMARKS:** Results will be determined during the next growing season in the Spring of 2001 for musk thistle.

**CERTIFIED PEST MANAGEMENT PROFESSIONAL**

(b) (6) , PhD, Lt Col, USAFR

Filename: d:\mydocuments\reports\smoky\6-11 Nov 00 PMP Report



**910 AW AERIAL SPRAY  
PMP'S POST-MISSION REPORT  
SMOKY HILL ANGR, KS 6-11 NOV 2005**

**1. MISSION BASICS:**

- a. **Installation Sprayed:** Smoky Hill ANGR, Salina KS
- b. **Mission Duration:** 6-11 Nov 05
- c. **Purpose of Application:** Control of Musk Thistle (*Cardus nutans*) on Smoky Hill, ANGR.
- d. **Application Date/s:** 7-8 Nov 05  
**Time/s of Application (Zulu):** 1345-1540 (7 Nov); 1300-1515; 1655-1820 (8 Nov)
- e. **Acres Treated:** 2,809
- f. **Project Coordinator/s (Name/Rank, Title, Phone #):** (b) (6) , Aerial Spray  
Coordinator, Smoky Hill ANGR, DSN (b) (6)
- g. **Date Spray Map Last Approved:** 7 Nov 05
- h. **Date of Waste Generation Letter:** N/A

**2. OPERATIONAL:**

- a. **Mission Commander:** MAJ (b) (6)
- b. **Certified PMP (Category 11):** LTC (b) (6) , LTC (b) (6) , CPT (b) (6)
- c. **Aircrew:**
  - (1) Aircraft Pilots: CAPT (b) (6) ; (b) (6)
  - (2) Co-Pilot: MAJ (b) (6) ; MAJ (b) (6)
  - (3) Navigator: LTC (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
  - (5) Spray Operators: MSG (b) (6) ; MSG (b) (6) ; MSG (b) (6)
- d. **Safety Briefer:** CPT (b) (6)
- e. **Spray Maintenance/Pesticide Loaders:** TSG (b) (6) ; TSG (b) (6) , SSG (b) (6)
- f. **Spray Ground Monitors:** LTC (b) (6) , LTC (b) (6) ; CAPT (b) (6)
- g. **Crew Chief(s):** SSG (b) (6) ; TSG (b) (6)
- h. **Avionics:** TSG (b) (6)
- i. **AGE:** TSG (b) (6)
- j. **Engine:** None
- k. **Ground Support/CPM Professionals:** LTC (b) (6) , LTC (b) (6) ; CAPT (b) (6) (b) (6)
- l. **Security Police:** SRA (b) (6) TSG (b) (6) ; SSG (b) (6) ; SRA (b) (6)
- m. **Flying Data:**
  - 1. Spray Sorties/Hours: 1/1.9 (7 Nov); 1/2.2 (8 Nov); 1/1.4 (8 Nov); total 3/5.5
  - 2. Ferry Sorties/Hours:
    - (a) Spray A/C 909107 Ferry Sorties/Hours: 1/3.6 (6 Nov); 1/2.9 (11 Nov)
    - (b) Support A/C 923022 Sorties/Hours: 2/6.2 (6 Nov);
    - (c) Support A/C 923022 Sorties/Hours: 2/6.0 (10, 11 Nov)

**3. PESTICIDE:**

- a. **Trade Name (% Active Ingredient):** Tordon® 22K
- b. **EPA Registration Number:** 62719-6
- c. **Formulation Sprayed:** Tordon® 22K mixed with water and Airex DC/Valid
- d. **Gallons Pesticide Loaded:** 220 gallons Tordon® 22K
- e. **Gallons Pesticide Applied:** 220 gallons Tordon® 22K
- f. **Gallons and Name Diluent Used:** 5618 gallons of water
- g. **Gallons and Name of Flush Used:** 200 gallons of water

- h. **Other Additives Used:** 14 gallons of AirexDC® (Nov 7); 4.75 gallons of Valid (Nov 8)
- i. **Application Rate:** 2 gallons spray/acre (water with 10 oz. of Tordon® and Drift control)

**4. APPLICATION EQUIPMENT:**

- a. **Aircraft Type (Tail Number):** 909107
- b. **Spray System (Modules Used) and System ID #:** 3-Module system
- c. **Spray System Configuration:** Fuselage Booms
- d. **Nozzle Type/Size:** 8070 Flat Fan TeeJet®
- e. **Nozzle Orientation & Number Used:** 40 Fuselage (20 each side, straight back)
- f. **Pressure:** 55-61 PSI (Nov 7); 51-59 PSI Nov 8
- g. **Flow Rate:** 236-273 GPM (7 Nov); 267-276 GPM (8 Nov)

**5. APPLICATION PARAMETERS:**

- a. **Swath Width Flown:** 300'
- b. **Spray Off Set:** 3 swath widths
- c. **Spray Release Altitude:** 100-150 depending on wind speed
- d. **Ground Speed:** 200 Knots

**6. WEATHER OBSERVATIONS:**

- a. **Winds (Direction/Speed):**  
Ground: 190°/7 KT (7 Nov); 170/10 KT (8 Nov)
- b. **Temperature Range During Application (°F):** 65°- 75°
- c. **Cloud Cover:** 0% (7 Nov); 0% (8 Nov)
- d. **Source:** Ground observations

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

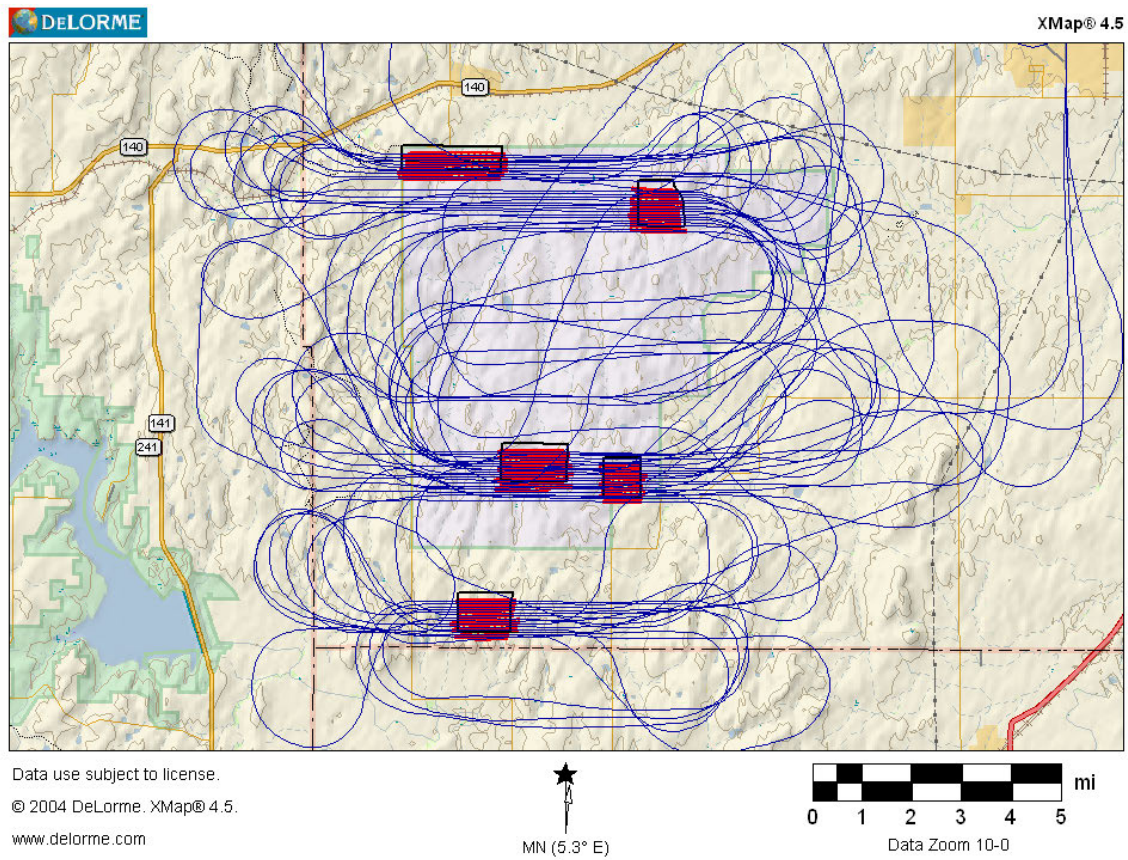
- a. **Deposition Pattern:**  
(1) Ground monitors observed/confirmed swath width from ground positions
- b. **Effectiveness:**  
(1) Technique/s Used: Visual field observations will be carried out in the spring by the Smoky Hill Staff.

- 8. REMARKS:** Musk thistle has been reduced to the point that spray flights are not required every year; which speaks highly of the effectiveness of prior missions in controlling thistles. This year moderate temperatures and lack of frost allowed for early takeoff times. This resulted in a significant amount of time being spent on-station, which, with the addition of extremely favorable meteorological spray conditions, allowed completion of the project in 3 lifts over the course of 2 days.

//Signed//

(b) (6) , CAPT, USAFR  
CERTIFIED PEST MANAGEMENT PROFESSIONAL

Attachment 1. Spray blocks, area treated and track of aircraft on spray sorties conducted 7 and 8 November 2005 at the Smokey Hill ANG Range, Salina Kansas.



# AERIAL SPRAY OPERATIONAL SCHEDULE

## SMOKY HILL ANG RANGE, KS

### 6-11 NOV 2005

Change 1

**PURPOSE/OBJECTIVE/BENEFIT:** Control musk thistle at the Smoky Hill ANGR, to improve grazing areas, to eliminate the Range as a source of infestation to neighboring farms from wind-blown musk thistle seeds and to support state and local noxious weed control efforts.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: Maj (b) (6)
- (2) Pilots: CPT (b) (6), MAJ (b) (6),  
Arriving 8 Nov: MAJ (b) (6), MAJ (b) (6)
- (3) Navigators: LTC (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: MSG (b) (6), MSG (b) (6), MSG (b) (6)

##### b. Maintenance:

- (1) Spray MX: TSG (b) (6), TSG (b) (6), SSG (b) (6)
- (2) Crew Chiefs: SSG (b) (6), TSG (b) (6)
- (3) Avionics: TSG (b) (6)
- (4) Age: TSG (b) (6)
- (5) Engine: None

##### c. Ground Support/CPM Professionals: CPT (b) (6), LTC (b) (6), LTC (b) (6)

##### d. Security Police: SRA (b) (6), TSG (b) (6), SSG (b) (6), SRA (b) (6)

#### 2. SCHEDULE: (All Local) Times

##### 6 NOV (Sunday)

0900: Show at KYNG  
1100: Depart KYNG  
1430: Land KSLN/Safety Briefing  
A/R: Maintenance configures aircraft; Aircrew plan next day's mission

##### 7 NOV (Monday): 2 Spray Sorties

0530: Show time  
0704: Sunrise  
0705: Take Off KSLN  
: Range time (Coordinate MARSA as needed after 1100)  
1100: Land KSLN

##### 8 NOV (Tuesday): 2 Spray Sorties

0530: Show time  
0705: Sunrise  
0705: Take Off KSLN  
: Range time (Coordinate MARSA as needed after 1100)  
1100: Land KSLN



**9 NOV (Wednesday): 1 or 2 Spray Sorties**

0530: Show time

0707: Sunrise

0710: Take Off KSLN

: Range time (Coordinate MARSA as needed after 1100)

1100: Land KSLN

**10 NOV (Thursday): 1 or 2 Spray Sorties**

0530: Show time

0708: Sunrise

0710: Take Off KSLN

: Range time (Coordinate MARSA as needed after 1100)

1100: Land KSLN

**11 NOV (Friday): Return**

0800: Show time

1000: Take Off KSLN

1230: Land KYNG

**3. ITEMS TO TAKE:**

- a. Mission Commander:** Hand Held GPS, 1 Cellular Phone
- b. Entomologist:** 1 Cellular Phone, Wind Gauge, 2 Compasses, 1 UHF Radio, Pest Safety Binder, 2 Signal Mirrors, 10 Packs Water Sensitive Cards, 3 Boxes Card Holders with Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Toshiba Computers, 1 SATLOC Manual, Project Notebook, 2 Anemometers, Entomologist's Tool Kit, Trakstar Receiver and Antenna, Batteries
- c. Navigator:** Maps/Map Bag, Validation Map,
- d. Spray Operator:** Safety Gear, Calibration Tables
- e. Spray Maintenance:** Deployment Kit, Stake Bed Truck, Support Equipment

**4. NOTIFICATION NECESSARY FOR THIS MISSION:** None Required.

**5. PARKING PLAN:** North Ramp (same as last time) Highway Patrol Ramp (by the Civil Air Patrol Hangar). A10s will be using same ramp area.

**6. RADIO FREQUENCIES:**

- a. Air To Ground:** Primary 392.2
- b. Salina:** CTAF: 119.3, UNICOM: 122.95, ATIS: 120.15, TWR: 119.3 / 257.7, GND: 121.9 / 397.9, NG OPS: 49.95 / 304.6
- c. Smoky Hill:** Primary 316.9, Secondary 304.9; Victor Freq: 139.7 Smoky Hill departure. Expect IFR clearance from KCC on 363.2 UHF 134.9 VHF. Advise them you are departing R3601

**7. IN-BRIEFING:** Upon Arrival.

**8. SPRAY CONFIGURATION:** (Note: File support a/c Chap 3 to AFJI 24-204)

- a. System:** SP-3G
- b. Nozzle Tips/Orientation:** 8070 Flat Fan TeeJet/90° straight back
- c. Number:** Fuselage. 40 Total (20 each side)
- d. Booms:** Fuselage Booms.
- e. Aircraft:** 90-9107
- f. Mission Identifier:** QZNRKA184310

## 9. SPRAY PARAMETERS:

**Altitude:** 100' AGL

**Swath Width.** 300 feet.

**Flow Rate.** 279 Gallons/Minute (approximately 2702 acres to be sprayed)

**Application Rate.** 2 Gal spray/Acre (water with 2 Oz of AirexDC® & 10 Oz of Tordon®)

**Ground Speed:** 200 Knots

## 10. SPRAY MIXING AND LOADING:

### a. Composition of Each Gallon:

- (1) 5 Ounces of Tordon® 22K
- (2) 1 Ounce of AirexDC® Drift Retardant
- (3) 122 Ounces of Water

### b. First Load (4 Tanks of 425 Gallons Each + Sump of 70 Gallons)

- (1) Fill to 425 Gal Water/Tank using the pump on the water tanker truck.  
This is done by putting the filler hose into the rear tank with all tanks open to the common sump.  
Total water in tanks = 1700 Gal.
- (2) 70 Gal/Water in Sump
- (3) Total Water Added = 1,770 Gallons
- (4) Upload 17.25 Gal/Tordon® 22K/Tank (69 Gallons Total for 4 Tanks + sump) with the ULV uploading system.  
Add 3.5 GalAirexDC®/Tank (14 Gallons Total for 4 Tanks + sump) while agitating approximately 15 min
- (6) Total Quantity Mix. 1853 Gallons

### c. Subsequent Loads (2)

- (1) Fill to 425 Gal/Water/Tank. Total Water = 1700 Gal
- (2) Add 16.5 Gal/Tordon 22K/Tank. Total Tordon 22K = 66 Gal
- (3) Add 3.25 Gal AirexDC®/Tank. Total AirexDC® = 13 Gal
- (4) Total quantity Mix. 1779 Gallons (does not include 70 Gal already mixed in Sump)

### d. Final (fourth) Load

- (1) Fill to 253 Gal/Water/Tank. Total Water = 1012 Gal
- (2) Add 10 Gal/Tordon 22K/Tank. Total Tordon 22K = 40 Gal
- (3) Add 2 Gal AirexDC®/Tank. Total AirexDC® = 8 Gal
- (4) Total quantity Mix. 1060 Gallons (does not include 70 Gal already mixed in Sump)

**e.** Total gallons of spray mixture for the spray project is **5412**. Tordon 22K required is **211** Gal.  
AirexDC® required is **41** Gal.

**f.** Mixing Time/Load. Agitate by recirculating each mix for approximately 15 minutes.

## 11. SPRAY MONITORING OR TESTING: Performed by the CPMPs

### NOTES:

Ideal to have westerly wind to spray west boundary.

Ideal to have easterly wind to spray east boundary.

(November winds expected to be predominately from the north)

## 12. CONTACTS:

**Quarters:** JTR Rate Lodging/\$60 Meals/\$28

**Holiday Inn, I70, \$59, Gp Reservations/Gala 785-823-5606/8574 fax**

Fairfield Inn \$55+tax, (785) 823-6900 FAX (785) 823-0996)

Comfort Inn, (785) 826-1711

Ramada inn, (785) 825-8211

Hampton Inn (on Schilling Rd.); Phone (785) 823-9800

Red Coach Inn, (785) 825-2111

**Transportation:** Hertz Rental Agency (Scott) (785)-827-7237; Fax (785)-827-3160

Vehicles will be at America Jet FBO.

OPS 2 Full Size-(b) (6)

MX 3 Full Size- (b) (6)

- SF 2 mid Size- (b) (6)

- Support 2 Full Size on 6-7 Nov (Support A/C) -

**c. Smoky Hill Range, Salina, KS** (DSN 743- Com 785)

- RANGE COMMANDER, LTC (b) (6) : DSN (b) (6) ; COM (b) (6)

- Scheduling DSN (b) (6) (b) (6) ext (b) (6) Tsgt. (b) (6)

(1) HQ ANGRC/CEVP:

- (b) (6) DSN (b) (6)

- (b) (6) : DSN (b) (6)

(2) NATURAL RESOURCES MGR/ SPRAY COORDINATOR:

- (b) (6) : DSN (b) (6)

(3) **SALINA AIRPORT: SALINA AIRPORT AUTHORITY: (785) 827-8077**

- (b) (6) and (b) (6) -Operations Manager will supply gate security cards to MX/OPS/SF enter the north ramp. Parking will be on North Ramp by big Hanger, same as previous missions.

(4) ARMY NATL GUARD HELO UNIT:

- OPS OFFICER, CW4 (b) (6) : DSN (b) (6) ; COM (b) (6)

(5) **FBO: AMERICA JET, (b) (6)**

-File Flight Plans and fuel

(6) STATE WILDLIFE REP:

- (b) (6) RGER (DIST FISHERY BIOLOGIST), (b) (6)

(7) DOW ELANCO REP: (b) (6) , (b) (6)

SALINE COUNTY FARM/ NOXIOUS WEED DIR:

- (b) (6) , (b) (6) ; FAX (913) 826-6534

**d. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, + Ext

(1) 910 AW/CC: Col (b) (6)

(2) 910 AW Command Post: Ext 1315; FAX 1161

(3) 910 AW/PA: Capt (b) (6) ; FAX 1022

(4) 910 OG/CC: LtC (b) (6) / (b) (6)

910 OS/OSA: Airfield Manager, (b) (6)

757 AS/DO: MAJ (b) (6)

910 OSF Supervisor of Flight Desk (SOF): 1069; FAX 1371

757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657

757 AS/DOS: Aerial Spray Office, Maj (b) (6) ; FAX 1616

910 LG/CC: Ext 1225

910 LG/LGM: CMS (b) (6)

Maintenance Control: Ext 1327

910 LG/LGMS: Spray Maintenance, Ext 1132/1586

Omega/SATO Travel: Ext 1772; 1-800-285-6342

Cellular Spray Phones:

Mission Commander: (b) (6)

Entomologist: (b) (6)

Spray Maintenance: (b) (6)

1 October 2002

MEMORANDUM FOR HQ AFRC/DOOM (FAX: 497-0198)

FROM: 757 AS/DOS (346-1111/1531; FAX 346-1616)

SUBJECT: Capability and Concept of Operations for Aerial Spray at Langley AFB

1. **Purpose/Objectives/Benefits:** Control nuisance and vector mosquitoes in order to improve working conditions for members operating at Langley AFB VA.
2. **Capability:** Spray Aircraft Available 6-11 Oct 2002.
3. **Concept of Operations:**
  - a. **6 Oct (Sunday):**
    - 1200 Show at KYNG
    - 1400 Take-Off KYNG
    - 1530 Land KLFI
    - 1545 Safety Brief
  - b. **7 Oct (Monday):**
    - 0900 In-Briefing with Langley AFB, CE Conference Room
    - 1400 Show Time/Weather Decision
    - 1430 Load Chemical
    - 1700 Take-Off KLFI, Spray Areas Designated by PMP
    - 2030 Land KLFI
  - c. **8 Oct (Tuesday):**
    - 1100 Daily meeting for PMP/MC in the hotel lobby
    - 1400 Show Time/Weather Decision
    - 1430 Load Dibrom
    - 1700 Take-Off KLFI, Spray Areas Designated by PMP
    - 2030 Land KLFI
  - d. **9 Oct (Wednesday):**
    - 1100 Daily meeting for PMP/MC in the hotel lobby
    - 1400 Show Time/Weather Decision
    - 1430 Load Dibrom
    - 1700 Depart KLFI, Spray Areas Designated by PMP
    - 2030 Land KLFI

**e. 10 Oct (Thursday):**

1100 Daily meeting for PMP/MC in the hotel lobby  
1400 Show Time/Weather Decision  
1430 Load Dibrom  
1700 Depart KLFI, Spray Areas Designated by PMP  
2030 Land KLFI

**f. 11 Oct (Friday):**

0900 Report  
1100: Depart KLFI  
1230: Land KYNG

**4. Spray Parameters:**

- a. Acreage: approximately 86,000 Acres
- b. Altitude: 150 Ft AGL
- c. Ground Speed: 200 Knots
- d. Pesticide: Dibrom® Concentrate
- e. Application Rate: 0.5 Ounce per Acre
- f. Flow Rate: 1.8 Gal per Minute at Craney Island; 3.6 Gallons per Minute for Langley AFB designated areas
- g. Swath Width: 1000' swaths at Craney Island; 2000' to 2500' swaths at Langley AFB
- h. System: SP2G – MASS ULV; Modules 1 and 2
- i. Nozzle Tips/Number/Orientation: 8008/8 oriented straight down for 2000' swaths; 8008/4 oriented straight down for 1000' swaths oriented straight down
- j. Aircraft Tail Number: 99105; Mission Identifier: QZNRKA020279
- k. Deploy/Re-Deploy Time: 3.2 hrs
- l. Spray Time: 3.50 hrs (or as called by PMP)

**5. Aircraft/Mission Commander: Major (b) (6)**

**6. Support required at Langley AFB has been requested via FAX message.**

**7. If you have any questions concerning this mission please contact DSN (b) (6) .**

(b) (6) , Major, USAFR  
Chief, Aerial Spray  
757 AS/DOS (DSN 346-1531)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 6 – 11 October 2002

**Purpose/Objectives/Benefits:** control nuisance and vector mosquitoes in order to improve working conditions and lower the incidence of arthropod borne illness for members operating at Langley AFB and surrounding communities.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: Major (b) (6)
- (2) Pilots: Maj (b) (6) , Major (b) (6) , LtC (b) (6) (6-9 Oct)
- (3) Navigators: Maj (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: CMS (b) (6) , MSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: SMS (b) (6) , TSG (b) (6) , TSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6) , TSG (b) (6)
- (3) Avonics: SSG (b) (6)

##### c. Certified Pest Management Professionals: LtC (b) (6) , Maj (b) (6) , CPT (b) (6)

**Gov Vehicles: 2 ea 9 pax van, 1 staff, 1 pick-up truck**

#### 2. SCHEDULE: (All time Local)

##### 6 Oct (Sunday):

**PPR # 1006DW01**

1200: Show at KYNG  
1400: Depart KYNG  
1530: Land KLF  
1545: Safety Briefing

##### 7 Oct (Monday):

0900: In-Briefing at CE Conference Room  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
1840: Sunset

##### 8 Oct (Tuesday):

1100: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
1839: Sunset

##### 9 Oct (Wednesday):

1100: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
1837: Sunset

##### 10 Oct (Thursday):

1100: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision

1430: Load Dibrom  
1700: Spray Sortie  
1836: Sunset

**11 Oct (Friday):**

0900: Report  
1100: Depart KLFI  
1230: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Cellular Phones, Kestrel Weather Monitor, Compass, Pest Safety Binder, Signal Mirrors, UHF Radio, Satloc Ground Tracker and Laptop Computer
- b. **Navigator:** Maps/Map Bag, Validation Map, Laptop Computer
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Langley Tower:** DSN 574-5326/5327 Tower Manager
- b. **Langley Base Ops:** DSN 574-2504

**5. PARKING PLAN:** Langley Aero Club ramp or as directed.

**6. RADIO FREQUENCIES:**

- a. **Felker AAF Tower (Ft Eustis): 126.3, 248.2, 241.0**
  - (1) Ops - 878-3588
  - (2) Tower - 878-3530
  - (3) Firing Range - 878-4412/5053 Range Tower
  - (4) Flight Service - 122.2
- b. **Newport News-Williamsburg Int:** (Operating Hours 1000Z-0200Z)
  - (1) Ground – **121.9 or 348.6** (phone 877-0221 ops)
  - (2) Tower – **124.9 or 280.1** (phone 877-2962)
  - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
  - (4) CTAF – **118.7**
- c. **Langley AFB:** Tower OIC MSG (b) (6) Lt (b) (6) 1st OSS SQ
  - (1) Tower - **125.0 or 253.5** (phone 4-5326)
  - (2) Ground - **121.7 or 275.8**
  - (3) Clearance – **118.85 or 271.3**
  - (4) Metro - **239.8**
- d. **Norfolk NAS (Chambers Fld):** Tower - **124.3, 126.375, 340.2, 318.7**
  - (1) Base Ops DSN 262-3419
  - (2) Tower DSN 262-3440
- e. **Spray Ground: Primary 392.2 / 308.6 Secondary**

**7. IN-BRIEFING:** Required; IAW the Schedule above.



**8. SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS ULV; Modules 1 and 2
- b. **Nozzle Tips/Orientation:** 8 8008's for 2000' swathes and 4 8008's for 1000' swathes oriented straight down.
- c. **Aircraft:** 99105 **Mission Identifier:** QZNRKA020279

**9. SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 1.8 Gallons/Minute at Craney Island; 3.6 Gallons/Minute at Langley areas
- f. **Acreage:** Approximately 86,000 Acres
- g. **Swath Width:** 1,000 Feet at Craney Island; 2,000 Feet at Langley areas.

**10. PESTICIDE LOADING:**

- a. **How Much Pesticide:** 334 Gallons for 86,000 acres sprayed.
- b. **Where:** Aero Club Ramp
- c. **When:** 1430 hrs each day.
- d. **Furnished by Installation:**
  - (1) Pesticide
  - (2) Loading Equipment/Crew
  - (3) Hazardous Waste Disposal
  - (4) Two B-5 or B-1 Stands

**11. SPRAY MONITORING OR TESTING:**

The local mosquito control districts and Langley Pest Control will conduct mosquito surveillance using either trapping or biting count pre- and post-spray data to determine spray effectiveness. Oil sensitive cards will be used to confirm application within the spray blocks.

**12. CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**

- a. **LANGLEY AFB VA:**
  - Wing Commander: Col (b) (6), DSN (b) (6)
  - Base Commander: Col (b) (6), DSN (b) (6)
  - Spray Coordinator: (b) (6), DSN (b) (6); Fax 3503
  - Civil Engineer: Lt Col (b) (6)
  - Deputy Operations Chief: Lt Col (b) (6)
  - Deputy Chief/Civil Engineer: (b) (6)
  - Base Operations: DSN (b) (6)
  - Langley Control Tower: Lt (b) (6) DSN (b) (6)
  - Weather: Langley AFB, DSN 574-5907
  - Ft Eustis: DSN 297-5300/3343
  - Command Post: DSN 574-5411

Pest Control Foreman: (b) (6) , DSN (b) (6) or Home (b) (6)  
Pest Control/Environmental NCOIC: MSG (b) (6)  
Public Affairs: DSN 574-2018/2010/2019  
Fuels: DSN 574-4312/3623/4224  
Motor Pool: 574-7505/5712 (3 vans and 1 staff vehicle supplied by (b) (6) )  
ACC PMP: (b) (6) , DSN (b) (6) , cell phone (b) (6)

**b. Billeting Office: COM: (757) 764-4667 EXT 2519 (ATTN: SSG (b) (6))**  
**DSN 574-4667, EXT 2519; FAX 574-3038**

**- Contract Quarters:**

**Hampton Inn, 1813 W Mercury Blvd, Hampton VA (757) 838-8484**

**-- Group #298815/Confirmation #8307838, \$89 per night**

**c. FT EUSTIS VA:**

Environmental Coordinator: (b) (6) and (b) (6) , DSN (b) (6) )

Entomology Shop: DSN 927-3405/2585; Com. (757)-878-XXXX

**d. Craney Island: (b) (6)**

**e. Hampton Mosquito Control: (b) (6) , ((b) (6) ; (b) (6) home**  
**Beeper (b) (6)**

**f. York County Control: (b) (6) or (b) (6) (b) (6)**

**g. Poquoson: (b) (6)**

**h. City of Portsmouth Biologist: (b) (6)**

**i. Newport News Mosq. Control: (b) (6)**

**j. Newport News/Williamsburg Int.:**

(1) Fixed Base Operator: Flight Int 877-6401

(2) Flight Service: 877-0209

(3) Tower: 877-2962

(4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

**k. Norfolk NAS VA: DSN 564-2442/7598 or COM (757)-444-2442/7598**

**l. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

**Toll Free 1 - 800 - 278 - 7046, + Ext**

(1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243

(2) 910 AW Command Post: Ext 1315; FAX 1161

(3) 910 AW/PA: Lt (b) (6) ; FAX 1022

(4) 910 OG/CC: LtC (b) (6)

(5) 910 OS/OSA: Airfield Manager, Lundy Odell, Ext 1186/1526

(6) 757 AS/DO: LtC (b) (6)

(7) 910 OSF Supervisor of Flight Desk (SOF): 1069; FAX 1371

(8) 757 AS/DOO: Ops Admin, SMS (b) (6) ; FAX 1657

(9) 757 AS/DOS: Aerial Spray Office, (b) (6) ; FAX 1616

(10) 910 LG/CC: Ext 1225

(11) 910 LG/LGM: Ext 1352

(12) Maintenance Control: Ext 1327

(13) 910 LG/LGMS: Spray Maintenance, Ext 1132/1586

(14) 910 LG/LGL: CMS (b) (6)

(15) Omega/SATO Travel: Ext 1772; 1-800-285-6342

(16) Cellular Spray Phones:

- Mission Commander: (b) (6)

- Entomologist: (b) (6)

- Spray Maintenance: (b) (6)

# 910 AW AERIAL SPRAY PMP'S POST-MISSION REPORT

## 1. MISSION BASICS:

- a. Installation Sprayed: Langley AFB
- b. Mission Duration: 6-11 October 2002
- c. Purpose of Application: Adult Mosquito Control
- d. Application Dates and times (Local): 7 Oct 1600-1900; 9 Oct 1545-1748; 10 Oct 1540-1710
- e. Acres Treated: 58,880 (7 Oct); 47,360 (9 Oct); 7,680 (10 Oct)
- f. Project Coordinator (Name/Title): (b) (6), Pest Control Manager
- g. Date Spray Map Last Approved: 22 Jul 02
- h. Date of Waste Generation Letter: 4 April 1996
- i. Installation In-Briefing: (When/Where/Briefer/s): CE Conference Room, Langley AFB;  
MAJ (b) (6), MAJ (b) (6)

## 2. OPERATIONAL:

- a. Mission Commander: MAJ (b) (6)
- b. Certified PMP's (Category 11): LTC (b) (6), MAJ (b) (6) CPT (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander/Pilot: MAJ (b) (6)
  - (2) Co-Pilot(s): LTC (b) (6), LTC (b) (6)
  - (3) Navigator: MAJ (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
  - (5) Spray Operators: CMS (b) (6), MSG (b) (6)
- d. Safety Briefer: CPT (b) (6)
- e. Spray Maintenance/Pesticide Loaders: MSG (b) (6), TSG (b) (6), TSG (b) (6)
- f. Crew Chief(s): MSG (b) (6), TSG (b) (6)
- g. Avonics: SSG (b) (6)
- h. Flying Data:
  - (1) Spray Sorties/Hours: 3 Sorties; 6.6 Hours
  - (2) Ferry Sorties/Hours: 2 Ferries; 3.1 Hours

## 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom® Concentrate (97% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom® Concentrate (neat)
- d. Gallons Pesticide Loaded: 310 (7 Oct); 105 (9 Oct); 30 (10 Oct)
- e. Gallons Pesticide Applied: 230 (7 Oct); 185 (9 Oct); 30 (10 Oct)
- f. Gallons and Name of Flush Used: Aromatic Naptha; 75 gallons (25 gallons/sortie)
- g. Application Rate: 0.5 ounce/acre

4. APPLICATION EQUIPMENT:

- a. Aircraft Type (Tail Number): C-130, 99105
- b. Spray System (Modules Used) and System ID #: System SP2G - MASS ULV; Modules 1 & 2
- c. Spray System Configuration: ULV Wing Booms; Modules 1 and 2/MASS ULV
- d. Nozzle Type/Size: 8008 TeeJet (Flat Fan)
- e. Nozzle Orientation & Number Used: 8 Nozzles oriented straight down
- f. Pressure: 33-38 psi
- g. Flow Rate: 3.6 Gal/Min for 2000' swathes

5. APPLICATION PARAMETERS:

- a. Swath Width Flown: 2000'
- b. Spray Off Set: 2000-4000' depending on wind speed
- c. Spray Release Altitude: 150' AGL
- d. Ground Speed: 200 knots

6. WEATHER OBSERVATIONS:

- a. Winds (Direction/Speed): 240°/6 kts (7 Oct); 240°/6 kts (9 Oct); 140°/5 kts (10 Oct)
- b. Temperature (Degrees Fahrenheit): 69°F (7 Oct); 63°F (9 Oct); 68°F (10 Oct)
- c. Relative Humidity: 74-83% (7 Oct); 73-88% (9 Oct); 78-94% (10 Oct)
- d. Cloud Cover: mostly cloudy (7 Oct); mostly cloudy (9 Oct); cloudy (10 Oct)
- e. Source: direct observations

7. SPRAY MONITORING (Pre- and Post-Treatment):

- a. Effectiveness:
  - (1) Technique/s Used: carbon dioxide-baited traps were used to monitor mosquito densities
  - (2) Results: A significant reduction in mosquito activity was observed in all treated areas.

8. REMARKS: The tidewater region has been experiencing one of the worst mosquito outbreaks in some time and consequently, an application during this time frame was well substantiated. Traps counts were indeed high with Langley Pest Control reporting over 100 mosquitoes collected during a single trap night; Portsmouth reported collecting more than 2000 mosquitoes in one trap night. Three spray sorties were flown and a 0.5 oz/acre application rate was used over the entire spray area. Following the application, all sources reported a significant reduction in nuisance mosquitoes (*Ochlerotatus* spp. mosquitoes were the target pest). Langley Pest Management reported a 98% decrease in *Ochlerotatus* spp. (pre- vs post-spray numbers). York County reported ~90% reduction in numbers. This spray represents the final scheduled spray at Langley AFB for CY2002, however, it also represents the first spray mission for FY 03 (1 Oct 02-30 Sep 03). The 757 AS Aerial Spray Unit received excellent support again this year from Langley Pest Control (Civil Engineering) with mosquito surveillance as well as with directing coordination between local mosquito control agencies. There has been plenty of West Nile Virus activity around Virginia this year and it is worth noting that Langley AFB did not find any positive birds or mosquitoes. If the virus is found next year, we know we have an excellent integrated program already in place to deal with the vectors.

(b) (6)

(b) (6) Capt, USAFR  
CERTIFIED PEST MANAGEMENT PROFESSIONAL

# AERIAL SPRAY OPERATIONAL SCHEDULE

## SMOKY HILL ANG RANGE, KS

### 6– 11 NOV 2000

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: LTC (b) (6)
- (2) Pilots: LTC (b) (6) ; CPT (b) (6)
- (3) Navigators: \*LTC (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: \*\*MSG (b) (6) , MSG (b) (6) , TSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSG (b) (6) , \*\*SSG (b) (6) , SSG (b) (6) ,  
TSG (b) (6)
- (2) Crew Chiefs: \*\*SRA (b) (6) so, TSG (b) (6)
- (3) Avionics: MSG (b) (6)
- (4) AGE: TSG (b) (6)

##### c. Ground Support/CPM Professionals: \*LTC (b) (6) , LTC (b) (6)

##### d. Security Police: SSG (b) (6) , SSG (b) (6)

\* = 3 each Mid-Size rental cars : (b) (6) & Security Personnel (LtC (b) (6) at Airport)  
\*\* = 3 each rental vans: (b) (6) ,

#### 2. SCHEDULE: (All Local) Times

##### 6 NOV (Monday)

1000: Show at KYNG

1200: Depart KYNG

1400: Land KSLN/Safety Briefing

A/R: Maintenance configures aircraft; Aircrew plan next day's mission

##### 7 NOV (Tuesday):

0530: Show time

0705: Sunrise

0700: Take Off KSLN

0700-1040/1120-1220: Range time (additional range available on a case-by-case basis)

0900: Land KSLN

##### 8 NOV (Wednesday):

0530: Show time

0706: Sunrise

0700: Take Off KSLN

0700-1040/1120-1300: Range time (additional range available on a case-by-case basis)

0900: Land KSLN

##### 9 NOV (Thursday):

0530: Show time

0707: Sunrise

0700: Take Off KSLN

0700-1040/1120-1300: Range time (additional range available on a case-by-case basis)

0900: Land KSLN

**10 NOV (Friday): (HOLIDAY)**

0530: Show time

0708: Sunrise

0700: Take Off KSLN

0700-1300: Range time (additional range available on a case-by-case basis)

0900: Land KSLN

**11 NOV (Saturday):**

0730: Show time

0709: Sunrise

0700-1300: Range time (additional range available on a case-by-case basis)

0900: Take Off KSLN

1400: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Mission Commander:** Hand Held GPS, 1 Cellular Phone
- b. **Entomologist:** 1 Cellular Phones, Wind Gauge, 2 Compasses, Pest Safety Binder, 2 Signal Mirrors, 1 UHF Radio, 10 Packs Water Sensitive Cards, 3 Boxes Card Holders with Index Cards, 2 Spotlights, 1 Measuring wheel 2 Toshiba Computers, 1 SATLOC Manual, Project Notebook, 2 Anemometers, Entomologist's Tool Kit, Trakstar Receiver and Antenna, Batteries, Kodak Camera
- c. **Navigator:** Maps/Map Bag, Validation Map, 1 Panasonic Computer
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Stake Bed Truck, Support Equipment, Control®

**4. NOTIFICATION NECESSARY FOR THIS MISSION:** None Required.

**5. PARKING PLAN:** Highway Patrol Ramp (by the Civil Air Patrol Hangar).

**6. RADIO FREQUENCIES:**

- a. **Air To Ground:** Primary 392.2
- b. **Salina:** CTAF: 119.3, UNICOM: 122.95, ATIS: 120.15, TWR: 119.3 / 257.7, GND: 121.9 / 397.9, NG OPS: 49.95 / 304.6
- c. **Smoky Hill:** Primary 316.9, Secondary 304.9; Victor Freq: 139.7

**7. IN-BRIEFING:** Upon Arrival.

**8. SPRAY CONFIGURATION:**

- a. **System:** SP-3G
- b. **Nozzle Tips/Orientation:** 8070 Flat Fan TeeJet/45° back
- c. **Number:** Wing. 68 Total (34 each side)/Fuselage. 16 Total (8 each side) with 3" restrictor
- c. **Booms:** Full Wing and Fuselage Booms
- d. **Aircraft:** 99107 **Mission Identifier:** QZNRKA202311
- e. **Profile:** Planned LV Profile

**9. SPRAY PARAMETERS:**

- a. **Altitude:** 100' AGL
- b. **Swath Width.** 330 feet.
- c. **Flow Rate.** 307 Gallons/Minute
- d. **Application Rate.** 2 Gal spray/Acre (water with 1 Oz of Control® & 10 Oz of Tordon®)
- d. **Ground Speed:** 200 Knots

## **10. SPRAY MIXING AND LOADING:**

- a. Composition of Each Gallon:
  - (1) 5 Ounces of Tordon® 22K
  - (2) 0.08 Ounces of Control® Drift Retardant
  - (3) Water
- b. First Load (4 Tanks of 457.5 Gallons Each + Sump of 70 Gallons)
  - (1) Fill to 439.5 Gallons of Water/Tank using the pump on the water tanker truck. This is done by putting the filler hose into the rear tank with all tanks open to the common sump. Total water in tanks = 1758 Gal.
  - (2) 70 Gallons of Water in Sump
  - (3) Total Water Added = 1,828 Gallons
  - (4) Upload 17.75 Gallons of Tordon® 22K/Tank (71 Gallons Total for 4 Tanks) with the ULV uploading system.
  - (5) Add 1 Quart of Control®/Tank while agitating approximately 15 min (1 Gallon total for four tanks)
  - (6) Total Quantity Mix. 1900 Gallons
- c. Subsequent Loads (2)
  - (1) Fill to 439 Gallons of Water/Tank. Total Water = 1756 Gal
  - (2) Add 17 Gallons of Tordon 22K/Tank. Total Tordon 22K = 68 Gal
  - (3) Add 1 Quart of Control/Tank. Total Control = 1 Gal
  - (4) Total quantity Mix. 1,825 Gallons (does not include 70 Gal already mixed in Sump)
- d. Final Load (4 tanks of 233.5 Gallons each)
  - (1) Fill to 224.4 Gallons of Water/Tank. Total water = 897.6 Gal
  - (2) Add 9 Gallons of Tordon® 22K/Tank. Total Tordon® 22K = 36 Gal
  - (3) Add 0.5 Quarts of Control®/Tank. Total Control® = 0.5 Gal
  - (4) Total Quantity Mix. 934 Gallons (Does not include 70 Gal already mixed in Sump)
- e. Mixing Time/Load. Agitate by recirculating each mix for approximately 15 minutes.

## **11. SPRAY MONITORING OR TESTING: Performed by the CPMPs**

### **NOTES:**

Ideal to have westerly wind to spray west boundary.

Ideal to have easterly wind to spray east boundary.

(November winds expected to be predominately from the north)

## **12. CONTACTS:**

- a. **Billeting:**
  - FairFild Inn, \$52, (785) 823-6900 FAX (785) 823-0996 (Tax Exempt if on Gov Orders)
  - Comfort Inn, (785) 826-1711
  - Ramada inn, (785) 825-8211
  - Hampton Inn (on Schilling Rd.); Phone (785) 823-9800
- b. **Transportation: Avis (785) 827-2054 (Shelly) / FAX (785) 827-2344**

**NOTE: Once a Credit Card has been put on a Contract AVIS will not change it**

  - (State Tax Exempt Forms accepted for State Tax, however, 3.2% Airport Access Tax and 3.5% Excise Tax is not exempted and will be charged to each vehicle; in order to get reimbursed for these two taxes you must itemize each in Block 16 of your Travel Voucher)
  - 150 miles per day allowed per vehicle
  - 3 Mini Vans & 3 Mid Size cars will be picked up at Moore's Aviation

Confirmation #'s: Vans (\$59/DAY)– 00448281US1, 00448233US2, 00448286US6  
Cars (\$39/DAY)– 00448299US5, 00448427US0, 00448428US1



**c. Smoky Hill Range, Salina, KS:**

- (1) HQ ANGRC/CEVP:
  - (b) (6) DSN(b) (6)
  - (b) (6) : DSN (b) (6) ; COM (b) (6)
  - RANGE COMMANDER, LTC (b) (6) : DSN (b) (6) ;  
COM (b) (6)
  - Scheduling: DSN(b) (6) (b) (6)
- (3) NATURAL RESOURCES MGR/ SPRAY COORDINATOR:
  - SMS (b) (6) EXT (b) (6)/TSG (b) (6) : DSN (b) (6) , Ext (b) (6)
- (4) SALINA AIRPORT:  
SALINA AIRPORT AUTHORITY: (913) 827-8077
  - (b) (6) and (b) (6)
- (5) ARMY NATL GUARD HELO UNIT:
  - OPS OFFICER, CW4 (b) (6) : DSN (b) (6) ; COM (b) (6)
- (6) FBO: JERRY MOORE'S MIDWAY AVIATION, (913) 825-6261
- (7) STATE WILDLIFE REP:
  - (b) (6) (DIST FISHERY BIOLOGIST), (b) (6)
- (8) DOW ELANCO REP: (b) (6) , (b) (6) or (b) (6)
- (9) SALINE COUNTY FARM/ NOXIOUS WEED DIR.:
  - (b) (6) ; FAX (913) 826-6534

**d. Spray Maintenance Command Post at Salina KS** will be located in the Civil Air Patrol Office, (913) 825-0009.

**e. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, 2, + Ext

- (1) 910 AW/CC: Brigadier General Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX Ext 1161
- (3) 910 AW/PA: LT (b) (6) FAX Ext 1022
- (4) 910 OG/CC: COL (b) (6)
- (5) 910 OG/OSA, Airfield Manager: (b) (6)
- (6) 757 AS/DO: LTC (b) (6)
- (7) 757 AS/DOO, Ops Admin: SMS(b) (6) ; FAX Ext 1657
- (8) 757 AS/DOS, Aerial Spray Office: (b) (6) ; FAX Ext 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: CMS (b) (6)
- (11) Maintenance Control: Ext 1348
- (12) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
- (13) 910 LG/LGL: CMS (b) (6)
- (14) Omega/SATO Travel: Ext 1772; 1 (800) 285 - 6342
- (15) Cellular Spray Phones: (b) (6) (MX) / (b) (6) (Entomologist)
- (16) Supervisor Of Flying desk (SOF): 1069; FAX Ext 1371

# AERIAL SPRAY OPERATIONAL SCHEDULE

## OIL SPILL EXERCISE

### 07 - 10 AUG 2000

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: \*LTC (b) (6)
- (2) Pilots: LTC (b) (6) ; \*\*CAPT (b) (6) ; CAPT (b) (6)
- (3) Navigator: LTC (b) (6) ; LTC (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: \*\*MSG (b) (6) ; TSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: \*\*SMS (b) (6) ; TSG (b) (6) ; SSG (b) (6)  
SSG (b) (6)
- (2) Crew Chiefs: TSG (b) (6)
- (3) Avionics: TSG (b) (6)

##### c. Security Police: \*TSG (b) (6) , SSG (b) (6) \* Mid Size \$44 day \*\* Van \$80

#### 2. SCHEDULE: (All time Local)

##### 07 AUG (Monday):

1530: Depart KYNG  
1720: Land KBIX PPR# 08-04 LC

##### 08 AUG (Tuesday):

0920: Depart KBIX  
1030: Land KBPT  
1500: Depart KBPT  
1630: Land KBPT Rapid Upload after landing

##### 09 AUG (Wednesday):

1330: Show Time / Weather Decision  
1500: Depart KBPT  
1630: Land KBPT

##### 10 AUG (Thursday):

1700: Depart KBPT  
2000: Land KYNG

#### 3. ITEMS TO TAKE:

- a. Navigator: Maps/Map Bag, Validation Map, Laptop Computer
- b. Spray Operator: Safety Gear
- c. Spray Maintenance: Deployment Kit

#### 4. NOTIFICATION NECESSARY FOR THIS MISSION:

- a. Port Arthur Airport Manager – (b) (6)

#### 5. PARKING PLAN: FBO ramp or as directed.

#### 6. RADIO FREQUENCIES. (Determined at Port Author TX)

7. **IN-BRIEFING.** Required; IAW the Schedule above.
8. **SPRAY CONFIGURATION:**
- a. **System:** SP2G - MASS LV/HV; Modules 1 and 2
  - b. **Nozzle Tips/Orientation:**
  - c. **Aircraft:** 99108
9. **QUARTERS:**
- a. **7 Aug. KEESLER AFB, PRIME KNIGHT BILLETING**  
**DSN 597-9986; FAX 597-0084**
  - b. **8-10 Aug. Holiday Inn Park Central, Port Arthur TX \$50**  
**(409) 724-5000; FAX (409) 724-7644**  
**(910 SP) Comfort Inn (409) 729-3434; fax 1243**
10. **TRANSPORTATION:**
- a. **7 Aug. Keesler AFB Transportation, DSN 597-2430**
  - b. **8-10 Aug. Thrifty Rental Car, Port Arthur TX, (409) 722-2277**  
**3 Van at \$80 per day, 2 Mid Size at \$44 per day**
13. **CONTACTS:**
- a. **Keesler AFB, MS.**
  - b. **Port Arthur, TX:**
    - (1) Air Field Manager. (b) (6)
    - (2) Texas Land Management Office:
      - (b) (6)
      - (b) (6), pager (b) (6)
      - (b) (6), pager (b) (6) (pin) (b) (6)
  - c. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046, + Ext
    - (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
    - (2) 910 AW Command Post: Ext 1315
    - (3) 910 AW/PA: Lt (b) (6); FAX 1161
    - (4) 910 OG/CC: Col (b) (6)
    - (4) 910 OS/OSA: Airfield Manager, (b) (6)
    - (5) 757 AS/DO: LtC (b) (6)
    - (6) 910 OSF Supervisor of Flight Desk (SOF): 1069; FAX 1371
    - (7) 757 AS/DOO: Ops Admin: SMS (b) (6)
    - (8) 757 AS/DOS: Aerial Spray Office, (b) (6); FAX 1616
    - (9) 910 LG/CC: LtC (b) (6)
    - (10) 910 LG/LGM: CMS (b) (6)
    - (11) Maintenance Control: Ext 1327
    - (12) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
    - (13) 910 LG/LGL: CMS (b) (6)
    - (14) Omega/SATO Travel: Ext 1772; 1- (800) 285 – 6342
    - (15) Cellular Spray Phones: (b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## NSB, KINGS BAY, GA

### 7-9 May 2009

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at NSB, Kings Bay, GA.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: : Maj (b) (6) , Maj(b) (6)
- (2) Navigators: Maj (b) (6)
- (3) Flight Engineers: SrA (b) (6)
- (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSgt (b) (6) SrA (b) (6) , SrA (b) (6) , SRA (b) (6)
- (2) Crew Chiefs: TSgt (b) (6) , SrA (b) (6)
- (3) Avionics: MSgt (b) (6)

##### c. Entomologist: MC Maj (b) (6) , LTC (b) (6)

#### 2. PPR REQUIREMENTS: 40701

#### 3. PLANNED SEQUENCE OF EVENTS: (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

##### 07 MAY (Thurs)

1500 Show  
1700 Depart YNG  
2000 Land KNIP  
2030 Safety Brief

##### 08 MAY (Friday) : Aircraft will squawk 5107 prior to entering P-50. Ensure pilots are given this squawk from ATC!!

Flight plan: KNIP – Kings Bay – KNIP at 3000' on IFR flight plan with delay at Kings Bay.

1300 In-Brief @ CO's Conference Room in Fluckey Hall  
1500 Weather call/Crew show  
1630 Load pesticide and calibrate system  
1815 Depart KNIP  
Sunset: 2010  
2030: Land at no later than @ KNIP

##### 09 MAY (Saturday)

0830 Show time  
1030 Depart KNIP  
1300 Land YNG

**\*\*No weather back up day available.**

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

- (1) Mission Commander Cell Phone use (b) (6)

##### b. Entomologist:

- (1) Wind Gauge & Compass
- (2) VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder

##### c. Navigators:

- (1) Maps
- (2) Templates

- d. **Spray Maintenance:**  
(1) Spill Kit  
(2) Safety Equipment  
(3) Loading and Clean-up Equipment and Supplies

5. **SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System  
b. **Booms:** Stainless Steel ULV Fuselage Booms  
c. **Nozzles:** size = 8005; 18 open for 7.3 flow rate; oriented straight down.  
d. **Differential GPS:** Wingman Installed  
e. **Aircraft:** 89-9106  
f. **Mission Identifier:** QZNRKA020727

6. **Adult mosquito control spray Parameters: (Kings Bay)**

- a. **Pesticide:**  
Trumpet® EC (78% AI naled)  
Organophosphate Insecticide  
Signal Word: Danger  
Antidote: Atropine, 2-PAM  
Flushing Agent: Water  
b. **Application:** 1.0 oz/acre  
c. **Spray Altitude:** 150 Feet  
d. **Swath Width:** 2,000 Feet  
e. **Ground Speed:** 200 Knots (338 Feet/Second)  
f. **Acreage:** 15,000 Acres  
g. **Spray-On Time:** 16 minutes  
h. **Flow Rate:** 7.3 gallons/minute

7. **AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading 4 drums of Trumpet for Kings Bay.

8. **PARKING PLAN NAS Jacksonville, FL**

9. **AIR TO GROUND RADIO FREQUENCIES:**

Navy Jax Ops-	310.2	Tower	120.0/340.2
Ground	128.6/336.4	<b>Spray Ground:</b>	<b>123.45 VHF</b>
ATIS	281.0		

10. **TRANSPORTATION:**

Enterprise Car Rental: 904-772-7007

5 FS Cars (b) (6) ) \$42/day+5gov policy

11. **SPRAY MONITORING/TESTING:** Ground monitoring by CPMP and by NSB Kings Bay pest control.

12.. **Quarters:**

Hampton Inn Jacksonville-Orange Park Contact is Diane Holmes (904)-777-5313 \$79/night  
6135 Youngerman Circle, Jacksonville, FL 32244  
Confirmation #80419625

13. **CONTACTS:**

- a. **Naval Submarine Base Kings Bay, GA (Com: (912) 573-xxxx; DSN 573-xxxx)**  
(1) Spray Coordinator: (b) (6)

(2) Strategic Weapons Facility Atlantic (SWFLANT) x0551

**b. Naval Air Station Jacksonville, FL (NAS JAX)**

- (1) For requesting PPR: DSN 942-2511
- (2) Transient line office, DSN 942-3843
- (3) Weather ??
- (4) Tower – 942-2516

**c. FAA JAX Center.** Mr. (b) (6), Mission Specialist (b) (6)

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Maj (b) (6); FAX 1022
4. 910 OG/CC: LtCol (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6); FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander (Maj (b) (6)): (b) (6)

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**NAVAL SUBMARINE BASE, KINGS BAY, GA 7-9 MAY 2009**

**1. MISSION BASICS:**

- a. Installation Sprayed: Naval Submarine Base, Kings Bay, Georgia
- b. Mission Duration: 7-9 May 2009
- c. Purpose of Application: To control pestiferous populations of mosquitoes (specifically salt marsh mosquitoes) and biting midges (*Culicoides* spp.)
- d. Application Date: 8 May 2009
- e. Time/s of Application (Local): 1845-2035 hrs
- f. Acres Treated: 15,360 acres
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) , Public Works, Aerial Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 8 May 2009
- i. Date of Waste Generation Letter: 30 October 2007
- j. Installation In-Briefing: (When/Where/Briefer): 8 May, CO's Conference Room in Fluckey Hall, Maj (b) (6) , Mr. (b) (6) , Ms. (b) (6) , Mr. (b) (6) .

**2. OPERATIONAL:**

- a. **Mission Commander:** Maj (b) (6) ugh
- b. **Aircrew:**
  - (1) Pilots: : Maj (b) (6) , Maj (b) (6)
  - (2) Navigators: Maj (b) (6)
  - (3) Flight Engineers: SrA (b) (6)
  - (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6)
- b. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) , SrA (b) (6) , SrA (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6) , SrA (b) (6)
  - (3) Avionics: MSgt (b) (6)
- c. **Entomologists:** Maj (b) (6) (safety briefer), LTC (b) (6)
- d. **Flying Data:**
  - (1) Spray Sorties/Hours: 1/1.8
  - (2) Ferry Sorties/Hours: 2/5.4

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet® EC Concentrate
- b. EPA Registration Number: 59639-90-5481
- c. Formulation Sprayed: Emulsified Concentrate
- d. Gallons Pesticide Loaded: 120 Gal
- e. Gallons Pesticide Applied: 120 Gal
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 20 gal/water
- h. Other Additives Used: None
- i. Application Rate: 1.0 oz/acre



**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 18 oriented straight down
- f. Pressure: 38 p.s.i.
- g. Flow Rate: 7.4 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: 2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 140-160°/4-8 mph
  - (2) Release Altitude: 140°/13 knots
- b. Temperature (Degrees Fahrenheit): 89-82°F
- c. Relative Humidity: 40%-54%
- d. Cloud Cover: clear
- e. Source: Ground observations and the aircraft self-contained navigational system.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

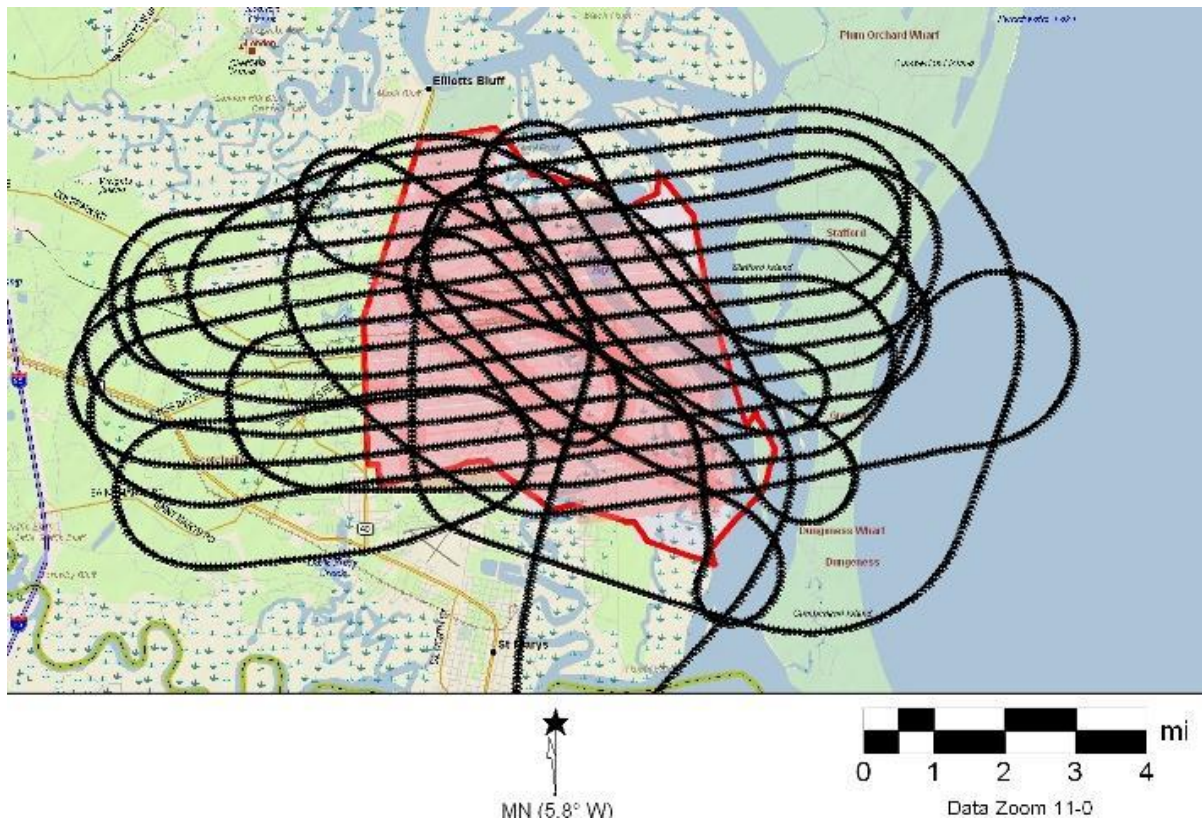
- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring of aircraft flight pattern (see Attachment 1).
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: mosquito surveillance and reported trap counts high enough to warrant aerial mosquito control (New Jersey style trap collections were as high as 100 individuals in some locations)
  - (2) Results: (b) (6) reported zero mosquito complaints and only one or two individuals in traps the following Monday; control was greater than 95% reductions.

8. **REMARKS:** This was the first mosquito mission at NSB Kings Bay this FY and the first for the new POC there, Mr. (b) (6) . Our thanks to Mr. (b) (6) and Ms. (b) (6) for completing all of the various requirements to put this add-on mission together on short notice. While this mission is relatively new, many of the complicated logistics have already been resolved. The method of asking the driver to remain until the mission is over to receive any generated waste worked well this time, but if the spray aircraft returns after dark, the driver will need to return the following day. This is because Spray Maintenance should not flush and rinse the system after dark because of safety concerns associated with this activity (handling pesticides in low-light conditions). Attachment 1 shows the path of the aircraft with the light red color indicating where spraying or flushing occurred. There were good spray conditions during the 8 May application, and subsequently, over a 99% reduction in mosquitoes was reported. Additional thanks go to the individuals and agencies which gave excellent support to make this mission a success: NAS JAX flight line, FAA, and JAX Center (Mr. (b) (6) ). The next aircraft for a NSB Kings Bay spray mission is scheduled for 25-28 June 2009.

//signed//

(b) (6) , MAJ, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

Attachment 1.





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

6 May 09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Kings Bay NSB, GA

1. One C-130 will be available 7-9 May 09 for the requested spray aerial insecticide mission to control nuisance and vector mosquitoes and thus reducing the negative impact on outdoor duty.

2. Concept of Operations:

- a. 7 May (Thursday)  
1500 Show KYNG  
1700 Depart KYNG  
2000 Land KNIP
- b. 8 May (Friday)  
1630 Show KNIP  
1800 Depart KNIP  
1930 Land KNIP
- c. 9 May (Saturday)  
0730 Show KNIP  
0930 Depart KNIP  
1230 Land KYNG

3. Aerial Spray Training for pilots and maintenance support personnel will be accomplished.  
The following flight parameters will be utilized:

- a. Altitude – 150' AGL
- b. Swath width – 2000'
- c. Flow rate – 7.3 gal/min for an application rate of 1.0 oz/acre
- d. Chemical – Trumpet
- e. Approximate spray area – 15000 acres

4. Maj (b) (6) will act as Mission Commander.

5. Maj (b) (6) will act as Aircraft Commander

6. Support required at Kings Bay NSB, GA and Jacksonville NAS, FL has been completed.

(b) (6), Major, USAFR  
Assistant Chief of Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## NEW ORLEANS / GULF COAST TRAINING

### 07 - 11 FEB 2000

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: LTC (b) (6)
- (2) Pilots: MAJ (b) (6) , MAJ (b) (6) MAJ (b) (6)
- (3) Navigators: LTC (b) (6)
- (4) Flight Engineers: SMS (b) (6)
- (5) Spray Operators: MSG (b) (6) , MSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSG (b) (6) , SSG (b) (6) , SSG (b) (6)
- (2) Crew Chiefs: TSG (b) (6) , SSG (b) (6)
- (3) Avionics: TSG (b) (6)

##### c. Ground Support/Certified Pest Management Professionals: 1LT (b) (6)

Full Size Car: LtC (b) (6) , Mid: LtC (b) (6) & SMS (b) (6) , Van: MX

#### 2. SCHEDULE: (All time Local)

##### 07 FEB (Monday)

0830: Show at KYNG Fly to New Orleans  
 1100: Depart KYNG  
 1315: Land KNBG

**PPR # - 01-02-07-00**

##### 08 FEB (Tuesday):

0800: Show at KNBG **DGPS** OIL SPILL SORTIE  
 1000: Depart KNBG **DAY** OVERWATER  
 1200: Land KNBG

##### 09 FEB (Wednesday):

0800: Show at KNBG  
 0930-1130: Range Time **VIS** DeSOTO MOA, SHELBY EAST RANGE  
 0900: Depart KNBG **DAY** SIMULATED DECON, ULV SORTIE  
 1200: Land KNBG

##### 10 FEB (Thursday):

0800: Show at KNBG  
 0930-1130: Range time **DGPS** DeSoto MOA, Shelby East Range  
 0900: Depart KNBG **DAY** Simulate ULV, LV/HV Sortie  
 1200: Land KNBG

##### 11 FEB (Friday):

0730: Show at KNBG **FLY HOME**  
 0900: Depart KNBG  
 1315: Land YNG

#### 3. ITEMS TO TAKE:

##### a. Navigator: Maps and Laptop Computer

##### b. Certified Pest Management Professionals:

- (1) Weather Monitoring Equipment
- (2) UHF Radio with Antenna and VHF Radio
- (3) Laptop Computers

- (4) Digital Camera
- (5) SATLOC Trackstar Equipment

**4. AIR TO GROUND FREQUENCIES:**

- a. Spray: Primary 392.2; Secondary 340.8
- b. Interplane: Primary 123.45; Secondary 122.9

**5. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 09107

**6. SPRAY PARAMETERS:** As required; in accordance with type of sortie to be flown

**7. LOADING AND MIXING:** Water

**8. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Unlimited.

**9. CONTACTS:**

- a. Quarters: **New Orleans Billeting:** DSN: 678-3841 COMM: (504) 392-1959 FAX  
**Maison Dupuy Hotel:** (504)-586-8000; FAX (504)-525-5334 (French Qtr)  
1001 Rue Toulouse, New Orleans, LA 70112
- b. Transportation: **New Orleans:** Enterprise (504) 366-9400 FAX (504) 366-3443  
928 ½ West Bank Expressway Gretna LA 70053  
2 mid size, 1 full size, 1 van; Confirmation #212984  
call when you land to have them bring the contracts to B Ops
- c. **New Orleans NAS JRB:** DSN prefix 678 Comm. (504)-678-xxxx  
Transit Alert – Ext 3603; Base Operations: 3180/3181
- f. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046, + Ext
  - (1) 910 AW/CC: B GEN Michael Gjede, Ext 1243
  - (2) 910 AW Command Post: Ext 1315, FAX 1161
  - (3) 910 AW/PA: LT (b) (6)
  - (4) 910 OG/CC: COL (b) (6)
  - (5) 910 OG/OSA: Airfield Manager: (b) (6) , FAX 1371
  - (6) 757 AS/DO: LTC (b) (6)
  - (7) 757 AS/DOO: Ops Admin: SMS (b) (6)
  - (8) 757 AS/DOS: Aerial Spray Office, Ext 1111, FAX 1616
  - (9) 910 LG/CC: LTC (b) (6)
  - (10) 910 LG/LGM: CMS (b) (6)
  - (11) Maintenance Control: Ext 1348
  - (12) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
  - (13) 910 LG/LGL: CMS (b) (6)
  - (14) Omega/SATO Travel: Ext 1772; (800) 285 - 6342
  - (15) Cellular Spray Phones: (b) (6)

2 January 2002

MEMORANDUM FOR HQ AFRC/DOOM (FAX: 497-0198)

FROM: 757 AS/DOS (346-1111; FAX 346-1616)

SUBJECT: Concept of Operations for Aerial Spray Training at Avon Park AFR/MacDill AFB FL

1. Purpose/Objectives/Benefits: To fulfill training requirements for squadron personnel and evaluate new drift control agent for enhanced application of aerially applied products.
2. Capability: Spray Aircraft Available 7-11 Jan 02.
3. Concept of Operations:
  - a. **7 Jan (Monday):**
    - 1100 Show at KYNG
    - 1300 Take-Off KYNG
    - 1600 Land KMCF
    - 1415 Safety Brief
  - b. **8 Jan (Tuesday):** 0930-1130 Range Times
    - 0800 Show Time/Weather Decision/Load Water
    - 0915 Depart KMCF/Call Tower & Fire Department at AGR
    - 0930-1130 Spray water over designated area of the Avon Park Bombing Range
    - 1200 Land KMCF
  - c. **9 Jan (Wednesday):** 0930-1430 Range Times (2 Sorties possible)
    - 0800 Show Time/Weather Decision/Load Water
    - 0915 Depart KMCF/Call Tower & Fire Department at AGR
    - 0930-1130 Spray water over designated area of the Avon Park Bombing Range
    - 1200 Land KMCF (Second Sortie to be determined)
  - d. **10 Jan (Thursday):** 0700-0930 Range Times
    - 0630 Show Time/Load Water
    - 0645 Depart KMCF/Call Tower & Fire Department at AGR
    - 0700-0930 Spray water over designated area of the Avon Park Bombing Range
    - 1000 Land KMCF
  - e. **11 Jan (Friday):**
    - 0700: Report
    - 0800: Out-Briefing
    - 0900: Depart KMCF
    - 1200: Land KYNG
4. Spray Parameters:



- a. Acreage: N/A
  - b. Altitude: 100 Ft AGL
  - c. Ground Speed: 200 Knots
  - d. Pesticide: N/A (Training with dyed water only)
  - e. Application Rate: 500 Gallons of water
  - f. Flow Rate: Approximately 200 Gallons per minute at psi 40
  - g. System: SP2G – MASS ULV; Modules 1 and 2
  - h. Nozzle Tips/Number/Orientation: 8070 Flat Fan oriented straight back
  - i. Aircraft Tail Number: 99105
  - j. Deploy/Re-Deploy Time: 3.5 hrs
  - k. Spray Time: 2 hrs (or as called by Mission Commander)
5. Mission Commander: Major (b) (6)
6. Support required at MacDill AFB and Avon Park Bombing Range AFB have been approved via telephone conversations with MacDill AFB Ops and the Range Manager at Avon Park AFRB.
7. If you have any questions concerning this mission please contact DSN (b) (6) .

(b) (6) , Major, USAFR  
Deputy Chief of Aerial Spray  
757 AS/DOS (346-1652)

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **MACDILL AFB / AVON PARK, FL**

### **7 - 11 JAN 2002**

**PURPOSE/OBJECTIVE/BENEFIT:** To fulfill training requirements for squadron personnel and evaluate new drift control agent for enhanced application of aerially applied products.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Mission Commander: Maj (b) (6)
- (2) Pilots: Maj (b) (6) , Lt Col (b) (6)
- (3) Navigators: Maj (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: CMS (b) (6) , MSG (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: TSG (b) (6) , TSG (b) (6) ,  
SSG (b) (6)
- (2) Crew Chiefs: SSG (b) (6) , SRA (b) (6)
- (3) Avionics: TSG (b) (6)

##### **c. Certified Pest Management Professionals:** Lt Col (b) (6) , Capt (b) (6)

##### **d. Ground Support:** MSG (b) (6)

Enterprise #: \$75 Vans: Spears/Topp; \$45 Full Size: (b) (6) ; \$41 Mid Size: SSG (b) (6)

#### **2. SCHEDULE: (All time Local)**

07 JAN (Monday): No range time.

**PPR # - 007-RJ1**

1100: Show at KYNG

1300: Depart KYNG

1600: Land KMCF

08 JAN (Tuesday): Range Times 0930-1130, call AGR Tower & Fire Dept

0800: Show Time

0915: Depart KMCF Coordinated with CAPT (b) (6) / Sgt (b) (6)

1200: Land KMCF

09 JAN (Wednesday): Range Times 0930-1430, call AGR Tower & Fire Dept

0800: Show Time

0915: Depart KMCF Coordinated with CAPT (b) (6) / Sgt (b) (6)

1430: Land KMCF

10 JAN (Thursday): Range Times 0700-0930, call AGR Tower & Fire Dept

0630: Show Time

0645: Depart KMCF Coordinated with CAPT (b) (6) / Sgt (b) (6)

1000: Land KMCF

11 JAN (Friday):

0900: Depart MCF

1200: Land YNG

#### **3. PURPOSE OF THIS MISSION.** Compare drift retardant capabilities of Garrco Control® with those of Airex DC™

#### **4. ITEMS TO TAKE:**

- a. **Navigator:** Maps with "No-Spray" Areas Marked and Laptop Computer

- b. **Certified Pest Management Professionals:**
- (1) 18 Packs of Water-Sensitive Cards
  - (2) 4 Boxes of Plastic Card Holders & Index Cards
  - (3) 1 Signal Mirrors
  - (4) 1 Spot Lights
  - (5) 1 Engineer Wheel
  - (6) Swath Kit Weather Station and Image Analyzer
  - (7) UHF Radio with Antenna and VHF Radio
  - (8) Ground Maps
  - (9) Laptop Computer
  - (10) Digital Camera
  - (11) SATLOC Trackstar Equipment

**5. AIR TO GROUND FREQUENCIES:**

- a. Spray: Primary 392.2; Secondary 340.8
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. Avon Park: TWR-292.2 (p), 126.15, 276.6 (s)
- e. MacDill: TWR-123.7; GND-121.65; ATIS-133.825; CMD POST-311.0; PTD-372.2

**6. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 105
- c. Mission Identifier: QZNRKA485007

**7. SPRAY PARAMETERS:**

- a. Booms -- Fuselage only.
- b. Nozzles -- 8070 Flat Fan oriented straight back.
- c. Number of Nozzles -- 30 Total; 15 on each fuselage boom.
- d. Airspeed -- 200 knots ground speed.
- e. Altitude -- 100' above ground level.
- f. Spray -- Water with either Garrco Control® or Airex DC™.
- g. Wind -- Headwind/tailwind.
- h. Flow Rate -- 200 Gallons per minute at 40 psi.

**8. LOADING, MIXING AND APPLICATION:**

- a. 8 JAN 02 –  
Mix 16 ounces of Control® with 500 gallons of water.  
Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.
- b. 9 JAN 02 – 0.5% solution  
Mix 2.5 gallons of Airex DC™ with 500 gallons of water.  
Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.
- c. 10 JAN 02 – 1.0% solution  
Mix 5 gallons of Airex DC™ with 500 gallons of water.  
Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.

**9. CONTACTS:**

- a. Quarters:  
-- MacDill Lodging: DSN: 968-4259, FAX 2660 (Gp 968-2617/2594)

**-- Sebring/Avon Park:**

Chatane Elan Airport Inn \$64, (863) 655-6252

- b. Transportation: **MacDill**: Enterprise, (813)-840-2613 / 8310 FAX  
2 Vans \$75; 2 Full size car \$45; 1 Mid Size \$41 + \$2 state surcharge; Unlimited mileage  
**All vehicles Reserved under Number 152170; keys will be at Base Ops**
- c. **MacDill AFB**: DSN prefix 968, Comm. (813)-828-xxxx, Base Operations – Ext 2350
- d. **Patrick AFB**: Rescue Squadron: DSN prefix 854  
LTC (b) (6) – CC - (b) (6)  
LTC (b) (6) – DO – (b) (6)  
LTC (b) (6) – Flight Ops – (b) (6)  
CPT (b) (6) – Tactics – (b) (6)  
Maintenance Ops Center - MOC – x2261, 2262, 2264 (b) (6)
- e. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX  
DSN 968-7+Avon Park Extension XXX)  
DSN Access from Avon Range phones: 4+94+DSN  
Avon Control Tower & Range Control Scheduling DSN 968-7176  
Local phone calls from Avon Range:
  - Sebring 82 + number
  - Avon Park 81 + number
  - (1) Installation Coordinator/Engineer: (b) (6) , (b) (6) (b) (6)  
FAX 189/218; (b) (6)
  - (2) Pest Control: (b) (6)
  - (3) Forestry/Wildlife: (b) (6)
  - (4) Weather: MacDill AFB Forecaster (DSN 968-2854)
  - (5) Fuels: 212/118
  - (6) Airfield Manager: (b) (6)
  - (7) Asst Airfield Mgr: (b) (6) Fax 233
  - (8) Range/Tower NCOIC: (b) (6)
  - (9) Range Manager: Mr (b) (6)
  - (10) Range Coordination Center: 138/242
  - (11) Range Scheduling MacDill: DSN (b) (6) (Current Ops Scheduling)  
Sgt (b) (6) or Sgt (b) (6) s; FAX DSN 968-4098
  - (12) Fire Department: 293/225
  - (13) Prison Snack Bar: Hours 0800-1100; 1300-1600)
  - (14) Sebring AP:
    - Mgr: (b) (6) (b) (6) (fuel needs)
    - (1) BEEPER: 1 (863) 999-8622
      - a) ENTER YOUR PHONE#
      - b) ENTER #
    - Asst Mgr: Peggy Whiteleather, (b) (6)
  - (15) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)
  - (16) Range VHF: 126.15
  - (17) MacDill AFB Ops Gp CC: COL(b) (6)
  - (18) Other Quarters:
    - Sebring FL: Chataue Elan Sebring Airport Inn (863) 655-6252
    - Inn On The Lakes (863) 471-9400
    - Avon Park:
      - Quality Inn (863) 385-4500, FAX: (863) 385-0250
      - Jacaronda (863) 453-2211; 19 East Main St, Avon Park, FL \$ 27.29
      - Econolodge (863) 453-2000
      - Oak Tree Inn (863) 453-3165

- f. **Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**  
Toll Free 1 - 800 - 278 - 7046, + Ext
- (1) 910 AW/CC: Ext 1243
  - (2) 910 AW Command Post: Ext 1315, FAX 1161
  - (3) 910 AW/PA: Ext 1236, FAX 1022
  - (4) 910 OG/CC: Ext 1257 / 1179
  - (5) 910 OG/OSA: Airfield Manager: (b) (6)
  - (6) 757 AS/DO: LTC (b) (6)
  - (7) 757 AS/DOO: Ops Admin, SMS (b) (6), FAX 1657
  - (8) 757 AS/DOS: Aerial Spray Office, (b) (6), FAX 1616
  - (9) 910 LG/CC: LTC Schulte, Ext 1225
  - (10) 910 LG/LGM: CMS (b) (6)
  - (11) Maintenance Control: Ext 1348
  - (12) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
  - (13) 910 LG/LGL: CMS (b) (6)
  - (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- a. Cellular Spray Phones:
- PMP: (b) (6)
  - Mission Cmdr: (b) (6)
  - Spray MX: (b) (6)

# AVON PARK AIR FORCE RANGE ORGANIZATIONAL DIRECTORY

as of 1 July 2001

## FIRE/EMERGENCY REPORTING - 117

(Building numbers are shown next to group name or listed in ( ) after specific offices.)

### COMMANDER (DET 1/CC) - Bldg 29

Commander Lt Col (b) (6) (b) (6)

### RANGE SUPPORT (RS) - Bldg 29

Range Support Manager (b) (6) (b) (6)

Secretary/Admin Spt (b) (6) (b) (6)

### SUPPORT FLIGHT (RS)

Funds Manager (FM) (29) (b) (6) (b) (6)

Computer Spt (RSC) (29) (b) (6)

Telephone Syst (RST) (28) (b) (6)

Supply Supervisor (RSS) (28) (b) (6)

Fuels (RSS) (28) (b) (6)

Supply (RSS) (28) (b) (6)

Vehicle Maint Supvr (RSV) (28) (b) (6)

Veh Maint Control (RSV) (28) (b) (6)

### OPERATIONS FLIGHT (ROO) - Bldg 236

Admin Support (b) (6)

Operations Supervisor /QAE (b) (6)

Ground Operations (77) (b) (6) (b) (6)

(b) (6)

Public Affairs/Radio Maint (b) (6)

Training Monitor (b) (6)

### OPERATIONS (AHNTECH) - Bldg 41

Site Manager (b) (6)

Alternate Site Mgr/RCO (b) (6)

Range Control/Scheduling (b) (6)

Avon Control Tower (b) (6)

and (b) (6) ) ,

Toss Maintenance (b) (6) 190

Charlie Center Tower (Bldg 1059) 112/115

Bravo Center Tower (Bldg 1052) 111/121

### CIVIL ENGINEERING (CEO) - Bldg 29

Flight Chief (CEO) (b) (6) (b) (6)

Maintenance Controller (b) (6) (b) (6)

Structural Maint. (CEOV)

Target Maint. (CEOX)

Barrier Maint.

Service Call Desk

### FAX NUMBERS

Range Support Manager/Administration (29) 149

Environmental Flight (Natural Resources) (29) 161

Outdoor Recreation Program.Fish & Wildlife (600) 221

Transportation (28) 172

Fire Department (43) 181

Operations (236) 218

Operations Officer (236) 227

Ground Operations (236) (b) (6) (b) (6)

(b) (6) (b) (6)

Telephone Systems (28) 233

Avon Tower (ANTECH) (41) 279

Charlie/Bravo Range CT (1059/1052) 154

### RESOURCE PROTECTION (CEF) - Bldg 43

**Fire Reporting/Emergency Dispatcher 117**

Fire Chief/Ground Safety (b) (6) (b) (6)

Fire Operations (Bldg 43) 225/272

### ENVIRONMENTAL FLIGHT (CEV) - Bldg 29

Chief (b) (6)

Secretary (b) (6)

### NATURAL RESOURCES (CEVN) - Bldg 29 (except as noted)

Archeology 119 x322

Endangered Species/ Vacant (Bldg 600) 254

Fish and Wildlife Mgmt (b) (6) (Bldg 600) (b) (6)

Forest Management

Fire Mgmt/Operations

GIS Lab

Grazing

(b) (6)

Outdoor Rec/Game Mgt (b) (6) (Bldg 600) (b) (6)

" " /Maintenance (b) (6)

Plant Ecology/Natural Areas (b) (6)

Environmental Engr. - NEPA (b) (6)

Environmental Flight Warehouse (809) 193

Outdoor Rec Range Status (recorded message) 119

Multi-Storage Bldg 445 (CEVN area) 351

### COMPLIANCE (CEVC) - Bldg 29

Environmental Coordinator (b) (6) (b) (6)

Environmental Engineer (Vacant) 119 x 324

Hazardous Waste (b) (6) (b) (6)

(b) (6) (b) (6)

### RESTORATION (CEVR) - Bldg 29

Program Manager (b) (6) (b) (6)

### FLORIDA ARMY NATIONAL GUARD

Range Control (Bldg 236) (b) (6) (b) (6)

UTES (UTES Bldg) Sgt 1st Class (b) (6) (b) (6)

Red Leg Maintenance (Bldg 800) (b) (6) (b) (6)

### OTHER UNITS ... MISC.

Main Gate Guard Shack 222

APCI Operator 453-3174

Avon Park Youth Academy 452-3815

Retirees Activities Office (424) 285

Deployed Unit Complex (DUC) (44) 294

DUC (77) 145

Warehouse- MacDill Supply (77) 231

Union Representative (26) 123

All phone numbers are dialed 452-4XXX (XXX = the extension number). All "119" extension numbers also require an additional individual's extension number be dialed after the 119 number has answered.

**DET 1/CC**Lt Col (b) (6) **Snake** Commander**Range Support**Mr. (b) (6) **Saber** Range Support Mgr**Air Force Security** **Sierra** (Reserved)**Range Operations**

(b) (6) **Bucaneer** **Range Operations Mgr**  
 (b) (6) **Wolf** Office Automation  
 (b) (6) **Ops 1** Range Ops Officer, QAE  
 (b) (6) **Ops 2** Ground Ops Officer, QAE  
 (b) (6) **Ops 1** Radio Systems, Ground Ops  
 (b) (6) **Ops 3** Ground Operations  
**Range Control** Airfield Tower  
**Bravo Tower** Bravo Tower  
**Charlie Tower** Charlie Tower  
 (b) (6) **Bobcat** FLARNG Contract Training Monitor

## Communications

(b) (6) **Gator 2** Telephone Systems**Vehicle Maint**

(b) (6) **Vehicle Maint** Vehicle Mnt Base  
 (b) (6) **Vehicle Maint 1** Supervisor  
 (b) (6) **Vehicle Maint 2** Maint Tech.  
 (b) (6) **Vehicle Maint 3** Maint Tech.  
 (b) (6) **Vehicle Maint 4** Maint Tech.  
 (b) (6) **Supply 1** Supply/Fuels  
 (b) (6) **Supply 2** Supply/Fuels

**AHNTECH (Contractor)**

(b) (6) **Cobra 1** Site Manager  
 (b) (6) **Cobra 2** Alternate Site Mgr/RCO  
 (b) (6) **Cobra 3** Chief, RCO  
 (b) (6) **Cobra 4** RCO  
 (b) (6) **Cobra 5** RCO  
 (b) (6) **Cobra 6** TOSS Technician  
 (b) (6) **Cobra 7** Computer Opr.

**CE Base** Base Station Bldg 29  
**CE-1** Engineer  
**CE-2** Supervisor Structures  
**CE-3** Electrical Maint  
**CE-5** Mechanical Maint  
**CE-6** Airfield Sweeper  
**CE-7** Plumbing  
**CE-8** Structures Maint  
**Welder** Structures Maint  
**Barrier Maint** Barrier Maint

**Target Maintenance**

(b) (6) **Target 1** (Target Maint Foreman)  
 (b) (6) **Target 2** (Work Leader)  
 (b) (6) **Target 3**  
 (b) (6) **Target 4**  
 (b) (6) **Target 5**  
 (b) (6) **Target 6**  
 (b) (6) **Target 7**  
 (b) (6) **Target 8**  
 (b) (6) **Target 9**  
 (b) (6) **Target 10**  
 (b) (6) **Target 12**



<b>Fire Protection</b>	<b>Rescue Ops</b>	Fire/Crash Base
Senior Fire Officer	<b>Chief 1</b>	Senior Officer on Duty
Asst Chief	<b>Chief 2</b>	6Pac (4x4)
Fire Fighters	<b>Engine 9</b>	Pumper Crew
Fire Fighters	<b>Rescue 3</b>	P-10 Rescue
<b>Fire Fighters</b>	Red 4, 5, & 6	<b>P-19 Crash Trucks</b>
Fire Fighters	<b>Tanker 10</b>	P-18 Water Dist

**Fla Army Guard**

(b) (6)

<b>Red Leg</b>	Fla Guard Base
<b>Red Leg 1</b>	OIC
<b>Red Leg 2</b>	NCOIC
<b>Red Leg 3</b>	Range Controller
<b>Red Leg 4</b>	Range Controller
<b>Red Leg 5</b>	Range Controller
<b>Red Leg 6</b>	Range Controller
<b>Red Leg 7</b>	Range Controller
<b>Red Leg Maintenance</b>	(Bldg 800)

**Environmental Flight**

(b) (6)

<b>Pine Tree</b>	Base Station-Bldg 29
<b>Pine Tree 1</b>	Flight Chief
<b>Pine Tree 2</b>	Supvry Forester
<b>Pine Tree 3</b>	Supvry Wildlife Biologist
<b>Pine Tree 4</b>	Forester (Fire Supvr)
<b>Pine Tree 5</b>	Supv Rangelands Spec
<b>Pine Tree 6</b>	Equipment Operator
<b>Pine Tree 7</b>	Equipment Operator
<b>Pine Tree 8</b>	Equipment Operator
<b>Pine Tree 9</b>	Park Ranger
<b>Pine Tree 10</b>	Hunt Program Maint
<b>Pine Tree 11</b>	Grazing Pgrm Maint
<b>Pine Tree 12</b>	Wildlife Biologist
<b>Pine Tree 13</b>	Park Ranger
<b>Pine Tree 14</b>	Environmental Engineer
<b>Pine Tree 15</b>	Interm. Park Rangers
<b>Pine Tree 17</b>	Plant Ecologist
<b>Pine Tree 18</b>	Equipment Operator
<b>Pine Tree 19</b>	Geographer
<b>Pine Tree 20</b>	Forester
<b>Pine Tree 21</b>	Biological Science Tech
<b>Pine Tree 22</b>	Archeologist
<b>Pine Tree 23</b>	Rangelands Specialist
<b>Pine Tree 25</b>	Env. Engineer/Restoration
<b>Pine Tree 26</b>	Forester
<b>Pine Tree 27</b>	Botany Intern
<b>Pine Tree 28</b>	NEPA

<u>Outdoor Rec Office</u>	<b>Hunt Headqtrs</b>	Base Station-Bldg 600
Volunteers	<b>Pine Tree 30 - 39</b>	

**Environmental Flight Contractors**

(b) (6)

<b>Archbold 1</b>	Florida Scrub Jay
<b>Archbold 2</b>	Florida Scrub Jay
<b>Archbold 3</b>	Red-cockaded Woodpecker
<b>Archbold 5</b>	Red-cockaded Woodpecker
<b>Sparrow 1</b>	Fla Grasshopper Sparrow
(b)	<b>Sparrow 2</b> Fla Grasshopper Sparrow
	<b>Sparrow 3</b> Fla Grasshopper Sparrow
<b>Coyote 1</b>	Coyote Surveys
<b>Coyote 2</b>	Coyote Surveys
<b>Botany 1</b>	Botany
<b>Botany 2</b>	Photography/Botany

(b) (6)

<b>Botany 3</b>	Photography
<b>Botany 4</b>	Contractor
<b>Indigo 1</b>	Indigo snake monitoring
<b>Indigo 2</b>	Indigo snake monitoring

22 January 2002

**MEMORANDUM FOR 757 AS/DO**

**FROM: 757 AS/DOS (LtC Spears)**

**SUBJECT: Avon Park Drift Retardant Comparison Mission Report, 7-11 January 2002**

1. Purpose: Compare spray deposition from Garrco Control® and AirexDC™ drift retardants.
2. Traveler(s): The participants are listed in Attachment 1, the Avon Park Operational Schedule for 7-11 January 2002.
3. Itinerary: The itinerary is listed in the Avon Park Operational Schedule (Attachment 1).
4. Aerial Spray Flight Data:

a. 7 Jan 02: Ferry Sortie	KYNG-KMCF 1850-2155Z	Flight Hours: 3.1
b. 8 Jan 02: Spray Sortie	KMCF-KMCF 1429-1650Z	Flight Hours: 2.4
c. 9 Jan 02: Spray Sortie	KMCF-KMCF 1420-1555Z	Flight Hours: 1.6
d. 10 Jan 02: Spray Sortie	KMCF-KMCF 1320-1455Z	Flight Hours: 1.6
e. 11 Jan 02: Ferry Sortie	KMCF-KYNG 1415-1725Z	Flight Hours: 3.2
5. Discussion:
  - a. StaPut® and Control® are drift retardants used previously, with Control® proving to be more effective than StaPut®. AirexDC™ is a new product that became available in mid-2001. It forms a protective coating around a spray droplet to prevent evaporation as opposed to the previous materials that mixed with and thickened the spray solution. The initial tests comparing the two were conducted in December 2001.
  - b. Control® was tested at the rates of 4 ounces and 8 ounces per 500 gallons of water. AirexDC™ proved to be a better material at both 0.5% and 1.0%. During this trial, Control® was applied at 32 ounces per 500 gallons of water. Trials of AirexDC™ were conducted at the rates of 1.0% (5 gallons) and 0.75% (3.75 gallons) per 500 gallons of water. AirexDC™ was used at a higher rate since it is less concentrated than Control®.
6. Results:
  - a. Using AirexDC™ resulted almost twice as much recovery in ounces per acre as Control® (Figure 1). Although the number of droplets collected (drops/cm<sup>2</sup>) was similar for the higher rate of AirexDC™, the lower rate of AirexDC™ resulted in more droplets collected. The volume median diameter (DV50) for both rates of AirexDC™ was larger than for Control®, accounting for increased deposition.

- b. The higher rate for AirexDC™ showed less deposition than the lower rate. This is because the humidity was about 20% lower than when the lower rate was flown. This resulted in increased evaporation, and thus, less recovery.
- c. Effective swath width was widest with 0.75% AirexDC™ without an increase in total swath. The wider effective swath is important for us in optimizing our application by decreasing the number of swaths we need to fly and the amount of time to complete an application.

## 7. Conclusions and Recommendations:

- a. AirexDC™ proved to be the best material (Figure 2) resulting in more recovery on the ground, larger volume median diameter and, therefore, less drift. It also produced a wider effective swath without increasing the total swath. Using this material will give us better recovery and control of spray deposition in future missions.
- b. Control® at a rate of 32 ounces per 500 gallons of water produced a 30 ft wide effective swath that is unacceptably narrow for most applications. AirexDC™ at 1.0% was better, but the effective swath was only 48 ft. AirexDC™ at 0.75% produced the best effective swath at 65 ft. It may prove to be the best rate for our application and airplane.
- c. We need to conduct additional characterization trials with AirexDC™ comparing different nozzle configurations. This will allow us to determine the best nozzle configuration for different applications.

(b) (6), Lt Col, USAFR  
Research Entomologist

### Attachments

- 1. Operational Schedule
- 2. Figure 1, Comparison of deposition of Control® and AirexDC™
- 3. Figure 2, Deposition patterns of Control® and AirexDC™

### Distribution via e-mail:

910 AW/CC, PA, LG, LGMS, OG/CC, DO/CC  
AFRC/DO/DOOM, XP, HO, PA

(Original copy of this report will be maintained by 757 AS/DOS)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## MACDILL AFB / AVON PARK, FL

### 7 - 11 JAN 2002

**PURPOSE/OBJECTIVE/BENEFIT:** To fulfill training requirements for squadron personnel and evaluate new drift control agent for enhanced application of aerially applied products.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: Maj (b) (6)
- (2) Pilots: Maj (b) (6), Lt Col (b) (6)
- (3) Navigators: Maj (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: CMS (b) (6), MSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSG (b) (6), TSG (b) (6), SSG (b) (6)
- (2) Crew Chiefs: SSG (b) (6), SRA (b) (6)
- (3) Avionics: TSG (b) (6)

##### c. Certified Pest Management Professionals: Lt Col (b) (6), Capt (b) (6)

##### d. Ground Support: MSG (b) (6)

Enterprise #: \$75 Vans: (b) (6); \$45 Full Size: (b) (6); \$41 Mid Size: SSG (b) (6)

#### 2. SCHEDULE: (All time Local)

07 JAN (Monday): No range time.

**PPR # - 007-RJ1**

1100: Show at KYNG

1300: Depart KYNG

1600: Land KMCF

08 JAN (Tuesday): Range Times 0930-1130, call AGR Tower & Fire Dept

0800: Show Time

0915: Depart KMCF Coordinated with CAPT (b) (6) / Sgt (b) (6)

1200: Land KMCF

09 JAN (Wednesday): Range Times 0930-1430, call AGR Tower & Fire Dept

0800: Show Time

0915: Depart KMCF Coordinated with CAPT (b) (6) / Sgt (b) (6)

1430: Land KMCF

10 JAN (Thursday): Range Times 0700-0930, call AGR Tower & Fire Dept

0630: Show Time

0645: Depart KMCF Coordinated with CAPT (b) (6) / Sgt (b) (6)

1000: Land KMCF

11 JAN (Friday):  
0900: Depart MCF  
1200: Land YNG

3. **PURPOSE OF THIS MISSION.** Compare drift retardant capabilities of Garrco Control® with those of Airex DC™

4. **ITEMS TO TAKE:**

- a. **Navigator:** Maps with “No-Spray” Areas Marked and Laptop Computer
- b. **Certified Pest Management Professionals:**
  - (1) 18 Packs of Water-Sensitive Cards
  - (2) 4 Boxes of Plastic Card Holders & Index Cards
  - (3) 1 Signal Mirrors
  - (4) 1 Spot Lights
  - (5) 1 Engineer Wheel
  - (6) Swath Kit Weather Station and Image Analyzer
  - (7) UHF Radio with Antenna and VHF Radio
  - (8) Ground Maps
  - (9) Laptop Computer
  - (10) Digital Camera
  - (11) SATLOC Trackstar Equipment

5. **AIR TO GROUND FREQUENCIES:**

- a. Spray: Primary 392.2; Secondary 340.8
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. Avon Park: TWR-292.2 (p), 126.15, 276.6 (s)
- e. MacDill: TWR-123.7; GND-121.65; ATIS-133.825; CMD POST-311.0; PTD-372.2

6. **SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 105
- c. Mission Identifier: QZNRKA485007

7. **SPRAY PARAMETERS:**

- a. Booms -- Fuselage only.
- b. Nozzles -- 8070 Flat Fan oriented straight back.
- c. Number of Nozzles -- 30 Total; 15 on each fuselage boom.
- d. Airspeed -- 200 knots ground speed.
- e. Altitude -- 100' above ground level.
- f. Spray -- Water with either Garrco Control® or Airex DC™ .
- g. Wind -- Headwind/tailwind.
- h. Flow Rate – 200 Gallons per minute at 40 psi.

8. **LOADING, MIXING AND APPLICATION:**

- a. 8 JAN 02 –

Mix 16 ounces of Control® with 500 gallons of water.  
Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.

b. 9 JAN 02 – 0.5% solution

Mix 2.5 gallons of Airex DC™ with 500 gallons of water.  
Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.

c. 10 JAN 02 – 1.0% solution

Mix 5 gallons of Airex DC™ with 500 gallons of water.  
Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.

## 9. CONTACTS:

a. Quarters:

-- **MacDill Lodging:** DSN: 968-4259, FAX 2660 (Gp 968-2617/2594)

-- **Sebring/Avon Park:**

Chateau Elan Airport Inn \$64, (863) 655-6252

b. Transportation: **MacDill:** Enterprise, (813)-840-2613 / 8310 FAX  
2 Vans \$75; 2 Full size car \$45; 1 Mid Size \$41 + \$2 state surcharge; Unlimited mileage  
**All vehicles Reserved under Number 152170; keys will be at Base Ops**

c. **MacDill AFB:** DSN prefix 968, Comm. (813)-828-xxxx, Base Operations – Ext 2350

d. **Patrick AFB:** Rescue Squadron: DSN prefix 854

LTC (b) (6) – CC - (b) (6)

LTC (b) (6) – DO – (b) (6)

LTC (b) (6) (b) (6) – Flight Ops – (b) (6)

CPT T.C. (b) (6) – Tactics – (b) (6)

Maintenance Ops Center - MOC – x2261, 2262, 2264 (b) (6)

e. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX

DSN 968-7+Avon Park Extension XXX)

DSN Access from Avon Range phones: 4+94+DSN

Avon Control Tower & Range Control Scheduling DSN 968-7176

Local phone calls from Avon Range:

- Sebring 82 + number

- Avon Park 81 + number

(1) Installation Coordinator/Engineer: (b) (6) ; (b) (6)  
FAX 189/218; (b) (6) after hours: (b) (6)

(2) Pest Control: (b) (6)

(3) Forestry/Wildlife: (b) (6)

(4) Weather: MacDill AFB Forecaster (DSN 968-2854)

(5) Fuels: 212/118

(6) Airfield Manager: (b) (6)

(7) Asst Airfield Mgr: (b) (6) Fax 233

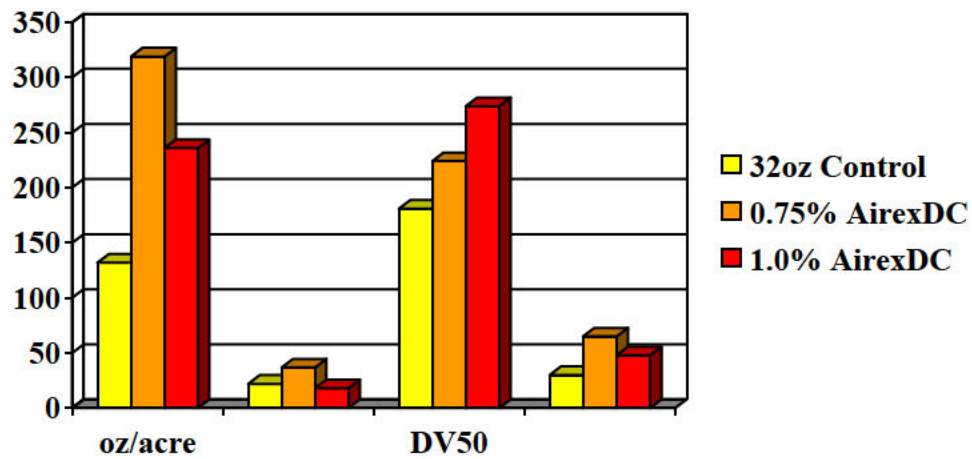
(8) Range/Tower NCOIC: (b) (6)



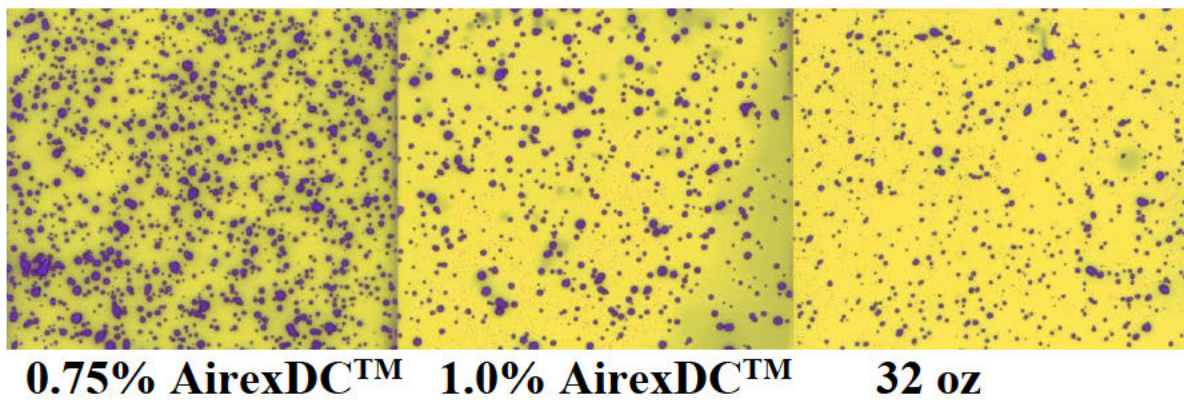
- (9) Range Manager: Mr (b) (6)
- (10) Range Coordination Center: (b) (6)
- (11) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)  
(b) (6) or (b) (6) ; FAX DSN 968-4098
- (12) Fire Department: 293/225
- (13) Prison Snack Bar: Hours 0800-1100; 1300-1600)
- (14) Sebring AP:  
Mgr: (b) (6) (b) (6) (fuel needs)  
(1) BEEPER: 1 (863) 999-8622  
a) ENTER YOUR PHONE#  
b) ENTER #  
Asst Mgr: (b) (6)
- (15) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)
- (16) Range VHF: 126.15
- (17) MacDill AFB Ops Gp CC: COL (b) (6)
- (18) Other Quarters:  
Sebring FL: Chateau Elan Sebring Airport Inn (863) 655-6252  
Inn On The Lakes (863) 471-9400  
Avon Park:  
Quality Inn (863) 385-4500, FAX: (863) 385-0250  
Jacaronda (863) 453-2211; 19 East Main St, Avon Park, FL  
Econolodge (863) 453-2000  
Oak Tree Inn (863) 453-3165  
Days Inn (863) 382-1148, 800 329-7466

f. **Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**  
Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Ext 1243
- (2) 910 AW Command Post: Ext 1315, FAX 1161
- (3) 910 AW/PA: Ext 1236, FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 OG/OSA: Airfield Manager: (b) (6)
- (6) 757 AS/DO: LTC (b) (6)
- (7) 757 AS/DOO: Ops Admin, SMS (b) (6) FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, (b) (6) , FAX 1616
- (9) 910 LG/CC: LTC (b) (6)
- (10) 910 LG/LGM: CMS (b) (6)
- (11) Maintenance Control: Ext 1348
- (12) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
- (13) 910 LG/LGL: CMS (b) (6)
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342  
a. Cellular Spray Phones:  
PMP: (b) (6)  
Mission Cmdr: (b) (6)  
Spray MX: (b) (6)



**Figure 1.** Comparison of deposition of Control® and AirexDC™ drift retardants applied from a C-130 aerial spray aircraft.



**Figure 2.** Deposition patterns of Control® and AirexDC™ drift retardants applied from a C-130 aerial spray aircraft.

1 April 2002

MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497 -0198)

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Parris Island  
MCRD SC for Control of Sandfly and Mosquitoes

1. Objective/Purpose/Benefits of the Spray Mission. Spray Parris Island MCRD SC for control of biting midges and mosquitoes. Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCDR SC at the request of the Parris Island MCRD/MCAS Environmental Coordinator.

2. Capability: Spray Aircraft Available on 7 April through 12 April 2002

3. Concept of Operations:

a. 7 Apr 02 (Sunday):

1400 Take Off KYNG  
1600 Land KNBC  
1630 Safety Briefing

b. 8 Apr 02 (Monday):

1430 Load Chemical  
1630 Take Off KNBC  
1900 Land KNBC

c. 9 Apr 02 (Tuesday):

1400 Load Chemical  
1630 Take Off KNBC  
1900 Land KNBC

d. 10 Apr 02 (Wednesday):

1400 Load Chemical  
1700 Take Off KNBC  
1900 Land KNBC

e. 11 Apr 02 (Thursday):

1400 Load Chemical  
1700 Take Off KNBC  
1900 Land KNBC

- f. 12 Apr 02 (Friday):
  - 1200 Take Off KNBC
  - 1400 Land KYNG
- 4. Spray Parameters:
  - a. Acreage: 7,500 Acres (Only areas determined by PMP)
  - b. Altitude: 150 Ft AGL
  - c. Pesticide: Dibrom® Concentrate (naled)
  - d. Deploy: 1.6 Hrs
  - e. Re-Deploy: 1.6 Hrs
  - f. Spray Time: 16 Minutes per Sortie (or as called by PMP)
- 5. Aircraft Commander/Mission Commander: Major (b) (6)
- 6. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator Mr (b) (6) DSN(b) (6) .
- 7. HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616, ATTN: 757 AS/DOS.

(b) (6) , Lt Col, USAFR  
Operations Officer, 757 AS

# AERIAL SPRAY OPERATIONAL SCHEDULE

## PARRIS ISLAND MCRD, SC

### 7-12 APR 2002

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCRD, SC.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: Maj(b) (6)
- (2) Pilots: Maj (b) (6) , Capt (b) (6)
- (3) Navigators: LtC(b) (6)
- (4) Flight Engineers: SMS (b) (6)
- (5) Spray Operators: CMS (b) (6) , MSG (b) (6) , TSG(b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: SMS (b) (6) , TSG (b) (6) , MSG (b) (6) ,  
SSG(b) (6) , SSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6) , SSG(b) (6)
- (3) Avionics: TSG (b) (6)

##### c. Pest Management Professionals/Entomologist: Capt (b) (6)

##### d. 910 MDS/SG Observer: Maj (b) (6)

#### 2. PLANNED SEQUENCE OF EVENTS: (All times local)

##### 07 APR (Sunday):

1400: Take off KYNG  
1600: Land KNBC  
1630: Safety Briefing

**PPR # 097-01**

##### 08 APR (Monday):

1400: Facility In-Brief  
1430: Load Chemical  
1630: Take off KNBC  
1900: Land KNBC  
1947: Sunset

HAN 10 Gallon boom flush.

##### 09 APR (Tuesday):

1400: Load Chemical  
1630: Take off KNBC  
1900: Land KNBC  
1947: Sunset

##### 10 APR (Wednesday):

1400: Load Chemical  
1630: Take off KNBC  
1900: Land KNBC  
1948: Sunset

##### 11 APR (Thursday):

1400: Load Chemical  
1630: Take off KNBC  
1900: Land KNBC  
1949: Sunset

##### 12 APR (Friday):

1200: Take off KNBC  
1400: Land KYNG

### 3. ITEMS TO TAKE:

a. **Entomologist/CPMP:**

- (1) Wind Gauge, Compass, and Signal Mirrors
- (2) UHF/VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder, Calibration Tables, and Oil Sensitive Papers
- (4) DGPS Computers, Trackstar Equipment, and Maps

b. **Navigators:**

- (1) Maps
- (2) Templates
- (3) Laptop Computer

c. **Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

### 4. SPRAY CONFIGURATION: SP-2G

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Wing Booms
- c. **Nozzles:** Open for ULV spray; 6, 8008's oriented straight down
- e. **Differential GPS:** Installed
- f. **Aircraft Tail #:** 09108
- f. **Mission Identifier:** QZNRKA

### 5. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)

a. **Pesticide:**

Dibrom® Concentrate (naled)  
Organophosphate Insecticide  
Signal Word: Danger  
Antidote: Atropine, 2-PAM  
Flushing Agent: HAN

- b. **Application:** 1 Ounce Dibrom®/Acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 3.634 Gallons/Minute

### 6. AMOUNT OF SPRAY MATERIAL AVAILABLE: Load 60 gallons of Dibrom® Concentrate per sortie and 25 gallons of HAN in flush tank.

### 7. PPR REQUIREMENTS: Required: PPR # 097-01

### 8. PARKING PLAN: Beaufort MCAS Ramp

## 9. AIR TO GROUND RADIO FREQUENCIES:

Air Traffic Control: 119.05 Beaufort MCAS TWR  
Hilton Head Arpt: 123.0 UNI  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 392.2; Secondary 340.8**

10. **TRANSPORTATION:** Parris Island will provide two vans for transportation to/from quarters and dining. An additional vehicle will be available for the CPMP/Entomologists/Ground Support personnel.

11. **SPRAY MONITORING OR TESTING:** CPMP and Parris Island MCRD Project Coordinator.

## 12. CONTACTS:

a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX

- (1) Environmental Coordinator (Spray Coordinator):  
- (b) (6), DSN (b) (6), (cellular) (b) (6); (b) (6), DSN (b) (6);  
- FAX (843) 228-2616; (b) (6), (cellular) (b) (6); (b) (6)
- (2) Assistant Chief of Staff I & L: Col (b) (6) & Cpt (b) (6) DSN (b) (6)
- (3) Pest Control Foreman: DSN 335-3663
- (4) P.I. Motor Pool: (b) (6), DSN (b) (6)
- (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
- (5) Thrifty Car Rental: (843) 525-9996
- (6) P.I. Rifle Range: DSN: 335-3183/3624

b. **Beaufort MCAS SC:** (Commercial (843) 228-XXXX)

- (1) Beaufort MCAS Environmental: (b) (6), DSN (b) (6); (b) (6), DSN (b) (6)
- (2) Fuels: DSN: 335-7049/7448/7168
- (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
DSN: (b) (6)
- (4) Base Ops: DSN 335- 7301/2/3  
(After duty hours: (b) (6), DSN: (b) (6))
- (5) Trans Alert/VAL: DSN: 335-7110
- (6) Weather: DSN 335-7001/7926/7/9 ([www.beaufort.usmc.mil](http://www.beaufort.usmc.mil))

c. **Beaufort County Mosquito Control:** (b) (6)

d. **Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) DSN: (b) (6)

e. **Quarters: JTR seasonal 15 Mar-30 Sep Lodging/\$95 Meals/\$40 Max \$137**

**Sleep Inn, \$72+Tax, (Yolanda), 843-522-3361, FAX: 843-522-9929**

Hampton Inn, 2342 Boundary St, Beaufort SC, (843) 986-0600 (FAX 0494)

Parris Island Billeting (b) (6) ) DSN: 335-2744 (FAX: 3815); (843) 228-3960

Comfort Inn (843) 525-9366 (FAX 1529)(b) (6)

Best Western (Sea Island Motel) (843) 524- 4121

Port Royal Days Inn (843) 524-1551

Beaufort Ramada 1-800-272-6232

Holiday Inn (843) 524-2144

Best Western Pt South (I-95) 1-843-726-8101



**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257
- (5) 910 OSF/OSA: Airfield Manager: (b) (6)
- (6) 757 AS/DO: (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, (b) (6) ; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: (b) (6)
- (11) Maintenance Control: Ext 1348
- (12) 910 LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL: CMS (b) (6)
- (14) Omega/SATO Travel: Ext 1772; (800) 285 – 6342
- (15) LG: Taxi Service to/from Airport: (b) (6) , FAX 1768
- (16) Supervisor of Flight Desk: 1069, FAX: 1371
- (17) Cellular Phones:
  - PMP/Entomologist Cellular Spray Phone: (b) (6) or (b) (6)
  - Mission Commander: (b) (6)
  - Spray Maintenance: (b) (6)

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT

### 1. MISSION BASICS:

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 7-12 April 2002
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 8 April 2002  
Time/s of Application (Local): 1745-1942
- f. Acres Treated: 6,272
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6), Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 7 April 2002
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-briefing: (When/Where/Briefer/s): Assistant Chief of Staff, Installation and Logistics, Col Semmler (Office); (b) (6) Maj (b) (6) & Capt (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: MAJ (b) (6)
- b. Certified PMP/s (Category 11): CPT (b) (6)
- c. Aircrew:
  - (1) Pilots: MAJ (b) (6) (A/C), CPT (b) (6)
  - (2) Navigator(s): LTC (b) (6)
  - (3) Flight Engineer(s): SMS (b) (6)
  - (5) Spray Operators: CMS (b) (6) MSG (b) (6), TSG (b) (6)
- d. Safety Briefer: CPT (b) (6)
- e. Spray Maintenance: SMS (b) (6), MSG (b) (6), MSG (b) (6),  
SSG (b) (6), SSG (b) (6)
- f. Spray Ground Monitors: CPT (b) (6)
- g. Crew Chiefs: MSG (b) (6), SSG (b) (6)
- h. Avionics: TSG (b) (6)
- i. 910 MDS/SG Observer: MAJ (b) (6)
- j. Flying Data:
  - (1) Spray Sorties/Hours: 2/3.7
  - (2) Ferry Sorties/Hours: 2/4.1

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate
- d. Gallons Pesticide Loaded: 60
- e. Gallons Pesticide Applied: 49
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 15 gallons Heavy Aromatic Naptha (HAN)
- h. Other Additives Used: None
- i. Application Rate: 1 Oz/Acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8008 Flat Fan
- e. Nozzle Orientation & Number Used:
- f. Pressure: 35 PSI
- g. Flow Rate: 3.6

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off Set: 3000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground (Knots): 6-8 knots @ 140-160
  - (2) Release Altitude: 10-12 knots @ 140-160
- b. Temperature (Degrees Fahrenheit): 68 °F
- c. Relative Humidity: 60 %
- d. Cloud Cover: Clear
- e. Source: Ground observations at the MCRD Marina.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Oil Sensitive Cards (OSC) wrapped on 1 meter dowels
  - (2) Results: Good coverage throughout spray area, as determined by OSC cards.
- b. Effectiveness:
  - (1) Technique/s Used: Insect trapping was carried out using carbon-dioxide baited traps
  - (2) Results: The number of biting midges collected in the traps were reduced following the spray.

**8. REMARKS:** The second spray sortie was weather cancelled after take-off when conditions were no longer conducive for insect control. The next mission to Parris Island MCRD is scheduled for 21-25 April 2002, with two spray sorties anticipated.

**(b) (6)**

**(b) (6)**, CAPT, USAFR  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL**



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



27 August 2003

MEMORANDUM FOR HQ AFRC/DOOM (FAX: 497-0198)

FROM: 757 AS/DOS (DSN 346-1111/1531; FAX 346-1616)

SUBJECT: Capability and Concept of Operations for Aerial Spray at Hill AFB/UTTR UT  
Annual Weed Control Spray Mission on the Utah Test and Training Range (UTTR)

1. **Capability:** One aircraft will be available 7-15 Sep 2003 for the requested spray mission. The support aircraft available 7-8 & 14-15 Sep 03 in support of the mission.

2. **Concept of Operations:**

a. **7 Sep (Sunday):**

0900 Show at KYNG  
0910 Pre-Mission Briefing  
0930 LM's released to assist in loading aircraft  
1100 Spray aircraft 99107 Take-Off KYNG  
1105 Support Aircraft 19143 Take-Off KYNG  
1430 Land HIF  
1445 Safety Brief

b. **8 Sep (Monday) – 14 Sep (Sunday):** Schedule of daily events will be determined by the Mission Commander as required.

**(Range times 0700-1400)**

0430 Ground Support Team departs for UTTR  
0515 FEs, Crew Chiefs, & Spray MX report and Mix/Load Chemical  
0700-1400 Target areas sprayed as designated by PMP

c. **13 Sep (Saturday):** Weather back-up.

d. **14 Sep (Sunday):** Flush and clean up day.  
Schedule of daily events will be determined by the Mission Commander as required.  
Support Aircraft returns to Hill AFB

f. **15 Sep (Monday):**

0800 Aircrew report for duty  
0830 All personnel report  
1000-1015 Spray Aircrafts & Support aircraft take-off  
1700-1800 Mission completed all personnel and aircraft arrive at KYNG

3. **Spray Parameters and Sequencing:** (See attached Operational Schedule)
4. **Mission Commander:** Lt Col (b) (6)
5. Support required at Hill AFB and the UTTR has been completed.

(b) (6), Lt Col, USAFR  
Aerial Spray Mission Commander  
757 AS/DOS

Attachment  
Spray Operations Schedule

5. 910 Com Flt Personnel: SMS (b) (6), MSG(b) (6), MSG (b) (6),  
TSG (b) (6), TSG (b) (6), SSG (b) (6)

**6. IN-BRIEFING: (UTTR Staff)**

- a. **When/Time:** 7 Sep 03, 1445
- b. **Where:** Air Freight Terminal
- c. **Who:** LtC (b) (6) , LtC (b) (6) SMS (b) (6)

**7. ITEMS TO TAKE:**

- a. **PMP:**
  - (1) Project Notebook with Recording Sheets and Maps
  - (2) LapTop Computer and Batteries
  - (3) 2 Compasses and Stop Watch
  - (4) 2 Signal Mirrors and 2 Spot Lights
  - (5) Measuring Wheels and Tape
  - (6) Entomologists' Tool Kit
  - (7) UHF/VHF Radios and VHF Radios
  - (8) Cellular Phone
- b. **Mission Commander:** Cellular Phone
- c. **Navigator:** Maps
- d. **Spray Maintenance:**
  - (1) MASS Spares and Spill Kit
  - (2) Tools and Other Equipment
  - (3) Herbicide Safety Binder
  - (4) Safety Equipment
- e. **Maintenance:** Aircraft Engine Spares

**8. SPRAY CONFIGURATION:**

- a. One Aircraft, Systems 3 and 5
- b. MASS Modules 1, 2 and 3
- c. UHV Fuselage booms oriented straight back

**9. PPR REQUIREMENTS:**

**10. PARKING PLAN:** Air Freight Ramp – on West side of the airfield, Spots 11/12

**11. RADIO FREQUENCIES:**

- **Clover Control:** UHF 339.0, 275.9, 361.4
- **Eagle Tower:** UHF 351.0; **MAWK 6 & 12**
- **Spray Ground Freq:** VHF 134.1, 118.45; UHF 398.1 (Primary), 383.2 (Back-up)
- **Spray Ground to Spray Maintenance:** **G MNT 1NO (on UTTR Brick)**
- **Base OPS:** 139.3

**12. SPRAY PARAMETERS:**

- a. **Herbicide:** Krovar 1DF®
- b. **Application Rate:** 22.5 gal/acre (10 lbs of Krovar in 22.4 gal of water)
- c. **Acreage:** 1,283 Acres (Targets 21, 24)
- d. **Ground Speed:** 200 Knots (337.55 ft/sec)
- e. **Spray Altitude:** 100 Feet AGL
- f. **Swath Width:** 35 Feet
- g. **Flow Rate:** 366.1 Gallons/Minute



**13. HERBICIDE LOADING: (For Partial Loads Use Table on Last Page)**

**a. Sequence for Loading 1,000 Gallon Mixing Tank:**

- (1) Fill with water up to 750 Gallon Mark, then add:
  - (a) 450 Pounds of Krovar 1DF® (9 bags, 50 # each)
  - (b) 4.0 Gallons (15,140 ml) of StaPut®
  - (c) 64 Ounces (1,892 ml) of Foam Fighter F®
  - (d) 200 Ounces (5,913 ml) Hi-Light® Dye
  - (e) Add Water to 1,000 Gallon Mark and Agitate for 30 Minutes

**b. When:** Start at 0515 Hours on first full day of spraying and adjust as necessary through end of the daily mission as called by Mission Commander.

**c. Items to be Furnished by Installation:**

- (1) Krovar 1 DF® (12,660 pounds)
- (2) Foam Fighter F® (15 gallons)
- (3) StaPut® Additive (114 gallons)
- (4) Hi-Light® Dye (45 gallons)
- (5) Remove Nutra-Sol Tank Cleaner
- (6) Loading Personnel and All Loading Equipment
- (7) All Necessary Cleanup and Hazardous Waste Disposal
- (8) Aircraft Support Equipment and TA Support
- (9) Wash Rack and Fuel Priority

**14. SPRAY MONITORING AND TESTING.** By CPMP & ground support personnel

**15. CONTACTS:** (Commercial prefix (801) 777-XXXX; DSN 777-xxxx)

**a. 388<sup>th</sup> RANS/DOO, Range Control Officer/Installation Spray**

**Coordinator:**

(b) (6), 6066 Cedar Lane, Bldg 1274S; (b) (6); FAX: 9205  
Cell Phone # (b) (6)

- **Hill Range Control:** 7-9386, Current OPS; 7-9385, Future OPS
- **Range Scheduler:** (b) (6)
- **Eagle Tower:** (b) (6) or (b) (6)
- **Clover Operations:** (b) (6)
- **Clover Commander:** LTC (b) (6)
- **388<sup>th</sup> RANS/RSR Resource Monitor:** (b) (6)

**b. Environmental Coordinator:** (b) (6), (b) (6)

**c. OASIS RRANGE SUPPORT DIRECTORATE:**

Oasis Chief: 75 CEG/CEU (b) (6)

Oasis Civil Engineering: (b) (6)

North Range Security: 7-1521/2/4

**d. Hill AFB Base OPS: 7-2221; WX 7-2885**

- **Aerial Spray OPS Work Center/Bldg 904:** DSN 777-6200

**e. ENTOMOLOGY:** (b) (6)

**f. Weather:** Hill AFB: 7-2018; UTTR: 7-1516/63

**g. Quarters:**

**Billeting Office Mountain View Inn, DSN 777-0802/4007, FAX 775-2014**

**- COM (801) 777-0802; FAX 775-2014**

**- Comfort Inn (\$48+Tax) 877 North 499 West 801 544-5577**

**- Quarters for LtC (b) (6) & Maj (b) (6)**

**- La Quinta Inn \$75 4905 W Wiley Post Way, Salt Lake City, 801 366-4444**

**- Quarters for UTTR Support Personnel**

**- State Line Inn (Wendover): 775-664-2221, 800-848-7300; FAX 775-664-4192**

Holiday Inn (Odgen): 1-800-999-6841 or 801 399-5671

Airport Hilton Inn: 1-800-648-9668 or 801 539-1515

Ogden Park: 247 24<sup>th</sup>, 801 627-1190/800 421-7599

La Quinta Inns: 1965 N 1200 W Layton, 801 776-6700

Alana Motel: 116 N Main Street, Clearfield, 801 825-2221 or 2321

Nevada Crossing: (\$49.50), Box 2457 Wendover NV, 800 537-0207

**h. Car Contact:**

**(1) Enterprise Rental Car (b) (6) ) 801 773-8999, FAX 801 775-0248;  
on Base at BX 801 825-0800**

**1 Mid-Size 6-15 Sep 03 pick up at SLC IAP (b) (6)**

**4 ea Mid-Size @ \$49/day –7-15 Sep 03**

**- LtC (b) (6) , Maj (b) (6) , Maj (b) (6) MSG (b) (6)**

**6 ea Mini Van @ \$70.74/day – 7-15 Sep 03**

**- CMS (b) (6) SMS (b) (6) MSG (b) (6) TSG (b) (6)**

**1 ea SUV 4 Wheel Drive \$70.47/Day 7-15 Sep 03**

**- Capt (b) (6)**

**(2) Hill Motor Pool: 1 Gov Mini Van Crew Chiefs**

**i. Hill AFB:**

Base Commander: Col (b) (6)

Airfield Manager: (b) (6)

Base Operations: 7-1861; FAX: 7-2221

C-130 Maintenance Contact: 7-3984

Fuels: 7-7423/7-7311

Transit Alert: 7-3956

Weather: 7-2885

**j. Hill Public Affairs: 7-5201**

**k. Supply Contact: 7-5391 (922 OE)**

- I. Youngstown ARS, OH:** Commercial (330) 609-XXXX or DSN 346-XXXX  
910 AW Direct Dial-In/Voice Mail: 1-800-278-7046+2+Ext  
Command Post: 1315; FAX 1161  
910 AW/CC: 1243  
910 AW/PA: 1236; FAX 1022  
910 AW/FM: Comptroller: 1216  
910 OG/OSF: Supervisor of Flight Desk: 1069; FAX 1371  
910 OG/CC: 1257/1179  
757 AS/DO Admin: SMS (b) (6) ; FAX 1657  
757 AS/DOS: Aerial Spray Operations, 1111; FAX 1616  
910 MX/LG/CC: 1225  
Maintenance Control: 1344  
Spray Maintenance: 1132/1586  
Omega/SATO Travel: 1772; 1-800-285-6342  
Cellular Spray Phones:  
- PMP: (b) (6)  
- Mission Commander: (b) (6)  
- Spray Maintenance: (b) (6)

**16. SEQUENCING:**

- a.** Target sequencing is determined by UTTR personnel based upon EOD clearance schedule and airspace scheduling. Target 21 is the priority and shall be completed before starting Target 24.
- b.** After completion of Target 21 if Sector E (North of Base Leg Knoll) is released for air operations on Eagle Range then spray ops aircraft shall remain South of the North edge of Target 21, and Eagle Range aircraft shall remain North of Base Leg Knoll.
- c.** When winds blow directly from one side of the target to the middle of the target, ground monitors will direct the “dress up” of the target edges.
- d. Spraying Priorities:**
- (1) Target 21
  - (2) Target 24
  - (3) NORDLZ

**f. Multiple-Target Alignments for Possible Future Operations.**

Whenever possible, multiple in line targets will be treated on the same pass to facilitate aircraft line-up and turning efficiency (in which case two separate ground-monitoring and marking parties will be required). However, no simo air operations will be conducted with Eagle Range while working Target 21.

- (1) The west edge of Target 23 lines up 1/4 mile west of the west edge of Target 21.
- (2) The west edge of Target 24 lines up with the west edge of Target 21.
- (3) When treating Targets 21 and 23 together on the same pass, treat the western-most stake on Target 23 and stake 139 on Target 21. If treating the east edge of Target 23, start with stake 90 on Target 21. When treating Targets 23 and 21 on the same passes, use stakes 90-139 on Target 21. Be sure to save treatment of stakes 90-139 on Target 21 until treating Targets 21 and 23 together.

**(4) When treating Targets 21 and 24 together, treat the west edge of Target 24 while aligned with stake 89 on Target 21. Be sure to save stakes 45-89 on Target 21 to treat concurrently with Target 13.**

**(5) Target 13 should be treated concurrently with stake 45 on Target 21 and those stakes to the east of stake 45.**

**17. GENERAL TARGET INFORMATION:**

**a. Target 21:**

- (1) Dimensions: 4,980' X 7,770'
- (2) Acreage: 888
- (3) Acres Sprayed in 2002: 888
- (4) 2000 Aircraft Loads: 18,869 Gal
- (5) Sorties: 17
- (6) Passes (35' Swath): 157
- (7) Spray-On Time/Pass: 23 Seconds
- (8) Spray Heading: 00/180

**b. Target 24:**

- (1) Dimensions: 1,600' X 6,080'
- (2) Acreage: 223
- (3) Acres Sprayed in 2002: 223
- (4) 2000 Aircraft Loads: 5,263 Gal
- (5) Sorties: 7
- (6) Passes: 47
- (7) Spray-On Time/Pass: 18 Seconds
- (8) Spray Heading: 00/180

**18. PLANNED SEQUENCE OF EVENTS: Hill AFB Tower Control and Runway Hours 0620L**

**NOTE: Scheduling reflects no weather or maintenance delays.**

**ALL TIMES MAY BE ADJUSTED BY MISSION COMMANDER.  
DUTY DAY FOR CIVILIANS WILL BE STD DAY (8 HOURS).  
MILITARY STATUS PERSONNEL WILL WORK AS  
REQUIRED WITHIN CREW REST CONSTRAINTS.**

**Tower Control, Runway & Airfield hours start at 0700L**

**RANGE TIMES: 0700-1400 each day (8-14 SEP)  
END OF EACH DAY LOAD GROUND TANKS WITH THE APPROPRIATE**

**MIX.**

**ALL MX & A/C PERSONNEL WILL REMAIN ON DUTY UNTIL  
AIRCRAFT IS PRE-FLIGHTED FOR THE NEXT DAY OR RELEASED  
BY THE AIRCRAFT COMMANDER.**

**7 Sep (Mon):**

Ground Support personnel depart for Wendover Stateline Inn

**8-14 Sep (Mon-Sun):** (First Spray Sortie, Range Times 0700-1400, 8-14 Sep)

0500L: Spray Maintenance starts on first full day of mission and adjust as directed

0616L: Sunrise (see attach Sunrise/Sunset Chart)

0700-1400L: Spray Targets as directed Using 8 Sep schedule spray

UTTR

Targets as directed by the Mission Commander or Ground Support

Director

**14 Sep (Sun):** Weather Back-up/Flush, Clean Up; Support Aircraft arrives at Hill

**15 Sep (Monday):** All personnel and aircraft return to YNG

0800L: All Aircrew report

0830L: All Personnel report

1000L: Spray Aircraft Takes Off Hill AFB

1015L: Support Aircraft Takes off Hill AFB

1700L: Spray Lands YNG

1715L: Support A/C Lands YNG

**19. CALCULATIONS:**

**a. FEET/SECOND:**

$6,076.1 \text{ FT/NAUT MI} \times 200 \text{ N/HR} / 60 \text{ MIN/HR} / 60 \text{ SEC/MIN}$

<< 337.55 FEET PER SECOND >>

**b. ACRES TREATED/MINUTE:**

$35 \text{ FOOT SWATH} \times 337.55 \text{ FT/SEC} \times 60 \text{ SEC/MIN}$

<< 708,855 SQUARE FEET PER MINUTE >>

$708,855 \text{ SQ FT/MIN} / 43,560 \text{ SQ FT/AC}$

<< 16.27 ACRES PER MINUTE >>

**c. SPRAY-ON TIME/LOAD:**

$1,750 \text{ GALLONS/LOAD} / 366.1 \text{ GAL/MIN} = 4.78 \text{ MIN/LOAD}$

OR 4 MIN 47 SEC/LOAD OR 287 SEC/LOAD

## UTTR GEOGRAPHIC LOCATION

### AND TARGET DIMENSIONS

Target areas on UTTR are geographically located in northwestern Utah, directly west of the Great Salt Lake and Hill Air Force Base. The complex is positioned between 40 and 41 degrees north latitude and close to 113 degrees ten minutes west longitude. The targets are within range 12 west and Township two and three north, Salt Lake Baseline Meridian.

**TARGET 13.** The target is located east of and between targets 23 and 24. Target 13 is three concentric circles. The spray area is 2000 feet in diameter and contains approximately 72 acres. Orientation is generally N-S, although exact spray lines will depend on marker set-up.

**TARGET 21.** The target is the most northerly of the southern group. Target is a large, rectangular area 5000' X 7800'. Orientation is NNE-SSW using right patterns of SSW-NNE using left patterns. Target and surrounding terrain are flat.

**TARGET 22.** Target is located approximately three N.M. N.E. of CBU Valley. Target is a rectangle 2400' X 3700'. To assist in identification, Target 1, a circular target, is located immediately SE of 22. Target orientation is SE to NW with left patterns.

**TARGET 23.** Target is located about three N.M. SSW of Target 21. Target 23 is a rectangle approximately 1850' X 4500'. Terrain is flat. Target orientation is NNE-SSW using right patterns or SSW-NNE using left patterns.

**TARGET 24.** Target is located about one N.M. SSW of Target 23. Target 24 is a 1500' X 6000' rectangle. Orientation is the same as Target 21. Terrain is flat.

**TARGET 26.** Personnel from MMETA, or 6501st RS will be aboard aircraft to assist in identification and orientation of target. Target is located west of Target 21. Target is rectangle 100' X 6000'. Terrain is flat and can be flown as desired.

**CBU VALLEY.** CBU Valley is located on the northeast corner of the range. Spray line is oriented northwest/southwest (320/140). Spray can be accomplished both directions with turn around over the lake bed northwest and at the head of the valley southeast. Alternatively, spray will be northwest using left patterns. The ground rises gradually to the southeast of the target requiring higher power going southeast, lower going northwest.

**EAGLE TARGET.** Eagle is located southwest of CBU Valley and approximately six NM northwest of Target 21. Targets are the run-in areas to the strafing targets and the bombing targets. Spray line from the northeast run-ins is 023, and spray line for the west run-ins is 293. The centerline is marked by a row of tires. Bombing run-ins are triangular 5200' X 600' at the wide end and 50' at the narrow end. Orientation is northeast to southwest on one and northwest to southeast to the other.

**BIG POPPA.** Big Poppa is a circle 3250' in diameter located N.E. of CBU Valley. Orientation of spray lines is SSW to NNE. The target is dished with higher terrain on the east side and northeast quadrant. Off the target, the terrain rises rapidly to the east. Leaving the northeast quadrant, there is a ridge line about 150' - 200' high to overfly. Patterns are left hand.

**WILDCAT MOUNTAIN.** Target is a simulated airfield located about 30 NM southwest of the northern end of Cedar Mountain. The spray area consists of a runway, parallel taxiway and parking ramp. The runway is 200' X 10,200' the Orientation is NE to SW with left patterns. Target area is flat but the terrain rises rapidly to the west.



## **SPRAY OPERATIONAL SCHEDULE**

### **UTAH TEST AND TRAINING RANGE MISSION**

### **17-24 SEPTEMBER 2004**

17 Sep Support A/C #xxx, Report Time: 0900 Take Off: 1100 Arrive: 1430L  
Spray #1 A/C #107, Report Time: 0905 Take Off: 1105 Arrive: 1435 L  
Spray #1 A/C #108, Report Time: 0910 Take Off: 1110 Arrive: 1440 L

**PURPOSE/BENEFIT/OBJECTIVE:** To control vegetation on selected targets at the Utah Test and Training Range (UTTR)

#### **1. AIRCREW:**

- a. **Pilots:** MAJ (b) (6) , MAJ (b) (6) , MAJ (b) (6) , CPT (b) (6)
- b. **Navigators:** LTC (b) (6) , MAJ (b) (6)
- c. **Flight Engineers:** MSG (b) (6) , MSG (b) (6)
- d. **Spray Operators:** MSG (b) (6) , MSG (b) (6)

#### **2. AIRCRAFT/MASS SUPPORT:**

- a. **Mission Commander:** MAJ (b) (6)
- b. **Spray Maintenance:** TSG (b) (6) , TSG (b) (6) ,  
TSG (b) (6) , SSG (b) (6)

#### **3. UTTR GROUND PARTY:**

- a. **Entomologist/Pest Management Professional(s):**  
LTC (b) (6) , MAJ (b) (6) , CPT (b) (6) , CPT (b) (6)

#### **4. MAINTENANCE:**

- a. **910 MA Supervisor:** SMS (b) (6)
- b. **Avionics:**
- c. **Engine/Propulsion:**
- d. **Crew Chief:**

- 5. **910 Com Flt Personnel:** SMS (b) (6) , MSG(b) (6) , MSG (b) (6) ,  
TSG (b) (b) (6) TSG (b) (6) , SSG (b) (6)

**6. IN-BRIEFING:** (UTTR Staff)

- a. **When/Time:** 17 Sep 04, 1530
- b. **Where:** Air Freight Terminal
- c. **Who:** Everyone
- d. **Briefing Plan**
  - a. Billeting
  - b. Vehicles
  - c. Schedule of events
  - d. Weather call
  - e. Cellular Phone numbers for all personal

**7. ITEMS TO TAKE:**

- a. **PMP:**
  - (1) Project Notebook with Recording Sheets and Maps
  - (2) Laptop Computer and Batteries
  - (3) 2 Compasses and Stop Watch
  - (4) 2 Signal Mirrors and 2 Spot Lights
  - (5) Measuring Wheels and Tape
  - (6) Entomologists' Tool Kit
  - (7) UHF/VHF Radios and VHF Radios
  - (8) Cellular Phone
- b. **Mission Commander:** Cellular Phone, Mission Info
- c. **Navigator:** Maps
- d. **Spray Maintenance:**
  - (1) MASS Spares and Spill Kit
  - (2) Tools and Other Equipment
  - (3) Herbicide Safety Binder
  - (4) Safety Equipment
- e. **Maintenance:** Applicable Equipment

**8. SPRAY CONFIGURATION:**

- a. One Aircraft, Systems 3 and 5
- b. MASS Modules 1, 2 and 3
- c. UHV Fuselage booms oriented straight back

**9. PPR REQUIREMENTS:**

**10. PARKING PLAN:** Air Freight Ramp – on West side of the airfield, **Spots 11/12**

**11. RADIO FREQUENCIES:**

- **Clover Control:** UHF 285.65, 275.9, 361.4
- **Eagle Tower:** UHF 351.0; **MAWK 4 (b) (6)**
- **Spray Ground Freq:** UHF 398.1 (Primary), 383.2 (Back-up); VHF 134.1, 118.45
- **Spray Ground to Spray Maintenance:** Use Sat phones
- **Base OPS:** 139.3

**12. SPRAY PARAMETERS:**

- a. **Herbicide:** Krovar 1DF®
- b. **Application Rate:** 22.5 gal/acre (10 lbs of Krovar in 22.4 gal of water)
- c. **Acreage:** 1,283 Acres (Targets 21, 24)
- d. **Ground Speed:** 200 Knots (337.55 ft/sec)

- e. Spray Altitude:** 100 Feet AGL
- f. Swath Width:** 35 Feet
- g. Flow Rate:** 366.1 Gallons/Minute

**13. HERBICIDE LOADING: (For Partial Loads Use Table on Last Page)**

**a. Sequence for Loading 1,000 Gallon Mixing Tank:**

- (1) Fill with water up to 750 Gallon Mark, then add:
  - (a) 450 Pounds of Krovar 1DF® (9 bags, 50 # each)
  - (b) 4.0 Gallons (15,140 ml) of StaPut®
  - (c) 64 Ounces (1,892 ml) of Foam Fighter F®
  - (d) 200 Ounces (5,913 ml) Hi-Light® Dye
  - (e) Add Water to 1,000 Gallon Mark and Agitate for 30 Minutes

**b. When:** Start at 0515 Hours on first full day of spraying and adjust as necessary through end of the daily mission as called by Mission Commander.

**c. Items to be Furnished by Installation:**

- (1) Krovar 1 DF® (12,660 pounds)
- (2) Foam Fighter F® (15 gallons)
- (3) StaPut® Additive (114 gallons)
- (4) Hi-Light® Dye (45 gallons)
- (5) Remove Nutra-Sol Tank Cleaner
- (6) Loading Personnel and All Loading Equipment
- (7) All Necessary Cleanup and Hazardous Waste Disposal
- (8) Aircraft Support Equipment and TA Support
- (9) Wash Rack and Fuel Priority

**14. SPRAY MONITORING AND TESTING.** By CPMP & ground support personnel

**15. CONTACTS:** (Commercial prefix (801) 777-XXXX; DSN 777-xxxx

**a. 388<sup>th</sup> RANS/DOO, Range Control Officer/Installation Spray Coordinator:**

- (b) (6) 6066 Cedar Lane, Bldg 1274S; (b) (6) ; FAX: 9205  
Cell Phone # (801) 558-4100, Bryce Billings x7854
- **Hill Range Control:** 7-9386, Current OPS; 7-9385, Future OPS
  - **Range Scheduler:** 7-9386
  - **Eagle Tower:** 7-1515/6
  - **Clover Operations:** 7-7575
  - **Clover Commander:** LTC (b) (6)
  - **388<sup>th</sup> RANS/RSR Resource Monitor:** 5-4257

**b. Environmental Coordinator:** (b) (6)

**c. OASIS RRANGE SUPPORT DIRECTORATE:**

Oasis Chief: 75 CEG/CEU (b) (6)

Oasis Civil Engineering: (b) (6)

North Range Security: 7-1521/2/4

**d. Hill AFB Base OPS: 7-2221; WX 7-2885**

- **Aerial Spray OPS Old Air Freight Terminal:** 7-9003 or 7-2314

**e. ENTOMOLOGY:** (b) (6)

**f. Weather:** Hill AFB: 7-2018; UTTR: 7-1516/63

**g. Quarters:**

**Billeting Office Mountain View Inn, DSN 777-0802/4007, FAX 775-2014  
COM (801) 777-0802; FAX 775-2014**

**- Comfort Inn (\$48+Tax) 877 North 499 West 801 544-5577**

**- Quarters for LtC (b) (6) & Maj (b) (6)**

**- La Quinta Inn \$75 4905 W Wiley Post Way, Salt Lake City, 801 366-4444**

**- Quarters for UTTR Support Personnel**

**- State Line Inn (Wendover): 775-664-2221, 800-848-7300; FAX 775-664-4192**

Holiday Inn (Odgen): 1-800-999-6841 or 801 399-5671

Airport Hilton Inn: 1-800-648-9668 or 801 539-1515

Ogden Park: 247 24<sup>th</sup>, 801 627-1190/800 421-7599

La Quinta Inns: 1965 N 1200 W Layton, 801 776-6700

Alana Motel: 116 N Main Street, Clearfield, 801 825-2221 or 2321

Nevada Crossing: (\$49.50), Box 2457 Wendover NV, 800 537-0207

**h. Car Contact:**

**(1) Enterprise Rental Car (b) (6) ) 801 773-8999, FAX 801 775-0248;  
on Base at BX 801 825-0800**

**1 Mid-Size 6-15 Sep 03 pick up at SLC IAP (b) (6) )**

**4 ea Mini-Size @ \$49/day –17-24 Sep 04**

**- MAJ (b) (6) , MAJ (b) (6) , CPT (b) (6)**

**4 ea Mini Van @ \$70.74/day – 17-24 Sep 04**

**- MSG (b) (6) SMS (b) (6) MSG (b) (6) TSG (b) (6)**

**1 ea SUV 4 Wheel Drive \$70.47/Day 17-24 Sep 04**

**- CPT (b) (6) CPT (b) (6)**

**(2) Hill Motor Pool: 1 Gov Mini Van Crew Chiefs**

**i. Hill AFB:**

Base Commander: Col (b) (6) (b) (6)

Airfield Manager:(b) (6)

Base Operations: 7-1861; FAX: 7-2221

C-130 Maintenance Contact: 7-3984

Fuels: 7-7423/7-7311

Transit Alert: 7-3956

Weather: 7-2885

**j. Hill Public Affairs: 7-5201**

**k. Supply Contact: 7-5391 (922 OE)**

- I. Youngstown ARS, OH:** Commercial (330) 609-XXXX or DSN 346-XXXX  
910 AW Direct Dial-In/Voice Mail: 1-800-278-7046+2+Ext  
Command Post: 1315; FAX 1161  
910 AW/CC: 1243  
910 AW/PA: 1236; FAX 1022  
910 AW/FM: Comptroller: 1216  
910 OG/OSF: Supervisor of Flight Desk: 1069; FAX 1371  
910 OG/CC: 1257/1179  
757 AS/DO Admin: SMS (b) (6) ; FAX 1657  
757 AS/DOS: Aerial Spray Operations, 1111; FAX 1616  
910 MX/LG/CC: 1225  
Maintenance Control: 1344  
Spray Maintenance: 1132/1586  
Omega/SATO Travel: 1772; 1-800-285-6342  
Cellular Spray Phones:  
- PMP: (b) (6)  
- Mission Commander: (b) (6)  
- Spray Maintenance: (b) (6)

**16. SEQUENCING:**

- a.** Target sequencing is determined by UTTR personnel based upon EOD clearance schedule and airspace scheduling. Target 21 is the priority.
- b.** Spray ops aircraft must stay south of Base Leg Knoll during turns on north run on Target 21. Coordination with range control is essential to assure that this portion of the range is released for air operations.
- c.** When winds blow directly from one side of the target to the middle of the target or during early morning when wind speed is low, ground monitors will direct the "dress up" of the target edges.
- d. Spraying Priorities:**  
(1) Target 21  
(2) Target 24  
(3) NORDLZ
- e. Multiple-Target Alignments for Possible Future Operations.**  
Whenever possible, multiple in line targets will be treated on the same pass to facilitate aircraft line-up and turning efficiency (in which case two separate ground-monitoring and marking parties will be required).  
(1) The west edges of Targets 21 & 24 are contiguous and can be treated on the same pass with a spray-off gap between targets.

**17. GENERAL TARGET INFORMATION:**

**a. Target 21:**

- (1) Dimensions: 4,980' X 7,770'
- (2) Acreage: 888
- (3) Acres Sprayed in 2002: 888
- (4) 2000 Aircraft Loads: 18,869 Gal
- (5) Sorties: 17
- (6) Passes (35' Swath): 157
- (7) Spray-On Time/Pass: 23 Seconds
- (8) Spray Heading: 00/180

**b. Target 24:**

- (1) Dimensions: 1,600' X 6,080'
- (2) Acreage: 223
- (3) Acres Sprayed in 2002: 223
- (4) 2000 Aircraft Loads: 5,263 Gal
- (5) Sorties: 7
- (6) Passes: 47
- (7) Spray-On Time/Pass: 18 Seconds
- (8) Spray Heading: 00/180

**18. PLANNED SEQUENCE OF EVENTS: Hill AFB Tower Control and Runway Hours 0700L**

Note to next year's planner: check runway hours. There was confusion in 2003 because base ops was conducting 24/7 ops but the tower was not! Check weekend versus weekday hours.

**NOTE: Scheduling reflects no weather or maintenance delays.**

**ALL TIMES MAY BE ADJUSTED BY MISSION COMMANDER.  
DUTY DAY FOR CIVILIANS WILL BE STD DAY (8 HOURS).  
MILITARY STATUS PERSONNEL WILL WORK AS  
REQUIRED WITHIN CREW REST CONSTRAINTS.**

**Tower Control, Runway & Airfield hours start at 0700L**

**RANGE TIMES: ????????**

**END OF EACH DAY LOAD GROUND TANKS WITH THE APPROPRIATE MIX.  
ALL MX & A/C PERSONNEL WILL REMAIN ON DUTY UNTIL AIRCRAFT IS  
PRE-FLIGHTED FOR THE NEXT DAY OR RELEASED BY THE AIRCRAFT  
COMMANDER.**



**17 Sep (Fri):**

Ground Support personnel depart for Wendover Stateline Inn

**18-22 Sep (Sat-Wed):** (First Spray Sortie, **Range Times 0700-1400, 18-23 Sep**)

0500L: Spray Maintenance starts on first full day of mission and adjust as directed

0712L: Sunrise (see attach Sunrise/Sunset Chart)

0700-1400L: Spray Targets as directed Using 8 Sep schedule spray UTTR

Targets as directed by the Mission Commander or Ground Support Director

**23 Sep (Thur):** Weather Back-up/Flush, Clean Up; Support Aircraft arrives at Hill

**24 Sep (Fri):** All personnel and aircraft return to YNG

0800L: All Aircrew report

0830L: All Personnel report

1000L: Spray Aircraft Takes Off Hill AFB

1005L: Spray Aircraft Takes Off Hill AFB

1010L: Support Aircraft Takes off Hill AFB

1700L: Spray Lands YNG

1715L: Support A/C Lands YNG

**19. CALCULATIONS:**

**a. FEET/SECOND:**

$6,076.1 \text{ FT/NAUT MI} \times 200 \text{ N/HR} / 60 \text{ MIN/HR} / 60 \text{ SEC/MIN}$

<< 337.55 FEET PER SECOND >>

**b. ACRES TREATED/MINUTE:**

$35 \text{ FOOT SWATH} \times 337.55 \text{ FT/SEC} \times 60 \text{ SEC/MIN}$

<< 708,855 SQUARE FEET PER MINUTE >>

$708,855 \text{ SQ FT/MIN} / 43,560 \text{ SQ FT/AC}$

<< 16.27 ACRES PER MINUTE >>

**c. SPRAY-ON TIME/LOAD:**

$1,750 \text{ GALLONS/LOAD} / 366.1 \text{ GAL/MIN} = 4.78 \text{ MIN/LOAD}$

OR 4 MIN 47 SEC/LOAD OR 287 SEC/LOAD

## **UTTR GEOGRAPHIC LOCATION AND TARGET DIMENSIONS**

Target areas on UTTR are geographically located in northwestern Utah, directly west of the Great Salt Lake and Hill Air Force Base. The complex is positioned between 40 and 41 degrees north latitude and close to 113 degrees ten minutes west longitude. The targets are within range 12 west and Township two and three north, Salt Lake Baseline Meridian.

**TARGET 21.** The target is the most northerly of the southern group. Target is a large, rectangular area 5000 X 7800 feet. Orientation is NNE-SSW using right patterns of SSW-NNE using left patterns. Target and surrounding terrain are flat.

**TARGET 24.** Target is located to the south of Target 21. Target 24 is a 1600' X 6000' rectangle. Orientation is the same as Target 21. Terrain is flat.

**NORD LZ.** Assault Strip located to the northeast of Target 21 and Base leg Knoll. The runway orientation is SE to NW (120/300) and is 150 X 5700 feet.

# 910 AW AERIAL SPRAY--PMP'S POST-MISSION REPORT

## UTAH TEST AND TRAINING RANGE

### 7-15 SEPTEMBER 2003

#### 1. MISSION BASICS:

- a. **Installation Sprayed:** Utah Test and Training Range, UT
- b. **Mission Duration:** 7-15 Sep 03
- c. **Purpose of Application:** Weed Control over designated UTTR targets/facilitate UXO recovery
- d. **Date/s and Time/s of Application (Local):** See Spray Operations Summary Chart
- e. **Acres Treated:** 1146 acres: See Spray Operations Summary Chart
- f. **Project Coordinator/s (Name/Rank, Title, Phone #):** (b) (6) , Aerial Spray Coordinator, Hill/UTTR AFB, DSN (b) (6)
- g. **Date Spray Map Last Approved:** 7 Sep 03
- h. **Date of Waste Generation Letter:** N/A
- i. **Installation In-Briefing: (When/Where/Briefer/s):** 7 Sep/1600, Base OPS, LtC (b) (6) /LtC (b) (6)

#### 2. OPERATIONAL:

- a. **Mission Commander:** LtC (b) (6)
- b. **Certified PMP (Category 11):** LtC (b) (6) , Maj (b) (6) (b) (6) Capt (b) (6)
- c. **Aircrew:**
  - (1) Aircraft CMDR/Pilot: Maj (b) (6) , Maj (b) (6)
  - (2) Navigators: LtC (b) (6) , Maj (b) (6)
  - (3) Flight Engineer: MSG (b) (6)
  - (4) Spray Operators: MSG (b) (6) , MSG (b) (6)
- d. **Safety Briefer:** Maj (b) (6)
- e. **Spray Maintenance/Pesticide Loaders:** TSG (b) (6) , TSG (b) (6) , TSG (b) (6)  
(b) (6), SSG (b) (6)
- f. **Spray Ground Monitors:** LtC (b) (6) (Spray Director), Maj (b) (6) , Capt (b) (6)  
(b) (6) , (b) (6)
- g. **Crew Chief(s):** MSG (b) (6) , TSG (b) (6)
- h. **910 MA/LG Superv:** SMS (b) (6)
- i. **Avionics:** MSG (b) (6)
- j. **Engine/Propulsion:** TSG (b) (6)
- k. **Flying Data:** (See Spray Data Charts)
  - (1) Spray A/C 899105: Ferry: 2, Hours: 9.9; Spray Sorties: 15, Hours: 19.3
  - (2) Support A/C 919108, Ferry: 2, Hours: 9.9

#### 3. PESTICIDE:

- a. **Trade Name (% Active Ingredient):** Krovar I DF®
- b. **EPA Registration Number:** 352-505
- c. **Formulation Sprayed:** 10 pounds in 22.5 gallons of water per acre
- d. **Gallons Pesticide Loaded:** 1,900 per sortie
- e. **Gallons Pesticide Applied:** 25,805 gallons
- f. **Gallons and Name Diluent Used:** 25,805 gallons water
- g. **Other Additives Used:** 13 Gal Foam Fighter F®, 103 Gal StaPut®, 40 Gal Hi-Light® Dye
- h. **Application Rate:** 22.5 Gal per acre

**4. APPLICATION EQUIPMENT:**

- a. **Aircraft Type (Tail Number):** C-130H (899105)
- b. **Spray System (Modules Used) and System ID #:** 3 and 5.
- c. **Spray System Configuration:** SP-3G
- d. **Nozzle Type/Size:** 3 inch herbicide nozzles.
- e. **Nozzle Orientation & Number Used:** 2, oriented straight back.
- f. **Pressure:** 40 psi
- g. **Flow Rate:** 366 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. **Swath Width Flown:** 35 feet.
- b. **Spray Off Set:** Variable, determined by spotters on the ground.
- c. **Spray Release Altitude:** 100 feet.
- d. **Ground Speed:** 200 knots.

**6. WEATHER OBSERVATIONS (Ground Wind Direction (degrees)/Speed (knots):**

- a. **8 Sep:** 360/4-15
- b. **9 Sep:** 340-030/3-7
- c. **11 Sep:** 140-200/0-4
- d. **12 Sep:** 200-090/1-5
- e. **13 Sep:** 280-030/2-9

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. **Deposition Monitoring:**
  - (1) Technique/s Used: Ground/Aircraft direct observation of dye markings
  - (2) Results: Spray off-set determined via direct observation of application coverage
- b. **Effectiveness:**
  - (1) Technique/s Used: Visual field observations of coverage and amount of spring vegetation germination.
  - (2) Results: (See Remarks)

- 8. REMARKS:** Ground coverage was complete with no skips in sprayed areas. While mission goals were met (Targets 21 & 24 treated), 10+ hours crew days were required to meet the requirements. Two airframes are critical to this mission. UTTR staff and Hill AFB provided excellent support as did the Aerial Spray Maintenance personnel who worked uncommonly long shifts. The 910<sup>th</sup> Communications Flight deployed on this spray mission and enhanced the operation through their equipment and knowledge. Stakes on targets 21 & 24 should be replaced and synchronized using the western target edges as the starting point. Diddle Knoll was found to serve as an excellent target Command and Control Site, since targets 21 & 24 can be monitored simultaneously; there are also excellent telephone and radio communications available. It does not replace the need for monitors on target, however.

(b) (6)

(b) (6) , Capt, USAFR  
CERTIFIED PEST MANAGEMENT PROFESSIONAL

Attachments:

1. Daily Summary Chart
2. Mission Charts
3. Participants

Distribution via Staff Summary Sheet (AF Form 1768):

757 AS/DOS, 757 AS/DO, 910 OG/CC, 910 LG/CC, 910 AW/CC

E-Mail Distribution:

AFRC/DOOM, AFRC/PA, AFRC/HO

22 AF/DO

910 AW/HO, 910 AW/XP, 910 LGMS



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

7 Jan 2010

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for NAS Jacksonville, FL Static Display

1. One Aerial Spray equipped C-130 will be available 8-9 Feb 2010 to provide a static display for the attendees of the Tri-Services pest Management Convention. The personnel attending are DoD members serving the Air Force, Army and Navy installations. The 757AS was invited to provide this static display and give presentations regarding the Aerial Spray Mission.

2. Concept of Operations:

- a. 8 Feb (Monday)  
1500 Show KYNG  
1700 Depart KYNG  
2000 Land KNIP
- b. 9 Feb (Tuesday)  
1330-1700 Static Display KNIP  
1900 Depart KNIP  
2130 Land KYNG

3. Aircraft will be SP2G configured with ULV booms.

5. Maj (b) (6) will act as Aircraft Commander.

6. Support required at Jacksonville NAS, FL has been completed.

(b) (6)  
757 Aerial Spray

, Capt, USAFR

# AERIAL SPRAY OPERATIONAL SCHEDULE

## NAS JACKSONVILLE, FL

### 8-9 FEB 2010

**OBJECTIVE/PURPOSE AND BENEFIT:** Provide a static display for the members of the Tri-Services Pest Management Convention to include DoD personnel serving Air Force, Army and Navy installations.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

1. Pilots: Maj (b) (6), Capt (b) (6)
2. Navigators: Maj (b) (6)
3. Flight Engineers: SrA (b) (6)
4. Spray Operators: MSgt (b) (6), MSgt (b) (6)

##### b. Maintenance:

1. Spray Maintenance: TSgt (b) (6), SrA (b) (6), SrA (b) (6), SRA (b) (6)
2. Crew Chiefs: TSgt (b) (6), SrA (b) (6)
3. Avionics: MSgt (b) (6)

##### c. Entomologist: Maj (b) (6), Maj (b) (6) (Both will be in place and will remain in place)

#### 2. PPR REQUIREMENTS: 40701

3. **PLANNED SEQUENCE OF EVENTS:** (All times local) Scheduled times may vary depending upon weather, and needs of the Entomologist.

##### 08 Feb Monday

1500 Show  
1700 Depart KYNG  
2000 Land KNIP

##### 09 Feb Tuesday

1330-1700 Static Display  
1900 Depart KNIP  
2130 Land KYNG

#### 4. SPRAY CONFIGURATION: SP-2G

- a. **Mass:** 2-Module System
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** 8005's.
- d. **Differential GPS:** Wingman Installed
- e. **Aircraft:** 89-9106
- f. **Mission Identifier:** QINRKA485039

#### 5. AIR TO GROUND RADIO FREQUENCIES:

Navy Jax Ops	310.2	Tower	120.0/360.2
Ground	128.6/336.4	ATIS	281.0
Metro	343.5		



**6. TRANSPORTATION:**

Enterprise Car Rental: 904-772-7007

5 FS Cars (b) (6) ) \$42/day+5gov policy

**7. Quarters:**

Hampton Inn Jacksonville-Orange Park Contact is (b) (6) (904)-777-5313 \$79/night

6135 Youngerman Circle, Jacksonville, FL 32244

Confirmation #80419625

**8. CONTACTS:**

**a. Naval Air Station Jacksonville, FL (NAS JAX)**

1. For requesting PPR: DSN 942-2511
2. Transient line office: DSN 942-3843
3. Weather, Naval Aviation Forecast Center: DSN 564-2594/Comm 757-444-2594
4. Tower: DSN 942-2516

**b. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6) 1243
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Maj (b) (6) FAX 1022
4. 910 OG/CC: LTC (b) (6) / 1179
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMSgt (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMSgt (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - (Maj<sup>bi</sup>(b) (6) ): (b) (6)



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926

23 JUL 08

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Langley AFB, VA.

1. Objective/Purpose/Benefits of the Spray Mission: Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes around LFI and the surrounding communities.

2. Capability: Aerial Spray C-130 Aircraft available 8-13 AUG 08

3. Concept of Operations:

**08 AUG (Friday): Deploy to LFI**

1000: Show time  
1200: Takeoff YNG  
1330: Land LFI w/safety briefing immediately following  
1430: Installation briefing

**09 AUG (Saturday): Spray LFI**

1600: Show time  
1630: WX decision, load Dibrom  
1800: Takeoff LFI  
2004: Sunset

**10 AUG (Sunday): Spray LFI**

1600: Show time  
1630: WX decision, load Dibrom  
1800: Takeoff LFI  
2002: Sunset

**11 AUG (Monday): Spray LFI**

1600: Show time  
1630: WX decision, load Dibrom  
1800: Takeoff LFI  
2001: Sunset

**12 AUG (Tuesday): System clean up/WX backup**

1600: Show time  
1630: WX decision, load Dibrom  
1800: Takeoff LFI  
2000: Sunset

**13 AUG (Wednesday): Redeploy to YNG**

1000: Show Time  
1200: Takeoff LFI  
1400: Land KYNG

4. Spray Parameters:

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.6 Gallons/Minute
- f. **Acreage:** Approximately 125,000 acres on the peninsula
- g. **Swath Width:** 2000 foot

5. Aircraft Commander: Capt (b) (6)

If there are any questions, please contact me at DSN (b) (6)

// SIGNED //

(b) (6)

757 Aerial Spray

, CAPT, USAFR

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 8-13 AUG 08

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes at LFI and the surrounding communities.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: LTC (b) (6)
- (2) Pilots: Capt (b) (6), Capt (b) (6)
- (3) Navigator: Maj (b) (6)
- (4) Flight Engineers: MSgt (b) (6), SSgt (b) (6)
- (5) Spray Operators: MSgt (b) (6) MSgt (b) (6) MSgt (b) (6)

##### b. Maintenance:

- 1. Spray Maintenance: TSgt (b) (6) MSgt (b) (6) MSgt (b) (6) TSgt (b) (6)
- 2. Crew Chiefs: TSgt (b) (6) AIC (b) (6)
- 3. Avionics: TSgt (b) (6)

##### c. Entomologists: Maj (b) (6)

##### d. Vehicles:

- Vehicle Dispatch: Will supply us with 2x9pax vans and 2 cars
- MC / Entomologist: One Car
- Ops: One van (9 pax), one car
- Mx: One Van (9 Pax)

##### e. Billeting Office: (757) 764-4667 DSN 574-4667, EXT 2528; FAX 574-3038 POC TSgt Cox

#### 2. PPR: 0827SF02

#### 3. SCHEDULE: (All times local)

##### 08 AUG (Friday): Deploy to LFI

- 1000: Show time
- 1200: Takeoff YNG
- 1330: Land LFI w/safety briefing immediately following
- 1430: Installation briefing

##### 09 AUG (Saturday): Spray LFI

- 1600: Show time
- 1630: WX decision, load Dibrom
- 1800: Takeoff LFI
- 2004: Sunset

##### 10 AUG (Sunday): Spray LFI

- 1600: Show time
- 1630: WX decision, load Dibrom
- 1800: Takeoff LFI
- 2002: Sunset

##### 11 AUG (Monday): Spray LFI

- 1600: Show time
- 1630: WX decision, load Dibrom
- 1800: Takeoff LFI
- 2001: Sunset

##### 12 AUG (Tuesday): System clean up/WX backup

- 1600: Show time
- 1630: WX decision, load Dibrom
- 1800: Takeoff LFI
- 2000: Sunset

##### 13 AUG (Wednesday): Redeploy to YNG

- 1000: Show Time

1200: Takeoff LFI

1400: Land KYNG

\*\*\*If mission is complete early, the mission will return early.

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Kestrel Weather Monitor, Compass, PCM Card, Pest Safety Binder, UHF Radios, Laptop Computer
- b. **Navigator:** Maps/Map Bag, Validation Map
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit/Supply Kit

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Langley Tower:** DSN 574-5326
- b. **Langley Base Ops:** DSN 574-2504

**5. PARKING PLAN:** Taxi Way Foxtrot or as directed by Transient Alert.

**6. RADIO FREQUENCIES:**

- a. **Felker AAF Tower (Ft Eustis): 126.3, 269.25, 248.2, 241.0**
  - (1) Ops phone DSN878-3588
  - (2) Tower phone DSN 878-3530
  - (3) Flight Service 122.2
- b. **Newport News-Williamsburg Int: CTAF – 118.7 or 257.9(Operating Hours 1000Z-0200Z)**
  - (1) Ground – 121.9 or 348.6 (phone 877-0221 ops)
  - (2) Tower – 118.7 (phone DSN 877-2862) voice mail 7-2962
  - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
- c. **Langley AFB: Tower DSN 574-7999**
  - (1) Tower - 125.0 or 253.5
  - (2) Ground - 121.7 or 275.8
  - (3) Clearance – 118.85 or 257.625
  - (4) Metro - 239.8
  - (5) ATIS – 270.1
- d. **Norfolk NAS (Chambers Fld): Tower –124.3, 379.15, Tower Supervisor DSN 262-3443**
- e. **Norfolk Approach: 125.7 or 335.625**
- f. **Spray Ground: Primary 392.2; Secondary: 308.6**

**7. IN-BRIEFING:** 1430 hrs; CE Conference Room

**8. SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS ULV; Fuselage booms
- b. **Nozzle Tips/Orientation:** 9 8005 nozzles -- straight down (4 left - 5 right)
- c. **Aircraft:** 90-9105
- d. **Mission Identifier:** QZNRKA810239

**9. SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.6 Gallons/Minute
- f. **Acreage:** Potentially 125,000 acres on the peninsula but final acreage TBD
- g. **Swath Width:** 2000 foot

**10. PESTICIDE LOADING:**

- a. **How Much Pesticide:** see entomologist
- b. **Where:** Taxi Way F Aero Club Ramp
- c. **When:** 1530 hrs each day pending weather and heat index.\*\*Calibration performed unless otherwise directed by the Entomologist or Mission Commander

**d. Furnished by Installation:**

- (1) Pesticide
- (2) Loading Equipment/Crew

- (3) Hazardous Waste Disposal
- (4) Two B-5 or B-1 Stands

**11. CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**

**a. LANGLEY AFB VA:**

Wing Commander: DSN 574-5321  
Mission Support Group Commander: DSN 574-7995  
Civil Engineer: DSN 574-2025  
Deputy Chief/Civil Engineer: Ms. (b) (6)  
Environmental Coordinator: DSN 574-3987; FAX 3503  
Base Operations: DSN 574-2504  
Langley Control Tower: DSN 574-5326  
Weather: Langley AFB, DSN 574-5907  
Ft Eustis: DSN 297-5300/3343  
Command Post: DSN 574-5411  
Pest Control Foreman: (b) (6), DSN (b) (6), cell phone (b) (6)  
Pest Control/Environmental NCOIC: MSgt (b) (6)  
Public Affairs: DSN 574-2018/2010/2019  
Fuels: DSN 574-4312/3623/4224  
Motor Pool: 574-7514/5712 (2 vans and 1 staff vehicle were requested)  
ACC PMP: (b) (6), DSN (b) (6), cell phone (b) (6)  
Fire Department Comm: 757-764-2222

**a. FT EUSTIS VA: Environmental Coordinator: DSN 927- 4152/2375**

**b. Hampton Mosquito Control: 757 850-3305**

**c. York County Mosquito Control: (757)-890-3780**

**d. Poquoson: Jerry Cagle (757) 868-3590**

**e. City of Portsmouth Biologist: (757) 393-8666**

**f. Newport News Mosq. Control: (757) 269-2750**

**g. Camp Peary: (757) 229-2121 Ext 2263, (b) (6) or (b) (6)**

**h. Ft Monroe: ?**

**i. Newport News/Williamsburg Int.:**

- (1) Fixed Base Operator: Flight Int 877-6401
- (2) Flight Service: 877-0209
- (3) Tower: 877-2962
- (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

**j. Norfolk NAS VA: DSN 564-2442/7598 or COM (757)-444-2442/7598**

**k. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Capt (b) (6); FAX 1022
- (4) 910 OG/CC: Col (b) (6)
- (5) 910 OS/OSA: Airfield Manager, (b) (6)
- (6) 757 AS/DO: Maj (b) (6)
- (7) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (8) 757 AS/DOO: Ops Admin: SMS (b) (6) FAX 1657
- (9) 757 AS/DOS: Aerial Spray Office, Maj (b) (6), Capt (b) (6); FAX 1616
- (10) 910 LG/CC: Ext 1225
- (11) 910 LG/LGM: Ext 1352
- (12) Maintenance Control: Ext 1327
- (13) 910 LG/LGMS: Spray Maintenance, Ext 1132
- (14) 910 LG/LGL, Ext 1137
- (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) (b) (6) cell (b) (6)

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT-Langley AFB 27-31 AUG 2007

### 1. MISSION BASICS:

- a. Installation Sprayed: Langley AFB and Craney Island, VA
- b. Mission Duration: 27-31 AUG 2007
- c. Purpose of Application: Control of adult mosquitoes transmitting arboviruses
- d. Application Dates: 28-30 AUG 07
- e. Times of Application (Local): 1700-1930 (28 AUG); 1645-1939 (29 AUG)
- f. Acres Treated: 99874 total: 52,824 (28 AUG); 47,290 (29 AUG)
- g. Project Coordinator (Name, Phone #): (b) (6)
- h. Date Spray Map Last Approved: 27 AUG, 2007
- i. Date of Waste Generation Letter: 4 April 1996
- j. Installation In-Briefing: 1 CE Conference Room, Langley AFB; 27 AUG 07; MAJ (b) (6)  
LTCOL (b) (6)
- k. Mission identifier: QZNRKA810239

### 2. OPERATIONAL:

- a. Mission Commander: LTCOL (b) (6)
- b. Certified PMPs (Category 11): MAJ Don (b) (6) LTCOL Brian (b) (6)
- c. Aircrew:
  - (1) Pilots: CPT (b) (6) MAJ (b) (6)
  - (2) Navigator(s): MAJ (b) (6)
  - (3) Flight Engineer: MSG (b) (6)
  - (4) Spray Operators: MSG (b) (6) , MSG (b) (6) , MSG (b) (6)
- d. Safety Briefer: LTCOL (b) (6)
- e. Spray Maintenance: TSG (b) (6) , TSG (b) (6) , TSG (b) (6)
- f. Crew Chiefs: SRA (b) (6) , TSG (b) (6)
- g. Avionics: (b) (6)
- h. Flying Data:
  - (1) Spray Sorties/Hours: 2/2.5 (28 AUG), 3.2 (29 AUG)
  - (2) Ferry Sorties/Hours: 2/1.6 (27 AUG), 1.6 (31 AUG)
  - (3) Training Sorties/Hours: 1/1.5 (27 AUG)

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 270 (28 AUG); 120 (29 AUG)
- e. Gallons Pesticide Applied: 208 (28 AUG); 191 (29 AUG)
- f. Gallons and Name Diluent Used: 10 gallons marvel oil
- g. Gallons and Name of Flush Used:
- h. Other Additives Used: n/a
- i. Application Rate: 0.5 oz/acre

### 4. APPLICATION EQUIPMENT:

- a. Aircraft Type (Tail Number): 90-9107
- b. Spray System (Modules Used) and System ID #: SP2G MASS ULV



- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: TeeJet 8005 flat fan nozzles
- e. Nozzle Orientation & Number Used: 9 straight down; 4 left, 5 right
- f. Pressure (PSI): 46
- g. Flow Rate: 3.63 gpm

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 feet
- b. Spray Off Set: 2000 feet
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed in knots): 70°/4 beginning dropping to 2 at 1900 on ground, 50° to 70°/7 at airplane (28 AUG); 70°/7 at airplane on Langley Peninsula, 110°/8 at Craney Island (29 AUG)
- b. Temperature (°F): 84° at 1735, dropping to 80° at 1900 (28 AUG)
- c. Cloud Cover: Clear (28 and 29 AUG)
- d.. Source: Ground observations/at altitude during spray

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Normal projected off-sets based on MASS system characterization
- b. Effectiveness:
  - (1) Technique/s Used: carbon dioxide-baited traps were used to monitor mosquito densities pre- and post-treatment
  - (2) Results: Community of Hampton reported an 87% reduction at 4 locations in mosquito counts following the application. Langley pest management and City of Portsmouth reported good control, with no significant numbers of daylight-flying species having been caught. Ft. Eustis reported excellent control. No report was available from York County. However, the pest management POC for that area was extremely pleased with the work done.

- 8. REMARKS:** Evidence of mosquito vectored viruses (namely Eastern Equine Encephalitis and West Nile Virus) has shown up in the tidewater area for the summer season 2007. This was the first spray of 2007, where in normal years the Langley peninsula receives 3-4 sprays per year. While popular local opinion related these depressed mosquito populations to the predaceous work of dragonflies, seen in abundance this year, it is more likely correlated with a much lower than average rainfall. Mosquito populations finally justified aerial application of pesticides following a significant rainfall event. Outstanding levels of mosquito control were achieved and the customers were pleased with the application. We received excellent support from Langley AFB, 1 CES to make this mission a success.

//Signed//

(b) (6) , LTCOL, USAFR; Donald Teig, MAJ, USAFR  
Certified Pest Management Professional

29 August 2002

**MEMORANDUM FOR HQ AFRC/DOOM** (FAX: 497-0198)

**FROM:** 757 AS/DOS (346-1111/1531; FAX 346-1616)

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Langley AFB

1. **Purpose/Objectives/Benefits:** Control nuisance and vector mosquitoes in order to improve working conditions for members operating at Langley AFB VA.
2. **Capability:** Spray Aircraft Available 8-13 September 2002.
3. **Concept of Operations:**
  - a. **8 Sep (Sunday):**
    - 1200 Show at KYNG
    - 1400 Take-Off KYNG
    - 1530 Land KLFI
    - 1545 Safety Brief
  - b. **9 Sep (Monday):**
    - 0900 In-Briefing with Langley AFB, CE Conference Room
    - 1400 Show Time/Weather Decision
    - 1430 Load Chemical
    - 1700 Take-Off KLFI, Spray Areas Designated by PMP
    - 2030 Land KLFI
  - c. **10 Sep (Tuesday):**
    - 1100 Daily meeting for PMP/MC in the hotel lobby
    - 1400 Show Time/Weather Decision
    - 1430 Load Dibrom
    - 1700 Take-Off KLFI, Spray Areas Designated by PMP
    - 2030 Land KLFI
  - d. **11 Sep (Wednesday):**
    - 1100 Daily meeting for PMP/MC in the hotel lobby
    - 1400 Show Time/Weather Decision
    - 1430 Load Dibrom
    - 1700 Depart KLFI, Spray Areas Designated by PMP
    - 2030 Land KLFI

**e. 12 Sep (Thursday):**

1100 Daily meeting for PMP/MC in the hotel lobby  
1400 Show Time/Weather Decision  
1430 Load Dibrom  
1700 Depart KLFI, Spray Areas Designated by PMP  
2030 Land KLFI

**f. 13 Sep (Friday):**

0900 Report  
1100: Depart KLFI  
1230: Land KYNG

**4. Spray Parameters:**

- a. Acreage: approximately 86,000 Acres
- b. Altitude: 150 Ft AGL
- c. Ground Speed: 200 Knots
- d. Pesticide: Dibrom® Concentrate
- e. Application Rate: 0.5 Ounce per Acre
- f. Flow Rate: 1.8 Gal per Minute at Craney Island; 3.6 Gallons per Minute for Langley AFB designated areas
- g. Swath Width: 1000' swaths at Craney Island; 2000' to 2500' swaths at Langley AFB
- h. System: SP2G – MASS ULV; Modules 1 and 2
- i. Nozzle Tips/Number/Orientation: 8008/8 oriented straight down for 2000' swaths; 8008/4 oriented straight down for 1000' swaths oriented straight down
- j. Aircraft Tail Number: 99105
- k. Deploy/Re-Deploy Time: 3.2 hrs
- l. Spray Time: 3.50 hrs (or as called by PMP)

**5. Aircraft/Mission Commander: Major(b) (6)**

**6. Support required at Langley AFB has been requested via FAX message.**

**7. If you have any questions concerning this mission please contact DSN (b) (6)**

(b) (6), Major, USAFR  
Chief, Aerial Spray  
757 AS/DOS (DSN 346-1531)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 8-13 SEPTEMBER 2002

**Purpose/Objectives/Benefits:** control nuisance and vector mosquitoes in order to improve working conditions and lower the incidence of arthropod borne illness for members operating at Langley AFB and surrounding communities.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: Major (b) (6)
- (2) Pilots: Maj (b) (6), Maj (b) (6), Maj (b) (6)
- (3) Navigators: Maj (b) (6) (8-11 Sep), Maj (b) (6) (11-13 Sep)
- (4) Flight Engineers: SMS (b) (6)
- (5) Spray Operators: MSG (b) (6), TSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: SMS (b) (6), TSG (b) (6), SSG (b) (6) (b) (6)
- (2) Crew Chiefs: MSG (b) (6) SMS (b) (6)
- (3) Avonics: TSG (b) (6)

##### c. Certified Pest Management Professionals: CPT (b) (6), LtC (b) (6)

**Gov Vehicles: 2 ea 9 pax van, 1 staff, 1 pick-up truck**

#### 2. SCHEDULE: (All time Local)

##### 8 SEP (Sunday):

**PPR # 0908EN01**

1200: Show at KYNG  
1400: Depart KYNG  
1530: Land KLF  
1545: Safety Briefing

##### 9 SEP (Monday):

0900: In-Briefing at CE Conference Room  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
1922: Sunset

##### 10 SEP (Tuesday):

1100: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
1921: Sunset

##### 11 SEP (Wednesday):

1100: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
1919: Sunset

##### 12 SEP (Thursday):

1100: Daily meeting for PMP/MC in the hotel lobby

1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
1918: Sunset

**13 SEP (Friday):**

0900: Report  
1100: Depart KLFI  
1230: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Cellular Phones, Kestrel Weather Monitor, Compass, Pest Safety Binder, Signal Mirrors, UHF Radio, Satloc Ground Tracker and Laptop Computer
- b. **Navigator:** Maps/Map Bag, Validation Map, Laptop Computer
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Langley Tower:** DSN 574-5326/5327 Tower Manager
- b. **Langley Base Ops:** DSN 574-2504

**5. PARKING PLAN:** Langley Aero Club ramp or as directed.

**6. RADIO FREQUENCIES:**

- a. **Felker AAF Tower (Ft Eustis): 126.3, 248.2, 241.0**
  - (1) Ops - 878-3588
  - (2) Tower - 878-3530
  - (3) Firing Range - 878-4412/5053 Range Tower
  - (4) Flight Service - 122.2
- b. **Newport News-Williamsburg Int:** (Operating Hours 1000Z-0200Z)
  - (1) Ground – **121.9 or 348.6** (phone 877-0221 ops)
  - (2) Tower – **124.9 or 280.1** (phone 877-2962)
  - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
  - (4) CTAF – **118.7**
- c. **Langley AFB:** Tower OIC MSG (b) (6) Lt (b) (6) 1st OSS SQ
  - (1) Tower - **125.0 or 253.5** (phone 4-5326)
  - (2) Ground - **121.7 or 275.8**
  - (3) Clearance – **118.85 or 271.3**
  - (4) Metro - **239.8**
- d. **Norfolk NAS (Chambers Fld):** Tower - **124.3, 126.375, 340.2, 318.7**
  - (1) Base Ops DSN 262-3419
  - (2) Tower DSN 262-3440
- e. **Spray Ground:** Primary **392.2 / 308.6** Secondary

**7. IN-BRIEFING:** Required; IAW the Schedule above.

**8. SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS ULV; Modules 1 and 2
- b. **Nozzle Tips/Orientation:** 8 8008's for 2000' swathes and 4 8008's for 1000' swathes oriented straight down.
- c. **Aircraft:** 99106

**9. SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom<sup>®</sup> Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 1.8 Gallons/Minute at Craney Island; 3.6 Gallons/Minute at Langley areas
- f. **Acreage:** Approximately 86,000 Acres
- g. **Swath Width:** 1,000 Feet at Craney Island; 2,000 Feet at Langley areas.

**10. PESTICIDE LOADING:**

- a. **How Much Pesticide:** 334 Gallons for 86,000 acres sprayed.
- b. **Where:** Aero Club Ramp
- c. **When:** 1430 hrs each day.
- d. **Furnished by Installation:**
  - (1) Pesticide
  - (2) Loading Equipment/Crew
  - (3) Hazardous Waste Disposal
  - (4) Two B-5 or B-1 Stands

**11. SPRAY MONITORING OR TESTING:**

The local mosquito control districts and Langley Pest Control will conduct mosquito surveillance using either trapping or biting count pre- and post-spray data to determine spray effectiveness. Oil sensitive cards will be used to confirm application within the spray blocks.

**12. CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**

- a. **LANGLEY AFB VA:**
  - Wing Commander: Col (b) (6) (b) (6) DSN (b) (6)
  - Base Commander: Col (b) (6) , DSN (b) (6)
  - Spray Coordinator: (b) (6) , DSN (b) (6) ; Fax 3503
  - Civil Engineer: Lt Col (b) (6)
  - Deputy Operations Chief: Lt Col (b) (6)
  - Deputy Chief/Civil Engineer: (b) (6)
  - Base Operations: DSN 574-2504
  - Langley Control Tower: Lt (b) (6) DSN (b) (6) (b) (6)
  - Weather: Langley AFB, DSN (b) (6)
  - Ft Eustis: DSN 297-5300/3343
  - Command Post: DSN 574-5411

Pest Control Foreman: (b) (6) , DSN (b) (6) or Home (b) (6)  
Pest Control/Environmental NCOIC: MSG (b) (6)  
Public Affairs: DSN 574-2018/2010/2019  
Fuels: DSN 574-4312/3623/4224  
Motor Pool: 574-7505/5712 (3 vans and 1 staff vehicle supplied by (b) (6) )  
ACC PMP: (b) (6) , DSN (b) (6) , cell phone (b) (6)

**b. Billeting Office: COM: (757) 764-4667 EXT 2519 (ATTN: SSG (b) (6))**  
**DSN 574-4667, EXT 2519; FAX 574-3038**

**- Contract Quarters:**

**Quality Inn, 1809 W Mercury Blvd, Hampton VA (757) 838-5011**  
**Group #298785, \$79 per night**

**c. FT EUSTIS VA:**

Environmental Coordinator: (b) (6) and (b) (6) , DSN (b) (6) )  
Entomology Shop: DSN (b) (6) ; Com. (b) (6)

**d. Craney Island: Bill Rawls**

**e. Hampton Mosquito Control: (b) (6) home**  
Beeper (b) (6)

**f. York County Control: (b) (6)**

**g. Poquoson: (b) (6)**

**h. City of Portsmouth Biologist: (b) (6)**

**i. Newport News Mosq. Control: (b) (6)**

**j. Newport News/Williamsburg Int.:**

- (1) Fixed Base Operator: Flight Int 877-6401
- (2) Flight Service: 877-0209
- (3) Tower: 877-2962
- (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

**k. Norfolk NAS VA: DSN 564-2442/7598 or COM (757)-444-2442/7598**

**l. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Lt (b) (6) ; FAX 1022
- (4) 910 OG/CC: LtC (b) (6) / 1179
- (5) 910 OS/OSA: Airfield Manager, (b) (6)
- (6) 757 AS/DO: LtC (b) (6)
- (7) 910 OSF Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (8) 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
- (9) 757 AS/DOS: Aerial Spray Office, (b) (6) ; FAX 1616
- (10) 910 LG/CC: Ext 1225
- (11) 910 LG/LGM: CMS (b) (6)
- (12) Maintenance Control: Ext 1327
- (13) 910 LG/LGMS: Spray Maintenance, Ext 1132/1586
- (14) 910 LG/LGL: CMS (b) (6)
- (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6)
  - Spray Maintenance: (b) (6)



# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 8-13 SEP 09

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes at LFI and the surrounding communities.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander:
- (2) Pilots: Capt (b) (6), Capt (b) (6)
- (3) Navigator: LTC (b) (6)
- (4) Flight Engineers: SSgt (b) (6)
- (5) Spray Operators: TSgt (b) (6)

##### b. Maintenance:

1. Spray Maintenance: TSgt (b) (6) MSgt (b) (6) TSgt (b) (6) SRA (b) (6)
2. Crew Chiefs: TSgt (b) (6) AIC (b) (6)
3. Avionics: SSgt (b) (6)

##### c. Entomologists: Maj (b) (6)

##### d. Vehicles:

- **Vehicle Dispatch:** Will supply us with 2x9pax vans and 2 cars
- **MC / Entomologist:** One Car
- **Ops:** One van (9 pax), one car
- **Mx:** One Van (9 Pax)

##### e. Billeting Office: (757) 764-4667 DSN 574-4667, EXT 2528; FAX 574-3038 POC TSgt (b) (6)

#### 2. PPR: 0827SF02

#### 3. SCHEDULE: (All times local)

##### 8 SEP (Tuesday): Deploy to LFI

- 1500: Show time
- 1700: Takeoff YNG
- 1830: Land LFI w/safety briefing immediately following

##### 9 SEP (Wednesday): Spray LFI

- 1430: Installation briefing
- 1530: Show time
- 1600: WX decision, load Dibrom
- 1730: Takeoff LFI
- 1922: Sunset

##### 10 SEP (Thursday): Spray LFI

- 1530: Show time
- 1600: WX decision, load Dibrom
- 1730: Takeoff LFI
- 1920: Sunset

##### 11 SEP (Friday): Spray LFI

- 1530: Show time
- 1600: WX decision, load Dibrom
- 1730: Takeoff LFI
- 1919: Sunset

##### 12 SEP (Saturday): Spray LFI

- 1530: Show time
- 1600: WX decision, load Dibrom
- 1730: Takeoff LFI
- 1917: Sunset

##### 13 Sep (Sunday) Redeploy to YNG

- 1000: Show time
- 1200: Takeoff LFI
- 1400: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Kestrel Weather Monitor, Compass, PCM Card, Pest Safety Binder, UHF Radios, Laptop Computer
- b. **Navigator:** Maps/Map Bag, Validation Map
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit/Supply Kit

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Langley Tower:** DSN 574-5326
- b. **Langley Base Ops:** DSN 574-2504
- c. **Camp Perry:** (757) 229-2121 ext 2263
- d. **Consideration calls:**
  - i. Newport News
  - ii. Ft Eustis/Felker AAF Tower
  - iii. Norfolk NS/Chambers Tower

**5. PARKING PLAN:** Taxi Way Foxtrot or as directed by Transient Alert.

**6. RADIO FREQUENCIES:**

- a. **Felker AAF Tower (Ft Eustis): 126.3, 269.25, 248.2, 241.0**
  - (1) Ops phone DSN826-3588
  - (2) Tower phone DSN 826-3530
  - (3) Flight Service 122.2
- b. **Newport News-Williamsburg Int: CTAF – 118.7 or 257.9 (Operating Hours 1000Z-0200Z)**
  - (1) Ground – **121.9** or 348.6 (phone 877-0221 ops)
  - (2) Tower – **118.7** (phone 877-2862) voice mail 7-2962
  - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
- c. **Langley AFB:** Tower DSN 574-7999
  - (1) Tower - **125.0** or 253.5
  - (2) Ground - **121.7** or 275.8
  - (3) Clearance – **118.85** or 257.625
  - (4) Metro - **239.8**
  - (5) ATIS – 270.1
- d. **Norfolk NAS (Chambers Fld): Tower –124.3, 379.15**, Base Ops, DSN 262-3419, will transfer to TWR
- e. **Norfolk Approach: 125.7 or 335.625**
- f. **Spray Ground: Primary 392.2; Secondary: 308.6**

**7. IN-BRIEFING:** 1430 hrs; CE Conference Room

**8. SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS ULV; Fuselage booms
- b. **Nozzle Tips/Orientation:** 9 8005 nozzles -- straight down (4 left - 5 right)
- c. **Aircraft:** 90-9107
- d. **Mission Identifier:** QZNRKA233246

**9. SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.6 Gallons/Minute
- f. **Acreage:** Potentially 125,000 acres on the peninsula but final acreage TBD
- g. **Swath Width:** 2000 foot

**10. PESTICIDE LOADING:**

- a. **How Much Pesticide:** see entomologist
- b. **Where:** Taxi Way F Aero Club Ramp
- c. **When:** 1530 hrs each day pending weather and heat index. \*\*Calibration performed unless otherwise directed by the Entomologist or Mission Commander

**d. Furnished by Installation:**

- (1) Pesticide
- (2) Loading Equipment/Crew
- (3) Hazardous Waste Disposal
- (4) Two B-5 or B-1 Stands

**11. CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**

**a. LANGLEY AFB VA:**

Wing Commander: DSN 574-5321  
Mission Support Group Commander: DSN 574-7995  
Civil Engineer: DSN 574-2025  
Deputy Chief/Civil Engineer: Ms. (b) (6)  
Environmental Coordinator: DSN 574-3987; FAX 3503  
Base Operations: DSN 574-2504  
Langley Control Tower: DSN 574-5326  
Weather: Langley AFB, DSN 574-5907  
Ft Eustis: DSN 297-5300/3343  
Command Post: DSN 574-5411  
Pest Control Foreman: (b) (6), DSN (b) (6) cell phone (b) (6)  
Pest Control/Environmental NCOIC: MSgt (b) (6)  
Public Affairs: DSN 574-2018/2010/2019  
Fuels: DSN 574-4312/3623/4224  
Motor Pool: 574-5714/5712  
ACC PMP: (b) (6) DSN (b) (6) cell phone (b) (6)  
Fire Department Comm: 757-764-2222

**a. FT EUSTIS VA: Environmental Coordinator: DSN 927- 4152/2375**

**b. Hampton Mosquito Control: 757 850-3305**

**c. York County Mosquito Control: (757)-890-3780**

**d. Poquoson: Jerry Cagle (757) 868-3590**

**e. City of Portsmouth Biologist: (757) 393-8666**

**f. Newport News Mosq. Control: (757) 269-2750**

**g. Camp Peary: (757) 229-2121 Ext 2263, (b) (6) or (b) (6)**

**h. Ft Monroe: ?**

**i. Newport News/Williamsburg Int.:**

- (1) Fixed Base Operator: Flight Int 877-6401
- (2) Flight Service: 877-0209
- (3) Tower: 877-2962
- (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

**j. Norfolk NAS VA: DSN 564-2442/7598 or COM (757)-444-2442/7598**

- (1) Weather: DSN 565-2500

**k. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Capt (b) (6) (b) (6); FAX 1022
- (4) 910 OG/CC: Col (b) (6)
- (5) 910 OS/OSA: Airfield Manager, (b) (6)
- (6) 757 AS/DO: Maj (b) (6)
- (7) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (8) 757 AS/DOO: Ops Admin: SMS (b) (6); FAX 1657
- (9) 757 AS/DOS: Aerial Spray Office, Maj (b) (6), Capt (b) (6); FAX 1616
- (10) 910 LG/CC: Ext 1225
- (11) 910 LG/LGM: Ext 1352
- (12) Maintenance Control: Ext 1327
- (13) 910 LG/LGMS: Spray Maintenance, Ext 1132
- (14) 910 LG/LGL, Ext 1137

(15) Omega/SATO Travel: Ext 1772; 1-800-285-6342

(16) Cellular Spray Phones:

- Mission Commander: (b) (6)

- Entomologist: (b) (6) (b) (6) cell (b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## VICTORIA, BC, CANADA

### 08 – 14 MAY 2000

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: \*LTC (b) (6) (7-12 May)
- (2) Pilots: \*\*LTC (b) (6), CPT (b) (6)
- (3) Navigators: MAJ (b) (6)
- (4) Flight Engineers: \*\*MSG (b) (6)
- (5) Spray Operators: MSG (b) (6), MSG (b) (6), TSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance:
  - (a) 7-14 May 00: \*SMS (b) (6) ks
  - (b) 8-14 May 00: TSG (b) (6), TSG (b) (6) SSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6)
- (3) Avionics: TSG (b) (6)

##### c. Ground Support/Certified Pest Management Professionals: LTC (b) (6)

##### d. Security Police Support: \*TSG (b) (6), TSG (b) (6), AMN (b) (6)

\*Van \$238 per week; \*\*Full Size Car \$170.10 per week

#### 2. SCHEDULE: (All time Local)

##### 08 May (Monday):

##### PPR # NOT REQUIRED

0800: Show at KYNG  
1000: Depart KYNG  
1400: Land CYYJ  
1430: Safety Briefing

##### 09 May (Tuesday):

0930: 910 AW Participants Show Time/Weather Decision/Load Water  
1200: C-130 Departs CYYJ for training  
1400: C130 Lands CYYJ

##### 10 May (Wednesday):

0700: 910 AW Participants Show Time / Weather Decision/ Load Water  
0700-0730: Load Water & Vessels depart  
910 AW Aircrew final briefing at Victoria Airport 443 SQ facility  
0900-0930: Wildlife Working Group meets at IOS Pat Bay auditorium and  
departs to Boundary Pass via Hovercraft  
0930: 910 AW C130 Depart CYYJ  
1000-1200: Dispersant Exercise in the straits area/Wildlife Working Group  
will observe the mission from the CCG Hovercraft  
1200-1230: CCG Hovercraft returns to IOS, Working lunch for Operations staff  
1230: 910 AW C130 Land CYYJ  
1300: Wildlife Working Group meets at IOS Pat Bay auditorium  
1530: Location and Team Leader Debriefing TBD

##### 11 May (Thursday): (C130 Exercise Offshore (USAF only)

0830: 910 AW Show Time / Weather Decision/Load Water  
1100: 910 AW C130 Depart CYYJ  
1300: 910 AW C130 Land CYYJ

**12 May (Friday): (C130 Exercise Offshore (USAF only)**

0830: 910 AW Show Time / Weather Decision/Load Water

1100: 910 AW C130 Depart CYYJ

1300: 910 AW C130 Land CYYJ

**13 May (Saturday): C130 Aircraft Reconfigures Equipment at Comox**

A/R: Show Time / Clean the system

**14 May (Sunday): (Aircraft Departs for Home Station)**

0600: Show Time

0800: Depart CYYJ

1800: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Cellular Phones, Wind Gauge, Compass, Pest Safety Binder, Signal Mirrors, UHF Radio, Satloc Ground Tracker
- b. **Navigator:** Maps/Map Bag, Validation Map, Laptop Computer
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit

**4. NOTIFICATION NECESSARY FOR THIS MISSION. N/A**

**5. PARKING PLAN.** Determined at Victoria IAP BC

**6. RADIO FREQUENCIES.** Spray Ground: Primary / Secondary

**7. IN-BRIEFING/De-Briefing(s):** IAW the Schedule above.

**8. SPRAY CONFIGURATION:**

- a. **System:** SP2G System #4
- b. **Nozzle Tips/Orientation:** Rain drop nozzle tips oriented straight back
- c. **Aircraft:** 99108; Mission Identifier: QZNRKA826129

**9. SPRAY PARAMETERS:**

- a. **Altitude:** 100' AGL
- b. **Ground Speed:** 200 KGS
- c. **Application Rate:** 5 to 9 gallons water per acre
- d. **Flow Rate:** Gallon/Minute
- e. **Swath Width:** 300'

**10. PESTICIDE LOADING:**

- a. **How Much Pesticide:** 1000 gallons of water
- b. **Where:** Victoria Airport
- c. **When:** 8-14 May 00
- d. **Furnished by Installation:**
  - (1) Water
  - (2) Loading Equipment
  - (3) Hazardous Waste Disposal
  - (4) Two B-5 or B-1 Stands

**11. SPRAY MONITORING OR TESTING: To be determined**

**12. Quarters:**

- a. Best Western, Victoria BC, 1-250-656-4441
- b. Travel Lodge, Victoria BC, 1-250-656-1176

**13. Budget Car Rental, Sydney IAP BC, 1-250-953-5300/FAX 1-250-655-2606**  
3 Vans at \$238 per week; 2 full size cars at \$170.10 per week

**14. CONTACTS:**

**a. Canadian Customs:**

(1) Sydney IAP BC: 1-250-363-6644/44 (POC (b) (6) )

(2) Vancouver BC: 1-604-775-6753 (POC (b) (6) )

**b. Canadian Coast Guard Pacific/Yukon:** 1-250-757-2059 (POC (b) (6) )

**c. Canadian Coast Guard Vancouver BC:** 1-604-270-3273 (POC (b) (6) )  
1-604-209-6206 (POC (b) (6) )

**d. Canadian Coast Guard Victoria IAP BC:** 1-250-656-3931 (POC SSG (b) (6) )

**e. Royal Canadian Police Victoria IAP BC:** 1-250-656-3931 (POC SSG (b) (6) )

**f. Canadian Forces Victoria IAP BC:** 1-250-363-6686 (POC Capt (b) (6) )

**g. ESSO Victoria, Victoria IAP BC:** 1-250-656-3231 or UNICOM 122.95

**h. Victoria Airport Fire Service, Victoria BC:** 1-250-953-7568 (POC (b) (6) )

**i. Victoria Airport Fire Chief, Victoria BC:** 1-250-953-7567 (POC (b) (6) (b) (6) )

**14. YOUNGSTOWN ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, + Ext

**a.** 910 AW/CC: BGEN Michael Gjede, Ext 1243

**b.** 910 AW Command Post: Ext 1315; FAX 1161

**c.** 910 AW/PA: LT (b) (6)

**d.** 910 OG/OSA: Airfield Manager: (b) (6) ; FAX 1371

**e.** SOF Desk: 1069; FAX 1371

**f.** 757 AS/DO: LTC (b) (6)

**g.** 757 AS/DOO: Ops Admin: SMS (b) (6)

**h.** 757 AS/DOS: Aerial Spray Office, Ext 1111; FAX 1616

**i.** 910 LG/CC: LTC (b) (6)

**j.** 910 LG/LGM: CMS (b) (6) (b) (6)

**k.** Maintenance Control: Ext 1348

**l.** 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586

**m.** 910 LG/LGL: CMS (b) (6)

**n.** Omega/SATO Travel: Ext 1772; 1- (800) 285 – 6342

**o.** Cellular Spray Phones: (b) (6)



# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA 8-14 OCT 08 **Change 2**

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes at LFI and the surrounding communities.

### 1. 910 AW PARTICIPANTS:

#### a. Aircrew:

- (1) Mission Commander: (b) (6)
- (2) Pilots: LTC Elder (depart 11<sup>th</sup>), Maj (b) (6) **Capt (b) (6)** (arrive 11<sup>th</sup>)
- (3) Navigator: LTC (b) (6)
- (4) Flight Engineers: SMSgt (b) (6) **TSgt (b) (6)** (depart 10<sup>th</sup>)
- (5) Spray Operators: MSgt (b) (6) MSgt (b) (6) MSgt (b) (6) MSgt (b) (6)

#### b. Maintenance:

1. Spray Maintenance: TSgt (b) (6) MSgt (b) (6) TSgt (b) (6)
2. Crew Chiefs: MSgt (b) (6) SRA (b) (6)
3. Avionics: SSgt (b) (6)

#### c. Entomologists: Maj (b) (6) LTC (b) (6) (arrive 9th)

#### d. Vehicles: Vehicles will be at motor pool.

- MC / Entomologist: 1 quarter ton pickup
- Ops: 2 six pax pickups
- Mx: 1 van

#### e. Billeting Office: (757) 764-4667 DSN 574-4667, EXT 2528; FAX 574-3038 POC TSgt (b) (6) 18 reservations at the **Marriott**, 530 St Johns Rd, Newport News (757) 842-6212

### 2. PPR: 1008AW01

### 3. SCHEDULE: (All times local)

#### 08 OCT (Wednesday): Deploy to LFI

- 1500: Show time
- 1700: Takeoff YNG
- 1830: Land LFI w/safety briefing immediately following

#### 09 OCT (Thursday): Spray LFI

- 0930: Tour of aircraft of VA Dept. of Pesticide Services to 1045
- 1330: Installation briefing
- 1415: Show time
- 1445: WX decision, load Dibrom
- 1615: Takeoff LFI, spray no earlier than 1636
- 1836: Sunset

#### 10 OCT (Friday): Spray LFI

- 1415: Show time
- 1445: WX decision, load Dibrom
- 1615: Takeoff LFI, spray no earlier than 1635
- 1835: Sunset

#### 11 OCT (Saturday): Spray LFI

- 1415: Show time
- 1445: WX decision, load Dibrom
- 1615: Takeoff LFI, spray no earlier than 1634
- 1834: Sunset

#### 12 OCT (Sunday): WX Backup

- 1415: Show time
- 1445: WX decision, load Dibrom
- 1615: Takeoff LFI, spray no earlier than 1632
- 1832: Sunset

**13 OCT (Monday): WX Backup**

1415: Show time  
1445: WX decision, load Dibrom  
1615: Takeoff LFI, spray no earlier than 1631  
1831: Sunset

**14 OCT (Tuesday): Redeploy to YNG**

1000: Show time  
1200: Takeoff LFI  
1330: Land YNG

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Kestrel Weather Monitor, Compass, PCM Card, Pest Safety Binder, VHF Radios, Laptop Computer
- b. **Navigator:** Maps/Map Bag, Validation Map
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit/Supply Kit

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Langley Tower:** DSN 574-5326
- b. **Langley Base Ops:** DSN 574-2504
- c. **Camp Perry:** (757) 229-2121 ext 2263
- d. **Consideration calls:**
  - i. Newport News
  - ii. Ft Eustis/Felker AAF Tower
  - iii. Norfolk NS/Chambers Tower

**5. PARKING PLAN:** Taxi Way Foxtrot or as directed by Transient Alert.

**6. RADIO FREQUENCIES:**

- a. **Felker AAF Tower (Ft Eustis): 126.3, 269.25, 248.2, 241.0**
  - (1) Ops phone DSN826-3588
  - (2) Tower phone DSN 826-3530
  - (3) Flight Service 122.2
- b. **Newport News-Williamsburg Int: CTAF – 118.7 or 257.9 (Operating Hours 1000Z-0200Z)**
  - (1) Ground – **121.9** or 348.6 (phone 877-0221 ops)
  - (2) Tower – **118.7** (phone 877-2862) voice mail 7-2962
  - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
- c. **Langley AFB:** Tower DSN 574-7999
  - (1) Tower - **125.0** or 253.5
  - (2) Ground - **121.7** or 275.8
  - (3) Clearance – **118.85** or 257.625
  - (4) Metro - **239.8**
  - (5) ATIS – 270.1
- d. **Norfolk NAS (Chambers Fld): Tower –124.3, 379.15,** Base Ops, DSN 262-3419, will transfer to TWR
- e. **Norfolk Approach: 125.7 or 335.625**
- f. **Spray Ground: Primary 123.45**

**7. IN-BRIEFING:** 1300 hrs; CE Conference Room

**8. SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS ULV; Fuselage booms
- b. **Nozzle Tips/Orientation:** 9 8005 nozzles -- straight down (4 left - 5 right)
- c. **Aircraft:** 90-9106
- d. **Mission Identifier:** QZNRKA110282

**9. SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.63 Gallons/Minute
- f. **Acreage:** Potentially 125,000 acres on the peninsula but final acreage TBD
- g. **Swath Width:** 2000 foot

10. **PESTICIDE LOADING:**
- a. **How Much Pesticide:** see entomologist
  - b. **Where:** Taxi Way F Aero Club Ramp
  - c. **When:** 1445 hrs each day pending weather and heat index.\*\*Calibration performed unless otherwise directed by the Entomologist or Mission Commander
  - d. **Furnished by Installation:**
    - (1) Pesticide
    - (2) Loading Equipment/Crew
    - (3) Hazardous Waste Disposal
    - (4) Two B-5 or B-1 Stands
11. **CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**
- a. **LANGLEY AFB VA:**
    - Wing Commander: DSN 574-5321
    - Mission Support Group Commander: DSN 574-7995
    - Civil Engineer: DSN 574-2025
    - Deputy Chief/Civil Engineer: Ms. (b) (6)
    - Environmental Coordinator: DSN 574-3987; FAX 3503
    - Base Operations: DSN 574-2504
    - Langley Control Tower: DSN 574-5326
    - Weather: Langley AFB, DSN 574-5907
    - Ft Eustis: DSN 297-5300/3343
    - Command Post: DSN 574-5411
    - Pest Control Foreman: DSN 574-3324, cell phone (b) (6)
    - Pest Control/Environmental NCOIC:
    - Public Affairs: DSN 574-2018/2010/2019
    - Fuels: DSN 574-4312/3623/4224
    - Motor Pool: 574-5714/5712
    - ACC PMP: (b) (6) DSN (b) (6), cell phone (b) (6)
    - Fire Department Comm: 757-764-2222
  - a. **FT EUSTIS VA:** Enviromental Coordinator: DSN 927- 4152/2375
  - b. **Hampton Mosquito Control:** 757 850-3305
  - c. **York County Mosquito Control:** (757)-890-3780
  - d. **Poquoson:** Jerry Cagle (757) 868-3590
  - e. **City of Portsmouth Biologist:** (757) 393-8666
  - f. **Newport News Mosq. Control:** (757) 269-2750
  - g. **Camp Peary:** (757) 229-2121 Ext 2263, (b) (6) or (b) (6)
  - h. **Ft Monroe: ?**
  - i. **Newport News/Williamsburg Int.:**
    - (1) Fixed Base Operator: Flight Int 877-6401
    - (2) Flight Service: 877-0209
    - (3) Tower: 877-2962
    - (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport
  - j. **Norfolk NAS VA:** DSN 564-2442/7598 or COM (757)-444-2442/7598
    - (1) Weather: DSN 565-2500

- k. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX      Toll Free 1 - 800 - 278 - 7046, + Ext
- (1) 910 AW/CC: Col (b) (6)
  - (2) 910 AW Command Post: Ext 1315; FAX 1161
  - (3) 910 AW/PA: Capt (b) (6)      FAX 1022
  - (4) 910 OG/CC: Col (b) (6)
  - (5) 910 OS/OSA: Airfield Manager, (b) (6)
  - (6) 757 AS/DO: Maj (b) (6)
  - (7) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
  - (8) 757 AS/DOO: Ops Admin: SMS (b) (6) , (b) (6) ) FAX 1657
  - (9) 757 AS/DOS: Aerial Spray Office, LtCol (b) (6) x(b) (6) , Capt (b) (6)      Ext (b) (6) FAX 1616
  - (10) 910 LG/CC: Ext 1225
  - (11) 910 LG/LGM: Ext 1352
  - (12) Maintenance Control: Ext 1327
  - (13) 910 LG/LGMS: Spray Maintenance, Ext 1132
  - (14) 910 LG/LGL, Ext 1137
  - (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342
  - (16) Cellular Spray Phones:
    - Mission Commander: (b) (6)
    - Entomologist: (b) (6)
    - (b) (6)      Cell (b) (6) (6)



**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
**3976 King Graves Rd Unit 26**  
**Vienna OH 44473-5926**

5 Oct 08

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Langley AFB, VA.

1. Objective/Purpose/Benefits of the Spray Mission: Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes around LFI and the surrounding communities.

2. Capability: Aerial Spray C-130 Aircraft available 8-14 Oct 08

3. Concept of Operations:

**08 OCT (Wednesday): Deploy to LFI**

1500: Show time

1700: Takeoff YNG

1830: Land LFI w/safety briefing immediately following

**09 OCT (Thursday): Spray LFI**

1330: Installation briefing

1415: Show time

1445: WX decision, load Dibrom

1615: Takeoff LFI, spray no earlier than 1636

1836: Sunset

**10 OCT (Friday): Spray LFI**

1415: Show time

1445: WX decision, load Dibrom

1615: Takeoff LFI, spray no earlier than 1635

1835: Sunset

**11 OCT (Saturday): Spray LFI**

1415: Show time

1445: WX decision, load Dibrom

1615: Takeoff LFI, spray no earlier than 1634

1834: Sunset

**12 OCT (Sunday): WX Backup**

1415: Show time

1445: WX decision, load Dibrom

1615: Takeoff LFI, spray no earlier than 1632

1832: Sunset

**13 OCT (Monday): WX Backup**

1415: Show time

1445: WX decision, load Dibrom

1615: Takeoff LFI, spray no earlier than 1631

1831: Sunset

**14 OCT (Tuesday): Redeploy to YNG**

1000: Show time

1200: Takeoff LFI

1330: Land YNG

4. Spray Parameters:

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom<sup>®</sup> Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.6 Gallons/Minute
- f. **Acreage:** Approximately 125,000 acres on the peninsula
- g. **Swath Width:** 2000 foot

5. Aircraft Commander: LTC (b) (6)

If there are any questions, please contact me at DSN<sup>(b)</sup> (b) (6)

// SIGNED //

(b) (6)

757 Aerial Spray

, CAPT, USAFR

1 February 2002

MEMORANDUM FOR HQ AFRC/DOOM (FAX: 497-0198)

FROM: 757 AS/DOS (346-1111; FAX 346-1616)

SUBJECT: Concept of Operations for Aerial Spray Training at Avon Park AFR/MacDill AFB FL

1. Purpose/Objectives/Benefits: To fulfill training requirements for squadron personnel and evaluate new drift control agent for enhanced application of aerially applied products.
2. Capability: Spray Aircraft Available 8-15 Feb 02.
3. Concept of Operations:
  - a. **8 Feb (Friday):**
    - 1100 Show at KYNG
    - 1300 Take-Off KYNG
    - 1600 Land KMCF
    - 1415 Safety Brief
  - b. **9 Feb (Saturday): 0800-1000 Range Times**
    - 0700 Show Time/Weather Decision/Load Water
    - 0715 Depart KMCF/Call Tower & Fire Department at AGR
    - 0800-1000 Spray water over designated area of the Avon Park Bombing Range
    - 1130 Land KMCF
  - c. **10 Feb (Sunday): 0800-1000 Range Times**
    - 0700 Show Time/Weather Decision/Load Water
    - 0715 Depart KMCF/Call Tower & Fire Department at AGR
    - 0800-1000 Spray water over designated area of the Avon Park Bombing Range
    - 1130 Land KMCF
  - d. **11 Feb (Monday): 0700-0930 Range Times**
    - 0630 Show Time/Load Water
    - 0645 Depart KMCF/Call Tower & Fire Department at AGR
    - 0700-0930 Spray water over designated area of the Avon Park Bombing Range
    - 1000 Land KMCF
  - e. **12 Feb (Tuesday): 0700-0930 Range Times**
    - 0630 Show Time/Load Water
    - 0645 Depart KMCF/Call Tower & Fire Department at AGR
    - 0700-0930 Spray water over designated area of the Avon Park Bombing Range
    - 1000 Land KMCF
  - f. **13 Feb (Wednesday): 0700-0930 Range Times**

0630 Show Time/Load Water  
0645 Depart KMCF/Call Tower & Fire Department at AGR  
0700-0930 Spray water over designated area of the Avon Park Bombing Range  
1000 Land KMCF

**g. 14 Feb (Thursday): 0700-0930 Range Times**

0630 Show Time/Load Water  
0645 Depart KMCF/Call Tower & Fire Department at AGR  
0700-0930 Spray water over designated area of the Avon Park Bombing Range  
1000 Land KMCF  
1001

**h. 15 Feb (Friday):**

0900 Show Time  
1200 Land KYNG

**4. Spray Parameters:**

- a. Acreage: N/A
- b. Altitude: 100 Ft AGL
- c. Ground Speed: 200 Knots
- d. Pesticide: N/A (Training with dyed water only)
- e. Application Rate: 500 Gallons of water
- i. Flow Rate: Approximately 200 Gallons per minute at psi 40
- j. System: SP2G – MASS ULV; Modules 1 and 2
- k. Nozzle Tips/Number/Orientation: 8070 Flat Fan oriented straight back 9-11 Feb and 45° 12-14 Feb
- l. Aircraft Tail Number: 99105
- m. Deploy/Re-Deploy Time: 3.5 hrs
- n. Spray Time: 2 hrs (or as called by Mission Commander)

**5. Mission Commander: Major (b) (6)**

**6. Support required at MacDill AFB and Avon Park Bombing Range AFB have been approved via telephone conversations with MacDill AFB Ops and the Range Manager at Avon Park AFRB.**

**7. If you have any questions concerning this mission please contact DSN (b) (6) .**

(b) (6) , Major, USAFR  
Deputy Chief of Aerial Spray  
757 AS/DOS (346-1652)





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
AERIAL SPRAY OPERATIONS  
3976 King Graves Rd Unit 32  
Vienna OH 44473-5932



2 July 2002

MEMORANDUM FOR 757 AS/DO

FROM: 757 AS/DOS (LtC Spears)

SUBJECT: Avon Park Drift Retardant Test Mission, 8-15 February 2002

1. Purpose. Compare different rates of AirexDC™ drift retardants, and different nozzle configurations.
2. Traveler(s). The participants are listed in Attachment 1, the Avon Park Operational Schedule for 8-15 February 2002.
3. Itinerary. The itinerary is listed in the Avon Park Operational Schedule (Attachment 1).
4. Aerial Spray Flight Data:

a. 8 Feb 02: Ferry Sortie	KYNG-KMCF 1800-2100Z	Flight Hours: 3.0
b. 9 Feb 02: Spray Sortie	KMCF-KMCF 1229-1502Z	Flight Hours: 2.6
c. 10 Feb 02: Spray Sortie	KMCF-KMCF 1228-1410Z	Flight Hours: 1.7
d. 11 Feb 02: Spray Sortie	KMCF-KMCF 1210-1431Z	Flight Hours: 2.4
e. 12 Feb 02: Spray Sortie	KMCF-KMCF 1220-1500Z	Flight Hours: 2.7
f. 13 Feb 02: Spray Sortie	KMCF-KMCF 1210-1450Z	Flight Hours: 2.7
g. 14 Feb 02: Spray Sortie	KMCF-KMCF 1220-1430Z	Flight Hours: 2.2
h. 15 Feb 02: Ferry Sortie	KMCF-KYNG 1510-1813Z	Flight Hours: 3.1

5. Discussion:

- a. Control® and AirexDC™ drift retardants were previously compared in December 2001 and January 2002 with AirexDC™ giving better results than Control®. AirexDC™ forms a protective coating around a spray droplet to prevent evaporation as opposed to the previous materials that mixed with and thickened the spray solution.
- b. AirexDC™ was tested at the rates of 0.25%, 0.50% and 0.75% with the nozzles oriented straight back (zero degrees) and at the rate of 0.50% with the nozzles at 45 degrees. The weather effects were similar for all of the trials so differences are likely due to the different rates and nozzle configurations and not influenced by weather.

## 6. Results:

- a. The recovery rate on the ground in ounces per acre was lowest for the 0.25% solution and highest for the 0.75% solution (Figure 1, Table 1). The recovery rates for the 0.50% solutions with nozzles oriented straight back and at 45 degrees were essentially the same, and between those for the 0.75% solution and the 0.25% solution. However, because of variability in the data, the only statistically significant difference was between the 0.75% solution and the 0.25 % solution. The differences are probably real, and would most likely show a statistically significant difference with more trials.
- b. The number of spray droplets per square centimeter (Figure 1, Table 1) was significantly higher for all of the solutions sprayed with the nozzles oriented straight back than for the 0.50% solution sprayed with the nozzles at 45 degrees. Observation of the water sensitive cards used to collect the spray droplets (Figure 2) indicates this is because fewer small droplets were collected with the nozzles at 45 degrees. There were no statistically significant differences between the number of droplets for the three solutions sprayed with the nozzles oriented straight back because of variability in the data although the 0.75% solution appeared to produce more droplets. Further testing may prove this as true. The droplet density for the 0.50% and 0.25% solutions with the nozzles at zero degrees was essentially equal.
- c. Volume median diameter (VMD) (Figure 1, Table 1) of the spray droplets was only statistically different between the 0.50% solution with the nozzles at 45 degrees and the 0.25% solution with the nozzles at zero degrees. The former had the largest VMD and the latter the smallest. Observation of the water sensitive cards (Figure 2) indicates that this is because fewer small droplets were produced with the nozzles at 45 degrees. The VMD for the 0.50% and 0.75% solutions with nozzles at zero degrees was about the same.
- d. There were no statistically significant differences in the effective swath for the four configurations (Figure 1, Table 1). However, the trend was for a narrower effective swath as the concentration of AirexDC™ in the solution was increased. Further testing may bear this out.

## 7. Conclusions and Recommendations:

- a. The 0.75% AirexDC™ with nozzles oriented at zero degrees gave the most recovery of the spray solution on the ground (Figure 2), but also appears to produce the narrowest effective swath. In dry climates, it would be best to use at least a 0.75% solution with the narrower swath. In wetter conditions, the 0.50% solution may be adequate and a wider swath width could then be used.

b. We need to conduct additional characterization trials with AirexDC™ comparing different concentrations and nozzle configurations. This will allow us to determine the best nozzle configuration for different applications.

(b) (6)

(b) (6), Lt Col, USAFR  
Research Entomologist

### **Attachments**

1. Operational Schedule
2. Figure 1, Comparison of different AirexDC™ drift retardant rates and nozzle configurations applied from a C-130 aerial spray aircraft.
3. Figure 2, Deposition patterns of different AirexDC™ drift retardant rates and nozzle configurations applied from a C-130 aerial spray aircraft.
4. Table 1, Sample means from comparison of different AirexDC™ drift retardant rates and nozzle configurations applied from a C-130 aerial spray aircraft.

Distribution via e-mail:

910 AW/CC, PA, HO  
910 LG, LGMS,  
910 OG/CC, DO/CC  
757 AS/DO, HO, DOS  
AFRC/DO, DOOM, XP, HO, PA  
22 AF/DO, DOOM

(Original copy of this report will be maintained by 757 AS/DOS)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## MACDILL AFB / AVON PARK, FL

8-15 FEB 2002

**PURPOSE/OBJECTIVE/BENEFIT:** To fulfill training requirements for squadron personnel and evaluate new drift control agent for enhanced application of aerially applied products.

### 1. 910 AW PARTICIPANTS:

#### a. Aircrew:

- (1) Mission Commander: Maj (b) (6)
- (2) Pilots: Maj (b) (6) , Capt (b) (6)
- (3) Navigators: Maj (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: MSG (b) (6) , MSG (b) (6) TSG (b) (6)

#### b. Maintenance:

- (1) Spray Maintenance: MSG (b) (6) , MSG (b) (6) , TSG (b) (6) ,  
SSG (b) (6) , SMS (b) (6)
- (2) Crew Chiefs: MSG (b) (6) , SSG (b) (6)
- (3) Avionics: TSG (b) (6)

#### c. Certified Pest Management Professionals: Lt Col (b) (6)

#### d. Ground Support: TSG (b) (6) , TSG (b) (6)

### 2. SCHEDULE: (All time Local)

**08 FEB (Friday):** No range time.

**PPR # - 039AC01**

1100: Show at KYNG

1300: Depart KYNG

1600: Land KMCF

**09 FEB (Saturday):** Range Times 0800-1000, call AGR Tower & Fire Dept

0700: Show Time

0715: Depart KMCF Coordinated with CAPT (b) (6) / Sgt (b) (6)

1130: Land KMCF

**10 FEB (Sunday):** Range Times 0800-1000, call AGR Tower & Fire Dept

0700: Show Time

0715: Depart KMCF Coordinated with CAPT (b) (6) / Sgt (b) (6)

1130: Land KMCF

**11 FEB (Monday):** Range Times 0700-0930, call AGR Tower & Fire Dept

0630: Show Time

0645: Depart KMCF Coordinated with CAPT (b) (6) / Sgt (b) (6)

1000: Land KMCF

**12 FEB (Tuesday):** Range Times 0700-0930, call AGR Tower & Fire Dept  
0630: Show Time  
0645: Depart KMCF Coordinated with CAPT (b) (6) / Sgt (b) (6)  
1000: Land KMCF

**13 FEB (Wednesday):** Range Times 0700-0930, call AGR Tower & Fire Dept  
0630: Show Time  
0645: Depart KMCF Coordinated with CAPT (b) (6) / Sgt (b) (6)  
1000: Land KMCF

**14 FEB (Thursday):** Range Times 0700-0930, call AGR Tower & Fire Dept  
0630: Show Time  
0645: Depart KMCF Coordinated with CAPT (b) (6) / Sgt (b) (6)  
1000: Land KMCF

**15 Feb (Friday):**  
0900: Depart MCF  
1200: Land YNG

3. **PURPOSE OF THIS MISSION.** Compare drift retardant capabilities of Airex DC™ using different nozzle configurations.

4. **ITEMS TO TAKE:**

- a. **Navigator:** Maps with “No-Spray” Areas Marked and Laptop Computer
- b. **Certified Pest Management Professionals:**
  - (1) 18 Packs of Water-Sensitive Cards
  - (2) 2 Boxes of Plastic Card Holders
  - (3) 1 Signal Mirror
  - (4) 1 Spot Light
  - (5) 1 Engineer Wheel
  - (6) Swath Kit Weather Station and Image Analyzer
  - (7) UHF Radio with Antenna and VHF Radio
  - (8) Ground Maps
  - (9) Laptop Computer
  - (10) Digital Camera
  - (11) SATLOC Trackstar Equipment

5. **AIR TO GROUND FREQUENCIES:**

- a. Spray: Primary 392.2; Secondary 340.8
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. Avon Park: TWR-292.2 (p), 126.15, 276.6 (s)
- e. MacDill: TWR-123.7; GND-121.65; ATIS-133.825; CMD POST-311.0; PTD-372.2

6. **SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 108

c. Mission Identifier: QZNRKA

## **7. SPRAY PARAMETERS:**

- a. Booms -- Fuselage only.
- b. Nozzles -- 8070 Flat Fan oriented straight back 9-11 Feb and 45° 12-14 Feb.
- c. Number of Nozzles -- 30 Total; 15 on each fuselage boom.
- d. Airspeed -- 200 knots ground speed.
- e. Altitude -- 100' above ground level.
- f. Spray -- Water with Airex DC™.
- g. Wind -- Headwind/tailwind.
- h. Flow Rate -- 200 Gallons per minute at 40 psi.

## **8. LOADING, MIXING AND APPLICATION:**

- a. 9 FEB 02 -- 0.75% solution  
Mix 3.75 gallons of AirexDC™ with 500 gallons of water.  
Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.  
Nozzles straight back.
- b. 10 FEB 02 -- 0.50% solution  
Mix 2.5 gallons of Airex DC™ with 500 gallons of water.  
Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.  
Nozzles straight back.
- c. 11 FEB 02 -- 0.25% solution  
Mix 1.25 gallons of AirexDC™ with 500 gallons of water.  
Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.  
Nozzles straight back.
- d. 12 FEB 02 -- 0.75% solution  
Mix 3.75 gallons of AirexDC™ with 500 gallons of water.  
Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.  
Nozzles 45°
- e. 13 FEB 02 -- 0.50% solution  
Mix 2.5 gallons of AirexDC™ with 500 gallons of water.  
Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.  
Nozzles 45°
- f. 14 FEB 02 -- 0.25% solution  
Mix 1.25 gallons of AirexDC™ with 500 gallons of water.  
Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.  
Nozzles 45°

## **9. CONTACTS:**

- a. Quarters:
  - MacDill Lodging**: DSN: 968-4259, FAX 2660 (Gp 968-2617/2594)
  - Holiday Inn Express 4732 North Dale Mabry (813) 877-6061, Fax) 813 876-1531

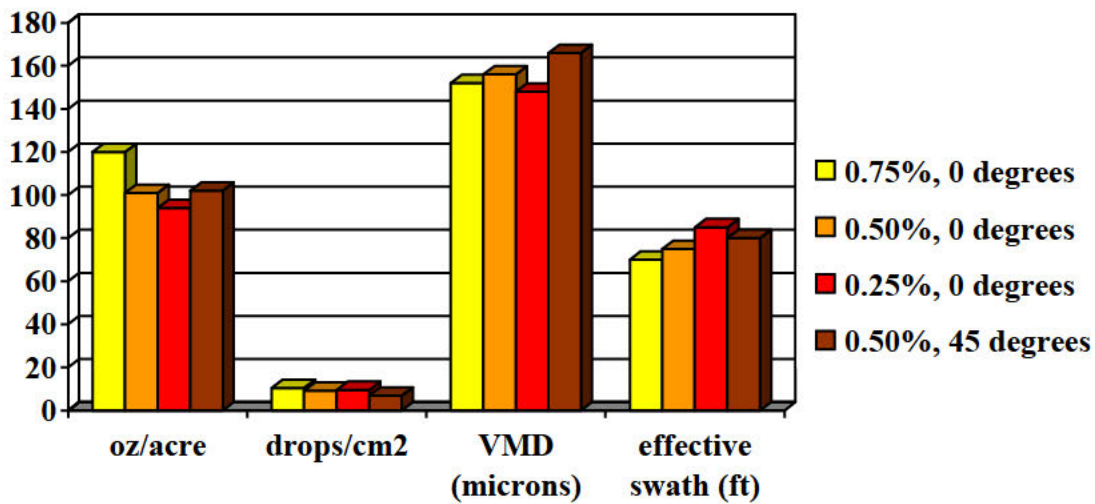
-- **Sebring/Avon Park:** Econolodge (863) 453-2000 (\$69+Tax)

- b. Transportation: **MacDill:** Enterprise, (813)-840-2613 / 8310 FAX  
2 Vans \$75; 2 Full size car \$45; 1 Mid Size \$41 + \$2 state surcharge
- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350
- d. **Patrick AFB:** Rescue Squadron: DSN prefix 854  
LTC (b) (6) – CC – (b) (6)  
LTC (b) (6) – DO – (b) (6)  
LTC (b) (6) (b) (6) – Flight Ops – (b) (6)  
CPT (b) (6) (b) (6) – Tactics – (b) (6)  
Maintenance Ops Center - MOC –Ext 2261/2262/2264 (b) (6)
- e. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX  
DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN  
Avon Control Tower & Range Control Scheduling DSN 968-7176  
Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number
  - (1) Installation Coordinator/Engineer: (b) (6) , (b) (6) ; (b) (6)  
FAX 189/218; (b) (6)
  - (2) Pest Control: (b) (6)
  - (3) Forestry/Wildlife: (b) (6)
  - (4) Weather: MacDill AFB Forecaster (DSN 968-2854)
  - (5) Fuels: 212/118
  - (6) Airfield Mgr: (b) (6) ; Asst Airfield Mgr: (b) (6) ; Fax 233
  - (8) Range/Tower NCOIC: (b) (6)
  - (9) Range Manager: Mr (b) (6)
  - (10) Range Coordination Center: 138/242
  - (11) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)  
Sgt (b) (6) or Sgt (b) (6) ; FAX DSN 968-4098
  - (12) Fire Department: 293/225
  - (13) Prison Snack Bar: Hours 0800-1100; 1300-1600)
  - (14) Sebring AP:  
Mgr: (b) (6) (b) (6) (fuel needs)  
- BEEPER: 1 (863) 999-8622 ENTER YOUR PHONE# ENTER #  
Asst Mgr: (b) (6) , (b) (6)
  - (15) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)
  - (16) Range VHF: 126.15
  - (17) MacDill AFB Ops Gp CC: COL (b) (6)
  - (18) Other Quarters:  
Sebring FL: Chateau Elan Sebring Airport Inn (863) 655-6252  
Inn On The Lakes (863) 471-9400  
Avon Park: (JTR Lodging \$64/Meals \$28)  
Chateau Elan Airport Inn \$64, (863) 655-6252  
Quality Inn (863) 385-4500, FAX: (863) 385-0250  
Jacaronda (863) 453-2211; 19 East Main St, Avon Park, FL \$ 27.29  
Oak Tree Inn (863) 453-3165  
Days Inn (863) 382-1148, 800 329-7466
- f. **Youngstown ARS:** DSN: 346-XXXX; (330) 609-XXXX; 1 – 800 278- 046 + Ext



- (1) 910 AW/CC: Ext 1243
- (2) 910 AW Command Post: Ext 1315, FAX 1161
- (3) 910 AW/PA: Ext 1236, FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 OG/OSA: Airfield Manager: (b) (6)
- (6) 757 AS/DO: LTC (b) (6)
- (7) 757 AS/DOO: Ops Admin, SMS (b) (6) , FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, (b) (6) , FAX 1616
- (9) 910 LG/CC: LTC (b) (6)
- (10) 910 LG/LGM: CMS (b) (6)
- (11) Maintenance Control: Ext 1348
- (12) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
- (13) 910 LG/LGL: CMS (b) (6)
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
  - a. Cellular Spray Phones:
    - PMP: (b) (6)
    - Mission Cmdr: (b) (6)
    - Spray MX: (b) (6)

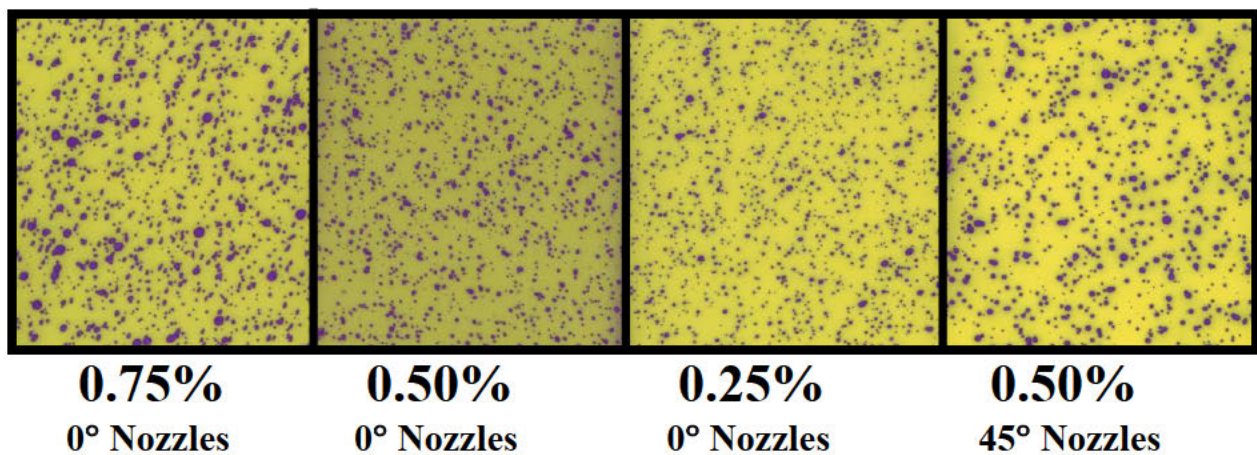




**Figure 1.** Comparison of different AirexDC™ drift retardant rates and nozzle configurations applied from a C-130 aerial spray aircraft.

**Table 1.** Sample means from comparison of different AirexDC™ drift retardant rates and nozzle configurations applied from a C-130 aerial spray aircraft.

AirexDC™ rate And nozzle orientation	oz/acre	drops/cm2	VMD (microns)	effective swath (ft)
0.75%, 0 degrees	120	10.5	152	70
0.50%, 0 degrees	101	9.1	156	75
0.25%, 0 degrees	94	9.5	148	85
0.50%, 45 degrees	102	6.9	166	80



**Figure 2.** Deposition patterns of different AirexDC™ drift retardant rates and nozzle configurations applied from a C-130 aerial spray aircraft.

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **MACDILL AFB / AVON PARK, FL**

### **8-15 FEB 2002**

**PURPOSE/OBJECTIVE/BENEFIT: To fulfill training requirements for squadron personnel and evaluate new drift control agent for enhanced application of aerially applied products.**

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Mission Commander: Maj (b) (6)
- (2) Pilots: Maj (b) (6) , Capt (b) (6)
- (3) Navigators: Maj (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: MSG (b) (6) , MSG (b) (6) , TSG (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: MSG (b) (6) , MSG (b) (6) , TSG (b) (6) ,  
SSG (b) (6) , SMS (b) (6)
- (2) Crew Chiefs: MSG (b) (6) , SSG (b) (6)
- (3) Avionics: TSG (b) (6)

##### **c. Certified Pest Management Professionals: Lt Col (b) (6)**

##### **d. Ground Support: TSG (b) (6) , TSG (b) (6)**

Enterprise #: \$75 Vans: (b) (6) /; \$45 Full Size: (b) (6) ; \$41 Mid Size: (b) (6)

#### **2. SCHEDULE: (All time Local)**

08 FEB (Friday): No range time.

**PPR # - 039AC01**

1100: Show at KYNG

1300: Depart KYNG

1600: Land KMCF

09 FEB (Saturday): Range Times 0800-1000, call AGR Tower & Fire Dept

0700: Show Time

0715: Depart KMCF Coordinated with CAPT (b) (6) / Sgt (b) (6)

1130: Land KMCF

10 FEB (Sunday): Range Times 0800-1000, call AGR Tower & Fire Dept

0700: Show Time

0715: Depart KMCF Coordinated with CAPT (b) (6) / Sgt (b) (6)

1130: Land KMCF

11 FEB (Monday): Range Times 0700-0930, call AGR Tower & Fire Dept

0630: Show Time

0645: Depart KMCF Coordinated with CAPT (b) (6) / Sgt (b) (6)

1000: Land KMCF

12 FEB (Tuesday): Range Times 0700-0930, call AGR Tower & Fire Dept

0630: Show Time

0645: Depart KMCF Coordinated with CAPT (b) (6) / Sgt (b) (6)

1000: Land KMCF

13 FEB (Wednesday): Range Times 0700-0930, call AGR Tower & Fire Dept

0630: Show Time

0645: Depart KMCF Coordinated with CAPT (b) (6) / Sgt (b) (6)

1000: Land KMCF

14 FEB (Thursday): Range Times 0700-0930, call AGR Tower & Fire Dept  
0630: Show Time  
0645: Depart KMCF Coordinated with CAPT (b) (6) / Sgt (b) (6)  
1000: Land KMCF

15 Feb (Friday):  
0900: Depart MCF  
1200: Land YNG

3. **PURPOSE OF THIS MISSION.** Compare drift retardant capabilities of Airex DC™ using different nozzle configurations.

4. **ITEMS TO TAKE:**

- a. **Navigator:** Maps with “No-Spray” Areas Marked and Laptop Computer
- b. **Certified Pest Management Professionals:**
  - (1) 18 Packs of Water-Sensitive Cards
  - (2) 2 Boxes of Plastic Card Holders
  - (3) 1 Signal Mirror
  - (4) 1 Spot Light
  - (5) 1 Engineer Wheel
  - (6) Swath Kit Weather Station and Image Analyzer
  - (7) UHF Radio with Antenna and VHF Radio
  - (8) Ground Maps
  - (9) Laptop Computer
  - (10) Digital Camera
  - (11) SATLOC Trackstar Equipment

5. **AIR TO GROUND FREQUENCIES:**

- a. Spray: Primary 392.2; Secondary 340.8
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. Avon Park: TWR-292.2 (p), 126.15, 276.6 (s)
- e. MacDill: TWR-123.7; GND-121.65; ATIS-133.825; CMD POST-311.0; PTD-372.2

6. **SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 108
- c. Mission Identifier: QZNRKA

7. **SPRAY PARAMETERS:**

- a. Booms -- Fuselage only.
- b. Nozzles -- 8070 Flat Fan oriented straight back 9-11 Feb and 45° 12-14 Feb.
- c. Number of Nozzles -- 30 Total; 15 on each fuselage boom.
- d. Airspeed -- 200 knots ground speed.
- e. Altitude -- 100' above ground level.
- f. Spray -- Water with Airex DC™.
- g. Wind -- Headwind/tailwind.
- h. Flow Rate -- 200 Gallons per minute at 40 psi.

## 8. **LOADING, MIXING AND APPLICATION:**

- a. 9 FEB 02 – 0.75% solution  
Mix 3.75 gallons of AirexDC™ with 500 gallons of water.  
Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.  
Nozzles straight back.
- b. 10 FEB 02 – 0.50% solution  
Mix 2.5 gallons of AirexDC™ with 500 gallons of water.  
Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.  
Nozzles straight back.
- c. 11 FEB 02 – 0.25% solution  
Mix 1.25 gallons of AirexDC™ with 500 gallons of water.  
Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.  
Nozzles straight back.
- d. 12 FEB 02 – 0.75% solution  
Mix 3.75 gallons of AirexDC™ with 500 gallons of water.  
Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.  
Nozzles 45°
- e. 13 FEB 02 – 0.50% solution  
Mix 2.5 gallons of AirexDC™ with 500 gallons of water.  
Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.  
Nozzles 45°
- f. 14 FEB 02 – 0.25% solution  
Mix 1.25 gallons of AirexDC™ with 500 gallons of water.  
Fly 8, fifteen-second passes with a flow rate of 200 gallons per minute.  
Nozzles 45°

## 9. **CONTACTS:**

- a. Quarters:  
--**MacDill Lodging:** DSN: 968-4259, FAX 2660 (Gp 968-2617/2594)  
--Holiday Inn Express 4732 North Dale Mabry (813) 877-6061, Fax) 813 876-1531  
-- **Sebring/Avon Park:** Econolodge (863) 453-2000 (\$69+Tax)
- b. Transportation: **MacDill:** Enterprise, (813)-840-2613 / 8310 FAX  
2 Vans \$75; 2 Full size car \$45; 1 Mid Size \$41 + \$2 state surcharge; Unlimited mileage  
**All vehicles Reserved under Number \_\_\_\_\_; keys will be at Base Ops**
- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350
- d. **Patrick AFB:** Rescue Squadron: DSN prefix 854  
LTC (b) (6) – CC – (b) (6)  
LTC (b) (6) – DO – Ext 2974  
LTC (b) (6) – Flight Ops – (b) (6)  
CPT (b) (6) – Tactics – (b) (6)(b) (6)  
Maintenance Ops Center - MOC –Ext 2261/2262/2264 ((b) (6))

- e. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX  
DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN  
Avon Control Tower & Range Control Scheduling DSN 968-7176  
Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number
- (1) Installation Coordinator/Engineer: (b) (6)  
FAX 189/218; (b) (6)
  - (2) Pest Control: (b) (6)
  - (3) Forestry/Wildlife: (b) (6)
  - (4) Weather: MacDill AFB Forecaster (DSN 968-2854)
  - (5) Fuels: 212/118
  - (6) Airfield Mgr: (b) (6) Asst Airfield Mgr: (b) (6) Fax 233
  - (8) Range/Tower NCOIC: (b) (6)
  - (9) Range Manager: Mr Ron Riedel, 110
  - (10) Range Coordination Center: 138/242
  - (11) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)  
Sgt (b) (6) or Sgt (b) (6) FAX DSN 968-4098
  - (12) Fire Department: 293/225
  - (13) Prison Snack Bar: Hours 0800-1100; 1300-1600)
  - (14) Sebring AP:  
Mgr: Mr (b) (6) (b) (6) (fuel needs)  
BEEPER: 1 (863) 999-8622 ENTER YOUR PHONE# ENTER #  
Asst Mgr: (b) (6), (b) (6)
  - (15) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)
  - (16) Range VHF: 126.15
  - (17) MacDill AFB Ops Gp CC: COL (b) (6)
  - (18) Other Quarters:  
Sebring FL: Chateau Elan Sebring Airport Inn (863) 655-6252  
Inn On The Lakes (863) 471-9400  
Avon Park: (JTR Lodging \$64/Meals \$28)  
Chateau Elan Airport Inn \$64, (863) 655-6252  
Quality Inn (863) 385-4500, FAX: (863) 385-0250  
Jacaronda (863) 453-2211; 19 East Main St, Avon Park, FL \$ 27.29  
Oak Tree Inn (863) 453-3165  
Days Inn (863) 382-1148, 800 329-7466
- f. **Youngstown ARS:** DSN: 346-XXXX; (330) 609-XXXX; 1 - 800 - 278 - 7046, + Ext
- (1) 910 AW/CC: Ext 1243
  - (2) 910 AW Command Post: Ext 1315, FAX 1161
  - (3) 910 AW/PA: Ext 1236, FAX 1022
  - (4) 910 OG/CC: Ext 1257 / 1179
  - (5) 910 OG/OSA: Airfield Manager: (b) (6)
  - (6) 757 AS/DO: LTC (b) (6)
  - (7) 757 AS/DOO: Ops Admin, SMS (b) (6) FAX 1657
  - (8) 757 AS/DOS: Aerial Spray Office, (b) (6) FAX 1616
  - (9) 910 LG/CC: LTC (b) (6)
  - (10) 910 LG/LGM: CMS (b) (6)
  - (11) Maintenance Control: Ext 1348
  - (12) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
  - (13) 910 LG/LGL: CMS (b) (6)
  - (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- a. Cellular Spray Phones:  
PMP: (b) (6)  
Mission Cmdr: (b) (6)  
Spray MX: (b) (6)



**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**PARRIS ISLAND MCRD, SC 9-11 JULY 2007**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 9-11 JUL 2007
- c. Purpose of Application: To control pestiferous populations of the black salt marsh mosquito (*Aedes taeniorhynchus*) and other mosquito species
- d. Application Date: 10 July 2007
- e. Time/s of Application (Local): 1915-2025 hrs
- f. Acres Treated: 7,680
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) ,  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 10 July 2007
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 10 July; Assistant Chief of Staff,  
Installations and Logistics Conference Rm, Lt Col (b) (6) , Mr. (b) (6)  
briefed by Maj (b) (6)

**2. OPERATIONAL:**

- a. **Mission Commander:** LTC (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Maj (b) (6) , Capt (b) (6)
  - (2) Navigator: LTC (b) (6)
  - (3) Flight Engineers: CMSG (b) (6)
  - (4) Spray Operators: MSG (b) (6) , MSG (b) (6)
- c. **Maintenance:**
  - 1. Spray Maintenance: TSGT (b) (6) , MSG (b) (6) , TSGT (b) (6)
  - 2. Crew Chiefs: MSG (b) (6) , SSG (b) (6)
  - 3. Avionics: SSG (b) (6)
- d. **Entomologists:** MAJ (b) (6) (safety briefer)
- e. **Flying Data:**
  - (1) Spray Sorties/Hours: 1/1.4
  - (2) Ferry Sorties/Hours: 2/5.5

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 60 Gal Dibrom<sup>®</sup>
- e. Gallons Pesticide Applied: 60 Gal Dibrom<sup>®</sup>
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 8 gal/marvel oil
- h. Other Additives Used: None
- i. Application Rate: 1.0 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99108
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 9 oriented straight down
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 3.7 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 3000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 220°/3 knots
  - (2) Release Altitude: 230°/8 knots
- b. Temperature (Degrees Fahrenheit): 88°F dropping to 85°F
- c. Relative Humidity: 67%-74%
- d. Cloud Cover: Mostly cloudy
- e. Source: Ground observations at the MCRD water tower near the Rifle Range/Aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

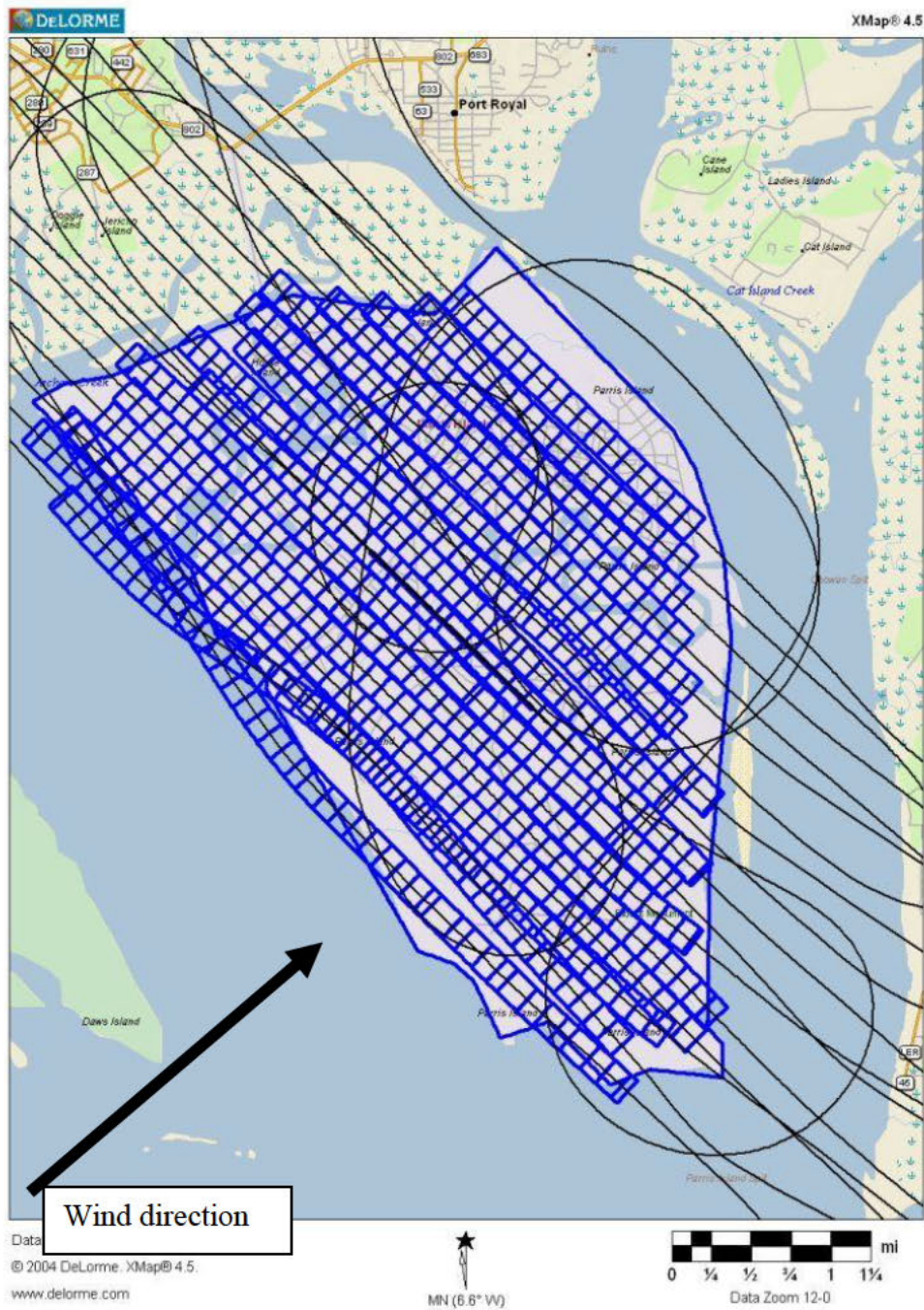
- a. Deposition Pattern:
  - (1) Technique/s Used: GPS systems monitors aircraft flight pattern
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: Collections of mosquitoes with traps in regions frequented by recruits involved in training before and after spray
  - (2) Results: 94% average reduction in mosquitoes (see attachment 2)

**8. REMARKS:** The typical target pest at Parris Island MCRD is the biting midge (sandflea). However, unusually high tides and rainfall in June resulted in a massive emergence of salt marsh mosquitoes. Thus, this spray was targeted specifically against mosquitoes. At this time of the year, the two breeding pairs of bald eagles migrate off the Depot, simplifying the flying logistics of this application (see attachment 1), since their nest sites did not have to be avoided. The weather conditions were near perfect for the application and trap results indicated a 94% average reduction in mosquito populations following the spray (attachment 2). An aircraft maintenance problem delayed the spray team's initial deployment from Youngstown ARS by 3 hours, but a quick decision by the mission commander and subsequent excellent support from both the deploying crew and base maintenance allowed for the mission to continue by switching the MASS to another aircraft; many thanks for their hard work. The next Parris Island mission is scheduled for 10 Sept 2007.

//signed//

(b) (6) , MAJ, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

**Attachment 1. Flight path of aircraft (black lines) while making Dibrom application, 10 July 07. The blue boxes represent the portion of the flight when the spray was on.**





Attachment 2. Mosquito numbers collected in traps before and after the 10 July aerial application.

The CO2 trap counts were the morning of::

	7/10/07	7/12/07
Site 1 Pre Spray	117	Post spray 3
Site 2 Pre Spray	149	Post Spray 7
Site 3 Pre Spray	129	Post Spray 13

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **PARRIS ISLAND MCRD, SC**

### **9-12 JUL 2007**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance and disease carrying mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Mission Commander: LTC (b) (6)
- (2) Pilots: Maj (b) (6) , Capt (b) (6)
- (3) Navigator: LTC (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: Msg (b) (6) , MSG (b) (6)

##### **b. Maintenance:**

1. Spray Maintenance: TSG (b) (6) , MSG (b) (6) , Tsgt (b) (6)
2. Crew Chiefs: Msg (b) (6) , SSG (b) (6)
3. Avionics: SSG (b) (6)

##### **c. Entomologists: MAJ (b) (6)**

#### **2. PPR REQUIREMENTS: 190-01**

**PPR BKT: TBD**

#### **3. PLANNED SEQUENCE OF EVENTS:** (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

##### **9 JUL (Monday):**

1300: Show Time  
1500 Take Off YNG  
1700 Land NBC w/ Safety Briefing immediately following  
1500: Installation Briefing

##### **10 JUL (Tuesday):**

0800: In-brief (Entomologist)  
1630 Show time  
1700 Wx/Decision, load Dibrom  
1845 Take off NBC  
2032 Sunset

##### **11 JUL (Wednesday):** (Wx Backup or Return to YNG)

1630 Show time  
1700 Wx/Decision, load Dibrom  
1845 Take off NBC  
2032 Sunset

##### **12 JUL (Thursday):**

1000: Show Time  
1200: Take off KNBC  
1300 Land BKT (Drop off Molino)  
1315 Depart BKT  
1530: Land KYNG

**Plan to drop off Molino at BKT on return to YNG either Wednesday or Thursday depending on return date.**

#### **4. ITEMS TO TAKE/NOTES:**

##### **a. Mission Commander:**

- (1) Mission Commander Cell Phone

- b. **Entomologist/CPMP:**
  - (1) Wind Gauge & Compass
  - (2) VHF Radios and Cellular Phone
  - (3) Pesticide Safety Binder
- c. **Navigators:**
  - (1) Maps
  - (2) Templates
- d. **Spray Maintenance:**
  - (1) Spill Kit
  - (2) Safety Equipment
  - (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** 9 flat fan 8005 nozzles oriented straight down (or other configuration per entomologist)
- d. **Differential GPS:** Installed
- e. **Aircraft:** 90-9106
- f. **Mission Identifier:** QZNRKA548190

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 1.0 or 0.75 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 3.6 or 2.7 gallons/Minute (see entomologist)

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading two drums of Dibrom

**8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
Hilton Head Arpt: 118.975 TWR  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 392.2; Secondary 340.8**

**10. TRANSPORTATION:** Parris Island will provide 3 vans for transportation to and from quarters and for messing.

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP & Parris Island MCRD Project Coordinator.

**12. CONTACTS:**

- a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX
  - (1) Environmental Coordinator (Spray Coordinator):  
(b) (6) DSN (b) (6) , (b) (6) ; (b) (6)

- FAX (843) 228-2616; (b) (6)
- (2) Assistant Chief of Staff I & L: Col (b) (6) DSN (b) (6)
- (3) Pest Control Foreman: DSN 335-3663
- (4) P.I. Motor Pool: (b) (6), DSN (b) (6)
- (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
- (6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)
- (7) P.I. Rifle Range: DSN: 335-3183/3624
- b. Beaufort MCAS SC:** (Commercial (843) 228-XXXX)
- (1) Beaufort MCAS Environmental: (b) (6), DSN (b) (6); (b) (6), DSN (b) (6)
- (2) Fuels: DSN: 335-7049/7448/7168
- (3) MCAS Beaufort Airfield MGR:  
DSN: 335-7301/7302/7874/7853/7310. Base Ops is ext 7301/2/3  
(After duty hours: (b) (6), DSN: (b) (6) (6))
- (4) Trans Alert/VAL: DSN: 335-7110
- (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)
- c. Beaufort County Mosquito Control:** (b) (6)
- d. Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) DSN: (b) (6)
- e. Billeting/Quarters:**
- Sleep Inn** \$72.99 M,T; \$79.99 W
- Ramada Inn (843) 524-2144/Fax 1704
- Hampton Inn (843) 986-0600 (FAX 0494)
- Sleep Inn** (843) 522-3361 FAX (843) 522-9929
- Parris Island Billeting DSN: 335-2744 (FAX: 3815); (843) 228-3960
- Comfort Inn (843) 525-9366 (FAX 1529)
- Best Western (Sea Island Motel) (843) 524- 4121
- Port Royal Days Inn (843) 524-1551
- Best Western Pt South (I-95) (843) 726-8101
- f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext
1. 910 AW/CC: Col (b) (6)
  2. 910 AW Command Post: Ext 1315; FAX 1161
  3. 910 AW/PA: Capt (b) (6) FAX 1022
  4. 910 OG/CC: Col (b) (6)
  5. 910 OG: Airfield Manager, Ext 1186/1526
  6. 757 AS/DO: Maj (b) (6)
  7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
  8. 757 AS/DOO: Ops Admin: SMS (b) (6) FAX 1657
  9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) FAX 1616
  10. 910 LG/CC: Ext 1225
  11. 910 LG/LGM: Ext 1352
  12. Maintenance Control: Ext 1327
  13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
  14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
  15. Cellular Spray Phones:
    - Mission Commander: (b) (6)
    - Entomologist: Mark's cell, (b) (6)



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



3 JUL 07

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Parris Island MCRD SC to control of Mosquitoes

1. Objective/Purpose/Benefits of the Spray Mission. Parris Island MCRD SC for control of nuisance mosquitoes with aerial spray application to reduce negative impact of insect bites on outdoor training at the request of the Parris Island MCRD/MCAS Environmental Coordinator.

2. Capability: Spray Aircraft available on 9-12 JUL 07

3. Concept of Operations:

**9 JUL (Monday):**

1300: Show Time

1500 Take Off YNG

1700 Land KNBC w/ Safety Briefing immediately following

**10 JUL (Tuesday):**

1630 Show time

1700 Wx/Decision, load Dibrom

1845 Take off NBC

2032 Sunset

**11 Jul (Wednesday):**

1630 Show time

1700 Wx/Decision, load Dibrom

1845 Take off NBC

2032 Sunset

**12 JUL (Thursday):**

1100: Show Time

1300: Take off KNBC

1500: Land KYNG

4. Spray Parameters:

a. Acreage: 7,500 Acres (Only areas determined by PMP)

b. Altitude: 150 Ft AGL

c. Pesticide: Dibrom® Concentrate

d. Deploy: 2.0 Hrs

e. Re-Deploy: 2.0 Hrs

f. Spray Time: 16 Minutes per Sortie (or as called by PMP)

5. Aircraft Commander: Maj (b) (6)

6. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator Mr. (b) (6) , DSN(b) (6) .

// SIGNED //

(b) (6) , CAPTAIN, USAFR  
Assistant Chief Aerial Spray



# AFRC Setup Sheet Mission ID # QZNRKA548190

Original: N	Rev #: 3	Rejected: N	Schdlr Name: (b) (6)	Wing: 910AW	Squad: 757AS	MDS: C130H
Msn Type: SPRAY			OG/CC (b) (6)	As of Date: 03/Jul/2007 11:38:36		ICAO: KNBC

PA Approval #:	Air Show #:	Allocation #:	NRA/Denton #:
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Acft Cmdr: (b) (6)	Last 4 SSN: (b) (6)	Call Sign: SPRAY01	Crew Type: BASIC
Close Watch: N	GDSS Input By: (b) (6)	Tail #: 99106	SRT:
Crew [MO/FO]: 0 / 0	Crew [ME/FE]: 0 / 0	JCS Pri: 5A1	GDSS Input Date: 02/Jul/2007

Departure Date: 09/Jul/2007	Mission ID: QZNRKA548190	AMC Mission ID:
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LINE	ICAO	FLY TIME	ARRIVE	arr actual	AP	GRND TIME	DEPART	dep actual	DP	REMARKS	airdrop actual	airland actual
1	KYNG	00:00				000:00	7190/1600		O	DEPART YNG	pax: cargo:	pax: cargo:
2	KNBC	02:00	7190/1800		S	029:30	7191/2330		S	SPRAY	pax: cargo:	pax: cargo:
3	KNBC	01:30	7192/0100		S	022:30	7192/2330		S	SPRAY	pax: cargo:	pax: cargo:
4	KNBC	01:30	7193/0100		S	016:00	7193/1700		S	RETURN YNG	pax: cargo:	pax: cargo:
5	KYNG	02:00	7193/1900		U	000:00					pax: cargo:	pax: cargo:

MISSION JUSTIFICATION: AERIAL APPLICATION OF INSECTICIDE TO CONTROL THE POPULATIONS OF NUISANCE AND DISEASE CARRYING MOSQUITOES AT PARRIS ISLAND MCRD

CIVIL/ANG JUSTIFICATION:

AIRCRAFT SECURITY STATEMENT/FORCE PROTECTION: PROVIDED BY NBC MILITARY SECURITY PERSONNEL.

INCENTIVE, ORIENTATION, MEDIA, AND FAMILIARIZATION FLIGHTS:

JEPPESEN'S APPROVED:

VERBATIM GDSS REMARK: AFRC COMMAND CENTER: 1-800-223-1784 EXT. 7-0680

Approved By:	TWG Approval: Y	OG/CC Approval: Y	NAF/CC Approval: Y
Wing Notification Date:	AFRC/DO Approval: Y	DOOM Approval: N	Sequence #: 280253





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



27 JAN 2009

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray Training at Avon Park, FL

1. Purpose/Objectives/Benefits: Flight testing of a new Quantity Indicating System (QIS) for the Modular Aerial Spray System will be conducted testing the accuracy of the system and ensuring no EMI with aircraft instrumentation or other systems. Aircrew flight training in aerial spray operations to include initial copilot training will be conducted over Avon Park Bombing range and coastal waters. Other aircrew positions perform training for currency and proficiency.
2. Capability: Spray Aircraft Available, 9-13 FEB 2009.
3. **Concept of Operations**  
9 FEB (Monday)  
1400: Show Time KYNG  
1600: Depart KYNG  
1900 Land KMCF  
  
10 FEB (Tuesday): Range 1200-1500  
1000 Show Time  
1200 Depart KMCF  
1500 Land KMCF  
  
11 FEB (Wednesday): Range 1200-1500  
1000 Show Time  
1200 Depart KMCF  
1500 Land KMCF  
  
12 FEB (Thursday): Range 1200-1500  
1000 Show Time  
1200 Depart KMCF  
1500 Land KMCF  
  
13 FEB (Friday):  
0900: Show Time  
1100: Depart KFMY  
1400: Land KYNG

4. Spray Configuration:
  - a. MASS – SP2G
  - b. Mission Identifier: QZNRKA667040
5. Mission Protocols: Avon Park Spray Flight Training
6. Range times reserved at Avon Park Bombing Range daily through MacDill range scheduling.
7. Aircraft Commander: Capt (b) (6)
8. If you have any questions concerning this mission please contact me at DSN (b) (6) .

//SIGNED//

(b) (6) , Capt, USAFR  
Assistant Chief of Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## AVON PARK, FL

9-13 FEB 2009 Ch 1

**PURPOSE/OBJECTIVE/BENEFIT:** Flight testing of the Quantity Indicator System MASS upgrade. Aerial Spray flight training for aircrews over Avon Park Bombing range.

### 1. 910 AW PARTICIPANTS:

- a. **Aircrew:**
  - 1. Pilots: Capt (b) (6) , LTC (b) (6) , Maj (b) (6) , Maj (b) (6)
  - 2. Navigators: Maj (b) (6)
  - 3. Flight Engineers: Msgt (b) (6)
- b. Spray Operators: Sms (b) (6) , Msgt (b) (6) , Msgt (b) (6)
- c. **Maintenance:**
  - 1. Spray Maintenance: Smsgt (b) (6) , Msgt (b) (6) , Msgt (b) (6)
  - 2. Avionics: Ssgt (b) (6) , Ssgt (b) (6)
  - 3. Crew Chiefs: Tsg (b) (6) , SRA (b) (6)
  - 4. Engine Shop: Tsg (b) (6)
- d. **Entomologist/Ground Support: None**

### 2. SCHEDULE: (All time Local) All times and sequence of events are subject to change depending upon the needs of the training and range.

9 FEB (MON)

1400: Show Time KYNG  
1600: Depart KYNG  
1930 Land KMCF

10 FEB (TUE): Range scheduled: 1200-1500

Ground testing of QIS: Complete remaining ground testing items as required. Upon completion of ground items, flight testing of the EMI will be conducted at MCF. Upon completion of testing, the crew will depart out to KAGR

0800 or TBA Show Time  
1200 or TBA Take Off  
1500 Land Time

\*\*Schedule for remainder of week will be flexible depending upon the QIS testing.

11 FEB (WED): Range scheduled: 1200-1500

1000 Show at aircraft  
1200 T/O MCF

\*\* Training at Avon Park Range or overwater  
1500 Land MCF

12 FEB (THUR): Range Times 1200-1500

1000 Show at aircraft  
1200 T/O MCF  
1500 Land MCF

13 FEB (FRI)

0900: Show Time  
1100: Depart KMCF  
1430: Land KYNG

### 3. ITEMS TO TAKE:

- a. **Navigator:** Maps with "No-Spray" Areas Marked  
Mission computer

**4. AIR TO GROUND FREQUENCIES:**

- a. **Spray: Primary 392.2;** Secondary 340.8
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. **Avon Park: TWR-292.2 (p), 126.15, 276.6 (s) Hrs 0700-2300 M-F, S-S per flying schedule DSN 968-7138**
- e. MacDill: TWR-123.7; GND-118.575; ATIS-133.825; CMD POST-311.0; PTD-372.2

**5. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 89-9105
- c. Nozzle Tips/Orientation: LV/HV 14 Raindrop nozzles oriented straight back
- d. Mission Identifier: QZNRKA346011

**6. MISSION PROTOCOLS:**

- a. **Altitude:** 100 and 150 AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Chemical:** Water
- d. **Application Rate:** TBD based on spray operator training needs
- e. **Flow Rate:** TBD
- f. **Acreage:** Configuration for training only.
- g. **Swath Width:** TBD depending upon training profile each day

**7. CONTACTS:**

- a. **Quarters:**  
**Springhill Suites**  
813-639-9600  
4835 W Cypress St Tampa, FL 33607
- b. Transportation:  
**Vehicles: 4 Vans - \$80/day;**  
Enterprise Rental MacDill AFB:  
(813) 840 2613 Attn: (b) (6)  
Van – (b) (6)
- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350  
(1) Weather: MacDill AFB Forecaster (DSN 968-2854)  
(2) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)  
(3) MacDill AFB Ops Gp CC 968-3014
- d. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX  
DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN  
Avon Control Tower & Range Control Scheduling DSN 968-7176  
Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number  
(1) Range Operations Manager: (b) (6) , Bldg 236, (b) (6)  
(2) Avon Range Control Tower: ext 176  
(1) Flight Chief of Civ Engineer: (b) (6) , Bldg 29, (b) (6)  
(2) Chief, Environmental Flight: (b) (6) Bldg 29, (b) (6) also Wildlife Biologist (b) (6)  
(3) Fuels: ext 118 or Cel (b) (6)  
(4) Range Support Manager: Mr (b) (6) Bldg 29, (b) (6)  
(5) Range Control/Schedule: (b) (6) , Bldg 41, (b) (6)  
**See Attached Avon Park Org directory for additional listings**  
(9) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)  
Range VHF: 126.15

1. 910 AW/CC: Col (b) (6), (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Capt (b) (6); FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6); FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6)
  - Spray Maintenance: (b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 9-13 JUL 07 DRAFT

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes at LFI and the surrounding communities.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: Maj (b) (6)
- (2) Pilots: Maj (b) (6), TBD
- (3) Navigator: LTC (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: Msg (b) (6), MSG (b) (6)

##### b. Maintenance:

1. Spray Maintenance: TSG (b) (6), MSG (b) (6), Tsgt (b) (6), SRA (b) (6)
2. Crew Chiefs: Msg (b) (6), SSG (b) (6)
3. Avionics: SSG (b) (6)

##### c. Entomologists: MAJ (b) (6)

##### d. Vehicles:

- Vehicle Dispatch: Will supply us with 2x9pax vans and 2 cars
- MC / Entomologist: One Car
- Ops: One van (9 pax), one car
- Mx: One Van (9 Pax)

##### e. Billeting Office: COM: (757) 764-4667 POC TSG (b) (6)

DSN 574-4667, EXT 2528; FAX 574-3038

Holiday Inn - 1815 W Mercury Blvd

- Non Available slips are in mission folder behind lodging info

#### 2. PPR: SPRAY01

#### 3. SCHEDULE: (All times local)

##### 9 JUL (Monday):

- 1000: Show Time
- 1200 Take Off YNG
- 1330 Land KLF w/ Safety Briefing immediately following
- 1430: Installation Briefing
- 1530 Calibrate system with Dibrom

##### 10 JUL (Tuesday):

- 1500 Show time
- 1530 Wx/Decision, load Dibrom
- 1800 Take off LFI
- 2027 Sunset

##### 11 Jul (Wednesday):

- 1500 Show time
- 1530 Wx/Decision, load Dibrom
- 1800 Take off LFI
- 2026 Sunset

##### 12 JUL (Thursday):

- 1500 Show time
- 1530 Wx/Decision, load Dibrom
- 1800 Take off LFI
- 2026 Sunset

**13 JUL (Friday) Deploy to YNG**

1000: Show Time

1200: Take off KNBC

1400: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Kestrel Weather Monitor, Compass, PCM Card, Pest Safety Binder, UHF Radios, Laptop Computer
- b. **Navigator:** Maps/Map Bag, Validation Map
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit/Supply Kit

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Langley Tower:** DSN 574-5326
- b. **Langley Base Ops:** DSN 574-2504

**5. PARKING PLAN:** Taxi Way Foxtrot or as directed by Transient Alert.

**6. RADIO FREQUENCIES:**

- a. **Felker AAF Tower (Ft Eustis): 126.3, 269.25, 248.2, 241.0**
  - (1) Ops phone DSN878-3588
  - (2) Tower phone DSN 878-3530
  - (3) Flight Service 122.2
- b. **Newport News-Williamsburg Int: CTAF – 118.7 (Operating Hours 1000Z-0200Z)**
  - (1) Ground – 121.9 or 348.6 (phone 877-0221 ops)
  - (2) Tower – 118.7 (phone DSN 877-2862) voice mail 7-2962
  - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
- c. **Langley AFB: Tower DSN 574-7999**
  - (1) Tower - 125.0 or 253.5
  - (2) Ground - 121.7 or 275.8
  - (3) Clearance – 118.85 or 271.3
  - (4) Metro - 239.8
- d. **Norfolk NAS (Chambers Fld): Tower –124.3, 379.15, Tower Supervisor DSN 262-3443**
- e. **Norfolk Approach: 124.9**
- f. **Spray Ground: Primary 392.2; Secondary: 308.6**

**7. IN-BRIEFING:** 1430 hrs; CE Conference Room

**8. SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS ULV; Fuselage booms
- b. **Nozzle Tips/Orientation:** ten 8005 nozzles -- straight down
- c. **Aircraft:** 89-9106
- d. **Mission Identifier:** QZNRKA548190

**9. SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.6 Gallons/Minute
- f. **Acreage:** Potentially 125,000 acres on the peninsula but final acreage TBD
- g. **Swath Width:** 2000 foot

**10. PESTICIDE LOADING:**

- a. **How Much Pesticide:** see entomologist
- b. **Where:** Taxi Way F Aero Club Ramp
- c. **When:** 1600 hrs each day pending weather and heat index.
- d. **Furnished by Installation:**
  - (1) Pesticide
  - (2) Loading Equipment/Crew
  - (3) Hazardous Waste Disposal
  - (4) Two B-5 or B-1 Stands



**11. CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**

**a. LANGLEY AFB VA:**

Wing Commander: DSN 574-5321

Mission Support Group Commander: DSN 574-7995

Civil Engineer: DSN 574-2025

Deputy Chief/Civil Engineer: (b) (6)

Environmental Coordinator: DSN 574-3987; FAX 3503

Base Operations: DSN 574-2504

Langley Control Tower: DSN 574-5326

Weather: Langley AFB, DSN 574-5907

Ft Eustis: DSN 297-5300/3343

Command Post: DSN 574-5411

Pest Control Foreman: (b) (6), DSN (b) (6) cell phone (b) (6)

Pest Control/Environmental NCOIC: MSgt (b) (6)

Public Affairs: DSN 574-2018/2010/2019

Fuels: DSN 574-4312/3623/4224

Motor Pool: 574-7514/5712 (2 vans and 1 staff vehicle were requested)

ACC PMP: (b) (6) DSN (b) (6), cell phone (b) (6)

Fire Department Comm: 757-764-2222

**b. FT EUSTIS VA: Environmental Coordinator: DSN 927- 4152/2375**

**c. Hampton Mosquito Control: 757 850-3305**

**d. York County Mosquito Control: (757)-890-3780**

**e. Poquoson: Jerry Cagle (757) 868-3590**

**f. City of Portsmouth Biologist: (757) 393-8666**

**g. Newport News Mosq. Control: (757) 269-2750**

**h. Camp Peary: (757) 229-2121 Ext 2263, (b) (6) or (b) (6)**

**i. Ft Monroe: ?**

**j. Newport News/Williamsburg Int.:**

(1) Fixed Base Operator: Flight Int 877-6401

(2) Flight Service: 877-0209

(3) Tower: 877-2962

(4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

**k. Norfolk NAS VA: DSN 564-2442/7598 or COM (757)-444-2442/7598**

**l. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, + Ext

(1) 910 AW/CC: Col (b) (6)

(2) 910 AW Command Post: Ext 1315; FAX 1161

(3) 910 AW/PA: Capt (b) (6) FAX 1022

(4) 910 OG/CC: Col (b) (6)

(5) 910 OS/OSA: Airfield Manager (b) (6)

(6) 757 AS/DO: Maj (b) (6)

(7) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371

(8) 757 AS/DOO: Ops Admin: SMS (b) (6) FAX 1657

(9) 757 AS/DOS: Aerial Spray Office, Maj (b) (6), Capt (b) (6)  
FAX 1616

(10) 910 LG/CC: Ext 1225

(11) 910 LG/LGM: Ext 1352

(12) Maintenance Control: Ext 1327

(13) 910 LG/LGMS: Spray Maintenance, Ext 1132

(14) 910 LG/LGL, Ext 1137

(15) Omega/SATO Travel: Ext 1772; 1-800-285-6342

(16) Cellular Spray Phones:

- Mission Commander: (b) (6)

- Entomologist: (b) (6) (b) (6) cell (b) (6)



**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
**3976 King Graves Rd Unit 26**  
**Vienna OH 44473-5926**

27 JUN 07

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Langley AFB, VA.

1. Objective/Purpose/Benefits of the Spray Mission: Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes around LFI and the surrounding communities.

2. Capability: Aerial Spray C-130 Aircraft available 9-13 JUL 07

3. Concept of Operations:

**9 JUL (Monday):**

1000: Show Time  
1200 Take Off YNG  
1330 Land KLF w/ Safety Briefing immediately following  
1430: Installation Briefing

**10 JUL (Tuesday):**

1500 Show time  
1530 Wx/Decision, load Dibrom  
1730 Take off LFI  
2026 Sunset

**11 JUL (Wednesday):**

1500 Show time  
1530 Wx/Decision, load Dibrom  
1730 Take off LFI  
2026 Sunset

**12 JUL (Thursday):**

1500 Show time  
1530 Wx/Decision, load Dibrom  
1730 Take off LFI  
2026 Sunset

**13 JUL (Friday) Deploy to YNG**

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

4. Spray Parameters:

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.6 Gallons/Minute
- f. **Acreage:** Approximately 125,000 acres on the peninsula
- g. **Swath Width:** 2000 foot

5. Aircraft Commander: MAJ (b) (6)

6. Mission Commander: Maj(b) (6)

6. Any questions please contact me at DSN:(b) (6)

// SIGNED //

(b) (6), CAPTAIN, USAFR  
Assistant Chief of Aerial Spray



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



28 MAY 2008

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray San Diego Oil Spill Exercise

**1. Objective/Purpose/Benefit:** Joint Operational Exercise with the US Coast Guard simulating an oil spill clean up operation near the California coastline. Aerial application of simulated oil dispersant using water will be performed working with the US CG ships and aircraft. Exercise activities should result in further refinement of MOU's with US CG as well as enhance the working relationship between US CG and the USAFR in environmental/disaster relief operations.

**2. Capability:** Spray Aircraft available 9-13 JUN 2008

**3. Concept of Operations:**

**9 JUN (Monday)**

0800L: Show time  
1000L: Depart KYNG  
1330L: Land KNZY for Safety Briefing

**10 JUN (Tuesday):**

Briefings 0800-1600L: Dispersants, JRC Set up, ICS

**11 JUN (Wednesday):**

0830L: Show time  
0900L: Load water  
1000L: Take off KNZY  
1130L: Land KNZY, reload water  
1200L: Take off KNZY  
1330L: Land KNZY

**12 JUN (Thursday):**

0830L: Show time  
0900L: Load water  
1000L: Take off KNZY  
1200L: Land KNZY  
1300-1700L: Debrief with all exercise personnel

**13 JUN (Friday):**

0700L: Show  
0900L: Depart KNZY  
1830L: Land KYNG

**4. Spray Parameters:**

- a. Altitude:** 100' AGL
- b. Swath Width.** 100 feet for UHV or as determined by the CPMP
- c. Flow Rate.** 277 gallons/minute
- d. Application Rate.** 7/acre
- e. Ground Speed:** 200 Knots
- f. Proposed spray area:** Exercise area TBD by CG

**5. Mission Commander:** MAJ(b) (6)

6. Please contact me at DSN (b) (6) if you have any questions.

// Signed //

(b) (6)

Aerial Spray

, CAPT, USAFR

# AERIAL SPRAY OPERATIONAL SCHEDULE

## SAN DIEGO OIL SPILL

### 9-13 JUN 2008

**Purpose/Objectives and Proposed Benefits:** Joint Operational Exercise with the US Coast Guard simulating an Oil Spill Clean-up operation near the coast of California. Aerial application of simulated oil dispersant using water will be performed working with both USCG ships and aircraft.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) MC: Maj (b) (6)
- 2) Pilots: LTC (b) (6) Maj (b) (6)
- 3) Navigators: LTC (b) (6)
- 4) Engineers: MSgt (b) (6)
- 5) Spray Operators: MSgt (b) (6) MSgt (b) (6)

##### b. Maintenance:

- 1) Spray Maintenance: TSgt (b) (6) TSgt (b) (6) TSgt (b) (6) SRA (b) (6)
- 2) Crew Chief(s): TSgt (b) (6) AIC (b) (6)
- 3) Avionics: TSgt (b) (6)

##### c. Scientific Advisor: Maj (b) (6) Maj (b) (6)

#### 2. SCHEDULE: (All Local Times) \*\*Spray Flight Times Subject to Change depending upon the Oil Spill Scenario

##### 9 JUNE (Monday)

0800: Showtime  
1000: Depart KYNG  
1330: Land KNZY/Safety Briefing

##### 10 JUN (Tuesday):

Briefings: 0900 with Spotter Aircraft personnel for MC & AC. MC briefs again in afternoon TBD.

##### 11 JUN (Wednesday):

1030: Show time  
1045: Load water  
1200: Takeoff KNZY  
1300: Land KNZY, reload water  
1400: Takeoff KNZY  
1500: Land KNZY, reload water  
1600: Takeoff KNZY  
1700: Land KNZY

##### 12 JUN (Thursday):

0730: Show time  
0745: Load water  
0900: Takeoff KNZY  
1000: Land KNZY, reload water  
1100: Takeoff KNZY  
1200: Land KNZY, reload water  
1300: Takeoff KNZY  
1400: Land KNZY

##### 13 JUN (Friday):

0700 Show  
0900 Depart KNZY  
1830 Land KYNG

#### 3. ITEMS TO TAKE

- a. **Mission Commander:** Cell Phone, Mission Folder

- b. Entomologist:** Cell Phone, 2 VHF Radio, Project Notebook, Entomologist's Tool Kit
- c. Navigator:** Maps/Map Bag, Validation Map
- d. Spray Operator:** Safety Gear, Calibration Tables
- e. Spray Maintenance:** Deployment Kit, Support Equipment

**4. PPR: 161-100**

**5. RADIO FREQUENCIES: Air To Ground/Air to Air TBD**

KNZY TWR 135.1V/336.4 U

**6. CONFIGURATION: SP2G**

- a. System:** 2-Module System/ Fuselage Booms
- b. Nozzle Tips/Orientation:**  
Larvicide: Raindrop nozzles straight back
- c. Number:** *Larvicide: fuselage only, 16 total (8 each side) straight back*
- d. Booms:** Fuselage
- e. Aircraft:** 899108
- f. Mission Identifier:** QZNRKA537161

**7. SPRAY PARAMETERS:**

- a. **Nozzles – Raindrop nozzles oriented straight back.**
- b. **8 (16 total) on each fuselage boom; evenly spaced.**
- c. **Booms – fuselage only**
- d. **Airspeed – 200 knots ground speed.**
- e. **Altitude – 100 feet above water.**
- f. **Application Rate – 7 Gal/Acre**
- g. **Flow Rate – 277 Gal/Min**
- h. **Spray -- water only.**
- i. **Number of passes – 6 per sortie. Do not decrease flow rate in order to increase passes.**
- j. **Pressure – 40 psi**

**8. LOADING: Water from?**

- a. **900 gallons of water per sortie through the fire dept.**
- b. **Battalion Chief (b) (6) and (b) (6) are the POC's (b) (6)**

**9. TRANSPORTATION: 5 full size cars from Enterprise (619-522-6111) at a rate of \$47 + tax and fees. Pick them up at Base Ops.**

- 1-MC (In (b) (6) name)**
- 2-Aircrew ((b) (6) (b) (6))**
- 1-Spray MX ((b) (6))**
- 1-Crew Chiefs & Specialists ((b) (6))**

**10. LODGING:**

Holiday Inn Express Downtown 139.00/night  
1430 Seventh Ave  
San Diego, CA 92101  
(619)819-1467 (877)863-4780

**11. CONTACTS:**

- (b) (6), Chevron Shipping Company 925-790-3754**
- Lt (b) (6), USCG (b) (6) (b) (6)**



**b. 910 AW, Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 Base Ops: Airfield Manager, Ext 1182
  - Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Ext 1503 or 1531, FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL:Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - (b) (6) cell phone (b) (6)
  - (b) (6) (b) (6)

# **SPRAY OPERATIONAL SCHEDULE**

## **UTAH TEST AND TRAINING RANGE MISSION**

### **9-14 MARCH 2009**

**PURPOSE/BENEFIT/OBJECTIVE:** Aerial spray flight proficiency training on Targets 21, 24 at the Utah Test and Training Range(UTTR). Initial copilot spray training will be accomplished. Evaluation of Wingman GX racetrack functionality using multiple spray blocks.

MI: QZNRKA756068

PPR: MO-0901

#### **1. AIRCREW**

- a. **Pilots:** Maj (b) (6) , Maj (b) (6) , Capt (b) (6) , Maj (b) (6)
- b. **Navigators:** Maj (b) (6)
- c. **Flight Engineers:** MSG (b) (6) g
- d. **Spray Operators:** MSG (b) (6)
- e. **Crew Chiefs:** Msgt (b) (6) , (b) (6)
- f. **Avionics –** Sgt (b) (6)

#### **2. MISSION SUPPORT:**

- a. **Mission Commander:** Capt (b) (6)
- b. **Pest Management:** Maj (b) (6)

#### **4. MAINTENANCE:**

- a. **910 Spray MX:** Tsgt (b) (6) , Tsgt (b) (6) , Ssgt (b) (6)
- b. **Instruments/Avionics:** Ssgt (b) (6)

#### **6. IN-BRIEFING: (UTTR Staff)**

- a. **When/Time:** 9 Mar 2009 , ASAP after landing
- b. **Where:** Upon Landing at the aircraft
- c. **Who:** EVERYONE!! Do Not leave area until cleared out by the MC.
- d. **Briefing Plan**
  - a. **Billeting-** See item **16.g** below
  - b. **Vehicles-** See item **16.h** below
  - c. **Schedule of events**
  - d. **Weather calls**
  - e. **Cellular Phone numbers for all personnel**

#### **7. PLANNED SEQUENCE OF EVENTS: Hill AFB Tower Control and Runway Hours 24/7**

##### **NOTES:**

- 1. Initial copilot upgrade/certification in spray operations.
- 2. Wingman GX evaluation in flight. Avionics please have computer available for building/modifying spray blocks. Will work with the MC to ensure adequate analysis is accomplished.
- 3. UTTR RANGE TIMES: 1500-1700Z

##### **9 Mar (Monday)**

0800 Show at KYNG  
1000 Depart KYNG  
1330 Land KHIF

##### **10-13 Mar (Tuesday-Friday)**

0600 Show at KHIF  
0745 Depart KHIF  
1015 Land KHIF

**14 Mar (Saturday)**

0700: All Aircrew checked out of billeting  
0730 Report at aircraft to drop bags, arrange vehicle return  
0900 Depart KHIF  
1600: Land KYNG

**8. ITEMS TO TAKE:**

- a. **PMP:** As required for test plot analysis.
- b. **Mission Commander:** Mission Folder, Cellular Phone
- c. **Navigator:** Maps, computer
- d. **Spray Maintenance:**  
Equipment and tools necessary for mixing container preparations.
- e. **Maintenance:** Applicable Equipment

**9. SPRAY CONFIGURATION: SP1G**

**10. PPR REQUIREMENTS: MO-0901**

**11. PARKING PLAN: Air Frieight Terminal Ramp**

**12. RADIO FREQUENCIES:**

- **Clover Range Control:** UHF 285.65, 275.9, 361.4 (p)
- **Eagle Tower:** UHF 351.0; Mawk 4 (**Matt Bolduc**)
- **Diddle Knoll & Spray Ops Freq:** UHF 398.1 (Primary), 383.2 (Back-up); VHF 134.1, 118.45
- **Spray Inter plane:** UHF 237.05 / VHF 138.375
- **Spray Ground to Spray Maintenance:** See Iridium Phones
- **Base OPS:** 139.3
- **HF Operations:** Designated by Comm. See attached list.
- **Communications Ground Freq:** LMR nets are trunked at Hill.

**13. SPRAY PARAMETERS:**

- a. All simulated depending upon training needs.

**14. CONTACTS:** Commercial prefix (801) 777-XXXX; DSN 777-xxxx

a. **388<sup>th</sup> RANS/RSO, Range Control Officer/Installation Spray Coordinator:**

(b) (6) : 6066 Cedar Lane, Bldg 1274S; (b) (6) ; FAX: 9205  
Cell Phone # (b) (6)

- (b) (6)
- **Hill Range Control:** 7-9386, Current OPS; 7-9385
- **Range Scheduler:** 7-9386
- **Eagle Tower:** 7-1515/6
- **Clover Operations:** 7-7575
- **Clover DO: 586-3103**
- **388<sup>th</sup> RANS/RSL Radio Freq Monitor:** 7-6715
- **388<sup>th</sup> RANS/RSR Resource Monitor:** 5-4257

a. **Environmental Coordinator:** (b) (6)

c. **OASIS RANGE SUPPORT DIRECTORATE:**

Oasis Chief: 75 CEG/CEU (b) (6)  
Oasis Civil Engineering: (b) (6)  
North Range Security: 7-1521/2/4

**d. Hill AFB Base OPS:** 7-1861

**e. Entomology:** (b) (6)

**f. Weather:** Hill AFB: 7-2018; UTTR: 7-1516/63  
ASOS at Eagle Range 6-1765/1795  
Need Dash1 daily at 0600

**g. Billeting: On Base**

- **Billeting Office Mountain View Inn, DSN 777-0802/1844, FAX 775-2014  
COM (801) 777-0802; FAX 775-2014**

**POC (b) (6) , DSN 777-1844**

- Holiday Inn Express, Layton UT 1695 Woodland Park Dr  
Comfort Inn (\$48+Tax) 877 North 499 West, 801 544-5577  
Holiday Inn (Odgen): 1-800-999-6841 or 801 399-5671  
Airport Hilton Inn: 1-800-648-9668 or 801 539-1515  
Ogden Park: 247 24<sup>th</sup>, 801 627-1190/800 421-7599  
La Quinta Inns: 1965 N 1200 W Layton, 801 776-6700  
Alana Motel: 116 N Main Street, Clearfield, 801 825-2221 or 2321

**h. Car Contact:**

**1. Enterprise Rental Car (b) (6) at BX 801-825-0080 (1 Van, 3 FS car)  
Van-Fassnacht  
FS Cars – (b) (6)**

**Hill Motor Pool: 75 LRS/Dispatch DSN 777-1843, 1 Van (b) (6)**

**i. Hill AFB:** Base Commander: Col (b) (6)

Airfield Manager: (b) (6)

Base Operations: 7-1861; FAX: 7-2221

Weather: 7-2018

Transit Alert: 7-3886

C-130 Maintenance Contact: 7-2478

Fuels: 7-7423/7-7311 available 0900-1800 daily after hours contact CP

Billeting: 7-1844

Chow Hall: 7-3428 Breakfast M-F 0530-0730, S-S 0700-1900

Golf Course: 7-1108

Public Affairs: 7-5201

Supply: 7-5391 (922 OE)

**j. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046, + Ext

(1) 910 AW/CC: Col (b) (6)

(2) 910 AW Command Post: Ext 1315; FAX 1161

(3) 910 AW/PA: Capt (b) (6) FAX 1022

(4) 910 OG/CC: Col (b) (6)

(4) 910 OS/OSA: Airfield Manager, (b) (6)

(5) 757 AS/DO: LTC (b) (6)

(6) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371

(7) 757 AS/DOO: Ops Admin: SMS (b) (6) FAX 1657

(8) 757 AS/DOS: Aerial Spray Office, LTC (b) (6)  
FAX 1616

(9) 910 LG/CC: Ext 1225

(10) 910 LG/LGM: Ext 1352

- (11) Maintenance Control: Ext 1327
- (12) 910 LG/LGMS: Spray Maintenance, Ext 1132
- (13) 910 LG/LGL, Ext 1137
- (14) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (15) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) (b) (6) cell (b) (6)
  - Spray Maintenance: (b) (6)

**17. GENERAL TARGET INFORMATION:**

**a. Target 21:**

- (1) Dimensions: 4,980' X 7,770'
- (2) Acreage: 888
- (3) Acres Sprayed in 2004: 888
- (4) Aircraft Loads: 18,869 Gal
- (5) Sorties: 17
- (6) Passes (35' Swath): 157
- (7) Spray-On Time/Pass: 23 Seconds
- (8) Spray Heading: 00/180

**b. Target 24:**

- (1) Dimensions: 1,600' X 6,080'
- (2) Acreage: 223
- (3) Acres Sprayed in 2004: 223
- (4) Aircraft Loads: 5,263 Gal
- (5) Sorties: 7
- (6) Passes (35' Swath): 47
- (7) Spray-On Time/Pass: 18 Seconds
- (8) Spray Heading: 00/180

**UTTR GEOGRAPHIC LOCATION**

Target areas on UTTR are geographically located in northwestern Utah, directly west of the Great Salt Lake and Hill Air Force Base. The complex is positioned between 40 and 41 degrees north latitude and close to 113 degrees ten minutes west longitude. The targets are within range 12 west and Township two and three north, Salt Lake Baseline Meridian.

# **910 AW AERIAL SPRAY UNIT -- POST-MISSION REPORT**

## **LANGLEY AFB, VA ADULT MOSQUITO CONTROL 8-14 Oct 2008**

### **1. MISSION BASICS:**

- a. Installation Sprayed: Langley AFB, VA and surrounding communities.
- b. Mission Duration: 8-14 Oct 2008
- c. Purpose of Application: Adult mosquito control
- d. Application Dates: 9-13 Oct 08
- e. Times of Application (Local): 1635-1839 (9 Oct); 1635-1805 (10 Oct); 1635-1835 (11 Oct); 1640-1740 (12 Oct); 1630-1840 (13 Oct)
- f. Acres Treated: 135,186 total: 52,824 (9 Oct); 47,290 (10 Oct); 19,712 (11 Oct); 2,560 (12 Oct); 12,800 (11 Oct)
- g. Project Coordinator (Name, Phone #): (b) (6), (b) (6)
- h. Date Spray Map Last Approved: 16 June 2008
- i. Date of Waste Generation Letter: 4 April 1996
- j. Installation In-Briefing: 1 CE Conference Room, Langley AFB; 9 Oct 08; Lt Col (b) (6) Maj (b) (6) Maj (b) (6)
- k. Mission identifier: QZNRKA110282

### **2. OPERATIONAL:**

#### **910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Mission Commander: Maj (b) (6)
- (2) Pilots: Lt Col (b) (6) (8-10 Oct), Maj (b) (6) Capt (b) (6) (10-14 Oct)
- (3) Navigator: Lt Col (b) (6)
- (4) Flight Engineers: SMSgt (b) (6) tSgt (b) (6) (8-10 Oct)
- (5) Spray Operators: MSgt (b) (6) MSgt (b) (6) MSgt (b) (6) MSgt (b) (6)

##### **b. Maintenance:**

- 1. Spray Maintenance: TSgt (b) (6) MSgt (b) (6) TSgt (b) (6)
- 2. Crew Chiefs: MSgt (b) (6) SRA (b) (6)
- 3. Avionics: SSgt (b) (6)

##### **c. Entomologists:** Maj (b) (6) Lt Col (b) (6) (In place 9 Oct)

##### **d. Flying Data:**

- (1) Spray Sorties/Hours: 5/8.1 [2.1 (9 Oct); 1.5 (10 Oct); 2.0 (11 Oct); 1.0 (12 Oct); 1.5 (13 Oct)]
- (2) Ferry Sorties/Hours: 2/3.2 [1.6 (8 Oct); 1.6 (14 Oct)]

### **3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 208 (9 Oct); 88 (10 Oct); 143 (11 Oct)
- e. Gallons Pesticide Applied: 163 (9 Oct); 125 (10 Oct); 77 (11 Oct); 10 (12 Oct); 50 (13 Oct)
- f. Gallons and Name Diluent Used: none
- g. Gallons and Name of Flush Used: 10 gallons marvel oil
- h. Other Additives Used: n/a
- i. Application Rate: 0.52 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 90-9107
- b. Spray System (Modules Used) and System ID #: SP2G MASS ULV
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: TeeJet 8005 flat fan nozzles
- e. Nozzle Orientation & Number Used: 9 straight down; 4 left, 5 right (9 Oct); 11 (10-13 Oct)
- f. Pressure (PSI): 70 psi (9 Oct); 50 psi (10-13 Oct)
- g. Flow Rate: 3.7 gpm

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 feet
- b. Spray Off Set: 2000 feet
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed in knots): 063°/8 (9 Oct); 70°/11 (10 Oct) on Langley Peninsula, 070°/8 (11 Oct); 090°/9 Craney Island (12 Oct); 270-330°/5 Portsmouth (13 Oct)
- b. Temperature (°F): 78-74 (9 Oct) 73-69 (10 Oct); 70-67 (11 Oct); 71-63 (12 Oct); 75-73 (13 Oct)
- c. Cloud Cover: overcast (9-11 Oct); mostly sunny (12-13 Oct)
- d. Source: Ground observations/at altitude during spray

**7. SPRAY MONITORING (Pre- and Post-Treatment):**



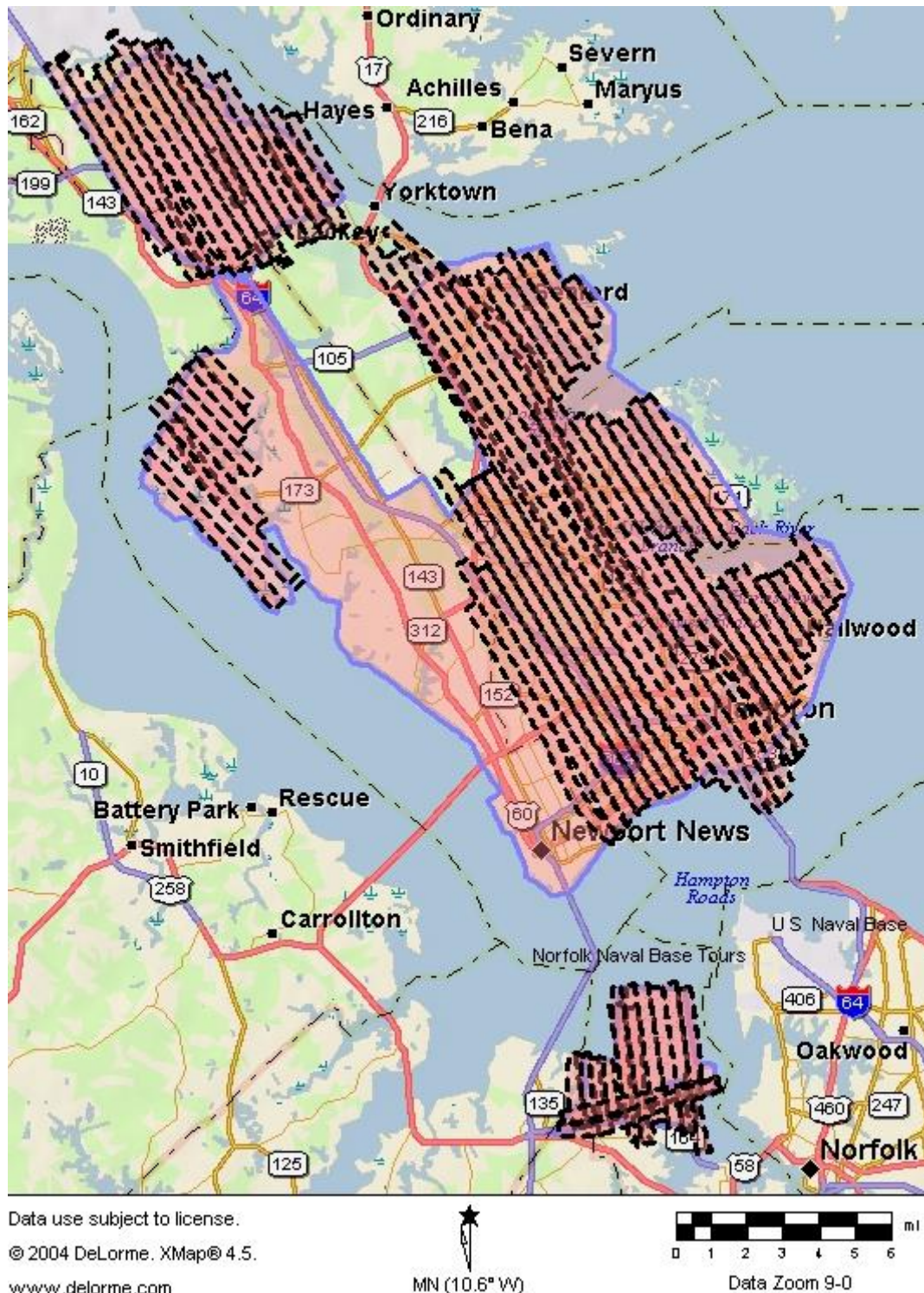
- a. Deposition Pattern:
  - (1) Technique/s Used: 2000 foot swath achieved easy with steady crosswind speeds greater than 5 knots.
- b. Effectiveness:
  - (1) Technique/s Used: carbon dioxide-baited traps were used to monitor mosquito densities pre- and post-treatment by the various community and Base mosquito control professionals.
  - (2) Results: Langley pest management and City of Portsmouth reported good control, with no significant numbers of daylight-flying species present following applications; reduction was approximately 87%. York Co. residents were pleased with the results. Diurnal species were reduced 80% in Hampton, relative to pre-spray levels.

8. **REMARKS:** High tides and heavy rainfall produced by late season storms prompted fall season mosquito development, particularly from salt marsh mosquito species. Wind direction and restrictions on treatment times for some areas limited total acreage per sortie during this mission. Additionally, spray was suspended on 12 Oct because the MASS flow meter stopped working. In subsequent investigation, Spray Maintenance found a foreign object blocking the device. This is the second time Dibrom drums at Langley have been less than pure (see mission report June 2008). Apparently, stocks of defective drums have now been exhausted. Recommend straining pesticide during loading with 100 mesh screens if material is suspect. A total of 5 spray sorties were flown giving effective levels of mosquito control and achieving customer satisfaction. Attachment 1 shows the treatment areas for this mission. A flight engineer and spray operator finished their qualifications and a copilot received initial observation flights and completed some nonspray swaths during this mission. We received excellent support from Langley AFB, 1 CES to make this mission a success. Special thanks to Spray Maintenance for quickly resolving the MASS flow rate issues.

//Signed//

(b) (6) LtCol, USAFR  
(b) (6) , Maj, USAFR  
Certified Pest Management Professionals

**Attachment 1. Map depicting sprayed areas over Langley AFB and surrounding communities. 9-13 October 2008. Shaded portions show total potential area certified to receive sprays while dotted lines show the actual areas treated. Some communities opted not to receive sprays based on low mosquito presence for those regions.**



# AERIAL SPRAY OPERATIONAL SCHEDULE

## CHARLESTON AFB / POINTSETT RANGE

### TRAINING AND TEST

#### 09 - 16 FEB 2001

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: LtC (b) (6)
- (2) Pilots: Maj (b) (6) (9-16), Lt (b) (6) (9-11) Cpt (b) (6) (11-16)
- (3) Navigators: LtC (b) (6) (9-16), Maj (b) (6) (12-16)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: (9-16) MSG (b) (6), TSG (b) (6)  
(9-11) TSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSG (b) (6), SSG (b) (6), TSG (b) (6)
- (2) Crew Chiefs: TSG (b) (6), TSG (b) (6)
- (2) Avionics: MSG (b) (6)

##### c. Ground Support: TSG (b) (6)

##### d. Certified Pest Management Professionals: LTC (b) (6), Lt (b) (6)

#### 2. SCHEDULE: (All time Local)

##### 09 FEB (Friday):

1700: Depart YNG  
1900: Land CHS

##### PPR # - NONE REQUIRED

##### 10 FEB (Saturday) 0900-1200 Range Time

0900: Depart CHS  
1200: Land CHS

##### 11 FEB (Sunday):

0900: Depart CHS  
1100: Land YNG Swap-out  
1130: Depart YNG  
1330: Land CHS

##### 12 FEB (Monday) 1300-1430 Range Time

1230: Depart CHS  
1500: Land CHS

##### 13 FEB (Tuesday) 1300-1430 Range Time

1230: Depart CHS  
1500: Land CHS

##### 14 FEB (Wednesday) 1300-1445 Range Time

1230: Depart CHS  
1500: Land CHS

##### 15 FEB (Thursday) 1300-1430 Range Time

1230: Depart CHS  
1500: Land CHS

##### 16 FEB (Friday):

0900: Depart CHS  
1100: Land YNG

### **3. ITEMS TO TAKE:**

- a. **Navigator:** Maps with “No-Spray” Areas Marked and Laptop Computer
- b. **Certified Pest Management Professionals:**
  - (1) 18 Packs of Water-Sensitive Cards
  - (2) 3 Boxes of Plastic Card Holders & Index Cards
  - (3) 2 Signal Mirrors
  - (4) 2 Spot Lights
  - (5) 1 Measuring Wheels
  - (6) Swath Kit Weather Station and Image Analyzer
  - (7) UHF Radio with Antenna and VHF Radio
  - (8) Ground Maps
  - (9) Laptop Computers
  - (10) Digital Camera
  - (11) SATLOC Trackstar Equipment

### **4. AIR TO GROUND FREQUENCIES:**

- a. Spray: Primary 392.2; Secondary 340.8
- b. Charleston: TWR-; GND-; CMD POST-; PTD-

### **5. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 0910?

### **6. SPRAY PARAMETERS: FEB 11 & 12**

- a. Nozzles – Raindrop oriented straight back.
- b. Number of Nozzles; 28; 7 on each wing boom and 7 on each fuselage boom; evenly spaced.
- c. Ball valve configuration to isolate booms; adapter for high volume spray.
- d. Airspeed – 200 knots ground speed.
- e. Altitude – 100 feet above ground level
- f. Spray -- water only.
- g. Number of passes – 6; pass 1 head wind with both wing booms; pass 2 tail wind with both wing booms; pass 3 head wind with fuselage booms; pass 4 tail wind with fuselage booms; pass 5 head wind with all booms; pass 6 tail wind with all booms.
- h. Pressure – 40 psi

### **7. SPRAY PARAMETERS: FEB 13 & 14**

- a. Nozzles – 8070 flat fan oriented straight back.
- b. Number of Nozzles; 80; 20 on each wing boom and 20 on each fuselage boom; evenly spaced.
- c. Ball valve configuration to isolate booms; adapter for high volume spray.
- d. Airspeed – 200 knots ground speed.
- e. Altitude – 100 feet above ground level
- f. Spray -- water only.
- g. Number of passes – 6; pass 1 head wind with both wing booms; pass 2 tail wind with both wing booms; pass 3 head wind with fuselage booms; pass 4 tail wind with fuselage booms; pass 5 head wind with all booms; pass 6 tail wind with all booms.
- h. Pressure – 40psi

### **8. SPRAY PARAMETERS: FEB 15**

- a. Nozzles – 8070 flat fan oriented straight back.
- b. Number of Nozzles; 80; 20 on each wing boom and 20 on each fuselage boom; evenly spaced.
- c. Ball valve configuration to isolate booms; adapter for high volume spray.

- d. Airspeed – 200 knots ground speed.
- e. Altitude – 100 feet above ground level
- f. Spray -- water only.
- g. Number of passes – 6; pass 1 upwind wing boom; pass 2 downwind wing boom; pass 3 upwind wing boom; pass 4 downwind wing boom; pass 5 fuselage booms; pass 6 fuselage booms.
- h. Pressure – 40psi

## 9. CONTACTS:

### a. Charleston AFB: (DSN prefix 673)

(1) Billeting: Front Desk 673-3806, FAX 673-3963

- Group Reservations: Attention (b) (6) DSN (b) (6)

FAX: DSN 673-3966; COM (843) 963-3966

e-mail: (b) (6)

- Contract Qtrs: Sheraton North Charleston 843 747-1900, FAX 843 744-2530

(2) AMC TERM BASE (Transportation): 3-3060 or 4236

(3) Base Operations: 3-3060 or 3024

(4) Command Post: 673-4151 or 2531

(5) MOB: 3-3814

### b. Enterprise Rental Vehicle Agency at Charleston AFB: Attn: Rob (843) 767-5460 FAX (843) 767-1890

3 Vans (\$282 weekly rate) – (b) (6) (b) (6) (b) (6)

2 Full-Size \$210 weekly rate) – (b) (6) (b) (6)

1 Mid-Size (\$204 weekly rate) - (b) (6)

### c. Shaw AFB: (DSN prefix 965)

(1) Billeting: DSN 965-3803 ext 330, COM (803) 895-3803 ext 330

FAX: 965-4896, COM (803) 895-4896

(2) Transportation: Ext 5016

(3) Base Operations: Ext 2357

(4) Command Post: Ext 5850

### d. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046, + Ext

(1) 910 AW/CC: B GEN Michael Gjede, Ext 1243

(2) 910 AW Command Post: Ext 1315, FAX 1161

(3) 910 AW/PA: LT (b) (6) FAX 1022

(4) 910 OG/CC: COL Eric Crabtree, Ext 1257 / 1179

(5) 910 OG/OSA: Airfield Manager: (b) (6)

SOF Desk: 1069 FAX 1371

(6) 757 AS/DO: LTC (b) (6)

(7) 757 AS/DOO: Ops Admin: SMS (b) (6)

(8) 757 AS/DOS: Aerial Spray Operations Office, Ext 1111; FAX 1616

(9) 910 LG/CC: LTC (b) (6)

(10) 910 LG/LGM: CMS (b) (6)

(11) Maintenance Control: Ext 1348

(12) 910 LG/LGMS: Spray Maintenance, Ext 1132 or 1586

(13) 910 LG/LGL: CMS (b) (6)

(14) Omega/SATO Travel: Ext 1772; (800) 285-6342

(15) Cellular Spray Phones:

Mission Commander: (b) (6)

Pest Management Professional: (b) (6)

Spray Maintenance: (b) (6)



# AERIAL SPRAY OPERATIONAL SCHEDULE

## PORTLAND OR

## SIMPLEX MEETING

### 10-12 JULY 2000

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) A/C & Mission Commander: LTC (b) (6)
- (2) Pilots: CPT (b) (6) & CPT (b) (6)
- (3) Navigators: MAJ (b) (6)
- (4) Flight Engineers: CMS (b) (6)
- (5) Spray Operators: TSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: SMS (b) (6)
- (2) Crew Chiefs: SSG (b) (6)

##### c. Certified Pest Management Professional. Maj (b) (6)

**\*3 Full Size Car \$50 per day (estimate) Reservation # 522834 assigned to SMS (b) (6)**  
**Call Enterprise (503) 252-1500 upon arrival**

#### 2. SCHEDULE: (All time Local)

##### 10 Jul Monday):

**PPR # 7-10 (VADER 07)**

0800: Show at KYNG  
1000: Depart KYNG  
1450: Land Portland IAP

##### 11 Jul (Tuesday):

0800: Show Time  
0900-1030: Meet at Base Ops, Review Goals, View C130H & MASS  
1030-1200: Tour SIMPLEX Facilities, Define Design Requirements of System  
and Technical Design Proposal  
1200-1300: Lunch  
1300-1500: Review Process for Contract Issuance/Award

##### 12 Jul (Wednesday):

0600: Show Time  
0800: Depart Portland IAP OR  
1800: Land KYNG

#### 4. NOTIFICATION NECESSARY FOR THIS MISSION. Portland ANG Base Ops (DSN 638-4390, (503) 335-4390)

#### 5. PARKING PLAN. Determined at Portland Air National Guard Base

#### 6. RADIO FREQUENCIES. Spray Ground: Primary / Secondary

7. **IN-BRIEFING/De-Briefing(s):** Determined by Aircraft/Mission Commander
8. **SPRAY CONFIGURATION:**
  - a. **System:** SPG3 System #5
  - b. **Nozzle Tips/Orientation:** N/A
  - c. **Aircraft:** 99107
  - d. **Mission Identifier:** QZNRKA3919192
9. **Contract Quarters through 939 MSS/SVBC, Lodging Office.**

**Clarion Hotel**, 6233 NE 78<sup>th</sup> Court, Portland OR (\$77 per night) (confirmation # attached)  
(503) 251-2000, (800) 994-7878; FAX (503) 253-9306  
E-Mail: [info@clarionpdx.com](mailto:info@clarionpdx.com)  
WEB Site: [www.clarionPDX.com](http://www.clarionPDX.com)
10. **Enterprise Rental Car Information. (503) 252-1500**

3 Full Size Cars (Maj (b) (6) Cpt (b) (6) SMS (b) (6)  
Reservation # 522834 is assigned to SMS Rooks  
(Upon arrival at Portland ANG call the Enterprise agent to pick individuals up in front of ANGBase Ops and drive them to the Enterprise Office to sign for vehicles)
11. **CONTACTS:**
  - a. **SIMPLEX**

13340 N.E. WHITAKER WAY PORTLAND OR 97230  
(503) 257-3511; FAX (503) 257-8556  
E-Mail: [mail@simplexmfg.com](mailto:mail@simplexmfg.com)  
Web: [www.simplexmfg.com](http://www.simplexmfg.com)  
SIMPLEX President, (b) (6)  
Director of Engineering, (b) (6)  
SIMPLEX Sales, (b) (6)
  - b. **939 AW Base Operations, (503) 335-4718, DSN 638-4718**
  - c. **939 AW Command Post, (503) 335-4421, DSN 638-4421**
  - d. **Air Nation Guard, (503) 335-4390, DSN 638-4390**
  - e. **939 MSS/SVBC. (503) 335-4826, DSN 638-4826; FAX 638-4174**
12. **YOUNGSTOWN ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046, + Ext
  - a. 910 AW/CC: Brig GEN Michael Gjede, Ext 1243
  - b. 910 AW Command Post: Ext 1315; FAX 1161
  - c. 910 AW/PA: LT (b) (6)
  - d. 910 OG/OSA: Airfield Manager: (b) (6) ; FAX 1371
  - e. SOF Desk: 1069; FAX 1371
  - f. 757 AS/DO: LTC (b) (6)
  - g. 757 AS/DOO: Ops Admin: SMS (b) (6)
  - h. 757 AS/DOS: Aerial Spray Office, Ext 1111; FAX 1616
  - i. 910 LG/CC: LTC (b) (6)
  - j. 910 LG/LGM: CMS (b) (6)
  - k. Maintenance Control: Ext 1348
  - l. 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
  - m. 910 LG/LGL: CMS (b) (6)
  - n. Omega/SATO Travel: Ext 1772; 1- (800) 285 – 6342
  - o. Cellular Spray Phones: (b) (6)



**Brewer June Civ 757 AS/DOS**

**From:** Griego Mariellen Civ 939 MSS/SVBC (b) (6)  
**Sent:** Wednesday, July 05, 2000 5:09 PM  
**To:** (b) (6) Civ 757 AS/DOS  
**Cc:** (b) (6) MSgt 939 MSS/SVXM  
**Subject:** Billeting Confirmations (Youngtown Air Reserve Station)

**Importance:** High

**Message Flag:** Read

**Flag Status:** Flagged

Hi June,

Enclosed are your Confirmation Numbers per your request. Please note that each room is \$77.00 per night and there is a 6:00pm hold on the rooms on day of arrival.

You can use their website when needed at [www.clarionPDX.com](http://www.clarionPDX.com) and 800 number is 1-800-994-7878.

Names

Confirmation Numbers

1. LTC (b) (6)	:	389248
2. MAJ (b) (6)		389249
3. CPT (b) (6)		389250
4. CPT (b) (6)		389251
5. CMS (b) (6)		389253
6. TSG (b) (6)		389252
7. SSG (b) (6)		389254
8. MAJ (b) (6)		389255
9. SMS (b) (6)		389256

Have a good day, any questions please feel free to call us.

(b) (6)

Services

17 July 2000

**MEMORANDUM FOR 757 AS/DO**

**FROM: 757 AS/DOS**

**SUBJECT: Granular Dispersal Equipment for Mosquito Larviciding**

**1. PURPOSE.** The purpose of the trip to Portland Oregon was to examine the feasibility of equipping our C-130 aerial spray aircraft with granular dispersal equipment for mosquito larviciding. Habitat for mosquito larvae is often located under heavy forest canopies. Liquid larvicides are intercepted by foliage and do not reach the water bodies where mosquitoes breed. Granular larvicides penetrate the leaf canopy and are deposited in the mosquito habitat under the dense vegetation. The area occupied by mosquito larvae is much smaller than that occupied by adults, therefore less area needs to be treated. With the Differential Global Positioning systems now on our airplanes, we can efficiently treat for mosquitoes in these smaller areas.

**2. PARTICIPANTS.** Attachment 1 provides a list of the 910 AW personnel who participated in this mission. Two ferry sorties totaling 13.3 hours were flown.

**3. ITINERARY.** Personnel from the 757<sup>th</sup> Airlift Squadron traveled to Portland Oregon on 10 July 2000. LtC (b) (6) Maj (b) (6) , and SMS (b) (6) met with (b) (6) and (b) (6) from Simplex Inc on 11 July 2000. The itinerary is in attachment 2. The 910 AW personnel returned to Youngstown Air Reserve Station on 12 July 2000.

**4. DISCUSSION.** Mosquito eggs are present in soil on flood plains. The eggs hatch when flooded by events such as hurricane Floyd resulting in extreme increase of adult mosquito populations in ten days to two weeks. Large increases of adult mosquitoes can be prevented by application of larvicides to flood water so that adult mosquitoes don't rise to nuisance levels and the disease threat is eliminated. Granular formulations penetrate dense forest canopies better than liquid formulations and would provide better control in floodwater. A granular capability needs to be developed for our C130 aircraft so we can increase our mission effectiveness for controlling mosquito larvae under dense forest canopies. This is especially important since the only current DoD granular capability lies with the Army Pesticide Dispersal Unit. The Army no longer plans to field this unit, so the granular capability needs to be replaced using another platform.

**5. CONCLUSION/RECOMMENDATIONS.** The visit to Simplex in Portland, Oregon was a valuable fact finding mission. We were able to view granular application equipment used on other aircraft. From viewing this equipment it appears that an air driven system would work best for granular application with our aircraft. It is recommended that the 757<sup>th</sup> Airlift Squadron develop specifications for a granular applicator and submit them through contracting to begin the acquisition process. A single unit should be developed and tested before additional units are acquired.

(b) (6) , Major, AFRC  
Research Entomologist

Attachments

1. Operational Schedule
2. Agenda

Distribution via Staff Summary Sheet (AF Form 1768)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## PARRIS ISLAND MCRD, SC

### 10-12 OCT 2006

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: MC- MAJ (b) (6) , LTC (b) (6) , Maj (b) (6)
- (2) Navigators: LTC (b) (6)
- (3) Flight Engineers: MSG (b) (6)
- (4) Spray Operators: Msgt (b) (6) , Msgt (b) (6) mmer, SRA (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: MSG (b) (6) , TSG (b) (6) , Tsg (b) (6)
- (2) Crew Chiefs: Msg (b) (6) , TSG (b) (6)
- (3) Avionics: SSgt (b) (6)

##### c. Pest Management Professionals/Entomologist: Maj (b) (6)

Gov Vehicles provided by Parris Island MCRD: 2 Crew Vans & 1 Staff Car keys and vehicles at Base Ops.

#### 2. PPR REQUIREMENTS: 283-01

#### 3. PLANNED SEQUENCE OF EVENTS: (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

**10 OCT (Tuesday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

0900: Show Time  
1100: Take Off YNG  
1300: Land KNBC  
1300: Safety Briefing  
1430: Installation in-brief  
1530: Load chemical/Wx decision  
1745: Take off KNBC for spray sortie (begin spraying 1.25 hrs prior to sunset)  
1856: Sunset

**11 OCT (Wednesday):** wx backup or training

Check Rifle Range: None

1100: Installation Brief  
1430 Showtime  
1500: Load Chemical/Wx Decision  
1700: Take off KNBC  
1855: Sunset

**12 OCT (Thursday)** redeploy to YNG

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

- (1) Mission Commander Cell Phone

- b. **Entomologist/CPMP:**
  - (1) Wind Gauge & Compass
  - (2) UHF/VHF Radios and Cellular Phone
  - (3) Pesticide Safety Binder
- c. **Navigators:**
  - (1) Maps
  - (2) Templates
- d. **Spray Maintenance:**
  - (1) Spill Kit
  - (2) Safety Equipment
  - (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** 11 open for 8005's oriented straight down
- d. **Differential GPS:** Installed
- e. **Aircraft:** 90-9107
- f. **Mission Identifier:** QENRKA011283

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 0.75 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 2,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 8 Minutes
- h. **Flow Rate:** 5.4 gallons/Minute

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading two drums of Dibrom

**8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
Hilton Head Arpt: 118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 123.4 V**

**10. TRANSPORTATION:** Parris Island will provide two vans and staff car for transportation to and from quarters and for messing.

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP & Parris Island MCRD Project Coordinator.

**12. CONTACTS:**

- a. **Parris Island MCRD SC: (MCRD/MCAS Com: (843) 228-XXXX; Off Station Com: (843) 525-XXXX)**
  - (1) Environmental Coordinator (Spray Coordinator):  
(b) (6) DSN (b) (6), Cel (b) (6); (b) (6)  
FAX (843) 228-2616; (b) (6)
  - (2) Assistant Chief of Staff I & L: Col (b) (6), DSN (b) (6)
  - (3) Pest Control Foreman: DSN 335-3663

- (4) P.I. Motor Pool: (b) (6) DSN (b) (6)  
 (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)  
 (6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)  
 (7) P.I. Rifle Range: DSN: 335-3183/3624
- b. Beaufort MCAS SC:** (Commercial (843) 228-XXXX)  
 (1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6) ; (b) (6) DSN (b) (6)  
 (2) Fuels: DSN: 335-7049/7448/7168  
 (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
 DSN: (b) (6) . Base Ops is ext 7301/2/3  
 (After duty hours: (b) (6) , DSN: (b) (6) )  
 (4) Trans Alert/VAL: DSN: 335-7110  
 (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)
- c. Beaufort County Mosquito Control:** (b) (6)
- d. Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) , DSN: (b) (6) (b) (6)
- e. Quarters:**  
Ramada Inn \$65/night for 10 and 11. (15 rooms)  
 Ramada Inn (843) 524-2144/Fax 1704  
 Hampton Inn (843) 986-0600 (FAX 0494)  
 Sleep Inn (843) 522-3361 FAX (843) 522-9929  
 Parris Island Billeting DSN: 335-2744 (FAX: 3815); (843) 228-3960  
 Comfort Inn (843) 525-9366 (FAX 1529)  
 Best Western (Sea Island Motel) (843) 524- 4121  
 Port Royal Days Inn (843) 524-1551  
 Best Western Pt South (I-95) (843) 726-8101
- f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
 Toll Free 1 - 800 - 278 - 7046,+2 + Ext
1. 910 AW/CC: Col (b) (6)
  2. 910 AW Command Post: Ext 1315; FAX 1161
  3. 910 AW/PA: Capt (b) (6) ; FAX 1022
  4. 910 OG/CC: Col (b) (6)
  5. 910 OG: Airfield Manager, Ext 1186/1526
  6. 757 AS/DO: Maj (b) (6)
  7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
  8. 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
  9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) (b) (6) FAX 1616
  10. 910 LG/CC: Ext 1225
  11. 910 LG/LGM: Ext 1352
  12. Maintenance Control: Ext 1327
  13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
  14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
  15. Cellular Spray Phones:
    - Mission Commander: (b) (6)
    - Entomologist: (b) (6) cell, (b) (6)

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**PARRIS ISLAND MCRD, SC 10-12 OCT 2006**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 10-12 OCT 2006
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 10 Oct 2006
- e. Time/s of Application (Local): 1815-1920
- f. Acres Treated: 7,281
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) ,  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 2 Oct 2006
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 2 Oct; Assistant Chief of Staff,  
Installations and Logistics, COL Wingard; briefed by Maj Tancer/Maj Breidenbaugh

**2. OPERATIONAL:**

- a. **Mission Commander:** MAJ (b) (6)
- b. **Aircrew:**
  - (1) Pilots: LTC (b) (6) e, Maj (b) (6)
  - (2) Navigators: LTC (b) (6)
  - (3) Flight Engineers: MSG (b) (6)
  - (4) Spray Operators: Msgt (b) (6) , Msgt (b) (6) , SRA (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: MSG (b) (6) , TSG (b) (6) ,, Tsg (b) (6)
  - (2) Crew Chiefs: Msg (b) (6) , TSG (b) (6)
  - (3) Avionics: SSgt (b) (6)
- d. **Entomologist:** MAJ (b) (6)
- e. **Flying Data:**
  - (1) Spray Sorties/Hours: 1/1.0
  - (2) Ferry Sorties/Hours: 2/4.1

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom® Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 45 Gal Dibrom® (10 Oct)
- e. Gallons Pesticide Applied: 44 Gal (10 Oct)
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 8 gal/marvel oil
- h. Other Additives Used: None
- i. Application Rate: 0.77 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 12 oriented straight down
- f. Pressure: 55 p.s.i.
- g. Flow Rate: 5.4 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: none
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS (20Oct):**

- a. Winds (Direction/Speed):
  - (1) Ground: 270°/1-2 Knots; variable
  - (2) Release Altitude: 260-290° /3-5 knots
- b. Temperature (Degrees Fahrenheit): 77° F
- c. Relative Humidity: 78%
- d. Cloud Cover: Partly Cloudy
- e. Source: Ground observations at the MCRD Rifle Range/Aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: visual observation of aircraft course (GPS)
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: Weekly collections of gravid mosquitoes with attractant-baited traps and landing rates in regions frequented by recruits involved in training.
  - (2) Results: Excellent control was noted in all areas sampled.

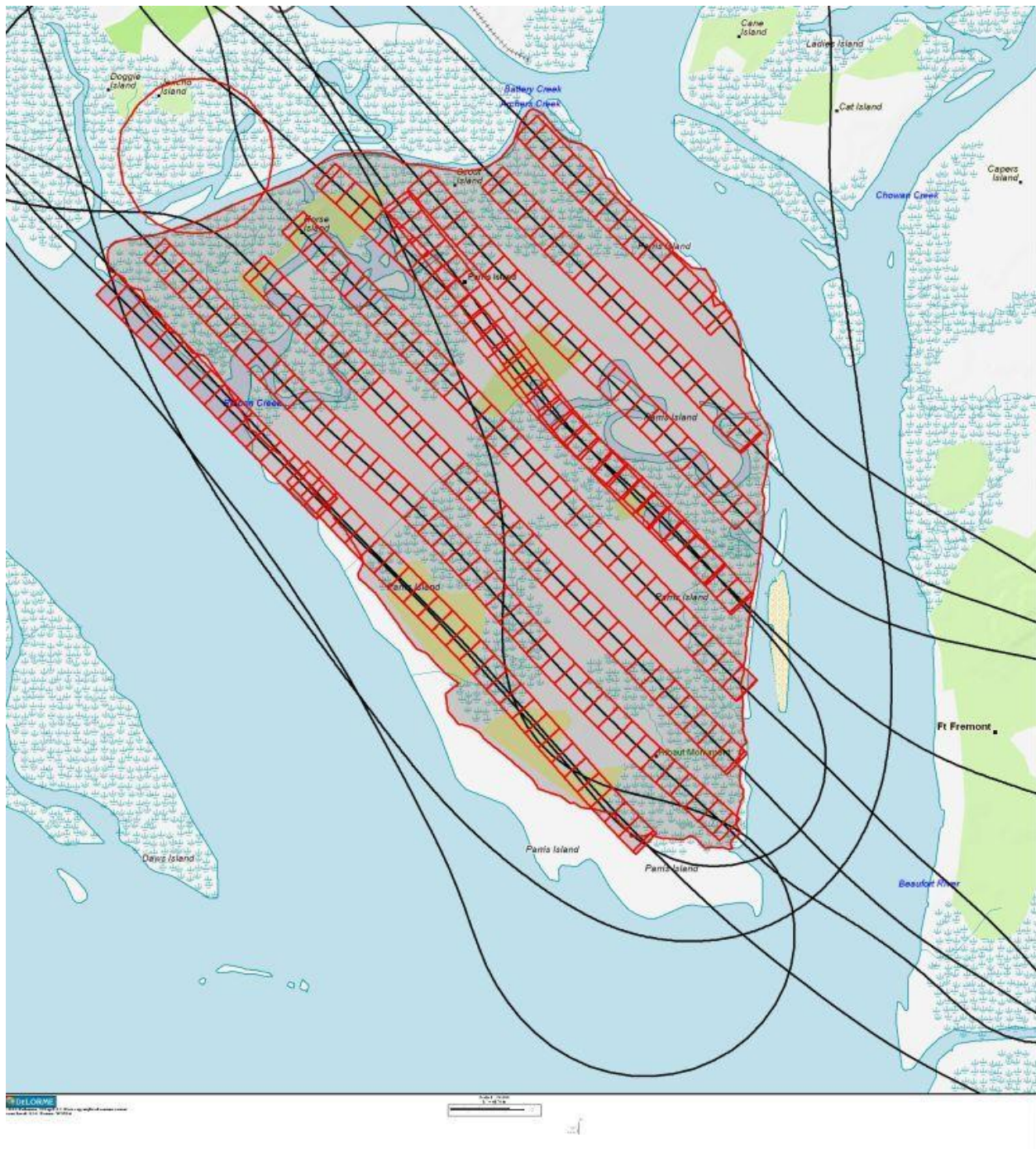
**8. REMARKS:** A single application was made over the Parris Island MCRD on 10 Oct 06 for control of biting midges (sandfleas) and mosquitoes. The application began approximately 1 hour prior to sunset to correspond with the peak activity period of the pest. The actual application required about 40 minutes. In order to save on costs we used a half drum and on full drum of pesticide resulting in 7,200 acres treated. This is slightly below the target of 7,400 acres on Parris Island but was justified by not opening a new pesticide drum at the end of the spray season. The path of the aircraft is shown in attachment 1. The relative efficacy will be determined by trap collections the following week. The next Parris Island mission is project to take place in late March early April in 2007. This was our final scheduled insecticide mission for the year.

//signed//

(b) (6) , MAJ, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL



**Attachment 1. Flight path of aircraft while making Dibrom application, 10 Oct 06. Red boxes indicates active spraying.**





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



23 AUG 07

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Parris Island MCRD SC to control of Mosquitoes

1. Objective/Purpose/Benefits of the Spray Mission. Parris Island MCRD SC for control of nuisance mosquitoes with aerial spray application to reduce negative impact of insect bites on outdoor training at the request of the Parris Island MCRD/MCAS Environmental Coordinator.

2. Capability: Spray Aircraft available on 10-12 SEP 07

3. Concept of Operations:

**10 SEP (Monday):**

0900: Show Time  
1100: Take Off YNG  
1300: Land KNBC  
1300: Safety Briefing  
1430: Installation in-brief  
1530: Load chemical/Wx decision  
1745: Take off KNBC for spray sortie (begin spraying 1.5 hrs prior to sunset)  
1937: Sunset

**11 SEP (Tuesday):** Wx back up, training, or redeploy to YNG

1500: Showtime  
1530: Load Chemical/Wx Decision  
1745: Take off KNBC  
1936: Sunset

**12 SEP (Wednesday):** Wx back up, training, or redeploy to YNG

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

4. Spray Parameters:

- a. Acreage: 7,500 Acres (Only areas determined by PMP)
- b. Altitude: 150 Ft AGL
- c. Pesticide: Dibrom® Concentrate
- d. Deploy: 2.0 Hrs
- e. Re-Deploy: 2.0 Hrs
- f. Spray Time: 16 Minutes per Sortie (or as called by PMP)

5. Aircraft Commander: Maj (b) (6)

6. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator Mr. (b) (6) DSN (b) (6)

// SIGNED //

(b) (6), CAPTAIN, USAFR  
Assistant Chief Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## PARRIS ISLAND MCRD, SC

### 10-12 SEP 2007      Change 2

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### 1. 910 AW PARTICIPANTS:

- a. **Aircrew:** MC: Maj (b) (6)
  - (1) Pilots: Maj (b) (6) , Capt (b) (6)
  - (2) Navigators: LTC (b) (6)
  - (3) Flight Engineers: CMSGT (b) (6)
  - (4) Spray Operators: SMSGT (b) (6) , MSGT (b) (6) , SRA (b) (6)
- b. **Maintenance:**
  - (1) Spray Maintenance: TSG (b) (6) , TSG (b) (6) , TSG (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6) , SRA (b) (6)
  - (3) Avionics: (b) (6)
- c. **Entomologist:** Maj (b) (6)

Gov Vehicles provided by Parris Island MCRD: 2 Crew Vans & 1 Staff Car keys and vehicles at Base Ops.

#### 2. PPR REQUIREMENTS: 255-01

**3. PLANNED SEQUENCE OF EVENTS:** (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

**10 SEP (Monday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc      Remember to check rifle range:

0900: Show Time  
1100: Take Off YNG  
1300: Land KNBC  
1300: Safety Briefing  
1430: Installation in-brief  
1530: Load chemical/Wx decision  
1745: Take off KNBC for spray sortie (begin spraying 1.5 hrs prior to sunset)  
1937: Sunset

**11 SEP (Tuesday):** Wx back up, training, or redeploy to YNG

1500: Showtime  
1530: Load Chemical/Wx Decision  
1745: Take off KNBC  
1936: Sunset

**12 SEP (Wednesday):** Redeploy to YNG

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

#### 4. ITEMS TO TAKE/NOTES:

- a. **Mission Commander:**
  - (1) Mission Commander Cell Phone
- b. **Entomologist/CPMP:**
  - (1) Wind Gauge & Compass
  - (2) VHF Radio and Cellular Phone
  - (3) Pesticide Safety Binder



- c. **Navigators:**
  - (1) Maps
  - (2) Templates
- d. **Spray Maintenance:**
  - (1) Spill Kit
  - (2) Safety Equipment
  - (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** 9 open for 8005's oriented straight down
- d. **Differential GPS:** Installed
- e. **Aircraft:** 90-9108
- f. **Mission Identifier:** QZNRKA756253

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 1.0 oz/acre or 0.75
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 3.72 gallons/Minute or 2.72 see entomologist

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading two drums of Dibrom

**8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
Hilton Head Arpt: 118.8 CTAF  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 123.45 VHF**

**10. TRANSPORTATION:** Parris Island will provide two vans and staff car for transportation to and from quarters and for messing.

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP &Parris Island MCRD Project Coordinator.

**12. CONTACTS:**

- a. **Parris Island MCRD SC: (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX)**
  - (1) Environmental Coordinator (Spray Coordinator):  
(b) (6) , DSN (b) (6) , Cel (b) (6) ; (b) (6) , (b) (6) Cel (b) (6)  
FAX (843) (b) (6)
  - (2) Assistant Chief of Staff I & L: Lt Col (b) (6) , DSN (b) (6)
  - (3) Pest Control Foreman: DSN 335-3663
  - (4) P.I. Motor Pool: (b) (6) , DSN (b) (6)
  - (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
  - (6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)
  - (7) P.I. Rifle Range: DSN: 335-3183/3624
- b. **Beaufort MCAS SC:** (Commercial (843) 228-XXXX)
  - (1) Beaufort MCAS Environmental: (b) (6) , DSN (b) (6) ; (b) (6) DSN (b) (6)

- (2) Fuels: DSN: 335-7049/7448/7168  
 (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
 DSN: (b) (6) . Base Ops is ext 7301/2/3  
 (After duty hours: (b) (6) , DSN: (b) (6) )  
 (4) Trans Alert/VAL: DSN: 335-7110  
 (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)

c. **Beaufort County Mosquito Control:** (b) (6)

d. **Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) , DSN: (b) (6)

e. **Quarters:**

**14 Rooms Comfort Inn and Suites (New hotel) \$94.99/night (843) 379-9400**

Ramada Inn (843) 524-2144/Fax 1704  
 Hampton Inn (843) 986-0600 (FAX 0494)  
 Sleep Inn (843) 522-3361 FAX (843) 522-9929  
 Parris Island Billeting DSN: 335-2744 (FAX: 3815); (843) 228-3960  
 Comfort Inn (843) 525-9366 (FAX 1529)  
 Best Western (Sea Island Motel) (843) 524- 4121  
 Port Royal Days Inn (843) 524-1551  
 Best Western Pt South (I-95) (843) 726-8101

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC:, Ext 1243
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Capt (b) (6) ; FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Lt Col (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) cell, (b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## MOUNTAIN HOME AFB RANGE, ID

### 10 – 15 OCT 2000

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: MAJ (b) (6)
- (2) Pilots: MAJ (b) (6) , CPT (b) (6)
- (3) Navigators: MAJ (b) (6)
- (4) Flight Engineers: CMS (b) (6)
- (5) Spray Operators: TSG (b) (6) , MSG (b) (6) , TSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSG (b) (6) , SSG (b) (6) , SSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6) , TSG (b) (6)
- (3) Avionics: SSG (b) (6)

##### c. Ground Support/CPM Professionals: LTC (b) (6) , LTC (b) (6) , CPT (b) (6) , CPT (b) (6)

#### 2. SCHEDULE: (All Local) Times

##### 10 OCT (Tuesday)

1000: Show at KYNG

**PPR # - 284-1**

1200: Depart KYNG

1530: Land KMUO/Safety Briefing

A/R: Maintenance configures aircraft; Aircrew plan next day's mission

##### 11 OCT (Wednesday): Range Time 0800-1245

0630: Show time

0752: Sunrise

A/R: Take Off KMUO (As determined by Mission Cmdr)

1030: Land KMUO

##### 12 OCT (Thursday): Range Time 0800-1045

0630: Show time

0753: Sunrise

A/R: Take Off KMUO (As determined by Mission Cmdr)

1030: Land KMUO

##### 13 OCT (Friday): Range Time 0800-1015 and 1345-1900

0630: Show time

0755: Sunrise

A/R: Take Off KMUO (As determined by Mission Cmdr)

A/R: Land KMUO

##### 14 OCT (Saturday): Range Time 0800-0900 and 1500-1800

0600: Show time

0756: Sunrise

0800: Take Off KMUO

0900: Land KMUO (Or as required)

1230: Take Off KMUO

1330: Land KHIF

**PPR # - None Required at Hill AFB**

##### 15 OCT (Sunday)

0730: Show time

0900: Take Off KHIF

1600: Land KYNG



**3. ITEMS TO TAKE:**

- a. **Mission Commander:** Hand Held GPS, 1 Cellular Phone
- b. **Entomologist:** Swath Kit, UHF Radio, Cardholders, Water Sensitive Cards, Tool Kit, VHF Radio, Cell Phone, Laptop Computers and accessories
- c. **Navigator:** Maps/Map Bag, Validation Map, Toshiba Computer
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Mobility Kit, MASS Spares, Spill Kit, Pesticide Safety Binder, Safety Equipment and Tool and other equipment

**4. NOTIFICATION NECESSARY FOR THIS MISSION:** None Required.

**5. PARKING PLAN:**

**6. RADIO FREQUENCIES:**

- a. **Air To Ground:** Entomologists: 292.2(range); Maintenance 384.7
- b. **Mt Home:** PTD: 372.2, ACC CP (Raymond 27): 381.3, ATIS: 273.5, TWR: 133.85 / 253.5, GND: 120.5 / 275.8, RAPCON: 259.1, Salt Lake Center: 387.15/363.0
- c. **Range:** Saylor Creek Range: 292.2 pri / 381.3 sec  
Sagebrush Control: 251.2, Paradise MOA: 272.7/236.05/225.55  
Owyhee MOA: 392.2/266.35, Bruneau/Sheep Creek MOA: 251.875

**7. IN-BRIEFING:** Upon Arrival.

**8. SPRAY CONFIGURATION FOR 11 OCT:**

- a. **System:** SP-2G
- b. **Nozzle Tips/Orientation:** Oil Spill Dispersant Nozzles/Straight Back
- c. **Number:** Fuselage 30 (15 each side)
- c. **Booms:** Fuselage Booms
- d. **Aircraft:** 99105 (0910? spare)
- e. **Profile:** Planned HV Profile

**9. SPRAY CONFIGURATION FOR 12 OCT:**

- a. **System:** SP-2G
- b. **Nozzle Tips/Orientation:** 8070 Flat Fan Wing; 8050 Flat Fan Fuselage/Straight Back
- c. **Number:** Upwind Wing Boom 46; Downwind Wing Boom 10 on most inboard sites; Fuselage 40 (20 each side)
- d. **Aircraft:** 99105 (Mission Identifier: QZNRKA010284)
- e. **Profile:** Planned HV Profile

**10. SPRAY CONFIGURATION FOR 13-14 OCT:** Will depend on results from previous days

**11. SPRAY PARAMETERS:**

- a. **Altitude:** 100' AGL
- b. **Swath Width.** 125 feet
- c. **Flow Rate.** 581 Gallons/Minute
- d. **Application Rate.** Simulate 10 Gal spray/Acre 11 OCT and 5 Gal spray/Acre 12 OCT
- e. **Ground Speed:** 200 Knots

**12. SPRAY MIXING AND LOADING:** One quart of Control per 475 gal water added to tanks.

**13. SPRAY MONITORING OR TESTING: Performed by the CPMPs**

**NOTES:** Will use water sensitive cards.

**14. CONTACTS:**

**a. Mountain Home AFB, ID:**

- (1) Base Ops: DSN: 728-2222; COMM: (208)-828-2222
- (2) Billeting: x6451 FAX: 4797
- (3) Transportation: x2215 FAX: 1619
- (4) Weather to be provided:
  - Davis Mothan AFB, SMS (b) (6) , DSN (b) (6)
  - Mountain Home AFB, Capt (b) (6) , DSN (b) (6)

**b. Hill AFB, UT**

- (1) Base Ops: DSN: 777-1861; COMM: (801)-777-1861
- (2) Billeting: x1844/0802/4007 FAX: 2014
- (3) LaQuinta Inn #686, 1965 North 1200 West, Layton UT, \$49 per night, (801) 776-6700
- (4) Command Post: x3007

**b. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, 2, + Ext

- (1) 910 AW/CC: Brigadier General Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: LT (b) (6) ; FAX 1022
- (4) 910 OG/CC: COL (b) (6)
- (5) 910 OSF/OSA, Airfield Manager:(b) (6)  
Assistant Air Field Manager (ACAM), (b) (6)
- (6) 910 OG/SOF (Supervisor of Flight Desk): Ext 1069; FAX 1371
- (7) 757 AS/DO: LTC (b) (6)
- (8) 757 AS/DOO, Ops Admin: SMS (b) (6) ; FAX 1657
- (9) 757 AS/DOS: Aerial Spray Office, (b) (6) , FAX 1616
- (10) 910 LG/CC: (Acting) Maj (b) (6)
- (11) 910 LG/LGM: CMS (b) (6)
- (12) Maintenance Control: Ext 1348
- (13) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
- (14) 910 LG/LGL: CMS (b) (6)
- (15) Omega/SATO Travel: Ext 1772; 1 (800) 285 - 6342
- (16) Cellular Spray Phones:(b) (6)

3 October 2000

**MEMORANDUM FOR 910 OG/CC**

**FROM: 757 AS/DOS**

**SUBJECT: Saylor Creek Range, Idaho, High Volume Test Mission 10-15 Oct 00**

1. **Purpose:** The purpose of this mission was to characterize our aerial spray aircraft for a high volume herbicide mission at Saylor Creek Range, Idaho, that is proposed for November 2000.
2. **Participants:** The participants are listed in Attachment 1, the Mountain Home Operational Schedule for 10-15 October 2000.
3. **Itinerary:** The itinerary is listed in the Mountain Home Operational Schedule (Atch 1). Four ferry sorties were flown totaling 11.4 hours and three spray sorties were flown totaling 5.5 hours.
4. **Discussion:**
  - a. Two configurations with raindrop nozzles were tested. Spray deposition was collected on kromekote cards. The first configuration was raindrop nozzles on the fuselage booms only. The application rate desired was 10 gallons per acre on a 125' swath width. Winds were 7-9 mph at 160 degrees, the temperature was 41degrees F and the humidity was 71%. The aircraft was flying 180 – 360 degrees so there was a slight crosswind component from the east. Spray deposition was excellent, but effective swath width was 75 feet rather than the desired 125 feet.
  - b. The second configuration was raindrop nozzles on the upwind wing boom and fuselage booms. This configuration also yielded excellent spray deposition. The application rate desired was 5 gallons per acre on a 250' swath width. Winds were 5 mph at 218 degrees and the aircraft was flying 180 degrees so there was a crosswind component from the west. Temperature was 44 degrees F and humidity was 91%. Effective swath width proved to be 200 feet with this configuration. Visual observation of the spray test using only the upwind wing boom with fuselage booms showed that the spray from the fuselage booms dropped from the aircraft and was deposited upwind of spray from the upwind wing boom. Spray from the wing was lifted by wind vortices created by air moving over the wings. It drifted downwind over the top of that from the fuselage booms and was deposited downwind of spray from the fuselage booms (Figure 1). Deposition from fuselage booms was heavier than deposition from the wing boom, however, there were no gaps in spray coverage.
  - c. Testing with flat fan nozzles was planned, but not completed due to unfavorable weather, and because tests with the raindrop nozzles yielded excellent spray deposition patterns for the high volume mission.

## 5. Conclusions/Recommendations:

- a. Both configurations will work for the high volume herbicide application planned for Saylor Creek Range in November 2000. The combination upwind wing boom and fuselage booms is recommended because the wider swath width will require less application time than with fuselage booms only. Spray-on time for a 200' swath width would be 16 minutes as opposed to 42 minutes with a 75' swath width.
  - b. The disadvantage of the wider swath width is less spray mix is applied per acre. The wider swath width tested was at the low end of the recommended 5 to 15 gallons per acre. I recommend increasing the flow rate from 581 to 651 gallons per minute to give a higher application rate for the 200' swath width desired. The application rate would be 7 gallons per acre. The required number of sorties would be 6. The required number of sorties for a 10 gallon per acre application would be 8. Thirty-three nozzles would be required as opposed to 30 used during this test.
  - c. Because of heavier deposition from the fuselage, 4 nozzles should be used on each fuselage boom instead of the 5 used during this test, and 25 nozzles should be used on the upwind wing boom instead of the 20 used during this test.
6. The actual High Volume Herbicide Spray mission for Saylor Creek Range ID is scheduled 13-19 Nov 00. With the excellent test results completed during this mission we anticipate no problems during the actual spray mission scheduled in November.

(b) (6), PhD, Lt Col, AFRC  
Research Entomologist

Attachment  
Operational Schedule

On Base Distribution will be made via Staff Summary (AF Form 1768) and e-mail

Cc:  
366 CES/CC  
HQ ACC/CEO  
AFRC/DO/DOOM, PA, HO



**Figure 1:** Downwind spray movement with nozzles located on the upwind wing boom and fuselage booms.

# AERIAL SPRAY OPERATIONAL SCHEDULE

## AVON PARK, FL

### 10-16 Jan 05

**PURPOSE/OBJECTIVE/BENEFIT:** Determine effective swath widths for various altitudes using fuselage ULV configuration

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

(1) Pilots: \*\*\*MAJ (b) (6), MAJ (b) (6) CPT (b) (6), LTC (b) (6)

(2) Navigators: LTC (b) (6)

(4) Flight Engineers: MSG (b) (6)

(5) Spray Operators: \*MSG (b) (6), MSG (b) (6)

##### b. Maintenance:

(1) Spray Maintenance: \*TSG (b) (6), TSG (b) (6)

(2) Avionics: MSG(b) (6)

(3) Crew Chiefs: \*MSG (b) (6), SSG (b) (6)

##### c. Entomologists: \*Capt (b) (6) Capt (b) (6), LTC (b) (6), MAJ (b) (6)

**Enterprise (Sebring) Gina (863) 385-6969; FAX (863) 385-3416, Vehicles: 4 \*Full size/\$44; \*\*\*2 SUV/\$57  
Vehicles will be dropped off at the control tower, they will have the keys.**

#### 2. SCHEDULE: (All time Local)

10 JAN (Monday):

PPR # - Not Req

0900: Show Time KYNG

1100: Depart KYNG

1400: Land KAGR

11 JAN (Tuesday): Range Times 0900-1200, call AGR Tower & Fire Dept

0730: Show Time

0730: Fuel

0900: Depart

1200: Land

12 JAN (Wednesday): Range Times 0900-1200, call AGR Tower & Fire Dept

0730: Show Time

0900: Depart

1200: Land

13 JAN (Thursday): Range Times 0900-1200, call AGR Tower & Fire Dept

0730: Show Time

0900: Depart

1200: Land

14 JAN (Friday): Range Times 0900-1200, call AGR Tower & Fire Dept

0730: Show Time

0900: Depart

1200: Land

15 JAN (Saturday): Range Times 0900-1200, call AGR Tower & Fire Dept

0730: Show Time

0900: Depart

1200: Land

16 JAN (Sunday):  
0800: Show Time  
1000: Depart  
1300: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Navigator:** Maps with “No-Spray” Areas Marked
- b. **Certified Pest Management Professionals:**
  - (1) Water-Sensitive Cards
  - (2) 1 Signal Mirror
  - (3) 1 Spot Light
  - (4) 1 Engineer Wheel
  - (5) Ground Maps
  - (6) Laptop Computer
  - (7) Digital Camera
  - (8) Oil-sensitive cards
  - (9) Spinners
  - (10) Wooden dowels

**4. AIR TO GROUND FREQUENCIES:**

- a. Spray: Primary 392.2; Secondary 340.8
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. Avon Park: TWR-292.2 (p), 126.15, 276.6 (s) Hrs 0700-2300 M-F, S-S per flying schedule  
DSN 968-7138
- e. MacDill: TWR-123.7; GND-121.65; ATIS-133.825; CMD POST-311.0; PTD-372.2

**5. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 99106
- c. Mission Identifier: QZNRKA405010

**6. MISSION PROTOCOLS:**

Avon Park Spray Testing Itinerary  
10-16 Jan 05

- 1. Test 1: determination of effective swath width with fuselage ULV configuration @ **300’** AGL
  - a. Spray mineral oil from fuselage booms using 9 (4 left side: 5 right side) 8005 nozzles at, 200 knots
    - i. We are looking for a crosswind spray (see below)
    - ii. 2 or 3 replications depending on results
- 2. Test 2: determination of effective swath width with fuselage ULV configuration @ **500’** AGL
  - a. Same as test one except change altitude to **500’** AGL, 200 knots
    - i. Crosswind pattern
    - ii. 2 or 3 replications
- 3. Spray Parameters (use for all tests):
  - a. Booms -- Fuselage only.
  - b. Nozzles - 8005 TeeJet
  - c. Number of Nozzles – 9 nozzles 4 on left, 5 on right
  - d. Airspeed -- 200 knots ground speed.
  - e. Altitude -- 300’/500’ above ground level.
  - f. Wind – Crosswind component.



g. Flow Rate – 4.5 gallons/minute

4. Mission Protocols:

- a. Determination of effective swath width with fuselage ULV configuration. Glass slides will be used to collect and sample droplets. Ten sampling stations will be setup along either Smith Road (east/west road south of Bravo Range), Oliver Road (north/south road), or Frostproof Rd (NW/SE). This is a crosswind test, thus, we are looking for the wind direction to be within  $\pm 30^\circ$  of the direction of the road. Additionally, we need the average winds to be below 10 mph. Because wind will play an important part in these tests please be prepared to wait for appropriate winds during the entire range time. We are aiming for a transect length of 3 miles. Some of the locations will not support this distance but we will try to get close.
- b. The first test will be a 300' AGL. We need the system to have stabilized prior to reaching the sampling points. 15 seconds prior to the sampling point and 15 seconds after should be sufficient (30 seconds total) but this value could change as we increase the altitude. Spray Operators: Please record the spray-on time and pressure. Three passes over the target is all that is require for a given day's test.
- c. Microscope slides will be retrieved 25 minutes after the plane has passed. Number and size of the droplets will be determined.

7. **CONTACTS:**

- a. Quarters: (JTR Lodging/\$62)  
-- **Sebring/Avon Park: Inn on the Lakes, (863) 471-9400, Group Reservation:**  
<http://www.innonthelakessebring.com> POC is (b) (6)  
-- Quality Inn (863) 385-4500 (\$64 w/Tax Exempt Form) FAX (863) 385-8436  
-- Jacaronda (863) 453-2211; 19 East Main St, Avon Park, FL \$ 27.29  
-- Oak Tree Inn (863) 453-3165  
-- Days Inn (863) 382-1148, 800 329-7466
- b. Transportation:  
**Sebring Enterprise POC Gina (863) 385-6969; Fax (863) 385-3416**  
Avon Park Enterprise (863) 452-5483; Fax (863) 452-5947  
1 SUV \$57; 4 Full size car \$44 + \$2 state surcharge; Unlimited mileage  
(All vehicles will be at Avon Park Flight Ramp, keys will be with tower)
- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350  
(1) Weather: MacDill AFB Forecaster (DSN 968-2854)  
(2) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)  
(3) MacDill AFB Ops Gp CC 968-3014
- d. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX  
DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN  
Avon Control Tower & Range Control Scheduling DSN 968-7176  
Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number  
(1) Range Operations Manager: (b) (6) , Bldg 236, (b) (6)  
(2) Avon Range Control Tower: ext 176  
(4) Flight Chief of Civ Engineer: (b) (6) Bldg 29, (b) (6)  
(5) Chief, Environmental Flight: (b) (6) , Bldg 29, (b) (6) also Wildlife Biologist (b) (6)  
(6) Fuels: ext 118 or Cel (b) (6)  
(7) Range Support Manager: Mr (b) (6) Bldg 29, (b) (6)  
(8) Range Control/Schedule: (b) (6) , Bldg 41, (b) (6)  
**See Attached Avon Park Org directory for additional listings**  
(9) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)

Range VHF: 126.15

- f. **Sebring AP:** Mgr: (b) (6) (b) (6) (fuel needs)  
BEEPER: 1 (863) 999-8622 ENTER YOUR PHONE# ENTER #  
Asst Mgr: (b) (6)  
**Fuel is coordinated for 10k at 0730L every day**
- g. **Youngstown ARS:** DSN: 346-XXXX; (330) 609-XXXX; 1 - 800 - 278 - 7046, + Ext
- (1) 910 AW/CC: Ext 1243
  - (2) 910 AW Command Post: Ext 1315, FAX 1161
  - (3) 910 AW/PA: Ext 1236, FAX 1022
  - (4) 910 OG/CC: Ext 1257 / 1179
  - (5) 910 OG/OSA: Airfield Manager: (b) (6)
  - (6) 757 AS/DO: (b) (6)
  - (7) 757 AS/DOO: Ops Admin, SMS (b) (6), FAX 1657
  - (8) 757 AS/DOS: Aerial Spray Office, (b) (6), FAX 1616
  - (9) 910 LG/CC: LTC (b) (6)
  - (10) 910 LG/LGM: Ext 1352
  - (11) Maintenance Control: Ext 1348
  - (12) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
  - (13) Omega/SATO Travel: Ext 1772; (800) 285-6342
  - (14) Cellular Spray Phones:
    - Entomologist (b) (6)
    - (b) (6) cell phone (b) (6)
    - Mission Cmdr: (b) (6)
    - Spray MX: (b) (6)



**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
**3976 King Graves Rd Unit 26**  
**Vienna OH 44473-5926**



3 Jan 2005

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray Test and Training at Avon Park, FL

1. Purpose/Objectives/Benefits: Determine effective swath widths for various altitudes of fuselage spray and to provide continuous training for aerial spray air and ground crews.
2. Capability: Spray Aircraft 89-9106 Available, 10-16 Jan 2005.
3. Concept of Operations:
  - 10 JAN (Monday): PPR # - Not Req
    - 0900: Show Time KYNG
    - 1100: Depart KYNG
    - 1400: Land KAGR
    - 1530: Depart
    - 1600: Land
  - 11 JAN (Tuesday): Range Times 0900-1200, call AGR Tower & Fire Dept
    - 0730: Show Time
    - 0730: Fuel
    - 0900: Depart
    - 1200: Land
  - 12 JAN (Wednesday): Range Times 0900-1200, call AGR Tower & Fire Dept
    - 0730: Show Time
    - 0900: Depart
    - 1200: Land
  - 13 JAN (Thursday): Range Times 0900-1200, call AGR Tower & Fire Dept
    - 0730: Show Time
    - 0900: Depart
    - 1200: Land
  - 14 JAN (Friday): Range Times 0900-1200, call AGR Tower & Fire Dept
    - 0730: Show Time
    - 0900: Depart
    - 1200: Land
  - 15 JAN (Saturday): Range Times 0900-1200, call AGR Tower & Fire Dept
    - 0730: Show Time
    - 0900: Depart
    - 1200: Land

16 JAN (Sunday):  
0800: Show Time  
1000: Depart  
1300: Land KYNG

4. Spray Configuration:
  - a. MASS – SP2G
  - a. Aircraft Number: 90-9106
  - b. Mission Identifier: QZNRKA405010
5. Mission Protocols: Avon Park Spray Testing Itinerary  
10-16 Jan 05
  1. Test 1: determination of effective swath width with fuselage ULV configuration @ **300'** AGL
    - a. Spray mineral oil from fuselage booms using 9 (4 left side: 5 right side) 8005 nozzles at, 200 knots
      - i. We are looking for a crosswind spray (see below)
      - ii. 2 or 3 replications depending on results
  2. Test 2: determination of effective swath width with fuselage ULV configuration @ **500'** AGL
    - a. Same as test one except change altitude to **500'** AGL, 200 knots
      - i. Crosswind pattern
      - ii. 2 or 3 replications
  3. Spray Parameters (use for all tests):
    - a. Booms -- Fuselage only.
    - b. Nozzles - 8005 TeeJet
    - c. Number of Nozzles – 9 nozzles 4 on left, 5 on right
    - d. Airspeed -- 200 knots ground speed.
    - e. Altitude -- 300'/500' above ground level.
    - f. Wind – Crosswind component.
    - g. Flow Rate – 4.5 gallons/minute
  4. Mission Protocols:
    - a. Determination of effective swath width with fuselage ULV configuration. Glass slides will be used to collect and sample droplets. Ten sampling stations will be setup along either Smith Road (east/west road south of Bravo Range), Oliver Road (north/south road), or Frostproof Rd (NW/SE). This is a crosswind test, thus, we are looking for the wind direction to be within  $\pm 30^\circ$  of the direction of the road. Additionally, we need the average winds to be below 10 mph. Because wind will play an important part in these tests please be prepared to wait for appropriate winds during the entire range time.
    - b. The first test will be a 300' AGL. We need the system to have stabilized prior to reaching the sampling points. 15 seconds prior to the sampling point and 15 seconds after should be sufficient (30 seconds total) but this value could change as we increase the altitude. Spray Operators: Please record the spray-on time and

pressure. Three passes over the target is all that is require for a given day's test.

- c. Microscope slides will be retrieved 25 minutes after the plane has passed.  
Number and size of the droplets will be determined.
- 6. Aircraft Commander: Major (b) (6)
- 7. Support required at Avon Park Bombing Range is thru the Range Manager.
- 8. If you have any questions concerning this mission please contact DSN (b) (6)

//SIGNED//

(b) (6), Maj, USAFR  
Aerial Spray Coordinator

# AERIAL SPRAY OPERATIONAL SCHEDULE

## NSB, KINGS BAY, GA

### 11-13 April 2008 **Change 1**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at NSB, Kings Bay, GA.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: MC: Capt (b) (6) , Maj (b) (6) , Capt (b) (6)
- (2) Navigators: LTC (b) (6)
- (3) Flight Engineers: Msgt (b) (6) ,
- (4) Spray Operators: Smsgt (b) (6) , Msgt (b) (6) , Msgt (b) (6) , Msgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , MSgt (b) (6) , SRA (b) (6)
- (2) Crew Chiefs: Ssgt (b) (6) A1C (b) (6)
- (3) Avionics: Ssgt (b) (6)

##### c. Entomologist: Maj (b) (6)

#### 2. PPR REQUIREMENTS: 41102

#### 3. PLANNED SEQUENCE OF EVENTS: (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

##### 11 APR (Friday)

1600 Show  
1700 Depart YNG  
2000 Land KNIP  
2030 Safety Brief

**12 APR (Saturday) :** Aircraft will squawk 5107 prior to entering P-50. Ensure pilots are given this squawk from ATC!!  
Flight plan: KNIP – Kings Bay – KNIP at 3000' on IFR flight plan with delay at Kings Bay.

TBD Brief  
1500 Weather call/Crew show  
1530 Load Chemical  
1800 Depart KNIP  
Sunset: 1952

##### 13 APR (Sunday)

1000 Show time  
1200 Depart KNIP  
1500 Land YNG

**\*\*No weather back up day available based on Kings Bay scheduled events.**

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

- (1) Mission Commander Cell Phone

##### b. Entomologist:

- (1) Wind Gauge & Compass
- (2) VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder

##### c. Navigators:

- (1) Maps
- (2) Templates

- d. **Spray Maintenance:**
  - (1) Spill Kit
  - (2) Safety Equipment
  - (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** size = 8005; 20 open for 7.4 flow rate; 15 open for 5.5); oriented straight down.
- d. **Differential GPS:** Wingman Installed
- e. **Aircraft:** 89-9105
- f. **Mission Identifier:** QZNRKA096102

**6. Adult mosquito control spray Parameters: (Kings Bay)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 1.0 oz/acre or 0.75 oz/acre see entomologist
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 2,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 15,000 Acres
- g. **Spray-On Time:** 32 Minutes
- h. **Flow Rate:** 7.4 gallons/minute or 5.55 gal/min see entomologist

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading 3 or 4 drums of Dibrom for Kings Bay (see entomologist).

**8. PARKING PLAN NAS Jacksonville, FL**

**9. AIR TO GROUND RADIO FREQUENCIES:**

Navy Jax Ops-	310.2	Tower	120.0/340.2
Ground	128.6/336.4	<b>Spray Ground:</b>	<b>123.45 VHF</b>
ATIS	281.0		

**10. TRANSPORTATION:**

Enterprise Car Rental: 904-772-7007  
 3 FS Cars ( Townsend, Galati, Lott) \$40/day+5gov policy  
 2 Mini Vans (Darby, Hefner) \$75/day+5gov policy

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP and by NSB Kings Bay pest control.

**12.. Quarters:**

Hampton Inn Jacksonville-Orange Park (904)-777-5313 \$79/night  
 6135 Youngerman Circle, Jacksonville, FL 32244

**13. CONTACTS:**

- a. **Naval Submarine Base Kings Bay, GA (Com: (912) 573-xxxx; DSN 573-xxxx)**
  - (1) Spray Coordinator: (b) (6)



(2) Strategic Weapons Facility Atlantic (SWFLANT) x0551

**b. Naval Air Station Jacksonville, FL (NAS JAX)**

- (1) For requesting PPR: DSN 942-2511
- (2) Transient line office, DSN 942-3843
- (3) Weather ??
- (4) Tower – 942-2516

**c. FAA JAX Center.** Mr. (b) (6), Mission Specialist (b) (6)

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Capt (b) (6) FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6); FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Breidenbaugh: (b) (6)

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **NSB, KINGS BAY, GA**

### **11-13 April 2008**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at NSB, Kings Bay, GA.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Pilots: MC: Capt (b) (6) , Maj (b) (6) , Capt (b) (6)
- (2) Navigators: LTC (b) (6)
- (3) Flight Engineers: Msgt (b) (6) ,
- (4) Spray Operators: Smsgt (b) (6) , Msgt (b) (6) , Msgt (b) (6) , Msgt (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , MSgt (b) (6) , SRA (b) (6)
- (2) Crew Chiefs: Ssgt (b) (6) , A1C (b) (6)
- (3) Avionics: Ssgt (b) (6)

##### **c. Entomologist:** Maj (b) (6)

#### **2. PPR REQUIREMENTS: 41102**

#### **3. PLANNED SEQUENCE OF EVENTS:** (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

##### **11 APR (Friday)**

1600 Show  
1700 Depart YNG  
2000 Land KNIP  
2030 Safety Brief

12 APR (Saturday) : Aircraft will squawk 5107 prior to entering P-50. Ensure pilots are given this squawk from ATC!!  
Flight plan: KNIP – Kings Bay – KNIP at 3000' on IFR flight plan with delay at Kings Bay.

TBD Brief  
1500 Weather call/Crew show  
1530 Load Chemical  
1800 Depart KNIP  
Sunset: 1952

##### **13 APR (Sunday)** If Saturday is a weather day then Saturday schedule is repeated here

1000 Show time  
1200 Depart KNIP  
1500 Land YNG

**\*\*If weather cancellation on Saturday, schedule will slip to Sunday evening for Spray. Everything else will slip to Monday morning flight to Beaufort with a swap to non-spray aircraft.**

#### **4. ITEMS TO TAKE/NOTES:**

##### **a. Mission Commander:**

- (1) Mission Commander Cell Phone

##### **b. Entomologist:**

- (1) Wind Gauge & Compass
- (2) VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder

##### **c. Navigators:**

- (1) Maps
- (2) Templates

**d. Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** size = 8005; 20 open for 7.4 flow rate; 15 open for 5.5); oriented straight down.
- d. **Differential GPS:** Wingman Installed
- e. **Aircraft:** 89-9105
- f. **Mission Identifier:** QZNRKA096102

**6. Adult mosquito control spray Parameters: (Kings Bay)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 1.0 oz/acre or 0.75 oz/acre see entomologist
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 2,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 15,000 Acres
- g. **Spray-On Time:** 32 Minutes
- h. **Flow Rate:** 7.4 gallons/minute or 5.55 gal/min see entomologist

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading 3 or 4 drums of Dibrom for Kings Bay (see entomologist).

**8. PARKING PLAN NAS Jacksonville, FL**

**9. AIR TO GROUND RADIO FREQUENCIES:**

Navy Jax Ops-	310.2	Tower	120.0/340.2
Ground	128.6/336.4	<b>Spray Ground:</b>	<b>123.45 VHF</b>
ATIS	281.0		

**10. TRANSPORTATION:**

Enterprise Car Rental: 904-772-7007  
 3 FS Cars ( Townsend, Galati, Lott)\$40/day+5gov policy  
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**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP and by NSB Kings Bay pest control.

**12.. Quarters:**

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- (4) Tower – 942-2516

**c. FAA JAX Center.** Mr. (b) (6) , Mission Specialist (b) (6)

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

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4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - (b) (6)



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON-AERIAL SPRAY  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926

26 Mar 2008

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at King's Bay NSB, GA

1. Objective/Purpose/Benefits of the Spray Mission. Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Kings Bay NSB, GA.

2. Capability: Spray Aircraft available on 11-13 APR 2008

3. Concept of Operations:

11 APR (Friday)

1600 Show

1700 Depart YNG

2000 Land KNIP

2030 Safety Brief

12 APR (Saturday) :

TBD In-Brief with NAS Personnel

1500 Weather call/Crew show

1530 Load Chemical

1800 Depart KNIP

Sunset: 1952

13 APR (Sunday)

1100 Show time

1200 Depart KNIP

1500 Land YNG

4. Spray Parameters:

a. Acreage: 15000 Acres (Only areas determined by PMP)

b. Altitude: 150 Ft AGL

c. Pesticide: Dibrom® Concentrate;

d. Deploy: 3.0 Hrs/ Redeploy: 3.0

f. Spray Time: 30 Minutes

5. Aircraft Commander Maj (b) (6)

6. Support required at Kings Bay NSB has been coordinated.

// SIGNED //

(b) (6)

CAPT, USAFR

Assistant Chief of Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 11-14 August 2009

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks and Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) MC: LTC (b) (6)
- 2) Pilots: LTC (b) (6) , Capt (b) (6)
- 3) Navigators: LTC (b) (6)
- 4) Flight Engineers: MSgt (b) (6)
- 5) Spray Operators: MSgt (b) (6) , Msgt (b) (6)

##### b. Maintenance:

- 1) Spray Maintenance: TSgt (b) (6) , SSgt (b) (6) , TSgt (b) (6)
- 2) Crew Chief(s): TSgt (b) (6) , SRA (b) (6)
- 3) Avionics: TSgt (b) (6)

##### c. Entomologists/Ground Support: Maj (b) (6)

#### 2. SCHEDULE: (All Local Times)

##### 11 AUG (Tuesday):

1000: Showtime  
1200: Depart KYNG  
1430: Land KRDR/Safety Briefing  
1630: WX decision/Load chemical  
1830: Takeoff KRDR (Adulticide Spray Sortie)  
Sunset: 2048

##### 12 AUG (Wednesday):

1630: Showtime/WX decision/Load Chemical  
1830: Takeoff KRDR (Adulticide Spray Sortie)  
Sunset: 2046

##### 13 AUG (Thursday):

1630: Showtime/WX Decision/Load Chemical  
1830: Takeoff KRDR (Adulticide Spray Sortie)  
Sunset: 2044

##### 14 AUG (Thursday):

1130: Show time  
1330: Takeoff KRDR  
1730: Land KYNG

#### 3. ITEMS TO TAKE

a. **Mission Commander:** Cellular Phone, Mission Folder

b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder,  
1 VHF Radio, Water Sensitive Cards, Card Holders with  
Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors,  
Project Notebook, Entomologist's Tool Kit

c. **Navigator:** Maps/Map Bag, Validation Map

d. **Spray Operator:** Safety Gear, Calibration Tables

e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

#### 4. PPR: 81101KB

5. **RADIO FREQUENCIES:** Air To Ground Primary VHF 123.45 KRDR Tower 124.9 V; Grand Forks International 118.4 V

#### 6. CONFIGURATION: SP2G

- a. System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. Nozzle Tips/Orientation:** ULV (adulticide): 8005 Tee Jet oriented straight down
- c. Number:** ULV: 18 8005s total (9 each side)
- e. Aircraft:** 90-9108
- f. Mission Identifier:** QZNRKA687223

## 7. SPRAY PARAMETERS:

### a. Adulticide

- (1) **Area to be treated:** 11518 acres (Grand Forks AFB), 18346 (Grand Forks) and 877 (Grand Forks Intl)
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 2000 feet
- (4) **Flow Rate.** 7.26 gallons/minute ULV
- (5) **Application Rate.** 1.0 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots
- (7) **Flush:** With water, triple rinse, then air purge

**8. SPRAY MIXING AND LOADING:** The amount of Trumpet to load will be determined on site

**9. TRANSPORTATION:** Transportation provided by base (DSN362-3976): One 15 pax van (OPS), three 6 pax trucks (MC, OPS, MX), one 1.5 ton truck (spray MX).

**10. LODGING:** Onbase, 18 rooms reserved. DSN 362-7200 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844

## 11. CONTACTS:

### a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205

- (1) **Base Operations:** Airfield Manager DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx20
- (2) **Pest Management:** TSgt (b) (6) or Ssgt (b) (6) DSN 362-4289, FAX 3432)
- (3) **Base Civil Engineer:** Lt Col (b) (6)
- (4) **Environmental Officer:** (b) (6), DSN (b) (6), FAX 6155
- (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
- (6) **Weather:** DSN 362-4396
- (6) **Billeting:** DSN 362-3070/6189/7200 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844

### b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Lt Col (b) (6)
- (5) 910 Base Ops: Airfield Manager: Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) or 1111; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: SMG (b) (6) 1132/1586 Cell: (b) (6)
- (13) 910 LG/LGL: Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - Entomologist: (b) (6)
  - Mission Commander: (b) (6)
  - Spray Maintenance: (b) (6)



# 910 AW AERIAL SPRAY UNIT POST-MISSION REPORT

## GRAND FORKS AFB – ADULT MOSQUITO CONTROL 11-14 August, 2009

### 1. MISSION BASICS:

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 11-14 August 2009
- c. Purpose of Application: Control adult nuisance and vector mosquitoes
- d. Application Date: 12-13 August 2009
- e. Time/s of Application (Local): 1915-2055 (12 Aug); 1855-2105 (13 Aug)
- f. Acres Treated: 30138
- g. Project Coordinator/s (Name/Rank, Title, Phone #): TSG (b) (6) , NCOIC Pest Management Shop, DSN (b) (6)
- h. Date Spray Map Last Approved: 10 August 2009
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): Teleconference. 10 August 2009. MAJ (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: LTC (b) (6)
- b. Certified PMP/s (Category 11): MAJ (b) (6)
- c. Aircrew:
  - 1) Pilots: LTC (b) (6) , CAPT (b) (6)
  - 2) Navigators: LTC (b) (6)
  - 3) Flight Engineers: SMS (b) (6)
  - 4) Spray Operators: SMS (b) (6) , SMS (b) (6)
- d. Safety Briefer: MAJ (b) (6)
- e. Spray Maintenance: TSGT (b) (6) , TSGT (b) (6) , TSGT (b) (6)
- f. Spray Ground Monitors: LTC (b) (6)
- g. Crew Chief: TSGT (b) (6) , SRA (b) (6)
- h. Avionics: TSGT (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 2/4.0
  - (2) Ferry Sorties/Hours: 2/6.2

### 3. PESTICIDES:

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 100 gal Trumpet® (12 August)
- d. Gallons Pesticide Applied: 140 gal Trumpet® (13 August)
- e. Gallons and Name of Flush Used: 50 gal/water
- f. Other Additives Used: none
- g. Application Rate: 1.0 oz/acre Trumpet®

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 18 straight down
- f. Pressure (PSI): 38 PSI
- g. Flow Rate: 7.26 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off Set: 2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 170° @ 7 knots (ground observation) (12 Aug); 190° @ 4 knots (13 Aug)
- b. Temperature (Degrees Fahrenheit): 85 °F (12 Aug); 81 °F (13 Aug)
- c. Relative Humidity: 55%
- d. Cloud Cover: Clear
- e. Source: Ground observations and National Weather Service

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

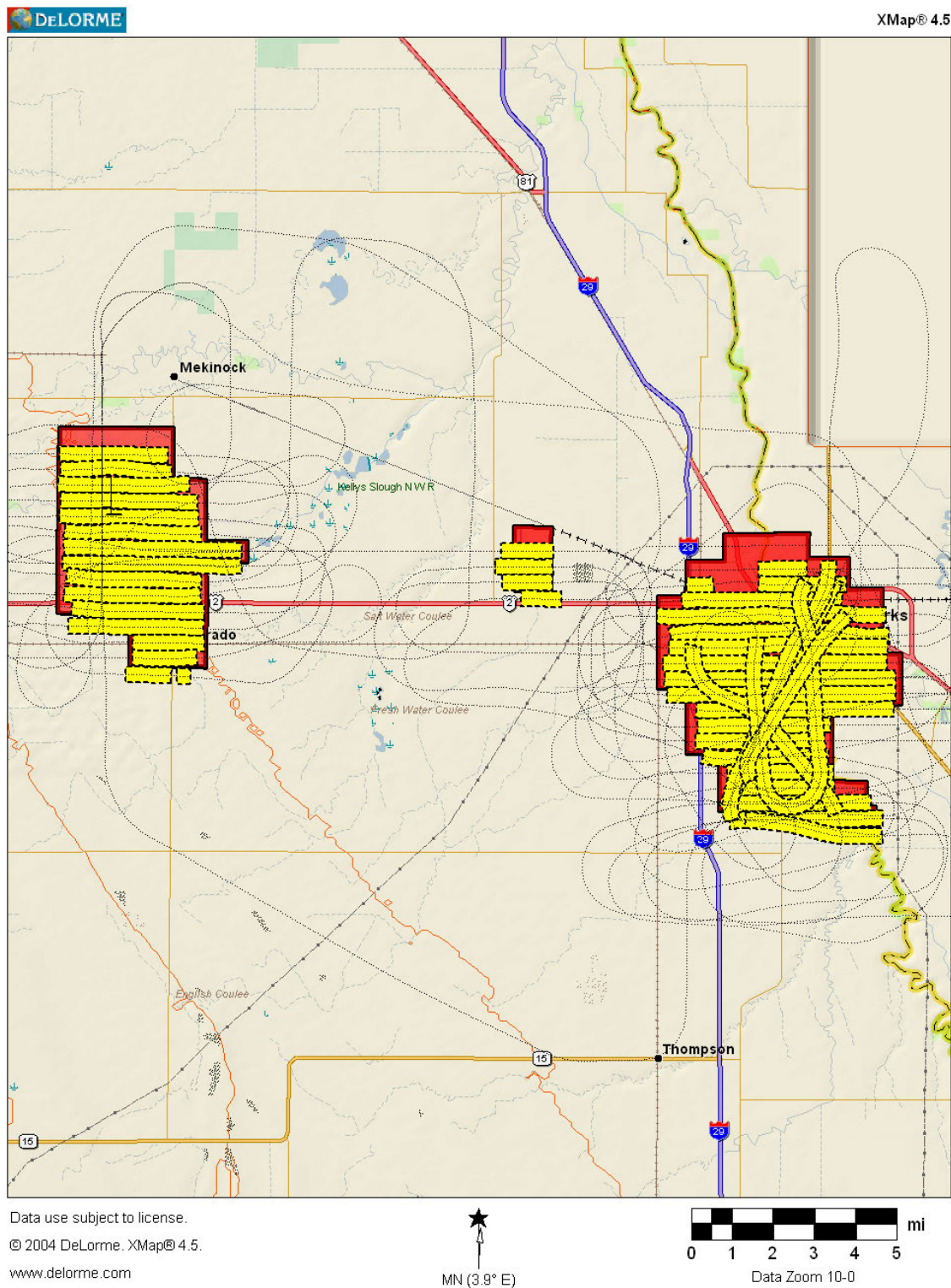
- a. The 319 MDG/ADS conducts adult mosquito trapping to monitor mosquito densities on base. The City of Grand Forks also monitors mosquito populations with 11 traps distributed around the city.
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito traps
  - (2) Results: Trap data pending from 319 MDG/ADS. City of Grand Forks reported an 89 percent decrease in mosquito counts, with the most active trap collecting only 4 mosquitoes following the spray. Most traps had zero mosquitoes present.

**8. REMARKS:** Mosquito counts were relatively low prior to this spray. However, the threat of West Nile Virus prompted AF public health to make the decision to spray the base with Trumpet EC. The applications were made during the last 1.5 hrs of daylight to maximize the correlation between the spray period and mosquito activity. Meteorological conditions were good during the AFB and city application, with a moderate unidirectional wind assuring good coverage. Preliminary post-spray observations indicate excellent control of mosquitoes. Pending trap count data will undoubtedly confirm this. The City of Grand Forks opted to be a part of this spray mission. Post-spray trap counts from the city indicate a significant reduction in the mosquito populations, with post-spray trap counts declining approximately 89 percent from pre-spray trap counts. Many thanks to TSGT (b) (6) of the GFAFB pest control shop, and thanks also to (b) (6), of the Grand Forks public health department.

//signed//

(b) (6), Maj, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

**Attachment 1. Image shows Grand Forks AFB, City of Grand Forks, and Grand Forks International Airport spray blocks (red) and pesticide application swaths (yellow) during application on 12 and 13 August 2009. A 2000' southerly offset was used to compensate for winds. Diagonal application of spray within the City of Grand Forks Spray Block indicates tank flush activities.**





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

6 May 09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Grand Forks AFB, ND

1. One C-130 will be available 11-15 May 09 for the requested spray larvacide mission helping to control nuisance and vector species of mosquitoes reducing the negative impact these organisms generate on outdoor activities.

2. Concept of Operations:

- a. 11 May (Monday)  
0900 Show KYNG  
1100 Depart KYNG  
1300 Land KRDR
- b. 12-14 May (Tuesday-Thursday)  
0430 Show KRDR  
0600 Depart KRDR  
0900 Land KRDR
- c. 15 May (Friday)  
0700 Show KRDR  
0900 Depart KRDR  
1500 Land KYNG

3. Aerial Spray Training for pilots and maintenance support personnel will be accomplished. The following flight parameters will be utilized:

- a. Altitude – 100' AGL
- b. Swath width – 200'
- c. Flow rate – 186 gal/min for an application rate of 2.0 gal/acre
- d. Chemical – Altosid
- e. Approximate spray area – 1636 acres

4. Maj (b) (6) will act as Mission Commander.

5. Lt Col (b) (6) will act as Aircraft Commander

6. Support required at Grand Forks AFB, ND has been completed.

(b) (6), Major, USAFR  
Assistant Chief of Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 11-15 May 2009

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes and thereby improving working conditions and lower mosquito-borne illness for members operating at Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) Pilots: LTC (b) (6), Maj (b) (6), LTC (b) (6)
- 2) Navigators: LTC (b) (6)
- 3) Flight Engineers: MSGT (b) (6)
- 4) Spray Operators: MSGT (b) (6), Msgt (b) (6) ibson, Msgt (b) (6)

##### b. Maintenance:

- 1) Spray Maintenance: Tsgt (b) (6), Tsgt (b) (6), Tsgt (b) (6), A1C (b) (6)
- 2) Crew Chief(s): (b) (6)
- 3) Avionics: Msgt (b) (6)

##### c. Entomologist/Mission Commander: Maj (b) (6)

#### 2. SCHEDULE: (All Local Times) PPR: 051101JM

##### 11 May (Monday)

0800: Showtime  
1000: Depart KYNG  
1200: Land KRDR/Safety Briefing  
1430: Spray In Brief (CPMP, MC, AC).

##### 12 May (Tuesday):

0430: Show time  
0530 Load Chemical  
0600 Take off KGFK (Larvicide Spray Sortie)  
0900 Land KRDR  
0552: Sunrise

##### 13 May (Wednesday):

0430: Show time  
0530 Load Chemical  
0600: Take off KRDR (Larvicide Spray Sortie)  
0900: Land KRDR  
0550: Sunrise

##### 14 May (Thursday):

0430: Show time  
0530 Load Chemical  
0600: Take off KRDR (Larvicide Spray Sortie)  
0900: Land KRDR  
0549: Sunrise

##### 15 May (Friday):

0800: Show time  
1000: Take off KRDR  
1400: Land KYNG

#### 3. ITEMS TO TAKE

a. **Mission Commander:** Cell Phone, Mission Folder

b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder,  
1 UHF Radio, Water Sensitive Cards, Card Holders with  
Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors,  
Project Notebook, Entomologist's Tool Kit

c. **Navigator:** Maps/Map Bag, Validation Map

- d. Spray Operator:** Safety Gear, Calibration Tables
- e. Spray Maintenance:** Deployment Kit, Support Equipment

**4. PPR: 05-16-01/ES**

**5. RADIO FREQUENCIES: Air To Ground Primary** VHF 123.45; secondary UHF 392.2;  
KRDR Tower 124.9 V; Grand Forks International 118.4 V

**6. CONFIGURATION: SP2G**

- a. System:** 2-Module System/ Fuselage Booms
- b. Nozzle Tips/Orientation:**  
Larvicide: Raindrop nozzles straight back
- c. Number:**  
Larvicide: fuselage only, 12 total (6 each side) straight back
- d. Booms:** Fuselage
- e. Aircraft:** 899105
- f. Mission Identifier:** QZNRKA227131

**7. SPRAY PARAMETERS:**

- a. Larvicide**
  - (1) **Area to be treated:** approx. 1,636 acres
  - (2) **Altitude:** 100' for Larvicide application
  - (3) **Swath Width.** 200 feet
  - (4) **Flow Rate.** 186 gallons/minute
- b. Application Rate.** 2 gallons/acre (water with 0.75 oz of Altosid®)
- c. Ground Speed:** 200 Knots

**8. SPRAY MIXING AND LOADING: (For Larvicide Spray Sorties)**

- a. Composition of each Gallon:**
  - (1) 0.375 ounces of Altosid® 20
  - (2) 0.64 ounces of AirexDC™ drift retardant
  - (3) Water
- b. Typical load:** (2 tanks of 450 gallons each)
  - (1) Fill with 450 gallons of water/tank. Total water in tanks = 900 gal.
  - (2) Total water added = 900 gallons
  - (3) Add 1.33 (1 1/3) gallons of Altosid® per tank (2 2/3 gallons total).
  - (4) 2.5 gal AirexDC per tank (5 Gal total) while agitating approximately 15 min
  - (5) Total quantity mix. 908 gallons
- c. Final Load for complete flush**
  - (1) Fill tanks with the amount of water necessary for a proper system flush
- d. Mixing Instructions:**  
SHAKE WELL BEFORE USING. Altosid® may separate on standing and must be thoroughly agitated prior to dilution.  
PRECAUTIONARY STATEMENT: Spray solution should be used within 48 hours; always agitate before spraying.

**9. TRANSPORTATION 2 cars and 2 vans provided by 319 CES, Transportation (bus) will be provided to the In-Brief , vehicles will be picked up there.**

**2-Aircrew**  
**1-Spray MX**  
**1-Crew Chiefs & Specialists**

**10. LODGING: On Base Billeting:** DSN 362-3070/6189 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844  
Rooms Reserved by the Pest Management at RDR



## 11. CONTACTS:

### a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205

- (1) **Base Operations:** Airfield Manager DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx
- (2) **Environmental Officer:** (b) (6), DSN (b) (6) FAX 6155
- (3) **Base Civil Engineer:** Lt Col McClure
- (4) **Pest Management:** TSgt (b) (6) or Ssgt (b) (6) DSN (b) (6)-(b) (6) FAX 3432
- (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
- (6) **Weather:** DSN 362-4396
- (6) **Billeting:** DSN 362-3070/6189/7200 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844
- (7) **Transportation:** DSN 362-3976

### b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 Base Ops: Airfield Manager, Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6); FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Ext 1503 or 1531, FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL: Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6) (b)
  - Entomologist cell phone (b) (6)

(b) (6)

**910 AW AERIAL SPRAY**  
**GRAND FORKS AFB, ND 11-15 May 2009**  
**PMP'S POST-MISSION REPORT**

**1. MISSION BASICS:**

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 11-15 May 2009
- c. Purpose of Application: Control nuisance and vector mosquitoes (larval stages)
- d. Application Date: 14 May, 2009
- e. Time of Application (Zulu): 1145-1252; 1330-1420; 1455-1625; 1640-1715 (flush)
- f. Acres Treated: 1,320
- g. Project Coordinator/s (Name/Rank, Title, Phone #): TSGT (b) (6) DSN (b) (6)
- h. Date Spray Map Last Approved: 11 May 2009
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): 11 May, 2009; 319<sup>th</sup> CES Conference Room, TSGT (b) (6) , Lt Col (b) (6) , LTC (b) (6) , MAJ (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: MAJ (b) (6)
- b. Certified PMP/Entomologist (Category 11): MAJ (b) (6) (safety briefer)
- c. Aircrew:
  - Pilots: LTC (b) (6) , Maj (b) (6) , MAJ (b) (6)
  - Navigators: LTC (b) (6)
  - Flight Engineers: Msg (b) (6)
  - Spray Operators: Msg (b) (6) , SMS (b) (6) , MSG (b) (6)
- d. Maintenance:
  - Spray Maintenance: Tsg (b) (6) , Tsg (b) (6) Tsg (b) (6) , A1C (b) (6)
  - Crew Chief(s): SrA (b) (6), SrA (b) (6)
  - Avionics: MSG (b) (6)
- e. Flying Data:
  - (1) Spray Sorties/Hours: 4/4.0
  - (2) Ferry Sorties/Hours: 2/6.0

**3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Altosid Liquid Larvicide Concentrate (20% methoprene)
- b. EPA Registration Number: Altosid Liquid Larvicide Concentrate 272446
- c. Gallons Pesticide Loaded: 8.0 Gal Altosid<sup>®</sup> (14 May)
- d. Pesticide Applied: 8.0 Gal Altosid<sup>®</sup> (14 May)
- e. Diluent: 2640 gallons water and 400 gallons of water rinse and flush
- f. Other Additives Used: AirexDC<sup>®</sup> drift reduction agent (1.28 oz/acre; 15 gal total)
- g. Application Rate: 0.75 oz/acre Altosid<sup>®</sup>

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 9106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: Raindrop nozzles
- e. Nozzle Orientation & Number Used: 12 straight back
- f. Pressure (PSI): 35-65
- g. Flow Rate: 187-189 gpm

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 200' LV
- b. Spray Off Set: none
- c. Spray Release Altitude: 100'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 340°/6 kts
- b. Temperature (Degrees Fahrenheit): 40-55°
- c. Relative Humidity: 88%
- d. Cloud Cover: 100%
- e. Source: Ground observations/aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Prior to the 14 May application, monitoring was conducted by Grand Forks AFB (GFAFB) Public Health personnel along the ditches to the west of the horse barns, and the ditches near the golf course and alert pad. Larval density averaged between 3-4 per dip depending on location, and all appeared to be 1<sup>st</sup> instar larvae. With expectation of much warmer and wetter weather in the future, this application was probably very timely.
- b. Effectiveness:
  - (1) Technique/s Used: Larval dip samples
  - (2) Results: Altosid is an insect growth regulator which acts by inducing morphological changes which interfere with normal development. These effects, not immediately apparent, result in the failure of adult mosquitoes to emerge from pupae. Thus, post application sampling is critical to determining efficacy. Grand Forks AFB Public Health and Pest Management personnel will continue to sample mosquito populations and report their findings.

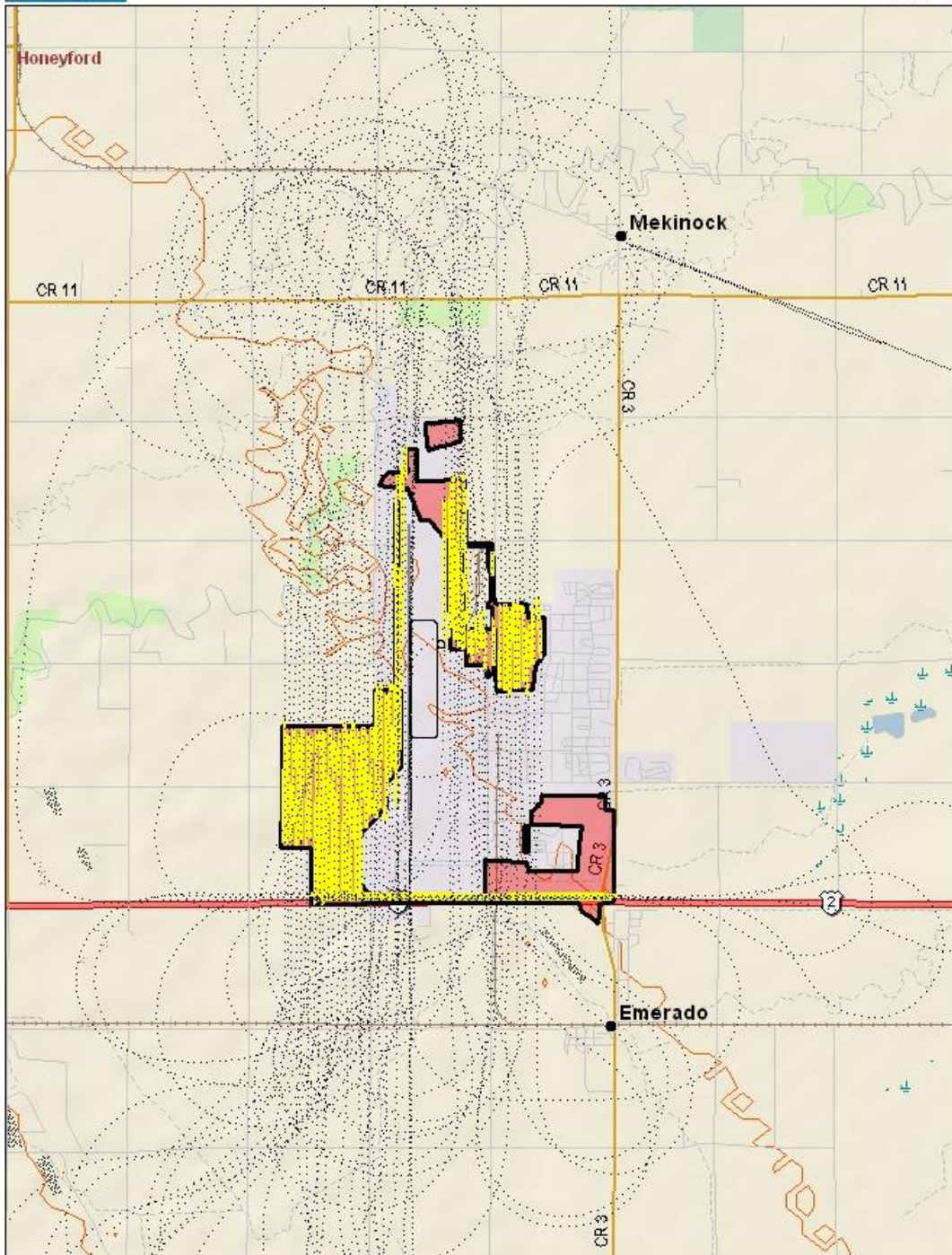
**8. REMARKS:** This is the seventh spray season at Grand Forks AFB. The spray block remains similar in size and shape to previous missions with the area west of the runway and ditches to the east and south of the runway as primary wet area. A propeller hydraulic leak cancelled operations on Tuesday (12 May), and high winds (30-45 kts) cancelled operations on Wednesday (13 May). Fortunately, excellent weather conditions prevailed on Thursday (14 May), and a majority of the prescribed area was sprayed in 3 lifts. We had excellent support from the GFAFB Fire Department, who delivered water upon request, and from TSGT (b) (6) of the Pest Management Shop. The next spray mission to Grand Forks AFB is scheduled for 29 June for adult mosquito control.

//Signed//

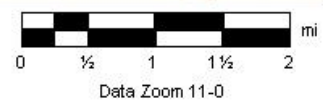
(b) (6), MAJ, USAFR  
Certified Pest Management Professional

1 attachment

Attachment 1. Map of Larvicide spray locations at Grand Forks Air Force Base. Yellow areas indicated areas sprayed. Dotted trail indicates the path of the aircraft.



Data use subject to license.  
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[www.delorme.com](http://www.delorme.com)



3 October 2001

**MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497-0198)**

**FROM: 757 AS/DOS**

**SUBJECT: Capability and Concept of Operations for Aerial Spray of Weed  
Control at Mountain Home AFB, Saylor Creek Range ID (11-19 Oct 01)**

1. **Purpose of the Aerial Spray Mission:** This mission was requested and funded by 366 CES/CERF to perform an aerial spray application of Oust® at the Saylor Creek Range at Mountain Home AFB ID to inhibit annual re-growth of the undesirable cheatgrass, thus, allowing native vegetation to establish and be competitive to cheatgrass.
2. **Proposed Benefits of the Requested Mission:** To prevent fire hazards and to inhibit re-growth of the undesirable cheatgrass allowing native vegetation to establish and be competitive.
3. **Capability:** Spray Aircraft Tail Number 99108 Available 11-19 October 2001
4. **Concept of Operations: (All Times are Local Times)**  
**11 OCT (Thursday):**  
0900: Show at KYNG **PPR # 284-1**  
1100: Depart KYNG  
1500: Land KMUO/Safety Briefing, MX configures aircraft; plan next day's mission  
1600: In-briefing  
  
**12 OCT (Friday): Range Time 0800-1000, 1300-1700 (3 sorties if possible)**  
0545: Show time  
0654: Sunrise  
0745: Take Off KMUO (As determined by Mission Cmdr)  
1000: Land KMUO  
1245: Take Off KMUO  
1430: Land KMUO  
1530: Take Off KMUO  
1715: Land KMUO  
  
**13 OCT (Saturday): Range Time 0815-1530 (3 Sorties)**  
0600: Show time  
0656: Sunrise  
0800: Take Off KMUO (As determined by Mission Cmdr)  
0945: Land KMUO  
1045: Take Off KMUO  
1130: Land KMUO  
1230: Take Off KMUO  
1545: Land KMUO

**14 OCT (Sunday): Range Time (Field/Range Closed)**

**15 OCT (Monday): Range Time 0800-1145, (2 Sorties)**

0545: Show Time  
0657: Sunrise  
0745: Take Off KMUO  
0930: Land KMUO (Or as required)  
1030: Take Off KMUO  
1200: Land KMUO

**16 OCT (Tuesday): Range Time 0800-1000, 1045-1200, 1545-1900 (2 Sorties)**

0545: Show Time  
0658: Sunrise  
0745: Take Off KMUO  
0930: Land KMUO (Or as required)  
1030: Take Off KMUO  
1215: Land KMUO

**17 OCT (Wednesday): Range Time 0800-1000, 1045-1200, 1545-1900 (1-2 sorties)**

0545: Show Time  
0659: Sunrise  
0745: Take Off KMUO  
0930: Land KMUO (Or as required)  
1030: Take Off KMUO  
1215: Land KMUO

**18 OCT (Thursday): Range Time 0800-1000, 1045-1200, 1545-1900 (1-2 sorties)**

0545: Show Time  
0700: Sunrise  
0745: Take Off KMUO  
0930: Land KMUO (Or as required)  
1030: Take Off KMUO  
1215: Land KMUO

**19 OCT (Friday)**

0830: Show time  
1000: Take Off KMUO  
1730: Land KYNG

**5. Spray Parameters:**

- a. Acreage:** 4,000 Acres (areas determined by PMP to spray for cheatgrass)
- b. Altitude:** 100' AGL
- c. Ground Speed:** 200 Knots
- d. Swath Width:** 68 Feet
- e. Pesticide:** Oust®

- f. **Flow Rate:** 158 Gallon/Minute
  - g. **Application Rate:** 5 Gal/Acre
  - h. **Deploy:** 6.5 Hrs
  - i. **Re-Deploy:** 6.0 Hrs
  - j. **Spray Time:** 10 Hrs (or as called by PMP)
6. **Primary Key Personnel:**
- a. **Mission Commander:** Major (b) (6)
  - b. **Aircraft Commander:** Major (b) (6)
  - c. **Certified Pest Management Professional(s):** LtC (b) (6)
  - d. **Toxicologist:** Capt (b) (6)
7. Support required at Mountain Home AFB has been coordinated with 366 CES/CERF, Ms (b) (6), Spray Coordinator, DSN (b) (6).
8. HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616 or DSN 346-1161, ATTN: 757 AS/DOS.

(b) (6), Lt Col, USAFR  
Operations Support Officer (757 AS)



# AERIAL SPRAY OPERATIONAL SCHEDULE

## MOUNTAIN HOME AFB RANGE, ID

### 11 – 19 OCT 2001

**PURPOSE/BENEFITS/OBJECTIVES.** To prevent fire hazards, inhibit annual re-growth of the cheatgrass allowing native vegetation to establish and be competitive.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: \* Maj (b) (6) n
- (2) Pilots: Maj (b) (6), Maj (b) (6)
- (3) Navigator: LtC (b) (6) LtC (b) (6)
- (4) Flight Engineer: MSG (b) (6) ary
- (5) Spray Operators: MSG (b) (6), \*\*MSG (b) (6)

##### b. Maintenance:

- (1) Spray MX: SMS (b) (6), TSG (b) (6), TSG (b) (6), SSG (b) (6), SSG (b) (6)
- (2) Crew Chiefs: \*\*MSG (b) (6), TSG (b) (6)
- (3) Avionic: TSG (b) (6)

##### c. Ground Support/CPM Professionals: LtC (b) (6), Capt (b) (6)

\* Full Size \$42, \*\* Van \$62 per day (Enterprise)

#### 2. SCHEDULE: (Local times; total of 12 lifts required, 2-3 lifts per day)

##### 11 OCT (Thursday):

0900: Show at KYNG

PPR # 284-1

1100: Depart KYNG

1500: Land KMUO/Safety Briefing, MX configures aircraft; plan next day's mission

1600: In-briefing

##### 12 OCT (Friday): Range Time 0800-1000, 1300-1700 (3 sorties if possible)

0545: Show time

0654: Sunrise

0745: Take Off KMUO (As determined by Mission Cmdr)

1000: Land KMUO

1245: Take Off KMUO

1430: Land KMUO

1530: Take Off KMUO

1715: Land KMUO

##### 13 OCT (Saturday): Range Time 0815-1530 (3 Sorties)

0600: Show time

0656: Sunrise

0800: Take Off KMUO (As determined by Mission Cmdr)

0945: Land KMUO

1045: Take Off KMUO

1230: Land KMUO

1330: Take Off KMUO

1545: Land KMUO

##### 14 OCT (Sunday): Range Time (Field/Range Closed)

**15 OCT (Monday): Range Time 0800-1145, (2 Sorties)**

0545: Show Time  
0657: Sunrise  
0745: Take Off KMUO  
0930: Land KMUO (Or as required)  
1030: Take Off KMUO  
1200: Land KMUO

**16 OCT (Tuesday): Range Time 0800-1000, 1045-1200, 1545-1900 (2 Sorties)**

0545: Show Time  
0658: Sunrise  
0745: Take Off KMUO  
0930: Land KMUO (Or as required)  
1030: Take Off KMUO  
1215: Land KMUO

**17 OCT (Wednesday): Range Time 0800-1000, 1045-1200, 1545-1900 (1-2 sorties)**

0545: Show Time  
0659: Sunrise  
0745: Take Off KMUO  
0930: Land KMUO (Or as required)  
1030: Take Off KMUO  
1215: Land KMUO

**18 OCT (Thursday): Range Time 0800-1000, 1045-1200, 1545-1900 (1-2 sorties)**

0545: Show Time  
0700: Sunrise  
0745: Take Off KMUO  
0930: Land KMUO (Or as required)  
1030: Take Off KMUO  
1215: Land KMUO

**19 OCT (Friday)**

0830: Show time  
1000: Take Off KMUO  
1730: Land KYNG

**3. ITEMS TO TAKE:**

- a. Mission Commander:** Hand Held GPS, 1 Cellular Phone
- b. Entomologist:** UHF Radio, Cardholders, Water Sensitive Cards, Tool Kit, VHF Radio, Cell Phone, Laptop Computer
- c. Navigator:** Maps/Map Bag, Validation Map, Toshiba Computer
- d. Spray Operator:** Safety Gear, Calibration Tables
- e. Spray Maintenance:** Mobility Kit, MASS Spares, Spill Kit, Pesticide Safety Binder, Safety Equipment and Tool and other equipment

**4. NOTIFICATION NECESSARY FOR THIS MISSION: N/A**

**5. PARKING PLAN: Bomb Loading Area**

**6. RADIO FREQUENCIES:**

- a. **Air To Ground:** Entomologists: 292.2 (range); Maintenance 384.7
- b. **Mt Home:** PTD: 372.2, ACC CP (Raymond 27): 381.3, ATIS: 273.5, TWR: 133.85 / 253.5, GND: 120.5 / 275.8, RAPCON: 259.1, Salt Lake Center: 387.15/363.0
- c. **Range:** Saylor Creek Range: 292.2 pri / 381.3 sec  
Sagebrush Control: 251.2, Paradise MOA: 272.7/236.05/225.55  
Owyhee MOA: 392.2/266.35, Bruneau/Sheep Creek MOA: 251.875

**7. IN-BRIEFING:** Upon Arrival.

**8. SPRAY CONFIGURATION:**

- a. **System:** SP-3G
- b. **Nozzle Tips/Orientation:** Raindrop/Straight Back
- c. **Number:** Fuselage – 8 (4 each side)
- d. **Booms:** Fuselage
- e. **Aircraft:** 99108 **Mission Identifier:** QZNRKA062284
- f. **Profile:** Planned HV Profile

**9. SPRAY PARAMETERS:**

- a. **Altitude:** 100' AGL
- b. **Swath Width.** 68 feet
- c. **Flow Rate.** 158 gal/min
- d. **Application Rate.** 5 gal/acre approximately 4,000 acres to be treated for cheatgrass
- e. **Ground Speed:** 200 Knots

**10. SPRAY MIXING AND LOADING:** On Bomb Loading Area

**11. SPRAY MONITORING OR TESTING:** Performed by the CPMPs

**NOTES:** Will use water sensitive cards.

**12. CONTACTS:**

- a. **Mountain Home AFB, ID:**
  - (1) Base Ops: DSN: 728-2222; COMM: (208)-828-2222
  - (2) OG COL (b) (6) DSN (b) (6)
  - (3) Natural Resource Manager, (b) (6) : DSN(b) (6)
  - (4) (b) (6) : DSN (b) (6)
  - (5) (b) (6) : DSN (b) (6)
  - (6) Capt (b) (6) : DSN (b) (6) Best Western \$68, (208) 587-8477
  - (7) Billeting: x6451, FAX: 4797
  - (8) Transportation: x2215 FAX: 1619
  - (9) Weather to be provided:
    - Davis Mothan AFB, SMS (b) (6) DSN (b) (6)
    - Mountain Home AFB, Capt (b) (6) DSN (b) (6)
- b. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046, 2, + Ext
  - (1) 910 AW/CC: Brigadier General Michael Gjede, Ext 1243
  - (2) 910 AW Command Post: Ext 1315; FAX 1161
  - (3) 910 AW/PA: LT (b) (6) ; FAX 1022
  - (1) 910 OG/CC: LTC (b) (6)
  - (2) 910 OSF/OSA, Airfield Manager: (b) (6)

- Assistant Air Field Manager (ACAM), (b) (6)
- (3) 910 OG/SOF (Supervisor of Flight Desk): Ext 1069; FAX 1371
  - (4) 757 AS/DO: LTC (b) (6)
  - (5) 757 AS/DOO, Ops Admin: SMS (b) (6) ; FAX 1657
  - (6) 757 AS/DOS: Aerial Spray Office, (b) (6) , FAX 1616
  - (7) 910 LG/CC: LTC (b) (6)  
910 MA: Maintenance Officer, Maj (b) (6)
  - (8) 910 LG/LGM: CMS (b) (6)
  - (9) Maintenance Control: Ext 1348
  - (10) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
  - (11) 910 LG/LGL: CMS (b) (6)
  - (12) Omega/SATO Travel: Ext 1772; 1 (800) 285 – 6342
  - (13) Cellular Phones: Mission Commander: (b) (6)  
PMP/Entomologist/Ground Support: (b) (6)  
Spray Maintenance: (b) (6)

# 910 AW AERIAL SPRAY PMP'S POST-MISSION REPORT

## 1. MISSION BASICS:

- a. Installation Sprayed: Mountain Home AFB, Saylor Creek Range, ID.
- b. Mission Duration: 11-19 OCT 01.
- c. Purpose of Application: Cheatgrass (Figure 1) control.
- d. Application Date(s) and time(s) (Local):
  - (1) 12 OCT: 0835-1010, 1245-1431, 1500-1627.
  - (2) 13 OCT: 0740-0914, 1110-1256.
  - (3) 14 OCT: 0740-0920, 1120-1227.
  - (4) 15 OCT: 0750-0905, 0950-1105.
  - (5) 16 OCT: 0800-0921.
  - (6) 18 OCT: 0805-0921, 1050-1148 (flush).
- e. Acres Treated: 3800
- f. Project Coordinator (Name/Rank/Title/Phone #): (b) (6) (b) (6) Natural Resource Manager (b) (6)
- g. Date Spray Map Last Approved: 11 OCT 01
- h. Installation In-Briefing: (When/Where/Briefer/s): 11 OCT 01, 1600, Mountain Home AFB, LtC (b) (6)

## 2. OPERATIONAL:

- a. Mission Commander: Maj (b) (6)
- b. Certified PMP/s (Category 11): LtC (b) (6) and (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander: Maj (b) (6)
  - (2) Pilot(s): Maj (b) (6) and Maj (b) (6)
  - (3) Navigator: LtC (b) (6) LtC (b) (6) (11-13 OCT)
  - (4) Flight Engineer(s): MSG (b) (6)
  - (5) Spray Operators: MSG (b) (6) & MSG (b) (6)
- d. Spray Maintenance/Pesticide Loaders: SMS (b) (6), TSG (b) (6), SSG (b) (6), and SSG (b) (6)
- e. Crew Chief(s): MSG (b) (6) and TSG (b) (6)
- f. Avionics: TSG (b) (6)
- g. Flying Data:
  - (1) Spray Sorties/Hours: 12 sorties; 17.8 hours
  - (2) Ferry Sorties/Hours:
    - (a) Spray A/C 99108: 2 Ferries; 11.2 Hours
    - (b) Support A/C 99101: 2 Ferries; 11.2 Hours

## 3. PESTICIDE:

- a. Trade Name: Oust<sup>®</sup>
- b. EPA Registration Number: 352-401; EPA SLN #ID-000019
- c. Formulation Sprayed: Water dispersible granule
- d. Pounds Pesticide Loaded: 204
- e. Pounds Pesticide Applied: 204
- f. Gallons and Name Diluent Used: 22,975 gallons water
- g. Gallons and Name of Flush Used: 600 Gal of water & 2 Gal Remove<sup>®</sup>
- h. Other Additives Used: 5.5 Gal Control<sup>®</sup> and 2.75 Gal Prevent<sup>®</sup>.
- i. Application Rate: 5 Gal/Acre (0.75 Oz Oust<sup>®</sup>).

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): C-130 (99108)
- b. Spray System (Modules Used) and System ID #: SP-3G
- c. Spray System Configuration: Fuselage booms
- d. Nozzle Type: Raindrop nozzles with flow rate of 20 gallons per minute at 40 psi.
- e. Nozzle Orientation and Number Used: 10 (5 each side).
- f. Pressure: 40 psi.
- g. Flow Rate: 158 gallons per minute.

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 68 Ft
- b. Spray Offset: 136 Ft
- c. Spray Release Altitude: 100 Ft AGL
- d. Ground Speed: 200 knots

**6. WEATHER OBSERVATIONS:**

- a. Wind Direction:
  - (1) 218° on 12 OCT, switching to 270° for second and third sorties.
  - (2) 270° on 13 OCT.
  - (3) 225° on 14 OCT
  - (4) 118° on 15 OCT with unexpected wind shift to 60° at beginning of second sortie.
  - (5) 88° on 16 OCT.
  - (6) 240° on 18 OCT.
- b. Wind Speed (mph)
  - (1) 10 on 12 OCT decreasing to 5-7 by the end of the third sortie.
  - (2) 6-10 on 13 OCT.
  - (3) 5-8 on 14 OCT.
  - (4) 8-10 on 15 OCT with gusts up to 12 by the end of the second sortie.
  - (5) 8-10 on 16 OCT early in the morning, but up to 14 on the west side of the block when the sortie was flown.
  - (6) 6-10 on 18 OCT
- c. Temperature (F°): 34-45 (12 OCT); 41-56 (13 OCT); 48-70 (14 OCT); 46-58 (15 OCT); 38 (16 OCT); 31.5 (18 OCT)
- d. Relative Humidity (%): 41 (12 OCT); 34 (13 OCT); 25 (14 OCT) 17 (15 OCT) 56 (16 OCT) 44 (18 OCT)
- e. Cloud Cover(%): 90 (12 OCT); 75 (13 OCT); 25 (14 OCT); 10 (15 OCT); 60 (16 OCT); 10 (18 OCT)
- f. Source: Ground observation

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Visual observation.
  - (2) Results: See remarks
- b. Effectiveness:
  - (1) Technique/s Used: Vegetation measurements
  - (2) Results: Will be determined in the spring of 2002

**8. REMARKS:** Conditions for aerial spray were best during early morning hours (Figure 2). Only fuselage booms were used this year in order to eliminate small spray droplets from wing booms caught in wing-tip vortices that are more prone to wind drift. This resulted in a narrower effective swath and consequently, a lower flow rate. The application rate of Oust<sup>®</sup> was reduced this year from 1 ounce to 0.75 ounces per acre to reduce impact on Sandberg's bluegrass. An unexpected shift in wind direction while spraying on 14 October caused an overlap of spray coverage of approximately two swaths or 136 feet. The effect of wind on spray deposition on 16 October was compensated for by shutting off the spray a little earlier on the west end of the swath. Ground observations at the location indicated that the spray was depositing well. Very few if any gaps in coverage are anticipated.

**CERTIFIED PEST MANAGEMENT PROFESSIONAL**

(b) (6) , PhD, LtC, USAFR





**Figure 1. Cheatgrass at Saylor Creek Range Idaho.**



**Figure 2. Early morning aerial spray at Saylor Creek Range Idaho.**



**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
**AERIAL SPRAY OPERATIONS**  
**3976 King Graves Rd Unit 32**  
**Vienna OH 44473-5932**



5 November 2002

MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497-0198)

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray of Musk Thistle Weed at Smoky Hill Air National Guard Range, Salina KS.

1. Purpose/Objective/Benefit: To control musk thistle weed at the Smoky Hill ANGR KS, to improve grazing areas, to eliminate the Range as a source of infestation to neighboring farms from wind-blown musk thistle seeds and to support state and local noxious weed control efforts.
2. Capability. Spray Aircraft Tail Number 99106 Available 12-16 November 2002
3. Concept of Operations:
  - a. 12 Nov 02 (Tuesday):
    - 1000 Show at KYNG
    - 1200 Take Off YARS
    - 1445 Land Salina Airport KS
  - b. 13 Nov 02 (Wednesday): Two spray sorties
    - 0700 Take-Off
    - 0703-1100 Range Time (CSAR Exercise 1100-1500)
  - c. 14 Nov 02 (Thursday): Two spray sorties
    - 0700 Take Off
    - 0704-1100 Range Time (CSAR Exercise 1100-1500)
  - d. 15 Nov 02 (Friday): One or two spray sorties
    - 0700 Take-Off
    - 0705-1100 Range Time (CSAR Exercise 1100-1500)
  - e. 16 Nov 02 (Saturday):
    - 0730 Show Time
    - 0900 Take-Off
    - 1345 Land KYNG
4. Spray Parameters:

- a. Acreage: 4,608 Acres (approximately) (Only areas determined by PMP)
  - b. Altitude: 100' AGL
  - c. Ground Speed: 200 Knots
  - d. Swath Width: 330 Feet
  - e. Pesticide: Tordon® 22K
  - f. Flow Rate: 307 Gallon/Minute
  - g. Application Rate: 2 Gal spray/Acre (water with 1 Oz Control® & 10 Oz Tordon® 22K)
  - h. Deploy: 3.4 Hrs
  - i. Re-Deploy: 2.8 Hrs
  - j. Spray Time: 10 Hrs (or as called by PMP)
5. Mission Commander: Lt (b) (6)
6. Certified Pest Management Professional(s): LtC (b) (6) and LtC (b) (6)
7. Support required at Smoky Hill ANGR KS has been coordinated with MSG (b) (6),  
Smoky Hill ANGR Spray Coordinator, DSN (b) (6) and Lt Col (b) (6), Range  
Commander, DSN (b) (6).
8. HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616 or DSN 346-1161,  
ATTN: 757 AS/DOS.

(b) (6), Major, USAFR  
Chief, Aerial Spray Operations (757 AS/DOS)



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



4 DEC 2007

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray Training at Avon Park, FL Bombing Range

1. Purpose/Objectives/Benefits: Flight training of aircrew in aerial spray operations. Initial copilot training conducted over Avon Park Bombing range and coastal waters. All other aircrew training will be to maintain proficiency and currency requirements. Aircraft will stage out of MacDill AFB, FL.
2. Capability: Spray Aircraft 90-9106 Available, 12-16 DEC 2007.
3. **Concept of Operations**

12 DEC (WEDNESDAY)

PPR # MCF

1100: Show Time KYNG

1300: Depart KYNG

1600: Land KMCF

1600 FUEL (20K requested each day)

13 DEC (THURSDAY): Range Times 0900-1200

0700: Show Time

0830: T/O KMCF

1230: Land KMCF

1230 Fuel

14 DEC (FRIDAY): Range Times 0900-1200

0700: Show Time

0830: T/O KMCF

1230: Land KMCF

1230 Fuel

15 DEC (SATURDAY): Range Times 0900-1200

0700: Show Time

0830: T/O KMCF

1230: Land KMCF

1230 FUEL

16 DEC (SUNDAY):

0900: Show Time

1100: Depart KMCF

1400: Land KYNG



4. Spray Configuration:
  - a. MASS – SP2G
  - b. Aircraft Number: 90-9106
  - c. Mission Identifier: QZNRKA157346
5. Mission Protocols: Avon Park Spray Flight Training
6. Range times reserved at Avon Park Bombing Range daily through MacDill range scheduling.
7. Aircraft Commander: Capt (b) (6)
8. If you have any questions concerning this mission please contact me at DSN (b) (6) .

//SIGNED//

(b) (6) , Capt, USAFR  
Assistant Chief of Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## AVON PARK, FL

### 12-16 DEC 2007

**PURPOSE/OBJECTIVE/BENEFIT:** Flight training of aircrew in aerial spray operations. Initial copilot training conducted over Avon Park Bombing range and coastal waters. Other aircrew positions are for currency and proficiency during winter months.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

1. Pilots: Capt (b) (6), Maj (b) (6), Capt (b) (6)
2. Navigators: Maj (b) (6) (MC)
3. Flight Engineers: Msgt (b) (6)
4. Spray Operators: Msgt (b) (6), Msgt (b) (6), Msgt (b) (6)

##### b. Maintenance:

1. Spray Maintenance: Tsgt (b) (6), Tsgt (b) (6), Tsgt (b) (6), SRA (b) (6)
2. Avionics: Msgt (b) (6)
3. Crew Chiefs: Msgt (b) (6),

##### c. Entomologist/Ground Support: TBD

#### 2. SCHEDULE: (All time Local) All times and sequence of events are subject to change depending upon the needs of the training and range.

12 DEC (WEDNESDAY)

PPR # MCF 346-BR-01

1100: Show Time KYNG  
1300: Depart KYNG  
1430 Land KHOP: Drop off Maint personnel and Aux pump  
1445 Depart KHOP  
1615 Land POB (ERO Cargo) PPR: 346-JDR-02  
1630 Depart POB  
1900: Land KMCF  
1800 FUEL (20K requested each day)

13 DEC (THURSDAY): Range Times 0900-1200

0700: Show Time  
0830: T/O KMCF  
1230: Land KMCF  
1230 Fuel

14 DEC (FRIDAY): Range Times 0900-1200

0700: Show Time  
0830: T/O KMCF  
1230: Land KMCF  
1230 Fuel

15 DEC (SATURDAY): Range Times 0900-1200

0700: Show Time  
0830: T/O KMCF  
1230: Land KMCF  
1230 FUEL

16 DEC (SUNDAY):

0730: Show Time  
0900: Depart KMCF  
1200: Land KYNG

#### 3. ITEMS TO TAKE:

- ##### a. Navigator:
- Maps with "No-Spray" Areas Marked  
Mission computer

**4. AIR TO GROUND FREQUENCIES:**

- a. **Spray: Primary 392.2; Secondary 340.8**
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. **Avon Park: TWR-292.2 (p), 126.15, 276.6 (s) Hrs 0700-2300 M-F, S-S per flying schedule DSN 968-7138**
- e. MacDill: TWR-123.7; GND-118.575; ATIS-133.825; CMD POST-311.0; PTD-372.2

**5. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 99106
- c. Nozzle Tips/Orientation: LV/HV
- d. Mission Identifier: QZNRKA157346

**6. MISSION PROTOCOLS:**

- a. **Altitude:** 100 and 150 AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Chemical:** Water
- d. **Application Rate:** TBD based on spray operator training needs
- e. **Flow Rate:** TBD
- f. **Acreage:** Configuration for training only.
- g. **Swath Width:** TBD depending upon training profile each day

**7. CONTACTS:**

- a. **Quarters: (JTR Max Lodging rate \$98; Food \$51)**  
**MacDill AFB Billeting Office: DSN: 968-4259**  
**Quorum Hotel Tampa Westshore 813-289-8200**
- b. Transportation:  
**Vehicles: 4 vehicles held at Transportation**  
Avon Park Enterprise POC (b) (6) (863) 452-5483; Fax (863) 452-5947  
Sebring Enterprise POC (b) (6) (863) 385-6969; Fax (863) 385-3416
- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350  
(1) Weather: MacDill AFB Forecaster (DSN 968-2854)  
(2) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)  
(3) MacDill AFB Ops Gp CC 968-3014
- d. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX  
DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN  
Avon Control Tower & Range Control Scheduling DSN 968-7176  
Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number  
(1) Range Operations Manager: (b) (6) , Bldg 236, (b) (6)  
(2) Avon Range Control Tower: ext 176  
(1) Flight Chief of Civ Engineer: (b) (6) , Bldg 29, (b) (6)  
(2) Chief, Environmental Flight: (b) (6) , Bldg 29, (b) (6) also Wildlife Biologist (b) (6) (b) (6)  
(3) Fuels: ext 118 or Cel (b) (6)  
(4) Range Support Manager: Mr (b) (6) Bldg 29, (b) (6)  
(5) Range Control/Schedule: (b) (6) , Bldg 41, (b) (6)  
**See Attached Avon Park Org directory for additional listings**  
(9) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)  
Range VHF: 126.15
- f. **Sebring AP:** Mgr: (b) (6) (b) (6) (fuel needs)  
BEEPER: 1 (863) 999-8622 ENTER YOUR PHONE# ENTER #  
Asst Mgr: (b) (6) , (b) (6) x-  
**Fuel is coordinated for 20k at 1200L every day except 1<sup>st</sup> day which is 1500**



g. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Capt (b) (6) ; FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: LTC (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) cell (b) (6)
  - Spray Maintenance: (b) (6)



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



04 JAN 2007

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Avon Park, FL

1. Purpose/Objectives/Benefits: Perform proficiency and continuation training for aerial spray aircrew and ground crew. Concurrently, a flight will proceed to Jacksonville NAS to attend part of the DOD Tri-services Pest Management Board annual meeting where a 757 AS entomologists will lecture about the Air Force spray mission. The crew may open the aircraft and allow the other DOD members of the class to view our system.
2. Capability: Spray Aircraft Available, 12-16 February 2007
3. Concept of Operations:
  - 12 FEB (Monday): PPR # - Not Req
    - 0900: Show Time KYNG
    - 1100: Depart KYNG
    - 1400: Land KAGR
  - 13 (Tuesday): Range Times 0900-1200, call AGR Tower & Fire Dept
    - 0830: Show Time
    - 1000: Depart AGR for training and fly to Jacksonville NAS
    - 1200: Arrive KNIP
    - 1600 Depart KNIP
    - 1645 Arrive KAGR
  - 14-15 Feb
    - 0800: Show Time
    - 0900: Depart
    - 1200: Land
  - 16 FEB (Friday)
    - 0800 Show time
    - 1000 Depart KAGR
    - 1300 Arrive KYNG
4. Spray Configuration:
  - a. MASS – SP2G
  - a. Aircraft Number: 90-9107
  - b. Mission Identifier: QZNRKA462043
5. Support required at Avon Park Bombing Range is thru the Range Manager.
6. If you have any questions concerning this mission please contact Maj (b) (6) at DSN (b) (6)  
(b) (6) I will be TDY from 7 Jan until 3 Mar.

//SIGNED//

(b) (6) CPT, USAFR  
Assistant Chief Aerial Spray

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **AVON PARK, FL**

### **12-16 FEB 2007**

**PURPOSE/OBJECTIVE/BENEFIT:** Static display for DOD Tri-services Pest Management Board at Jacksonville NAS on 13 Feb 07. Aircrew and Spray Maintenance will be conducting flight and ground training. Mission commander/AC will determine the priority and plan of training.

#### **1. 910 AW PARTICIPANTS:**

- a. **Aircrew:**
  - 1. Pilots: M/C-LTC (b) (6) , Capt(b) (6)
  - 2. Navigators: LTC (b) (6) , Maj (b) (6) ,
  - 3. Flight Engineers: MSgt (b) (6)
  - 4. Spray Operators: MSgt (b) (6) MSgt (b) (6)(b) (6) , SSgt (b) (6)
- b. **Maintenance:**
  - 1. Spray Maintenance: MSgt (b) (6) , TSgt (b) (6) TSgt(b) (6)
  - 2. Avionics: None
  - 3. Crew Chiefs: TSgt (b) (6) TSgt (b) (6)
- c. **Entomologists:** None
- d. **Admin Support:** None

#### **2. SCHEDULE: (All time Local) All times and sequence of events are subject to change depending upon the needs of the testing and training.**

12 Feb (Monday):

0900: Show Time KYNG  
1100: Depart KYNG  
1400: Land KAGR

13 Feb (Tuesday): Range Times 0900-1200, call AGR Tower & Fire Dept

0830: Show Time  
1000: Depart AGR for training and fly to Jacksonville NAS to attend DOD Tri  
Services Pest Management Meeting and open aircraft for viewing of the system  
1200: Arrive KNIP **PPR # - 21301**  
1600: Depart KNIP  
1645: Arrive KAGR

14-15 Feb (Wednesday-Thursday) Range Times 0900-1200

0730: Show Time  
0900: Depart KAGR  
1200: Land KAGR

16 Feb (Friday) Range Times 0900-1200

0830: Show time  
1000: Depart KAGR  
1300: Arrive KYNG

#### **3. ITEMS TO TAKE:**

- a. **Navigator:** Avon Park Range Maps

**4. AIR TO GROUND FREQUENCIES:**

- a. **Spray: Primary 392.2;** Secondary 340.8
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. Avon Park: TWR-292.2 (p), 126.15, 276.6 (s) Hrs 0700-2300 M-F, S-S per flying schedule **DSN 968-7138**
- e. MacDill: TWR-123.7; GND-118.575; ATIS-133.825; CMD POST-311.0; PTD-372.2

**5. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 99106
- c. Mission Identifier: QZNRKA462043

**6. MISSION PROTOCOLS:**

- a. Training Requirements: Loadmaster ULV water spray training, pilot proficiency and navigator initial training

**7. CONTACTS:**

- a. Quarters: (JTR Lodging/\$92)
  - **Quality Inn (863) 385-4500 (\$71 w/Tax Exempt Form) FAX (863) 382-4793**  
Group Reservation—**910 AIR WING**
  - Holiday Inn Express Sebring, POC is (b) (6) (863) 386-1115, Fax (863) 386-4109
  - Sebring/Avon Park: Inn on the Lakes, (863) 471-9400,  
<http://www.innonthelakessebring.com>
  - Jacaronda (863) 453-2211; 19 East Main St, Avon Park, FL \$ 27.29
  - Oak Tree Inn (863) 453-3165
  - Days Inn (863) 382-1148, 800 329-7466
- b. Transportation:  
**Avon Park Enterprise POC (b) (6) ; Fax (863) 452-5947**  
(b) (6)
  - (b) (6) SUV/Mini Van
  - (b) (6) SUV/Mini Van
  - (b) (6) SUV/Mini Van
  - (b) (6) Full Size

Sebring Enterprise POC (b) (6) (863) 385-6969; Fax (863) 385-3416  
3 Van \$61.99; 2 Full size car \$40.99 (+ TAXES); Unlimited mileage  
(All vehicles will be at Avon Park Flight Ramp, keys will be with tower)
- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350
  - (1) Weather: MacDill AFB Forecaster (DSN 968-2854)
  - (2) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)
  - (3) MacDill AFB Ops Gp CC 968-3014
  - (4) Range Manager, (b) (6) , DSN (b) (6)
- d. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX
  - DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN
  - Avon Control Tower & Range Control Scheduling DSN 968-7176
  - Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number
  - (1) Range Operations Manager: (b) (6) , Bldg 236, (b) (6)
  - (2) Avon Range Control Tower: ext 176

- (3) Flight Chief of Civ Engineer: (b) (6) , Bldg 29, (b) (6)
- (4) Chief, Environmental Flight: (b) (6) , Bldg 29, (b) (6) also  
Wildlife Biologist (b) (6)
- (5) Fuels: ext 118 or Cel 863-655-6455
- (6) Range Support Manager: Mr (b) (6) , Bldg 29, (b) (6)
- (7) Range Control/Schedule: (b) (6) , Bldg 41, (b) (6)  
**See Attached Avon Park Org directory for additional listings**
- (8) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)  
Range VHF: 126.15

f. **Sebring AP:** Mgr: Mr (b) (6) (fuel needs)  
BEEPER: 1 (863) 999-8622 ENTER YOUR PHONE# ENTER #  
Asst Mgr: (b) (6)  
**Fuel** 12 Feb 20K at 1500L  
14 Feb 10K at 1200L  
15 Feb 20K at 1200L

g. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 – 7046,+2 + Ext

- 1. 910 AW/CC: Col (b) (6)
- 2. 910 AW Command Post: Ext 1315; FAX 1161
- 3. 910 AW/PA: Capt (b) (6) FAX 1022
- 4. 910 OG/CC: Col (b) (6)
- 5. 910 OG: Airfield Manager, Ext 1186/1526
- 6. 757 AS/DO: Maj (b) (6)
- 7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- 8. 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
- 9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) FAX 1616
- 10. 910 LG/CC: Ext 1225
- 11. 910 LG/LGM: Ext 1352
- 12. Maintenance Control: Ext 1327
- 13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
- 14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
- 15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) (b) (6)





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



24 May 06

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Minot AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Minot AFB ND and the city of Minot and surrounding areas. Operations will consist of Adulticide applications.

**2. Capability:** Spray Aircraft 89-9105 available 12-16 JUN 06

**3. Concept of Operations:**

**12 Jun (Monday)**

1100: Show at KYNG  
1300: Depart KYNG  
1500: Land KMIB/Safety Briefing  
1600: Spray In Brief (CPMP, MC, AC)

**13 Jun(Tuesday):**

1730: Show time  
1800 Load Chemical  
1930: Take off KMIB (Spray Sortie)  
2146: Sunset

**14 Jun (Wednesday):**

1730: Show time  
1800 Load Chemical  
1930: Take off KMIB (Spray Sortie)  
2147: Sunset

**15 Jun (Thursday):**

1730: Show time  
1800 Load Chemical  
1930: Take off KMIB (Spray Sortie)  
2147: Sunset

**16 Jun (Friday):**

1130: Show time  
1330: Take off KMIB  
1730: Land KYNG

**4. Spray Parameters:**

- a. **Altitude:** 150' AGL for Adulticide swaths
- b. **Swath Width.** 1000 feet for ULV or as determined by the CPMP
- c. **Flow Rate.** 4.36 gallons/minute ULV
- d. **Application Rate.** 0.60 oz/acre Trumpet
- e. **Ground Speed:** 200 Knots
- f. **Proposed spray area:** Approximately 20,000 acres

**5. Mission Commander:** Maj (b) (6)

// Signed //

(b) (6), Maj, USAFR  
AERIAL SPRAY CHIEF



# AERIAL SPRAY OPERATIONAL SCHEDULE

## MINOT AFB, ND

### 12-16 June 2006

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Minot AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: Maj (b) (6)
- (2) Pilots: CPT (b) (6) (b) (6) CPT (b) (6) (b) (6) COL (b) (6)
- (3) Navigators: LTC (b) (6) (b) (6) LTC (b) (6) (b) (6)
- (3) Flight Engineers: MSG (b) (6) (b) (6)
- (4) Spray Operators: MSG (b) (6) (b) (6) MSG (b) (6) (b) (6) SRA (b) (6) (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: MSG (b) (6) (b) (6) TSG (b) (6) (b) (6) TSG (b) (6) (b) (6)
- (2) Crew Chief(s): MSG (b) (6) (b) (6) SRA (b) (6) (b) (6)
- (3) Avionics: TSG (b) (6) (b) (6)

##### c. Entomologist: Maj (b) (6) (b) (6)

#### 2. SCHEDULE: (All Local Times)

##### 12 Jun (Monday)

PPR: OM163001

- 1100: Show at KYNG
- 1300: Depart KYNG
- 1500: Land KMIB/Safety Briefing
- 1600: Spray In Brief (CPMP, MC, AC)

##### 13 Jun (Tuesday):

- 1730: Show time
- 1800 Load Chemical
- 1930: Take off KMIB for area review (Adulticide Spray Sortie will begin @ 2000 hrs)
- 2141: Sunset

**NOTE: We will determine on Monday evening if we will be making a larvicide application on Tues. morning. See MC and CPMP for info.**

##### 14 Jun (Wednesday):

- 1730: Show time
- 1800 Load Chemical
- 2000: Take off KMIB (Adulticide Spray Sortie)
- 2142: Sunset

##### 15 Jun (Thursday):

- 1730: Show time
- 1800 Load Chemical
- 2000: Take off KMIB (Adulticide Spray Sortie)
- 2143: Sunset

##### 16 Jun (Friday):

- 1130: Show time
- 1330 Depart KMIB
- 1800 Land YNG

#### 3. ITEMS TO TAKE

- a. **Mission Commander:** Cellular Phone, Mission Folder
- b. **Entomologist:** Cell Phone, Wind Gauge, Compass, Pest Safety Binder, 1 UHF Radio, 1 VHF radio Project Notebook
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment

#### 4. PPR: OM163001

#### 5. RADIO FREQUENCIES: Air To Ground Primary UHF 392.2; VHF 123.45

Minot AFB Tower 120.65 V, 236.6, 253.5; Minot International 118.2 V or Unicom 122.95

## 6. CONFIGURATION: SP2G

- a. **System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. **Nozzle Tips/Orientation:** ULV (adulticide): 8005 Tee Jet oriented straight down
- c. **Number:** ULV: 8 8005s total (4 each side) for 1000' swaths and 16 8005's (8 each side) for 2000' swaths
- e. **Aircraft:** 89-9105
- f. **Mission Identifier:** QZNRKA569163

## 7. SPRAY PARAMETERS:

### a. Adulticide

- (1) **Area to be treated:** 14,000 acres
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 1000 feet for AFB; 2000' City of Minot or as determined by the PMP
- (4) **Flow Rate.** 3.27 gallons/minute for 1000' swaths; 6.5 gal/min for 2000' swaths
- (5) **Application Rate.** 0.90 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots (338 Feet/Second)
- (7) **Flush:** With water, triple rinse, then air purge

### b. Larvicide

- (1) **Area to be treated:** approx. 300
- (2) **Altitude:** 100' for Larvicide application
- (3) **Swath Width.** 200 feet
- (4) **Flow Rate.** 186 gallons/minute
- (5) **Application Rate.** 2 gallons/acre (water with 4 oz of Vectobac)
- (6) **Nozzles:** Raindrop nozzles straight back; fuselage only, 14 total (7 each side)

8. **SPRAY MIXING AND LOADING:** Amount of Trumpet will be determined on site but at least 90 gallons will be loaded. When working with Vectobac be sure to continue to re-circulate whenever possible once the active ingredient has been added.

9. **TRANSPORTATION:** 4 six packs, 2 Ops, 2 Mx

10. **LODGING:** International Inn Hotel, Com 701-852-3161, MC will pick up non A slips at the hotel, billeting is faxing them. Go South on Hwy 83 from the base. It will be on the right hand side about a ¼ mile south of the airport.

## 11. CONTACTS:

Minot AFB ND: DSN prefix: **453-** Commercial area code and prefix **(701) 723—**

- 1. **Base Operations:** x2347, Airfield Manager: MSgt (b) (6) /TSgt (b) (6) FAX: 3637
- 2. **Environmental Officer:** (b) (6)
- 3. **Base Civil Engineer:** Lt (b) (6)
- 4. **Pest Management:** (b) (6), AIC (b) (6)
- 5. **Public Affairs:** Maj (b) (6)
- 6. **Weather:** TSgt (b) (6) /Capt (b) (6)
- 7. **Billeting:** SSgt (b) (6), TSgt (b) (6) (if you have problems w/this number use (b) (6))
- 8. **Fire Dept:** x2461
- 9. **Transient Alert:** x3153, closes at 1730L
- 10. **Minot AFB Twr** – x-3330
- 11. **Minot Int'l Twr (Magic City Twr)** (b) (6)

b. **910 AW, Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Col (b) (6)
- (5) 910 Base Ops: Airfield Manager: Ext 1182
  - Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, CAPT (b) (6) ; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: SMG (b) (6) (b) (6)
- (13) 910 LG/LGL: Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - Entomologist ((b) (6) cell): (b) (6)
  - Mission Commander: (b) (6)

Spray Maintenance

(b) (6)



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



6 MAY 2008

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Grand Forks AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks AFB ND.

**2. Capability:** Spray Aircraft available 12-16 May 2008

**3. Concept of Operations:**

**12 May (Monday)**

0900: Showtime  
1100: Depart KYNG  
1300: Land KGFK/Safety Briefing  
1430: Spray In Brief (CPMP, MC, AC).

**13 May (Tuesday):**

0430: Show time  
0530 Load Chemical  
0600: Take off KGFK (Larvicide Spray Sortie)  
0552: Sunrise

**14 May (Wednesday):**

0430: Show time  
0530 Load Chemical  
0600: Take off KGFK (Larvicide Spray Sortie)  
0550: Sunrise

**15 May (Thursday):**

0430: Show time  
0530 Load Chemical  
0600: Take off KGFK (Larvicide Spray Sortie)  
0549: Sunrise

**16 May (Friday):**

0800: Show time  
1000: Take off KGFK  
1400: Land KYNG

**4. Spray Parameters:**

- a. Altitude:** 100' AGL for Larvicide swath when no trees are present.
- b. Swath Width.** 200 feet for LV or as determined by the CPMP
- c. Flow Rate.** 1.86 gallons/minute LV
- d. Application Rate.** 0.75 oz/acre Altosid<sup>®</sup>)
- e. Ground Speed:** 200 Knots
- f. Proposed spray area:** Approximately 1,800 acres

**5. Aircraft Commander:** CAPT (b) (6)

6. Support at Grand Forks AFB ND has been coordinated with the organization's Environmental/Spray Coordinator.

7. HQ AFRC/DOOM approval via email.

// Signed //

(b) (6), CAPT, USAFR  
Assistant Chief Aerial Spray

**910 AW AERIAL SPRAY**  
**GRAND FORKS AFB, ND 14-18 May 2007**  
**PMP'S POST-MISSION REPORT**

**1. MISSION BASICS:**

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 14-18 May 2007
- c. Purpose of Application: Control nuisance and vector mosquitoes (larval stages)
- d. Application Date/s: 15, 16, and 17 May, 2006
- e. Time/s of Application (Local): 0755-0825; 1000-1045 (15 May); 0550-0640; 1500-1615 (16 May); 0550-0700; 0810-0920; 0950-1020 (flush) (17 May)
- f. Acres Treated: 1,800
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6) , Environmental Officer, DSN<sup>(b)</sup> (b) (6) SSGT (b) (6) , (b) (6)
- h. Date Spray Map Last Approved: 14 May 2007
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): 14 May, 2006; 319<sup>th</sup> CES Conference Room; Lt (b) (6) , Ms. (b) (6) , Lt Col (b) (6) , Maj (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Certified PMP/Entomologist (Category 11): Maj (b) (6) (safety briefer)
- c. Aircrew:
  - Pilots: Maj (b) (6) , Maj (b) (6)
  - Navigators: Maj (b) (6)
  - Flight Engineers: Msg (b) (6) , TSgt (b) (6)
  - Spray Operators: Msg (b) (6) , Msg (b) (6)
- d. Maintenance:
  - Spray Maintenance: Tsg (b) (6) , Tsg (b) (6) , Tsg (b) (6)
  - Crew Chief(s): Msg (b) (6) , SrA (b) (6)
  - Avionics: (b) (6)
- e. Flying Data:
  - (1) Spray Sorties/Hours: 6/6.1
  - (2) Ferry Sorties/Hours: 2/6.3

**3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Altosid Liquid Larvicide Concentrate (20% methoprene)
- b. EPA Registration Number: Altosid Liquid Larvicide Concentrate 272446
- c. Gallons Pesticide Loaded: 2.6 Gal Altosid<sup>®</sup> (15 May); 2.6 Gal Altosid<sup>®</sup> (16 May); 5.2 Gal Altosid<sup>®</sup> (17 May)
- d. Pesticide Applied: 2.6 Gal Altosid<sup>®</sup> (15 May); 2.6 Gal Altosid<sup>®</sup> (16 May); 5.2 Gal Altosid<sup>®</sup> (17 May); total of 10.5 gallons Altosid<sup>®</sup>
- e. Diluent: 3,600 gallons water and 600 gallons of water flush
- f. Other Additives Used: AirexDC<sup>®</sup> drift reduction agent (1.28 oz/acre; 20 gal total)
- g. Application Rate: 0.75 oz/acre Altosid<sup>®</sup>

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 9107 (14-16 May); 9105 (16-18 May)
- b. Spray System (Modules Used) and System ID #: 2 (15 May); 6 (16-17 May)
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: Raindrop nozzles
- e. Nozzle Orientation & Number Used: 12 straight back
- f. Pressure (PSI): 35-65 (15 May); 35-65 (16 May) & 41-65 (17 May)
- g. Flow Rate: 187-189 gpm (15-17 May)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 200' LV
- b. Spray Off Set: 200' (15 May); none (16-17 May)
- c. Spray Release Altitude: 100'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 330°/20kts (15 May); 330° (16 May); 190°/15kts (17 May)  
(1) Ground: 4 knots (15 May); 10 knots (16 May); 12 knots (17 May)
- b. Temperature (Degrees Fahrenheit): 40-59° (15-17 May)
- c. Relative Humidity: 94-37% (15-17 May) during applications
- d. Cloud Cover: Partly Cloudy (15 May); clear (16-17 May)
- e. Source: Ground observations/aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Prior to the 15-17 May application, monitoring was conducted by Grand Forks AFB (GFAFB) Public Health personnel along the ditches to the west of the horse barns, the ditches to the north of the smokehouse, and the area west of the alert pad by the perimeter road. Larval density averaged between 6-35 larvae per dip depending on location. It appeared that some pupation had already occurred prior to the larvicide application and, subsequently, the base will likely be experiencing significant adult mosquito activity soon, as the insecticide is not effective against pupae.
- b. Effectiveness:
  - (1) Technique/s Used: Larval dip samples
  - (2) Results: Altosid is an insect growth regulator which acts by inducing morphological changes which interfere with normal development. These effects, not immediately apparent, result in the failure of adult mosquitoes to emerge from pupae. Thus, post application sampling is critical to determining efficacy. Grand Forks AFB Public Health personnel will continue to sample mosquito populations and report their findings.

**8. REMARKS:** This is the sixth spray season at Grand Forks AFB. The spray block remains similar in size and shape to previous missions with the area west of the runway and ditches to the east and south of the runway as primary wet area. A computer failure on the MASS #2 occurred during the application on 15 May which made it impossible to determine the flow rate and spray had to be stopped. The 910th was able to replace the #2 MASS with #6 by swapping out with an aircraft from Youngstown on the morning of 16 May. Excellent weather conditions then allowed for quick coverage over the remaining spray block. We had excellent support from the GFAFB Fire Department who delivered water upon request. The next spray mission to Grand Forks AFB is scheduled for 25-29 June for adult mosquito or larval control.

//Signed//

(b) (6) , MAJ, USAFR  
Certified Pest Management Professional



# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 12-16 May 2008

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes and thereby improving working conditions and lower mosquito-borne illness for members operating at Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) Pilots: LTC (b) (6), LTC (b) (6), LTC (b) (6),
- 2) Navigators: LTC (b) (6), Capt (b) (6)
- 3) Flight Engineers: MSGT (b) (6), TSGT (b) (6), Msgt (b) (6)
- 4) Spray Operators: MSGT (b) (6), MSGT (b) (6), Tsgt (b) (6)

##### b. Maintenance:

- 1) Spray Maintenance: Tsgt (b) (6), TSG (b) (6), Ssgt (b) (6), Tsgt (b) (6)
- 2) Crew Chief(s): Msg (b) (6), A1C (b) (6)
- 3) Avionics: Msgt (b) (6)

##### c. Entomologist: LTC (b) (6)

#### 2. SCHEDULE: (All Local Times) PPR: 05-16-01/ES

##### 12 May (Monday)

0900: Showtime  
1100: Depart KYNG  
1300: Land KGFK/Safety Briefing  
1430: Spray In Brief (CPMP, MC, AC).

##### 13 May (Tuesday):

0430: Show time  
0530 Load Chemical  
0600: Take off KGFK (Larvicide Spray Sortie)  
0552: Sunrise

##### 14 May (Wednesday):

0430: Show time  
0530 Load Chemical  
0600: Take off KGFK (Larvicide Spray Sortie)  
0550: Sunrise

##### 15 May (Thursday):

0430: Show time  
0530 Load Chemical  
0600: Take off KGFK (Larvicide Spray Sortie)  
0549: Sunrise

##### 16 May (Friday):

0800: Show time  
1000: Take off KGFK  
1400: Land KYNG

#### 3. ITEMS TO TAKE

a. **Mission Commander:** Cell Phone, Mission Folder

b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder,  
1 UHF Radio, Water Sensitive Cards, Card Holders with  
Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors,  
Project Notebook, Entomologist's Tool Kit

c. **Navigator:** Maps/Map Bag, Validation Map

d. **Spray Operator:** Safety Gear, Calibration Tables

e. **Spray Maintenance:** Deployment Kit, Support Equipment

**4. PPR: 05-16-01/ES**

**5. RADIO FREQUENCIES: Air To Ground Primary** VHF 123.45; secondary UHF 392.2;  
KRDR Tower 124.9 V; Grand Forks International 118.4 V

**6. CONFIGURATION: SP2G**

**a. System:** 2-Module System/ Fuselage Booms

**b. Nozzle Tips/Orientation:**

Larvicide: Raindrop nozzles straight back

**c. Number:**

Larvicide: fuselage only, 12 total (6 each side) straight back

**d. Booms:** Fuselage

**e. Aircraft:** 899107

**f. Mission Identifier:** QZNRKA454133

**7. SPRAY PARAMETERS:**

**a. Larvicide**

(1) **Area to be treated:** approx. 1,608 acres

(2) **Altitude:** 100' for Larvicide application

(3) **Swath Width.** 200 feet

(4) **Flow Rate.** 186 gallons/minute

**b. Application Rate.** 2 gallons/acre (water with 0.75 oz of Altosid®)

**c. Ground Speed:** 200 Knots

**8. SPRAY MIXING AND LOADING: (For Larvicide Spray Sorties)**

**a. Composition of each Gallon:**

(1) 0.375 ounces of Altosid® 20

(2) 0.64 ounces of AirexDC™ drift retardant

(3) Water

**b. Typical load:** (2 tanks of 450 gallons each)

(1) Fill with 450 gallons of water/tank. Total water in tanks = 900 gal.

(2) Total water added = 900 gallons

(3) Add 1.33 (1 1/3) gallons of Altosid® per tank (2 2/3 gallons total).

(4) 2.5 gal AirexDC per tank (5 Gal total) while agitating approximately 15 min

(5) Total quantity mix. 908 gallons

**c. Final Load for complete flush**

(1) Fill tanks with the amount of water necessary for a proper system flush

**d. Mixing Instructions:**

SHAKE WELL BEFORE USING. Altosid® may separate on standing and must be thoroughly agitated prior to dilution.

PRECAUTIONARY STATEMENT: Spray solution should be used within 48 hours; always agitate before spraying.

**9. TRANSPORTATION 2 cars and 2 vans provided by 319 CES, Transportation (bus) will be provided to the In-Brief , vehicles will be picked up there.**

**2-Aircrew**

**1-Spray MX**

**1-Crew Chiefs & Specialists**

**10. LODGING: On Base Billeting:** DSN 362-3070/6189 or (701) 594-8431, FAX 362-3069

-- Prime Knight DSN 362-3844 or (701) 747-3844

Rooms Reserved by the Pest Management at RDR

## 11. CONTACTS:

### a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205

- (1) **Base Operations:** Airfield Manager DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx
- (2) **Environmental Officer:** (b) (6), DSN (b) (6), FAX 6155
- (3) **Base Civil Engineer:** Lt (b) (6)
- (4) **Pest Management:** (b) (6) or (b) (6), DSN (b) (6), FAX 3432
- (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
- (6) **Weather:** DSN 362-4396
- (6) **Billeting:** DSN 362-3070/6189/7200 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844
- (7) **Transportation:** DSN 362-3976

### b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 Base Ops: Airfield Manager, Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6); FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Ext 1503 or 1531, FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL: Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - (b) (6) cell phone (b) (6) (b)
  - (b) (6) (b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## SMOKY HILL ANG RANGE, KS

### 12-16 NOV 2002

**PURPOSE/OBJECTIVE/BENEFIT:** to control musk thistle at the Smoky Hill ANGR, to improve grazing areas, to eliminate the Range as a source of infestation to neighboring farms from wind-blown musk thistle seeds and to support state and local noxious weed control efforts.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: \*\*Lt Col (b) (6)
- (2) Pilots: Lt Col (b) (6)      Maj (b) (6)      Lt (b) (6)
- (3) Navigators: Maj (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: \*\*MSG(b) (6)      , TSG (b) (6)

##### b. Maintenance:

- (1) Spray MX: \*TSG (b) (6)      , TSG (b) (6)      , TSG (b) (6)      , SSG (b) (6)
- (2) Crew Chiefs: \*\*TSG (b) (6)      lor, TSG (b) (6)
- (3) Avionics: \*\*MSG (b) (6)
- (4) AGE: TSG (b) (6)

##### c. Ground Support/CPM Professionals: (11-16 Nov) LTC (b) (6)      , LTC (b) (6)

##### d. Security Police: \*\*MSG (b) (6)      , \*\*TSG (b) (6)      , TSG (b) (6)      , SSG (b) (6)

\* = 1 Van/\$79 day: TSG (b) (6)      1 Van 12-13 Nov/Maj (b) (6)      ;      1 Van 15-16 Nov/Unk

\*\* = 7 Full Size/\$49 day :,

Mid-Size/\$47 day

#### 2. SCHEDULE: (All Local) Times

##### 12 NOV (Tuesday)

1000: Show at KYNG

1200: Depart KYNG

1445: Land KSLN/Safety Briefing

A/R: Maintenance configures aircraft; Aircrew plan next day's mission

##### 13 NOV (Wednesday): 2 Spray Sorties

0530: Show time

0711: Sunrise

0700: Take Off KSLN

0703-1100: Range time (Coordinate MARSA as needed after 1100)

0900: Land KSLN

##### 14 NOV (Thursday): 2 Spray Sorties

0530: Show time

0712: Sunrise

0700: Take Off KSLN

0704-1100: Range time (Coordinate MARSA as needed after 1100)

0900: Land KSLN

##### 15 NOV (Friday): 1 or 2 Spray Sorties

0530: Show time

0713: Sunrise

0700: Take Off KSLN

0705-1100: Range time (Coordinate MARSA as needed after 1100)

0900: Land KSLN

##### 16 NOV (Saturday):

0708: Sunrise

0730: Show time  
0900: Take Off KSLN  
1345: Land KYNG

### 3. ITEMS TO TAKE:

- a. **Mission Commander:** Hand Held GPS, 1 Cellular Phone
- b. **Entomologist:** 1 Cellular Phone, Wind Gauge, 2 Compasses, 1 UHF Radio, Kodak Camera, Pest Safety Binder, 2 Signal Mirrors, 10 Packs Water Sensitive Cards, 3 Boxes Card Holders with Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Toshiba Computers, 1 SATLOC Manual, Project Notebook, 2 Anemometers, Entomologist's Tool Kit, Trakstar Receiver and Antenna, Batteries
- c. **Navigator:** Maps/Map Bag, Validation Map, 1 Panasonic Computer
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Stake Bed Truck, Support Equipment, Control®

### 4. NOTIFICATION NECESSARY FOR THIS MISSION: None Required.

### 5. PARKING PLAN: Highway Patrol Ramp (by the Civil Air Patrol Hangar).

### 6. RADIO FREQUENCIES:

- a. **Air To Ground:** Primary 392.2
- b. **Salina:** CTAF: 119.3, UNICOM: 122.95, ATIS: 120.15, TWR: 119.3 / 257.7, GND: 121.9 / 397.9, NG OPS: 49.95 / 304.6
- c. **Smoky Hill:** Primary 316.9, Secondary 304.9; Victor Freq: 139.7

### 7. IN-BRIEFING: Upon Arrival.

### 8. SPRAY CONFIGURATION:

- a. **System:** SP-3G
- b. **Nozzle Tips/Orientation:** 8070 Flat Fan TeeJet/90° straight back
- c. **Number:** Wing. 68 Total (34 each side)/Fuselage. 16 Total (8 each side) with 3" restrictor
- d. **Booms:** Full Wing and Fuselage Booms
- e. **Aircraft:** 106 **Mission Identifier:** QZNRKA115316
- f. **Profile:** Planned LV Profile

### 9. SPRAY PARAMETERS:

- a. **Altitude:** 100' AGL
- b. **Swath Width.** 330 feet.
- c. **Flow Rate.** 307 Gallons/Minute (approximately 4,608 acres to be sprayed)
- d. **Application Rate.** 2 Gal spray/Acre (water with 1 Oz of Control® & 10 Oz of Tordon®)
- e. **Ground Speed:** 200 Knots

### 10. SPRAY MIXING AND LOADING:

- a. **Composition of Each Gallon:**
  - (1) 5 Ounces of Tordon® 22K
  - (2) 0.08 Ounces of Control® Drift Retardant
  - (3) Water
- b. **First Load (4 Tanks of 443.3 Gallons Each + Sump of 70 Gallons)**
  - (1) Fill to 425.05 Gal/ Water/Tank using the pump on the water tanker truck.  
This is done by putting the filler hose into the rear tank with all tanks open to the common sump.  
Total water in tanks = 1700.2 Gal.
  - (2) 70 Gal/Water in Sump

- (3) Total Water Added = 1,770.2 Gallons
- (4) Upload 18 Gal/Tordon® 22K/Tank (72 Gallons Total for 4 Tanks) with the ULV uploading system.
- (5) Add 1 Qt/ Control®/Tank while agitating approximately 15 min  
(1 Gallon total for four tanks)
- (6) Total Quantity Mix. 1843.2 Gallons
- c. Subsequent Loads (4)
  - (1) Fill to 442.55 Gal/Water/Tank. Total Water = 1770.2 Gal
  - (2) Add 18 Gal/Tordon 22K/Tank. Total Tordon 22K = 72 Gal
  - (3) Add 1 Qt/ Control/Tank. Total Control = 1 Gal
  - (4) Total quantity Mix. 1,843.2 Gallons (does not include 70 Gal already mixed in Sump)
- d. Mixing Time/Load. Agitate by recirculating each mix for approximately 15 minutes.

## 11. SPRAY MONITORING OR TESTING: Performed by the CPMPs

### NOTES:

Ideal to have westerly wind to spray west boundary.

Ideal to have easterly wind to spray east boundary.

(November winds expected to be predominately from the north)

## 12. CONTACTS:

- a. **Quarters:** JTR Rate Lodging/\$55 Meals/\$28
  - **Fairfield Inn \$55+tax, (785) 823-6900 FAX (785) 823-0996)**  
 Holiday Inn Express, I70, \$55, Gp Reservations/Lori 785-823-5606  
 Comfort Inn, (785) 826-1711  
 Ramada inn, (785) 825-8211  
 Hampton Inn (on Schilling Rd.); Phone (785) 823-9800  
 Red Coach Inn, (785) 825-2111  
 Heart of America Inn, (785) 827-9315  
 Holiday Inn, (913) 823-1739
- b. **Transportation:** Hertz Rental Agency ((b) (6) 785 827-7237; Fax 785 827-3160  
**Vehicles will be at Moore's Aviation**
  - **1 Mini Vans (\$75): Lamantia**
  - **7 Full Size (\$49):** LtC (b) (6) LtC (b) (6) MSG (b) (6) MSG (b) (6) TSG (b) (6)  
 MSG (b) (6) , TSG (b) (6) ,

**1 VAN on 12 Nov (Support A/C) – Maj (b) (6)**  
**1 Van on 15 Nov (Support A/C)**
- c. **Smoky Hill Range, Salina, KS:**
  - (1) HQ ANGRC/CEVP:
    - (b) (6) : DSN(b) (6)
    - (b) (6) : DSN (b) (6) ; COM(b) (6)
    - RANGE COMMANDER, LTC (b) (6) DSN (b) (6) ; COM(b) (6)
    - Scheduling: DSN (b) (6) , (b) (6) **TSGT.** (b) (6)
  - (2) NATURAL RESOURCES MGR/ SPRAY COORDINATOR:
    - MSG (b) (6) : DSN (b) (6)
  - (3) SALINA AIRPORT: SALINA AIRPORT AUTHORITY: (913) 827-8077
    - (b) (6) and (b) (6)
  - (4) ARMY NATL GUARD HELO UNIT:
    - OPS OFFICER, CW4 (b) (6) : DSN (b) (6)
  - (5) FBO: JERRY MOORE'S MIDWAY AVIATION, (913) 825-6261
  - (6) STATE WILDLIFE REP:
    - (b) (6) (DIST FISHERY BIOLOGIST), (b) (6)

- (7) DOW ELANCO REP: (b) (6) , (b) (6)
- (8) SALINE COUNTY FARM/ NOXIOUS WEED DIR:  
- (b) (6) FAX (913) 826-6534
- d.** Spray Maintenance Command Post at Salina KS will be located in the Civil Air Patrol Office,  
(913) 825-0009.
- e. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046, 2, + Ext
  - (1) 910 AW/CC: Brigadier General Michael Gjede, Ext 1243
  - (2) 910 AW Command Post: Ext 1315; FAX Ext 1161
  - (3) 910 AW/PA: LT (b) (6) ; FAX Ext 1022
  - (4) 910 OG/CC: Ext 1257 / 1179
  - (5) 910 OG/OSA, Airfield Manager: (b) (6)
  - (6) 757 AS/DO: LTC (b) (6)
  - (7) 757 AS/DOO, Ops Admin: SMS (b) (6) ; FAX Ext 1657
  - (8) 757 AS/DOS, Aerial Spray Office: (b) (6) ; FAX Ext 1616
  - (9) 910 LG/CC: Ext 1225
  - (10) 910 LG/LGM: CMS (b) (6)
  - (11) Maintenance Control: Ext 1348
  - (12) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
  - (13) 910 LG/LGL: CMS (b) (6)
  - (14) Omega/SATO Travel: Ext 1772; 1 (800) 285 - 6342
  - (15) Supervisor Of Flying desk (SOF): 1069; FAX Ext 1371
  - (16) Cellular Spray Phones: PMP: (b) (6) ; MSN CMDR: (b) (6)



# 910 AW AERIAL SPRAY PMP'S POST-MISSION REPORT

## 1. MISSION BASICS:

- a. **Installation Sprayed:** Smoky Hill ANGR, Salina KS
- b. **Mission Duration:** 12-16 Nov 02
- c. **Purpose of Application:** Management of Musk Thistle on ANGR.
- d. **Application Date/s:** 13, 14, 15 Nov 02  
**Time/s of Application (Zulu):** 1314-1500 (13 Nov); 1307-1430, 1635-1650 (14 Nov); 1500-1810, 1930-2140 (15 Nov)
- e. **Acres Treated:** 2300
- f. **Project Coordinator/s (Name/Rank, Title, Phone #):** MSG (b) (6), Aerial Spray Coordinator, Smoky Hill ANGR, DSN (b) (6) (b) (6) LTC (b) (6), LTC (b) (6)
- g. **Date Spray Map Last Approved:** 12 Nov 02
- h. **Date of Waste Generation Letter:** N/A
- i. **Installation In-Briefing: (When/Where/Briefer/s):** 0830, 12 Nov 02; Smoky Hill ANGR; LTC (b) (6) (b) (6)

## 2. OPERATIONAL:

- a. **Mission Commander:** LTC (b) (6)
- b. **Certified PMP (Category 11):** LTC (b) (6), LTC (b) (6)
- c. **Aircrew:**
  - (1) Aircraft Commander: Pilot: LTC (b) (6)
  - (2) Co-Pilot: MAJ (b) (6)
  - (3) Navigator: MAJ (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
  - (5) Spray Operators: MSG (b) (6) TSG (b) (6)
- d. **Safety Briefer:** LTC (b) (6)
- e. **Spray Maintenance/Pesticide Loaders:** TSG (b) (6), TSG (b) (6), TSG (b) (6), SSG (b) (6)
- f. **Spray Ground Monitors:** LTC (b) (6), LTC (b) (6)
- g. **Crew Chief(s):** TSG (b) (6), TSG (b) (6)
- h. **Avionics:** TSG (b) (6)
- i. **AGE:** TSG (b) (6)
- j. **Flying Data:**
  - (1) Spray Sorties/Hours: 1/1.8 13 NOV; 2/1.6 14 Nov; 2/5.3 15 Nov.
  - (2) Ferry Sorties/Hours:
    - (a) Spray A/C 99105 Ferry Sorties/Hours: 2/6.1
    - (b) Support A/C 99106 Ferry Sorties/Hours: 4/6.3 (12-13 Nov & 15-16 Nov)

## 3. PESTICIDE:

- a. **Trade Name (% Active Ingredient):** Tordon® 22K
- b. **EPA Registration Number:** 62719-6
- c. **Formulation Sprayed:** Tordon® 22K mixed with water and AirexDC®
- d. **Gallons Pesticide Loaded:** 4600 gal of Tordon® 22K/AirexDC®/water loaded (179 gal Tordon® 22K; 35 gal AirexDC®)
- e. **Gallons Pesticide Applied:** 179 gallons
- f. **Gallons and Name Diluent Used:** 4,386 gallons of water
- g. **Gallons and Name of Flush Used:** 198 gallons of water & 2 gallons Remove®
- h. **Other Additives Used:** None
- i. **Application Rate:** 2 gallons spray/acre (water with 2 oz. AirexDC® & 10 oz. of Tordon®)

**4. APPLICATION EQUIPMENT:**

- a. **Aircraft Type (Tail Number):** 909105
- b. **Spray System (Modules Used) and System ID #:** 3-Module system
- c. **Spray System Configuration:** Full Wing and Fuselage Booms
- d. **Nozzle Type/Size:** 8070 Flat Fan TeeJet®
- e. **Nozzle Orientation & Number Used:** 68; Wing: 34 each side;  
Fuselage: 16 (8 each side) with 3" Restrictor
- f. **Pressure:** 40 PSI
- g. **Flow Rate:** 280 GPM

**5. APPLICATION PARAMETERS:**

- a. **Swath Width Flown:** 300'
- b. **Spray Off Set:** 990' 13 Nov, 660' 14 Nov; 660, 15 Nov
- c. **Spray Release Altitude:** 100' 13 Nov; 150' dropping to 100' on 14 Nov as wind speed picked up;  
150' first sortie dropping to 100' for second sortie with higher wind speed 15 Nov.
- d. **Ground Speed:** 200 Knots

**6. WEATHER OBSERVATIONS:**

- a. **Winds (Direction/Speed):**  
Ground: 230/4-16 mph 13 Nov; 330 switching to 10/6-10 mph 14 Nov; 20/5-10 mph 15 Nov.
- b. **Temperature Range During Application (°F):** 40-55 13 Nov; 48 14 Nov; 35-47 15 Nov
- c. **Cloud Cover:** 0% 13 Nov, 100% 14 Nov; 50% 15 Nov
- d. **Humidity:** 53% 13 Nov, 98% 14 Nov; 68%-55% 15 Nov
- e. **Source:** Ground observations

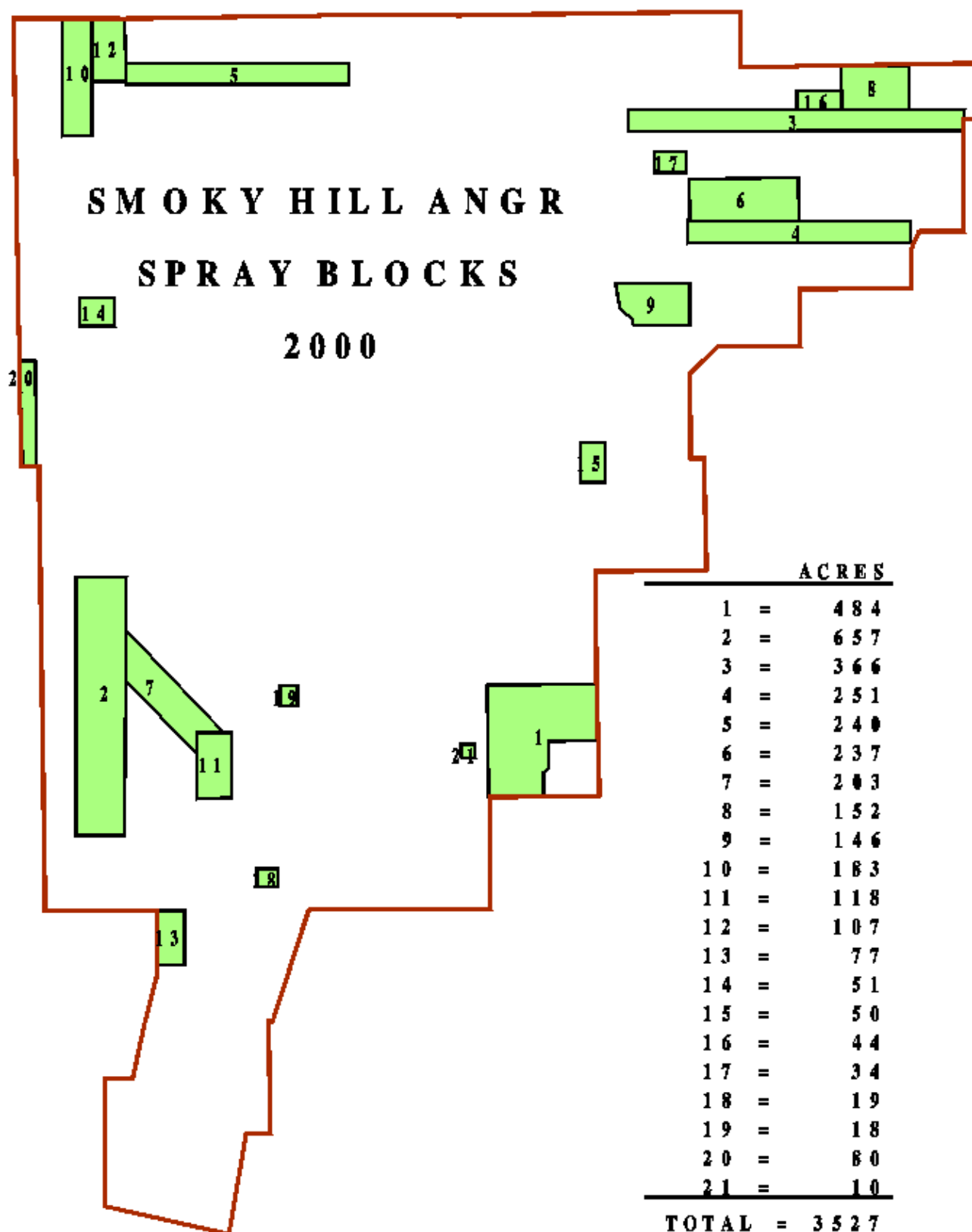
**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. **Deposition Pattern:**
  - (1) Technique/s Used: Ground Observation
  - (2) Results: Spray off-set determined each day
- b. **Effectiveness:**
  - (1) Technique/s Used: Visual field observations
  - (2) Results: (See Remarks)

- 8. REMARKS:** Results will be determined during the next growing season in the Spring of 2003 for musk thistle.

(b) (6)

**CERTIFIED PEST MANAGEMENT PROFESSIONAL**  
(b) (6) , PhD, Lt Col, USAFR





DEPARTMENT OF THE AIR FORCE  
YOUNGSTOWN AIR RESERVE STATION  
757AS/AERIAL SPRAY UNIT  
VIENNA OH 44473-5924

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT**  
**UTAH TEST AND TRAINING RANGE, MARCH 12-20, 2008**

**1. MISSION BASICS:**

- a. Installation Sprayed: Utah Test and Training Range (UTTR)
- b. Mission Duration: 12-20 MAR 2008
- c. Purpose of Application: Weed control on UTTR Targets 21 and 24, facilitate UXO recovery
- d. Application Dates: 14 MAR, 16 MAR, 17 MAR, 19 MAR 2008
- e. Times of Application (Local): 0856-1312 14 MAR; 0855-1338 16 MAR; 0933-1310 17 MAR; 0914-1130 18 MAR.
- f. Acres Treated: 888 on Target 21; 293 on Target 24; Total = 1,181.
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) Range Specialist/DSN (b) (6)  
Environmental Coordinator (b) (6) DSN (b) (6)
- h. Date Spray Map Last Approved: 12 MAR 08
- j. Installation In-Briefing: (When/Where/Briefer/s): Briefed by telephone, Capt (b) (6) and in place by LTC (b) (6)

**2. OPERATIONAL:**

- a. **Mission Commander:** LTC (b) (6)
- b. **Aircrew:**
  - (1) Pilots: MAJ (b) (6) CPT (b) (6) MAJ (b) (6) CPT (b) (6)  
CPT (b) (6) CPT (b) (6)
  - (2) Navigators: MAJ (b) (6) MAJ (b) (6)
  - (3) Flight Engineers: MSGT (b) (6) MSGT (b) (6)
  - (4) Spray Operators: MSGT (b) (6) , MSGT (b) (6) MSGT (b) (6) MSGT (b) (6)
- b. **Maintenance:**
  - (1) Spray Maintenance: SMSGT (b) (6) TSG (b) (6) TSG (b) (6) MSGT (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6) MSgt (b) (6) SRA (b) (6) (b) (6)  
(b) (6)
  - (3) Avionics: SSGT (b) (6) SSGT (b) (6)
  - (4) Engine/Propulsion: TSgt (b) (6)
  - (5) Hydraulics/Electrician: MSgt (b) (6) TSgt (b) (6)
  - (6) ARMS: SRA (b) (6)
- c. **Entomologists:** LTC (b) (6) application supervision, Cat 11 (UTTR), MAJ Mark Breidenbaugh, pesticide mixing and loading Cat 11, safety briefer (Hill AFB)
- d. **Ground Support:** SMSgt (b) (6) (UTTR), TSgt (b) (6) (Hill AFB).
- e. **Flying Data:**
  - (1) 4 Spray Sorties on 14 MAR – 2 105; 2 106.
  - (2) 4 Spray Sorties on 16 MAR – 2 105; 2 106.
  - (3) 4 Spray Sorties on 17 MAR – 2 105; 2 106.
  - (4) 2 Spray Sorties on 18 MAR – 1 105; 1 106.
  - (5) 1 Training Sortie on 19 MAR – 106.
  - (6) Ferry Sorties/Hours: 4/20.1
  - (7) Spray sorties/hours: 17/27.6

**3. PESTICIDE:**

- a. Trade Name: Krovar<sup>®</sup> IDF
- b. EPA Registration Number: 352-505
- c. Formulation Sprayed: 10 lbs Krovar<sup>®</sup> per 22.5 gallons formulation.
- d. Gallons Pesticide Mix Loaded: 24,640
- e. Gallons Pesticide Mix Applied: 24,640
- f. Formulation Used: 450 lbs Krovar<sup>®</sup>, 4.0 gal StaPut<sup>®</sup>, ½ gal Foam Fighter<sup>®</sup>, 200 ounces Hi-Light<sup>®</sup> Dye, remainder water per 1000 gal of spray mix.
- g. Gallons and Name of Flush Used: 900 gal water
- h. Other Additives Used: 102 gal StaPut<sup>®</sup>; 40.6 gal Hi-Light<sup>®</sup> dye; 12.7 gal No-foam
- i. Application Rate: 22.5 gal/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99105, 99106
- b. Spray System (Modules Used) and System ID #: 3 and 5.
- c. Spray System Configuration: 3-Module System/ UHV Fuselage Booms
- d. Nozzle Type/Size: UHV Fuselage
- e. Nozzle Orientation & Number Used: 2 oriented straight back.
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 22.5 gallons per minute.

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 35'
- b. Spray Off-set: None
- c. Spray Release Altitude: 100' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) 14 MAR – beginning 300° at 9 knots; ending 290° at 8 knots
  - (2) 16 MAR – beginning calm; ending 20° at 11 knots with gusts to 16 knots.
  - (3) 17 MAR – beginning light & variable; ending 310° at 6 knots.
  - (4) 18 MAR – beginning 170° at 7 knots; ending 160° at 9 knots.
- b. Temperature (Degrees Fahrenheit):
  - (1) 14 MAR – 40° F - 46° F.
  - (2) 16 MAR – 27° F - 37° F.
  - (3) 17 MAR – 38° F.
  - (4) 18 MAR – 41° F
- c. Relative Humidity:
  - (1) 14 MAR – 42 % - 37 %.
  - (2) 16 MAR – 52 % - 43 %.
  - (3) 17 MAR – 42 %.
  - (4) 18 MAR – 36 %.
- d. Cloud Cover: Variable from 0 % to 100 % over the duration of the project; but mostly low cloud cover while spraying.
- e. Source: Ground observations at UTTR Target 21.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:

- (1) Technique Used: blue dye pattern on targets and observations from ground markers.
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Techniques Used: monitoring of weed emergence in spring.
  - (2) Results: will be determined this spring by range personnel.

8. **REMARKS:** No spraying was conducted on March 13 or March 15 due to poor weather. The spray for Target 24 was completed on March 16, 2008 and the spray for Target 21 was completed on March 18, 2008. The Aerial Spray Squadron used 24,640 gallons of pesticide mix for the spray (11,450 pounds of Krovar; active ingredients: 4,580 Bromacil and 4,580 lbs Diuron). Specific data is shown in Attachment 1. In October 2007, members from 75 CES and 757AS made herbicide applications on test plots located on the NORD LZ with unique herbicide formulations from different vendors. Results from these applications will be evaluated this spring and summer. Formulations that perform at equal or greater than Krovar will be considered for use during future missions depending on product cost and application schedule. Timing of applications will also be evaluated; specifically we will determine whether the spring or fall timeframe is more appropriate. Thus, the FY09 application may occur either in March or September based on these findings.

//signed//

(b) (6) , LTC, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

//signed//

(b) (6) , MAJ, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

## Attachment 1: Summary Spray Chart

**12 – 20 March 2008****SPRAY OPERATIONS SUMMARY FOR UTAH TEST AND TRAINING RANGE**

<b>DATE March</b>	<b>SORTIE #</b>	<b>AIRCRAFT #</b>	<b>SPRAY ON TIME (min)</b>	<b>TARGET</b>	<b>PASSES</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>FLYING HOURS</b>
14	1	105	5.1	21,24	8	83	1771	1.5
14	2	106	5.2	21,24	8	85	1810	1.4
14	3	105	5.2	21,24	6	88	1753	1.3
14	4	106	5.0	24,21	8	81	1757	1.5
16	5	105	5.6	24,21	10	91	1749	1.4
16	6	106	5.1	24,21	8	83	1787	1.4
16	7	105	5.1	21	12	84	1626	2.9
16	8	106	5.2	21	17	84	1825	2.2
17	9	105	5.1	21	13	83	1740	1.3
17	10	106	5.0	21	14	81	1793	1.5
17	11	105	5.4	21	11	87	1728	1.3
17	12	106	4.9	21	15	80	1748	1.9
18	13	105	5.1	21	11	82	1717	1.4
18	14	106	5.4	21	14	89	1836	2.1
18	Flush	105	Flush/Rinse	21	Flush	n/a	n/a	1.1
18	Flush	106	Flush/Rinse	21	Flush	n/a	n/a	1.1



19	Training	106	Wingman GPS training	UTTR	TNG	n/a	n/a	2.3
		Totals	72.4		155	1,181	24,640	27.6



**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
**3976 King Graves Rd Unit 26**  
**Vienna OH 44473-5926**



**MEMORANDUM FOR HQ AFRC/DOOM**

15 FEB 08

**FROM:** 757 AS/DOS

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Hill AFB/UTTR UT  
Annual Weed Control Spray Mission on the Utah Test and Training Range (UTTR)

1. **Capability:** Two aircraft will be available 12-21 Mar 08 for the requested spray mission. The 910AW will provide mission support 12-13 & 20-21 Mar 08.

2. **Concept of Operations:**

**12 Mar (Wednesday)**

0800 Show at KYNG  
0815 Mission Brief  
1000 Spray01 Take off (Crew Per the flying schedule, not spray plan)  
1005 Spray02 Take off (Crew Per the flying schedule, not spray plan)  
1010 Support aircraft Take off  
1330, 1335, 1340 Arrive Hill AFB  
1400 Mission Commander/Safety/Flight operations/ and In-processing Briefings

**13-14 Mar (First Spray Sortie, Range Times (1500Z-2000Z))**

0600: Show time, aircrew 1 (Crew according to spray plan)  
0630: Show time, aircrew 2 (Crew according to spray plan)  
0743: Sunrise  
0800: Spray 01 Take off  
0830: Spray 02 Take off  
0800-1700: Spray 01 & 02 spray UTTR Targets as directed by the MC

**15-16 Mar- Weather back up only; Hill range closed unless needed due to delays**

**17-19 Mar (First Spray Sortie, Range Times (1500Z-2000Z))**

0600: Show time, aircrew 1 (Crew according to spray plan)  
0630: Show time, aircrew 2 (Crew according to spray plan)  
0735: Sunrise  
0800: Spray 01 Take off  
0830: Spray 02 Take off  
0800-1700: Spray 01 & 02 spray UTTR Targets as directed by the MC

**20 Mar : Finish spray areas/Weather Back-up/Flush, Clean Up;**

0600: Show time, aircrew Spray 1  
0630: Show time, aircrew Spray 2  
0732: Sunrise (see attach Sunrise/Sunset Chart in mission folders)  
0800: Spray 01 Take off  
0830: Spray 02 Take off

**\*\*Flush sorties, plan 2 sorties each pending spray mx approval on clean tanks**

**21 Mar (Thur) All aircrew and aircraft return to YNG**

0700: All Aircrew report  
0730: All Personnel report  
0900: Spray01 Takes off  
0905: Spray02 Takes off  
0910: Support airplane Takes off  
1600: Lands YNG

3. **Spray Parameters and Sequencing:**

- a. **Herbicide:** Krovar 1DF®
- b. **Application Rate:** 22.5 gal/acre (10 lbs of Krovar in 22.4 gal of water)
- c. **Acreage:** 1,283 Acres (Targets 21, 24 and Nord LZ)
- d. **Ground Speed:** 200 Knots (337.55 ft/sec)
- e. **Spray Altitude:** 100 Feet AGL
- f. **Swath Width:** 35 Feet
- g. **Flow Rate:** 366.1 Gallons/Minute

4. **Mission Commander:** Lt Col (b) (6)

5. **Aircraft Commanders:** Maj's (b) (6), Capt (b) (6)

6. **Support required at Hill AFB and the UTTR has been completed.**

(b) (6), Capt, USAFR  
Assistant Chief of Aerial Spray

# SPRAY OPERATIONAL SCHEDULE

## UTAH TEST AND TRAINING RANGE MISSION

### 12-21 MARCH 2008 CH3

12 Mar A/C #105, MI: QZNRKA753072 Report Time: 0800 Take Off: 1000 Arrive: 1330L

12 Mar A/C #106, MI: QZNRKA754072 Report Time: 0805 Take Off: 1005 Arrive: 1335L

12 Mar Supt A/C #103 QDNRKA755072 Report Time: 0810 Take Off: 1010 Arrive: 1340L

20 Mar Supt AC #??? QDNRKA756080 Report Time 0800 Take Off 1000 Arrive 1330

**PURPOSE/BENEFIT/OBJECTIVE:** Aerial spray herbicide mission controlling Halogeton on Targets 21, 24 at the Utah Test and Training Range(UTTR)aiding vegetation control for bombing mission test evaluations and unexploded ordinance recovery.

#### 1. AIRCREW 1: AC 106-In place CALL SIGN: SPRAY 06

a. **Pilots:** MAJ (b) (6) , Capt (b) (6) , Maj (b) (6)

b. **Navigators:** Maj (b) (6) , LTC (b) (6)

c. **Flight Engineers:** MSgt (b) (6)

d. **Spray Operators:** MSgt (b) (6) , Msgt(b) (6)

e. **Crew Chiefs:** Msgt (b) (6)

#### AIRCREW 2: AC 105-In place CALL SIGN: SPRAY 05

a. **Pilots:** Capt (b) (6) , 1Lt (b) (6) , Capt (b) (6) ,

b. **Navigator:** Maj (b) (6) ,

c. **Flight Engineer:** MSgt (b) (6)

d. **Spray Operators:** MSgt(b) (6) , Msgt (b) (6)

e. **Crew Chief:** Tsgt(b) (6)

Aircrew/Personnel to take Support aircraft: Msgt (b) (6) , Msgt (b) (6) Msgt (b) (6) , Msgt (b) (6) , Sra (b) (6) , Sra (b) (6)

Separate Arrival: LTC (b) (6) (Wed – Sat)

#### 2. MISSION SUPPORT:

a. **Mission Commander:** LTC (b) (6)

1. Makes final decision on all changes to the schedule

2. Confirm all hotel information is correct upon check in

3. Report flight data to AFRC daily (See contact info on reporting sheet)

b. **Entomologists:** Maj (b) (6) (In Place)

c. **ARMS:** SRA (b) (6)

#### 3. UTTR GROUND PARTY:

a. **Entomologist/Pest Management Professional(s):** \*LTC (b) (6) (Commercial air out)  
 , Smsgt Susan Kintz

#### 4. MAINTENANCE:

a. **910 MX Supervisor:** \*SMSgt(b) (6) - (In place 5 Mar 08); Msgt (b) (6)

b. **910 Spray MX:** \* TSgt (b) (6) - (In place 6 Mar 08), Tsgt (b) (6) , Tsgt (b) (6) ,  
(b) (6) , (b) (6) , (b) (6)

c. **Instruments/Avionics:** Ssgt Andrew Ford (in place 6 Mar 08), Ssgt (b) (6)

d. **Hydraulics/Electrician:** Msgt (b) (6) , Tsgt (b) (6)

e. **Engine/Propulsion:** Tsgt (b) (6)

5. **COMM:** MSgt (b) (6) , MSgt (b) (6) , Msgt (b) (6) , Tsgt (b) (6) , A1C (b) (6)

#### 6. IN-BRIEFING: (UTTR Staff)

a. **When/Time:** 12 Mar 2008 , 1400-1430

b. **Where:** Building 777

c. **Who:** EVERYONE!! Do Not leave Forestry area until cleared out by the MC.

**d. Briefing Plan**

- a. Billeting- See item **16.g** below
- b. Vehicles- See item **16.h** below
- c. Schedule of events
- d. Weather call
- e. Cellular Phone numbers for all personnel

**7. PLANNED SEQUENCE OF EVENTS:** Hill AFB Tower Control and Runway Hours 24/7

**NOTES:**

- 1. Scheduling reflects no weather or maintenance delays. In the event of weather or maintenance delays, the missions will be adjusted as required. **ALL TIMES SUBJECT TO ADJUSTMENT BY MISSION COMMANDER**
- 2. **DUTY DAY FOR CIVILIANS WILL BE AS REQUIRED WITHIN CREW REST CONSTRAINTS.**
- 3. Tower Control, Runway & Airfield hours 24/7
- 4. **UTTR RANGE TIMES: 1500-2000Z**
- 5. **ALL MX & A/C PERSONNEL WILL REMAIN ON DUTY UNTIL AIRCRAFT IS PRE-FLIGHT COMPLETE AND RELEASED BY THE MISSION COMMANDER.**

**12 Mar (Wednesday)**

0800 Show at KYNG  
0815 Mission Brief  
1000 Spray01 Take off (Crew Per the flying schedule, not spray plan)  
1005 Spray02 Take off (Crew Per the flying schedule, not spray plan)  
1010 Support aircraft Take off  
1330, 1335, 1340 Arrive Hill AFB  
1400 Mission Commander/Safety/Flight operations/ and In-processing Briefings

**13-14 Mar (First Spray Sortie, Range Times (1500Z-2000Z))**

0545: Show time, aircrew 1 (Crew according to spray plan)  
0630: Show time, aircrew 2 (Crew according to spray plan)  
0743: Sunrise  
0800: Spray 01 Take off  
0830: Spray 02 Take off  
0800-1700: Spray 01 & 02 spray UTTR Targets as directed by the MC

**15-16 Mar- Weather back up only; Hill range closed unless needed due to delays**

**\*\*Possible Wingman Training Flight on Sat morning**

**17-19 Mar (First Spray Sortie, Range Times (1500Z-2000Z))**

0545: Show time, aircrew 1 (Crew according to spray plan)  
0630: Show time, aircrew 2 (Crew according to spray plan)  
0735: Sunrise  
0800: Spray 01 Take off  
0830: Spray 02 Take off  
0800-1700: Spray 01 & 02 spray UTTR Targets as directed by the MC

**20 Mar : Finish spray areas/Weather Back-up/Flush, Clean Up;**

0600: Show time, aircrew Spray 1  
0630: Show time, aircrew Spray 2  
0732: Sunrise (see attach Sunrise/Sunset Chart in mission folders)  
0800: Spray 01 Take off  
0830: Spray 02 Take off  
**\*\*Flush sorties, plan 2 sorties each pending spray mx approval on clean tanks**

**21 Mar (Thur) All aircrew and aircraft return to YNG**

0700: All Aircrew report  
0730: All Personnel report  
0900: Spray01 Takes off  
0905: Spray02 Takes off  
0910: Support airplane Takes off  
1600: Lands YNG

\*\*If completed early, the aircrews and airframes may return early. Support personnel will be dependent upon the arrival of the support aircraft. TBD by the mission commander.

## 8. ITEMS TO TAKE:

- a. **PMP:**
  - (1) Project Notebook with Recording Sheets and Maps
  - (2) Laptop Computer and Batteries
  - (3) 2 Compasses and Stop Watch
  - (4) 2 Signal Mirrors and 2 Spot Lights
  - (5) Measuring Wheels and Tape
  - (6) Entomologists' Tool Kit
  - (7) UHF/VHF Radios and VHF Radios
  - (8) Cellular Phone
- b. **Mission Commander:** Mission Folder, Cellular Phone
- c. **Navigator:** Maps
- d. **Spray Maintenance:**
  - (1) MASS Spares and Spill Kit
  - (2) Tools and Other Equipment
  - (3) Herbicide Safety Binder
  - (4) Safety Equipment
- e. **Maintenance:** Applicable Equipment

## 9. SPRAY CONFIGURATION: SP3G

- a. Two Aircraft, Systems 3 and 5
- b. MASS Modules 1, 2 and 3
- c. UHV Fuselage booms oriented straight back

## 10. PPR REQUIREMENTS: All required, see Form 33 setup sheets for aircraft

- 106- LD1202
- 105- LD1201
- 023- LD1203 (Departure)
- 023- LD2004 (Return)

## 11. PARKING PLAN: Forestry (Alert) Ramp – on East side of the airfield.

## 12. RADIO FREQUENCIES:

- **Clover Range Control:** UHF 285.65, 275.9, 361.4 (p)
- **Eagle Tower:** UHF 351.0; Mawk 4 ((b) (6) )
- **Diddle Knoll & Spray Ops Freq:** UHF 398.1 (Primary), 383.2 (Back-up); VHF 134.1, 118.45
- **Spray Inter plane:** UHF 237.05 / VHF 138.375
- **Spray Ground to Spray Maintenance:** See Iridium Phones
- **Base OPS:** 139.3
- **HF Operations:** Designated by Comm. See attached list.
- **Communications Ground Freq:** LMR nets are trunked at Hill.

### - IRIDIUM PHONES

- Mission Commander (808) 434-8586
- Maintenance Supervisor (808) 434-9585
- Entomologist/Pest Management (808) 434-1477 and (808) 659-3224

## 13. SPRAY PARAMETERS:

- a. **Herbicide:** Krovar 1DF®
- b. **Application Rate:** 22.5 gal/acre (10 lbs of Krovar in 22.4 gal of water)
- c. **Acreage:** 1,283 Acres (Targets 21, 24 and a couple passes on Nord LZ)
- d. **Ground Speed:** 200 Knots (337.55 ft/sec)
- e. **Spray Altitude:** 100 Feet AGL
- f. **Swath Width:** 35 Feet
- g. **Flow Rate:** 366.1 Gallons/Minute

**14. HERBICIDE LOADING: (For Partial Loads Use Table on Last Page)**

**a. Sequence for Loading 1,000 Gallon Mixing Tank:**

- (1) Fill with water up to 750 Gallon Mark, then add:
  - (a) 450 Pounds of Krovar 1DF® (9 bags, 50 # each)
  - (b) 4.0 Gallons (15,140 ml) of StaPut®
  - (c) 64 Ounces (1,892 ml) of Foam Fighter F®
  - (d) 200 Ounces (5,913 ml) Hi-Light® Dye
  - (e) Add Water to 1,000 Gallon Mark and Agitate for 30 Minutes

**b. When:** Start at 0530 Hours on first full day of spraying and adjust as necessary through end of the daily mission as called by Mission Commander.

**c. Items to be furnished by installation:**

- (1) Krovar 1 DF® (12,660 pounds)
- (2) Foam Fighter F® (15 gallons)
- (3) StaPut® Additive (114 gallons)
- (4) Hi-Light® Dye (45 gallons)
- (5) Remove Nutra-Sol Tank Cleaner
- (6) Loading Personnel and All Loading Equipment
- (7) All Necessary Cleanup and Hazardous Waste Disposal
- (8) Aircraft Support Equipment and TA Support
- (9) Wash Rack and Fuel Priority

**15. SPRAY MONITORING AND TESTING.** By CPMP & ground support personnel

**16. CONTACTS:** Commercial prefix (801) 777-XXXX; DSN 777-xxxx

**a. 388<sup>th</sup> RANS/RSO, Range Control Officer/Installation Spray Coordinator:**

(b) (6) : 6066 Cedar Lane, Bldg 1274S; (b) (6) ; FAX: 9205  
Cell Phone # (b) (6)

(b) (6) 4

- **Hill Range Control:** 7-9386, Current OPS; 7-9385
- **Range Scheduler:** 7-9386
- **Eagle Tower:** 7-1515/6
- **Clover Operations:** 7-7575
- **Clover DO: 586-3103**
- **388<sup>th</sup> RANS/RSL Radio Freq Monitor:** 7-6715
- **388<sup>th</sup> RANS/RSR Resource Monitor:** 5-4257

**b. Environmental Coordinator:** (b) (6)

**c. OASIS RANGE SUPPORT DIRECTORATE:**

Oasis Chief: 75 CEG/CEU (b) (6)

Oasis Civil Engineering: (b) (6)

North Range Security: 7-1521/2/4

**d. Hill AFB Base OPS:** 7-1861

**e. Entomology:** (b) (6)

**f. Weather:** Hill AFB: 7-2018; UTTR: 7-1516/63  
ASOS at Eagle Range 6-1765/1795  
Need Dash1 daily at 0600

**g. Billeting; Marriott POC:** (b) (6) (801) 390 4142

See roster for assigned Hotels

TownePlace Suites by Marriott, 1743 Woodland Park, Layton UT 84041 (801) 779-2422

Nugget (Wendover): 1-(800)-848-7300 (UTTR Personnel)

- Billeting Office Mountain View Inn, DSN 777-0802/1844, FAX 775-2014  
COM (801) 777-0802; FAX 775-2014



**POC (b) (6), DSN 777-2904**

- Holiday Inn Express, Layton UT 1695 Woodland Park Dr  
Comfort Inn (\$48+Tax) 877 North 499 West, 801 544-5577  
Holiday Inn (Odgen): 1-800-999-6841 or 801 399-5671  
Airport Hilton Inn: 1-800-648-9668 or 801 539-1515  
Ogden Park: 247 24<sup>th</sup>, 801 627-1190/800 421-7599  
La Quinta Inns: 1965 N 1200 W Layton, 801 776-6700  
Alana Motel: 116 N Main Street, Clearfield, 801 825-2221 or 2321

**h. Car Contact:**

- 1. Enterprise Rental Car (b) (6) at BX 801-825-0080**  
- Layton Office 801 593-6007

**1 Full Size @ \$389 12-21 Mar 08**

MC - LtCol (b) (6)

MX NCOIC- SMSgt (b) (6) (In place with car)

Com – 2 FS – MSgt (b) (6) Msgt (b) (6)

**7 Mini Vans @ \$563 12-21 Mar 08**

Spray 06 Crew – 2 Vans – MAJ (b) (6) (b) (6) Msgt (b) (6) (b) (6)

Spray 05 Crew – 2 Vans –, Capt (b) (6) (b) (6) Msgt (b) (6) (b) (6)

Entomologist– Maj (b) (6) (b) (6) (In Place with car)

Spray MX – 1 Van – Msgt (b) (6) (b) (6)

Crew Chiefs – 1 Van – Msgt (b) (6) (b) (6)

MX Specialists – 1 Van Msgt (b) (6) (b) (6)

- 2. Hill Motor Pool: 75 LRS/Dispatch DSN 777-1843, All Reserved: 1 total**

2x8 PaxVan for Supt Crew 12-21 Mar 08

1 Truck for flight line

**i. Hill AFB: Base Commander: Col (b) (6)**

Airfield Manager: (b) (6), (b) (6)

Base Operations: 7-1861; FAX: 7-2221

Weather: 7-2018

Transit Alert: 7-3886

C-130 Maintenance Contact: 7-2478

Fuels: 7-7423/7-7311 available 0900-1800 daily after hours contact CP

Billeting: 7-1844

Chow Hall: 7-3428 Breakfast M-F 0530-0730, S-S 0700-1900

Golf Course: 7-1108

Public Affairs: 7-5201

Supply: 7-5391 (922 OE)

**j. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, + Ext

(1) 910 AW/CC: Col (b) (6)

(2) 910 AW Command Post: Ext 1315; FAX 1161

(3) 910 AW/PA: (b) (6); FAX 1022

(4) 910 OG/CC: Col (b) (6)

(4) 910 OS/OSA: Airfield Manager, (b) (6)

(5) 757 AS/DO: LTC (b) (6) (b) (6)

(6) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371

(7) 757 AS/DOO: Ops Admin: SMS (b) (6); FAX 1657

(8) 757 AS/DOS: Aerial Spray Office, (b) (6)

FAX 1616

(9) 910 LG/CC: Ext 1225

(10) 910 LG/LGM: Ext 1352

(11) Maintenance Control: Ext 1327

- (12) 910 LG/LGMS: Spray Maintenance, Ext 1132
- (13) 910 LG/LGL, Ext 1137
- (14) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (15) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) (b) (6) cell (b) (6)
  - Spray Maintenance: (b) (6)

**17. SEQUENCING:**

- a. Target sequencing is determined by UTTR personnel based upon EOD clearance schedule and airspace scheduling.
- b. Spray ops aircraft must stay south of Base Leg Knoll during turns on north run on Target 21. Coordination with range control is essential to assure that this portion of the range is released for air operations.
- c. When winds blow directly from one side of the target to the middle of the target or during early morning when wind speed is low, ground monitors will direct the “dress up” of the target edges.
- d. **Spraying Priorities:**
  - (1) Target 21
  - (2) Target 24
- f. **Multiple-Target Alignments for Possible Future Operations.**  
Whenever possible, multiple in line targets will be treated on the same pass to facilitate aircraft line-up and turning efficiency (in which case two separate ground-monitoring and marking parties will be required).
  - (1) The west edges of Targets 21 & 24 are contiguous and can be treated on the same pass with a spray-off gap between targets.

**18. GENERAL TARGET INFORMATION:**

- a. **Target 21:**
  - (1) Dimensions: 4,980' X 7,770'
  - (2) Acreage: 888
  - (3) Acres Sprayed in 2004: 888
  - (4) Aircraft Loads: 18,869 Gal
  - (5) Sorties: 17
  - (6) Passes (35' Swath): 157
  - (7) Spray-On Time/Pass: 23 Seconds
  - (8) Spray Heading: 00/180
- b. **Target 24:**
  - (1) Dimensions: 1,600' X 6,080'
  - (2) Acreage: 223
  - (3) Acres Sprayed in 2004: 223
  - (4) Aircraft Loads: 5,263 Gal
  - (5) Sorties: 7
  - (6) Passes (35' Swath): 47
  - (7) Spray-On Time/Pass: 18 Seconds
  - (8) Spray Heading: 00/180

**UTTR GEOGRAPHIC LOCATION**

Target areas on UTTR are geographically located in northwestern Utah, directly west of the Great Salt Lake and Hill Air Force Base. The complex is positioned between 40 and 41 degrees north latitude and close to 113 degrees ten minutes west longitude. The targets are within range 12 west and Township two and three north, Salt Lake Baseline Meridian.

# AERIAL SPRAY OPERATIONAL SCHEDULE

## MOUNTAIN HOME AFB RANGE, ID

### 12-28 SEPTEMBER 2008

**PURPOSE/BENEFITS/OBJECTIVES.** To prevent fire hazards, inhibit annual re-growth of cheatgrass on Saylor Creek Range and allow native vegetation to establish and be competitive.

#### 1. 910 AW PARTICIPANTS:

##### 2. 12 SEP 08

###### a. Aircrew:

- 1) Mission Commander: Maj (b) (6) 12-20 Sep
- 2) Pilots: Capt (b) (6) -28 Sep, Capt (b) (6) 12-20 Sep
- 3) Navigator: Maj (b) (6) 12-20 Sep
- 4) Flight Engineer: SSgt (b) (6) 12-16 Sep
- 5) Spray Operators: MSgt (b) (6) 12-28 Sep, MSgt (b) (6) 12-20 Sep

###### b. Maintenance:

- 1) Spray MX: TSgt (b) (6) 12-28 Sep
- 2) Crew Chiefs: TSgt (b) (6) 12-28 Sep, SRA (b) (6) 15-28 Sep

##### 15 SEP 08

###### a. Aircrew:

Pilot: Capt (b) (6) 15-20 Sep, Maj (b) (6) 15-16 Sep, Maj (b) (6) 15-16 Sep  
Nav: 1Lt (b) (6) 15-16 Sep  
Engineer: SMS (b) (6) (b) (6) 15-20 Sep\*  
Load Masters: MSgt (b) (6) 15-16 Sep

###### b. Maintenance:

Spray Mx: MSgt (b) (6) 15-28 Sep, TSgt (b) (6) 15-28, SRA (b) (6) 15-28  
Avionics: TSgt (b) (6) (b) (6) 15-28 Sep  
Crew Chief: MSgt (b) (6) 15-16 Sep  
Prop: MSgt (b) (6) 15-28 Sep  
Electric: TSgt (b) (6) 15-28 Sep  
Hyd: MSgt (b) (6) 15-28 Sep

###### c. Entomologists: LTC (b) (6) (b) (6) 15-28 Sep

##### 19 SEP 08

###### a. Aircrew:

- 1) Mission Commander: LTC (b) (6) 19-28 Sep
- 2) Pilots: Maj (b) (6) 19-28 Sep
- 3) Navigator: LTC (b) (6) 19-28 Sep
- 4) Flight Engineer: MSgt (b) (6) 19-28 Sep
- 5) Spray Operator: MSgt (b) (6) 19-28 Sep
- 6) Load Master MSgt (b) (6) 19-20 Sep

###### b. Maintenance:

TBD

#### 2. SCHEDULE: (Local times; total of 13 lifts required, 1-3 lifts per day)

##### 12 SEP (Friday):

0600: Show at KYNG

PPR #AMS003

0800: Depart KYNG

1130: Land KMUO (Local)

1230: Safety Briefing, MX configures aircraft; plan next day's mission

\*\* ASAP After landing

**15 SEP (Monday)**

**Support Aircraft**

**PPR#2461514**

0800 Crew show  
1000 Depart YNG  
1335 Land MUO

\*Spray Crew members: SMS (b) (6)

\*Spray Mx/Mx: Msgt (b) (6) Tsgt (b) (6) Sra (b) (6) Ssgt (b) (6) Sra (b) (6)

**16 SEP (Tuesday): Range Time 0630-1100, (1-3 sorties if possible)**

0530: Crew Show time/Load water and chemical  
**0700:** Take Off KMUO (As determined by Mission Cmdr)  
0724: Sunrise  
0830 Reload Chemical and depart ASAP if second lift  
1000: Land KMUO

**17 SEP (Wednesday): Range Time: 0630-1100, (1-3 sorties if possible)**

0730: Show time/Load water and Chemical  
**0700:** Take Off KMUO  
0725: Sunrise  
Multiple lifts TBD – Wx permitting 2-3 sorties

**18 SEP (Thursday): Range Time: 0630-1100 (1-3 sorties if possible)**

0800: Show time  
**0700:** Take Off KMUO  
0726: Sunrise  
Multiple lifts TBD – Wx permitting 2-3 sorties

**19 SEP (Friday): Range Time 0700-1000, (1 sorties )**

0730: Crew Show time/Load water and chemical (FOD WALK @MUO)  
**0700:** Take Off KMUO (As determined by Mission Cmdr)  
0727: Sunrise  
0830 Reload Chemical and depart ASAP if second lift  
1000: Land KMUO

**\*\*SWAPOUT AIRCRAFT YNG PPR#2461516**

0800: Show at YNG  
1000: Depart YNG  
1330: Land MUO

**20 SEP (Saturday): Range Time 0700-1000, (1-2 sorties if possible)**

0530: Crew Show time/Load water and chemical  
**0700:** Take Off KMUO (As determined by Mission Cmdr)  
0728: Sunrise  
0830 Reload Chemical and depart ASAP if second lift  
1000: Land KMUO

**21 SEP (Sunday): Range Time 0700-1000, (1-2 sorties if possible)**

0530: Crew Show time/Load water and chemical  
**0700:** Take Off KMUO (As determined by Mission Cmdr)  
0730: Sunrise  
0830 Reload Chemical and depart ASAP if second lift  
1000: Land KMUO

**22 SEP (Monday): Range Time 0700-1000, (1-2 sorties if possible)**

0530: Crew Show time/Load water and chemical  
**0700:** Take Off KMUO (As determined by Mission Cmdr)  
0730: Sunrise  
0830 Reload Chemical and depart ASAP if second lift  
1000: Land KMUO

**23 SEP (Tuesday): Range Time 0700-1000, (1-2 sorties if possible)**

0530: Crew Show time/Load water and chemical  
**0700:** Take Off KMUO (As determined by Mission Cmdr)  
0730: Sunrise  
0830 Reload Chemical and depart ASAP if second lift  
1000: Land KMUO

**24 SEP (Wednesday): Range Time 0700-1000, (1-2 sorties if possible)**

0530: Crew Show time/Load water and chemical  
**0700:** Take Off KMUO (As determined by Mission Cmdr)  
0730: Sunrise  
0830 Reload Chemical and depart ASAP if second lift  
1000: Land KMUO

**25 SEP (Thursday): Range Time 0700-1000, (1-2 sorties if possible)**

0530: Crew Show time/Load water and chemical  
**0700:** Take Off KMUO (As determined by Mission Cmdr)  
0730: Sunrise  
0830 Reload Chemical and depart ASAP if second lift  
1000: Land KMUO

**26 SEP (Friday): Range Time 0700-1000, (1-2 sorties if possible)**

0530: Crew Show time/Load water and chemical  
**0700:** Take Off KMUO (As determined by Mission Cmdr)  
0730: Sunrise  
0830 Reload Chemical and depart ASAP if second lift  
1000: Land KMUO

**\*\*Spray Support Aircraft: PPR#:2461521**

0800 Show YNG  
1000 Depart YNG  
1330 Land MUO

**27 SEP (Saturday): Range Time 0700-1000, (1-2 sorties if possible)**

0530: Crew Show time/Load water and chemical  
**0700:** Take Off KMUO (As determined by Mission Cmdr)  
0730: Sunrise  
0830 Reload Chemical and depart ASAP if second lift  
1000: Land KMUO

**28 SEP (Sunday)**

0700 Show  
0900 Depart MUO  
1630 Land YNG

**\*\* If no delays are encountered, the mission will return to YNG after completion of last flush sortie and cleaning of system.**

**3. ITEMS TO TAKE:**

- a. Mission Commander:** 1 Cellular Phone
- b. Entomologist:** UHF Radio, Cardholders, Water Sensitive Cards, Tool Kit, VHF Radio, Cell Phone, Laptop Computer
- c. Navigator:** Maps/Map Bag, Validation Map,
- d. Spray Operator:** Safety Gear, computer
- e. Spray Maintenance:** Mobility Kit, MASS Spares, Spill Kit, Pesticide Safety Binder, Safety Equipment and Tool and other equipment

**4. NOTIFICATION NECESSARY FOR THIS MISSION: N/A**

**5. PARKING PLAN:** Transient Ramp in front of Base Operations

## 6. RADIO FREQUENCIES:

- a. **Air To Ground:** Entomologists: 123.45 VHF; 292.2 (range); Maintenance 384.7
- b. **Mt Home:** PTD: 372.2/138.9, ACC CP (Raymond 27): 381.3, ATIS: 273.5, TWR: 133.85 / 253.5, GND: 120.5 / 275.8, RAPCON: 259.1, Salt Lake Center: 387.15/363.0
- c. **Range:** Saylor Creek Range: 134.1 / 292.2 pri / 381.3 sec  
Sagebrush Control: 251.2, Paradise MOA: 272.7/236.05/225.55  
Owyhee MOA: 392.2/266.35, Bruneau/Sheep Creek MOA: 251.875

## 7. IN-BRIEFING: 1530 Airfield Management Office

## 8. Billeting:

### Sleep Inn Foot Hills

1180 US 20 Mountain Home, ID

208-587-9743

Fax: 208-587-7382

## 9 Vehicles: Mountain Home will provide vehicles.

- 2 Minivans (1 Ops; 1 MX)
- 1 12Pax Van (Ops/Support crew)
- 1 ½ Ton Pick Up (OPS)
- 6 Pax 16-28 SEP (MX)
- 6 Pax 17-28 SEP (MX)

## 8. SPRAY CONFIGURATION:

- a. **System:** SP-3G
- b. **Nozzle Tips/Orientation:** Raindrop/Straight Back
- c. **Number:** Fuselage – 17 nozzles (8 left side: 9 right side)
- d. **Booms:** Fuselage
- e. **Aircraft:** 99105 **Mission Identifier:** QZNRKA287256
- f. **Profile:** Planned HV Profile

## 9. SPRAY PARAMETERS:

- a. **Altitude:** 100' AGL (we are treating at 46.5 acres/minute)
- b. **Swath Width.** 100 feet
- c. **Flow Rate.** 326 gal/min
- d. **Application Rate.** 7 gal/acre; approximately 3,200 acres to be treated for cheatgrass
- e. **Ground Speed:** 200 Knots

## 10. SPRAY MIXING AND LOADING:

### a. Composition of Each Gallon:

- (1) 0.57 ounces of Plateau® (we want 4oz in 7 gallons per acre)
- (2) 1 ounce of Sta-put® Drift Retardant
- (3) 126.4 ounces of water

### b. First Load (4 Tanks of 450 gallons each + sump of 75 gallons)

- (1) Fill to 450 gal water/tank using the pump on the water tanker truck. This is done by putting the filler hose into the rear tank with all tanks open to the common sump. Total water in tanks = 1,800 gal.
- (2) 75 gal/water in sump
- (3) Total water added = 1,800 gallons
- (4) Upload 8.03 gal (30.4L)/Plateau; add 14 gal Sta-put while agitating approximately 5-7 min  
Total quantity mix 1822 gallons

## 11. **SPRAY MONITORING OR TESTING: Performed by the CPMPs**

**NOTES:** Will use water sensitive cards.

## 12. **CONTACTS:**

### a. **Mountain Home AFB, ID:**

- (1) Base Ops: DSN: 728-2222; COMM: (208)-828-2222 TSgt (b) (6)
- (2) Transit Alert: (b) (6) DSN (b) (6)
- (3) OG Col (b) (6) : DSN (b) (6)
- (4) Conservation Chief/Spray Project POC, (b) (6) : DSN (b) (6)
- (5) Entomology: TSgt (b) (6) , SSgt (b) (6) , (b) (6) : DSN (b) (6)
- (6) Weather Superintendent, Sgt (b) (6) or Weather NCOIC, TSgt (b) (6) (b) (6) DSN (b) (6)
- (7) Weather: Lt (b) (6) DSN (b) (6) 8, Maj (b) (6) : DSN (b) (6) .
- (8) Billeting: Sagebrush Hotel DSN 728-5151, FAX: 4797
- (9) Transportation: (b) (6) FAX: 1619
- (10) Weather to be provided:  
??- Davis Mothan AFB, DSN 228-6590  
- Mountain Home AFB, Lt (b) (6) DSN (b) (6) Maj (b) (6) DSN (b) (6)
- (11) Fire Dept (CEF): Chief (b) (6) , (b) (6) (b) (6) TSgt (b) (6) (b) (6) DSN 728-6292 dispatch

### b. **Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, 2, + Ext

- (1) 910 AW/CC: COL (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: CAPT (b) (6) ; FAX 1022
- (1) 910 OG/CC: COL (b) (6) (b) (6) / (b) (6)  
910 OSF/OSA, Airfield Manager:, (b) (6)
- (2) 910 OG/SOF (Operations Supervisor Desk): Ext 1069; FAX 1371
- (3) 757 AS/DO: MAJ (b) (6) 93
- (4) 757 AS/DOO, Ops Admin: SMS (b) (6) FAX 1657
- (5) 757 AS/DOS: Aerial Spray Office, CAPT (b) (6) (b) (6)  
CAPT Travis Adams Ext 1111, FAX 1616
- (6) 910 LG/CC:, Ext 1225  
910 MA: Maintenance Officer, Ext 1144
- (7) 910 LG/LGM:, Ext 1352
- (8) Maintenance Control: Ext 1348
- (9) 910 LG/LGMS: Spray Maintenance: SMS (b) (6)
- (10) 910 LG/LGL: CMS (b) (6)
- (11) Omega/SATO Travel: Ext 1772; 1 (800) 285 – 6342
- (12) Cellular Phones: Mission Commander: (b) (6)  
PMP/Entomologist/Ground Support:  
(b) (6)  
Spray Maintenance: (b) (6)



7 August 2001

MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497 -0198)

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Grand Forks AFB  
ND Control of Mosquitoes

1. **Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks AFB ND.
2. **Capability:** Spray Aircraft Available 13-16 Aug 2001
3. **Concept of Operations:**
  - 13 August (Monday):
    - 1000: Show time
    - 1300: Depart KYNG
    - 1530: Land KRDR/Safety Briefing
  - 14 August (Tuesday): Targeted pests are active during evening hours
    - 1700: Show time
    - 1900: Take Off KRDR
    - 2045: Land KRDR
  - 15 August (Wednesday): Targeted pests are active during evening hours
    - 1700: Show time
    - 1900: Take Off KRDR
    - 2045: Land KRDR
  - 16 August (Thursday):
    - 0800: Show Time
    - 1100: Take Off KRDR
    - 1500: Land KYNG
4. **Spray Parameters:**
  - a. **Acreage:** 20,000 Acres with Adulticide (Only areas determined by PMP)
  - b. **Altitude:** 150 Ft ULV
  - c. **Pesticide:** Trumpet (Adulticide)
  - d. **Deploy:** 3.3 Hrs
  - e. **Re-Deploy:** 3.0 Hrs
  - f. **Spray Time:** Will be determined by PMP
5. **Mission Commander:** Major (b) (6)

6. **Aircraft Commander:** Major (b) (6)
7. Support required at Grand Forks AFB ND has been coordinated with the organization's Environmental/Spray Coordinator Ms (b) (6), DSN (b) (6).
8. HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616, ATTN: 757 AS/DOS.

(b) (6), Major, USAFR  
Aerial Spray Operations Coordinator

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **GRAND FORKS AFB, ND**

### **13-16 AUGUST 2001**

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks AFB, North Dakota.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Mission Commander: LTC (b) (6)
- (2) Pilots: MAJ (b) (6) , LTC (b) (6)
- (3) Navigators: MAJ (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: MSG (b) (6) , CMS (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: TSG (b) (6) , TSG (b) (6) , TSG (b) (6)
- (2) Crew Chief(s): SSG (b) (6) , SRA (b) (6)
- (3) Avionics: SSG (b) (6)

##### **c. Entomologists/Ground Support: MAJ (b) (6) & 1LT (b) (6)**

#### **2. SCHEDULE: (All Local Times)**

##### **13 AUGUST (Monday)**

1000: Show at KYNG  
1300: Depart KYNG  
1530: Land KRDR/Safety Briefing

##### **14 AUGUST (Tuesday): (Target Pest are active during evening hours)**

1530: In-brief  
1700: Show time  
1900: Take Off KRDR  
2043: Sunset/Land KRDR

##### **15 AUGUST (Wednesday): (Target Pest are active during evening hours)**

1700: Show time  
1900: Take Off KRDR  
2041: Sunset/Land KRDR

##### **16 AUGUST (Thursday)**

0800: Show time  
1100: Take Off KRDR  
1500: Land KYNG

#### **3. ITEMS TO TAKE:**

- a. **Mission Commander:** Hand Held GPS, 1 Cellular Phone
- b. **Entomologist:** 1 Cellular Phones, Wind Gauge, 2 Compasses, Pest Safety Binder, 2 Signal Mirrors, 1 UHF Radio, 10 Packs Water Sensitive Cards, 3 Boxes Card Holders with Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Toshiba Computers, 1 SATLOC Manual, Project Notebook, 2 Anemometers, Entomologist's Tool Kit, Trakstar Receiver and Antenna, Batteries, Kodak Camera
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

4. **PPR:** Not required weekdays

5. **RADIO FREQUENCIES:** Air To Ground Primary 392.2; VHF 123.45

#### 6. **SPRAY CONFIGURATION:**

- a. **System:** 2-Module System/Stainless Steel ULV Wing Booms and Fuselage Booms
- b. **Nozzle Tips/Orientation:**  
ULV: 8008 TeeJet oriented straight down
- c. **Number:**  
ULV: wing only, 6 8008s total (3 each side)
- d. **Booms:** Full Wing
- e. **Aircraft: ; Mission Identifier:**

#### 7. **SPRAY PARAMETERS:**

- a. **Altitude:** 150' for ULV application
- b. **Swath Width.** 1500 feet for ULV or as determined by the PMP
- c. **Flow Rate.** 3.3 gallons/minute ULV
- d. **Application Rate.** 0.60 oz/acre Trumpet, ULV
- e. **Ground Speed:** 200 Knots

#### 8. **SPRAY MIXING AND LOADING:**

The amount of Trumpet to load will be determined on site

#### 9. **CONTACTS:**

- a. **319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks ND 58205**  
**DSN 362-xxxx; Commercial (701) 747-xxxx**
  - (1) **Base Operations:** Gene Crouse Airfield Manager or 1LT (b) (6) DSN(b) (6)
  - (2) **Environmental Officer:** (b) (6) , DSN (b) (6) , FAX 6155
  - (3) **Base Civil Engineer:** LTC (b) (6)
  - (4) **Pest Management:** SSG (b) (6) , DSN (b) (6) , FAX 3432
  - (5) **Public Affairs:** Capt.(b) (6) ext 5608 or ext 5023; off duty CP ext 6711
  - (6) **Utilities shop:** MSG (b) (6) , Superintendent DSN (b) (6)
  - (7) **Billeting:** DSN 362-3070/6189, (701) 594-8431; FAX 362-3069  
Prime Knight: DSN 362-3844; (701) 747-3844

#### **-- CONTRACT QUARTERS:**

- b. **910 AW, Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext  
(1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243

- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 OSF/OSA: Airfield Manager: (b) (6)
  - Assistant Air Field Manager (ACAM), (b) (6)
- (6) 757 AS/DO: LtC Merle Hart, Ext 1793
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6)
- (8) 757 AS/DOS: Aerial Spray Office, (b) (6) , FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: CMS (b) (6)
- (11) Maintenance Control: Ext 1348
- (12) 910 LG/LGMS: Spray Maintenance, Ext 1132/1586
- (13) 910 LG/LGL: CMS (b) (6)
- (14) Omega/SATO Travel: Ext 1772; (800) 285 – 6342
- (15) Supervisor of Flight Desk: 1069, FAX 1371
- (16) Cellular Spray Phones:
  - PMP/Entomologist: (b) (6)
  - Mission Commander: (b) (6)
  - Spray Maintenance: (b) (6) Pager (b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 13-16 AUG 2007

**Purpose/Objectives and Proposed Benefits:** To control vector mosquitoes of West Nile virus in order to protect the health and improve working conditions for members operating at Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) Pilots: Maj (b) (6), Capt (b) (6), Capt (b) (6)
- 2) Navigators: LTC (b) (6)
- 3) Flight Engineers: SMS (b) (6)
- 4) Spray Operators: MSG (b) (6), MSG (b) (6) olino

##### b. Maintenance:

- 1) Spray Maintenance: SMS (b) (6), Tsgt (b) (6), Tsgt (b) (6)
- 2) Crew Chief(s): SSG (b) (6), SSG (b) (6)
- 3) Avionics: TSgt (b) (6)

##### c. Entomologist: Maj (b) (6)

#### 2. SCHEDULE: (All Local Times)

##### 13 AUG (Monday)

1000: Showtime  
1200: Depart KYNG  
1400: Land KGFK/Safety Briefing  
1530: Spray In Brief (CPMP, MC, AC)  
1730: Wx decision/load chemical  
1915: Take off KRDR (Adulticide Spray Sortie)  
2045: Sunset

##### 14 AUG (Tuesday):

1700: Show time  
1730 Wx decision/load chemical  
1915: Take off KRDR (Adulticide Spray Sortie)  
Sunset: 2043

##### 15 AUG (Wednesday):

1700: Show time  
1730 Wx decision/load chemical  
1915: Take off KRDR (Adulticide Spray Sortie)  
Sunset: 2042

##### 16 AUG (Thursday):

1130: Show time  
1330: Take off KGFK  
1730: Land KYNG

#### 3. ITEMS TO TAKE

- a. **Mission Commander:** Cellular Phone, Mission Folder
- b. **Entomologist:** Cell Phone, Wind Gauge, Compass, Pest Safety Binder, 1 VHF Radio
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment

#### 4. PPR: 08-13-01-HL

#### 5. RADIO FREQUENCIES: Air To Ground Primary UHF 392.2; VHF 123.45 KRDR Tower 124.9 V; Grand Forks International 118.4 V

#### 6. CONFIGURATION: SP2G

- a. **System:** 2-Module System/Stainless Steel ULV Fuselage Booms

- b. Nozzle Tips/Orientation:** ULV (adulthoodicide): 8005 Tee Jet oriented straight down  
**c. Number:** ULV: 14 8005s total (7 each side)

**e. Aircraft:** 89-9105

**f. Mission Identifier:** QZNRKA741225

**7. SPRAY PARAMETERS:**

**a. Adulthoodicide**

- (1) **Area to be treated:** 11488 acres (Grand Forks AFB) and city of Grand Forks (18,300 acres)
- (2) **Altitude:** 150' for Adulthoodicide application
- (3) **Swath Width.** 2000 feet
- (4) **Flow Rate.** 7.26 gallons/minute ULV
- (5) **Application Rate.** 1.0 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots
- (7) **Flush:** With water, triple rinse, then air purge

**8. SPRAY MIXING AND LOADING:** The amount of Trumpet to load will be determined on site on a daily basis with about 232 gallons required (8 drums) to treat entire area

**9. TRANSPORTATION: TBD**

**10. LODGING: ON BASE**

**Billeting :** DSN 362-7200 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844  
14 Rooms Reserved

**11. CONTACTS:**

**a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**

- (1) **Base Operations:** Airfield Manager DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx20
- (2) **Pest Management:** TSgt (b) (6) or Ssgt (b) (6) DSN (b) (6) , FAX 3432)
- (3) **Base Civil Engineer:** Lt Col (b) (6)
- (4) **Environmental Officer:** (b) (6) , DSN (b) (6) 5, FAX 6155
- (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
- (6) **Weather:** DSN 362-4396
- (6) **Billeting:** DSN 362-3070/6189/7200 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844

**b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC:, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Col (b) (6)
- (5) 910 Base Ops: Airfield Manager: Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS(b) (6) FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, CAPT (b) (6) ; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: SMG (b) (6) Cell: (b) (6)
- (13) 910 LG/LGL: Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - Entomologist: (b) (6)
  - Mission Commander: (b) (6)
  - Spray Maintenance (b) (6)





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



8 AUG 2007

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Grand Forks AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and WNV vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks AFB ND.

**2. Capability:** Spray Aircraft available 13-16 AUG 2007

**3. Concept of Operations:**

**13 AUG (Monday)**

1100: Showtime

1300: Depart KYNG

1500: Land KGFK/Safety Briefing

1600: Spray In Brief (CPMP, MC, AC).

**14 AUG (Tuesday):**

1700: Show time

1730 Load Chemical

1930: Take off KRDR (Adulticide Spray Sortie)

Sunset: 2131

**15 AUG (Wednesday):**

1700: Show time

1730 Load Chemical

1930: Take off KRDR (Adulticide Spray Sortie)

Sunset: 2131

**16 AUG (Thursday):**

1130: Show time

1330: Take off KGFK

1730: Land KYNG

**4. Spray Parameters:**

**a. Adulticide**

- (1) **Area to be treated:** 11488 acres (Grand Forks AFB)
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 2000 feet
- (4) **Flow Rate.** 7.26 gallons/minute ULV
- (5) **Application Rate.** 1.0 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots
- (7) **Flush:** With water, triple rinse, then air purge

5. **Aircraft Commander:** Capt (b) (6)

6. **Mission Commander:** Maj (b) (6) (b) (6)

6. Support at Grand Forks AFB ND has been coordinated with the organization's Environmental/Spray Coordinator.

7. HQ AFRC/DOOM approval via email.

// Signed //

(b) (6), CAPT, USAFR  
Assistant Chief Aerial Spray

20 August 2001

MEMORANDUM FOR 757 AS/DO

FROM: 757 AS/DOS

SUBJECT: Grand Forks AFB ND Aerial Spray Mission After Action Report

**1. PURPOSE:** The purpose of this mission was to spray the designated areas of Grand Forks AFB ND for mosquito control (13-17 Aug 01). The designated areas to be sprayed were determined by the Grand Forks AFB Environmental Officer and the Civil Engineer Pest Management Office in coordination with the 910 AW Entomologists/Pest Management Professionals.

**2. SPRAY EVENTS:**

- a. 13 Aug 01 (Mon):** The C-130 departed KYNG 1655 and landed at KRDR 2010. Aircraft Serial #899106, Mission ID: QZNRKA962225. A total of 3.3 hrs of Flight Time was logged.
- b. 14 Aug 01 (Tues):** The scheduled spray mission was aborted due to bad weather.
- c. 15 Aug 01 (Wed):** The scheduled spray mission was aborted due to bad weather.
- d. 16 Aug 01 (Thur):** One Spray sortie was conducted 1150-1455Z. 25 swath passes were flown over 25,600 acres, 120 gallons of Trumpet EC applied (0.6 Ounce Ground Coverage Per Acre). A total of 3.1 hours were logged during this spray sortie.
- e. 17 Aug 01 (Fri):** The C-130 departed KRDR 1410, arriving at KYNG 1709. A total of 3.0 hrs Flight Time was logged.
- f.** This mission completed the spray season at Grand Folks AFB.

**3. TRAINING.**

- a.** CMS (b) (6) received Spray Operator's/Loadmaster recurrency training.
- b.** The reserve entomologist, Major (b) (6), received excellent training. He was required to go through the mission "step by step", directing spray swath passes, and conducting pre- and post-briefings. Maj (b) (6) also received excellent on-the-job-training on the DGPS system. Marking the spray boundaries and inputting them to SATLOC greatly enhanced the efficiency of mission.
- c.** Spray Maintenance personnel wore their PPE during this mission with no problems and received continuous spray maintenance qualification training.

**4. QUARTERS/TRANSPORTATION:** The contract quarters were fine. Transportation was well coordinated.

(b) (6), Lt Col, USAFR  
Aerial Spray Mission Commander

Attachments

1. PMP Report
2. Operational Mission Plan

cc: Distribution via Staff Summary Sheet and e-mail

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT

### 1. MISSION BASICS:

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 13-17 August 2001
- c. Purpose of Application: Control nuisance and vector mosquitoes
- d. Application Date/s: 16 August 2001
- e. Time/s of Application (Local): 0650-0950 (16 Aug)
- f. Acres Treated: 25,600 (16 Aug)
- g. Project Coordinators (Name/Rank, Title, Phone #): (b) (6) , DSN (b) (6) ; SSG (b) (6) , NCOIC Pest Management Shop, DSN (b) (6)
- h. Date Spray Map Last Approved: 14 Aug 2001
- i. Installation In-Briefing: (When/Where/Briefer/s): 14 Aug 2001; CE Conference Room, LTC (b) (6) & MAJ (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: LTC (b) (6)
- b. Certified PMP/s (Category 11): MAJ (b) (6) & 1LT (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander: MAJ (b) (6)
  - (2) CoPilot: LTC (b) (6)
  - (3) Navigator(s): MAJ (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
  - (5) Spray Operators: CMSG (b) (6) , MSG (b) (6)
- d. Safety Briefer: 1LT (b) (6)
- e. Spray Maintenance: TSG (b) (6) , TSG (b) (6) TSG (b) (6)
- f. Spray Ground Monitors: MAJ (b) (6) & 1LT (b) (6)
- g. Crew Chiefs: SSG (b) (6) & SRA (b) (6)
- h. Avionics: SSG (b) (6)

### 3. FLYING DATA:

- (1) Spray Sorties/Hours: 1/3.1
- (2) Ferry Sorties/Hours: 2/6.3

### 4. PESTICIDES:

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 120
- d. Gallons Pesticide Applied: 120
- e. Gallons and Name of Flush Used: Water
- f. Application Rate: .60 oz/acre

**5. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8008 Flat Fan
- e. Nozzle Orientation & Number Used: 8008 6 straight down
- f. Pressure (PSI): 40-60
- g. Flow Rate: 3.3 GPM

**6. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1500' ULV
- b. Spray Off Set: 3000'
- c. Spray Release Altitude: 150' ULV
- d. Ground Speed: 200 Knots (338 Feet/Second)

**7. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - 1) Ground: 4-6 knots @ 270-300°
  - 2) Release Altitude: 6-12 knots @ 280-330°
- b. Temperature (Degrees Fahrenheit): 61-65°
- c. Cloud Cover: Clear
- d. Source: Direct observation

**8. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. The Grand Forks AFB Public Health Unit and Pest Management conduct adult mosquito trapping to monitor mosquito densities on base.
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito traps
  - (2) Results: Significant decrease in mosquito activity following application

- 9. REMARKS:** After two evening sorties were cancelled due to adverse weather conditions, a morning application was made based on the confirmed presence of the target pest during morning hours (0600-1000 hrs) and advantageous environmental parameters (wind speed and temperature). Morning applications, with ground equipment, have been carried out regularly with excellent results at Minot AFB for similar reasons. Mosquito trap counts dropped significantly following the spray. However, Pest Management noted that mosquito activity had returned to area within a few days. This was the final mission this year for the Grand Forks Aerial Mosquito Control Program, which is only one aspect of the overall Integrated Pest Management Plan (IPMP) for mosquito control at Grand Forks. Three adulticide applications and one larvicide spray were made this year. During this period, surveillance trapping of mosquitoes was not always reported in a timely and consistent manner. While we are sensitive to manpower problems, background pest surveillance is the cornerstone of any IPMP and necessary for efficacy monitoring of spray applications. Our best mosquito control option continues to be larviciding. These materials are environmentally friendly and prevent immature mosquitoes from reaching the pestiferous flying blood-feeding adult stage. The current plan for CY2002 includes two larvicide applications early in the season and up to three adulticide treatments; the larger the spray area around the base, the longer period of relief from mosquito attack will be realized.

(b) (6)

(b) (6) , 1LT, USAFR  
CERTIFIED PEST MANAGEMENT PROFESSIONAL





**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
**3976 King Graves Rd Unit 26**  
**Vienna OH 44473-5926**



7 Feb 2006

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray Test and Training at Avon Park, FL

1. Purpose/Objectives/Benefits: Determine effective swath widths for 500' altitudes of fuselage spray and to provide continuation training for aerial spray aircrew and ground crews.
2. Capability: Spray Aircraft 90-9108 Available, 13-17 FEB 2006.
3. Concept of Operations:
  - 13 FEB (MONDAY): Range Times 1600-1800, call AGR Tower & Fire Dept  
PPR # - Not Req since scheduled for range.
    - 0900: Show Time KYNG
    - 1100: Depart KYNG
    - 1400: Land KAGR
    - 1600 T/O AGR
    - 1800 Land AGR
  - 14 FEB (TUESDAY): Range Times 0900-1300
    - 0730: Show Time
    - 0730: Fuel
    - 0900: Depart
    - 1300: Land
  - 15 FEB (WEDNESDAY): Range Times 0900-1300
    - 0730: Show Time
    - 0730: Fuel
    - 0900: Depart
    - 1300: Land
  - 16 FEB (THURSDAY): Range Times 0900-1300
    - 0730: Show Time
    - 0730: Fuel
    - 0900: Depart
    - 1300: Land



17 FEB (FRIDAY): Range Times 0900-1300

0730: Show Time

0730: Fuel

0900: Depart

1300: Land

1400 Fuel

1500 Depart for YNG

1800 Land YNG

4. Spray Configuration:
  - a. MASS – SP2G
  - b. Aircraft Number: 90-9105
  - c. Mission Identifier: QZNRKA665044

5. Mission Protocols:

A. Avon Park Spray Testing Itinerary 13-17 FEBB 06

1. Test Determine the effective swath width with a fuselage ULV configuration released at 500 feet AGL with 8008/8005 Nozzles.

- a. Spray mineral oil from fuselage at 200 knots
  - i. We are looking for a crosswind spray (see below)
  - ii. 2 or 3 replications depending on results

2. Spray Parameters (use for all tests):

- a. Booms -- Fuselage only.
- b. Nozzles – 8008/8005 TeeJet
- c. Airspeed -- 200 knots ground speed.
- d. Altitude -- 500' above ground level.
- e. Wind – Crosswind component.
- f. Flow Rate – 4.5 gallons/minute

3. Testing Protocols:

Determination of effective swath width at 500 feet release altitude with fuselage ULV configuration. Glass slides will be used to collect and sample droplets at 10 sampling stations along approximately 5 miles of projected spray path. Desired wind is at least +/- 30 degrees of collection station alignment and less than 10 MPH.

BVA oil will be mixed with 0.25% (volume/volume) ratio Fluorescent dye. Dye distinguishes our droplets from contaminate droplets when viewed under florescent microscope.

- a. The test will be a 500' AGL. System will be stabilized prior to reaching the sampling points. 15 seconds prior to the sampling point and 15 seconds after should be sufficient (30 seconds total). Three passes over the target is planned for each day's test.
- b. Microscope slides will be retrieved 1 hour after the plane has passed. Number and size of the droplets will be determined.

6. Mission Commander: MAJ (b) (6)

7. Support required at Avon Park Bombing Range is thru the Range Manager.
8. If you have any questions concerning this mission please contact me at DSN (b) (6)

//SIGNED//

(b) (6), CPT, USAFR  
Aerial Spray Coordinator



DEPARTMENT OF THE AIR FORCE  
757 AERIAL SPRAY SQUADRON  
Youngstown Air Reserve Station  
Vienna OH 44473-5926

29 November 2023

MEMORANDUM FOR 757 AS/DO

FROM: 757 AS/DOS

SUBJECT: 500 Foot Release Height Swath Characterization Test and Training Mission  
Avon Park AF Range, Florida 13-17 FEB 06

**1. Purpose:** Determine swath characteristics (i.e. droplet drift, swath offsets, average droplet size at various distances downwind) of a mimic insecticide (BVA oil) dispersed at altitudes of 500' AGL by the C-130 aerial spray platform. In these tests, a fluorescent dye was added to distinguish material sprayed from the aircraft with microscopic drops occurring in the environment. Additionally, initial spray training for navigator aircrew members was planned.

**2. Participants:**

a. **Aircrew:**

1. Mission Commander: Maj (b) (6)
2. Pilots: Maj (b) (6) Maj (b) (6)
3. Navigators: Maj (b) (6) , Lt Col (b) (6) Maj (b) (6)
4. Flight Engineers: MSgt (b) (6)
5. Spray Operators: SMSgt (b) (6) MSgt (b) (6)

b. **Maintenance:**

1. Spray Maintenance: TSgt (b) (6) TSgt (b) (6) TSgt (b) (6)  
(b) (6)
2. Avionics: TSgt (b) (6)
3. Crew Chiefs: TSgt (b) (6) TSgt (b) (6)

c. **Entomologists:** Maj (b) (6) Capt (b) (6) SMSgt  
(b) (6) (entomology technical support)

**3. Spray Configuration:**

Mass-SP2G  
Aircraft Number: 99105  
Mission Identifier: QZNRKA665044

**4. Spray Parameters:**

Booms—Fuselage only.  
Nozzles—8008 TeeJet.  
Number of Nozzles— 3 per side (8008)  
Airspeed—200 knots ground speed.  
Altitude—500' AGL.  
Wind—90 degree crosswind component.

## 5. Aerial Spray Flight Data:

a. 13 Feb 06: Ferry	KYNG-KYNG 1600-1715Z	Flight Hours: 1.3
b. 13 Feb 06: Ferry	KYNG-KAGR 1950-2248Z	Flight Hours: 3.0
c. 14 Feb 06: Spray Sortie	KAGR-KAGR1400-1615Z	Flight Hours: 2.3
d. 15 Feb 06: Spray Sortie	KAGR-KAGR1350-1553Z	Flight Hours: 2.1
e. 16 Feb 06: Spray Sortie	KAGR-KAGR1350-1542Z	Flight Hours: 1.9
f. 17 Feb 06: Ferry	KAGR-KYNG1400-1728Z	Flight Hours: 3.5

## 6. Methods:

Ten droplet collection stations were outfitted with spinning impingers (glass microscope slides) and placed along available sections of road inside the Avon Park Range (see figure 1). Six 8008 flat fan nozzles (3 per side) on fuselage booms were used along with a flow rate of approximately 4.5 gpm at 50 psi of BVA oil (equivalent to 0.62 oz/acre). Four aircraft passes were made on a course perpendicular to the collection stations, with each pass totaling 30 seconds of spray-on time. After the last pass was completed, and giving time for the spray cloud to settle, the spinning slides were collected and viewed under a fluorescent compound microscope. Fifty drops (if available) were counted for each sampling station. Drops were measured for volume mean diameter (VMD) and drop density (number of drops per cm<sup>2</sup>) for each station. Training was accomplished on all spray flights with navigator spray upgrades receiving priority.

14 February: A test was conducted with stations set up along a NW-SE orientation along Frostproof road (Figure 1.) Light and variable winds yielded poor results for this test. Ground wind speed was below 2 knots and wind direction shifted 180° more than once during the test. Such parameters cannot be counted as a replication of high altitude spray test and serve as an example of the need for a minimum wind speed and consistent wind direction for aerial spray applications.

15 February: A test was conducted along an east-west orientation on Kissimmee Road (Figure 1). Spinner stations were separated by 2,500 feet. Ground wind conditions maintained 1.5 – 3.0 knots at approximately 070° during the test. Test conditions were acceptable and drops were recovered on all slides (except for directly under the aircraft release point). Volume median diameter and drop density are shown in Figure 2 for all stations. The highest droplet densities (10-14 drops per cm<sup>2</sup>) were seen at stations 3 & 4. At other stations, droplet densities were less than 5 drops per cm<sup>2</sup>. Because higher concentrations of drops are correlated with greater insect mortality, stations 3 & 4 represent that portion of the swath with the greatest potential for effective mosquito control as well as the effective swath width of the application (approximately 2,000 feet). This data suggests the use of a 2,000 foot swath width along with a swath offset of 4,000 feet (Figure 2).

16 February: Wind conditions allowed for the use of a north-south orientation along Van Eegan road (Figure 1). Spinner stations were positioned 1,742 feet apart, with the 1<sup>st</sup> spinner station located at the junction of Kissimmee and Van Eegan. Four West-East passes were made flying along Kissimmee with each pass commencing and ending spray on or off 40 seconds prior to intersection with the road, respectively. Ground wind conditions averaged 1.5 – 4.5 knots at 360 - 030° and 11 knots at 060° at altitude during the test. Parameters

appeared to be excellent for this test. However, it now seems that the crosswind component at altitude was substantial enough that the spray cloud did not intersect with every sampling station. Figure 3 shows that droplets were only recovered downwind as far as station 6. Droplet densities were low throughout (less than 8 drops per cm<sup>2</sup>).

**7. Conclusions:** The test completed on 15 February can be considered a replication of previous high altitude spray results (see previous reports on 500 foot release heights). These data indicate a 2,000 foot effective swath and an offset of 4,000 feet (figure 2). Tests carried out on 14 & 16 February were less conclusive. On 14 February, meteorological conditions were unfavorable and, consequently, negative results were expected. However, conditions appeared to be near perfect on the ground and acceptable at altitude during the 16 February test but the results were not as expected. It is well accepted that it is more difficult to control drift from material released at a higher altitude and these results probably reflect that fact. These results may indicate a narrow tolerance for cross-wind components when spraying at 500 feet above ground level. Nonetheless, the 15 February test suggests that effective mosquito sprays can be accomplished using the C-130 and the modular aerial spray system. The obvious next step is to perform further replications with the addition of active ingredient and insect bioassays.

**8. Recommendations:** Conduct a series of mosquito bioassays spraying active ingredient (most likely our primary mosquito insecticide -- Dibrom) over a long distance sampling line (3 + miles) and simultaneously conduct swath characterizations to attempt to correlate insect mortality with droplet size and density. This can be accomplished during regularly scheduled spray missions at such locations as Langley or Grand Forks Air Force Bases.

//signed//

(b) (6) , Maj, USAFR  
Research Entomologist

Attachment 1. Figures.

Figure 1. Test sites at Avon Park

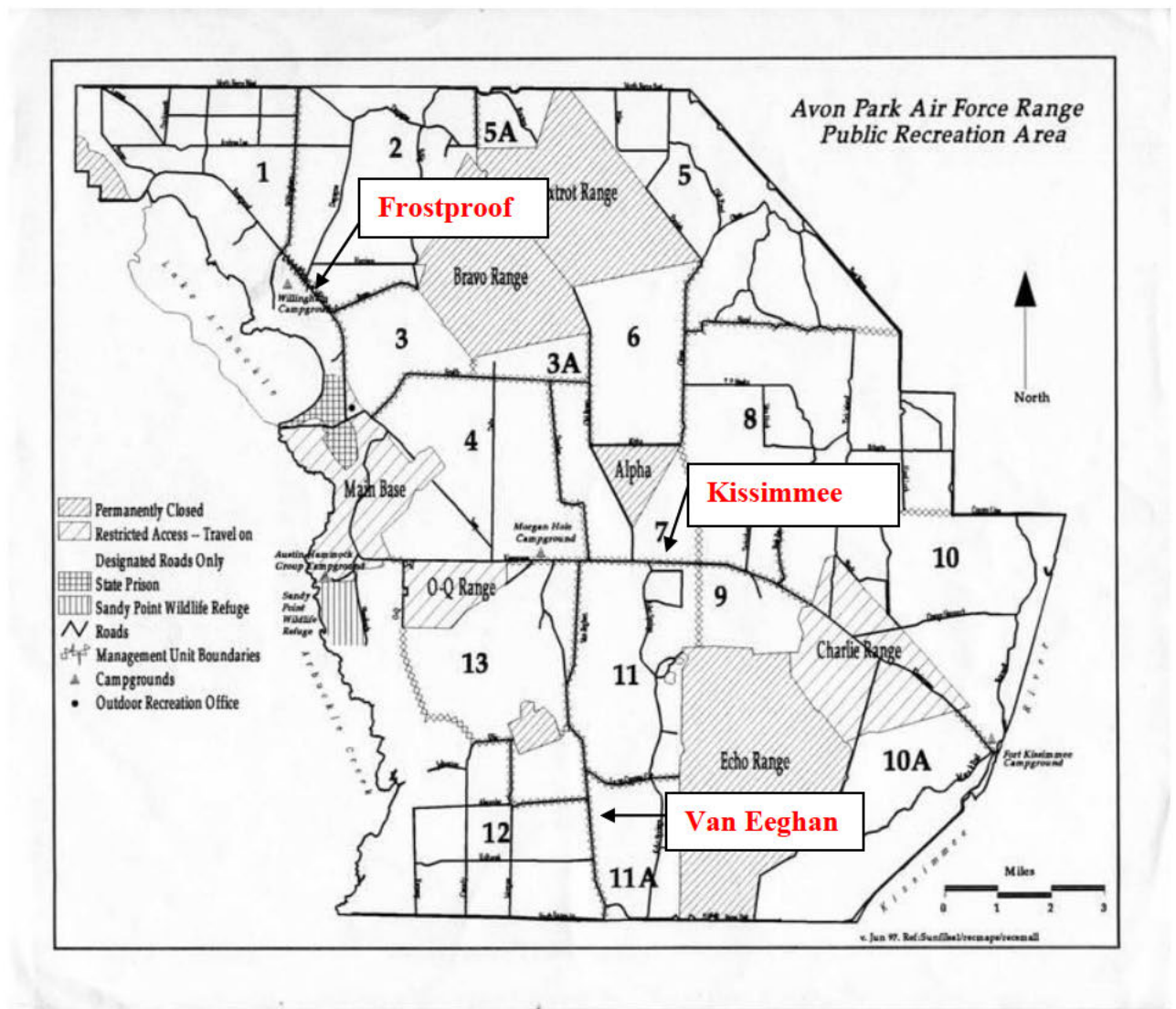




Figure 2. 15 February 2006. 500 foot AGL release, BVA oil 8008 nozzles

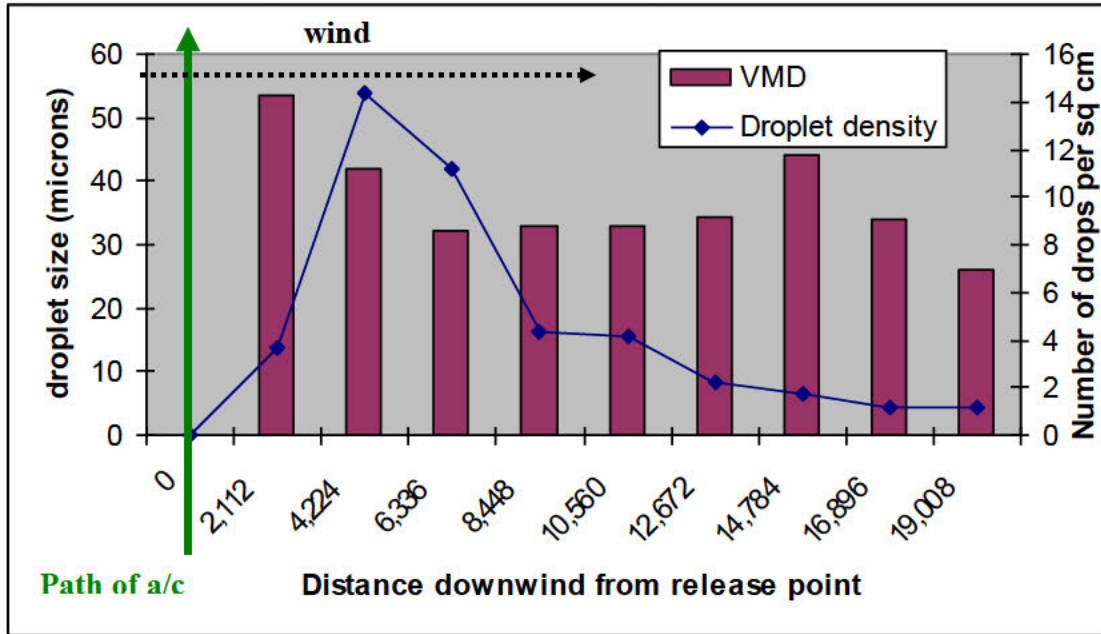
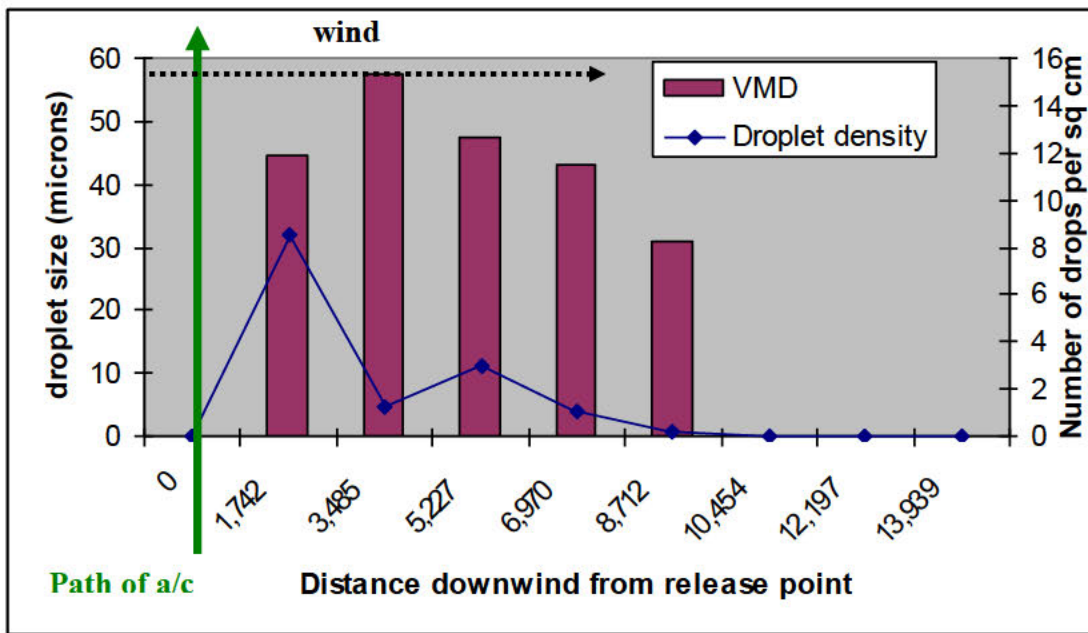


Figure 3. 16 February 2006. 500 foot AGL release; BVA oil 8008 nozzles





# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **AVON PARK, FL**

### **13-17 FEB 06**

**PURPOSE/OBJECTIVE/BENEFIT:** Determine effective swath width for 500' altitudes using fuselage ULV configuration. Secondary mission is to complete initial spray training for Navigator aircrew members.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

1. Mission Commander: MAJ (b) (6)
2. Pilots: MAJ (b) (6), MAJ (b) (6)
3. Navigators: MAJ (b) (6), LTC (b) (6), MAJ (b) (6)
4. Flight Engineers: MSGT (b) (6)
5. Spray Operators: SMSGT (b) (6), MSGT (b) (6)

##### **b. Maintenance:**

1. Spray Maintenance: TSGT (b) (6), TSGT (b) (6), TSGT (b) (6)  
(b) (6)
2. Avionics: TSGT (b) (6)
3. Crew Chiefs: TSGT (b) (6), TSGT (b) (6)

##### **c. Entomologists: MAJ (b) (6), CAPT (b) (6), SMSGT (b) (6) (entomology technical support)**

#### **2. SCHEDULE: (All time Local) All times and sequence of events are subject to change depending upon the needs of the testing and training.**

13 FEB (MONDAY): Range Times 1600-1800, call AGR Tower & Fire Dept  
PPR # - Not Req since scheduled for range.

0900: Show Time KYNG

1100: Depart KYNG

1400: Land KAGR

1600 T/O AGR

1800 Land AGR

14 FEB (TUESDAY): Range Times 0900-1300, call AGR Tower & Fire Dept

0730: Show Time

0730: Fuel

0900: Depart

1300: Land

15 FEB (WEDNESDAY): Range Times 0900-1300, call AGR Tower & Fire Dept

0730: Show Time

0730: Fuel

0900: Depart

1300: Land

16 FEB (THURSDAY): Range Times 0900-1300, call AGR Tower & Fire Dept

0730: Show Time

0730: Fuel

0900: Depart

1300: Land

17 FEB (FRIDAY): Range Times 0900-1300, call AGR Tower & Fire Dept

0730: Show Time

0730: Fuel

0900: Depart

1300: Land

1400 Fuel

1500 Depart for YNG

1800 Land YNG

**3. ITEMS TO TAKE:**

- a. **Navigator:** Maps with “No-Spray” Areas Marked
- b. **Certified Pest Management Professionals:**
  - (1) Water-Sensitive Cards
  - (2) 1 Signal Mirror
  - (3) 1 Spot Light
  - (4) 1 Engineer Wheel
  - (5) Ground Maps
  - (6) Laptop Computer
  - (7) Digital Camera
  - (8) Oil-sensitive cards
  - (9) Spinners
  - (10) Wooden dowels

**4. AIR TO GROUND FREQUENCIES:**

- a. **Spray: Primary 392.2; Secondary 340.8**
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. **Avon Park: TWR-292.2 (p), 126.15, 276.6 (s) Hrs 0700-2300 M-F, S-S per flying schedule DSN 968-7138; South Range 285.725/North Range 264.625**
- e. MacDill: TWR-123.7; GND-118.575; ATIS-133.825; CMD POST-311.0; PTD-372.2

**5. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 909108
- c. Mission Identifier: QZNRKA665044

**6. MISSION PROTOCOLS:**

**Avon Park Spray Testing 13-17 Feb 06**

Purpose: Determining the effective swath width with a fuselage ULV configuration released at 500 feet AGL with 8008 Nozzles.

**Spray Parameters**

Spray: BVA oil

Booms -- Fuselage only

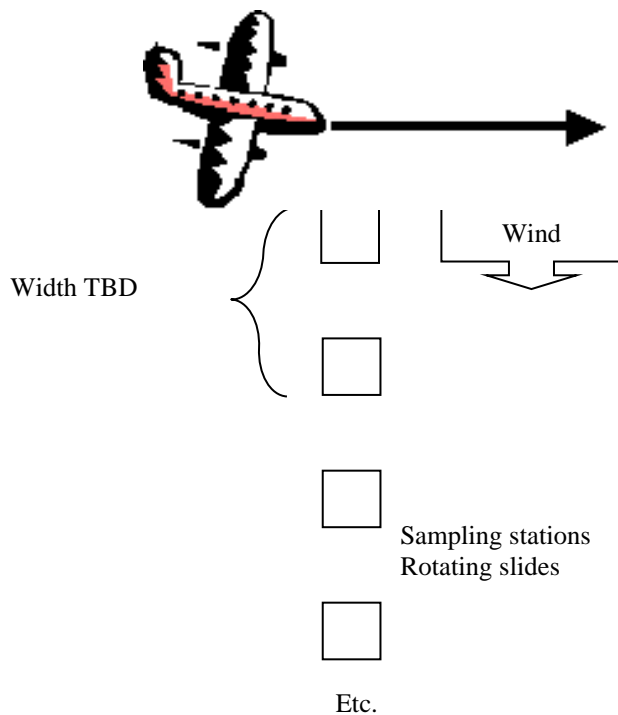
Number and type of nozzles – 8008; 6 Nozzles total = (3 left, 3 right) Airspeed -- 200 knots ground speed

Altitude -- 500' above ground level

Wind – crosswind test

Flow Rate – 4.5 gallons/minute

Fig. 1. Diagram of crosswind test. First sampling location will be on the Upwind aspect. Aircraft will pass directly over 1<sup>st</sup> sampling site (no offset).



#### Mission Protocols:

Determination of effective swath width at 500 feet release altitude with fuselage ULV configuration. Glass slides will be used to collect and sample droplets. Ten sampling stations will be setup along either Van Eeghan (north/south), Frostproof (north-west/southeast) or Kissimmee Rd (east/west). This is a crosswind test, thus, we are looking for the wind direction to be within  $\pm 30^\circ$  of the direction of the road. Additionally, we need the average winds to be below 10 mph. Because wind will play an important part in these tests please be prepared to wait for appropriate winds during the entire range time. We are aiming for a transect length of approximately 5 miles if possible. Some of the locations will not support this distance but we will try to get close.

BVA oil will be mixed with a 0.25% (volume/volume) ratio Fluorescent dye. This dye allows us (when viewed with a fluorescent microscope) to distinguish between drops sprayed by determine exactly drops that are coming out of the spray system as opposed to drops resulting from environmental contaminants. The dye will be dissolved in HAN and mixed with the BVA oil prior to the 1<sup>st</sup> day of testing.

We need the system to have stabilized prior to reaching the sampling points. 20 seconds prior to the sampling point and 20 seconds after should be sufficient (40 seconds total). Please note that this could change depending on wind direction and speed. The aircraft will dispense spray directly over the upwind end of the sampling line, hopefully marked with a vehicle. There will be no offset.

**Navigator:** please record wind speed and direction at time of test. **Spray Operators:** Please record the spray-on time and pressure. Three passes over the target is all that is required for a given day's test. Ground personnel for the test will position themselves at the 1<sup>st</sup> sampling location and provide visual cues or mirror flashes as appropriate.

Microscope slides will be retrieved up to an hour after the plane has passed. Please do not fly through the test area during this time-frame.

Testing will be repeated on subsequent days until a sufficient number of replications have been completed.

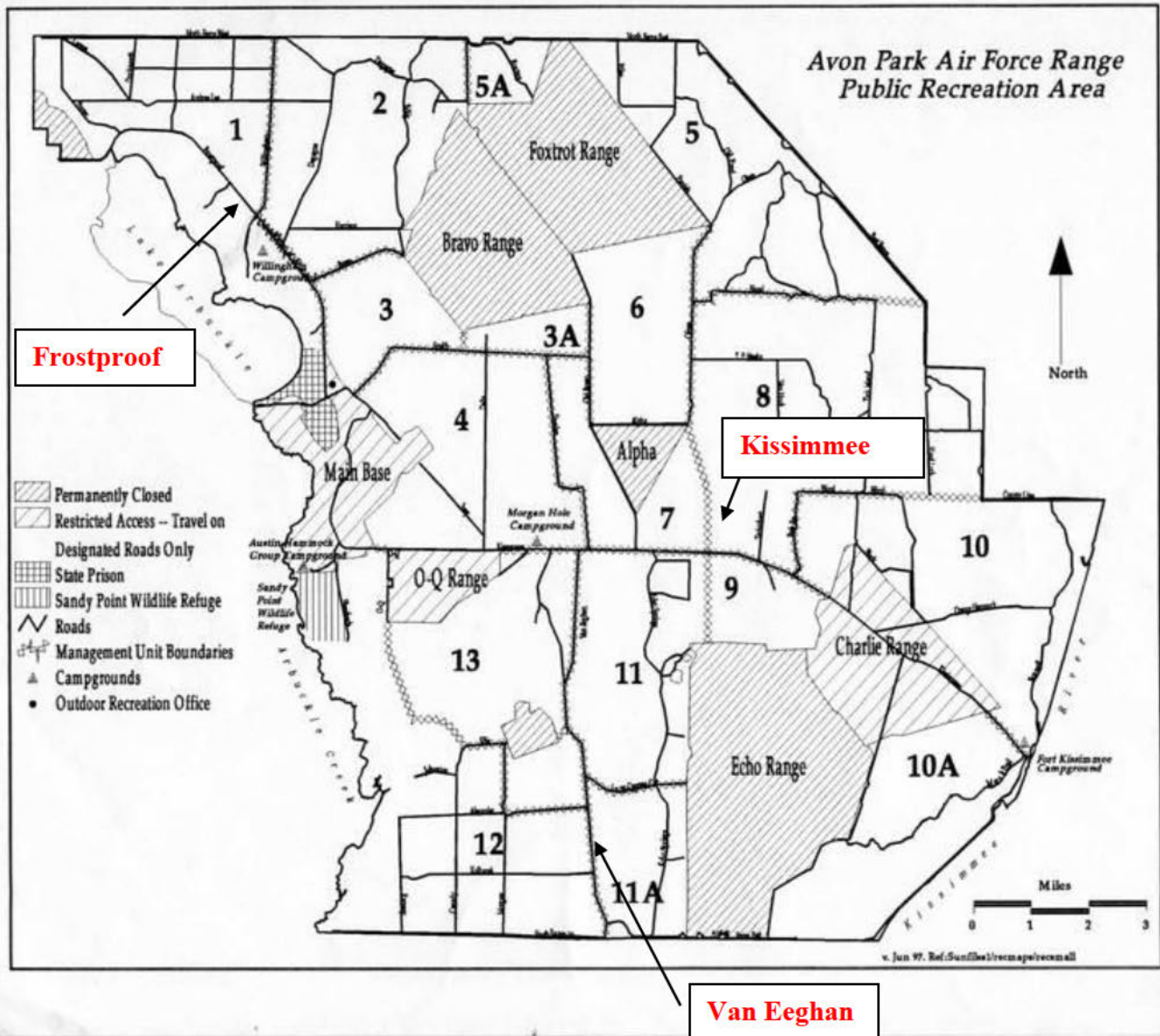


Fig. 2. Map of Avon Park Range

#### CONTACTS:

- a. Quarters: (JTR Lodging/\$62)
  - **Quality Inn (863) 385-4500 (\$64 w/Tax Exempt Form) FAX (863) 382-4793**
  - Sebring/Avon Park: Inn on the Lakes, (863) 471-9400, Group Reservation: <http://www.innonthelakessebring.com> POC is (b) (6)
  - Jacaronda (863) 453-2211; 19 East Main St, Avon Park, FL \$ 27.29
  - Oak Tree Inn (863) 453-3165
  - Days Inn (863) 382-1148, 800 329-7466
- b. Transportation:
  - Avon Park Enterprise POC Dave Rosario (863) 452-5483; Fax (863) 452-5947**
  - Sebring Enterprise POC (b) (6) (863) 385-6969; Fax (863) 385-3416**
  - 2 Van \$61.99; 3 Full size car \$40.99 (+ TAXES); Unlimited mileage

(All vehicles will be at Avon Park Flight Ramp, keys will be with tower)  
(b) (6) (Van), (b) (6) – (Full Size) (b) (6) (Mid size)

- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350  
(1) Weather: MacDill AFB Forecaster (DSN 968-2854)  
(2) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)  
(3) MacDill AFB Ops Gp CC 968-3014
- d. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX  
DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN  
Avon Control Tower & Range Control Scheduling DSN 968-7176  
Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number  
(1) Range Operations Manager: (b) (6) Bldg 236, (b) (6)  
(2) Avon Range Control Tower: ext 176  
(1) Flight Chief of Civ Engineer: (b) (6) , Bldg 29, (b) (6)  
(2) Chief, Environmental Flight: (b) (6) , Bldg 29, (b) (6) also Wildlife Biologist (b) (6) 54  
(3) Fuels: ext 118 or Cel (b) (6)  
(4) Range Support Manager: (b) (6) Bldg 29, (b) (6)  
(5) Range Control/Schedule: (b) (6) , Bldg 41, (b) (6)  
**See Attached Avon Park Org directory for additional listings**  
(9) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)  
Range VHF: 126.15  
**South Range 285.725/North 264.625**
- f. **Sebring AP:** Mgr: (b) (6) (fuel needs)  
BEEPER: 1 (863) 999-8622 ENTER YOUR PHONE# ENTER #  
**Asst Mgr: (b) (6)**  
**Fuel is coordinated for 20k at 0730L every day (and also 1400 on the 17<sup>th</sup>)**
- g. **Youngstown ARS:** DSN: 346-XXXX; (330) 609-XXXX; 1 - 800 - 278 - 7046, + Ext  
(1) 910 AW/CC: Col (b) (6) (b) (6)  
(2) 910 AW Command Post: Ext 1315, FAX 1161  
(3) 910 AW/PA: Ext 1236, FAX 1022  
(4) 910 OG/CC: Col (b) (6)  
(5) 910 OG/OSA: Airfield Manager: (b) (6)  
(6) 757 AS/DO: Maj (b) (6)  
(7) 757 AS/DOO: Ops Admin, SMS (b) (6) , FAX 1657  
(8) 757 AS/DOLP: Aerial Spray Office, Cpt (b) (6) , FAX 1616  
(9) 910 LG/CC: COL (b) (6)  
(10) 910 LG/LGM: Ext 1352  
(11) Maintenance Control: Ext 1348  
(12) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586  
(13) Omega/SATO Travel: Ext 1772; (800) 285-6342  
(14) Cellular Spray Phones:  
Entomologist (b) (6) (b) (6) cell phone = (b) (6)  
Mission Cmdr: (b) (6)  
Spray MX: (b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 13-17 October 09

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes at LFI and the surrounding communities.

1. **910 AW PARTICIPANTS:**
  - a. **Aircrew:**
    - (1) Pilots: LTC (b) (6) , LTC (b) (6)
    - (2) Navigator: LTC (b) (6)
    - (3) Flight Engineers: SMSgt (b) (6)
    - (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6)
  - b. **Maintenance:**
    1. Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , MSgt (b) (6)
    2. Crew Chiefs: MSgt (b) (6) , Amn (b) (6)
    3. Avionics: TSgt (b) (6)
  - c. **Entomologist:** Maj (b) (6) (MC), LTC(b) (6)
2. **Vehicles:** Langley will supply us with 2x9pax vans and 2 cars
  - **MC / Entomologist:** One Car
  - **Ops:** One van (9 pax), One car
  - **Mx:** One Van (9 pax)
3. **Billeting:** 14 rooms on base DSN 574-4667 or Comm (757) 764-4667 FAX DSN 574-3038
4. **PPR:** 1013AS01
5. **SCHEDULE: (All times local) THIS MISSION WILL RETURN EARLY IF ABLE**

**13 Oct (Tuesday): Deploy to LFI**

1500: Show time  
1700: Takeoff YNG  
1830: Land LFI w/safety briefing immediately following

**14-16 Oct (Wednesday-Friday): Spray LFI**

1200: Station In-brief (Tuesday only)  
1415: Show time  
1430: WX decision, load Dibrom  
1615: Takeoff LFI  
1830: Sunset  
1845: Land LFI

**17 Oct (Saturday): Redeploy to YNG**

0800: Show time  
1000: Takeoff LFI  
1130: Land KYNG
6. **ITEMS TO TAKE:**
  - a. **Entomologist:** Kestrel Weather Monitor, Compass, PCM Card, Pest Safety Binder, VHF Radios, Laptop Computer
  - b. **Navigator:** Maps/Map Bag, Validation Map
  - c. **Spray Operator:** Safety Gear, Calibration Tables
  - d. **Spray Maintenance:** Deployment Kit/Supply Kit
7. **NOTIFICATION NECESSARY FOR THIS MISSION:**
  - a. **Langley Tower:** DSN 574-5326
  - b. **Langley Base Ops:** DSN 574-2504
  - c. **Camp Perry:** (757) 229-2121 ext 2263
  - d. **Consideration calls:**
    - i. Newport News
    - ii. Ft Eustis/Felker AAF Tower
    - iii. Norfolk NS/Chambers Tower



8. **PARKING PLAN:** Taxiway Foxtrot with the North Ramp as an alternate
9. **RADIO FREQUENCIES:**
- a. **Felker AAF Tower (Ft Eustis): 126.3, 269.25, 248.2, 241.0**
    - (1) Ops phone DSN 826-3588
    - (2) Tower phone DSN 826-3530
    - (3) Flight Service 122.2
  - b. **Newport News-Williamsburg Int: CTAF – 118.7 or 257.9(Operating Hours 1000Z-0200Z)**
    - (1) Ground – 121.9 or 348.6 (phone 877-0221 ops)
    - (2) Tower – 118.7 (phone 877-2862) voice mail 7-2962
    - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
  - c. **Langley AFB: Tower DSN 574-7999**
    - (1) Tower - 125.0 or 253.5
    - (2) Ground - 121.7 or 275.8
    - (3) Clearance – 118.85 or 257.625
    - (4) Metro - 239.8
    - (5) ATIS – 270.1
  - d. **Norfolk NAS (Chambers Fld): Tower –124.3, 379.15, Base Ops, DSN 262-3419, will transfer to TWR**
  - e. **Norfolk Approach: 118.9 or 353.7**
  - f. **Spray Ground: 123.4**
10. **IN-BRIEFING:** 1200 hrs on Tuesday in the CE Conference Room
11. **SPRAY CONFIGURATION:**
- a. **System:** SP2G - MASS ULV; Fuselage booms
  - b. **Nozzle Tips/Orientation:** 9 8005 nozzles -- straight down (4 left - 5 right)
  - c. **Aircraft:** 90-9107
  - d. **Mission Identifier:** QZNRKA097286
12. **SPRAY PARAMETERS:**
- a. **Altitude:** 150' AGL
  - b. **Ground Speed:** 200 KNOTS
  - c. **Pesticide:** Dibrom® Concentrate
  - d. **Application Rate:** 0.5 oz/acre
  - e. **Flow Rate:** 3.6 Gallons/Minute
  - f. **Acreage:** Potentially 125,000 acres on the peninsula but final acreage TBD
  - g. **Swath Width:** 2000 foot
13. **PESTICIDE LOADING:**
- a. **How Much Pesticide:** see entomologist
  - b. **Where:** Taxi Way F Aero Club Ramp or North Ramp if constructions isn't complete
  - c. **When:** 1430 hrs each day pending weather and heat index.\*\*Calibration performed unless otherwise directed by the Entomologist or Mission Commander
  - d. **Furnished by Installation:**
    - (1) Pesticide
    - (2) Loading Equipment/Crew
    - (3) Hazardous Waste Disposal
    - (4) Two B-5 or B-1 Stands



**14. CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**

**a. LANGLEY AFB VA:**

Wing Commander: DSN 574-5321  
Mission Support Group Commander: DSN 574-7995  
Civil Engineer: DSN 574-2025  
Deputy Chief/Civil Engineer: Ms. (b) (6)  
Environmental Coordinator: DSN 574-3987; FAX 3503  
Base Operations: DSN 574-2504  
Langley Control Tower: DSN 574-5326  
Weather: Langley AFB, DSN 574-5907  
Ft Eustis: DSN 297-5300/3343  
Command Post: DSN 574-5411  
Pest Control Foreman: (b) (6) DSN (b) (6) , cell phone (b) (6)  
Pest Control NCOIC to TSgt (b) (6)  
Public Affairs: DSN 574-2018/2010/2019  
Fuels: DSN 574-4312/3623/4224  
Motor Pool: 574-7514/5712 (2 vans and 1 staff vehicle were requested)  
ACC PMP: (b) (6) , DSN (b) (6)  
Fire Department Comm: 757-764-2222

**a. FT EUSTIS VA:** Environmental Coordinator: DSN 927- 4152/2375

**b. Hampton Mosquito Control:** 757 850-3305

**c. York County Mosquito Control:** (757)-890-3780

**d. Poquoson:** (b) (6)

**e. City of Portsmouth Biologist:** (757) 393-8666

**f. Newport News Mosq. Control:** (757) 269-2750

**g. Camp Peary:** (757) 229-2121 Ext 2263, (b) (6) or (b) (6)

**h. Ft Monroe: ?**

**i. Newport News/Williamsburg Int.:**

- (1) Fixed Base Operator: Flight Int 877-6401
- (2) Flight Service: 877-0209
- (3) Tower: 877-2962
- (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

**j. Norfolk NAS VA:** DSN 564-2442/7598 or COM (757)-444-2442/7598

- (1) Weather: DSN 565-2500

**k. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Maj (b) (6) ; FAX 1022
- (4) 910 OG/CC: LtCol (b) (6)
- (5) 910 OS/OSA: Airfield Manager, (b) (6)
- (6) 757 AS/DO: Maj (b) (6)
- (7) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (8) 757 AS/DOO: Ops Admin: SMSgt (b) (6) ; FAX 1657
- (9) 757 AS/DOS: Aerial Spray Office, LtCol (b) (6) , Maj (b) (6) ; FAX 1616
- (10) 910 LG/CC: Ext 1225
- (11) 910 LG/LGM: Ext 1352
- (12) Maintenance Control: Ext 1327
- (13) 910 LG/LGMS: Spray Maintenance, Ext 1132
- (14) 910 LG/LGL, Ext 1137
- (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) (b) (6) cell (b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## AVON PARK, FL

### 13-18 Feb 05

**PURPOSE/OBJECTIVE/BENEFIT:** Determine effective swath widths for various altitudes using fuselage ULV configuration and characterize sprays using TeeJet Nozzles

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

(1) Pilots: \*\*\*MAJ (b) (6), MAJ (b) (6), Capt (b) (6) (13-16 Feb), MAJ (b) (6)

(2) Navigators: \*MAJ (b) (6)

(4) Flight Engineers: MSG (b) (6)

(5) Spray Operators: \*\*\*MSG (b) (6), MSG (b) (6), MSG (b) (6)

##### b. Maintenance:

(1) Spray Maintenance: \*TSG (b) (6), TSG (b) (6)

(2) Avionics: MSG (b) (6)

(3) Crew Chiefs: \*TSG (b) (6), SSG (b) (6)

c. Entomologists/Ground Personnel: LTC (b) (6), Capt (b) (6), Capt (b) (6), SMS Susan Kintz

**Enterprise (Sebring) Gina (863) 385-6969; FAX (863) 385-3416, Vehicles: 4 \*Full size/\$44; \*\*\*2 SUV or Van/\$57; Vehicles will be dropped off at the control tower, they will have the keys.**

(b) (6) Yukon  
(b) (6) Full Size that don't match any other in this list  
(b) (6) Mini Van  
(b) (6) Lincoln Chick Magnet  
(b) (6) Stratus

#### 2. SCHEDULE: (All time Local)

13 FEB (Sunday): PPR # - Not Req

1200: Show Time KYNG

1400: Depart KYNG

1700: Land KAGR

14 FEB (Monday): Range Times 0900-1200, call AGR Tower & Fire Dept

0800: Show Time

0830: Fuel

0930: Depart

1200: Land

15 FEB (Tuesday): Range Times 0900-1200, call AGR Tower & Fire Dept

0800: Show Time

0830: Fuel

0930: Depart

1200: Land

16 FEB (Wednesday): Range Times 0900-1200, call AGR Tower & Fire Dept

0800: Show Time

0830: Fuel

0930: Depart

1200: Land

17 FEB (Thursday): Range Times 0900-1200, call AGR Tower & Fire Dept

0800: Show Time  
0830: Fuel  
0930: Depart  
1200: Land

18 FEB (Friday): Range Times 0900-1200, call AGR Tower & Fire Dept  
0800: Show Time  
1000: Depart  
1300: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Navigator:** Maps with “No-Spray” Areas Marked
- b. **Certified Pest Management Professionals:**
  - (1) 1 Signal Mirror
  - (2) 1 Spot Light
  - (3) 1 Engineer Wheel
  - (4) Ground Maps
  - (5) Laptop Computer
  - (6) Digital Camera
  - (7) Oil-sensitive cards
  - (8) Spinners
  - (9) Wooden dowels

**4. AIR TO GROUND FREQUENCIES:**

- a. Spray: Primary 392.2; Secondary 340.8
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. Avon Park: TWR-292.2 (p), 126.15, 276.6 (s) Hrs 0700-2300 M-F, S-S per flying schedule  
DSN 968-7138
- e. MacDill: TWR-123.7; GND-121.65; ATIS-133.825; CMD POST-311.0; PTD-372.2

**5. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 99106
- c. Mission Identifier: QZNRKA643044

**6. MISSION PROTOCOLS:**

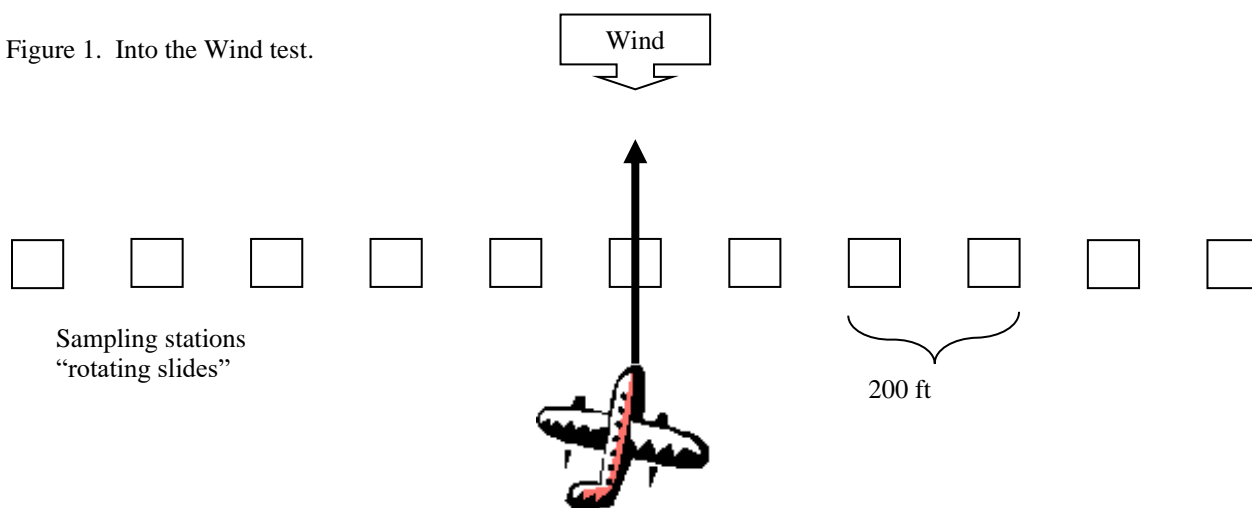
**Avon Park Spray Testing Itinerary  
13-18 Feb 05**

Test 1. Characterization of droplet spectrum produced using fuselage ULV configuration with 8001 nozzles.

**Spray Parameters**

Booms -- Fuselage only  
Number and type of nozzles – 8001 = 42 nozzles/21 per side  
Airspeed -- 200 knots ground speed  
Altitude -- 150' above ground level  
Wind – Into the wind test  
Flow Rate – 4.5 gallons/minute

Figure 1. Into the Wind test.



Test 2: determination of effective swath width with fuselage ULV configuration @ **300'** AGL  
 Spray BVA oil from fuselage booms using 9 (4 left side: 5 right side) 8005 nozzles at, 200 knots  
 We are looking for a crosswind spray (see below)  
 Single test depending on results

Test 3: determination of effective swath width with fuselage ULV configuration @ **500'** AGL  
 Same as test one except change altitude to **500'** AGL, 200 knots  
 Crosswind pattern  
 2 or 3 replications

#### Spray Parameters for crosswind tests:

Booms -- Fuselage only.

Nozzles - 8005 TeeJet

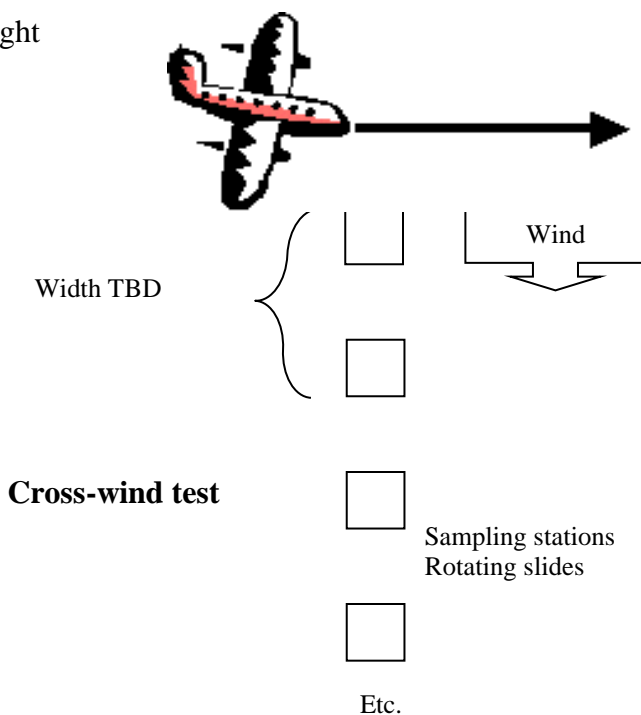
Number of Nozzles – 9 nozzles 4 on left, 5 on right

Airspeed -- 200 knots ground speed.

Altitude -- 300'/500' above ground level.

Wind – Crosswind component.

Flow Rate – 4.5 gallons/minute



## Mission Protocols:

Determination of effective swath width at 300/500 feet release altitude with fuselage ULV configuration. Glass slides will be used to collect and sample droplets. Ten sampling stations will be setup along either Smith Road (east/west road south of Bravo Range), Oliver Road (north/south road), or Frostproof Rd (NW/SE), or Kissimmee Rd (east/west). This is a crosswind test, thus, we are looking for the wind direction to be within  $\pm 30^\circ$  of the direction of the road. Additionally, we need the average winds to be below 10 mph. Because wind will play an important part in these tests please be prepared to wait for appropriate winds during the entire range time. We are aiming for a transect length of 3 miles (5 miles if we can use Kissimmee. Some of the locations will not support this distance but we will try to get close.

The first altitude test will be at 300' AGL. We need the system to have stabilized prior to reaching the sampling points. 15 seconds prior to the sampling point and 15 seconds after should be sufficient (30 seconds total) but this value could change as we increase the altitude. **Navigators:** please record wind speed and direction at time of test. **Spray Operators:** Please record the spray-on time and pressure. Three passes over the target is all that is required for a given day's test. After the 300' test we will proceed the following test day to a 500' AGL test.

Microscope slides will be retrieved an hour after the plane has passed. Please do not fly through the test area during this time-frame.

## 7. CONTACTS:

- a. Quarters: (JTR Lodging/\$63)  
-- **Econo Lodge (863) 453-2000 (\$63 military rate), Fax 863-453-0820, POC is Bill the Manager—all under own names.**  
-- Sebring/Avon Park: Inn on the Lakes, (863) 471-9400, Group Reservation:  
<http://www.innonthelakessebring.com> POC is (b) (6)  
-- Quality Inn (863) 385-4500 (\$64 w/Tax Exempt Form) FAX (863) 385-8436  
-- Jacaronda (863) 453-2211; 19 East Main St, Avon Park, FL \$ 27.29  
-- Days Inn (863) 382-1148, 800 329-7466
- b. Transportation:  
**Sebring Enterprise POC (b) (6) (863) 385-6969; Fax (863) 385-3416**  
Avon Park Enterprise (863) 452-5483; Fax (863) 452-5947  
2 SUV/Van \$57; 3 Full size car \$44 + \$2 state surcharge; Unlimited mileage  
(All vehicles will be at Avon Park Flight Ramp, keys will be with tower)
- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350  
(1) Weather: MacDill AFB Forecaster (DSN 968-2854)  
(2) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)  
(3) MacDill AFB Ops Gp CC 968-3014
- d. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX  
DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN  
Avon Control Tower & Range Control Scheduling DSN 968-7176  
Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number  
(1) Range Operations Manager: (b) (6) , Bldg 236,(b) (6)  
(2) Avon Range Control Tower: ext 176  
(4) Flight Chief of Civ Engineer: (b) (6) , Bldg 29, (b) (6)  
(5) Chief, Environmental Flight: (b) (6) , Bldg 29, (b) (6) also Wildlife Biologist (b) (6)  
(6) Fuels: ext 118 or Cel (b) (6)  
(7) Range Support Manager: Mr(b) (6) Bldg 29, (b) (6)  
(8) Range Control/Schedule: (b) (6) , Bldg 41,(b) (6)  
**See Attached Avon Park Org directory for additional listings**

(9) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)  
Range VHF: 126.15

- f. **Sebring AP:** Mgr: Mr (b) (6) (b) (6) (fuel needs)  
BEEPER: 1 (863) 999-8622 ENTER YOUR PHONE# ENTER #  
Asst Mgr: (b) (6) , (b) (6)  
**Fuel is coordinated for 10k at 0730L every day**
- g. **Youngstown ARS:** DSN: 346-XXXX; (330) 609-XXXX; 1 - 800 - 278 - 7046, + Ext
- (1) 910 AW/CC: Ext 1243
  - (2) 910 AW Command Post: Ext 1315, FAX 1161
  - (3) 910 AW/PA: Ext 1236, FAX 1022
  - (4) 910 OG/CC: Ext 1257 / 1179
  - (5) 910 OG/OSA: Airfield Manager: (b) (6)
  - (6) 757 AS/DO: LTC (b) (6) (b) (6)
  - (7) 757 AS/DOO: Ops Admin, SMS (b) (6) , FAX 1657
  - (8) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) , FAX 1616
  - (9) 910 LG/CC: LTC (b) (6)
  - (10) 910 LG/LGM: Ext 1352
  - (11) Maintenance Control: Ext 1348
  - (12) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
  - (13) Omega/SATO Travel: Ext 1772; (800) 285-6342
  - (14) Cellular Spray Phones:
    - Entomologist (b) (6)
    - (b) (6) cell phone) (b) (6)
    - Mission Cmdr: (b) (6)
    - Spray MX: (b) (6)





**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON – AERIAL SPRAY FLIGHT**  
**3976 King Graves Rd Unit 26**  
**Vienna OH 44473-5926**



1 March 2005

MEMORANDUM FOR 757 AS/DO

FROM: 757 AS/DOS

**SUBJECT:** Swath Characterization Test and Training Mission

**1. Purpose:** The purpose of the following series of tests was to determine swath characteristics (i.e. Average diameter of dispensed droplets and drift distance) of a mimic insecticide (BVA oil) dispersed at altitudes of 300' and 500' AGL by the C-130 aerial spray platform. This test consisted of swath characterization at various altitudes using a C-130 equipped with a Modular Aerial Spray System (MASS) with fuselage booms equipped with 8005 TeeJet nozzles. We also completed an additional replication of an "into the wind" test with 8001 nozzles (Please see Aerial Spray Report/Memorandum dated 14 December 2004 for more background information).

**2. Participants:** A list of test participants is included in attachment I.

**3. Spray Configuration:**

Mass-SP2G

Aircraft Number: 99106

Mission Identifier: QZNRKA405010

**4. Spray Parameters:**

Booms—Fuselage only.

Nozzles—8005, 8001 TeeJet.

Number of Nozzles— 4 per side (8005); 20 per side (8001), oriented down

Airspeed—200 knots ground speed.

Altitude—150', 300' and 500' AGL.

Wind—90 degree crosswind component or directly into the wind.

**5. Itinerary:**

13-14 February: Personnel Arrive at Avon Park (14 Feb) after diverting to Patrick AFB to inspect landing gear. Total ferry time was 4.8 hours (KYNG-KCOF-KAGR).

15 February: One testing sortie was flown for a total flight time of 2.0 hours. Nine spinning impingers ("spinners") were placed in an east-west orientation on Smith Road which is south of Bravo Range (Figure 1). Spinner stations were positioned in an array with each station separated 200 feet apart and spanning 800 feet left of the center station and 800 feet right of the center spinner station (This follows methods detailed in Aerial Spray report 10 December 2004). Twenty 8001 flat fan nozzles were used per side with fuselage booms along with a flow rate of 4.5 gmp target flow rate. Three passes were made to increase the number of



drops collected (Figure 2) and aircraft path was at 180°. Spray-on time for each pass was 40 seconds; spraying began 20 seconds prior to the aircrafts' point of intersection with Smith Road. Ground wind conditions averaged 1.0 knot at 206° during the test, while winds were recorded at altitude as 4 knots at 190°. Flow rate was 4.0 gpm and 71 psi. Drops were counted and measured under compound microscopes. A target of 100 drops per slide or 200 drops per station were measured. Volume median diameter (VMD) was calculated using the method described by Yeomans (1949), and droplet density was determined by dividing the number of drops counted by the number of microscope fields viewed times the area of each field (=drops per centimeter squared), and finally divided by the number of spray passes. An initial sortie of 1.0 hours was logged without getting the test completed because there was a problem with flow through the nozzles. The problem was remedied by Spray Maintenance and a second successful sortie of 1.3 hours was flown. Total flight time was 3.3 hours.

16 February: No sorties flown. Aircraft maintenance.

17 February: One testing sortie was flown with 2 individual testing passes completed. Ten spinning impingers ("spinners") were placed in an east-west orientation on Kissimmee Road, north of OQ range (Figure 1). Spinners were located approximately 1500' apart and were equipped with Teflon-coated microscope slides to document droplet size and drift distance from point of release. The aircraft flew north-south spray passes near the west end of Kissimmee Road, perpendicular to the line of spinners. Three 40 second passes were made; spraying began 20 seconds prior to the aircrafts' point of intersection with Kissimmee Rd. The aircraft flew directly over the 1<sup>st</sup> spinner location. Aircraft altitude was 300' AGL. Thirty minutes following the first test, the microscope slides were collected to be counted later and were replaced with fresh slides. A second test was accomplished at 500' AGL release altitude, while all other parameters remained the same. Ground wind conditions were 2.9 knots at 257 to 270 degrees. Flow rate for the 300 ft test averaged 5.0 gpm and 4.3 gpm during the 500 ft test. Boom pressure was reported between 42-74 psi over both tests. Total flight time was 1.9 hours.

18 February: Mission complete. Personnel return to Youngstown ARS. Total ferry time 3.6 hours.

**6. Results:** Over 5,800 drops were measured during the mission. Volume Mean Diameter (VMD) of the collected spray droplets from the 8001 "into the wind test" was 14 micrometers (range 2.4 – 37.8  $\mu\text{m}$ ) (Figure 2). This is in agreement with the previous test with 8001 nozzles which had an overall VMD of 18.4  $\mu\text{m}$ . The 300 ft altitude test detected drops at every station and results are graphically represented in Figure 3. The largest size drops were collected at station 2 ( $\approx$  1,600 ft downwind) and the most dense collection of drops occurred at station 3 ( $\approx$  3,200 ft downwind). Results from the 500 ft altitude spray test were less easy to interpret. Droplets were again seen on the first station slides (these slides were directly under the spray plane) and the density of these drops was unusually high (149 drop per  $\text{cm}^2$ ). Drop densities and average drop size remained relatively the same over the 2.7 mile sampling line (Figure 4).

**7. Conclusions:** Results of the "into the wind" test analyzing the 8001 sized nozzles were similar to previous tests and can be considered a valid replication indicative of the droplet spectrum produced by the fuselage booms under operational parameters (Aerial Spray report 10 December 2004).

Downwind altitude testing using fuselage booms and flat fan nozzles with BVA oil and Dibrom from 150' AGL has been shown to be an effective configuration for adult mosquito control. Our tests here releasing BVA oil at 300 ft indicate that an offset greater than 1,600 ft will be needed for mosquito control because the greatest concentration of drops were recovered 3,168 feet downwind. Droplet sizes and concentrations throughout the sampling transect are predicted to be effective at mosquito control if the material contained an active ingredient. These data agree with a previous 300 ft altitude test carried out in January 2004 which showed that the majority of large drops had fallen out of the spray cloud by the 3,000 ft mark. Unfortunately, the 500 ft altitude test reported here is more difficult to interpret. It is unclear why droplets were recovered directly under the plane in the 300ft or particularly at 500ft (drops were recovered at station one in both tests). The possibility exists that slides can be contaminated from a source other than the BVA released from the plane. Small droplets, such as the ones worked with here, are difficult to distinguish as to their original source.

**8. Recommendations:** Repeat 300' and 500' AGL releases with the addition of a fluorescent dye to distinguish between droplets and answer the question of contamination. Use active pesticide and caged mosquitoes as bioassays to determine efficacy of high altitude spray releases. Use minimum of 2 mile transect for such studies. Our next scheduled test of the fuselage configuration is 14-19 March 2005 at Craney Island, VA (Army Corps of Engineers) to complete characterization studies with Dibrom.

**9. Acknowledgements:** Excellent work by both the Aircrew and Spray Maintenance helped assure a successful test. Ground operations and data acquisition was enhanced by the helpful presence of MAJ (b) (6), CAPT (b) (6) and SMS (b) (6) Mr. (b) (6) (b) (6) Director of Manatee County Mosquito Control District, observed and offered his knowledge and technical support to the test.

//signed//

(b) (6), CAPT, USAFR  
Research Entomologist

Attachments:

1. List of Participants
2. Figures

## 910 AW PARTICIPANTS

1. **910 AW PARTICIPANTS:**

a. **Aircrew:**

- (1) Pilots: MAJ (b) (6) MAJ (b) (6) MAJ (b) (6)  
CAPT (b) (6)
- (2) Navigator: MAJ (b) (6)
- (3) Flight Engineer: MSG (b) (6)
- (4) Spray Operators: MSG (b) (6) MSG (b) (6) MSG (b) (6)

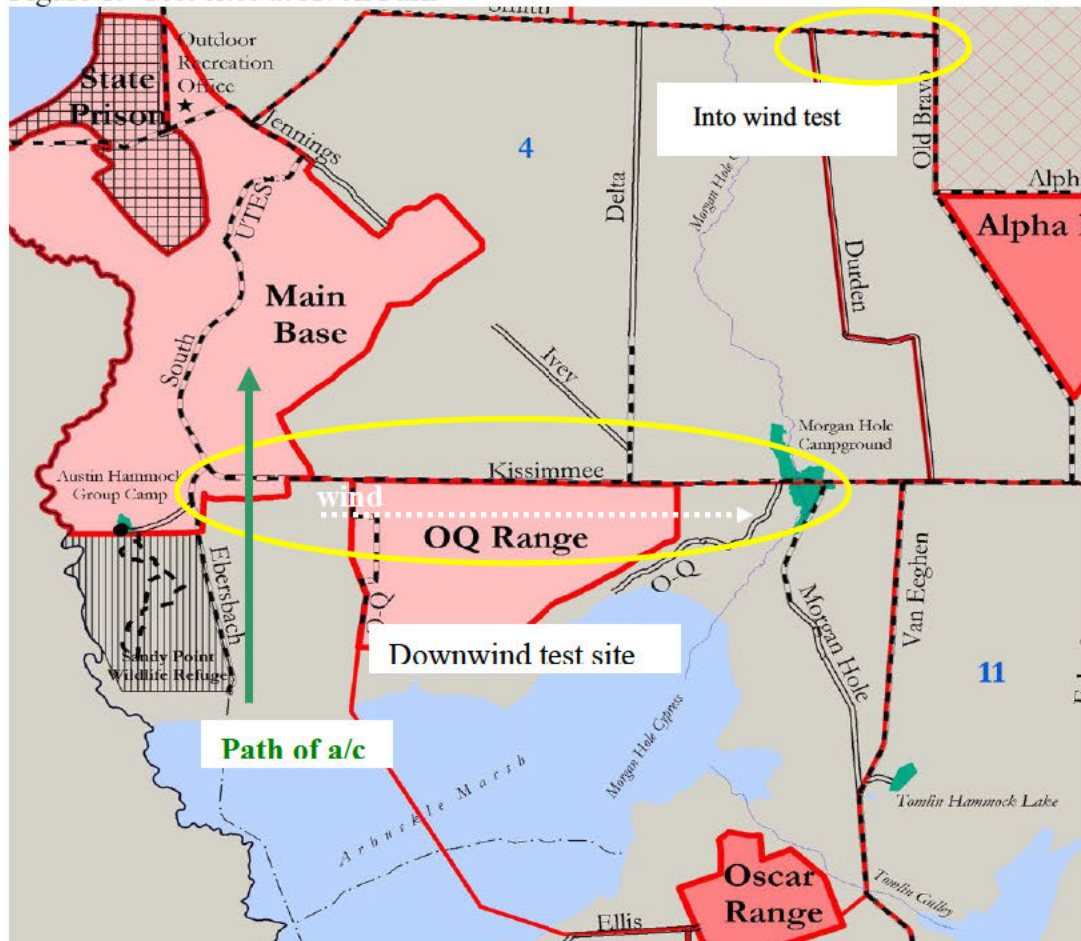
b. **Maintenance:**

- (1) Spray Maintenance: TSG (b) (6) TSG (b) (6)
- (2) Avionics: MSG (b) (6)
- (3) Crew Chiefs: TSG (b) (6) SSG (b) (6)

c. **Entomologists/Ground Personnel:** LTC (b) (6) Capt (b) (6) Capt (b) (6)  
(b) (6) SMS (b) (6) Mr. (b) (6) Director, Manatee County  
Mosquito Control District)

Attachment 2. Figures.

Figure 1. Test sites at Avon Park



Attachment 2 (cont.)

Figure 2. Into the wind test

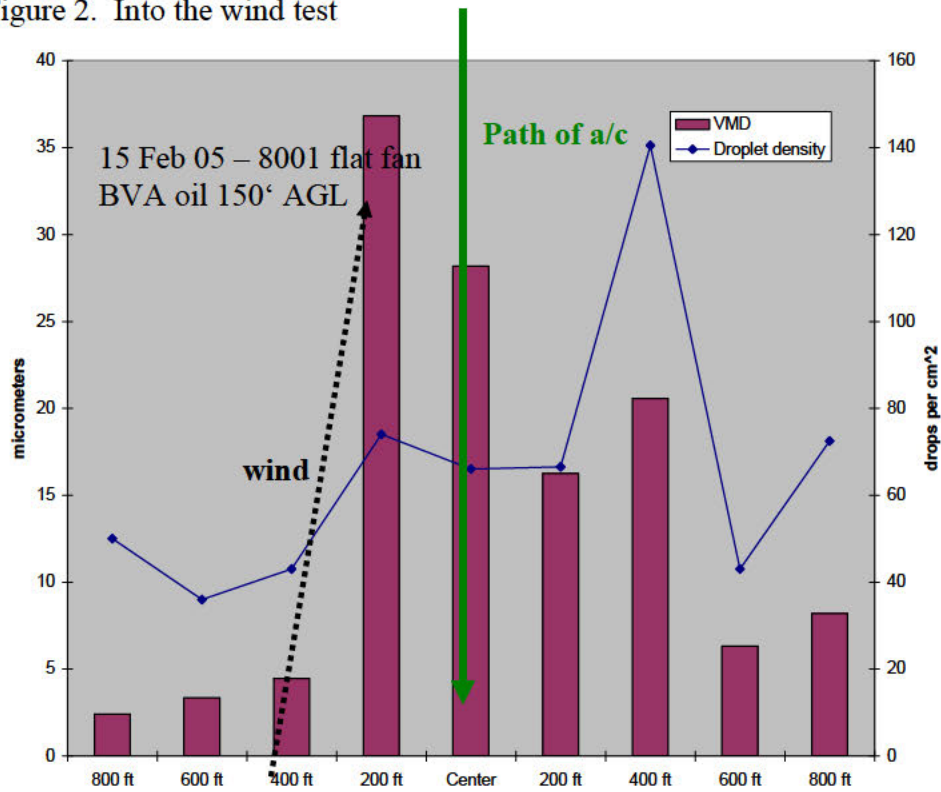


Figure 3. 300 foot AGL release; BVA oil 8005 nozzles

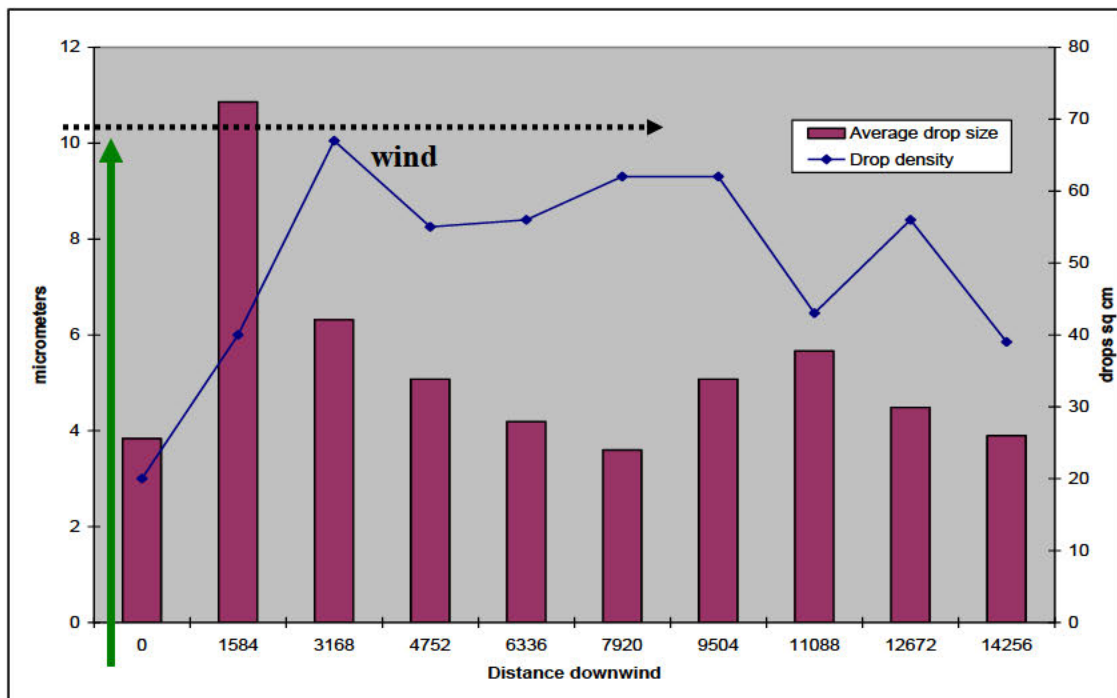
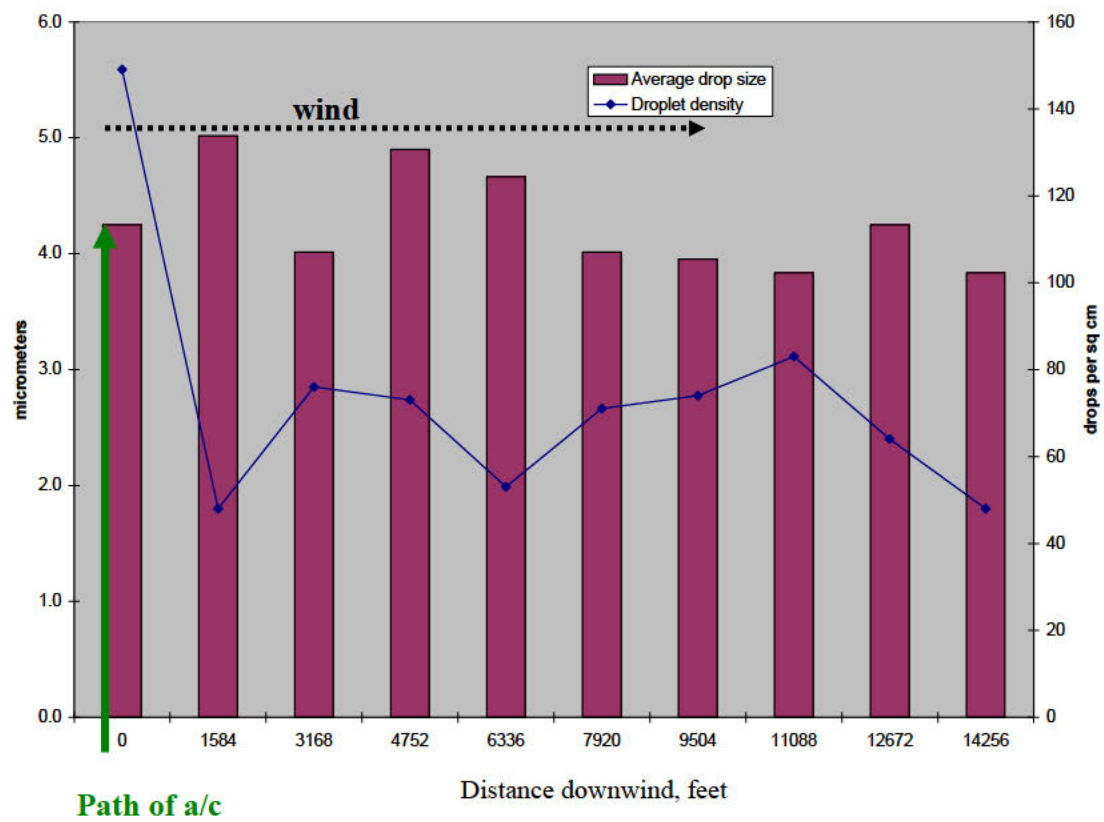


Figure 4. 500 foot AGL release; BVA oil 8005 nozzles





**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
**3976 King Graves Rd Unit 26**  
**Vienna OH 44473-5926**



6 Feb 2005

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray Test and Training at Avon Park, FL

1. Purpose/Objectives/Benefits: Determine effective swath widths for various altitudes of fuselage spray and to provide continuous training for aerial spray air and ground crews.
2. Capability: Spray Aircraft 89-9106 Available, 13-18 Feb 2005.
3. Concept of Operations:

13 FEB (Sunday):

PPR # - Not Req

1100: Show Time KYNG

1400: Depart KYNG

1700: Land KAGR

14 FEB (Monday): Range Times 0900-1200, call AGR Tower & Fire Dept

0800: Show Time

0830: Fuel

0930: Depart

1200: Land

15 FEB (Tuesday): Range Times 0900-1200, call AGR Tower & Fire Dept

0800: Show Time

0830: Fuel

0930: Depart

1200: Land

16 FEB (Wednesday): Range Times 0900-1200, call AGR Tower & Fire Dept

0800: Show Time

0830: Fuel

0930: Depart

1200: Land

17 FEB (Thursday): Range Times 0900-1200, call AGR Tower & Fire Dept

0800: Show Time

0830: Fuel

0930: Depart

1200: Land



18 FEB (Friday): Range Times 0900-1200, call AGR Tower & Fire Dept  
0800: Show Time  
1000: Depart  
1300: Land KYNG

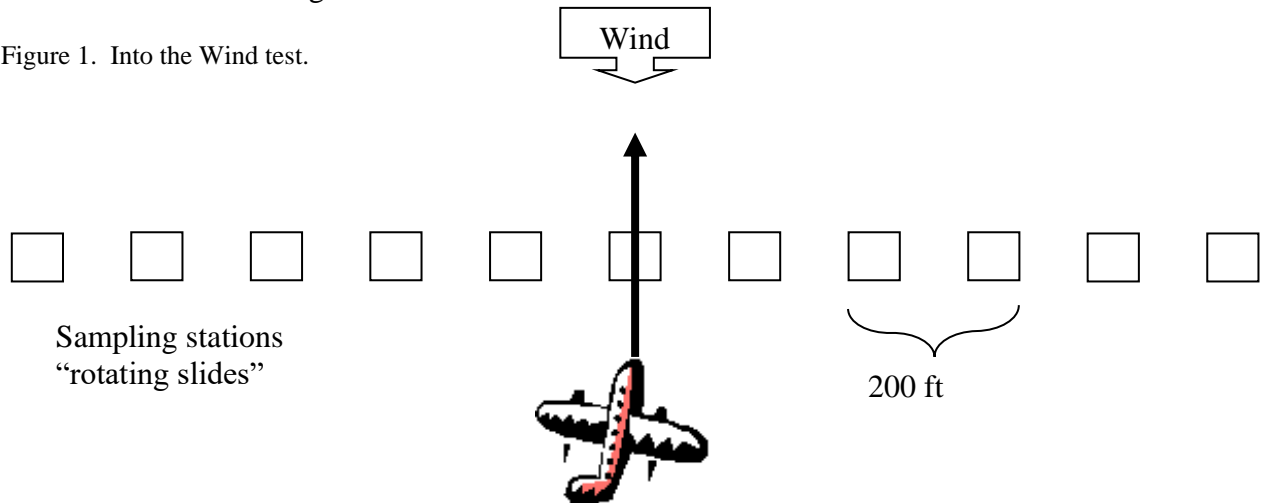
4. Spray Configuration:
  - a. MASS – SP2G
  - a. Aircraft Number: 90-9106
  - b. Mission Identifier: QZNRKA643044
5. Mission Protocols: **Avon Park Spray Testing Itinerary**  
**13-18 Feb 05**

Test 1. Characterization of droplet spectrum produced using fuselage ULV configuration with 8001 nozzles.

Spray Parameters

Booms -- Fuselage only  
Number and type of nozzles -- 8001 = 42 nozzles/21 per side  
Airspeed -- 200 knots ground speed  
Altitude -- 150' above ground level  
Wind -- Into the wind test  
Flow Rate -- 4.5 gallons/minute

Figure 1. Into the Wind test.



Test 2: determination of effective swath width with fuselage ULV configuration @ **300'** AGL

Spray BVA oil from fuselage booms using 9 (4 left side: 5 right side) 8005 nozzles at, 200 knots

We are looking for a crosswind spray (see below)  
Single test depending on results

Test 3: determination of effective swath width with fuselage ULV configuration @ **500'** AGL

Same as test one except change altitude to **500'** AGL, 200 knots  
Crosswind pattern  
2 or 3 replications



Spray Parameters for crosswind tests:

Booms -- Fuselage only.

Nozzles - 8005 TeeJet.

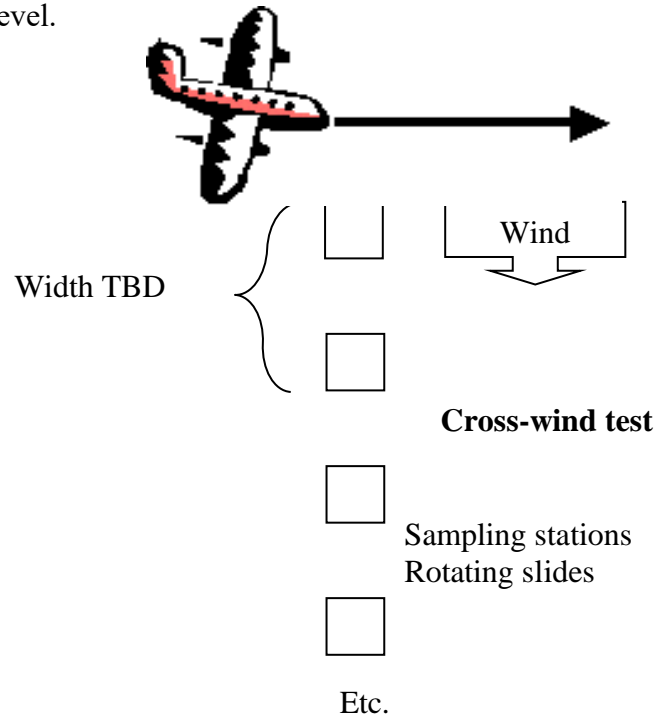
Number of Nozzles – 9 nozzles 4 on left, 5 on right.

Airspeed -- 200 knots ground speed.

Altitude -- 300'/500' above ground level.

Wind – Crosswind component.

Flow Rate – 4.5 gallons/minute.



Mission Protocols:

Determination of effective swath width at 300/500 feet release altitude with fuselage ULV configuration. Glass slides will be used to collect and sample droplets. Ten sampling stations will be setup along either Smith Road (east/west road south of Bravo Range), Oliver Road (north/south road), or Frostproof Rd (NW/SE), or Kissimmee Rd (east/west). This is a crosswind test, thus, we are looking for the wind direction to be within  $\pm 30^\circ$  of the direction of the road. Additionally, we need the average winds to be below 10 mph. Because wind will play an important part in these tests please be prepared to wait for appropriate winds during the entire range time. We are aiming for a transect length of 3 miles (5 miles if we can use Kissimmee. Some of the locations will not support this distance but we will try to get close.

The first altitude test will be at 300' AGL. We need the system to have stabilized prior to reaching the sampling points. 15 seconds prior to the sampling point and 15 seconds after should be sufficient (30 seconds total) but this value could change as we increase the altitude. **Navigator:** please record wind speed and direction at time of test. **Spray Operators:** Please record the spray-on time and pressure. Three passes over the target is all that is required for a given day's test. After the 300' test we will proceed the following test day to a 500' AGL test.

Microscope slides will be retrieved an hour after the plane has passed. Please do not fly through the test area during this time-frame.

6. Aircraft Commander: Maj (b) (6)
7. Support required at Avon Park Bombing Range is thru the Range Manager.
8. If you have any questions concerning this mission please contact DSN (b) (6) .

//SIGNED//

(b) (6) , Maj, USAFR  
Aerial Spray Coordinator



**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



5 Jan 2006

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray Test and Training at Avon Park, FL

1. Purpose/Objectives/Benefits: Determine effective swath widths for 500' altitudes of fuselage spray and to provide continuation training for aerial spray aircrew and ground crews. Concurrently, a flight exercise will be conducted with the Florida Mosquito Control Association.
2. Capability: Spray Aircraft 89-9105 Available, 13-18 Jan 2006.
3. Concept of Operations:
  - 13 JAN (Friday): PPR # - Not Req
    - 1000: Show Time KYNG
    - 1200: Depart KYNG
    - 1500: Land KAGR
  - 14 JAN (Saturday): Range Times 0800-1100, call AGR Tower & Fire Dept
    - 0630: Show Time
    - 0630: Fuel
    - 0800: Depart
    - 1100: Land
  - 15 JAN (Sunday): Range Times 1200-1600, call AGR Tower & Fire Dept
    - 1030: Show Time
    - 1200: Depart
    - 1600: Land
  - 16 JAN (Monday): Range Times 0900-1300, call AGR Tower & Fire Dept
    - 0730: Show Time
    - 0900: Depart
    - 1300: Land
  - 17 JAN (Tuesday): Range Times 0900-1300, call AGR Tower & Fire Dept
    - 0730: Show Time
    - 0900: Depart
    - 1300: Land
  - 18 JAN (Wednesday): Range Times 0930-1330, call AGR Tower & Fire Dept

0530: Show Time

0700: Depart: Fly to Lee County airport for exercise with Florida Mosquito Control Association

0930: Training at Range

1330: Land to reconfigure (remove booms, etc.) the aircraft

1600: Depart Avon Park

4. Spray Configuration:

- a. MASS – SP2G
- a. Aircraft Number: 90-9105
- b. Mission Identifier: QZNRKA567013

5. Mission Protocols:

A. Avon Park Spray Testing Itinerary 13-18 Jan 05

1. Test 1. Determine the effective swath width with a fuselage ULV configuration released at 500 feet AGL with 8008 Nozzles.

- a. Spray mineral oil from fuselage booms using 5 (2 left side: 3 right side) nozzles at, 200 knots
  - i. We are looking for a crosswind spray (see below)
  - ii. 2 or 3 replications depending on results

2. Spray Parameters (use for all tests):

- a. Booms -- Fuselage only.
- b. Nozzles - 8008 TeeJet
- c. Number of Nozzles – 5 nozzles 2 on left, 3 on right
- d. Airspeed -- 200 knots ground speed.
- e. Altitude -- 500' above ground level.
- f. Wind – Crosswind component.
- g. Flow Rate – 4.5 gallons/minute

3. Testing Protocols:

Determination of effective swath width at 500 feet release altitude with fuselage ULV configuration. Glass slides will be used to collect and sample droplets at 10 sampling stations along approximately 5 miles of projected spray path. Desired wind is at least +/- 30 degrees of collection station alignment and less than 10 MPH.

BVA oil will be mixed with 0.25% (volume/volume) ratio Fluorescent dye. Dye distinguishes our droplets from contaminate droplets when viewed under florescent microscope.

- a. The test will be a 500' AGL. System will be stabilized prior to reaching the sampling points. 15 seconds prior to the sampling point and 15 seconds after should be sufficient (30 seconds total. Three passes over the target is planned for each day's test.
- b. Microscope slides will be retrieved 1 hour after the plane has passed. Number and size of the droplets will be determined.

B. Flight exercise with Florida Mosquito Control Association:

Spray aircraft will participate in an exercise with the Florida Mosquito Control Association during their short course on aerial spray. Entomologists from the 757 AS will be on the ground working with the spray course personnel during the exercise. The exercise will simulate the application of mosquito larvicide down a runway at Buckingham Army airfield using water. Water sensitive cards will be used in collection and analysis of spray.

6. Aircraft Commander: Major (b) (6)
7. Support required at Avon Park Bombing Range is thru the Range Manager.
8. If you have any questions concerning this mission please contact DSN (b) (6) .

//SIGNED//

(b) (6) , CPT, USAFR  
Aerial Spray Coordinator



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON – AERIAL SPRAY FLIGHT  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



24 Jan 2006

MEMORANDUM FOR 757 AS/DO

FROM: 757 AS/DOS

SUBJECT: Swath Characterization Test and Training Mission

**1. Purpose:** The purpose of the following series of tests was to determine swath characteristics (i.e. Average diameter of dispensed droplets and drift distance) of a mimic insecticide (BVA oil) dispersed at altitudes of 500' AGL by the C-130 aerial spray platform. These tests were replications of 500' release tests conducted last year, however, new quantification equipment (fluorescent dye and a fluorescent microscope) were utilized to minimize the effect of non-spray contamination on the test results. These tests consisted of swath characterizations using a C-130 equipped with a Modular Aerial Spray System (MASS) with fuselage booms equipped with 8008 TeeJet nozzles.

**2. Participants:**

- a. **Aircrew:**
  - 1. Pilots: Maj (b) (6)      Maj (b) (6)      Maj (b) (6)      Cpt (b) (6)
  - 2. Navigators: LTC (b) (6)
  - 3. Flight Engineers: Msgt (b) (6)
  - 4. Spray Operators: Msgt (b) (6)      Msgt (b) (6)      Msgt (b) (6)
- b. **Maintenance:**
  - 1. Spray Maintenance: (b) (6)
  - 2. Avionics: None
  - 3. Crew Chiefs: (b) (6)
- c. **Entomologists:** Maj (b) (6)      Capt (b) (6)
- d. **Admin Support:** Smsgt (b) (6)

**3. Spray Configuration:**

Mass-SP2G  
Aircraft Number: 99105  
Mission Identifier: QZNRKA567013

**4. Spray Parameters:**

Booms—Fuselage only.  
Nozzles—8008 TeeJet.  
Number of Nozzles— 3 per side (8008)  
Airspeed—200 knots ground speed.  
Altitude—500' AGL.  
Wind—90 degree crosswind component.

**5. Itinerary:**

13 January: Personnel Arrive at Avon Park from YARS. Total ferry time was 3.5 hours (KYNG-KAGR).

14 January: One testing and training sortie was flown for a total flight time of 2.5 hours. Ten spinning impingers (“spinners”) were placed in an east-west orientation on Kissimmee Road (Figure 1). Spinner stations were positioned in an array with each station separated by 2500 feet. Five 8008 flat fan nozzles were used per side with fuselage booms along with a flow rate of 4.7 gmp target flow rate. Three North-South (crosswind) passes were made to increase the number of drops collected. Spray-on time for each pass was 40 seconds; spraying began 30 seconds prior to the aircrafts’ point of intersection with Kissimmee. Ground wind conditions maintained 9-15 knots at approximately 290° during the test. Flow rate was 4.5 gpm and 83 psi. Attempts were made to count and measure droplets under a compound fluorescent microscope. However, observation revealed no droplets collected on the slides, obviously a factor of the relatively high release heights compounded by the stiff wind. A determination was made to conduct further tests with lesser wind speeds.

15 January: One testing and training sortie was flown for a total flight time of 2.0 hours. Ten spinning impingers were placed in a NW-SE orientation along Frostproof road (Figure 1.) Spinner stations were positioned 1700 feet apart, with the 1<sup>st</sup> spinner station located in the most northwest point of the road. Six 8008 flat fan nozzles were used per side with fuselage booms with a flow rate of approximately 4.75 gpm at 56 psi. Three Southwest-Northeast passes were made, with each pass commencing and ending spray on or off 30 seconds prior to intersection with the road, respectively. Ground wind conditions averaged 2-4 knots at 310° during the test. 45 minutes after the last pass was completed, the spinning slides were collected and viewed under a fluorescent compound microscope. 50 droplets (if available) were counted for a slide located at each one of the sampling stations. Drops were measured for volume mean diameter, calculated using the method described by Yeomans (1949).

16 February: One testing and training sortie was flown for a total flight time of 2.0 hours. Spinning impingers were placed in a North-South orientation along Van Egan road (Figure 1.) Spinner stations were positioned 2500 feet apart, with the 1<sup>st</sup> spinner station located in a southern point of the road. Six 8008 flat fan nozzles were used per side with fuselage booms with a flow rate of approximately 4.7 gpm at 60 psi. Four West-East passes were made, with each pass commencing and ending spray on or off 40 seconds prior to intersection with the road, respectively. Ground wind conditions averaged 6-7 knots at 188° during the test. 45 minutes after the last pass was completed, the spinning slides were collected and viewed under a fluorescent compound microscope. Slide data was calculated as above.

17 January: No training missions were conducted. Entomologists redeployed to Fort Myer to coordinate an aerial spray demonstration and to give a presentation at the Lee County Aerial Spray Fly-in.

18 January: Mission complete. Personnel return to Youngstown ARS. Total ferry time 3.5 hours.

**6. Results:** Volume Mean Diameter (VMD) of the collected spray droplets from the 8008 crosswind test on Frostproof Road are depicted in figure 2. VMD’s ranged from approximately 32 microns 1700 feet from the aircraft release point, increasing to approximately 50 microns at 3400, and 5100 feet respectively, followed by a roughly



linear decrease in VMD at 13,600 from the aircraft release point. Drops were not located at stations greater than this distance, or at the sampling station directly beneath the aircraft flight path. VMD of drops collected from the Crosswind test on Van Eegan road are shown in Figure 3, along with droplet density corrected for a 4 pass scenario. VMD was approximately 68 microns for droplets collected at the sampler located 2500 feet from the aircraft release point. VMD's for the rest of the sampling locations varied from roughly 30 microns to over 50 microns all the way out to 22500 feet from the release point. Droplet density increased from approximately 0.75 drops/mm<sup>2</sup> at the 2500 foot sampling location, increasing to over 2.25 drops/mm<sup>2</sup> at 10000 feet, and then decreased to between 0.5 and 1.0 drops/mm<sup>2</sup>.

**7. Conclusions:** As expected, no drops were located directly beneath the material release point, in accordance with the dogma that drops are carried to be deposited downwind. Also, as evidenced by figure 2, a lighter wind condition may have resulted in a tighter and more “normal” distribution of droplet sizes. Indeed, no drops were collected at all at the limits of the test. This is in contrast to the test with increased windspeed (Figure 3), where large drops are collected generally close to the release point (2500'), and the rest of the drops are distributed fairly evenly over the entire sampling line, out to 22,500 feet from the release point. In this scenario it is entirely possible that the even smaller drops were not collected at all, as the smaller drops would have a tendency to deposit more slowly, and thus, be generally collected for downwind of the release point. In effect, we may have missed the end of the aerosol cloud.

Comparing this data to previous, it becomes obvious that our previous testing (droplet sizing and density counts may have been significantly biased by slide contamination. This has been suggested by (b) (6), (pers. Communication) and several others doing similar pesticide cloud characterization work. Looking at some of the data from the 2004 testing season (Figure 4), in which a test was conducted in almost identical (with respect to windspeed) conditions as the test recently conducted on Van Eegan (figure 3) we find that despite a 4 knot crosswind we find that “drops” are very small and have been collected directly below the material release point. These drops, however, did not have the benefit of being unambiguously “marked” with a fluorescent dye, and we consider the previous data suspect at best.

In light wind conditions it appears that the material drift can be defined quite well. Further, although there is not suitable replication at this point, windspeed increases appear to create a major shift in material cloud distribution (deposition), to the point where at the “higher winds” of, for example, greater than 10-12 knots may make the material cloud “uncontrollable” from a targeted application perspective.

The relationship between VMD and drop density in the Van Eegan test appears to be quite typical, and the peak density may suggest where the limits or middline of effective swath occurs.

Using 8008 flat fan nozzles we feel maximized the chances for successful material recovery on the spinners by increasing the size of the droplets coming out of the aircraft. Interestingly, the VMD's of droplets recovered are not that far out of the range of what has been traditionally thought of as “optimal” size for mosquito control, and in fact might prove to be quite effective for vector control. However, the general industry thinking is that “smaller is better” might also suggest that smaller nozzles are necessary for more complete atomization of the spray material. It is quite likely the properties of the spray clouds described in these test would be altered substantially and that the smaller drops produced would drift farther than witnessed in this series of tests.

Effective control will be dependent on functionally characterizing the effective width of a swath. To adequately do this, bioassays using live mosquitos AND the

characterization techniques described here will necessary. At 500', the key variable will undoubtedly be the single-pass rates that are applied (as well as the nozzle) selection. We may well see a scenario where multiple swaths might need to be flown to achieve a rate necessary to control vectors over the distance that the cloud travels. In short, very wide swaths, very high flow rates for each swath.

We considered this series of tests to be a success in that we effectively captured spray deposition from 500' AGL application and demonstrated that the spray material will deposit within a reasonable distance given relatively low-wind conditions.

**8. Recommendations:** Conduct testing in relatively mild conditions (less than 6 knots). Repeat this series of tests using 8005 flat fans for comparison. Conduct a series of mosquito bioassays spray active ingredient (Dibrom) over a long distance sampling line (5 plus miles) and simultaneously conduct swath characterizations to attempt to correlate insect mortality with drops size and drop density. Conduct bioassays with different flow rates using a single pass application. Initial applications should be relatively low (standard 2000', 0.5 oz/acre Dibrom parameters, 3.6 gpm), and significantly higher (5x or 10x rates). If a single pass application rate will not support this, conduct multiple passes.

**9. Acknowledgements:** Excellent work by both the Aircrew and Spray Maintenance helped assure a successful test. Ground operations and data acquisition was enhanced by the helpful presence of MAJ (b) (6) and SMS (b) (6) Dr. (b) (6), associate professor, Florida A&M, offered her knowledge and technical support to the test.

//signed//  
(b) (6), CAPT, USAFR  
Research Entomologist

Attachment 1. Figures.

Figure 1. Test sites at Avon Park

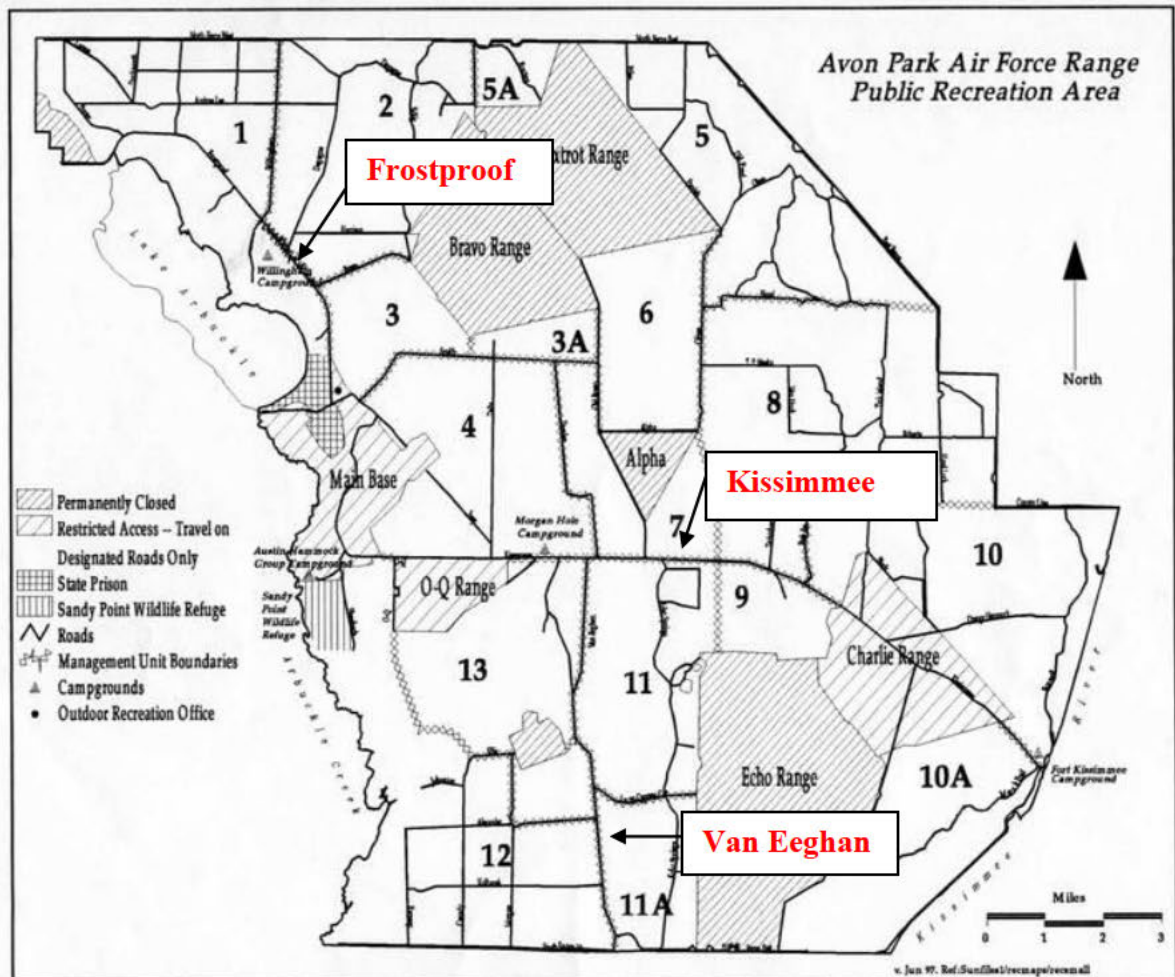


Figure 2. 500' AGL release, BVA oil 8008 nozzles, 1<sup>st</sup> replicate (Frostproof)

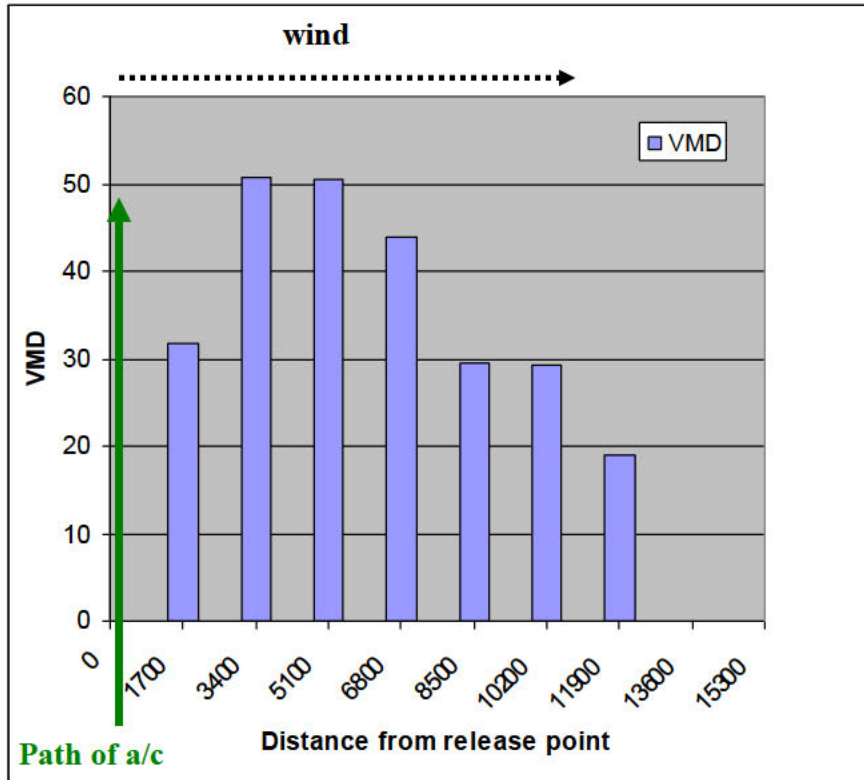


Figure 3. 500 foot AGL release; BVA oil 8008 nozzles, 2nd replicate

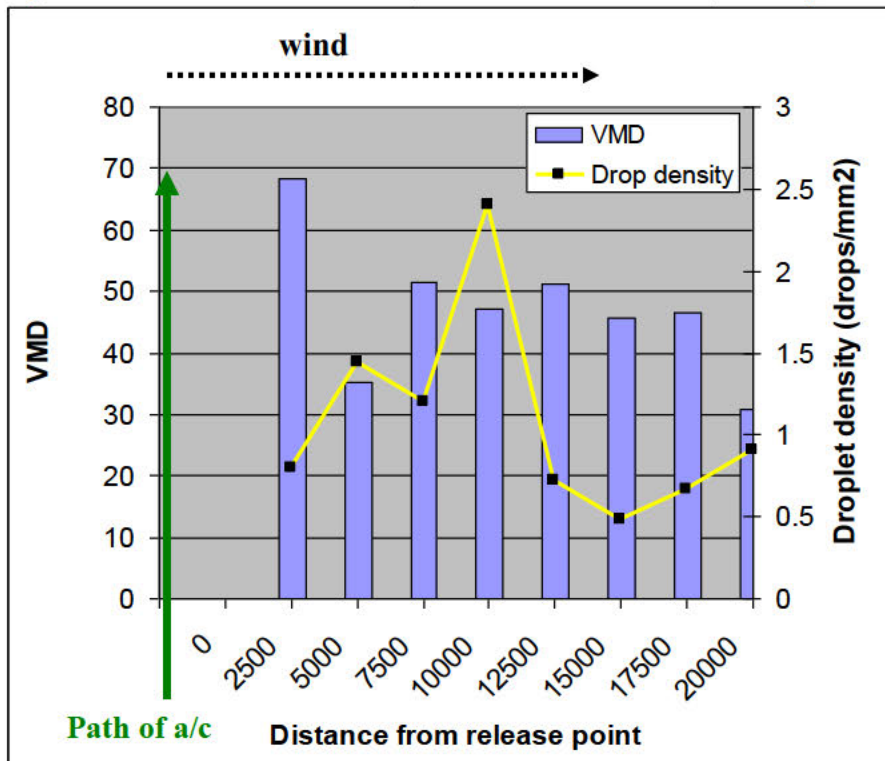
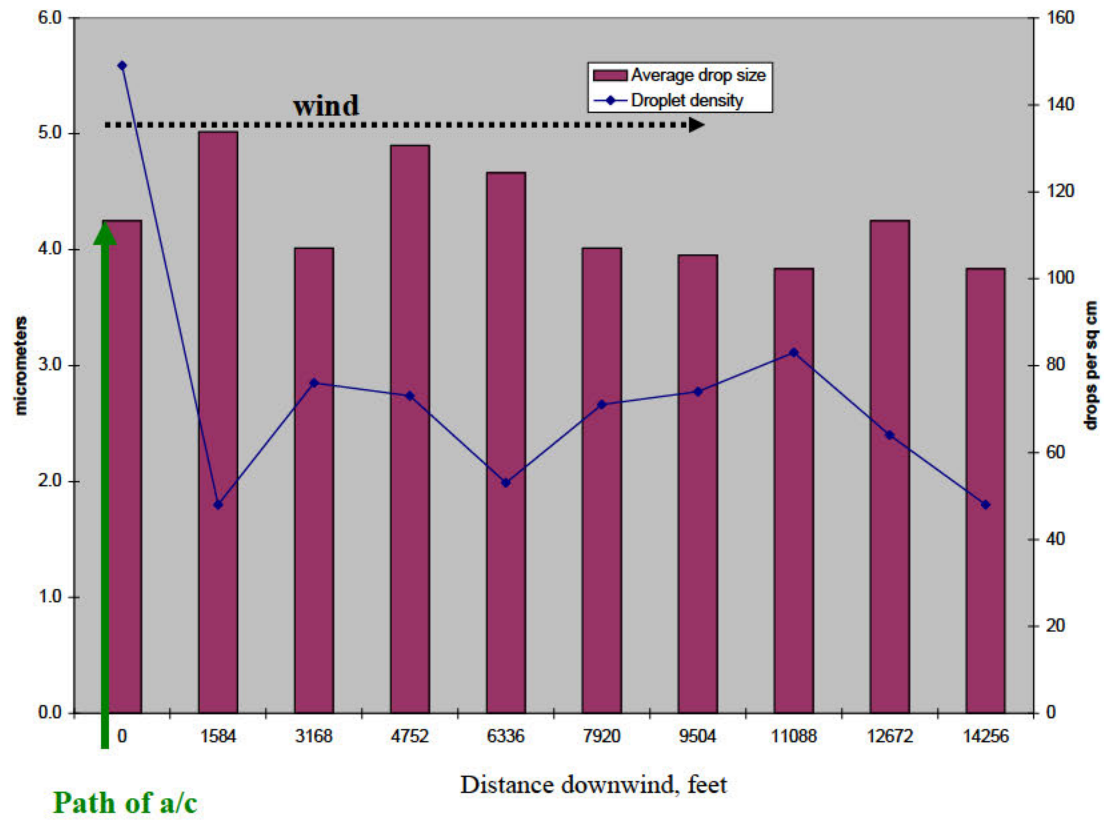


Figure 4. 500 foot AGL release; BVA oil 8005 nozzles, 2004 Test Data.

Crosswind test, 4 knot winds.



# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **AVON PARK, FL**

### **13-18 Jan 06 Change 1**

**PURPOSE/OBJECTIVE/BENEFIT:** Determine effective swath width for 500' altitudes using fuselage ULV configuration. Secondary mission is to complete initial spray training for aircrew. Third, aerial spray will run an exercise with the Florida Mosquito Control Association.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

1. Pilots: Maj (b) (6) , Maj (b) (6) Maj (b) (6) , Cpt (b) (6)
2. Navigators: LTC (b) (6) ,
3. Flight Engineers: Msgt (b) (6)
4. Spray Operators: Msgt(b) (6) , Msgt (b) (6) , Msgt(b) (6)

##### **b. Maintenance:**

1. Spray Maintenance: (b) (6)
2. Avionics: None
3. Crew Chiefs: (b) (6)

##### **c. Entomologists:** Maj (b) (6) , Capt (b) (6) ,

##### **d. Admin Support:** Smsgt (b) (6)

#### **2. SCHEDULE: (All time Local) All times and sequence of events are subject to change depending upon the needs of the testing and training.**

13 JAN (Friday):

PPR # - Not Req

1000: Show Time KYNG

1200: Depart KYNG

1500: Land KAGR

\*Must be on the ground KAGR by 1500 for tower personnel briefing

14 JAN (Saturday): Range Times 0800-1100, call AGR Tower & Fire Dept

0630: Show Time

0630: Fuel

0800: Depart

1100: Land

15 JAN (Sunday): Range Times 1200-1600, call AGR Tower & Fire Dept

1030: Show Time

1200: Depart

1600: Land

16 JAN (Monday): Range Times 0900-1300, call AGR Tower & Fire Dept

0730: Show Time

0900: Depart

1300: Land

17 JAN (Tuesday): Range Times 0900-1300, call AGR Tower & Fire Dept

0730: Show Time

0900: Depart

1300: Land

18 JAN (Wednesday): Range Times 0930-1330, call AGR Tower & Fire Dept  
0530: Show Time  
0700: Depart: Fly to Lee County airport for exercise with Mosquito Control Association  
0930: Training at Range  
1330: Land to reconfigure (remove booms, etc.) the aircraft  
1600: Depart Avon Park

**3. ITEMS TO TAKE:**

- a. **Navigator:** Maps with “No-Spray” Areas Marked
- b. **Certified Pest Management Professionals:**
  - (1) Water-Sensitive Cards
  - (2) 1 Signal Mirror
  - (3) 1 Spot Light
  - (4) 1 Engineer Wheel
  - (5) Ground Maps
  - (6) Laptop Computer
  - (7) Digital Camera
  - (8) Oil-sensitive cards
  - (9) Spinners
  - (10) Wooden dowels

**4. AIR TO GROUND FREQUENCIES:**

- a. **Spray: Primary 392.2; Secondary 340.8**
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. **Avon Park: TWR-292.2 (p), 126.15, 276.6 (s) Hrs 0700-2300 M-F, S-S per flying schedule DSN 968-7138**
- e. MacDill: TWR-123.7; GND-118.575; ATIS-133.825; CMD POST-311.0; PTD-372.2
- f. **Buckingham Army Airfield- CTAF 122.9 (Flight exercise location) N26 38.6 W081 42.6**

**5. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 99105
- c. Mission Identifier: QZNRKA567013

**6. MISSION PROTOCOLS:**

**Avon Park Spray Testing 13-18 Jan 06**

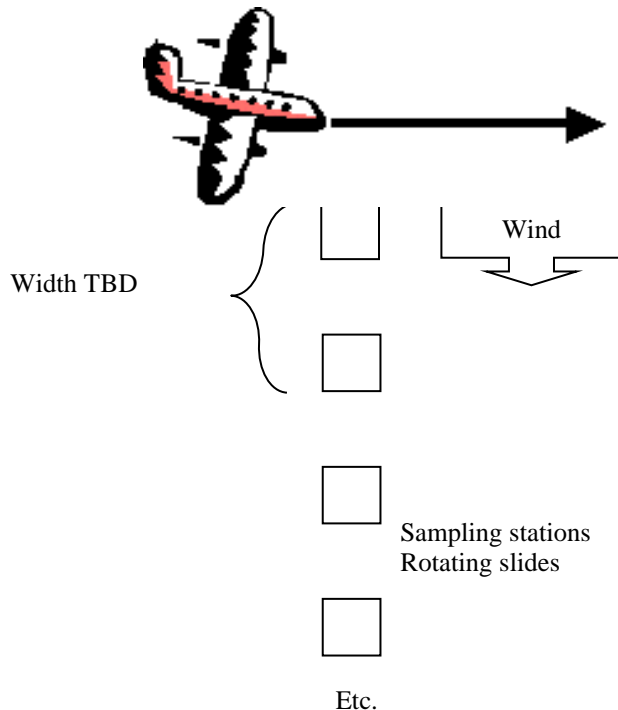
Test 1. Determining the effective swath width with a fuselage ULV configuration released at 500 feet AGL with 8008 Nozzles.

**Spray Parameters**

Spray: BVA oil  
Booms -- Fuselage only  
Number and type of nozzles – 8008; 5 Nozzles total = (2 left, 3 right) Airspeed -- 200 knots ground speed  
Altitude -- 500' above ground level  
Wind – crosswind test  
Flow Rate – 4.5 gallons/minute



Fig. 1. Diagram of crosswind test. First sampling location will be on the Upwind aspect. Aircraft will pass directly over 1<sup>st</sup> sampling site (no offset).



#### Mission Protocols:

Determination of effective swath width at 500 feet release altitude with fuselage ULV configuration. Glass slides will be used to collect and sample droplets. Ten sampling stations will be setup along either Van Eeghan (north/south), Frostproof (north-west/southeast) or Kissimmee Rd (east/west). This is a crosswind test, thus, we are looking for the wind direction to be within  $\pm 30^\circ$  of the direction of the road. Additionally, we need the average winds to be below 10 mph. Because wind will play an important part in these tests please be prepared to wait for appropriate winds during the entire range time. We are aiming for a transect length of approximately 5 miles if possible. Some of the locations will not support this distance but we will try to get close.

In the BVA oil will be mixed 0.25% (volume/volume) ratio Fluorescent dye. This dye will allow us (when viewed with a fluorescent microscope) to determine exactly the drops that are coming out of the spray system as opposed to drops resulting from environmental contaminants. The dye will be dissolved in HAN and mixed with the BVA oil prior to the 1<sup>st</sup> days testing.

We need the system to have stabilized prior to reaching the sampling points. 15 seconds prior to the sampling point and 15 seconds after should be sufficient (30 seconds total) but this value could change as we increase the altitude. The aircraft will dispense spray directly over the 1<sup>st</sup> sampling location. There will be no offset. **Navigator:** please record wind speed and direction at time of test. **Spray Operators:** Please record the spray-on time and pressure. Three passes over the target is all that is required for a given day's test. Ground personnel for the test will position themselves at the 1<sup>st</sup> sampling location and provide visual cues or mirror flashes as appropriate.

Microscope slides will be retrieved an hour after the plane has passed. Please do not fly through the test area during this time-frame.

Test one will be repeated on subsequent days until a sufficient number of replications have been completed.

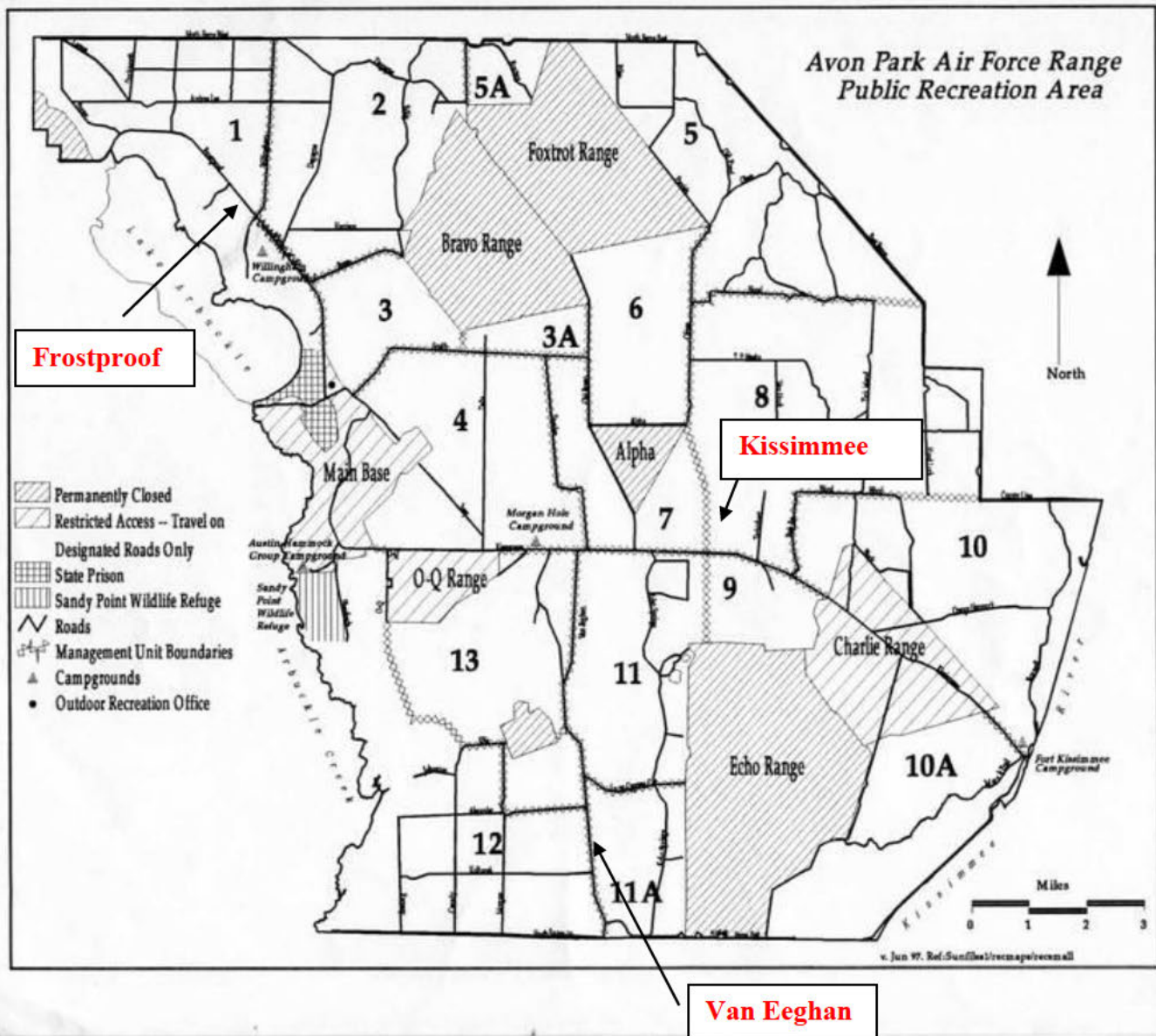


Fig. 2. Map of Avon Park Range

#### CONTACTS:

- a. Quarters: (JTR Lodging/\$62)
  - **Quality Inn (863) 385-4500 (\$64 w/Tax Exempt Form) FAX (863) 382-4793**
  - Sebring/Avon Park: Inn on the Lakes, (863) 471-9400, Group Reservation: <http://www.innonthelakessebring.com> POC is (b) (6)
  - Jacaronda (863) 453-2211; 19 East Main St, Avon Park, FL \$ 27.29
  - Oak Tree Inn (863) 453-3165
  - Days Inn (863) 382-1148, 800 329-7466
- b. Transportation:
  - Avon Park Enterprise POC Dave Rosario (863) 452-5483; Fax (863) 452-5947**
  - Sebring Enterprise POC Gina (863) 385-6969; Fax (863) 385-3416**
  - 3 Van \$61.99; 2 Full size car \$40.99 (+ TAXES); Unlimited mileage
  - (All vehicles will be at Avon Park Flight Ramp, keys will be with tower)
  - (b) (6) -Van
  - (b) (6) - Full Size

- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350  
(1) Weather: MacDill AFB Forecaster (DSN 968-2854)  
(2) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)  
(3) MacDill AFB Ops Gp CC 968-3014
- d. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX  
DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN  
Avon Control Tower & Range Control Scheduling DSN 968-7176  
Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number  
(1) Range Operations Manager: (b) (6) , Bldg 236, (b) (6)  
(2) Avon Range Control Tower: ext 176  
(1) Flight Chief of Civ Engineer: (b) (6) , Bldg 29, (b) (6)  
(2) Chief, Environmental Flight: (b) (6) , Bldg 29, (b) (6) also Wildlife Biologist (b) (6)  
(3) Fuels: ext 118 or Cel (b) (6)  
(4) Range Support Manager: Mr (b) (6) Bldg 29, (b) (6)  
(5) Range Control/Schedule: (b) (6) , Bldg 41, (b) (6)  
**See Attached Avon Park Org directory for additional listings**  
(9) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)  
Range VHF: 126.15
- f. **Sebring AP:** Mgr: (b) (6) (fuel needs)  
BEEPER: 1 (863) 999-8622 ENTER YOUR PHONE# ENTER #  
Asst Mgr: (b) (6)  
**Fuel is coordinated for 20k at 0730L every day**
- g. **Youngstown ARS:** DSN: 346-XXXX; (330) 609-XXXX; 1 - 800 - 278 - 7046, + Ext  
(1) 910 AW/CC: Col (b) (6)  
(2) 910 AW Command Post: Ext 1315, FAX 1161  
(3) 910 AW/PA: Ext 1236, FAX 1022  
(4) 910 OG/CC: Col (b) (6)  
(5) 910 OG/OSA: Airfield Manager: (b) (6)  
(6) 757 AS/DO: Maj (b) (6)  
(7) 757 AS/DOO: Ops Admin, SMS (b) (6) , FAX 1657  
(8) 757 AS/DOLP: Aerial Spray Office, Cpt (b) (6) , FAX 1616  
(9) 910 LG/CC: COL (b) (6)  
(10) 910 LG/LGM: Ext 1352  
(11) Maintenance Control: Ext 1348  
(12) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586  
(13) Omega/SATO Travel: Ext 1772; (800) 285-6342  
(14) Cellular Spray Phones:  
Entomologist (b) (6)  
(b) (6) cell phone (b) (6)  
Mission Cmdr: (b) (6)  
Spray MX: (b) (6)

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **AVON PARK, FL**

### **13-19 DECEMBER 2003**

**PURPOSE/OBJECTIVE/BENEFIT: Determine effective swath widths for various altitudes using fuselage ULV configuration**

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Aircraft Commander: Maj (b) (6)
- (2) Pilots: Maj (b) (6) , 1LT (b) (6) , LTC (b) (6) (13-15)
- (3) Navigators: \*\* Maj (b) (6)
- (4) Flight Engineers: \*MSG (b) (6)
- (5) Spray Operators: MSG (b) (6) , TSG (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: MSG (b) (6) , \*\*\*TSG (b) (6) , SSG (b) (6)
- (2) Crew Chiefs: \*\*TSG (b) (6) , SSG (b) (6)

##### **c. Entomologists: \*\*\*Capt (b) (6) Dr. (b) (6)**

**Enterprise (Avon Park/Sebring) (863) 452-5483; FAX( 863) 452-5947**

**Vehicles: 2 \*Full size/\$45; 1 \*\*Mid Size; 2 \*\*\*Vans/\$75**

#### **2. SCHEDULE: (All time Local)**

13 DEC (Saturday): PPR # - N/A

0800: Show Time KYNG

1000: Depart KYNG

1200: Land KAGR

14 DEC (Sunday): Range Times 1100-1400, call AGR Tower & Fire Dept

0800: Show Time

0930: Fuel

1100: Depart

1400: Land

15 DEC (Monday): Range Times 1130-1430, call AGR Tower & Fire Dept

0830: Show Time

1130: Depart

1430: Land

16 DEC (Tuesday): Range Times 1330-1500, call AGR Tower & Fire Dept

1030: Show Time

1330: Depart

1500: Land

17 DEC (Wednesday): Range Times 0800-1200

0630: Show Time

0707: Sunrise

0830: Depart

1200: Land

18 DEC (Thursday): Range Times 0800-1200

0630: Show Time

0830: Depart

1205: Land

19 DEC (Friday):

0900: Depart KAGR

1200: Land KYNG

### 3. ITEMS TO TAKE:

- a. **Navigator:** Maps with “No-Spray” Areas Marked
- b. **Certified Pest Management Professionals:**
  - (1) Water-Sensitive Cards
  - (2) 1 Signal Mirror
  - (3) 1 Spot Light
  - (4) 1 Engineer Wheel
  - (5) Ground Maps
  - (6) Laptop Computer
  - (7) Digital Camera
  - (8) Oil-sensitive cards
  - (9) Spinners
  - (10) Wooden dowels

### 4. AIR TO GROUND FREQUENCIES:

- a. Spray: Primary 392.2; Secondary 340.8
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. Avon Park: TWR-292.2 (p), 126.15, 276.6 (s)
- e. MacDill: TWR-123.7; GND-121.65; ATIS-133.825; CMD POST-311.0; PTD-372.2

### 5. SPRAY CONFIGURATION:

- a. MASS – SP2G
- b. Aircraft Number: 99106
- c. Mission Identifier: QZNRKA347

### 6. MISSION PROTOCOLS:

Avon Park Spray Testing Itinerary  
13-19 Dec 03

- 1. Test 1: determination of effective swath width with fuselage ULV configuration @ **150’** AGL
  - a. Spray soybean oil from fuselage booms using 9 (4 left side: 5 right side) 8005 nozzles at, 200 knots
    - i. We are looking for a crosswind spray (see below)
- 2. Test 2: determination of effective swath width with fuselage ULV configuration @ **500’** AGL
  - a. Same as test one except change altitude to **500’** AGL, 200 knots
    - i. Crosswind pattern
- 3. Spray Parameters (use for all tests):
  - a. Booms -- Fuselage only.
  - b. Nozzles - 8005 TeeJet
  - c. Number of Nozzles – 9 nozzles 4 on left, 5 on right
  - d. Airspeed -- 200 knots ground speed.
  - e. Altitude -- 150’/500’ above ground level.

Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number



- (1) Range Operations Manager: (b) (6) Bldg 236, (b) (6)
  - (2) Avon Range Control Tower: ext 176
  - (3) Flight Chief of Civ Engineer: (b) (6) , Bldg 29, (b) (6)
  - (4) Chief, Environmental Flight: (b) (6) , Bldg 29, (b) (6)
  - (5) Fuels: ext 118
  - (6) Range Support Manager: Mr (b) (6) Bldg 29, (b) (6)
  - (7) Range Control/Schedule: (b) (6) , Bldg 41, (b) (6)
- See Attached Avon Park Org directory for additional listings**

- (8) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)  
Range VHF: 126.15

f. **Sebring AP:**

Mgr: Mr (b) (6) (b) (6) (fuel needs)  
BEEPER: 1 (863) 999-8622 ENTER YOUR PHONE# ENTER #  
Asst Mgr: (b) (6) , (b) (6)

g. **Other Quarters:**

Sebring FL: Chateau Elan Sebring Airport Inn (863) 655-6252  
Inn On The Lakes (863) 471-9400  
Avon Park: (JTR Lodging \$64/Meals \$28)  
Chateau Elan Airport Inn \$64, (863) 655-6252  
**Quality Inn (863) 385-4500, FAX: (863) 385-0250**  
Jacaronda (863) 453-2211; 19 East Main St, Avon Park, FL \$ 27.29  
Oak Tree Inn (863) 453-3165  
Days Inn (863) 382-1148, 800 329-7466

h. **Youngstown ARS:** DSN: 346-XXXX; (330) 609-XXXX; 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Ext 1243
- (2) 910 AW Command Post: Ext 1315, FAX 1161
- (3) 910 AW/PA: Ext 1236, FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 OG/OSA: Airfield Manager: (b) (6)
- (6) 757 AS/DO: LTC (b) (6)
- (7) 757 AS/DOO: Ops Admin, SMS (b) (6) , FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, (b) (6) , FAX 1616
- (9) 910 LG/CC: LTC (b) (6)
- (10) 910 LG/LGM:, Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
- (13) 910 LG/LGL: CMS (b) (6)
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Cellular Spray Phones:  
PMP: (b) (6)  
Mission Cmdr: (b) (6)  
Spray MX: (b) (6)





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



20 January 2004

MEMORANDUM FOR 757 AS/DO

FROM: 757 AS/DOS

SUBJECT: Swath Characterization Test and Training Mission

**1. Purpose:** The purpose of this series of tests was to determine swath characteristics (i.e. Volume Mean Diameter of dispensed droplets and drift distance) of a mimic insecticide (soybean oil) dispersed at altitudes of 150' and 500' AGL by the C-130 aerial spray platform. This test consisted of swath characterization at various altitudes using a C-130 equipped with a Modular Aerial Spray System (MASS) with fuselage booms equipped with 8005 TeeJet nozzles.

**2. Participants:** A list of test participants are included in attachment I.

**3. Spray Configuration:**

Mass-SP2G

Aircraft Number: 99106

Mission Identifier: QZNRKA999347

**4. Spray Parameters:**

Booms—Fuselage only.

Nozzles—8005 TeeJet.

Number of Nozzles—3 and 4 per side respectively, oriented straight down.

Airspeed—200 knots ground speed.

Altitude—150' and 500' AGL.

Wind—90 degree crosswind component.

**5. Itinerary:**

13 December: Personnel Arrive at Avon Park. Total ferry time was 3.6 hours.

14 December: No sorties were flown due to inclement weather.

15 December: One testing sortie was flown with 2 individual testing passes completed. Ten spinning impingers ("spinners") were placed in north-south orientation on Oliver Road between Alpha and Foxtrot ranges (see appendix 2). Spinners were located approximately 500' apart and were equipped with Teflon-coated microscope slides to document droplet size and drift distance from point of release. Spinners were also equipped with oil-sensitive cards located on the spinner mounting poles. The aircraft flew a spray pass to the north end of Oliver Road, perpendicular to the line of spinners. Spray-on time for the oil was 40 seconds, half of which was dispensed prior to the aircrafts' point of intersection with Oliver

Road. Aircraft offset was 500' North of the 1<sup>st</sup> spinner location. Aircraft altitude was 150' AGL. Following the 1<sup>st</sup> pass, the microscope slides were collected to be counted later and were replaced with fresh slides. The test was repeated with the same parameters. Ground wind conditions were light and variable from 270 to 90 degrees at 4 MPH. Flow rates for both passes ranged from 4.6 to 5.3 gph at 26 to 28 psi. Total flight time was 2.0 hours.

16 December: One testing sortie was flown with 2 passes completed for 1 test. Spinners with microscope slides were placed in an east-west orientation on Smith road with spinners located 1500' apart. Material was dispensed 1500' upwind of the first droplet collector (Smith and Old Bravo roads). Aircraft trajectory during Spray-on was directly over Old Bravo road flying North to South. The aircraft made 2 spray-on passes of 40 seconds apiece as described previously. Aircraft altitude was 500' AGL for each pass. Thirty minutes following the final pass, an attempt was made to retrieve the microscope slides from the spinners. However, it commenced to rain at that time, rendering any results from the test invalid. Total flight time was 0.7 hours.

17 December: No sorties were flown due to inclement weather.

18 December: One testing sortie was flown with 2 passes completed for 1 test. Test parameters and set-up were identical to that on 16 December except that the spinners were oriented north-south on Oliver road. Flight trajectory was from west to east, intercepting the north end of Oliver road. Microscope slides were collected 30 minutes after conclusion of the 2<sup>nd</sup> spray pass. Winds at altitude were approximately 12 knots at 340 degrees. System flow rates for both passes ranged from 4.0 to 4.7 gpm at 10 to 17 psi. Total flight time was 1.0 hours.

19 December: Mission complete. Personnel return to Youngstown ARS. Total ferry time 3.4 hours.

**6. Results:** Volume Mean Diameter (VMD) of the collected spray droplets from the 150' spray altitude ranged from 31.25 to 5.0 microns after a spread factor had been calculated with the raw data. VMD was quite large at the first 2 sampling stations (500 and 1000 feet from flight path), with values of 31.25 and 21.88 microns, respectively. At 1500' VMD decreased to 7.5 microns, followed by an additional decrease to 6.25 microns from 2000 to 3500 feet from the flight path, and a further decrease to 5 microns from 4000 to 5000 feet from the flight path. The range of the droplet sizes collected was greatest near the flight path of the aircraft, and dropped substantially as downwind distance from the flight path increased. Droplet size distributions were noticeably skewed (positively) from 1500 to 3000 feet, suggesting the collection of a few very large droplets and many smaller droplets of various sizes. Droplet size distribution approached normality from 3500 to 5000 feet. VMD of the collected spray droplets from the 500' spray altitude ranging from 47.5 to 18.75 microns in diameter. No droplets were collected at the 1000' offset from the spray path. Maximum VMD of droplets was at 3500' from the spray path, in general decreasing to 18.75 at 14,000'. Distribution of droplets at each sampling location were approximately normal. The number of drops available to count on the microscope slides ranged from 11 to 77. The target number for each location was 100.

**7. Conclusions:** Swath characteristics generated from the 150' spray pass appear to be quite typical of many published characterizations including our own C-130 ULV wing-boom configuration, with the majority of large droplets collected from spinners nearest the flight path. VMD of droplets at 1500' and beyond indicate a droplet size suitable for effective control of biting flies when conducting space sprays, however, it should be noted that VMD is a descriptive statistic that which only indicates the median droplet diameter, and does not describe the distribution of droplet sizes at a particular collection point. In order to elucidate the effective swath width, in future tests using fuselage spray booms, insect bioassays at each collection point will also be necessary, using material with an active ingredient. Despite this current limitation, this 150' test seems to indicate that using fuselage booms to apply active ingredient in a space spray from a C-130 may be effective. Results from the 500' test were more ambiguous. VMD of droplets collected were quite large in comparison with the 150' test at all collection points. Further, relatively few drops were collected as seen by the absence of available data. Despite the extensive sampling distance involved, it may be that some of the smaller droplets drifted even further downwind, in which case future tests would necessitate using even greater sampling distances. An alternate theory to explain the data may be that at the higher altitude, the individual droplets had more opportunity to coalesce. This theory remains improvable at this time as our sampling line was limited to approximately 3 miles. In future tests we intend to increment spray altitudes less dramatically (i.e. 100' increments) and extend our sampling lines in order to attempt to explain our current data set. Our next scheduled test of the fuselage configuration is 24-29 January 2004 at Avon Park Air Force Bombing Range.

(b) (6), PhD, GS11  
Research Entomologist

Attachments:

1. List of Participants
2. Data Summary
3. Site Map

## 910 AW PARTICIPANTS

a. **Aircrew:**

- (1) Aircraft Commander: Maj (b) (6)
- (2) Pilots: Maj (b) (6) , 1LT (b) (6) , LTC (b) (6) (13-15)
- (3) Navigators: Maj (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: MSG (b) (6) , TSG (b) (6)

b. **Maintenance:**

- (1) Spray Maintenance: MSG (b) (6) , TSG (b) (6) , SSG (b) (6)
- (2) Crew Chiefs: TSG (b) (6) , SSG (b) (6)

c. **Entomologists:** Capt (b) (6) Dr. (b) (6)

# Data Summary

	150' Spray Altitude									
distance from AC	500	1000	1500	2000	2500	3000	3500	4000	4500	5000
spinner #	1	2	3	4	5	6	7	8	9	10
Mean	36.41006	26.72256	16.28811	7.882622	8.521341	6.962652	6.105183	5.243902	5.030488	4.359756
Median	31.25	21.875	7.5	6.25	6.25	6.25	6.25	5	5	5
Standard Deviation	19.40244	20.24292	21.26188	4.156996	9.17535	6.103466	2.176834	2.358818	2.405431	1.792085
Kurtosis	0.615821	2.352467	13.06092	6.495231	13.52986	23.13603	-0.683446	0.748094	3.370438	-0.039353
Skewness	0.967293	1.352557	3.188149	2.019379	3.364661	4.138079	0.068001	0.736536	1.424271	0.630581
Range	93.125	96.25	135	25.625	56.875	44.375	7.5	10	12.5	7.5
Minimum	9.375	3.75	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Maximum	102.5	100	137.5	28.125	59.375	46.875	10	12.5	15	10
Count	100	100	100	100	100	100	100	100	100	100

	500' Spray Altitude									
distance from AC	1000	2000	3500	5000	6500	8000	9500	11000	12500	14000
spinner #	0	2	3	4	5	6	7	8	9	10
Mean	N/A*	58.33333	51.17647	43.72093	26.60308	34.76563	37.94548	33	29.40341	24.51109
Standard Error	N/A	6.591894	6.344636	3.73856	2.52018	3.706671	3.880395	4.301927	5.337251	2.748625
Median	N/A	46.25	47.5	42.5	18.75	26.25	32.5	28.75	25	18.75
Standard Deviation	N/A	36.10529	36.99527	24.51537	22.11449	20.9681	26.60265	19.2388	17.70166	21.64269
Kurtosis	N/A	-0.561793	0.96057	-0.44876	2.579144	5.892025	0.555021	2.552809	-1.584418	5.548263
Skewness	N/A	0.70179	1.168	0.553798	1.861895	2.190366	1.109972	1.569942	0.349519	2.353201
Range	N/A	125	152.5	95	93.75	97.5	104.375	72.5	47.1875	93.75
Minimum	N/A	17.5	5	10	6.25	15	5	10	7.8125	6.25
Maximum	N/A	142.5	157.5	105	100	112.5	109.375	82.5	55	100
Count	0	30	34	43	77	32	47	20	11	62

\* N/A indicates no data from this sampling location

8 November 2000

**MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497-0198)**

**FROM: 757 AS/DOS**

**SUBJECT: Capability and Concept of Operations for Aerial Spray of Weed  
Control at Mountain Home AFB, Saylor Creek Range ID (13-19 Nov 00)**

1. **Purpose of the Aerial Spray Mission:** This mission was requested and funded by 366 CES/CERF to perform an aerial spray application of Oust® at the Saylor Creek Range at Mountain Home AFB ID to inhibit annual re-growth of the undesirable cheatgrass, thus, allowing native vegetation to establish and be competitive to cheatgrass.
2. **Proposed Benefits of the Requested Mission:** To prevent fire hazards and to inhibit re-growth of the undesirable cheatgrass allowing native vegetation to establish and be competitive.
3. **Capability:** Spray Aircraft Tail Number 99107 Available 13-19 November 2000
4. **Concept of Operations:**
  - a. **13 Nov 00 (Monday):**
    - 1100 Take Off KYNG
    - 1450 Land KMUO; Safety Briefing, Configure A/C, Aircrew Mission planning meeting
  - b. **14 Nov 00 (Tuesday): Range time 0700-1030/1300-1415 (additional times available on case-by-case basis)**
    - 0600 Show Time
    - 0730 Take-Off KMUO
    - 0745-1030 Range available for Spray mission
    - 1045 Land KMUO
    - 1245 Take-Off KMUO
    - 1430 Land KMUO
  - c. **15 Nov 00 (Wednesday): Range Time 0700-0945/1245-1400**
    - 0600 Show Time
    - 0730 Take Off KMUO
    - 0705-0945 Range available for Spray mission
    - 1000 Land KMUO
    - 1230 Take-Off KMUO
    - 1415 Land KMUO
  - d. **16 Nov 00 (Thursday): Range Time 0700-0945/1245-1400**
    - 0630 Show Time
    - 0800 Take-Off KMUO
    - 0700-0945 Range available for Spray mission
    - 1000 Land KMUO
    - 1230 Take-Off KMUO

- 1415 Land KMUO
- e. **17 Nov 00 (Friday): Range Times 0700-1015/1500-1830 (Flush Day)**  
0630 Show Time  
0800 Take-Off KMUO  
0700-1015 & 1530-1830 Spray Mission as Determined by Mission Commander
- f. **18 Nov 00 (Saturday): Range Time 0945-1800 if needed**  
0800 Show Time  
0930 Take Off KMUO  
1130 Land KMUO  
1500 Take Off KMUO  
1600 Land KHIF
- g. **19 Nov 00 (Sunday):**  
0730 Show Time  
0900 Take-Off KHIF  
1400 Land KYNG
5. **Spray Parameters:**
- a. **Acreage:** 1,460 Acres (areas determined by PMP to spray for cheatgrass)
  - b. **Altitude:** 100' AGL
  - c. **Ground Speed:** 200 Knots
  - d. **Swath Width:** 200 Feet
  - e. **Pesticide:** Oust<sup>®</sup>
  - f. **Flow Rate:** 651 Gallon/Minute
  - g. **Application Rate:** 7 Gal/Acre
  - h. **Deploy:** 3.4 Hrs
  - i. **Re-Deploy:** 2.8 Hrs
  - j. **Spray Time:** 10 Hrs (or as called by PMP)
6. **Primary Key Personnel:**
- a. **Mission Commander:** Lt Col (b) (6)
  - b. **Aircraft Commander:** Capt (b) (6)
  - c. **Certified Pest Management Professional(s):** LtC (b) (6) and Maj (b) (6)
  - d. **Toxicologist:** Capt (b) (6)
7. Support required at Mountain Home AFB has been coordinated with 366 CES/CERF, Ms (b) (6), Spray Coordinator, DSN (b) (6).
8. HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616 or DSN 346-1161, ATTN: 757 AS/DOS.

(b) (6), Lt Col, USAFR  
Chief, Aerial Spray (757 AS/DOS)  
DSN (b) (6)



# AERIAL SPRAY OPERATIONAL SCHEDULE

## MOUNTAIN HOME AFB RANGE, ID

### 13 – 19 NOV 2000

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: LTC (b) (6)
- (2) Pilots: MAJ (b) (6) , CPT (b) (6) , CPT (b) (6)
- (3) Navigators: MAJ (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: MSG (b) (6) MSG (b) (6) , MSG (b) (6)

##### b. Maintenance:

- (1) Spray MX: SMS (b) (6) , SSG (b) (6) , SSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6) , TSG (b) (6)
- (3) Avionics: TSG (b) (6)

##### c. Ground Support/CPM Professionals: LTC (b) (6) , MAJ (b) (6) , CPT (b) (6)

#### 2. SCHEDULE: (Local Times; Total of 6 Lifts required, 2 Lifts per day WX depending)

##### 13 NOV (Monday):

0900: Show at KYNG

PPR # - 318-1

1100: Depart KYNG

1450: Land KMUO/Safety Briefing, MX configures aircraft; Aircrew plan next day's mission

##### 14 NOV (Tuesday): Range Time 0700-1030/1300-1415

0600: Show time

0730: Take Off KMUO (As determined by Mission Cmdr)

0735: Sunrise

1045: Land KMUO

1245: Take Off KMUO

1430: Land KMUO

##### 15 NOV (Wednesday): Range Time 0700-0945/1245-1400

0600: Show time

0730: Take Off KMUO (As determined by Mission Cmdr)

0736: Sunrise

1000: Land KMUO

1230: Take Off KMUO

1415: Land KMUO

##### 16 NOV (Thursday): Range Time 0700-0945/1245-1400

0600: Show time

0730: Take Off KMUO (As determined by Mission Cmdr)

0737: Sunrise

1000: Land KMUO

1230: Take Off KMUO

1415: Land KMUO

##### 17 NOV (Friday): Range Time 0700-1015/1530-1830 (FLUSH DAY)

0600: Show time

0730: Take Off KMUO (As determined by Mission Cmdr)

0739: Sunrise

1030: Land KMUO

**18 NOV (Saturday): Range Time 0945-1800 (If Needed)**

0740: Sunrise; Show Time 0800

0930: Take Off KMUO

1130: Land KMUO (Or as required)

1500: Take Off KMUO

1600: Land KHIF

**PPR # - None Required at Hill AFB**

**19 NOV (Sunday)**

0830: Show time

1000: Take Off KHIF

1700: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Mission Commander:** Hand Held GPS, 1 Cellular Phone
- b. **Entomologist:** UHF Radio, Cardholders, Kromekote Cards, Tool Kit, VHF Radio, Cell Phone, Laptop Computers and accessories, spinners and Teflon coated slides; microscope
- c. **Navigator:** Maps/Map Bag, Validation Map, Toshiba Computer
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Mobility Kit, MASS Spares, Spill Kit, Pesticide Safety Binder, Safety Equipment and Tool and other equipment

**4. NOTIFICATION NECESSARY FOR THIS MISSION: N/A**

**5. PARKING PLAN: Bomb Loading Area**

**6. RADIO FREQUENCIES:**

- a. **Air To Ground:** Entomologists: 292.2(range); Maintenance 384.7
- b. **Mt Home:** PTD: 372.2, ACC CP (Raymond 27): 381.3, ATIS: 273.5, TWR: 133.85 / 253.5, GND: 120.5 / 275.8, RAPCON: 259.1, Salt Lake Center: 387.15/363.0
- c. **Range:** Saylor Creek Range: 292.2 pri / 381.3 sec  
Sagebrush Control: 251.2, Paradise MOA: 272.7/236.05/225.55  
Owyhee MOA: 392.2/266.35, Bruneau/Sheep Creek MOA: 251.875

**7. IN-BRIEFING: Upon Arrival.**

**8. SPRAY CONFIGURATION:**

- a. **System:** SP-3G
- b. **Nozzle Tips/Orientation:** Oil Spill Dispersant Nozzles/Straight Back
- c. **Number:** Fuselage – 8 (4 each side); Wing 50 (25 each side) with ball shut-off valves
- d. **Booms:** Fuselage and Wing Booms (only fuselage and upwind wing booms will be used)
- e. **Aircraft:** 99105 (99106 spare) **Mission Identifier:** QZNRKA225318
- f. **Profile:** Planned HV Profile

**10. SPRAY PARAMETERS:**

- a. **Altitude:** 100' AGL
- b. **Swath Width.** 200 feet
- c. **Flow Rate.** 651 Gallons/Minute
- d. **Application Rate.** 7 gal/acre (Approximately 1460 acres to be treated for cheatgrass)
- e. **Ground Speed:** 200 Knots

**11. SPRAY MIXING AND LOADING: On Bomb Loading Area**

## 12. SPRAY MONITORING OR TESTING: Performed by the CPMPs

NOTES: Will use water sensitive cards.

## 13. CONTACTS:

### a. Mountain Home AFB, ID:

- (1) Base Ops: DSN: 728-2222; COMM: (208)-828-2222
- (2) OG COL (b) (6) : DSN(b) (6)
- (3) Natural Resource Manager, (b) (6) DSN (b) (6)
- (4) (b) (6) : DSN (b) (6)
- (5) (b) (6) : DSN(b) (6)
- (6) Capt (b) (6) DSN (b) (6)
- (7) Billeting: x6451 FAX: 4797
- (8) Transportation: x2215 FAX: 1619
- (9) Weather to be provided:
  - Davis Mothan AFB, SMS (b) (6) , DSN (b) (6)
  - Mountain Home AFB, Capt (b) (6) DSN (b) (6)

### b. Hill AFB, UT

- (1) Base Ops: DSN: 777-1861; COMM: (801)-777-1861
- (1) Billeting: x1844/0802/4007 FAX: 2014
- (2) LaQuinta Inn #686, 1965 North 1200 West, Layton UT, \$49 per night, (801) 776-6700
- (3) Command Post: x3007

### b. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046, 2, + Ext

- (1) 910 AW/CC: Brigadier General Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: LT (b) (6) ; FAX 1022
- (4) 910 OG/CC: COL (b) (6)
- (4) 910 OSF/OSA, Airfield Manager: (b) (6)  
Assistant Air Field Manager (ACAM), (b) (6)
- (6) 910 OG/SOF (Supervisor of Flight Desk): Ext 1069; FAX 1371
- (7) 757 AS/DO: LTC (b) (6)
- (8) 757 AS/DOO, Ops Admin: SMS (b) (6) ; FAX 1657
- (9) 757 AS/DOS: Aerial Spray Office, (b) (6) , FAX 1616
- (10) 910 LG/CC: LTC (b) (6) 25  
910 MA: Maintenance Officer, Maj (b) (6)
- (11) 910 LG/LGM: CMS (b) (6)
- (12) Maintenance Control: Ext 1348
- (13) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
- (14) 910 LG/LGL: CMS (b) (6)
- (15) Omega/SATO Travel: Ext 1772; 1 (800) 285 - 6342
- (16) Cellular Spray Phones:
  - Spray Maintenance: (b) (6)
  - Entomologist/Ground Support: (b) (6)

# 910 AW AERIAL SPRAY PMP'S POST-MISSION REPORT

## 1. MISSION BASICS:

- a. Installation Sprayed: Mountain Home AFB, Saylor Creek Range, ID (Figure 1)
- b. Mission Duration: 13-19 Nov 00
- c. Purpose of Application: Cheatgrass
- d. Application Date(s) and time(s) (Local):
  - (1) 15 Nov: 1245-1345, 1535-1700
  - (2) 16 Nov: 1245-1340, 1530-1625
  - (3) 17 Nov: 1520-1605
- e. Acres Treated: 1,443
- f. Project Coordinator (Name/Rank/Title/Phone #): (b) (6), Natural Resource Manager, (b) (6)
- g. Date Spray Map Last Approved: 13 Nov 00
- h. Installation In-Briefing: (When/Where/Briefer/s): 13 Nov 00, 1530, Mountain Home AFB, Maj (b) (6)

## 2. OPERATIONAL:

- a. Mission Commander: LtC (b) (6)
- b. Certified PMP/s (Category 11): LtC (b) (6) & Maj (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander: Capt (b) (6)
  - (2) Pilot(s): Maj (b) (6) & Capt (b) (6)
  - (3) Navigator: Maj (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
  - (5) Spray Operators: MSG (b) (6), MSG (b) (6) & MSG (b) (6)
- d. Spray Maintenance/Pesticide Loaders: SMS (b) (6), SSG (b) (6) & SSG (b) (6)
- e. Crew Chief(s): MSG (b) (6) & TSG (b) (6)
- f. Avionics: TSG (b) (6)
- g. Flying Data:
  - (1) Spray Sorties/Hours: 7 Sorties; 8.0 Hours
  - (2) Ferry Sorties/Hours:
    - (a) Spray A/C 99105: 3 Ferries; 10.8 Hours
    - (b) Support A/C 923023 (13-14 Nov): 2 Ferries; 10.5 Hours
    - (c) Support A/C 919144 (17-19 Nov): 3 Ferries; 11.8 Hours

## 3. PESTICIDE:

- a. Trade Name: Oust<sup>®</sup>
- b. EPA Registration Number: 352-401; EPA SLN #ID-000019
- c. Formulation Sprayed: Water dispersible granule
- d. Pounds Pesticide Loaded: 82
- e. Pounds Pesticide Applied: 82
- f. Gallons and Name Diluent Used: 7,166 gallons water
- g. Gallons and Name of Flush Used: 600 Gal of water & 2 Gal Remove<sup>®</sup>
- h. Other Additives Used: 4 Gal Control<sup>®</sup>; 30 Gal Blaze-on<sup>®</sup> dye
- i. Application Rate: 7 Gal/Acre 15 Nov 00 (1 Oz Oust<sup>®</sup>); 5 Gal/Acre 16-17 Nov 00 (1 Oz Oust<sup>®</sup>)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): C-130 (99105)
- b. Spray System (Modules Used) and System ID #: SP-3G
- c. Spray System Configuration: Wing and fuselage booms
- d. Nozzle Type/Size: Raindrop nozzles
- e. Nozzle Orientation & Number Used: Straight Back\Wing 50 (25 each side); Fuselage 12 (6 each side)
- f. Pressure: 40 psi
- g. Flow Rate: 325 gpm 15 Nov (two passes flown over each swath); 465 gpm 16-17 Nov (1 pass per swath)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 200 Ft
- b. Spray Offset: 600 Ft
- c. Spray Release Altitude: 100 Ft AGL; Second sortie on 16 Nov flown at 150 Ft because of low wind
- d. Ground Speed: 200 knots

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 270/5-10 mph (15 Nov); 30/3mph (16 Nov); 270/5mph (17 Nov)
  - (2) Release Altitude:
- b. Temperature (Degrees Fahrenheit): 34° (15 Nov); 37° (16 Nov); 27° (17 Nov)
- c. Relative Humidity: 85% (15 Nov); 60% (16 Nov); 80% (17 Nov)
- d. Cloud Cover: 100% (15 Nov); 0% (16 Nov); 100% (17 Nov)
- e. Source: Ground observation

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Visual observation of blue dye on snow (Figure 2)
  - (2) Results: See remarks
- b. Effectiveness:
  - (1) Technique/s Used: Vegetation measurements
  - (2) Results: Will be determined in the spring of 2001

**8. REMARKS:** The coverage of the spray block was excellent except for the first sortie on 16 Nov 00 which had 32 oz per 1000 gallons of the drift retardant Control® in the mix in an attempt to reduce drift from wingtip vortices. Downwind drift of the smallest droplets was up to 0.6 mile with 16 oz of Control® per 1000 gallons when winds were 8 to 10 mph. No gaps in coverage were observed with the 32 oz rate and wind speeds from 8 to 10 mph. The 32 oz rate proved to be too much for the wind speed of 3 mph on 16 Nov 00 and caused gaps in the spray pattern between the fuselage boom and wing booms. In the second sortie, 16 oz of Control® per 1000 gallons was used and the altitude was increase to 150 feet. This eliminated spray gaps for the 3 mph wind speed. In situations where less drift is required, it is recommended that only the fuselage booms be used, and the swath be narrowed. This will eliminate drops being spread further downwind in the wingtip vortices.

**CERTIFIED PEST MANAGEMENT PROFESSIONAL**

(b) (6) , PhD, LtC, USAFR





Aerial spray of cheatgrass with a C-130 at Saylor Creek Range Idaho.



Droplet distribution of aerial spray at Saylor Creek Range Idaho.

# AERIAL SPRAY OPERATIONAL SCHEDULE

## MOUNTAIN HOME AFB RANGE, ID

### 13-28 SEPTEMBER 2007 CH2

**PURPOSE/BENEFITS/OBJECTIVES.** To prevent fire hazards, inhibit annual re-growth of cheatgrass on Saylor Creek Range and allow native vegetation to establish and be competitive.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

##### 13-21 SEP 07 CREW

- (1) Mission Commander: LTC (b) (6)
- (2) Pilots: Capt (b) (6), Capt (b) (6), Capt (b) (6)
- (3) Navigator: LtC (b) (6)
- (4) Flight Engineer: Msgt (b) (6)
- (5) Spray Operators: Msgt (b) (6), Msgt (b) (6)

##### b. Maintenance:

- (1) Spray MX: Tsgt (b) (6), Tsgt (b) (6), Tsgt (b) (6), Tsgt (b) (6)
- (2) Crew Chiefs: Tsgt (b) (6), AIC (b) (6)
- (3) Avionics: (b) (6)
- (4) Engine Shop: Msgt (b) (6)

##### c. Entomologists: LTC (b) (6), Maj (b) (6)

##### 20-28 SEP CREW

- (1) Mission Commander: Maj (b) (6)
- (2) Pilots: MAJ (b) (6)
- (3) Flight Engineer: Msgt (b) (6) (17 Sep – 28 Sep)
- (5) Spray Operators: TBD

##### b. Maintenance:

- (1) Avionics: Smsgt (b) (6)

##### d. Entomologists: Maj (b) (6),

#### 2. SCHEDULE: (Local times; total of 13 lifts required, 1-2 lifts per day)

##### 13 SEP (Thursday):

0800: Show at KYNG PPR # 259321  
1000: Depart KYNG  
1400: Land KMUO (Local)  
1430 Safety Briefing, MX configures aircraft; plan next day's mission  
1530 Spray Mission In-brief for at Base Operations Bldg 262

##### \*\* ASAP After landing

\* Crew members, Crew chiefs will be on Spray Aircraft

##### Support Aircraft PPR#253921

0800 Crew show  
1005 Depart YNG  
1435 Land MUO

##### 14 SEP Support Aircraft

0830 Crew Show  
1030 Depart MUO  
1700 Arrive YNG

Spray Maintenance additional personnel will ride on support aircraft.

##### 14 SEP (Friday): Range Time 0700-1000, (1-2 sorties if possible)

0530: Crew Show time/Load water and chemical



**0700:** Take Off KMUO (As determined by Mission Cmdr)  
 0721: Sunrise  
 0830 Reload Chemical and depart ASAP if second lift  
 1000: Land KMUO  
**15 SEP (Saturday): Range Time Free All Day, (2-3 sorties if possible)**  
 0730: Show time/Load water and Chemical  
**0900:** Take Off KMUO  
 0722: Sunrise  
 Multiple lifts TBD – Wx permitting 2-3 sorties  
**16 SEP (Sunday): Range Time Free all day (2-3 sorties if possible)**  
 0800: Show time  
**0900:** Take Off KMUO  
 0723: Sunrise  
 Multiple lifts TBD – Wx permitting 2-3 sorties  
**17 SEP (Monday): Range Time 0700-1000, (1 sorties )**  
 0730: Crew Show time/Load water and chemical (FOD WALK @MUO)  
**0900:** Take Off KMUO (As determined by Mission Cmdr)  
 0724: Sunrise  
 0830 Reload Chemical and depart ASAP if second lift  
 1000: Land KMUO  
**18 SEP (Tuesday): Range Time 0700-1000, (1-2 sorties if possible)**  
 0530: Crew Show time/Load water and chemical  
**0700:** Take Off KMUO (As determined by Mission Cmdr)  
 0725: Sunrise  
 0830 Reload Chemical and depart ASAP if second lift  
 1000: Land KMUO  
**19 SEP (Wednesday): Range Time 0700-1000, (1-2 sorties if possible)**  
 0530: Crew Show time/Load water and chemical  
**0700:** Take Off KMUO (As determined by Mission Cmdr)  
 0726: Sunrise  
 0830 Reload Chemical and depart ASAP if second lift  
 1000: Land KMUO  
**20 SEP (Thursday): Range Time 0700-1000, (1-2 sorties if possible)**  
  
**20 SEP            Swap out Aircraft                    PPR# 253924**  
                  1000   Depart YNG  
                  1430   Arrive MOU  
                  \*\*Spray crew members in crew rest for 0530 show  
**21 SEP            Swap out Aircraft**  
                  0830   Crew Show  
                  1030   Depart MUO  
                  1700   Arrive YNG  
  
**21 SEP (Friday): Range Time 0700-1000, (1-2 sorties if possible)**  
 0530: Crew Show time/Load water and chemical  
**0700:** Take Off KMUO (As determined by Mission Cmdr)  
 0729: Sunrise  
 0830 Reload Chemical and depart ASAP if second lift  
 1000: Land KMUO  
  
**22 SEP (Saturday): Range Time 0700-1000, (1-2 sorties if possible)**  
 0800: Crew Show time/Load water and chemical  
**0900:** Take Off KMUO (As determined by Mission Cmdr)  
 0730: Sunrise

0830 Reload Chemical and depart ASAP if second lift

1000: Land KMUO

**23 SEP (Sunday): Range Time 0700-1000, (1-2 sorties if possible)**

0800: Crew Show time/Load water and chemical

**0900:** Take Off KMUO (As determined by Mission Cmdr)

0731: Sunrise

0830 Reload Chemical and depart ASAP if second lift

1000: Land KMUO

**24 SEP (Monday): Range Time 0700-1000, (1-2 sorties if possible)**

0530: Crew Show time/Load water and chemical

**0700:** Take Off KMUO (As determined by Mission Cmdr)

0732: Sunrise

0830 Reload Chemical and depart ASAP if second lift

1000: Land KMUO

**25 SEP (Tuesday): Range Time 0700-1000, (1-2 sorties if possible)**

0530: Crew Show time/Load water and chemical

**0700:** Take Off KMUO (As determined by Mission Cmdr)

0733: Sunrise

0830 Reload Chemical and depart ASAP if second lift

1000: Land KMUO

**26 SEP (Wednesday): Range Time 0700-1000, (1-2 sorties if possible)**

0530: Crew Show time/Load water and chemical

**0700:** Take Off KMUO (As determined by Mission Cmdr)

0734: Sunrise

0830 Reload Chemical and depart ASAP if second lift

1000: Land KMUO

**27 SEP (Thursday)**

Maintenance system clean up

**Support Aircraft Arrival:** [PPR#253925](#)

1000 Depart YNG

1430 Arrive MUO

**28 SEP (Friday) Both Aircraft**

0830: Show time

1000: Take Off KMUO

1730: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Mission Commander:** 1 Cellular Phone
- b. **Entomologist:** UHF Radio, Cardholders, Water Sensitive Cards, Tool Kit, VHF Radio, Cell Phone, Laptop Computer
- c. **Navigator:** Maps/Map Bag, Validation Map,
- d. **Spray Operator:** Safety Gear, computer
- e. **Spray Maintenance:** Mobility Kit, MASS Spares, Spill Kit, Pesticide Safety Binder, Safety Equipment and Tool and other equipment

**4. NOTIFICATION NECESSARY FOR THIS MISSION: N/A**

**5. PARKING PLAN:** Transient Ramp in front of Base Operations

**6. RADIO FREQUENCIES:**

- a. **Air To Ground:** Entomologists: 123.45 VHF; 292.2 (range); Maintenance 384.7
- b. **Mt Home:** PTD: 372.2/138.9, ACC CP (Raymond 27): 381.3, ATIS: 273.5, TWR: 133.85 / 253.5, GND: 120.5 / 275.8, RAPCON: 259.1, Salt Lake Center: 387.15/363.0
- c. **Range:** Saylor Creek Range: 134.1 / 292.2 pri / 381.3 sec  
Sagebrush Control: 251.2, Paradise MOA: 272.7/236.05/225.55  
Owyhee MOA: 392.2/266.35, Bruneau/Sheep Creek MOA: 251.875

**7. IN-BRIEFING:** Upon Arrival. At 1530 Airfield Management Office

8. Billeting:

**Sleep Inn Foot Hills \$60 or \$65/night depending on the room you get**

1180 US 20 Mountain Home, ID

208-587-9743

Fax: 208-587-7382

9 Vehicles: Mountain Home CE will provide vehicles.

2- 6 Pax (OPS)

1 Mini-van & 1 6 Pax (Maint)

**8. SPRAY CONFIGURATION:**

- a. **System:** SP-3G
- b. **Nozzle Tips/Orientation:** Raindrop/Straight Back
- c. **Number:** Fuselage – 17 nozzles (8 left side: 9 right side)
- d. **Booms:** Fuselage
- e. **Aircraft:** 99105 **Mission Identifier:** QZNRKA757256
- f. **Profile:** Planned HV Profile

**9. SPRAY PARAMETERS:**

- a. **Altitude:** 100' AGL (we are treating at 46.5 acres/minute)
- b. **Swath Width.** 100 feet
- c. **Flow Rate.** 326 gal/min
- d. **Application Rate.** 7 gal/acre; approximately 3,200 acres to be treated for cheatgrass
- e. **Ground Speed:** 200 Knots

**10. SPRAY MIXING AND LOADING:**

**a. Composition of Each Gallon:**

(1) 0.57 ounces of Plateau® (we want 4oz in 7 gallons per acre)

(2) 1 ounce of Sta-put® Drift Retardant

(3) 126.4 ounces of water

**b. First Load (4 Tanks of 450 gallons each + sump of 75 gallons)**

(1) Fill to 450 gal water/tank using the pump on the water tanker truck. This is done by putting the filler hose into the rear tank with all tanks open to the common sump. Total water in tanks = 1,800 gal.

(2) 75 gal/water in sump

(3) Total water added = 1,800 gallons

(4) Upload 8.03 gal (30.4L)/Plateau; add 14 gal Sta-put while agitating approximately 5-7 min

Total quantity mix 1822 gallons

**11. SPRAY MONITORING OR TESTING: Performed by the CPMPs**

**NOTES:** Will use water sensitive cards.

**12. CONTACTS:**

**a. Mountain Home AFB, ID:**

(1) Base Ops: DSN: 728-2222; COMM: (208)-828-2222 TSgt (b) (6)

- (2) Transit Alert: (b) (6) DSN (b) (6)
- (3) OG Col (b) (6) : DSN (b) (6)
- (4) Conservation Chief/Spray Project POC, (b) (6) : DSN (b) (6) , cell (b) (6)
- (5) Entomology: TSgt (b) (6) , SSgt (b) (6) , (b) (6) : DSN (b) (6)
- (6) Weather Superintendent, Sgt (b) (6) or Weather NCOIC, TSgt (b) (6) (b) (6) DSN (b) (6)
- (7) Weather: Lt (b) (6) DSN (b) (6) , Maj (b) (6) DSN<sup>(b)</sup> (b) (6) .
- (8) Billeting: Sagebrush Hotel DSN 728-5151, FAX: 4797
- (9) Transportation: SSgt (b) (6) FAX: 1619
- (10) Weather to be provided:  
 ??- Davis Mothan AFB, DSN 228-6590  
 - Mountain Home AFB, Lt (b) (6) DSN (b) (6) , Maj (b) (6) DSN (b) (6)
- (11) Fire Dept (CEF): Chief (b) (6) , (b) (6) , TSgt (b) (6) DSN 728-6292 dispatch

**b. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
 Toll Free 1 - 800 - 278 - 7046, 2, + Ext

- (1) 910 AW/CC: COL (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: CAPT (b) (6) ; FAX 1022
- (1) 910 OG/CC: COL (b) (6)  
 910 OSF/OSA, Airfield Manager:, (b) (6)
- (2) 910 OG/SOF (Supervisor of Flight Desk): Ext 1069; FAX 1371
- (3) 757 AS/DO: MAJ (b) (6)
- (4) 757 AS/DOO, Ops Admin: SMS (b) (6) ; FAX 1657
- (5) 757 AS/DOS: Aerial Spray Office, CAPT (b) (6) FAX 1616
- (6) 910 LG/CC:, Ext 1225  
 910 MA: Maintenance Officer, Ext 1144
- (7) 910 LG/LGM:, Ext 1352
- (8) Maintenance Control: Ext 1348
- (9) 910 LG/LGMS: Spray Maintenance: SMS (b) (6)
- (10) 910 LG/LGL: CMS (b) (6)
- (11) Omega/SATO Travel: Ext 1772; 1 (800) 285 – 6342
- (12) Cellular Phones: Mission Commander: (b) (6)  
 PMP/Entomologist/Ground Support:  
 (330) 233-2346 (Haagsma); (b) (6)  
 Spray Maintenance: (b) (6)



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

13 Apr 09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Parris Island MCRD, SC

1. Aerial spray mission controlling biting midges and mosquitoes with insecticide to reduce the negative impact on outdoor training at Parris Island MCRD, SC.

2. Concept of Operations:

- a. 14 April (Tuesday)  
1100 Depart KYNG  
1300 Land KNBC  
1830 Depart KNBC  
2000 Land KNBC
- b. 15 April (Wednesday)  
1830 Depart KNBC  
2000 Land KNBC
- c. 16 April (Thursday)  
1200 Depart KNBC  
1400 Land KYNG

3. Maj (b) (6) will act as Mission Commander.

4. Maj (b) (6) will act as Aircraft Commander

5. Support required at Parris Island has been completed.

(b) (6), Maj, USAFR  
Assistant Chief of Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## PARRIS ISLAND MCRD, SC

### 14-16 APR 2009

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: Maj (b) (6) , Maj (b) (6)
- (2) Navigator: LTC (b) (6)
- (3) Flight Engineer: TSG (b) (6)
- (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSgt (b) (6) , SSgt (b) (6) , TSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6) , MSG (b) (6)
- (3) Avionics: MSG (b) (6)

##### c. Entomologist: Maj (b) (6) -MC

#### 2. PPR REQUIREMENTS: 104-01 (PFC Bullock)

#### 3. PLANNED SEQUENCE OF EVENTS: (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

**14 APR (Tuesday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

0900: Show Time/Load system  
1100: Take Off KYNG  
1300: Land KNBC  
1300: Safety Briefing  
1430 Installation Brief  
1700: Wx Decision and Load Chemical  
Take off TBD (approx.1850) or mission (Start Spray 1.0 hrs prior to Sunset)  
1950: Sunset

**15 APR (Wednesday):** Adulticide sortie at Parris Island Wx/backup

1500: Showtime  
1700: Wx Decision and Load Chemical  
Take off TBD (approx.1850) or mission (Start Spray 1.0 hrs prior to Sunset)  
1951: Sunset

**16 APR (Thurs) Redeploy to YNG; this will occur on Wed following successful spray on Tues.**

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

- (1) Mission Commander Cell Phone

##### b. Entomologist/CPMP:

- (1) Wind Gauge & Compass
- (2) UHF/VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder

##### c. Navigators:

- (1) Maps
- (2) Templates

##### d. Spray Maintenance:

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** 7 open for 8005's oriented straight down
- d. **Differential GPS:** Installed
- e. **Aircraft:** 90-9106
- f. **Mission Identifier:** QZNRKA053104

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 0.75 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 8 Minutes
- h. **Flow Rate:** 2.7 gallons/Minute

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading two drums of Dibrom

**8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

Beaufort Tower: 119.05 MCAS TWR  
Beaufort Approach 123.7  
Hilton Head Arpt: 118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 123.4 V**

**10. TRANSPORTATION:** Parris Island will provide vehicles for transportation to and from quarters and for messing. Vehicles will be at Base Operations.

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP &Parris Island MCRD Project Coordinator.

**12. CONTACTS:**

- a. **Parris Island MCRD SC: (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX)**
  - (1) Environmental Coordinator (Spray Coordinator):  
(b) (6) DSN (b) (6) , Cel (b) (6) (b) (6) , (b) (6) Cel (b) (6)  
FAX (843) 228-2616; (b) (6)
  - (2) Assistant Chief of Staff I & L: COL (b) (6) , DSN (b) (6)
  - (3) Pest Control: DSN 335-2364
  - (4) P.I. Motor Pool: (b) (6) , DSN (b) (6)
  - (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
  - (6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)
  - (7) P.I. Rifle Range: DSN: 335-3183/3624
- b. **Beaufort MCAS SC: (Commercial (843) 228-XXXX)**
  - (1) Beaufort MCAS Environmental: (b) (6) , DSN (b) (6) ; (b) (6) , DSN (b) (6)
  - (2) Fuels: DSN: 335-7049/7448/7168
  - (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
DSN: (b) (6) . Base Ops is ext 7301/2/3  
(After duty hours: (b) (6) DSN: (b) (6) )
  - (4) Trans Alert/VAL: DSN: 335-7110
  - (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)



- c. **Beaufort County Mosquito Control:** (b) (6)
- d. **Naval Occupational Health/Preventive Medicine:** LtJ<sup>(b) (6)</sup>, DSN: (b) (6)
- e. **Quarters:**

**14 Rooms Holiday Inn Hotel & Suites**  
**BEAUFORT @ HIGHWAY 21**  
**2225 BOUNDARY STREET**  
**BEAUFORT, SC 29902 UNITED STATES**  
**Hotel Front Desk: 1-843-379-3100**  
**Hotel Fax: 1-843-3793101 \$119/night**

Ramada Inn	(843) 524-2144/Fax 1704
Hampton Inn	(843) 986-0600 (FAX 0494)
Sleep Inn	(843) 522-3361 FAX (843) 522-9929
Parris Island Billeting	DSN: 335-2744 (FAX: 3815); (843) 228-3960
Comfort Inn	(843) 525-9366 (FAX 1529)
Best Western (Sea Island Motel)	(843) 524- 4121
Port Royal Days Inn	(843) 524-1551
Best Western Pt South (I-95)	(843) 726-8101

- f. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Capt (b) (6) FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - (b) (6) cell (b) (6)

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**PARRIS ISLAND MCRD, SC 14-16 APR 2009**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 14-16 APR 2009
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 14,15 Apr 2009
- e. Time/s of Application (Local): 1845-1920 (14 Apr); 1825-1945 (15 Apr)
- f. Acres Treated: 6,827
- g. Project Coordinator (Name/Rank, Title, Phone #):(b) (6) ,  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 14 Apr 2009
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 14 Apr; Assistant Chief of Staff,  
Installations and Logistics, COL (b) (6) briefed by Maj (b) (6) /Maj (b) (6)
- k. Mission Identifier: QZNRKA053104

**2. OPERATIONAL:**

- a. **Mission Commander:** Maj(b) (6)
- b. **Aircrew:**
  - (1) Pilots: Maj (b) (6) Maj (b) (6)
  - (2) Navigator: LTC (b) (6)
  - (3) Flight Engineer: TSG (b) (6)
  - (4) Spray Operators: MSgt (b) (6) MSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) , SSgt (b) (6) , TSG (b) (6)
  - (2) Crew Chiefs: MSG (b) (6) , MSG (b) (6)
  - (3) Avionics: MSG (b) (6)
- d. **Entomologist:** Maj (b) (6)
- e. **Flying Data:**
  - (1) Spray Sorties/Hours: 2/1.9
  - (2) Ferry Sorties/Hours: 2/4.6

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom® Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 40 Gal Dibrom® (14 Apr)
- e. Gallons Pesticide Applied: 3 gal (14 Apr); 37 gal (15 Apr)
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 10 gal/marvel oil
- h. Other Additives Used: None
- i. Application Rate: 0.75 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 7 oriented straight down
- f. Pressure: 55 p.s.i.
- g. Flow Rate: 2.7 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 1000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS (19 Apr):**

- a. Winds (Direction/Speed):
  - (1) Ground: 160-200°/3-5 Knots
  - (2) Release Altitude: 230° /5-7 Knots
- b. Temperature (Degrees Fahrenheit): 74° F
- c. Relative Humidity: 43%
- d. Cloud Cover: Partly Cloudy
- e. Source: Ground observations at the MCRD Rifle Range/Aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

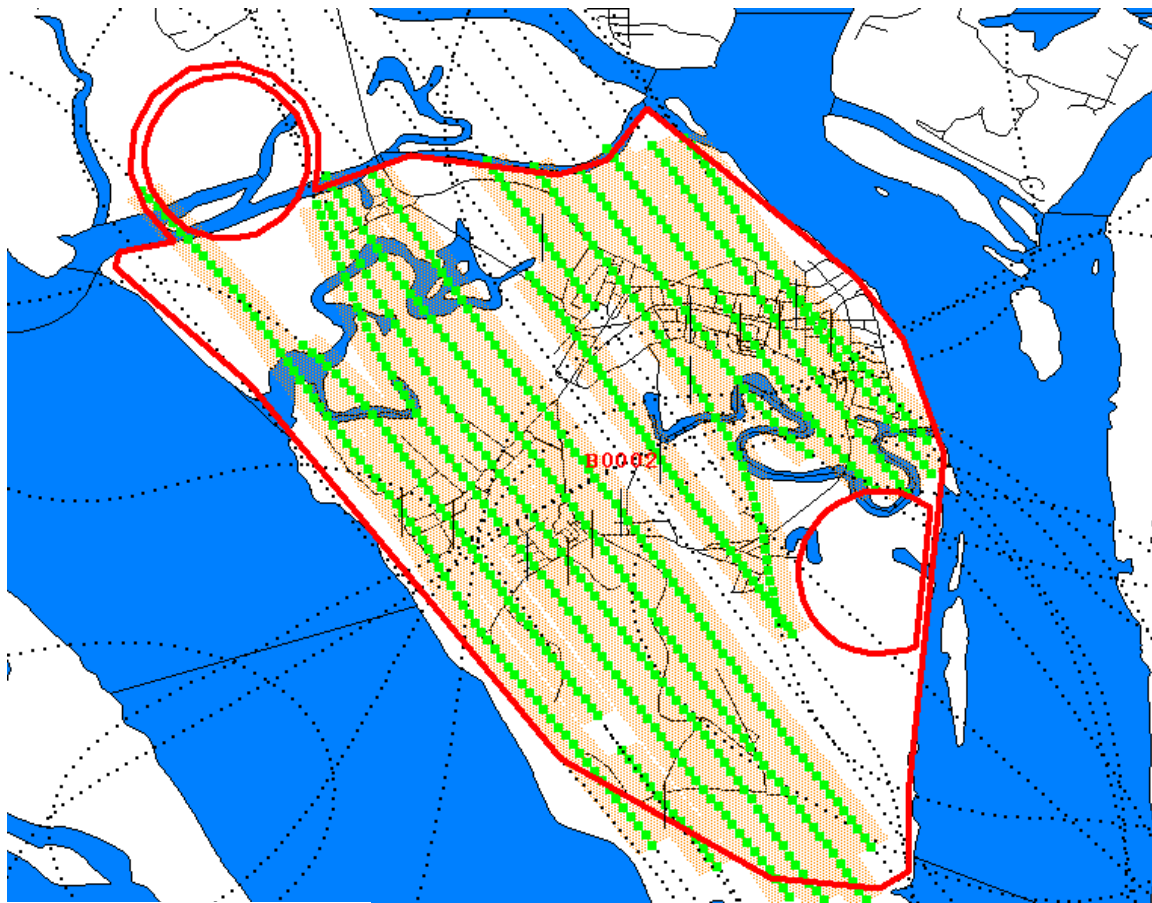
- a. Deposition Pattern:
  - (1) Technique/s Used: visual observation of aircraft course (GPS)
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito and midge numbers were determined prior to spraying using CO<sub>2</sub>-baited traps. Post-spray monitoring was carried out by Natural Resources personnel.
  - (2) Results: Good results were reported.

**8. REMARKS:** This was the first application of CY2009 at Parris Island and mosquito and midges were present in moderate numbers. On 14 April our application was cut short by approaching thunderstorms. The following night conditions were acceptable for aerial spray operations (Attachment 1) and the rest of the installation was treated. The mission was carried out without incident and the Parris Island Environmental staff reported good control. The next application is projected for 27-30 April and, judging from the amount of recent rainfall, will likely be an important spray for Parris Island.

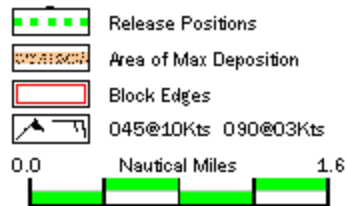
//signed//

(b) (6) , MAJ, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

**Attachment 1. Flight path of aircraft while making Dibrom application, 15 Apr 09. Green indicates active spraying. Red circles are bald eagles nests and were avoided.**



**LEGEND**



**910 AW -- AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**NAVAL SUBMARINE BASE, KINGS BAY, GA 14-16 August 2008**

**1. MISSION BASICS:**

- a. Installation Sprayed: Naval Submarine Base, Kings Bay, Georgia
- b. Mission Duration: 14-16 Aug 2008
- c. Purpose of Application: To control pestiferous populations of mosquitoes (specifically *Aedes taeniorhynchus*) and biting midges (*Culicoides* spp.)
- d. Application Date: 15 August 2008
- e. Time/s of Application (Local): 1820-2000 hrs
- f. Acres Treated: 15,360 acres
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) , Public Works, Aerial Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 4 April 2008
- i. Date of Waste Generation Letter: 30 October 2007
- j. Installation In-Briefing: (When/Where/Briefer/s): via telephone with Mr. (b) (6) *et al.* briefed by LTC (b) (6) Maj (b) (6) Maj (b) (6)

**2. OPERATIONAL:**

- a. **Mission Commander:** Maj (b) (6)
- b. **Aircrew:**
  - (1) Pilots: LTC (b) (6) (A/C), Capt (b) (6)
  - (2) Navigators: Maj (b) (6) Maj (b) (6)
  - (3) Flight Engineers: TSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6) MSgt (b) (6) MSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) TSgt (b) (6) SSgt (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6) SRA (b) (6)
  - (3) Avionics: SSgt (b) (6)
- d. **Entomologist:** LTC (b) (6)
  - (1) Spray Sorties/Hours: 1/1.7
  - (2) Ferry Sorties/Hours: 2/5.2

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 120 Gal Dibrom<sup>®</sup>
- e. Gallons Pesticide Applied: 120 Gal Dibrom<sup>®</sup>
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 8 gal/marvel oil
- h. Other Additives Used: None
- i. Application Rate: 1.0 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 20 oriented straight down
- f. Pressure: 100 p.s.i.
- g. Flow Rate: 7.3 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: 2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 220°/3 knots
  - (2) Release Altitude: 270°/8 knots
- b. Temperature (Degrees Fahrenheit): 90°F dropping to 82°F
- c. Relative Humidity: 46%-74%
- d. Cloud Cover: Mostly cloudy
- e. Source: Ground observations and aircraft SCNs

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations (Mr. (b) (6) LT (b) (6) Maj (b) (6) )
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: New Jersey Light Trap collections before and after sprays
  - (2) Results: 83% reduction in mosquitoes

**8. REMARKS:** This mission was the second conducted at the request of NSB Kings Bay for emergency mosquito control. The installation is in the process of completing required documentation to become established as a pre-approved routine mission. Kings Bay had been experiencing moderate mosquito levels until the day before the application when numbers of mosquitoes increased significantly. Consequently, we were requested to treat at the higher label rate as we do on other installations when large numbers are present. Observations on the ground 1 hr after the application revealed a significant reduction in mosquito activity. Mosquito trapping over the next 3 days yielded an average of 25 mosquitoes per trap night. This represents an 83% reduction relative to pre-spray levels. To improve the efficacy of these sprays and lengthen the period of biting relief felt by the base population, increasing the spray area to include a buffer-zone beyond the installation boundaries should be considered. The next scheduled spray mission for Kings Bay will be 2-5 Oct 08. Kings Bay is planning on purchasing and using the naled formulation Trumpet for the next mission. This material is less expensive, can be flushed with water, is compatible with liquid larvicides use, and is just as effective. This was Mr. (b) (6) last mission as the project coordinator at Kings Bay, we thank him for his excellent support and wish him well.

//signed//

(b) (6) , MAJ, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL





**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON-AERIAL SPRAY**  
**3976 King Graves Rd Unit 26**  
**Vienna OH 44473-5926**

8 APR 2008

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Parris Island MCRD

1. Objective/Purpose/Benefits of the Spray Mission. Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training Parris Island MCRD SC.

2. Capability: Spray Aircraft available on 14-17 APR 08

3. Concept of Operations:

**14 APR (Monday):**

0900 Show Time  
1200: Take Off KYNG  
1400: Land KNBC  
1430: Safety Briefing  
1500 Installation Brief

**15 APR (Tuesday):** Adulticide at Parris Island

1500: Showtime  
1530: Load Chemical/Wx Decision  
1800: Take off KNBC (Start Spray 1.5 hrs prior to Sunset)  
1951: Sunset

**16 APR (Wednesday)** Wx Backup/System Clean up. If wx backup, see above note for Tuesday.

1500 Showtime  
1530: Load Chemical/Wx Decision  
1800: Take off KNBC  
1951: Sunset

**17 APR (Thursday) Redeploy to YNG**

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

4. Spray Parameters:

- a. Acreage: 7,500 Acres (Only areas determined by PMP)
- b. Altitude: 150 Ft AGL
- c. Pesticide: Dibrom® Concentrate;
- d. Deploy: 2.0 Hrs
- e. Re-Deploy: 2.0 Hrs
- f. Spray Time: 32 Minutes

5. Aircraft Commander Maj (b) (6)



6. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator Mr. (b) (6) , DSN (b) (6)

// SIGNED //

(b) (6) , CAPT, USAFR  
Assistant Chief of Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## PARRIS ISLAND MCRD, SC

### 14-16 APR 2008

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: MC-LTC (b) (6) , Maj (b) (6) , Capt (b) (6) , LTC (b) (6)
- (2) Navigator: Maj (b) (6)
- (3) Flight Engineer: MSG (b) (6)
- (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6) , MSgt (b) (6) (b) (6) MSgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSgt (b) (6) , SSgt (b) (6) , SrA (b) (6) , MSgt (b) (6)
- (2) Crew Chiefs: TSgt (b) (6) , Amn (b) (6)
- (3) Avionics: Ssgt (b) (6)

##### c. Entomologist: Maj (b) (6)

#### 2. PPR REQUIREMENTS: 015-01

#### 3. PLANNED SEQUENCE OF EVENTS: (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

**14 APR (Monday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

0900: Show Time/Load system

1200: Take Off KYNG

1400: Land KNBC

1430: Safety Briefing

1500 Installation Brief

1530: Load Chemical/Wx Decision Training mission/Adulticide if weather dictates

Take off TBD for mission (Start Spray 1.5 hrs prior to Sunset)

1950: Sunset

**15 APR (Tuesday):** Adulticide/training sortie at Parris Island Wx/backup

1500: Showtime

1530: Load Chemical/Wx Decision

1800: Take off KNBC (Start Spray 1.5 hrs prior to Sunset)

1951: Sunset

**16 APR (Wednesday) Redeploy to YNG**

1000: Show Time

1200: Take off KNBC

1400: Land KYNG

**\*\*Due to ORI debrief on Thursday 17 Apr, the mission will return on 16 APR.**

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

- (1) Mission Commander Cell Phone

##### b. Entomologist/CPMP:

- (1) Wind Gauge & Compass
- (2) UHF/VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder

##### c. Navigators:

- (1) Maps
- (2) Templates

- d. **Spray Maintenance:**  
(1) Spill Kit  
(2) Safety Equipment  
(3) Loading and Clean-up Equipment and Supplies

5. **SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)  
b. **Booms:** Stainless Steel ULV Fuselage Booms  
c. **Nozzles:** 11 open for 8005's oriented straight down  
d. **Differential GPS:** Installed  
e. **Aircraft:** 90-9105  
f. **Mission Identifier:** QZNRKA192105

6. **SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**  
Dibrom® Concentrate (naled)  
Organophosphate Insecticide  
Signal Word: Danger  
Antidote: Atropine, 2-PAM  
Flushing Agent: Marvel Mystery Oil  
b. **Application:** 0.75 oz/acre  
c. **Spray Altitude:** 150 Feet  
d. **Swath Width:** 1,000 Feet  
e. **Ground Speed:** 200 Knots (338 Feet/Second)  
f. **Acreage:** 7,500 Acres  
g. **Spray-On Time:** 8 Minutes  
h. **Flow Rate:** 2.7 gallons/Minute

7. **AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading two drums of Dibrom

8. **PARKING PLAN:** Beaufort MCAS Ramp

9. **AIR TO GROUND RADIO FREQUENCIES:**

Beaufort Tower: 119.05 MCAS TWR  
Beaufort Approach 123.7  
Hilton Head Arpt: 118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 123.4 V**

10. **TRANSPORTATION:** Parris Island will provide vehicles for transportation to and from quarters and for messing. Vehicles will be at Base Operations.

11. **SPRAY MONITORING/TESTING:** Ground monitoring by CPMP &Parris Island MCRD Project Coordinator.

12. **CONTACTS:**

- a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX  
(1) Environmental Coordinator (Spray Coordinator):  
(b) (6) , DSN (b) (6) , Cel (b) (6) ; (b) (6) Cel (b) (6)  
FAX (843) 228-2616; (b) (6)  
(2) Assistant Chief of Staff I & L: COL (b) (6) , DSN (b) (6) (b) (6)  
(3) Pest Control: DSN 335-2364  
(4) P.I. Motor Pool: (b) (6) , DSN (b) (6) (b)  
(5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)  
(6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)  
(7) P.I. Rifle Range: DSN: 335-3183/3624  
b. **Beaufort MCAS SC:** (Commercial (843) 228-XXXX)  
(1) Beaufort MCAS Environmental: (b) (6) , DSN (b) (6) ; (b) (6) , DSN (b) (6)

- (2) Fuels: DSN: 335-7049/7448/7168  
 (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
 DSN: (b) (6) . Base Ops is ext 7301/2/3  
 (After duty hours: (b) (6) , DSN: (b) (6)  
 (4) Trans Alert/VAL: DSN: 335-7110  
 (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)

c. **Beaufort County Mosquito Control:** (b) (6)

d. **Naval Occupational Health/Preventive Medicine:** LtJG (b) (6) , DSN: (b) (6)

e. **Quarters:**

**14 Rooms Comfort Inn and Suites \$94.99/night (843) 379-9400**

Ramada Inn	(843) 524-2144/Fax 1704
Hampton Inn	(843) 986-0600 (FAX 0494)
Sleep Inn	(843) 522-3361 FAX (843) 522-9929
Parris Island Billeting	DSN: 335-2744 (FAX: 3815); (843) 228-3960
Comfort Inn	(843) 525-9366 (FAX 1529)
Best Western (Sea Island Motel)	(843) 524- 4121
Port Royal Days Inn	(843) 524-1551
Best Western Pt South (I-95)	(843) 726-8101

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6) , (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Capt (b) (6) ; FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - (b) (6) cell (b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## NSB, KINGS BAY, GA

### 14-17 August 2008

**Change 2**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at NSB, Kings Bay, GA.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: LTC(b) (6) , Capt (b) (6)
- (2) Navigators: Maj (b) (6) Maj (b) (6)
- (3) Flight Engineers: TSgt (b) (6)
- (4) Spray Operators: SMSgt (b) (6) MSgt (b) (6) MSgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSgt (b) (6) TSgt (b) (6) MSgt (b) (6)
- (2) Crew Chiefs: MSgt (b) (6) SRA (b) (6)
- (3) Avionics: SSgt (b) (6)

##### c. Entomologist: Maj (b) (6) (MC), LTC (b) (6)

#### 2. PPR REQUIREMENTS: 81401 **\*\*Must squawk 5107 before entering P-50\*\***

#### 3. PLANNED SEQUENCE OF EVENTS: (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

14 AUG (Thursday)

1600: Show

1800: Depart KYNG

2030: Land KNIP/Safety brief

15 AUG (Friday)

TBD: In-Brief with Kings Bay Personnel

1500: Weather call/Crew show

1530: Load Chemical

1800: Depart KNIP

Sunset: 2008

16 AUG (Saturday) WX Backup

1500: Weather call/Crew show

1530: Load Chemical

1800: Depart KNIP

Sunset: 2007

17 AUG (Sunday)

1000: Show time

1200: Depart KNIP

1430: Land KYNG

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

- (1) Mission Commander – use (b) (6) cell phone: (b) (6)

##### b. Entomologist:

- (1) Wind Gauge & Compass
- (2) VHF Radios
- (3) Pesticide Safety Binder

##### c. Navigators:

- (1) Maps

(2) Templates

**d. Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** size = 8005; 20 open for 7.4 flow rate; 15 open for 5.5); oriented straight down.
- d. **Differential GPS:** Wingman Installed
- e. **Aircraft:** 89-9105
- f. **Mission Identifier:** QZNRKA151227

**6. Adult mosquito control spray Parameters: (Kings Bay)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 1.0 oz/acre or 0.75 oz/acre see entomologist
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 2,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 15,000 Acres
- g. **Spray-On Time:** 32 Minutes
- h. **Flow Rate:** 7.4 gallons/minute or 5.55 gal/min see entomologist

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading 3 or 4 drums of Dibrom for Kings Bay (see entomologist).

**8. PARKING PLAN:** Parking will be on the T-33 Line at NAS Jacksonville, FL.

**9. AIR TO GROUND RADIO FREQUENCIES:**

Navy Jax Ops-	310.2/134.775	Tower	120.0/340.2
Ground	128.6/336.4	Spray Ground:	123.45 VHF
ATIS	281.0	St Marys:	122.8 VHF

**10. TRANSPORTATION:** Enterprise Car Rental: 904-772-7007 \$40/day+5gov policy  
5 Full Size Cars (b) (6) ) Keys will be at base ops.

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP and by NSB Kings Bay pest control.

**12. BILLETING:** Hampton Inn Jacksonville-Orange Park, 6135 Youngerman Circle, 904-777-5313  
16 rooms blocked confirmation # 85742030 \$79/night

**13. CONTACTS:**

- a. **Naval Submarine Base Kings Bay, GA (Com: (912) 573-xxxx; DSN 573-xxxx)**
  - (1) Spray Coordinator: (b) (6)

(2) Strategic Weapons Facility Atlantic (SWFLANT) x0551

**b. Naval Air Station Jacksonville, FL (NAS JAX)**

- (1) For requesting PPR: DSN 942-2511
- (2) Transient line office: DSN 942-3843
- (3) Weather: DSN 942-2535
- (4) Tower: DSN 942-2516

**c. FAA JAX Center:** Mr. Patrick Powers, Mission Specialist 904-549-1542

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- 1. 910 AW/CC: Col (b) (6)
- 2. 910 AW Command Post: Ext 1315; FAX 1161
- 3. 910 AW/PA: Capt (b) (6) FAX 1022
- 4. 910 OG/CC: Col (b) (6)
- 5. 910 OG: Airfield Manager, Ext 1186/1526
- 6. 757 AS/DO: Maj (b) (6)
- 7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- 8. 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
- 9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) FAX 1616
- 10. 910 LG/CC: Ext 1225
- 11. 910 LG/LGM: Ext 1352
- 12. Maintenance Control: Ext 1327
- 13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
- 14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
- 15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - (b) (6)





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON-AERIAL SPRAY  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926

5 Aug 2008

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at King's Bay NSB, GA

1. Objective/Purpose/Benefits of the Spray Mission. Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Kings Bay NSB, GA.

2. Capability: Spray Aircraft available on 14-17 August 2008

3. Concept of Operations:

14 AUG (Thursday)

1600: Show

1800: Depart KYNG

2030: Land KNIP/Safety brief

15 AUG (Friday)

TBD: In-Brief with Kings Bay Personnel

1500: Weather call/Crew show

1530: Load Chemical

1800: Depart KNIP

Sunset: 2008

16 AUG (Saturday) WX Backup

1500: Weather call/Crew show

1530: Load Chemical

1800: Depart KNIP

Sunset: 2007

17 AUG (Sunday)

1000: Show time

1200: Depart KNIP

1430: Land KYNG

4. Spray Parameters:

a. Acreage: 15000 Acres (Only areas determined by PMP)

b. Altitude: 150 Ft AGL

c. Pesticide: Dibrom® Concentrate;

d. Deploy: 3.0 Hrs/ Redeploy: 3.0

f. Spray Time: 30 Minutes

5. Aircraft Commander: Maj (b) (6)

6. Support required at Kings Bay NSB has been coordinated.

// SIGNED //  
(b) (6) CAPT, USAFR  
757 Aerial Spray

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **AVON PARK, FL**

**9-13 FEB 2009 Ch 1**

**PURPOSE/OBJECTIVE/BENEFIT:** Flight testing of the Quantity Indicator System MASS upgrade. Aerial Spray flight training for aircrews over Avon Park Bombing range.

### **1. 910 AW PARTICIPANTS:**

#### **a. Aircrew:**

1. Pilots: Capt (b) (6) , LTC (b) (6) , Maj(b) (6) , Maj (b) (6)
2. Navigators: Maj (b) (6)
3. Flight Engineers: Msgt (b) (6)

#### **b. Spray Operators: Sms (b) (6) , Msgt (b) (6) , Msgt (b) (6)**

#### **c. Maintenance:**

1. Spray Maintenance: Smsgt (b) (6) , Msgt (b) (6) , Msgt (b) (6)
2. Avionics: Ssgt (b) (6) , Ssgt (b) (6)
3. Crew Chiefs: Tsg (b) (6) , SRA (b) (6)
4. Engine Shop: Tsg (b) (6)

#### **d. Entomologist/Ground Support: None**

### **2. SCHEDULE: (All time Local) All times and sequence of events are subject to change depending upon the needs of the training and range.**

9 FEB (MON)

1400: Show Time KYNG  
1600: Depart KYNG  
1930 Land KMCf

10 FEB (TUE): Range scheduled: 1200-1500

Ground testing of QIS: Complete remaining ground testing items as required. Upon completion of ground items, flight testing of the EMI will be conducted at MCF. Upon completion of testing, the crew will depart out to KAGR

0800 or TBA Show Time  
1200 or TBA Take Off  
1500 Land Time

\*\*Schedule for remainder of week will be flexible depending upon the QIS testing.

11 FEB (WED): Range scheduled: 1200-1500

1000 Show at aircraft  
1200 T/O MCF

\*\* Training at Avon Park Range or overwater  
1500 Land MCF

12 FEB (THUR): Range Times 1200-1500

1000 Show at aircraft  
1200 T/O MCF  
1500 Land MCF

13 FEB (FRI)

0900: Show Time  
1100: Depart KMCf  
1430: Land KYNG

### **3. ITEMS TO TAKE:**

- #### **a. Navigator:**
- Maps with "No-Spray" Areas Marked  
Mission computer

**4. AIR TO GROUND FREQUENCIES:**

- a. **Spray: Primary 392.2;** Secondary 340.8
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. **Avon Park: TWR-292.2 (p), 126.15, 276.6 (s) Hrs 0700-2300 M-F, S-S per flying schedule DSN 968-7138**
- e. MacDill: TWR-123.7; GND-118.575; ATIS-133.825; CMD POST-311.0; PTD-372.2

**5. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 89-9105
- c. Nozzle Tips/Orientation: LV/HV 14 Raindrop nozzles oriented straight back
- d. Mission Identifier: QZNRKA346011

**6. MISSION PROTOCOLS:**

- a. **Altitude:** 100 and 150 AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Chemical:** Water
- d. **Application Rate:** TBD based on spray operator training needs
- e. **Flow Rate:** TBD
- f. **Acreage:** Configuration for training only.
- g. **Swath Width:** TBD depending upon training profile each day

**7. CONTACTS:**

- a. **Quarters:**  
**Springhill Suites**  
813-639-9600  
4835 W Cypress St Tampa, FL 33607
- b. Transportation:  
**Vehicles: 4 Vans - \$80/day;**  
Enterprise Rental MacDill AFB:  
(813) 840 2613 Attn: David  
Van – Townsend, Darby, Daniels, Hvostal
- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350  
(1) Weather: MacDill AFB Forecaster (DSN 968-2854)  
(2) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)  
(3) MacDill AFB Ops Gp CC 968-3014
- d. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX  
DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN  
Avon Control Tower & Range Control Scheduling DSN 968-7176  
Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number  
(1) Range Operations Manager: (b) (6) , Bldg 236,(b) (6)  
(2) Avon Range Control Tower: ext 176  
(1) Flight Chief of Civ Engineer: (b) (6) rt, Bldg 29, (b) (6)  
(2) Chief, Environmental Flight: (b) (6) Bldg 29, (b) (6) also Wildlife Biologist (b) (6)  
(3) Fuels: ext 118 or (b) (6)  
(4) Range Support Manager: (b) (6) Bldg 29, (b) (6)  
(5) Range Control/Schedule: (b) (6) , Bldg 41, (b) (6)  
**See Attached Avon Park Org directory for additional listings**  
(9) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)  
Range VHF: 126.15

f.      **Sebring AP:** Mgr: Mr (b) (6) (fuel needs)  
BEEPER: 1 (863) 999-8622 ENTER YOUR PHONE# ENTER #  
Asst Mgr: (b) (6) X-

g.      **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Capt (b) (6) ; FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander:(b) (6)
  - Entomologist: (b) (6)
  - Spray Maintenance: (b) (6)



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



26 DEC 2007

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray Training at Avon Park, FL Bombing Range

1. Purpose/Objectives/Benefits: Aircrew flight training in aerial spray operations. Initial copilot and Navigator training conducted over Avon Park Bombing range and coastal waters. Other aircrew positions are for currency and proficiency during winter months. Flight exercise with the Florida Mosquito Control Association annual spray training course
2. Capability: Spray Aircraft Available, 14-18 JAN 2008.
3. **Concept of Operations**

14 JAN (MONDAY)

1100: Show Time KYNG  
1300: Depart KYNG  
1600: Land KMCF  
1700 FUEL (20K requested each day)

15 JAN (TUESDAY): Range Times 0900-1200 TBD

0700: Show Time  
0900: T/O KMCF  
1300: Land KMCF  
1330 Fuel

16 JAN (WEDNESDAY): Range Times 0900-1200

0630: Show Time  
0800: T/O KMCF  
0830 Exercise at Buckingham AAF  
1200: Land KMCF  
1230 Fuel

17 JAN (THURSDAY): Range Times 0900-1200

0700: Show Time  
0900: T/O KMCF  
1300: Land KMCF  
1330 FUEL

18 JAN (FRIDAY):

0730: Show Time  
0900: Depart KMCF  
1200: Land KYNG

4. Spray Configuration:
  - a. MASS – SP2G
  - b. Mission Identifier: QZNRKA160014
5. Mission Protocols: Avon Park Spray Flight Training
6. Range times reserved at Avon Park Bombing Range daily through MacDill range scheduling.
7. Aircraft Commander: LTC (b) (6)
8. If you have any questions concerning this mission please contact me at DSN (b) (6) .

//SIGNED//

(b) (6) , Capt, USAFR  
Assistant Chief of Aerial Spray



# AERIAL SPRAY OPERATIONAL SCHEDULE

## AVON PARK, FL

### 14-18 JAN 2008

**PURPOSE/OBJECTIVE/BENEFIT:** Aircrew flight training in aerial spray operations. Initial copilot and Navigator training conducted over Avon Park Bombing range and coastal waters. Other aircrew positions are for currency and proficiency during winter months. Flight exercise with the Florida Mosquito Control Association annual spray training course.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

1. Pilots: LTC (b) (6) (May not go??), Maj (b) (6), Capt (b) (6), 1LT (b) (6), LTC (b) (6)
2. Navigators: Maj (b) (6), Capt (b) (6)
3. Flight Engineers: Msgt (b) (6)
4. Spray Operators: CMsgt (b) (6), Tsgt (b) (6), Msgt (b) (6)

##### b. Maintenance:

1. Spray Maintenance: Msgt (b) (6), Msgt (b) (6), SRA (b) (6), SRA (b) (6)
2. Avionics: (b) (6)
3. Crew Chiefs: Msgt (b) (6), SRA (b) (6),

##### c. Entomologist/Ground Support: Maj (b) (6), Maj (b) (6)

#### 2. SCHEDULE: (All time Local) All times and sequence of events are subject to change depending upon the needs of the training and range.

14 JAN (MONDAY)

PPR # MCF 014-MA-001

1100: Show Time KYNG  
1300: Depart KYNG  
1600: Land KMCF  
1700 FUEL (20K requested each day)

15 JAN (TUESDAY): Range Times 0900-1200 Entire range is ours to use

0700: Show Time  
0830: T/O KMCF  
1230: Land KMCF  
1230 Fuel

16 JAN (WEDNESDAY): Range Times 0900-1200 North Range Only

0600: Show Time  
0715: T/O KMCF  
0730-0900 Exercise at Buckingham AAF  
1230: Land KMCF  
1230 Fuel

17 JAN (THURSDAY): Range Times 0900-1200 North Range Only

0700: Show Time  
0830: T/O KMCF  
1230: Land KMCF  
1230 FUEL

18 JAN (FRIDAY):

0730: Show Time  
0900: Depart KMCF  
1200: Land KYNG



**3. ITEMS TO TAKE:**

- a. **Navigator:** Maps with “No-Spray” Areas Marked  
Mission computer

**4. AIR TO GROUND FREQUENCIES:**

- a. **Spray: Primary 392.2; Secondary 340.8**
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. **Avon Park: TWR-292.2 (p), 126.15, 276.6 (s) Hrs 0700-2300 M-F, S-S per flying schedule DSN 968-7138**
- e. MacDill: TWR-123.7; GND-118.575; ATIS-133.825; CMD POST-311.0; PTD-372.2

**5. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 99106
- c. Nozzle Tips/Orientation: Tuesday: ULV configuration 14 8005 nozzles; Wed and Thur.- Raindrop nozzles-Straight back; 14 Total, 7 per side until after flight exercise;
- d. Mission Identifier: QZNRKA160014

**6. MISSION PROTOCOLS:**

- a. **Altitude:** 100 AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Chemical:** Water
- d. **Application Rate:** 3 Gallons/Acre
- e. **Flow Rate:** 276 Gallons/Minute
- f. **Acres:** Configuration for training only.
- g. **Swath Width:** 200 ft for Demo

**7. CONTACTS:**

- a. **Quarters: (JTR Max Lodging rate \$123; Food \$51)**  
MacDill AFB Billeting Office: DSN: 968-4259  
**Hyatt Place – 813 828-1037**  
4811 W. Main St – off Westshore Blvd  
- 17 Rooms reserved. If any names change/personnel drop off, contact the Hyatt Place hotel ASAP to ensure the base card is not charged. Thank you.
- b. **Enterprise (BX on MacDill): 813-840-2613**  
6 Vehicles reserved for 1600 pick up  
FS- (b) (6) , (b) (6)  
MS- (b) (6)  
Transportation: DSN: 968 5281
- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350  
(1) Weather: MacDill AFB Forecaster (DSN 968-2854)  
(2) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)  
(3) MacDill AFB Ops Gp CC 968-3014  
(4) MacDill AFB Fire Dept, Chief (b) (6)
- d. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX  
DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN  
Avon Control Tower & Range Control DSN 968-7176  
Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number

- (1) Range Operations Manager: (b) (6) , Bldg 236, (b) (6)
- (2) Avon Range Control Tower: ext 176
- (1) Flight Chief of Civ Engineer: (b) (6) Bldg 29,(b) (6)
- (2) Chief, Environmental Flight: (b) (6) , Bldg 29,(b) (6) also Wildlife Biologist (b) (6)
- (3) Fuels: ext 118 or Cel (b) (6)
- (4) Range Support Manager: Mr (b) (6) Bldg 29, (b) (6)
- (5) Range Control/Schedule: (b) (6) , Bldg 41,(b) (6)
- See Attached Avon Park Org directory for additional listings**
- (9) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)  
Range VHF: 126.15

f. **Sebring AP:** Mgr: (b) (6) (b) (6) (fuel needs)  
BEEPER: 1 (863) 999-8622 ENTER YOUR PHONE# ENTER #  
Asst Mgr: (b) (6) , (b) (6) X-  
**Fuel is coordinated for 20k at 1200L every day except 1<sup>st</sup> day which is 1500**

g. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- 1. 910 AW/CC: Col (b) (6)
- 2. 910 AW Command Post: Ext 1315; FAX 1161
- 3. 910 AW/PA: Capt (b) (6) FAX 1022
- 4. 910 OG/CC: Col (b) (6)
- 5. 910 OG: Airfield Manager, Ext 1186/1526
- 6. 757 AS/DO: LTC (b) (6)
- 7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- 8. 757 AS/DOO: Ops Admin: SMS (b) (6) FAX 1657
- 9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) FAX 1616
- 10. 910 LG/CC: Ext 1225
- 11. 910 LG/LGM: Ext 1352
- 12. Maintenance Control: Ext 1327
- 13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
- 14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
- 15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) , (b) (6)
  - Spray Maintenance: (b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## MINOT AFB, ND

### 14-18 JUL 08

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Minot AFB and City of Minot, ND.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: Maj (b) (6) (A/C, MC), Maj (b) (6) Capt (b) (6)
- (2) Navigators: Maj (b) (6)
- (3) Flight Engineers: MSgt (b) (6)
- (4) Spray Operators: MSgt (b) (6) MSgt (b) (6) MSgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSgt (b) (6) TSgt (b) (6) TSgt (b) (6) SRA (b) (6)
- (2) Crew Chief(s): TSgt (b) (6) Amn (b) (6)
- (3) Avionics: TSgt (b) (6)

##### c. Entomologist: Maj (b) (6) (ground MC) & LtCol (b) (6) (TR)

#### 2. SCHEDULE: (All Local Times)

##### 14 JUL (Monday):

0900 Show time  
1100 Depart KYNG  
1345 Land KMIB  
1500 Installation Brief

##### 15 JUL (Tuesday):

1500 Calibration System  
1730 Show time/WX Decision  
1800 Load Chemical  
1945 Takeoff KMIB (Adulticide Spray Sortie)  
2141 Sunset

##### 16 JUL (Wednesday):

1730 Show time/WX Decision  
1800 Load Chemical  
1945 Takeoff KMIB (Adulticide Spray Sortie)  
2140 Sunset

##### 17 JUL (Thursday): Weather back up

1730 Show time/WX Decision  
1800 Load Chemical  
1945 Takeoff KMIB (Adulticide Spray Sortie)  
2139 Sunset

##### 18 JUL (Friday)

1100 Show time  
1300 Depart KMIB  
1735 Land KYNG

#### 3. ITEMS TO TAKE

- a. **Mission Commander:** Cellular Phone, Mission Folder
- b. **Entomologist:** Cell Phone, Wind Gauge, Compass, Pest Safety Binder,  
1 VHF radio Project Notebook
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment

#### 4. KMIB PPR: 1401RM

#### 5. RADIO FREQUENCIES: Air To Ground Primary UHF 392.2; VHF 123.45

Minot AFB Tower 120.65 V, 236.6, 253.5; Minot International 118.2 V, 393.1 or Unicom 122.95

#### 6. CONFIGURATION: SP2G

- a. **System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. **Nozzle Tips/Orientation:** ULV (adulticide): 8005 Tee Jet oriented straight down

c. **Number:** 13 for 5.45GPM or 18 for 7.27  
e. **Aircraft:** 89-9105  
f. **Mission Identifier:** QZNRKA775196

**7. SPRAY PARAMETERS:**

**a. Adulticide**

- (1) **Area to be treated:** 5,158 (AFB) & 9,011 (Magic City)
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 2000
- (4) **Flow Rate.** 5.45 or 7.27 (see entomologist)
- (5) **Application Rate.** 0.75 oz/acre or 1.0 oz/acre
- (6) **Ground Speed:** 200 Knots (338 Feet/Second)
- (7) **Flush:** With water, triple rinse, then air purge

**8. SPRAY MIXING AND LOADING:** Amount of Trumpet will be determined on site.

**9. TRANSPORTATION:** Provided by Minot, POC is Sgt (b) (6) (pest management): 2 mini-vans, 2 six pax

**10. LODGING:** Grand International Inn, 701-852-3161, 1500 N Broadway, Minot. Directions and non-avails are in mission folder.

**11. CONTACTS:**

**a. Minot AFB ND: DSN prefix: 453- Commercial area code and prefix (701) 723 -**

1. **Base Operations:** x2347, Airfield Manager: TSgt (b) (6) /TSgt (b) (6) FAX: 3637
2. **Environmental Officer:** (b) (6)
3. **Base Civil Engineer:** Lt Col (b) (6)
4. **Pest Management:** (b) (6) (cell: (b) (6) SrA (b) (6)
5. **Public Affairs:** Capt (b) (6)
6. **Weather:** TSgt (b) (6) /Capt (b) (6)
7. **Billeting:** SSgt (b) (6), TSgt (b) (6) (if you have problems w/this number use (b) (6) )
8. **Fire Dept:** x2461
9. **Transient Alert:** x3153, closes at 1730L
10. **Minot AFB Twr** – x3330
11. **Minot Int'l Twr (Magic City Twr)** (b) (6)

**b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Ext 1236; FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 Base Ops: Airfield Manager: Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181
6. 757 AS/DO: Maj (b) (6)
7. 757 AS/DOO: Ops Admin: SMSgt (b) (6) ; FAX 1657
8. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) ; FAX 1616
9. 910 LG/CC: Ext 1225
10. 910 LG/LGM: Ext 1352
11. Maintenance Control: Ext 1348
12. LG/LGMS: Spray Maintenance: SMSgt (b) (6) Cell: (b) (6)
13. 910 LG/LGL: Ext 1137
14. Omega/SATO Travel: Ext 1772; (800) 285-6342
15. Supervisor of Flight Desk: 1069, FAX: 1371
16. Cellular Spray Phones:
  - (b) (6) cell: (b) (6)
  - Mission Commander: (b) (6)
  - Spray Maintenance (b) (6)

# 910 AW AERIAL SPRAY UNIT -- POST-MISSION REPORT

## MINOT AFB ADULT MOSQUITO CONTROL 14-18 JULY 2008

### 1. MISSION BASICS:

- a. Installation Sprayed: Minot AFB, North Dakota
- b. Mission Duration: 14-18 July 2008
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date/s: 16 & 17 July 2008
- e. Time/s of Application (Local): 2025-2141 (16 Jul) & 2025-2138 (17 Jul)
- f. Acres Treated: 9,045 (16 Jul) & 5,461 (18 Jul) = 14,506 acres
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6), Pest control supervisor/spray coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 14 July 2008
- i. Date of Waste Generation Letter: 17 July 2006
- j. Installation In-Briefing: (When/Where/Briefer/s): 14 Jul; 5CES Conference Room; Maj (b) (6), Maj (b) (6)

### 2. OPERATIONAL:

- a. **Aircrew:**
  - (1) Pilots: Maj (b) (6) (A/C), Maj (b) (6) Capt (b) (6)
  - (2) Navigators: Maj (b) (6)
  - (3) Flight Engineers: MSgt (b) (6)
  - (4) Spray Operators: MSgt (b) (6) MSgt (b) (6) MSgt (b) (6)
- b. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) TSgt (b) (6) TSgt (b) (6) SRA (b) (6)
  - (2) Crew Chief(s): TSgt (b) (6) Amn (b) (6)
  - (3) Avionics: TSgt (b) (6)
- c. **Entomologist:** Maj (b) (6) (MC) & LtCol (b) (6)
- d. **Safety Briefer:** Maj (b) (6)
- e. **Flying Data:**
  - (1) Spray Sorties/Hours: 2 sorties (2.4+1.3) = 3.7
  - (2) Ferry Sorties/Hours: 4.0+3.3 = 7.3

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Trumpet<sup>®</sup> EC Concentrate
- b. EPA Registration Number: 59639-90-5481
- c. Formulation Sprayed: Emulsified Concentrate
- d. Gallons Pesticide Loaded: 60 gal (15 Jul); 30 gal (17 Jul); 90 gallons total
- e. Gallons Pesticide Applied: 53 gal (16 Jul) & 32 gal (17 Jul)
- f. Gallons and Name Diluent Used: None
- g. Gallons and Name of Flush Used: 45 gallons; water
- h. Other Additives Used: None
- i. Application Rate: 0.75 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 13 oriented straight down
- f. Pressure: 45-60 psi
- g. Flow Rate: 5.5 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray offset: 2000' (17 Jul); 2000' (18 Jul)
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 7-8 knots @ 330° (16 Jul) & light and variable <3 knots @ 330° (17 Jul)
  - (2) Release Altitude: 7-13 knots @ 330° (16 Jul) & 3-5 knots @ 330° (17 Jul)
- b. Temperature (Degrees Fahrenheit): 79°(16 Jul) & 74° (17 Jul)
- c. Relative humidity: 52-74% (16 Jul) & 57-68% (17 Jul)
- d. Cloud Cover: Overcast (16 Jul) & mostly clear (17 Jul)
- e. Source: Ground observations and aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Minot AFB Pest Control Shop (5 CES/CEOUE) collected 300 mosquitoes/trap night and 10 mosquitoes/trap night the night following the application (97% reduction).
- b. No data was reported from the city of Minot, but judging the excellent environmental conditions and results at the AFB, we expect significant reduction in mosquito activity.

**8. REMARKS:** This was the 4<sup>th</sup> year of spray operations conducted at Minot AFB and the city of Minot to control mosquitoes. Areas treated are shown in Attachment 1. Moderate levels of mosquito abundance were reduced by this application to very low and we consider these results to be excellent. The scheduled application on 15 July was cancelled because an ignition control relay failed. The part was located at the 934<sup>th</sup> AW & 910<sup>th</sup> AW staff responded with each group driving half-way to deliver the part. Quick action and a long work day by 910 AW/MXS enabled the mission to continue as scheduled on 16 July. Because of the cancelled sortie, there was some confusion with local media as to which spray area was to be sprayed on a given date. Because the mosquito species *Aedes vexans* has a peak flight period close to sunset, it is this timeframe which is particularly important to utilize for optimal control. Thus, when the spray crew finished spraying the AFB property on 16 July with additional daylight to spare, we also treated the northern portion of the City of Minot. It is important to take advantage of favorable environmental conditions because they may not be present on subsequent dates. In the future it is advised that both the City and the AFB be prepared for spray operations the final 2 hours of daylight each evening as conditions may be varied throughout the spray area and flexibility is required to maximize mosquito control.

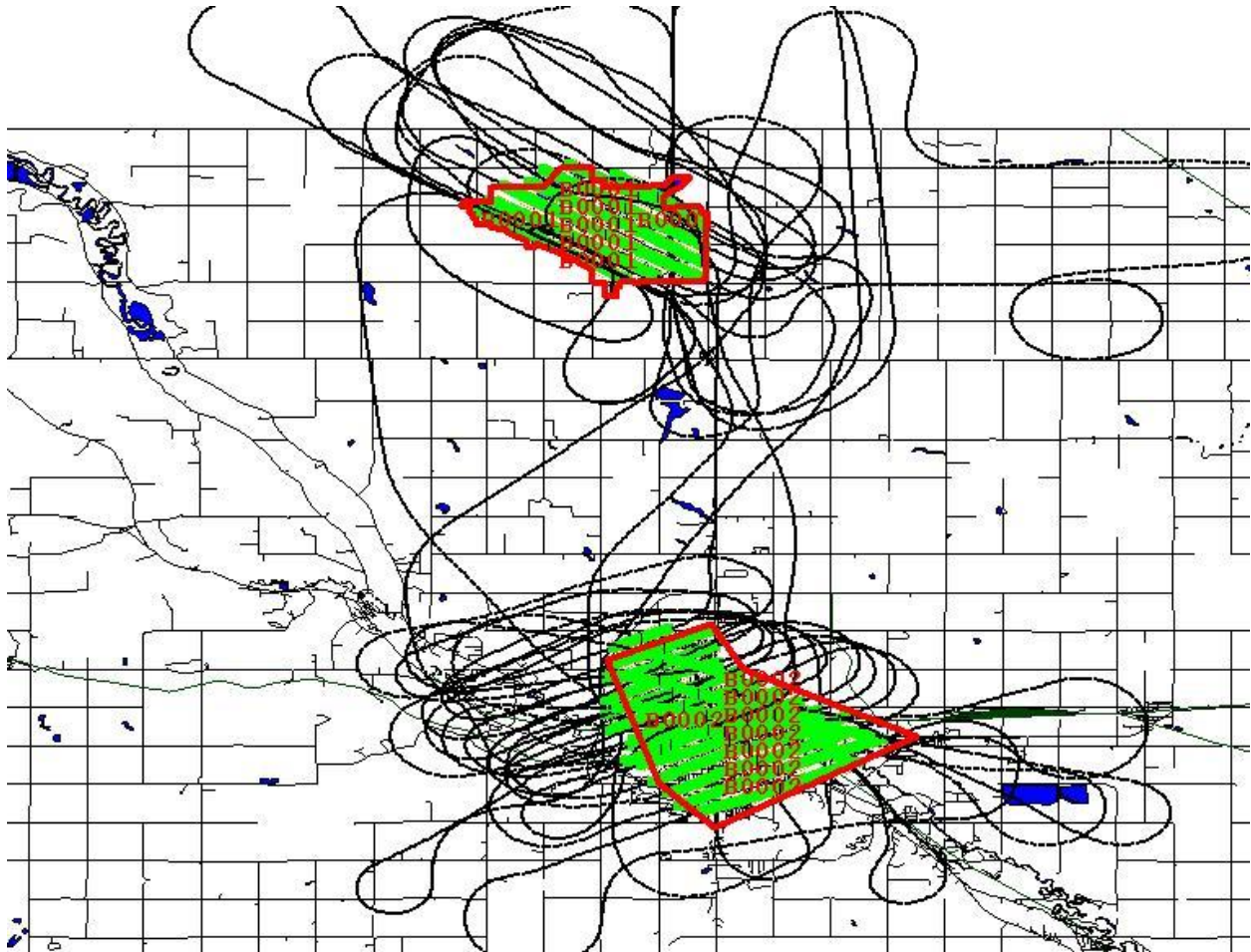
As encountered in previous years, the 5<sup>th</sup> CES and others at Minot provided outstanding support for our operation; the people at Minot AFB are great to work with. Special thanks go out to MSgt (b) (6) and SSgt (b) (6) for making this mission a success through their conscientious and diligent work.

//signed//

(b) (6) , MAJ, USAFR  
Entomologist and DoD Certified Applicator



**Attachment 1. Map depicting spray areas 16-17 July 2008 includeing Minot AFB and City of Minot, ND (red polygons with green spray track) and the path of the aircraft during each sortie (black dashed-line).**







DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



27 JUNE 2008

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Minot AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Minot AFB ND and the city of Minot and surrounding areas. Operations will consist of Adulticide applications.

**2. Capability:** Spray Aircraft available 14-18 JULY 2008

**3. Concept of Operations:**

**14 JUL (Monday):**

0900 Show time  
1100 Depart KYNG  
1345 Land KMIB  
1500 Installation Brief

**15 JUL (Tuesday):**

1500 Calibration System  
1730 Show time/WX Decision  
1800 Load Chemical  
1945 Takeoff KMIB (Adulticide Spray Sortie)  
2141 Sunset

**16 JUL (Wednesday):**

1730 Show time/WX Decision  
1800 Load Chemical  
1945 Takeoff KMIB (Adulticide Spray Sortie)  
2140 Sunset

**17 JUL (Thursday): Training/Weather back up**

1730 Show time/WX Decision  
1800 Load Chemical  
1945 Takeoff KMIB (Adulticide Spray Sortie)  
2139 Sunset

**18 JUL (Friday):**

1000 Show time  
1200 Depart KMIB  
1630 Land KYNG

**4. Spray Parameters:**

- a. **Altitude:** 150' AGL
- b. **Swath Width.** as determined by the CPMP
- c. **Flow Rate.** 4.36 gallons/minute ULV
- d. **Application Rate.** 0.60 oz/acre
- e. **Chemical:** Trumpett
- f. **Ground Speed:** 200 Knots
- g. **Proposed spray area:** Approximately 20,000 acres

5. **Aircraft Commander:** Capt (b) (6)

// SIGNED //

(b) (6)

757 Aerial Spray

, CAPTAIN, USAFR

# AERIAL SPRAY OPERATIONAL SCHEDULE

## OIL SPILL EXERCISE

### MOBILE AL

### 14-18 MAY 2001

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: LtC (b) (6)
- (2) Pilots: Maj (b) (6) , Capt (b) (6)
- (3) Navigators: \*Maj (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: \*MSG (b) (6) , MSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: SMS (b) (6) , \*MSG (b) (6) , TSG (b) (6) ,  
TSG (b) (6)
- (2) Avonics: SMS (b) (6)
- (3) Crew Chiefs: \*\*MSG (b) (6) , SRA (b) (6)

##### c. Ground Support/Certified Pest Management Professionals: LtC (b) (6)

##### d. COM FLT: TSG (b) (6) , TSG (b) (6) , \*TSG (b) (6) , SSG (b) (6)

##### e. Public Affairs: Lt (b) (6)

\*Van \*\*Mid-Size

#### 2. SCHEDULE: (All time Local)

14 MAY (Monday):

1400: Depart YNG

1600: Land MOB

PPR # -

15 MAY (Tuesday):

0558: Sunrise

1030: Depart MOB

1200: Land MOB

1230: Depart MOB

1400: Land MOB

1940: Sunset

All sorties are quick turns for Spray Maint.

16 MAY (Wednesday):

0557: Sunrise

1030: Depart MOB

1200: Land MOB

1230: Depart MOB

1400: Land MOB

1941: Sunset

17 MAY (Thursday):

0556: Sunrise

1030: Depart MOB

1200: Land MOB

1230: Depart MOB

1400: Land MOB

1942: Sunset

18 MAY (Friday):

0556: Sunrise

1000: Depart MOB

1400: Land YNG

**3. ITEMS TO TAKE:**

**Navigator:** Maps with “No-Spray” Areas Marked and Laptop Computer

**4. AIR TO GROUND FREQUENCIES:**

- a. Spray: Primary 381.8; Secondary 392.2
- b. Interplane: Primary 122.9; Secondary 123.45
- c. USAF-HF: Primary 11.4485 (WHITETAIL); Secondary 7675.5

**5. SPRAY CONFIGURATION:**

- a. MASS – SP2G (Oil Spill Kit)
  - Fuselage booms for oil dispersant package
  - Raindrop nozzles (12 per side) straight back
- b. Aircraft Number: 09108
- c. Mission Identifier: QZNRKA125134

**6. SPRAY PARAMETERS:**

- a. **Swath Width.** 100 Feet
- b. **Spray Altitude.** 100 Feet AGL
- c. **Ground Speed.** 200 Knots
- d. **Flow Rate.** 233 Gallons Per Minute
- e. **Application Rate.** 5 Gallons per Acre
- f. **Spray Material.** Water
- g. **Flushing Agent.** N/A
- h. **Acreage.** As Directed

**7. LOADING AND MIXING:** Water Only; On Howard Barker’s Ramp.

**8. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Unlimited.

**9. CONTACTS:**

- a. Quarters: Primary Homewood Suites by Hilton \$75+Tax  
530 Providence Dr Mobile AL  
(334) 634-8664, FAX 8695  
  
Secondary Holiday Inn Express, \$55+Tax  
4800 Amoco Dr Moss Point MS  
(228) 474-2100
- b. Transportation: Enterprise, (334) 639-9609 (b) (6) ; FAX (334) 639-0078  
4 Van, \$69/day, \$360/Week; 1 Mid Size \$40/day, \$240/Week
- c. Oil Spill Exercise Point of Contacts:
  - (1) U S Coast Guard ATC, (b) (6) , ((b) (6)) (FAX 6435)
  - (2) U S Coast Guard Marine Safety Officer, Mobile AL, (b) (6) , ((b) (6))  
(FAX 6169)
  - (3) U S Coast Guard D8(MOR), 501 Magazine St, New Orleans LA  
- Welcome (b) (6) (b) (6) (FAX 4999)
  - (4) Chevron, Moss Point LA, Lee Harbison, (228) 938-4407 (FAX 4647)

d. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257
- (5) 910 OSF/OSA: Airfield Manager: (b) (6)
  - Assistant Air Field Manager (ACAM), (b) (6)
- (6) 757 AS/DO: Ext 1258
- (7) 757 AS/DOO: Ops Admin: SMSgt (b) (6) FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, (b) (6) FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: CMSgt (b) (6)
- (11) Maintenance Control: Ext 1348
- (12) 910 LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL: CMSgt (b) (6)
- (14) Omega/SATO Travel: Ext 1772; (800) 285 – 6342
- (15) LG: Taxi Service to/from Airport: (b) (6) , FAX 1768
- (16) Supervisor of Flight Desk: 1069, FAX: 1371
- (17) Cellular Phones:
  - PMP/Entomologist Cellular Spray Phone: (b) (6)
  - Mission Commander: (b) (6)
  - Spray Maintenance: (b) (6) , Pager (b) (6)



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



30 APR 2007

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Grand Forks AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks AFB ND.

**2. Capability:** Spray Aircraft available 14-18 May 2007

**3. Concept of Operations:**

**14 May (Monday)**

0900: Showtime  
1100: Depart KYNG  
1300: Land KGFK/Safety Briefing  
1500: Spray In Brief (CPMP, MC, AC).

**15 May(Tuesday):**

0430: Show time  
0530 Load Chemical  
0600: Take off KGFK (Larvicide Spray Sortie)  
0550: Sunrise

**16 May (Wednesday):**

0430: Show time  
0530 Load Chemical  
0600: Take off KGFK (Larvicide Spray Sortie)  
0549: Sunrise

**17 May (Thursday):**

0430: Show time  
0530 Load Chemical  
0600: Take off KGFK (Larvicide Spray Sortie)  
0547: Sunrise

**18 may (Friday):**

0800: Show time  
1000: Take off KGFK  
1400: Land KYNG

**4. Spray Parameters:**

- a. **Altitude:** 100' AGL for Larvicide swath when no trees are present.
- b. **Swath Width.** 200 feet for LV or as determined by the CPMP
- c. **Flow Rate.** 1.86 gallons/minute LV
- d. **Application Rate.** 0.75 oz/acre Altosid<sup>®</sup>)
- e. **Ground Speed:** 200 Knots
- f. **Proposed spray area:** Approximately 1,800 acres

**5. Mission Commander:** LTC (b) (6)

**6. Aircraft Commander:** Maj (b) (6)

**7.** Support at Grand Forks AFB ND has been coordinated with the organization's Environmental/Spray Coordinator.

**7.** HQ AFRC/DOOM approval via email.

// Signed //

(b) (6), CAPT, USAFR  
Assistant Chief Aerial Spray



**910 AW AERIAL SPRAY**  
**GRAND FORKS AFB, ND 14-18 May 2007**  
**PMP'S POST-MISSION REPORT**

**1. MISSION BASICS:**

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 14-18 May 2007
- c. Purpose of Application: Control nuisance and vector mosquitoes (larval stages)
- d. Application Date/s: 15, 16, and 17 May, 2006
- e. Time/s of Application (Local): 0755-0825; 1000-1045 (15 May); 0550-0640; 1500-1615 (16 May); 0550-0700; 0810-0920; 0950-1020 (flush) (17 May)
- f. Acres Treated: 1,800
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6) , Environmental Officer, DSN 362-4655; SSGT Pollock, DSN (b) (6)
- h. Date Spray Map Last Approved: 14 May 2007
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): 14 May, 2006; 319<sup>th</sup> CES Conference Room; Lt Col (b) (6) Ms. (b) (6) Lt Col (b) (6) , Maj(b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Certified PMP/Entomologist (Category 11): Maj (b) (6) (safety briefer)
- c. Aircrew:
  - Pilots: Maj (b) (6) , Maj (b) (6)
  - Navigators: Maj (b) (6)
  - Flight Engineers: Msg (b) (6) , TSgt (b) (6)
  - Spray Operators: Msg (b) (6) , Msg (b) (6)
- d. Maintenance:
  - Spray Maintenance: Tsg (b) (6) , Tsg (b) (6) , Tsg (b) (6)
  - Crew Chief(s): Msg (b) (6) , SrA (b) (6)
  - Avionics: (b) (6)
- e. Flying Data:
  - (1) Spray Sorties/Hours: 6/6.1
  - (2) Ferry Sorties/Hours: 2/6.3

**3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Altosid Liquid Larvicide Concentrate (20% methoprene)
- b. EPA Registration Number: Altosid Liquid Larvicide Concentrate 272446
- c. Gallons Pesticide Loaded: 2.6 Gal Altosid<sup>®</sup> (15 May); 2.6 Gal Altosid<sup>®</sup> (16 May); 5.2 Gal Altosid<sup>®</sup> (17 May)
- d. Pesticide Applied: 2.6 Gal Altosid<sup>®</sup> (15 May); 2.6 Gal Altosid<sup>®</sup> (16 May); 5.2 Gal Altosid<sup>®</sup> (17 May); total of 10.5 gallons Altosid<sup>®</sup>
- e. Diluent: 3,600 gallons water and 600 gallons of water flush
- f. Other Additives Used: AirexDC<sup>®</sup> drift reduction agent (1.28 oz/acre; 20 gal total)
- g. Application Rate: 0.75 oz/acre Altosid<sup>®</sup>

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 9107 (14-16 May); 9105 (16-18 May)
- b. Spray System (Modules Used) and System ID #: 2 (15 May); 6 (16-17 May)
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: Raindrop nozzles
- e. Nozzle Orientation & Number Used: 12 straight back
- f. Pressure (PSI): 35-65 (15 May); 35-65 (16 May) & 41-65 (17 May)
- g. Flow Rate: 187-189 gpm (15-17 May)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 200' LV
- b. Spray Off Set: 200' (15 May); none (16-17 May)
- c. Spray Release Altitude: 100'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 330°/20kts (15 May); 330° (16 May); 190°/15kts (17 May)  
(1) Ground: 4 knots (15 May); 10 knots (16 May); 12 knots (17 May)
- b. Temperature (Degrees Fahrenheit): 40-59° (15-17 May)
- c. Relative Humidity: 94-37% (15-17 May) during applications
- d. Cloud Cover: Partly Cloudy (15 May); clear (16-17 May)
- e. Source: Ground observations/aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Prior to the 15-17 May application, monitoring was conducted by Grand Forks AFB (GFAFB) Public Health personnel along the ditches to the west of the horse barns, the ditches to the north of the smokehouse, and the area west of the alert pad by the perimeter road. Larval density averaged between 6-35 larvae per dip depending on location. It appeared that some pupation had already occurred prior to the larvicide application and, subsequently, the base will likely be experiencing significant adult mosquito activity soon, as the insecticide is not effective against pupae.
- b. Effectiveness:
  - (1) Technique/s Used: Larval dip samples
  - (2) Results: Altosid is an insect growth regulator which acts by inducing morphological changes which interfere with normal development. These effects, not immediately apparent, result in the failure of adult mosquitoes to emerge from pupae. Thus, post application sampling is critical to determining efficacy. Grand Forks AFB Public Health personnel will continue to sample mosquito populations and report their findings.

**8. REMARKS:** This is the sixth spray season at Grand Forks AFB. The spray block remains similar in size and shape to previous missions with the area west of the runway and ditches to the east and south of the runway as primary wet area. A computer failure on the MASS #2 occurred during the application on 15 May which made it impossible to determine the flow rate and spray had to be stopped. The 910th was able to replace the #2 MASS with #6 by swapping out with an aircraft from Youngstown on the morning of 16 May. Excellent weather conditions then allowed for quick coverage over the remaining spray block. We had excellent support from the GFAFB Fire Department who delivered water upon request. The next spray mission to Grand Forks AFB is scheduled for 25-29 June for adult mosquito or larval control.

//Signed//

(b) (6) , MAJ, USAFR  
Certified Pest Management Professional

# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 14-18 May 2007

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes and thereby improving working conditions and lower mosquito-borne illness for members operating at Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) Pilots: MAJ (b) (6), LTC (b) (6), Maj (b) (6)
- 2) Navigators: MAJ (b) (6)
- 3) Flight Engineers: MSG (b) (6), TSgt (b) (6)
- 4) Spray Operators: Msg (b) (6), MSG (b) (6)

##### b. Maintenance:

- 1) Spray Maintenance: TSG (b) (6), TSG (b) (6), TSG (b) (6)
- 2) Crew Chief(s): TSG (b) (6), SRA (b) (6)
- 3) Avionics: (b) (6)

##### c. Entomologist: Maj (b) (6)

#### 2. SCHEDULE: (All Local Times) PPR: 05-14-01MS

##### 14 May (Monday)

0900: Showtime  
1100: Depart KYNG  
1300: Land KGFK/Safety Briefing  
1400: Spray In Brief (CPMP, MC, AC).

##### 15 May (Tuesday):

0430: Show time  
0530 Load Chemical  
0600: Take off KGFK (Larvicide Spray Sortie)  
0550: Sunrise

##### 16 May (Wednesday):

0430: Show time  
0530 Load Chemical  
0600: Take off KGFK (Larvicide Spray Sortie)  
0549: Sunrise

##### 17 May (Thursday):

0430: Show time  
0530 Load Chemical  
0600: Take off KGFK (Larvicide Spray Sortie)  
0548: Sunrise

##### 18 May (Friday):

0800: Show time  
1000: Take off KGFK  
1400: Land KYNG

#### 3. ITEMS TO TAKE

a. **Mission Commander:** Cellular Phone, Mission Folder

b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder,  
1 UHF Radio, Water Sensitive Cards, Card Holders with  
Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors,  
Project Notebook, Entomologist's Tool Kit

c. **Navigator:** Maps/Map Bag, Validation Map

d. **Spray Operator:** Safety Gear, Calibration Tables

e. **Spray Maintenance:** Deployment Kit, Support Equipment

**4. PPR: 05-14-01MS**

**5. RADIO FREQUENCIES: Air To Ground Primary** VHF 123.45; secondary UHF 392.2;  
KRDR Tower 124.9 V; Grand Forks International 118.4 V

**6. CONFIGURATION: SP2G**

**a. System:** 2-Module System/ Fuselage Booms

**b. Nozzle Tips/Orientation:**

Larvicide: Raindrop nozzles straight back

**c. Number:**

Larvicide: fuselage only, 12 total (6 each side) straight back

**d. Booms:** Fuselage

**e. Aircraft:** 899108

**f. Mission Identifier:** QZNRKA196134

**7. SPRAY PARAMETERS:**

**a. Larvicide**

(1) **Area to be treated:** approx. 1,608 acres

(2) **Altitude:** 100' for Larvicide application

(3) **Swath Width.** 200 feet

(4) **Flow Rate.** 186 gallons/minute

**b. Application Rate.** 2 gallons/acre (water with 0.75 oz of Altosid®)

**c. Ground Speed:** 200 Knots

**8. SPRAY MIXING AND LOADING: (For Larvicide Spray Sorties)**

**a. Composition of each Gallon:**

(1) 0.375 ounces of Altosid® 20

(2) 0.64 ounces of AirexDC™ drift retardant

(3) Water

**b. Typical load:** (2 tanks of 450 gallons each)

(1) Fill with 450 gallons of water/tank. Total water in tanks = 900 gal.

(2) Total water added = 900 gallons

(3) Add 1.33 (1 1/3) gallons of Altosid® per tank (2 2/3 gallons total).

(4) 2.5 gal AirexDC per tank (5 Gal total) while agitating approximately 15 min

(5) Total quantity mix. 908 gallons

**c. Final Load for complete flush**

(1) Fill tanks with the amount of water necessary for a proper system flush

**d. Mixing Instructions:**

SHAKE WELL BEFORE USING. Altosid® may separate on standing and must be thoroughly agitated prior to dilution.

PRECAUTIONARY STATEMENT: Spray solution should be used within 48 hours; always agitate before spraying.

**9. TRANSPORTATION** 2 cars and 2 vans provided by 319 CES, Transportation (bus) will be provided to the In-Brief , vehicles will be picked up there.

**2-Aircrew**

**1-Spray MX**

**1-Crew Chiefs & Specialists**

**10. LODGING: On Base Billeting:** DSN 362-3070/6189 or (701) 594-8431, FAX 362-3069

-- Prime Knight DSN 362-3844 or (701) 747-3844

Rooms Reserved by the Pest Management at RDR

## 11. CONTACTS:

### a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205

- (1) **Base Operations:** Airfield Manager DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx20
- (2) **Environmental Officer:** (b) (6) DSN (b) (6) , FAX 6155
- (3) **Base Civil Engineer:** Lt Col (b) (6)
- (4) **Pest Management:** TSgt (b) (6) or Ssgt (b) (6) DSN (b) (6) , FAX 3432
- (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
- (6) **Weather:** DSN 362-4396
- (6) **Billeting:** DSN 362-3070/6189/7200 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844

### b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 Base Ops: Airfield Manager, Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Ext 1503 or 1531, FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL:Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - (b) (6) cell phone (b) (6)



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 910<sup>TH</sup> AIRLIFT WING



7 Mar 2005

**MEMORANDUM FOR HQ AFRC/DOOM (FAX: 497-0198)**

**FROM:** 757 AS/DOS (346-1652/1965; FAX 346-1616)

**SUBJECT:** Capability and Concept of Operations for Aerial Spray Characterization Testing at Langley AFB

1. **Purpose/Objectives/Benefits:** Characterize the droplet spectrum for two TeeJet flat fan nozzles using the Characterize Ultra Low Volume (ULV) fuselage configuration and Dibrom insecticide.
2. **Capability:** Spray Aircraft 89-9106 Available 14-19 Mar 05.

3. **Concept of Operations:**

**14 Mar (Monday):**

**PPR: 314BB01**

0900: Show at KYNG  
1100: Depart KYNG  
1215: Land KLF1  
1230: Mission Safety Briefing

**15 Mar (Tuesday):**

0800: Show time Hotel Lobby  
0900: Load Dibrom / Weather Decision  
1000: Take off, testing at Craney Island  
1130: Land

**16 Mar (Wednesday):**

0800: Show time Hotel Lobby  
0900: Load Dibrom / Weather Decision  
1000: Take off, testing at Craney Island  
1130: Land

**17 Mar (Thursday):**

0800: Show time Hotel Lobby  
0900: Load Dibrom / Weather Decision  
1000: Take off, testing at Craney Island  
1130: Land

**18 Mar (Friday):**

0800: Show time Hotel Lobby  
0900: Load Dibrom / Weather Decision  
1000: Take off, testing at Craney Island  
1130: Land

**19 Mar (Saturday)**

0800: Show time Hotel Lobby

1000: Take off for KYNG  
1115: Land KYNG

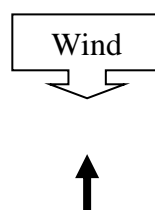
**4. Spray Parameters:**

- a. **System:** SP2G - MASS ULV; Fuselage booms
- b. **Aircraft:** 89-9106
- c. **Mission Identifier:** QZNRKA773073

**5. Testing Protocols:** Craney Island (Langley AFB) Testing Itinerary

- a. Purpose: Characterization of droplet spectrum produced using the fuselage ULV configuration with two nozzle types and Dibrom (concentrate). We propose to characterize the following TeeJet flat fan nozzles: 8008 and 8003.
- b. Spray Parameters (Please note that only the number and type of nozzle will change during this mission):
  - 1. Booms -- Fuselage only
  - 2. Nozzles -- 8008 = 7 nozzles/4 left side; 3 right side; 8003 = 17 nozzles/9 left side & 8 right side. Projected schedule will be alternating from 8008 to 8005 nozzles.
  - 3. Airspeed -- 200 knots ground speed
  - 4. Altitude -- 150' above ground level
  - 5. Wind -- Into the wind test
  - 6. Flow Rate -- 3.6 gallons/minute
- c. Mission Protocols:
  - 1. Purpose: Determine droplet spectrum as delivered for a simulated mosquito adulticide spray using the fuselage ULV configuration. Teflon-coated microscope slides will be used to collect droplets. Eleven sampling stations will be setup along one of the west/north/east perimeter roads on Craney Island. The final setup will be determined by the prevailing wind direction. This is an “into the wind. We need the average winds to be below 10 mph.
  - 2. Aircrew: We need the system to have stabilized prior to reaching the sampling points. This is an into the wind test (see figure 1 below). Please turn the spray system on 20 seconds prior to the sampling point and until 10 seconds after.  
**Spray Operators:** Please record the spray-on time and pressure at 5 second intervals. **Navigator:** Please record winds at altitude every ten seconds. If conditions are stable (little variation in wind direction and speed) two spray-on passes will be used for each test (e.g. that is two passes per nozzle configuration).
  - 3. Microscope slides will be retrieved 20 minutes after the plane has passed. Number and size of the droplets will be determined. Please depart the area so as to avoid contamination of the slides.

Figure 1. Into the Wind test.





6. Aircraft/Mission Commander: Maj (b) (6)
7. If you have any questions concerning this mission please contact the Aerial Spray Office,  
DSN (b) (6) .

// SIGNED //  
(b) (6) , Maj, USAFR  
AERIAL SPRAY CHIEF

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 14-19 Mar 2005

**Purpose/Objectives/Benefits:** Characterize the droplet spectrum for two TeeJet flat fan nozzles using the Characterize Ultra Low Volume (ULV) fuselage configuration and Dibrom insecticide.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: MAJ (b) (6), MAJ (b) (6), MAJ(b) (6),
- (2) Navigator: MAJ (b) (6)
- (3) Flight Engineers: MSG (b) (6)
- (4) Spray Operators: MSG (b) (6), TSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: SMS (b) (6), TSG (b) (6)(b) (6), TSG (b) (6), TSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6), TSG (b) (6),
- (3) Avionics: TSG (b) (6)

##### c. Certified Pest Management Professionals: LTC (b) (6), CPT (b) (6), LTC Steve Olson (15-16 Mar), MAJ (b) (6) (16,17 Mar)

##### d. Vehicles: Rentals will be at base ops. Enterprise (757) 865-7201

- (b) (6) will provide 2 vans/staff, another van at motor pool - (b) (6)
- **Ops:** one GOV van, 2 Rentals-(b) (6)
- **Mx:** two GOV vans, one Spray Mx, one Crew Chiefs
- **Entomologist:** one staff car- (b) (6)

##### e. Billeting Office: COM: (757) 764-4667 EXT 2606 – SSgt Dana Seefeldt

DSN 574-4667, EXT 2528; FAX 574-3038

- **Staying at Hampton Inn COM 757-838-8484**
- Holiday Inn Hampton-Pick up Non Available Slips at Langley Billeting
  - POC (b) (6), COM (b) (6) /3353 fax
- Individual Confirmation numbers, non at this time

#### 2. SCHEDULE: (All times local)

##### 14 Mar (Monday):

**PPR: 314BB01**

0900: Show at KYNG  
1100: Depart KYNG  
1215: Land KLF  
1230: Mission Safety Briefing

##### 15 Mar (Tuesday):

0800: Show time Hotel Lobby  
0900: Load Dibrom / Weather Decision  
1000: Take off, testing at Craney Island  
1130: Land

##### 16 Mar (Wednesday):

0800: Show time Hotel Lobby  
0900: Load Dibrom / Weather Decision  
1000: Take off, testing at Craney Island  
1130: Land

**17 Mar (Thursday):**

0800: Show time Hotel Lobby  
0900: Load Dibrom / Weather Decision  
1000: Take off, testing at Craney Island  
1130: Land

**18 Mar (Friday):**

0800: Show time Hotel Lobby  
0900: Load Dibrom / Weather Decision  
1000: Take off, testing at Craney Island  
1130: Land

**19 Mar (Saturday)**

0800: Show time Hotel Lobby  
1000: Take off for KYNG  
1115: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Kestrel Weather Monitor, Compass,  
Pest Safety Binder, UHF Radio,  
Satloc Ground Tracker and Laptop Computer
- b. **Navigator:** Maps/Map Bag, Validation Map, Laptop Computer
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Langley Tower:** DSN 574-5326
- b. **Langley Base Ops:** DSN 574-2504

**5. PARKING PLAN:** Taxi Way Foxtrot or as directed.

**6. RADIO FREQUENCIES:**

- a. **Felker AAF Tower (Ft Eustis): 126.3, 248.2, 241.0**
  - (1) Ops phone 878-3588
  - (2) Tower phone 878-3530
  - (3) Flight Service 122.2
- b. **Newport News-Williamsburg Int: CTAF – 118.7** (Operating Hours 1000Z-0200Z)
  - (1) Ground – **121.9** or 348.6 (phone 877-0221 ops)
  - (2) Tower – **124.9** or 280.1 (phone 877-2962)
  - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
- c. **Langley AFB: Tower 4-2591**
  - (1) Tower - **125.0** or 253.5 (phone 4-5326)
  - (2) Ground - **121.7** or 275.8
  - (3) Clearance – **118.85** or 271.3
  - (4) Metro - **239.8**
- d. **Norfolk NAS (Chambers Fld): Tower – 125.7 or 124.3**

e. **Spray Ground: Primary 392.2; Secondary: 308.6**

7. **IN-BRIEFING:** No official in-brief. We will brief the fire department directly.

8. **SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS ULV; Fuselage booms
- b. **Nozzle Tips/Orientation:** see protocols
- c. **Aircraft:** 89-9106
- d. **Mission Identifier:** QZNRKA773073

9. **SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom<sup>®</sup> Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.6 Gallons/Minute
- f. **Acreage:** n/a; Dibrom<sup>®</sup> Test at Craney Island
- g. **Swath Width:** 2000 foot

10. **PESTICIDE LOADING:**

- a. **How Much Pesticide:** see entomologist
- b. **Where:** Taxi Way F Aero Club Ramp
- c. **When:** 0830 hrs each day.
- d. **Furnished by Installation:**
  - (1) Pesticide
  - (2) Loading Equipment/Crew
  - (3) Hazardous Waste Disposal
  - (4) Two B-5 or B-1 Stands

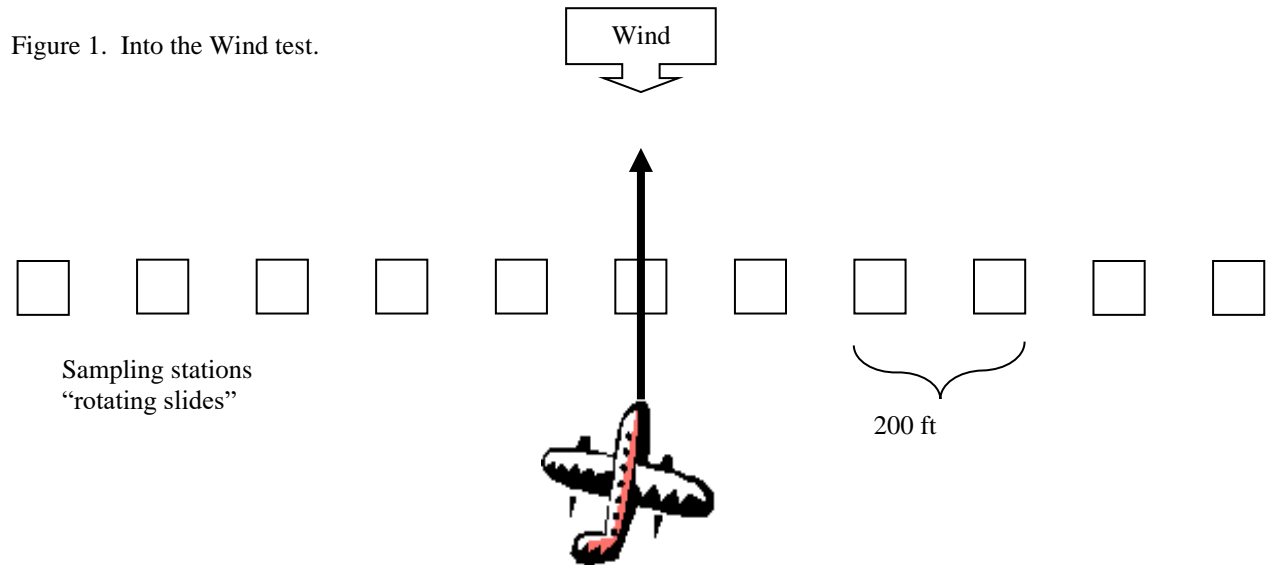
11. **SPRAY TEST PROTOCOLS**

Craney Island (Langley AFB) Testing Itinerary  
15-18 March 05

- a. Purpose: Characterization of droplet spectrum produced using the fuselage ULV configuration with two nozzle types and Dibrom (concentrate). We propose to characterize the following TeeJet flat fan nozzles: 8008 and 8003.
- b. Spray Parameters (Please note that only the number and type of nozzle will change during this mission):
  - 1. Booms -- Fuselage only
  - 2. Nozzles -- 8008 = 7 nozzles/4 left side; 3 right side; 8003 = 17 nozzles/9 left side & 8 right side. Projected schedule will be alternating from 8008 to 8003 nozzles.
  - 3. Airspeed -- 200 knots ground speed
  - 4. Altitude -- 150' above ground level
  - 5. Wind -- Into the wind test
  - 6. Flow Rate -- 3.6 gallons/minute
- c. Mission Protocols:
  - 1. Purpose: Determine droplet spectrum as delivered for a simulated mosquito adulticide spray using the fuselage ULV configuration. Teflon-coated microscope slides will be

used to collect droplets. Eleven sampling stations will be setup along one of the west/north/east perimeter roads on Craney Island. The final setup will be determined by the prevailing wind direction. This is an “into the wind. We need the average winds to be below 10 mph.

2. **Aircrew:** We need the system to have stabilized prior to reaching the sampling points. This is an into the wind test (see figure 1 below). Please turn the spray system on 20 seconds prior to the sampling point and until 10 seconds after. **Spray Operators:** Please record the spray-on time and pressure at 5 second intervals. **Navigator:** Please record winds at altitude every ten seconds. If conditions are stable (little variation in wind direction and speed) two spray-on passes will be used for each test (e.g. that is two passes per nozzle configuration).



3. Microscope slides will be retrieved 20 minutes after the plane has passed. Number and size of the droplets will be determined. Please depart the area so as to avoid contamination of the slides.

## 12. **CONTACTS:** LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX

### a. **LANGLEY AFB VA:**

Wing Commander: DSN 574-5321  
Mission Support Group Commander: DSN 574-7995  
Civil Engineer: DSN 574-2025  
Deputy Chief/Civil Engineer: (b) (6)  
Environmental Coordinator: DSN 574-3987; FAX 3503  
Base Operations: DSN 574-2504  
Langley Control Tower: DSN 574-5326  
Weather: Langley AFB, DSN 574-5907  
Ft Eustis: DSN 297-5300/3343  
Command Post: DSN 574-5411  
Pest Control Foreman: (b) (6) DSN (b) (6)  
Pest Control/Environmental NCOIC: SSgt (b) (6)  
Public Affairs: DSN 574-2018/2010/2019  
Fuels: DSN 574-4312/3623/4224

Motor Pool: 574-7514/5712 (2 vans and 1 staff vehicle were requested)

ACC PMP: (b) (6) , DSN (b) (6) , cell phone (b) (6)

- b. **FT EUSTIS VA:** Environmental Coordinator: (b) (6) , DSN (b) (6) )
- c. **Hampton Mosquito Control:** 757 850-3305
- d. **York County Control:** (757)-890-3780
- e. **Poquoson:**(b) (6)
- f. **City of Portsmouth Biologist:** (757) 393-8666
- g. **Newport News Mosq. Control:** (757) 269-2750
- h. **Newport News/Williamsburg Int.:**
  - (1) Fixed Base Operator: Flight Int 877-6401
  - (2) Flight Service: 877-0209
  - (3) Tower: 877-2962
  - (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport
- i. **Norfolk NAS VA:** DSN 564-2442/7598 or COM (757)-444-2442/7598
- j. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046, + Ext
  - (1) 910 AW/CC: Col (b) (6)
  - (2) 910 AW Command Post: Ext 1315; FAX 1161
  - (3) 910 AW/PA: Capt (b) (6) ; FAX 1022
  - (4) 910 OG/CC: Col (b) (6)
  - (5) 910 OS/OSA: Airfield Manager, (b) (6)
  - (6) 757 AS/DO: Maj (b) (6)
  - (7) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
  - (8) 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
  - (9) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) ; FAX 1616
  - (10) 910 LG/CC: Ext 1225
  - (11) 910 LG/LGM: CMS (b) (6)
  - (12) Maintenance Control: Ext 1327
  - (13) 910 LG/LGMS: Spray Maintenance, Ext 1132
  - (14) 910 LG/LGL: CMS (b) (6)
  - (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342
  - (16) Cellular Spray Phones:
    - Mission Commander: (b) (6)
    - Entomologist: (b) (6) (b) (6) cell (b) (6)
    - Spray Maintenance: (b) (6)



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON – AERIAL SPRAY FLIGHT  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



24 March 2005

MEMORANDUM FOR 757 AS/DO

FROM: 757 AS/DOS

SUBJECT: Fuselage Characterization Test with Dibrom and Training Mission Langley AFB, VA

**1. Purpose:** The purpose of this mission was to determine the droplet spectrum produced by the relatively new ULV fuselage configuration using 8008 and 8003 size flatfan nozzles. This information allows us to confirm that we are applying product, in this case the organophosphate Dibrom, in accordance with the pesticide label.

**2. Participants:** A list of test participants is included in attachment I.

**3. Spray Configuration:**

Mass-SP2G

Aircraft Number: 99106

Mission Identifier: QZNRKA773073

**4. Spray Parameters:**

Booms—Fuselage only.

Nozzles—8008, 8003 TeeJet.

Number of Nozzles— 7 (8008); 17 (8003), oriented down   Airspeed—200 knots ground speed.

Altitude—150' AGL.

Wind— Directly into the wind.

**5. Itinerary:**

14 March: Personnel Arrive at Langley AFB. Total ferry time was 1.4 hours. Safety brief given to mission participants and Fire Department on hazards associated with Dibrom.

15 February: Test cancelled. Wind speeds above acceptable levels. Briefed Lt Col (b) (6) (b) (6) from AF/REOR on the 910<sup>th</sup> AW capability in regard to aerial spray. Lt Col (b) (6) asked us to continue to work on a comprehensive brief and be prepared to visit the Pentagon, AFRC HQ, and Unified Commands to explain our capability.

16-17 March: No sorties flown. Snow and wind prevented test.

18 March: One testing sortie was flown with 2 individual testing passes completed. Ten spinning impingers (“spinners”) were placed in a 150/330 degrees orientation on the northern



end of the Craney Island Project, Army Corps of Engineers. Spinners were located approximately 200' apart and were equipped with Teflon-coated microscope slides to document droplet size. The aircraft flew 060 degree heading over the center station to confirm location and then made two "wet" passes over the center station. The aircraft departed the test area to conduct training and the spinners were allowed to run for 15 minutes and then microscope slides were collected. The test was then repeated. Ground wind conditions were 4.6 knots at 060 degrees, temperature was 55 °F. Flow rate for the test averaged 3.6 gpm. Boom pressure was reported between 16-23 psi. Total flight time was 1.7 hours.

19 March: Mission complete. Personnel return to Youngstown ARS. Total ferry time 1.4 hours.

**6. Results:** Droplets were not recovered in appreciable numbers on the right side of the sampling transect from either test. Relatively large drops were recovered at the center station (i.e., >40 microns) and subsequent slides to the left of the aircrafts path. Furthermore, the droplet size recovered at the left end of the transect (i.e., 800 feet left of center line) were not of the size expected (not less than <15 microns).

**7. Conclusions:** It is apparent that too much of a crosswind was present to consider our results from the 18<sup>th</sup> of March to be a true "into the wind" test. The droplets collected at the center station will be used as a replication during future studies. Training was accomplished for all crew positions. Squadron entomologists received training and practice setting up and measuring droplet characterization tests. Aerial Spray maintenance trained 1 new member on uploading and downloading of Dibrom, one of most difficult compounds to work with, mostly because of extensive personal protective equipment which must be worn.

**8. Recommendations:** Repeat test at future time to coincide with scheduled mosquito control applications on the Langley Peninsula. Refine aerial spray mission briefs to show our applicability to current and projected military operations. The next scheduled spray mission will be an actual application at the Parris Island MCRD, SC.

**9. Acknowledgements:** Langley AFB supported the mission with vehicles and ramp space/equipment. Setup for the experiment on Craney Island was supported by Portsmouth Mosquito Control biologists. The MASS worked flawlessly thanks to impeccable performances by the spray operators and spray maintenance.

//signed//

(b) (6)

Research Entomologist

, CAPT, USAFR

Attachment:

1. List of Participants

Attachment 1.

**1. 910 AW PARTICIPANTS:**

**a. Aircrew:**

(1) Pilots: MAJ (b) (6), MAJ (b) (6) MAJ(b) (6)

(2) Navigator: MAJ(b) (6)

(3) Flight Engineers: MSG (b) (6)

(4) Spray Operators: MSG (b) (6), TSG(b) (6)

**b. Maintenance:**

(1) Spray Maintenance: SMS (b) (6)(b) (6), TSG (b) (6), TSG (b) (6)  
, TSG (b) (6)

(2) Crew Chiefs: MSG (b) (6), TSG (b) (6),

(3) Avionics: TSG (b) (6)

**c. Certified Pest Management Professionals:** LTC (b) (6), CPT (b) (6)  
LTC (b) (6) (15-16 Mar), MAJ (b) (6) (16,17 Mar)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 14-20 JUNE 2002

**Purpose/Objectives/Benefits:** control nuisance and vector mosquitoes in order to improve working conditions and lower the incidence of arthropod borne illness for members operating at Langley AFB and surrounding communities.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: MAJ (b) (6)
- (2) Pilots: MAJ (b) (6), MAJ (b) (6)
- (3) Navigators: LTC (b) (6) avis
- (4) Flight Engineers: MSG (b) (6), TSG (b) (6)
- (5) Spray Operators: MSG (b) (6) (14-20), TSG (b) (6)
- (6) Spray Maintenance: MSG (b) (6), TSG (b) (6), SSG (b) (6)
- (7) Crew Chiefs: SSG (b) (6) SSG (b) (6)
- (8) Avonics: TSG (b) (6), SRA (b) (6)

##### c. Certified Pest Management Professionals: LTC (b) (6), Maj (b) (6), LTC (b) (6) Capt (b) (6) (b) (6)

#### 2. SCHEDULE: (All time Local)

##### 14 JUN (Friday):

##### PPR #

0800: Show at KYNG  
1100: Depart KYNG  
1230: Land KLF  
1230: Safety Briefing  
1300: Installation in-brief at CE Conference room

##### 15 JUN (Saturday):

1100: Daily meeting for PMP/MC in hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
2027: Sunset

##### 16 JUN (Sunday):

1100: Daily meeting for PMP/MC in hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
2027: Sunset

##### 17 JUN (Monday):

1100: Daily meeting for PMP/MC in hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
2027: Sunset

**18 JUN (Tuesday):**

1100: Daily meeting for PMP/MC in hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
2028: Sunset

**19JUN (Wednesday):**

1100: Daily meeting for PMP/MC in hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
2028: Sunset

**20 JUN (Thursday):**

0900: Report  
1100: Depart KLFI  
1230: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Cellular Phones, Wind Gauge, Compass, Pest Safety Binder, Signal Mirrors, UHF Radio, Satloc Ground Tracker
- b. **Navigator:** Maps/Map Bag, Validation Map, Laptop Computer
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Langley Tower:** DSN 574-5326 (Contacted 18 May 99, 0700L, DSN 574-2508)
- b. **Langley Base Ops:** DSN 574-2504 (Contacted 10 May 99, 1000L)

**5. PARKING PLAN:** Langley Aero Club ramp or as directed.

**6. RADIO FREQUENCIES:**

- a. **Felker AAF Tower (Ft Eustis): 126.3, 248.2, 241.0**
  - (1) Ops phone 878-3588
  - (2) Tower phone 878-3530
  - (3) Flight Service 122.2
- b. **Newport News-Williamsburg Int: (Operating Hours 1000Z-0200Z)**
  - (1) Ground - **121.9 or 348.6** (phone 877-0221 ops)
  - (2) Tower – **124.9 or 280.1** (phone 877-2962)
  - (1) FSS – 122.1R, 122.2, 122.65, OR 124.9
  - (2) CTAF – **118.7**
- c. **Langley AFB: Tower OIC MSG (b) (6) Lt (b) (6) 1st OSS SQ (23665)**
  - (1) Tower - **125.0 or 253.5** (phone 4-5326)
  - (2) Ground - **121.7 or 275.8**
  - (3) Clearance – **118.85 or 271.3**
  - (4) Metro - **239.8**
- d. **Norfolk NAS (Chambers Fld): Tower - 124.3, 126.375, 340.2, 318.7**
- e. **Spray Ground: Primary 392.2 / 308.6 Secondary**

7. **IN-BRIEFING:** Required; IAW the Schedule above.

8. **SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS ULV; Modules 1 and 2
- b. **Nozzle Tips/Orientation:** 7 8008's for 2500' swathes and 5 8008's for 1000' swathes (unless temperatures are above 85 degrees then use 8010's – 6 for 2500' swathes and 2 or 3 for 1000' swathes), Oriented down.
- c. **Aircraft:** 99106

9. **SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL depending upon weather conditions
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom<sup>®</sup> Concentrate
- d. **Application Rate:** 0.5 Ounce/Acre
- e. **Flow Rate:** 1.8 Gallons/Minute at Craney Island; 4.5 Gallons/Minute at Langley areas
- f. **Acreage:** Approximately 82,000 Acres
- g. **Swath Width:** 1,000 Feet at Craney Island; 2,500 Feet at Langley areas.

10. **PESTICIDE LOADING:**

- a. **How Much Pesticide:** 320 Gallons for 82,000 acres sprayed.
- b. **Where:** Aero Club Ramp
- c. **When:** 1430 Hours each day.
- d. **Furnished by Installation:**
  - (1) Pesticide
  - (2) Loading Equipment/Crew
  - (3) Hazardous Waste Disposal
  - (4) Two B-5 or B-1 Stands

11. **SPRAY MONITORING OR TESTING:**

The local mosquito control districts will put out cages of live mosquitoes and oil-sensitive cards to monitor the control. Also, light trap data and biting count data will be collected pre- and post-spray by the base and the mosquito control districts to determine spray effectiveness.

12. **CONTACTS:** LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX

a. **LANGLEY AFB VA:**

Wing Commander: Col (b) (6) DSN (b) (6)  
Base Commander: Col (b) (6) , DSN (b) (6)  
Spray Coordinator: (b) (6) , DSN (b) (6) ; Fax 3503  
Civil Engineer: Lt Col (b) (6)  
Deputy Operations Chief: Lt Col (b) (6)  
Deputy Chief/Civil Engineer: (b) (6)  
Base Operations: DSN 574-2504  
Langley Control Tower: Lt (b) (6) DSN (b) (6)  
Weather: Langley AFB, DSN 574-5907  
Ft Eustis: DSN 297-5300/3343  
Command Post: DSN 574-5411  
Pest Control Foreman: (b) (6) , DSN (b) (6) or Home (b) (6)  
Pest Control/Environmental NCOIC: MSG (b) (6)  
Public Affairs: DSN 574-2018/2010/2019

Fuels: DSN 574-4312/3623/4224

Motor Pool: 574-7505/5712 (3 vans and 1 staff vehicle supplied by (b) (6) )

ACC PMP: (b) (6) , DSN (b) (6) cell phone (b) (6)

**b. Billeting Office: COM: (757) 764-4667 EXT 2519**

**DSN 574-4667, EXT 2519; FAX 574-3038**

**- Contract Quarters:**

- **Radisson Hotel, 700 Settler's Landing Hampton VA, \$99 per night, (757) 727-9700**

**Group # 298207**

**c. FT EUSTIS VA:**

Environmental Coordinator: (b) (6) and (b) (6) , DSN (b) (6) )

Entomology Shop: DSN 927-3405/2585; Com. (757)-878-XXXX

**d. Craney Island: (b) (6)**

**e. Hampton Mosquito Control: (b) (6) , (b) (6) home  
Beeper (b) (6)**

**f. York County Control: (b) (6) or (b) (6) (b) (6)**

**g. Poquoson: (b) (6)**

**h. City of Portsmouth Biologist: (b) (6)**

**i. Newport News Mosq. Control: (b) (6)**

**j. Newport News/Williamsburg Int.:**

(1) Fixed Base Operator: Flight Int 877-6401

(2) Flight Service: 877-0209

(3) Tower: 877-2962

(4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

**k. Norfolk NAS VA: DSN 564-2442/7598 or COM (757)-444-2442/7598**

**l. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, + Ext

(1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243

(2) 910 AW Command Post: Ext 1315; FAX 1161

(3) 910 AW/PA: Lt Davis, Ext 1236; FAX 1022

(4) 910 OG/CC: LtC (b) (6)

(5) 910 OS/OSA: Airfield Manager, (b) (6)

(6) 757 AS/DO: LtC (b) (6)

(7) 910 OSF Supervisor of Flight Desk (SOF): 1069; FAX 1371

(8) 757 AS/DOO: Ops Admin: SMS (b) (6) FAX 1657

(9) 757 AS/DOS: Aerial Spray Office, (b) (6) ; FAX 1616

(10) 910 LG/CC: Ext 1225

(11) 910 LG/LGM: CMS (b) (6)

(12) Maintenance Control: Ext 1327

(13) 910 LG/LGMS: Spray Maintenance: Ext 1132/1586

(14) 910 LG/LGL: CMS (b) (6)

(15) Omega/SATO Travel: Ext 1772; 1-800-285-6342

(16) Cellular Spray Phones:

- Mission Commander: (b) (6)
- Entomologist: (b) (6)
- Spray Maintenance: (b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## MOUNTAIN HOME AFB RANGE, ID

### 14-22 SEPTEMBER 2006 CH 2

**PURPOSE/BENEFITS/OBJECTIVES.** To prevent fire hazards, inhibit annual re-growth of cheatgrass on Saylor Creek Range and allow native vegetation to establish and be competitive.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: LTC (b) (6)
- (2) Pilots: CPT (b) (6), CPT (b) (6)
- (3) Navigator: LtC (b) (6), LTC (b) (6)

\*\*MAJ John Kochansky arrive 19 SEP

LTC Dave Wiles Depart 20 SEP

- (4) Flight Engineer: MSG (b) (6)

- (5) Spray Operators: MSG (b) (6), MSG (b) (6), MSG (b) (6)

##### b. Maintenance:

- (1) Spray MX: MSGT (b) (6), TSG (b) (6), TSG (b) (6), TSGT (b) (6)

- (2) Crew Chiefs: TSGT (b) (6), TSGT (b) (6)

- (3) Avionics: TSG (b) (6)

##### c. Entomologists: Maj (b) (6), Capt (b) (6), Maj (b) (6)

#### 2. SCHEDULE: (Local times; total of 9 lifts required, 1-2 lifts per day)

##### 14 SEP (Thursday):

0800: Show at KYNG

PPR # 241-1112

1000: Depart KYNG

1400: Land KMUO (Local)

1430 Safety Briefing, MX configures aircraft; plan next day's mission

**\*\* ASAP After landing In-briefing** All personnel who plan to drive need the Flt Line driving brief just prior to the installation brief at 1530. Spray Mission Inbrief for 1600 in the CE Conference Room, Bldg 1300, 14 Sep 2006.

\* Crew members, Crew chiefs will be on Spray Aircraft

##### RAS Spray Support plane:

- 1. Departure time as close to primary spray AC as possible.
- 2. Crew will make own billeting, transportation arrangements and PPR
- 3. spray personnel and maintenance will ride as PAX on the Support aircraft.

##### 15 SEP (Friday): Range Time 0730-0930, (1-2 sorties if possible)

0545: Show time

0722: Sunrise

0710: Take Off KMUO (As determined by Mission Cmdr)

1000: Land KMUO

##### 16 SEP (Saturday): Range Time Free All Day, (3-4 sorties if possible)

0545: Show time

**0710:** Take Off KMUO

0723: Sunrise

TBD – Wx permitting 3-4 sorties



**17 SEP (Sunday): Range Time Free all day (3-4 sorties if possible)**

0545: Show time

**0710:** Take Off KMUO

0725: Sunrise TBD – Wx permitting 3-4 sorties

**18 SEP (Monday): Range Time 0730-0930, (1-2 sorties if possible)**

0545: Show Time

0726: Sunrise

**0710:** Take Off KMUO

1000: Land KMUO (Or as required)

**19 SEP (Tuesday): Range Time 0730-0930, (1-2 sorties if possible)**

0545: Show Time

0727: Sunrise

**0710:** Take Off KMUO

1000: Land KMUO (Or as required)

**20 SEP (Wednesday): Range Time 0730-0930, (1-2 sorties if possible)**

0545: Show Time

0728: Sunrise

**0710:** Take Off KMUO

1000: Land KMUO (Or as required)

**21 SEP (Thursday): Range Time 0730-0930, (1-2 sorties if possible)**

0545: Show Time

0729: Sunrise

**0710:** Take Off KMUO

1000: Land KMUO (Or as required)

**Support Aircraft:**

1. Depart YNG for MUO

2. Make own billeting, transportation arrangements and set up PPR

**22 SEP (Friday) Both Aircraft**

0830: Show time

1000: Take Off KMUO

1730: Land KYNG

**3. ITEMS TO TAKE:**

- a. Mission Commander:** 1 Cellular Phone
- b. Entomologist:** UHF Radio, Cardholders, Water Sensitive Cards, Tool Kit, VHF Radio, Cell Phone, Laptop Computer
- c. Navigator:** Maps/Map Bag, Validation Map,
- d. Spray Operator:** Safety Gear, computer
- e. Spray Maintenance:** Mobility Kit, MASS Spares, Spill Kit, Pesticide Safety Binder, Safety Equipment and Tool and other equipment

**4. NOTIFICATION NECESSARY FOR THIS MISSION: N/A**

**5. PARKING PLAN: Bomb Loading Area**

## 6. RADIO FREQUENCIES:

- a. **Air To Ground:** Entomologists: 123.45 VHF; 292.2 (range); Maintenance 384.7
- b. **Mt Home:** PTD: 372.2/138.9, ACC CP (Raymond 27): 381.3, ATIS: 273.5, TWR: 133.85 / 253.5, GND: 120.5 / 275.8, RAPCON: 259.1, Salt Lake Center: 387.15/363.0
- c. **Range:** Saylor Creek Range: 134.1 / 292.2 pri / 381.3 sec  
Sagebrush Control: 251.2, Paradise MOA: 272.7/236.05/225.55  
Owyhee MOA: 392.2/266.35, Bruneau/Sheep Creek MOA: 251.875

## 7. IN-BRIEFING: Upon Arrival.

### 8. Billeting:

#### **Sleep Inn Foot Hills \$60/night**

1180 US 20 Mountain Home, ID

208-587-9743

Fax: 208-587-7382

### 9 Vehicles: Mountain Home CE will provide vehicles.

2- 6 Pax (OPS)

1 Mini-van & 1 6 Pax (Maint)

1 Rental- (Don Teig will keep from Airport) (Entomologists)

## 8. SPRAY CONFIGURATION:

- a. **System:** SP-3G
- b. **Nozzle Tips/Orientation:** Raindrop/Straight Back
- c. **Number:** Fuselage – 17 nozzles (8 left side: 9 right side)
- d. **Booms:** Fuselage
- e. **Aircraft:** 99107 **Mission Identifier:** QZNRKA120257
- f. **Profile:** Planned HV Profile

## 9. SPRAY PARAMETERS:

- a. **Altitude:** 100' AGL (we are treating at 46.5 acres/minute)
- b. **Swath Width.** 100 feet
- c. **Flow Rate.** 326 gal/min
- d. **Application Rate.** 7 gal/acre; approximately 2,000 acres to be treated for cheatgrass
- e. **Ground Speed:** 200 Knots

## 10. SPRAY MIXING AND LOADING:

### a. Composition of Each Gallon:

- (1) 0.57 ounces of Plateau® (we want 4oz in 7 gallons per acre)
- (2) 1 ounce of Sta-put® Drift Retardant
- (3) 126.4 ounces of water

### b. First Load (4 Tanks of 450 gallons each + sump of 75 gallons)

- (1) Fill to 450 gal water/tank using the pump on the water tanker truck. This is done by putting the filler hose into the rear tank with all tanks open to the common sump. Total water in tanks = 1,800 gal.
- (2) 75 gal/water in sump
- (3) Total water added = 1,800 gallons
- (4) Upload 8.03 gal (30.4L)/Plateau; add 14 gal Sta-put while agitating approximately 5-7 min  
Total quantity mix 1822 gallons

### c. Additional test loads:

++A single lift is planned at a 6oz per acre Plateau in 7 gal/acre:

An additional 4.01 gallons of Plateau will be need in the above tank mix

++A single lift is planned at a 6oz per acre Plateau in 10 gal/acre  
An additional 4.01 gallons (15.1L) of Plateau will be needed  
Flow rate: 465 gallons/minute with 12 nozzles open per side

## 11. SPRAY MONITORING OR TESTING: Performed by the CPMPs

NOTES: Will use water sensitive cards.

## 12. CONTACTS:

### a. Mountain Home AFB, ID:

- (1) Base Ops: DSN: (b) (6) ; COMM: \*SMSgt (b) (6)
- (2) OG Col (b) (6) : DSN (b) (6)
- (3) Conservation Chief/Spray Project POC, (b) (6) : DSN (b) (6) , cell (b) (6)
- (4) Entomology: TSgt (b) (6) , (b) (6) : DSN (b) (6)
- (5) Weather Superintendent, Sgt (b) (6) or Weather NCOIC, TSgt (b) (6) : DSN (b) (6)
- (6) Weather: Capt (b) (6): DSN (b) (6) , 1Lt (b) (6) DSN (b) (6)
- (7) Billeting: Sagebrush Hotel DSN 728-5151, FAX: 4797
- (8) Transportation: TSgt (b) (6) X-(b) (6) FAX: 1619
- (9) Weather to be provided:  
??- Davis Mothan AFB, DSN 228-6590  
- Mountain Home AFB, Capt (b) (6), DSN (b) (6)

### b. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX Toll Free 1 - 800 - 278 - 7046, 2, + Ext

- (1) 910 AW/CC: COL (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: CAPT (b) (6) FAX 1022
- (1) 910 OG/CC: COL (b) (6)
- (2) 910 OSF/OSA, Airfield Manager: (b) (6)  
Assistant Air Field Manager (ACAM), (b) (6)
- (3) 910 OG/SOF (Supervisor of Flight Desk): Ext 1069; FAX 1371
- (4) 757 AS/DO: MAJ (b) (6)
- (5) 757 AS/DOO, Ops Admin: SMS (b) (6) ; FAX 1657
- (6) 757 AS/DOS: Aerial Spray Office, CAPT (b) (6) FAX 1616
- (7) 910 LG/CC: COL (b) (6)  
910 MA: Maintenance Officer, Ext 1144
- (8) 910 LG/LGM:, Ext 1352
- (9) Maintenance Control: Ext 1348
- (10) 910 LG/LGMS: Spray Maintenance: SMS (b) (6)
- (11) 910 LG/LGL: CMS (b) (6)
- (12) Omega/SATO Travel: Ext 1772; 1 (800) 285 - 6342
- (13) Cellular Phones: Mission Commander: (b) (6)  
PMP/Entomologist/Ground Support:  
(b) (6) (b) (6) (b) (6) (b) (6)  
Spray Maintenance: (b) (6)

**757<sup>th</sup> AERIAL SPRAY SQUADRON**  
**PMP'S POST-MISSION REPORT**  
**Mountain Home AFB, ID Saylor Creek Range 14-22 Sept 2006**

**1. MISSION BASICS:**

- a. Installation Sprayed: Mountain Home AFB, Saylor Creek Range, ID (attachment 1)
- b. Mission Duration: 14-22 September 2006
- c. Purpose of Application: Herbicide application to control cheatgrass to suppress range fires
- d. Application Date(s) and time(s) (Local):
  - (1) 15 Sept: 0725-0902 (1.6 hrs)
  - (2) 16 Sept: 0755-0919 (1.3); 1005-1115 (1.2)
  - (3) 17 Sept: 0714-0842 (1.5); 0955-1058 (1.1); 1155-1305 (1.2)
  - (4) 18 Sept: 0710-0837 (1.5)
  - (5) 19 Sept: 0720-0845 (1.3)
  - (6) 20 Sept: 0710-0825 (1.3)
  - (7) 21 Sept: 0710-0819 (1.2); 0825-0905 (0.7) (flush sortie)
- e. Acres Treated: 2,560 acres: 256 (15 Sept); 512 (16 Sept); 768 (17 Sept); 256 (18 Sept); 256 (19 Sept); 256 (20 Sept); 256 (21 Sept)
- f. Project Coordinator (Name/Rank/Title/Phone #): (b) (6), Natural Resource Manager, (b) (6)
- g. Date Spray Map Last Approved: 14 September 2006
- h. Installation In-Briefing: (When/Where/Briefer/s): 14 Sept 06, Mountain Home AFB, Maj (b) (6), LTC (b) (6)

**2. OPERATIONAL:**

- a. **Aircrew:**
  - (1) Mission Commander: LTC (b) (6)
  - (2) Pilots: CPT (b) (6), CPT (b) (6)
  - (3) Navigator: LTC (b) (6), LTC (b) (6)
  - \*\*MAJ (b) (6) arrive 19 SEPT
  - LTC Dave Wiles Depart 20 SEPT
  - (4) Flight Engineer: MSG (b) (6)
  - (5) Spray Operators: MSG (b) (6), MSG (b) (6), MSG (b) (6)
- b. Maintenance:
  - (1) Spray MX: MSGT (b) (6), TSG (b) (6), TSG (b) (6), TSGT (b) (6)
  - (2) Crew Chiefs: TSGT (b) (6), TSGT (b) (6)
  - (3) Avionics: TSG (b) (6)
- c. Entomologists: Maj (b) (6), Capt (b) (6), Maj (b) (6)
- d. Flying Data:
  - (1) Spray Sorties/Hours: 10 Sorties + 1 flush sortie; 13.9 hours
  - (2) Ferry Sorties/Hours:
    - (a) Spray A/C 99105: 2 Ferries; 11.5 Hours
    - (b) Support A/C 022 (14 Sept): 1 Ferries; 6 Hours
    - (c) Support A/C 102 (22 Sept): 2 Ferries; 11.4 Hours

**3. PESTICIDE:**

- a. Trade Name: Plateau<sup>®</sup>
- b. EPA Registration Number: 241-365
- c. Formulation Sprayed: Liquid herbicide (23.6% active ingredient)
- d. Gallons Pesticide Loaded: 8 (15 Sept); 16 (16 Sept); 24 (17 Sept); 8 (18 Sept); 8 (19 Sept); 8 (20 Sept); 12 (21 Sept)

- e. Gallons Pesticide Applied: 8 (15 Sept); 16 (16 Sept); 24 (17 Sept); 8 (18 Sept); 8 (19 Sept); 8 (20 Sept); 12 (21 Sept)
- f. Gallons and Name Diluent Used: 1,800 gallons water per lift
- g. Gallons and Name of Flush Used: 200 per lift; 600 Gal of water final flush
- h. Other Additives Used: gallons of Sta-Put®; 14 (15 Sept); 28 (16 Sept); 42 (17 Sept); 10 (18 Sept); 10 (19 Sept); 0 (20 Sept); 7.5 (21 Sept)
- i. Application Rate: 7 Gal/Acre 15-20 Sept 06 (4 oz/acre Plateau®); 21 Sept 06 (6.0 oz/acre Plateau®)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): C-130 (99105)
- b. Spray System (Modules Used) and System ID #: SP-3G
- c. Spray System Configuration: Wing and fuselage booms
- d. Nozzle Type/Size: Raindrop nozzles
- e. Nozzle Orientation & Number Used: Fuselage; Straight Back; 38 (19 each side)
- f. Pressure: 40 psi
- g. Flow Rate: 325 gpm

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 100 Ft
- b. Spray Offset: weather dependant. No offset when flown into the wind.
- c. Spray Release Altitude: 100 Ft AGL
- d. Ground Speed: 200 knots

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):  
Ground: 140/3-5 mph (15 Sept); 240-280/8-11mph (16 Sept); 240-260 3 mph (17 Sept); SE @ 5.3 mph (18 Sept); 100/5 mph (19 Sept); 290 – 6mph (20 Sept); 260-300 (21 Sept)
- b. Temperature (Degrees Fahrenheit): 58° (15 Sept); 48-51° (16 Sept); 35-68° (17 Sept); 45° (18 Sept); 50° (19 Sept); 46° (20 Sept); 50° (21 Sept)
- c. Relative Humidity: 60% (15 Sept); 60%-36% (16 Sept); 40-20% (17 Sept); 37% (18 Sept); 50% (19 Sept); 46-50% (20 Sept); 50 (21 Sept)
- d. Cloud Cover: 100% (15 Sept); 80% (16 Sept); 0% (17 Sept); 0% (18 Sept); (19 Sept); light rain (20 Sept); 80% (21 Sept)
- e. Source: Ground observations

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:  
(1) Technique/s Used: Visual observation from PMP on range  
(2) Results: See remarks
- b. Effectiveness:  
(1) Technique/s Used: Vegetation measurements  
(2) Results: Will be determined in the spring of 2007

**8. REMARKS:** This mission was the first use of the herbicide Plateau by the 910<sup>th</sup>. An excellent material to work with, it is biologically active at low concentration levels (e.g., 4oz/acre). The target pest plant (weed) was cheatgrass, an invasive species which dries out in the late season and is extremely flammable. The integrated pest management approach is to prevent germination of cheatgrass seeds the following year while allowing native grasses (less prone to burn) to become established. The fuselage boom configuration and resulting 100 foot swath width was tested and confirmed at home station & Youngstown ARS) prior to departure. On the Saylor Creek range the same swath width was confirmed visually by ground support. Coverage of the spray block was excellent, see map in attachment 1. The

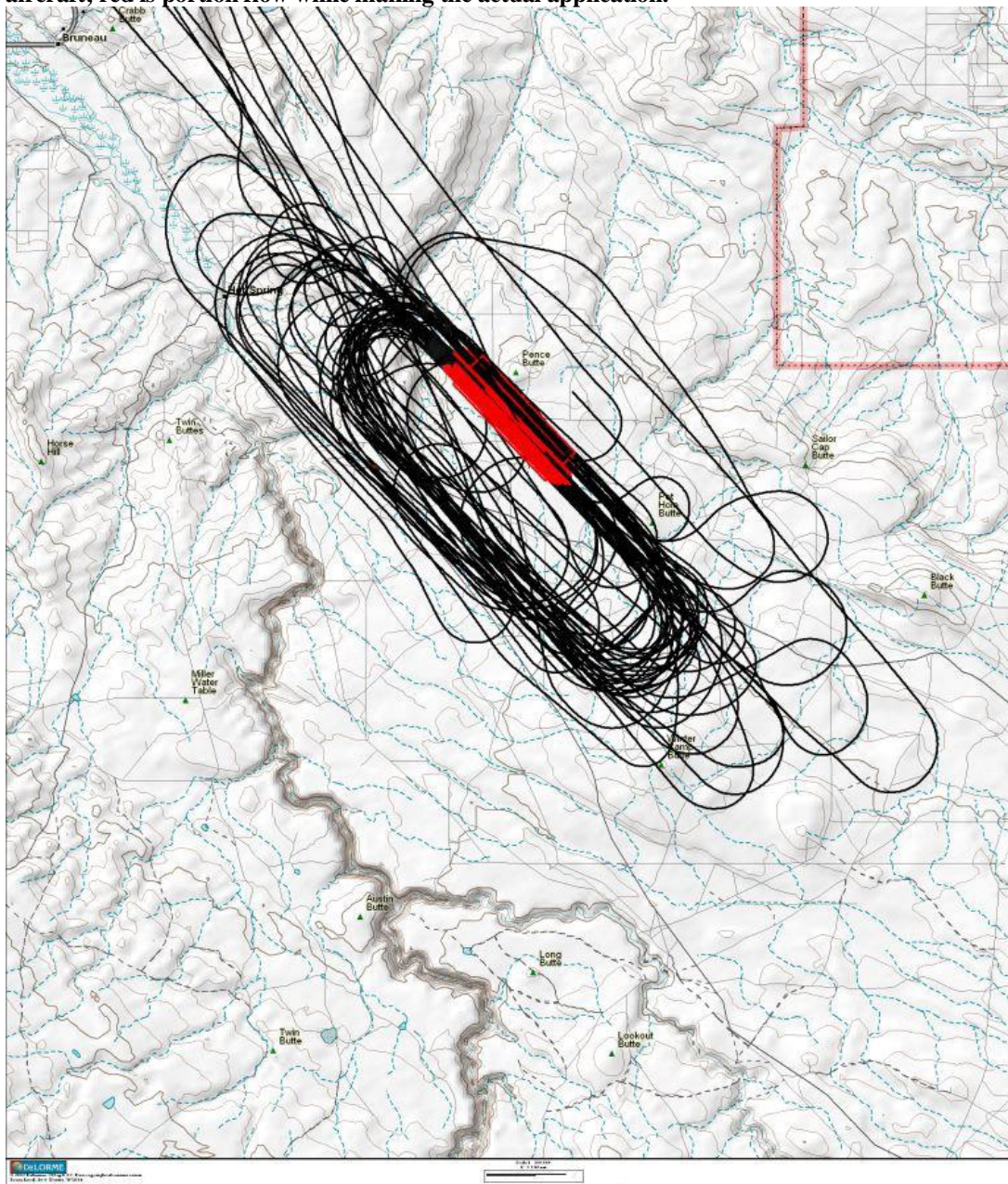


map shows red for the majority of the spray passes (indicating spray-on) but the inhibit switch was in the wrong position on the northeast side of the spray block which only recorded the path of the aircraft and not the spray-on condition even though excellent coverage was achieved in this section as well. The majority of the sorties were flown with a headwind with less than a 30% crosswind component. On 16 September, two sorties were flown in a crosswind and ground support confirmed the appropriate offset to assure an even application and control drift. Efficacy will be determined by Mountain Home AFB Office of Natural Resources during the spring season 2007. If successful and additional money is available, an application on another section of the range will likely be planned for 2007. We would like to thank the folks at Mountain Home AFB for the excellent support we received. In particular, we appreciate the vehicle support and the Fire Department who filled us up with water just before dawn daily and played along with a quick turn on our final flush sortie.

//signed//

(b) (6) , MAJ, USAFR  
CERTIFIED PEST MANAGEMENT PROFESSIONAL

**Attachment 1. Map of application on Saylor Creek Range, ID 15-21 September 2006. Black indicates path of aircraft; red is portion flow while making the actual application.**





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

31 Aug 09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Mountain Home AFB, ID

1. Aerial Spray flight proficiency training at Saylor Creek Bombing Range near Mountain Home AFB, ID aiding their fire prevention program. Cheat grass, an invasive grass species which creates a fire hazard, has overtaken many of the areas on the bombing range. Aerial spray operation applies a herbicide targeting Cheat grass, but allowing native fire resistant vegetation (sagebrush) to re-establish and become competitive.

2. Concept of Operations:

- a. 14 September (Monday)
  - 0900 Show KYNG
  - 1100 Spray aircraft depart KYNG
  - 1105 Support aircraft depart KYNG
  - 1430 Spray aircraft land KMUO
  - 1435 Support aircraft land KMUO
  - 1600 Installation briefing
- b. 15-18 September (Tuesday-Friday)
  - Spray aircraft:
    - 0500 Show KMUO
    - 0700 Depart MUO
    - 0815 Land MUO
    - 0900 Depart KMUO
    - 1015 Land KMUO
- c. Saturday and Sunday airfield closed



- d. 21-22 September (Monday-Tuesday)
  - 0500 Show KMUO
  - 0700 Depart MUO
  - 0815 Land MUO
  - 0900 Depart KMUO
  - 1015 Land KMUO
- e. 22 September (Tuesday) Support aircraft
  - 0900 Show KYNG
  - 1100 Depart KYNG
  - 1430 Land KMUO
- f. 23 September (Wednesday)
  - 0700 Show KMUO
  - 0900 Spray aircraft depart KMUO
  - 0905 Support aircraft depart KMUO
  - 1630 Spray aircraft land KYNG
  - 1635 Support aircraft land KYNG

- 3. Maj (b) (6) will act as Mission Commander.
- 4. Maj (b) (6) will act as Aircraft Commander
- 5. Support required at Mountain Home AFB and Saylor Creek has been completed.

(b) (6), Maj, USAFR  
Assistant Chief of Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## MOUNTAIN HOME AFB RANGE, ID

### 14-23 SEPTEMBER 2009

**PURPOSE/BENEFITS/OBJECTIVES.** To prevent fire hazards, inhibit annual re-growth of cheatgrass on Saylor Creek Range and allow native vegetation to establish and be competitive.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) Mission Commander: Maj (b) (6) 14-18 Sep; Maj (b) (6) 18-23 Sep
- 2) Pilots: Maj (b) (6) 14-18 Sep, Capt (b) (6) 14-18 Sep; Lt Col (b) (6) 14-23 Sep, Lt Col (b) (6) 18-23 Sep
- 3) Navigator: Lt Col (b) (6) 14-18 Sep; Lt Col (b) (6) 18-23 Sep
- 4) Flight Engineer: SSgt (b) (6) 14-18 Sep; MSgt (b) (6) 18-23 Sep
- 5) Spray Operators: MSgt (b) (6) SSgt (b) (6) 14-18 Sep; TSgt (b) (6) 18-23 Sep

##### b. Maintenance:

- 1) Spray MX: TSgt (b) (6) TSgt (b) (6) SSgt (b) (6) TSgt (b) (6)
- 2) Crew Chiefs: Tsg (b) (6) , Amn (b) (6)
- 3) Hyd/Prop/EE/Avi/Com- MSgt (b) (6) TSgt (b) (6) TSgt (b) (6) SSgt (b) (6) TSgt (b) (6)

#### 2. SCHEDULE: (Local times; total of 13 lifts required, 1-3 lifts per day)

##### 14 SEP (Monday):

0900: Show at KYNG QENRKA728257 PPR #2311247

1100: Depart KYNG

1430: Land KMUO (Local)

\*\* ASAP After landing Safety Briefing, MX configures aircraft; plan next day's mission

1630: Installation Briefing

##### Support Aircraft

QDNRKA786257

PPR#2311254

0900 Crew show

1105 Depart YNG

1435 Land MUO

\*All extra crew and maintenance ride on support aircraft

##### 15 SEP (Tuesday): Range Time 0700-1000, (1-3 sorties if possible)

0530: Crew Show time/Load water and chemical

0700: Take Off KMUO (As determined by Mission Cmdr)

0723: Sunrise

##### 16 SEP (Wednesday): Range Time: 0700-1000, (1-3 sorties if possible)

0530: Show time/Load water and Chemical

0700: Take Off KMUO

0724: Sunrise

##### 17 SEP (Thursday): Range Time: 0700-1000 (1-3 sorties if possible)

0530: Show time

0700: Take Off KMUO

0725: Sunrise

##### 18 SEP (Friday): Range Time 0700-1000, (1-3 sorties )

0530: Crew Show time/Load water and chemical (FOD WALK @MUO)

0700: Take Off KMUO (As determined by Mission Cmdr)

0726: Sunrise

Multiple lifts TBD – Wx permitting

**\*\*SWAPOUT AIRCRAFT YNG QDNRKA788261 PPR#2311252**

0600: Show at YNG

0800: Depart YNG

1130: Land MOU

1230: Depart KMUO

2000: Land KYNG

**21 SEP (Monday): Range Time 0700-1000, (1-3 sorties if possible)**

0530: Crew Show time/Load water and chemical

**0700:** Take Off KMUO (As determined by Mission Cmdr)

0730: Sunrise

**22 SEP (Tuesday): Range Time 0700-1000, (1-3 sorties if possible)**

0530: Crew Show time/Load water and chemical

**0700:** Take Off KMUO (As determined by Mission Cmdr)

0730: Sunrise

**Support Aircraft QDNRKA787265 PPR# 2311301**

0900 Show YNG

1100 Depart YNG

1430 Arrive KMUO

**23 SEP (Wednesday):**

0700: Crew Show time/Load water and chemical

**0900:** Take Off KMUO (As determined by Mission Cmdr)

1630: Land KYNG

**\*\* If no delays are encountered, the mission will return to YNG after completion of last flush sortie and cleaning of system.**

**3. ITEMS TO TAKE:**

- a. **Mission Commander:** 1 Cellular Phone
- b. **Entomologist:** UHF Radio, Cardholders, Water Sensitive Cards, Tool Kit, VHF Radio, Cell Phone, Laptop Computer
- c. **Navigator:** Maps/Map Bag, Validation Map,
- d. **Spray Operator:** Safety Gear, computer
- e. **Spray Maintenance:** Mobility Kit, MASS Spares, Spill Kit, Pesticide Safety Binder, Safety Equipment and Tool and other equipment

**4. NOTIFICATION NECESSARY FOR THIS MISSION: N/A**

**5. PARKING PLAN:** Transient Ramp in front of Base Operations

**6. RADIO FREQUENCIES:**

- a. **Air To Ground:** Entomologists: 123.45 VHF; 292.2 (range); Maintenance 384.7
- b. **Mt Home:** PTD: 372.2/138.9, ACC CP (Raymond 27): 381.3, ATIS: 273.5, TWR: 133.85 / 253.5, GND: 120.5 / 275.8, RAPCON: 259.1, Salt Lake Center: 387.15/363.0
- c. **Range:** Saylor Creek Range (Cowboy Control): 236.05pri/381.3sec/134.1tertiary  
If Cowboy Control isn't up, contact MUO APP on 371.2  
Sagebrush Control: 251.2, Paradise MOA: 272.7/236.05/225.55  
Owyhee MOA: 392.2/266.35, Bruneau/Sheep Creek MOA: 251.875

**7. IN-BRIEFING:** 1630 Airfield Management Office

**8. Billeting:**

**Sleep Inn Foot Hills \$70/night**  
1180 US 20 Mountain Home, ID  
208-587-9743  
Fax: 208-587-7382

**9. Vehicles:** Mountain Home is providing vehicles.

2 - 6 PAX trucks (1 Ops O's; 1 Spray MX)  
1 - 15 Pax Van (MX)  
1 - Pick-up (MC/Ento)  
1 - Staff Car (Ops E's)

**10. SPRAY CONFIGURATION:**

- a. **System:** SP-3G
- b. **Nozzle Tips/Orientation:** Raindrop/Straight Back
- c. **Number:** Fuselage – 17 nozzles (8 left side: 9 right side)
- d. **Booms:** Fuselage
- e. **Aircraft:** 90-9107 **Mission Identifier:** QZNRKA728257
- f. **Profile:** Planned HV Profile

**11. SPRAY PARAMETERS:**

- a. **Altitude:** 100' AGL (we are treating at 46.5 acres/minute)
- b. **Swath Width.** 100 feet
- c. **Flow Rate.** 326 gal/min
- d. **Application Rate.** 7 gal/acre; approximately 3,200 acres to be treated for cheatgrass
- e. **Ground Speed:** 200 Knots

**12. SPRAY MIXING AND LOADING:**

**a. Composition of Each Gallon:**

- (1) 0.57 ounces of Plateau® (we want 4oz in 7 gallons per acre)
- (2) 1 ounce of Sta-put® Drift Retardant
- (3) 126.4 ounces of water

**b. First Load (4 Tanks of 450 gallons each + sump of 75 gallons)**

- (1) Fill to 450 gal water/tank using the pump on the water tanker truck. This is done by putting the filler hose into the rear tank with all tanks open to the common sump. Total water in tanks = 1,800 gal.
- (2) 75 gal/water in sump
- (3) Total water added = 1,800 gallons
- (4) Upload 8.03 gal (30.4L)/Plateau; add 14 gal Sta-put while agitating approximately 5-7 min  
Total quantity mix 1822 gallons

**13. SPRAY MONITORING OR TESTING:** Performed by the CPMPs

## 14. CONTACTS:

### a. Mountain Home AFB, ID:

- (1) Base Ops: DSN: 728-2222; COMM: (208)-828-2222 TSgt (b) (6) .
- (2) Transit Alert: (b) (6) DSN (b) (6)
- (3) OG Col (b) (6) : DSN (b) (6)
- (4) Conservation Chief/Spray Project POC, (b) (6) : DSN (b) (6) , cell (b) (6)
- (5) Entomology: TSgt (b) (6) , SSgt (b) (6) , (b) (6) : DSN (b) (6)
- (6) Weather Superintendent, Sgt (b) (6) or Weather NCOIC, TSgt (b) (6) : DSN 728-2253
- (7) Weather: Lt (b) (6) DSN (b) (6) , Maj (b) (6) : DSN (b) (6) .
- (8) Billeting: Sagebrush Hotel DSN 728-5151, FAX: 4797
- (9) Transportation: SSgt (b) (6) (b) (6) FAX: 1619
- (10) Weather to be provided:
  - Davis Mothan AFB, DSN 228-6590
  - Mountain Home AFB, Lt (b) (6) DSN (b) (6) , Maj (b) (6) DSN (b) (6)
- (11) Fire Dept (CEF): Chief (b) (6) , (b) (6) , TSgt (b) (6) DSN 728-6292 dispatch

### b. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046, 2, + Ext

- (1) 910 AW/CC: COL (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Maj (b) (6) ; FAX 1022
- (1) 910 OG/CC: Lt Col (b) (6) / 1179
- 910 OSF/OSA, Airfield Manager:, (b) (6)
- (2) 910 OG/SOF (Operations Supervisor Desk): Ext 1069; FAX 1371
- (3) 757 AS/DO: MAJ (b) (6)
- (4) 757 AS/DOO, Ops Admin: SMS (b) (6) ; FAX 1657
- (5) 757 AS/DOS: Aerial Spray Office, Maj (b) (6)  
CAPT (b) (6) , FAX 1616
- (6) 910 LG/CC:, Ext 1225  
910 MA: Maintenance Officer, Ext 1144
- (7) 910 LG/LGM:, Ext 1352
- (8) Maintenance Control: Ext 1348
- (9) 910 LG/LGMS: Spray Maintenance: SMS (b) (6)
- (10) 910 LG/LGL: CMS(b) (6)
- (11) Omega/SATO Travel: Ext 1772; 1 (800) 285 – 6342
- (12) Cellular Phones: Mission Commander: (b) (6)  
PMP/Entomologist/Ground Support:  
(b) (6) ); (b) (6) )  
Spray Maintenance: (b) (6)

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT

### 1. MISSION BASICS:

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 15-18 May 2006
- c. Purpose of Application: Control nuisance and vector mosquitoes (larval stages)
- d. Application Date/s: 16 and 18 May, 2006
- e. Time/s of Application (Local): 0615-1555 (16 May); 0555-0825 (18 May)
- f. Acres Treated: 1701 Acres
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6), Environmental Officer, DSN (b) (6)
- h. Date Spray Map Last Approved: 15 May 2006
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): 15 May, 2006 CAPT (b) (6) COL (b) (6); LTC (b) (6); MAJ (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: MAJ (b) (6)
- b. Certified PMP/s (Category 11): CAPT (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander: MAJ (b) (6)
  - (2) CoPilot: COL (b) (6)
  - (3) Navigator(s): LTC (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
  - Spray Operators: MSG (b) (6), MSG (b) (6)
- d. Safety Briefer: CAPT (b) (6)
- e. Spray Maintenance: TSG (b) (6), TSG (b) (6), TSG (b) (6)
- f. Spray Ground Monitors: CAPT (b) (6)
- g. Crew Chiefs: MSG (b) (6), TSGT (b) (6)
- h. Avionics: TSG (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 7/6.1
  - (2) Ferry Sorties/Hours: 2/5.7

### 3. PESTICIDES:

- a. Trade Name (% Active Ingredient): Altosid Liquid Larvicide Concentrate (20% methoprene)
- b. EPA Registration Number: Altosid Liquid Larvicide Concentrate 272446
- c. Gallons Pesticide Loaded: 7.97 Gal Altosid® (16 May); 1.61 Gal Altosid® (18 May) Gallons Pesticide Applied: 7.97 Gal Altosid® (16 May); 1.61 Gal Altosid® (18 May); Gallons and Name of Flush Used: Water (900 Gallons).
- d. Other Additives Used: AirexDC® drift reduction agent
- e. Application Rate: 0.75 Oz/acre Altosid®

#### **4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 9108
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: Raindrop nozzles
- e. Nozzle Orientation & Number Used: 14 straight back
- f. Pressure (PSI): 36-42 (16 May); 35-46 (18 May)
- g. Flow Rate: 2.95-3.04 gpm (16 May); 2.76 gpm (18 May)

#### **5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 200' LV (16 and 18 May)
- b. Spray Off Set: None
- c. Spray Release Altitude: 100'
- d. Ground Speed: 200 Knots (338 Feet/Second)

#### **6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 350° @ 5 Knots (16 May); Light and variable (18 May)
- b. Temperature (Degrees Fahrenheit): 45-78° (16, 18 May)
- c. Cloud Cover: Mostly Clear (16 May); Mostly Cloudy/ showers (18 May)
- d. Source: Ground observations

#### **7. SPRAY ACTIVITIES:**

16 and 18 May: 5 Sorties Flown. The first sortie was terminated prematurely due to a non-functional totalizer (i.e. cumulative pesticide volume counter). Three wet passes were completed. In short, the instantaneous flow rate was known, but not the total volume of pesticide applied per unit time. Since weather conditions were ideal for application, and the forecast for the remainder of the week appeared marginal for aerial spray activities, a decision was made by the mission commander under the advisement of the CPMP to continue the mission and adjust for flow rates between sorties using pump pressure changes and/or nozzle addition or removal. Justification for this deviation from standard procedure was based on several factors:

1. Weather is rarely optimal for aerial spray activities in North Dakota. In this instance, wind direction and speed were ideal for an application of larvicide. Winds were from the N-NW with a maximum speed of 7 knots and an average speed of 4.5 knots. Furthermore, upon consultation with the customer (Grand Forks AFB CE) concerning the problems involved, the customer exhibited strong support for the continuation of spray activities, as they are acutely aware of the time sensitivity (with respect to effective mosquito control) of this application.
2. The application area in question was relatively small (1608 acres). Therefore, with a high volume application with 3.5 sorties involved and the use of 3200 plus gallons of finish spray, the flow rates of the applied pesticide could be modified between sorties to produce the desired application rates. Furthermore, with this scenario of treating the application block as a whole, there was no possibility of over treating, as the limiting factor was the amount of pesticide available. Since treatment was conducted at the lower label (legal) rates, there was an approximately 30% over application factor included, which in using the system as configured would have been impossible to achieve. If this material was required to be applied neat (i.e. concentrated) this application would never have been attempted, because in that case precise volume control is required. However, since this was a dilute application, the margin of legal safety was large enough for the mission to continue. In this case, the spray-on times for the acreages involved and the volume of pesticide applied per unit time were well within the calculated legal factors, and were in fact within 5% of the planned application rates.
3. The pesticide applied (Altosid) is relatively benign from a toxicological standpoint. Altosid is an insect growth regulator, and even in its concentrated state has little or no effect on non-target organisms. Concentrated Altosid, although relatively non-toxic, can be an eye irritant. However, in its diluted state, (as sprayed from the aircraft - 0.75 oz in 2 gallons water) it poses no human or animal toxicologically adverse effects. Since there was no possibility of overtreatment (as stated previously), the risk factors were negligible. To re-emphasize, treatment without a flow totalizer



using a more toxic material would be unacceptable. However, with the chemical involved and the dilution factors and weather variables, non-treatment was not an acceptable option.

Sortie 1 and 2: 300 seconds spray on time. 465 Acres covered with an application rate of 3.02 gallons finish spray per second. Total spray applied: 907 gallons. Winds: Ave 6@ 360.

Sortie 3: 298 seconds spray on time. 461.9 Acres covered with an application rate of 3.04 gallons finish spray per second. Total spray applied: 907 gallons. Winds: Ave 5.6@ 330.

Sortie 4: 312 seconds spray on time. 483.6 Acres covered with an application rate of 2.76 gallons finish spray per second. Total spray applied: 850 gallons. Winds: Ave 6.5 @ 360.

Sortie 5: 211 seconds spray on time. 290.5 Acres covered with and application rate of 2.76 gallons finish spray per second. Total spray applied: 581 gallons. Winds: Light and variable.

## **8. MONITORING (Pre- and Post-Treatment):**

- a. The Grand Forks AFB Environmental officer conducts adult mosquito trapping and larval sampling to determine mosquito densities on base. Prior to the 16-18 May application, no systematized monitoring was conducted, however, increased larval densities within spray blocks was observed by the environmental officer. In addition, larval dip sampling was conducted at 4 locations on the base by the 757th entomologist.
- b. Effectiveness:
  - (1) Technique/s Used: Larval dip samples
  - (2) Results: Pre-application averages at the 4 locations ranged from 4 larvae/dip to 20 larvae/dip. The greatest numbers were collected in the swales adjacent to the golf course. Other sampling locations included the ditches to the west of the horse barns, the ditches to the north of the smokehouse, and the area west of the alert pad by the perimeter road. The Grand Forks AFB Environmental section will conduct larval counts in spray blocks that were treated with Altosid® larvicide to determine the insecticide's efficacy.

**8. REMARKS:** This is the fifth spray season at Grand Forks AFB. The use of Low Volume sprays in order to treat mosquito larvae has been accomplished by the 910 AW/757 AS before. Recommend that Grand Forks AFB consider using a *Bacillus thuringiensis* larvicide (VectoBac) in the future to better assess larval mortality after the spray. Despite the fact that several operational difficulties were encountered, this mission was completed to the satisfaction of the customer. One of the principle difficulties encountered was with the MASS system and a defective totalizer. The aerial spray maintenance and avionics components to the success of this mission were critical. Special mention must be made for TSgt (b) (6) of Avionics and TSgt's (b) (6) (b) (6) and (b) (6) of spray maintenance for their efforts in troubleshooting the electrical misgivings of the MASS spray system in a timely fashion in order for the mission to continue on 16 May. In an adverse environment they managed to "jump-start" the system so the mission could advance.

//Signed//

(b) (6), CAPT, USAFR  
Certified Pest Management Professional



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON-AERIAL SPRAY  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926

10 OCT 2007

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Parris Island MCRD

1. Objective/Purpose/Benefits of the Spray Mission. Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training Parris Island MCRD SC.

2. Capability: Spray Aircraft available on 15-18 OCT 07

3. Concept of Operations:

**15 OCT (Monday):**

1300: Show Time  
1500: Take Off KYNG  
1700: Land KNBC  
1730: Safety Briefing

**16 OCT (Tuesday):** Adulticide at Parris Island

TBD Installation Brief  
1430: Showtime  
1500: Load Chemical/Wx Decision  
1645: Take off KNBC (Start Spray 1.5 hrs prior to Sunset)  
1850: Sunset

**17 OCT (Wednesday)** Wx Backup/ System Clean up.

1430 Showtime  
1500: Load Chemical/Wx Decision  
1645: Take off KNBC  
1849: Sunset

**18 OCT (Thursday)** Redeploy to YNG

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

4. Spray Parameters:

- a. Acreage: 7,500 Acres (Only areas determined by PMP)
- b. Altitude: 150 Ft AGL
- c. Pesticide: Dibrom® Concentrate;
- d. Deploy: 2.0 Hrs
- e. Re-Deploy: 2.0 Hrs
- f. Spray Time: 16 Minutes

5. Aircraft Commander Capt (b) (6)

6. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator Mr. (b) (6) DSN (b) (6)

// SIGNED //

(b) (6), CAPT, USAFR  
Assistant Chief of Aerial Spray

**910 AW AERIAL SPRAY  
PMP'S POST-MISSION REPORT-PARRIS ISLAND MCRD  
15-18 OCT 2007**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island MCRD, South Carolina
- b. Mission Duration: 15-18 OCT 2007
- c. Purpose of Application: Control of biting midges and adult mosquitoes
- d. Application Dates: 16 OCT 07
- e. Times of Application (Local): 1720-1800
- f. Acres Treated: 7,500
- g. Project Coordinator (Name, Phone #): (b) (6) , (b) (6)
- h. Date Spray Map Last Approved: 16 OCT 2007
- i. Date of Waste Generation Letter: 10 April 2000.
- j. Installation In-Briefing: 16 OCT 07; LTCOL (b) (6)
- k. Mission identifier: QZNRKA057288

**2. OPERATIONAL:**

- a. Mission Commander: MAJ (b) (6)
- b. Certified PMPs (Category 11): LTCOL (b) (6)
- c. Aircrew:
  - (1) Pilots: CPT (b) (6) , CPT (b) (6) , COL (b) (6)
  - (2) Navigator(s): LTCOL (b) (6)
  - (3) Flight Engineer: MSG (b) (6)
  - (4) Spray Operators: MSG (b) (6) , SGT (b) (6)
- d. Safety Briefer: LTCOL (b) (6)
- e. Spray Maintenance: TSG (b) (6) , TSG (b) (6) , TSG (b) (6)
- f. Crew Chiefs: TSG (b) (6) , TSG (b) (6)
- g. Avionics: TSG (b) (6)
- h. Flying Data:
  - (1) Spray Sorties/Hours: 1/1.4 (16 OCT)
  - (2) Ferry Sorties/Hours: 2/2.1 (15 OCT), 2.0 (18 OCT)
  - (3) Training Sorties/Hours: 1/0.8 (17 OCT)

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 44
- e. Gallons Pesticide Applied: 44
- f. Gallons and Name Diluent Used: None
- g. Gallons and Name of Flush Used: 12 Gallons Marvel Oil
- h. Other Additives Used: n/a
- i. Application Rate: 0.75 oz/acre

#### 4. APPLICATION EQUIPMENT:

- a. Aircraft Type (Tail Number): 90-9107
- b. Spray System (Modules Used) and System ID #: SP2G MASS ULV
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: TeeJet 8005 flat fan nozzles
- e. Nozzle Orientation & Number Used: 11 straight down; 5 left, 6 right
- f. Pressure (PSI): 45
- g. Flow Rate: 5.4 gpm

#### 5. APPLICATION PARAMETERS:

- a. Swath Width Flown: 2000 feet
- b. Spray Off Set: 2000 feet
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 Knots (338 Feet/Second)

#### 6. WEATHER OBSERVATIONS:

- a. Winds (Direction/Speed in knots): Ground; 1640 – 4.5 knots average at 175°-200°; 1750 – 3.5 knots average at 180°; airplane 8-10 knots at 180°
- b. Temperature (°F): Ground; 80° at 1640, dropping to 78° at 1750
- c. Humidity: Ground; 55% at 1640, increasing to 65% at 1750
- d. Cloud Cover: Clear 50% to 90%
- e. Source: Ground observations/at altitude during spray

#### 7. SPRAY MONITORING (Pre- and Post-Treatment):

- a. Deposition Pattern:
  - (1) Technique Used: Normal projected off-sets based on MASS system characterization.
- b. Effectiveness:
  - (1) Technique Used: light traps were used to monitor biting midge and mosquito densities pre- and post-treatment.
  - (2) Results: Will be determined from light trap counts.

- 8. REMARKS:** Biting midges and mosquitoes were present and active during the time of spray. Landing counts on 17 OCT were taken. No mosquitoes were present; the counts for biting midges are in the table below:

Location	Time	Wind Speed Knots	Wind Direction	Temperature	Humidity	Number per minute
Rifle Range	1700	3	100	81	65	0
Elliott's Beach	1711	2	60	82	65	1
Golf Course	1720	3	100	82	61	0
Page Field	1726	2	95	80	63	0
Marina	1732	6	115	80	64	0

//Signed//

(b) (6) , LTCOL, USAFR  
Certified Pest Management Professional

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **PARRIS ISLAND MCRD, SC**

### **15-18 OCT 2007**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Pilots: MC-MAJ (b) (6) , Capt (b) (6) , COL (b) (6) , Capt (b) (6)
- (2) Navigators: LTC (b) (6)
- (3) Flight Engineers: MSG (b) (6)
- (4) Spray Operators: Msgt (b) (6) , Ssgt (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: Tsgt (b) (6) , Tsgt (b) (6) , Tsgt (b) (6)
- (2) Crew Chiefs: Tsgt (b) (6) , Tsgt (b) (6)
- (3) Avionics: Tsgt (b) (6)

##### **c. Pest Management Professionals/Entomologist: LTC (b) (6)**

#### **2. PPR REQUIREMENTS: 288-02**

#### **3. PLANNED SEQUENCE OF EVENTS:** (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

**15 OCT (Monday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

- 1300: Show Time
- 1500: Take Off KYNG
- 1700: Land KNBC
- 1730: Safety Briefing

**16 OCT (Tuesday):** Adulticide at Parris Island

- TBD Installation Brief
- 1430: Showtime
- 1500: Load Chemical/Wx Decision
- 1645: Take off KNBC (Start Spray 1.5 hrs prior to Sunset)
- 1850: Sunset

**17 OCT (Wednesday)** Wx Backup or System Clean up. If wx backup, see above note for Tuesday.

- 1430 Showtime
- 1500: Load Chemical/Wx Decision
- 1645: Take off KNBC
- 1849: Sunset

**18 OCT (Thursday) Redeploy to YNG**

- 1000: Show Time
- 1200: Take off KNBC
- 1400: Land KYNG

#### **4. ITEMS TO TAKE/NOTES:**

##### **a. Mission Commander:**

- (1) Mission Commander Cell Phone

##### **b. Entomologist/CPMP:**

- (1) Wind Gauge & Compass
- (2) UHF/VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder

##### **c. Navigators:**

- (1) Maps
- (2) Templates

**d. Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** 11 open for 8005's oriented straight down
- d. **Differential GPS:** Installed
- e. **Aircraft:** 90-9107
- f. **Mission Identifier:** QENRKA057288

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 0.75 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 2,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 8 Minutes
- h. **Flow Rate:** 5.4 gallons/Minute

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading two drums of Dibrom

**8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
Hilton Head Arpt: 118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 123.4 V**

**10. TRANSPORTATION:** Parris Island will provide two vans and staff car for transportation to and from quarters and for messing. Vehicles will be at Base Operations.

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP &Parris Island MCRD Project Coordinator.

**12. CONTACTS:**

- a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX



- (1) Environmental Coordinator (Spray Coordinator):  
 (b) (6) , DSN (b) (6) Cel (b) (6) : (b) (6) Cel (b) (6)  
 FAX (843) 228-2616; (b) (6)
- (2) Assistant Chief of Staff I & L: COL (b) (6) , DSN (b) (6)
- (3) Pest Control: DSN 335-2364
- (4) P.I. Motor Pool: (b) (6) , DSN (b) (6)
- (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
- (6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)
- (7) P.I. Rifle Range: DSN: 335-3183/3624
- b. Beaufort MCAS SC:** (Commercial (843) 228-XXXX)
- (1) Beaufort MCAS Environmental: (b) (6) , DSN (b) (6) (b) (6) , DSN (b) (6)
- (2) Fuels: DSN: 335-7049/7448/7168
- (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
 DSN: (b) (6) . Base Ops is ext 7301/2/3  
 (After duty hours: (b) (6) DSN: (b) (6) )
- (4) Trans Alert/VAL: DSN: 335-7110
- (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)
- c. Beaufort County Mosquito Control:** (b) (6)
- d. Naval Occupational Health/Preventive Medicine:** LtJG (b) (6) DSN: (b) (6)
- e. Quarters:**
- 14 Rooms Comfort Inn and Suites \$94.99/night (843) 379-9400**
- |                                 |   |
|---------------------------------|---|
| Ramada Inn                      | (843) 524-2144/Fax 1704                   |
| Hampton Inn                     | (843) 986-0600 (FAX 0494)                 |
| Sleep Inn                       | (843) 522-3361 FAX (843) 522-9929         |
| Parris Island Billeting         | DSN: 335-2744 (FAX: 3815); (843) 228-3960 |
| Comfort Inn                     | (843) 525-9366 (FAX 1529)                 |
| Best Western (Sea Island Motel) | (843) 524- 4121                           |
| Port Royal Days Inn             | (843) 524-1551                            |
| Best Western Pt South (I-95)    | (843) 726-8101                            |

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Capt (b) (6) ; FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: LTC (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 910<sup>TH</sup> AIRLIFT WING



1 Aug 2005

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Langley AFB, Hampton, Ft Eustis, VA

1. **Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites and mosquito borne diseases.
2. **Capability:** Spray Aircraft 89-9107 Available 15-19 Aug 05.
3. **Concept of Operations:**
  - 15 Aug (Monday):
    - 0900: Show at KYNG
    - 1100: Depart KYNG
    - 1215: Land KLF1
    - 1230: Mission Safety Briefing
    - 1530: Spray In-Briefing
    - 1600: Showtime, Weather Decision, Load Dibrom
    - 1730: Take off KLF1 (Adulticide Spray Sortie)
    - 1957: Sunset
  - 16 Aug (Tuesday):
    - 1530: Showtime, Weather Decision, Load Dibrom
    - 1730: Take off KLF1 (Adulticide Spray Sortie)
    - 1830: Quiet hours begin
    - 2000: Quiet hours end
    - 1956: Sunset
  - 17 Aug (Wednesday):
    - 1530: Showtime, Weather Decision, Load Dibrom
    - 1730: Take off KLF1 (Adulticide or Spray Training Sortie)
    - 1954: Sunset
  - 18 Aug (Thursday):
    - 1530: Showtime, Weather Decision, Load Dibrom
    - 1730: Take off KLF1 (Adulticide or Spray Training Sortie)
    - 1953: Sunset
  - 19 Aug (Friday):
    - 0800: Show time Hotel Lobby
    - 1000: Take off for KYNG
    - 1115: Land KYNG
4. **Spray Parameters:**
  - a. **Altitude:** 150' AGL for Adulticide swaths when no trees are present.
  - b. **Swath Width:** 2000 feet for ULV or as determined by the CPMP
  - c. **Flow Rate:** 3.6 gallons/minute ULV
  - d. **Application Rate:** 0.50 oz/acre Dibrom® Concentrate
  - e. **Ground Speed:** 200 Knots
  - f. **Proposed spray area:** Approximately 125,000 acres
5. **Mission Commander:** Maj (b) (6)
6. **Aircraft Commander:** Ma (b) (6)
7. **Any questions concerning this mission please contact the Aerial Spray Office, DSN** (b) (6)

// SIGNED //  
(b) (6) Maj, USAFR  
AERIAL SPRAY CHIEF

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 15-19 Aug 2005

**Purpose/Objectives/Benefits:** Characterize the droplet spectrum for two TeeJet flat fan nozzles using the Characterize Ultra Low Volume (ULV) fuselage configuration and Dibrom insecticide.

**1. 910 AW PARTICIPANTS:**

**a. Aircrew:**

- (1) Mission Commander: MAJ (b) (6)
- (2) Pilots: MAJ (b) (6) , LTC (b) (6) , MAJ (b) (6) , CPT (b) (6)
- (3) Navigator: MAJ (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: MSG (b) (6) , MSG (b) (6) , SSG (b) (6)

**b. Maintenance:**

- (1) Spray Maintenance: SMS (b) (6) , MSG (b) (6) , TSG (b) (6) , TSG (b) (6)
- (2) Crew Chiefs: TSG (b) (6) , SSG (b) (6)
- (3) Avionics: TSG (b) (6)

**c. Certified Pest Management Professionals:** CPT (b) (6) , MAJ (b) (6) (In Place)

**d. Observer:** Col (b) (6) , 910LG/CC

**e. Vehicles: Rentals will be at base ops. Enterprise (757) 865-7201**

- **Vehicle Dispatch:** will provide 3 vans/one staff car
- **Ops:** two GOV vans
- **Mx:** one GOV van for spray mx, crew chiefs, rental car for SMS (b) (6)
- **Entomologist:** one staff car- (b) (6) and MC

**f. Billeting Office:** COM: (757) 764-4667 EXT 2606 POC (b) (6)  
DSN 574-4667, EXT 2528; FAX 574-3038

- **Staying at Candlewood Hotel COM 757-766-8976**
- **Group Confirmation 20130299959**
- Pick up Non Available Slips at Langley Billeting

**2. PPR: 0115TP01**

**3. SCHEDULE: (All times local)**

**15 Aug (Monday):**

0900: Show at KYNG  
1100: Depart KYNG  
1215: Land KLFI  
1230: Mission Safety Briefing  
1530: Spray In-Briefing  
1600: Showtime, Weather Decision, Load Dibrom  
1730: Take off KLFI (Adulticide Spray Sortie)  
1957: Sunset

**16 Aug (Tuesday):**

1530: Showtime, Weather Decision, Load Dibrom  
1730: Take off KLFI (Adulticide Spray Sortie)  
1830: Quiet hours begin  
2000: Quiet hours end  
1956: Sunset

**17 Aug (Wednesday):**

1530: Showtime, Weather Decision, Load Dibrom  
1730: Take off KLFI (Adulticide or Spray Training Sortie)  
1954: Sunset

**18 Aug (Thursday):**

1530: Showtime, Weather Decision, Load Dibrom  
1730: Take off KLFJ (Adulticide or Spray Training Sortie)  
1953: Sunset

**19 Aug (Friday):**

0800: Show time Hotel Lobby  
1000: Take off for KYNG  
1115: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Kestrel Weather Monitor, Compass, PCM Card, Pest Safety Binder, UHF Radios, Laptop Computer
- b. **Navigator:** Maps/Map Bag, Validation Map
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit/Supply Kit

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Langley Tower:** DSN 574-5326
- b. **Langley Base Ops:** DSN 574-2504

**5. PARKING PLAN:** Taxi Way Foxtrot or as directed by Transient Alert.

**6. RADIO FREQUENCIES:**

- a. **Felker AAF Tower (Ft Eustis): 126.3, 269.25, 248.2, 241.0**
  - (1) Ops phone DSN878-3588
  - (2) Tower phone DSN 878-3530
  - (3) Flight Service 122.2
- b. **Newport News-Williamsburg Int: CTAF – 118.7** (Operating Hours 1000Z-0200Z)
  - (1) Ground – **121.9** or 348.6 (phone 877-0221 ops)
  - (2) Tower – **118.7** (phone DSN 877-2862) voice mail 7-2962
  - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
- c. **Langley AFB:** Tower DSN 574-7999
  - (1) Tower - **125.0** or 253.5
  - (2) Ground - **121.7** or 275.8
  - (3) Clearance – **118.85** or 271.3
  - (4) Metro - **239.8**
- d. **Norfolk NAS (Chambers Fld): Tower –124.3, 379.15,** Tower Supervisor DSN 262-3443
- e. **Norfolk Approach: 124.9**
- f. **Spray Ground: Primary 392.2; Secondary: 308.6**

**7. IN-BRIEFING:** 1530 hrs; CE Conference Room

**8. SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS ULV; Fuselage booms
- b. **Nozzle Tips/Orientation:** ten 8005 nozzles -- straight down
- c. **Aircraft:** 89-9107
- d. **Mission Identifier:** QZNRKA766227

**9. SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.6 Gallons/Minute
- f. **Acreage:** Potentially 125,000 acres on the peninsula but final acreage TBD
- g. **Swath Width:** 2000 foot

**10. PESTICIDE LOADING:**

- a. **How Much Pesticide:** see entomologist
- b. **Where:** Taxi Way F Aero Club Ramp

c. **When:** 1600 hrs each day pending weather and heat index.

d. **Furnished by Installation:**

- (1) Pesticide
- (2) Loading Equipment/Crew
- (3) Hazardous Waste Disposal
- (4) Two B-5 or B-1 Stands

**11. CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**

a. **LANGLEY AFB VA:**

Wing Commander: DSN 574-5321  
Mission Support Group Commander: DSN 574-7995  
Civil Engineer: DSN 574-2025  
Deputy Chief/Civil Engineer: Ms. (b) (6)  
Environmental Coordinator: DSN 574-3987; FAX 3503  
Base Operations: DSN 574-2504  
Langley Control Tower: DSN 574-5326  
Weather: Langley AFB, DSN 574-5907  
Ft Eustis: DSN 297-5300/3343  
Command Post: DSN 574-5411  
Pest Control Foreman: (b) (6) , DSN (b) (6) , cell phone (b) (6)  
Pest Control/Environmental NCOIC: MSgt (b) (6)  
Public Affairs: DSN 574-2018/2010/2019  
Fuels: DSN 574-4312/3623/4224  
Motor Pool: 574-7514/5712 (2 vans and 1 staff vehicle were requested)  
ACC PMP: (b) (6) , DSN (b) (6) , cell phone (b) (6)

b. **FT EUSTIS VA:** Environmental Coordinator: DSN 927- 4152/2375

c. **Hampton Mosquito Control:** 757 850-3305

d. **York County Mosquito Control:** (757)-890-3780

e. **Poquoson:** (b) (6)

f. **City of Portsmouth Biologist:** (757) 393-8666

g. **Newport News Mosq. Control:** (757) 269-2750

h. **Camp Peary:** (757) 229-2121 Ext 2263, (b) (6) or (b) (6)

i. **Ft Monroe: ?**

j. **Newport News/Williamsburg Int.:**

- (1) Fixed Base Operator: Flight Int 877-6401
- (2) Flight Service: 877-0209
- (3) Tower: 877-2962
- (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

k. **Norfolk NAS VA:** DSN 564-2442/7598 or COM (757)-444-2442/7598

l. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Capt (b) (6) ; FAX 1022
- (4) 910 OG/CC: Col (b) (6)
- (5) 910 OS/OSA: Airfield Manager, Lundy Odell, Ext 1186/1526
- (6) 757 AS/DO: Maj (b) (6)
- (7) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (8) 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
- (9) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) ; FAX 1616
- (10) 910 LG/CC: Ext 1225
- (11) 910 LG/LGM: CMS (b) (6)
- (12) Maintenance Control: Ext 1327
- (13) 910 LG/LGMS: Spray Maintenance, Ext 1132
- (14) 910 LG/LGL: CMS (b) (6)
- (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) , (b) (6) cell (b) (6)
  - Spray Maintenance: (b) (6) 219

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT-Langley AFB 15-18 Aug 2005

### 1. MISSION BASICS:

- a. Installation Sprayed: Langley AFB, VA
- b. Mission Duration: 15-18 Aug 2005
- c. Purpose of Application: Control of adult mosquitoes transmitting arboviruses
- d. Application Dates: 15-18 Aug 2005
- e. Times of Application (Local): 1835-2010 (15 Aug); 1745-1945 (16 Aug); 1800-2006 (17 Aug)
- f. Acres Treated: 79,616 total: 13,824 (15 Aug); 31,744 (16 Aug); 34,048 (17 Aug)
- g. Project Coordinator (Name, Phone #): (b) (6)
- h. Date Spray Map Last Approved: 15 Aug 2005
- i. Date of Waste Generation Letter: 4 April 1996
- j. Installation In-Briefing: 1 CE Conference Room, Langley AFB; Maj (b) (6) & Maj (b) (6)
- k. Mission identifier: QZNRKA766227

### 2. OPERATIONAL:

- a. Mission Commander: MAJ (b) (6)
- b. Certified PMPs (Category 11): LTC (b) (6) , MAJ (b) (6) , CPT (b) (6)
- c. Aircrew:
  - (1) Pilots: MAJ (b) (6) , LTC (b) (6) , MAJ (b) (6) , CPT (b) (6)
  - (2) Navigator(s): MAJ (b) (6)
  - (3) Flight Engineer(s): MSG (b) (6)
  - (4) Spray Operators: MSG (b) (6) , MSG (b) (6) , SSG (b) (6)
- d. Safety Briefer: CPT (b) (6)
- e. Spray Maintenance: SMS (b) (6) , MSG (b) (6) , TSG (b) (6) , TSG (b) (6)
- f. Crew Chiefs: TSG (b) (6) , SSG (b) (6)
- g. Avionics: TSG (b) (6)
- h. Observer: Col (b) (6) 910MXG/CC
- i. Flying Data:
  - (1) Spray Sorties/Hours: 3/5.7
  - (2) Ferry Sorties/Hours: 2/3.0

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 210 (15 Aug); 60 (16 Aug); 45 (17 Aug)
- e. Gallons Pesticide Applied: 56 (15 Aug); 124 (16 Aug); 133 (17 Aug)
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 18 gallons marvel oil
- h. Other Additives Used: n/a
- i. Application Rate: 0.5 oz/acre (15-16 Aug); 0.6 oz/acre (17 Aug)

### 4. APPLICATION EQUIPMENT:

- a. Aircraft Type (Tail Number): 90-9107
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: TeeJet 8005 flat fan nozzles

- e. Nozzle Orientation & Number Used: 10 straight back (9 used 15-16 Aug; 10 used 17 Aug)
- f. Pressure (PSI): 18-37 (15 Aug); 35-55 (16 Aug) & 40-60 (17 Aug)
- g. Flow Rate: 3.5 gpm (15-16 Aug); 4.3 gpm (17 Aug)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 feet
- b. Spray Off Set: 2000 feet
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed in knots): 060°/7 (15 Aug); 070°/8 (16 Aug); 080°/8 (17 Aug)
- b. Temperature (°F): 88-82 °F (15 Aug); 84-80 °F (16 Aug); 80-77 °F (17 Aug)
- c. Dew Point: 79 °F (15 Aug); 76 °F (16 Aug); 72 °F (17 Aug)
- d. Cloud Cover: Mostly Cloudy (15 Aug); Mostly Cloudy/thunderstorms (16 Aug); Scattered clouds (17 Aug)
- e. Source: Ground observations/at altitude during spray

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Normal projected off-sets based on MASS system characterization
  - (2) Results: DGPS shows spray block completed.
- b. Effectiveness:
  - (1) Technique/s Used: carbon dioxide-baited traps were used to monitor mosquito densities pre- and post-treatment
  - (2) Results: Communities did not report numerical figures but reported that mosquito densities had dropped significantly.

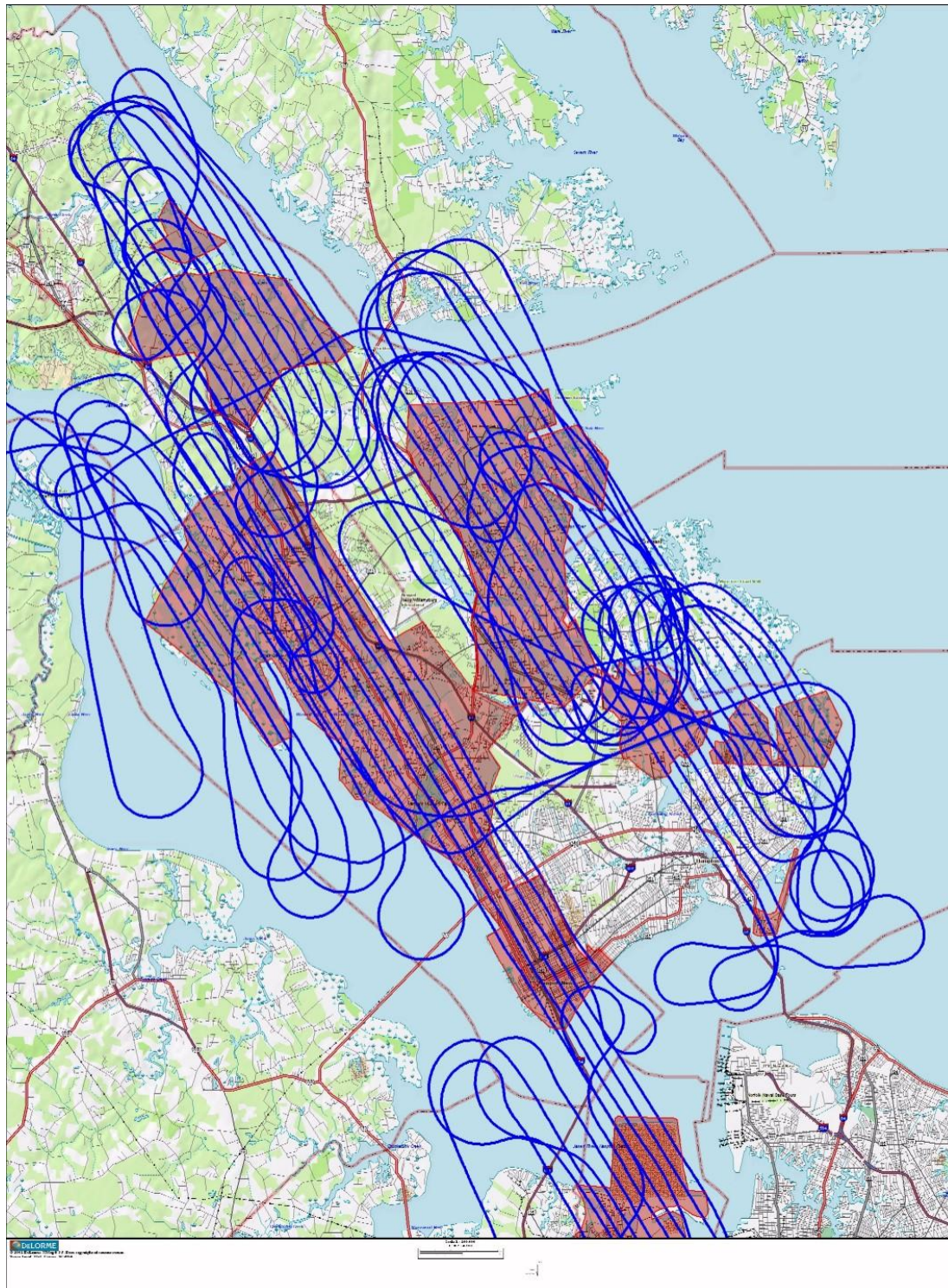
**8. REMARKS:** Evidence of mosquito vectored viruses (namely Eastern Equine Encephalitis and West Nile Virus) has shown up in the tidewater area for the summer season 2005. As of 8 August 2005, 94 mosquito pools, 45 sentinel chickens, and 5 horses tested positive for virus or antibodies against encephalitides. In contrast to high levels of virus, mosquito populations were lower than normally encountered this time of the year. While popular local opinion related these depressed mosquito populations to the predaceous work of dragonflies, seen in abundance this year, it is more likely correlated with a lower than average rainfall. Virus activity prompted the majority of the communities to spray their areas, with the exception of Hampton City and Poquoson. An image showing the aircraft flight path and spray areas for 15-17 August applications is shown in Attachment 1. We received excellent support from Langley AFB, 1 CES to make this mission a success. This was an exceptional training opportunity for us, with 3 pilots receiving aerial spray aircraft commander upgrade training and 1 spray operator finishing ULV spray training. Our next scheduled aerial spray mission to Langley AFB will be 3-7 Oct 2005.

//Signed//

(b) (6) , CAPT, USAFR  
Certified Pest Management Professional



Attachment 1. Aircraft flight path and spray areas for 15-17 August applications at Langley AFB



# 910 AW AERIAL SPRAY UNIT -- POST-MISSION REPORT

## MINOT AFB ADULT MOSQUITO CONTROL 15-19 JUNE 2009

### 1. MISSION BASICS:

- a. Installation Sprayed: Minot AFB, North Dakota
- b. Mission Duration: 15-19 June 2009
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date/s: 16 & 17 June 2009
- e. Time/s of Application (Local): 2030-2145 (16 Jun) & 2030-2200 (17 Jun)
- f. Acres Treated: 4,950 (16 Jun) & 12,230 (17 Jun) = 17,180 acres
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6), Pest control supervisor/spray coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 16 June 2009
- i. Date of Waste Generation Letter: 17 July 2006
- j. Installation In-Briefing: (When/Where/Briefer/s): 16 Jun; 5 CES Conference Room; Lt Col (b) (6) Lt Col (b) (6) (Mission Commander), Maj (b) (6) Lt Col (b) (6)

### 2. OPERATIONAL:

#### a. Aircrew:

- (1) Pilots: Maj (b) (6) Lt Col (b) (6)
- (2) Navigators: Maj (b) (6)
- (3) Flight Engineers: CMS (b) (6)
- (4) Spray Operators: MSgt (b) (6) MSgt (b) (6)

#### b. Maintenance:

- (1) Spray Maintenance: SSgt (b) (6) TSgt (b) (6) MSgt (b) (6) SrA (b) (6) (b) (6)
- (2) Crew Chief(s): TSgt (b) (6) Amn (b) (6)
- (3) Avionics: MSgt (b) (6)

#### c. Entomologist: Lt Col (b) (6)

#### d. Safety Briefer: Lt Col (b) (6)

#### e. Flying Data:

- (1) Spray Sorties/Hours: 2 sorties (1.8+1.9) = 3.7
- (2) Ferry Sorties/Hours: 2 sorties (3.6 + 3.4) = 7.0

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Trumpet<sup>®</sup> EC Concentrate
- b. EPA Registration Number: 59639-90-5481
- c. Formulation Sprayed: Emulsified Concentrate
- d. Gallons Pesticide Loaded: 105 gallons total (16 Jun)
- e. Gallons Pesticide Applied: 31 gal (16 Jun) & 73 gal (17 Jun)
- f. Gallons and Name Diluent Used: None
- g. Gallons and Name of Flush Used: 100 gallons; water
- h. Other Additives Used: None
- i. Application Rate: 0.8 oz/acre (16 Jun); 0.75 oz/acre (17 Jun)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 8- 8005s total (4 each side) for 1000' swaths (16 Jun) and 16- 8005's (8 each side) for 2000' swaths (16 Jun) oriented straight down
- f. Pressure: 45-60 psi
- g. Flow Rate: 2.9 gallons per minute (16 Jun); 5.5 gallons per minute (17 Jun)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000' (16 Jun); 2000' (17 Jun)
- b. Spray offset: 1000' (16 Jun); 2000' (17 Jun)
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 5 knots @ 130° (16 Jun) & light and variable <3 knots @ 180° (17 Jun)
  - (2) Release Altitude: 12 knots @ 130° (16 Jun) & 12 knots @ 180° (17 Jun)
- b. Temperature (Degrees Fahrenheit): 70° (16 Jun) & 77° (17 Jun)
- c. Relative humidity: 69% (16 Jun) & 62% (17 Jun)
- d. Cloud Cover: Clear (16 Jun) & Clear (17 Jun)
- e. Source: Ground observations and aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Minot AFB Pest Control Shop (5 CES/CEOUE) collected 119 mosquitoes/trap night and 56 mosquitoes/trap night the night following the application (47% reduction).
- b. No data was reported from the city of Minot, but judging the excellent environmental conditions and results at the AFB, we expect significant reduction in mosquito activity.

**8. REMARKS:** This was the 5<sup>th</sup> year of spray operations conducted at Minot AFB and the city of Minot to control mosquitoes. The City of Surrey (approximately 2500 acres) was added east of Minot. Areas treated are shown in Attachment 1. Significant spring rainfall produced ponds of water in all fields surrounding Minot AFB. Moderate levels of mosquito abundance were reduced by this application. New emergence and pressure from outside the spray area caused trap numbers to increase to 374 the night after spraying was completed. All spraying was optimized by flying up to sunset (2150) to control the target mosquito species, *Aedes vexans*.

The 5<sup>th</sup> CES and others activities on Minot AFB provided outstanding support for our operation; the people at Minot AFB are great to work with. Special thanks go out to Ms. (b) (6) and SrA (b) (6) for making this mission a success through their conscientious and diligent work.

//signed//

(b) (6), LT COL, USAFR  
Entomologist and DoD Certified Applicator



# AERIAL SPRAY OPERATIONAL SCHEDULE

## MINOT AFB, ND

### 15-19 June 2009

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Minot AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: Lt Col (b) (6)
- (2) Pilots: MAJ Phil Townsend, Lt Col (b) (6)
- (3) Navigators: MAJ (b) (6)
- (3) Flight Engineers: CMS (b) (6)
- (4) Spray Operators: MSG (b) (6), MSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: SSG (b) (6), TSG (b) (6), MSG (b) (6), SRA (b) (6)
- (2) Crew Chief(s): TSG (b) (6), AMN (b) (6)
- (3) Avionics: MSG (b) (6)

##### c. Entomologist: LTC (b) (6) (TR arriving at MOB @ 1300 hrs)

#### 2. SCHEDULE: (All Local Times)

##### 15 Jun (Monday) PPR: 1501 RM

- 1300: Show at KYNG
- 1500: Depart KYNG
- 1730: Land KMIB/Safety Briefing
- Spray Safety Brief at aircraft

##### 16 Jun(Tuesday):

- 1430: Installation Brief
- 1755: Show time
- 1800 Load and Calibration
- 1955: Take off KMIB for area review (Adulticide Spray Sortie will begin @ 2000 hrs)
- 2148: Sunset

##### 17 Jun (Wednesday):

- 1800: Show time
- 1800 Load Chemical
- 2000: Take off KMIB (Adulticide Spray Sortie)
- 2149: Sunset

##### 18 Jun (Thursday): Wx backup or training sortie

- TBD: Show time
- TBD Load Chemical
- TBD: Take off KMIB (Adulticide Spray Sortie)
- 2149: Sunset

##### 19 Jun (Friday):

- 0700: Show time
- 0900 Depart KMIB
- 1300 Land YNG

\*\*Time will adjust if using weather day

#### 3. ITEMS TO TAKE

- a. **Mission Commander:** Cellular Phone, Mission Folder
- b. **Entomologist:** Cell Phone, Wind Gauge, Compass, Pest Safety Binder,  
1 UHF Radio, 1 VHF radio Project Notebook
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment

#### 4. PPR: 1501RM

#### 5. RADIO FREQUENCIES: Air To Ground Primary VHF 123.45

Minot AFB Tower 120.65 V, 236.6, 253.5; Minot International 118.2 V or Unicom 122.95

#### 6. CONFIGURATION: SP2G

- a. **System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. **Nozzle Tips/Orientation:** ULV (adulticide): 8005 Tee Jet oriented straight down

- c. **Number:** ULV: 8 8005s total (4 each side) for 1000' swaths and 16 8005's (8 each side) for 2000' swaths  
e. **Aircraft:** 89-9107  
f. **Mission Identifier:** QZNRKA446166

**7. SPRAY PARAMETERS:**

**a. Adulticide**

- (1) **Area to be treated:** 14,000 acres
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 1000 feet for AFB; 2000' City of Minot or as determined by the PMP
- (4) **Flow Rate.** 2.7 gallons/minute for 1000' swaths; 5.5 gal/min for 2000' swaths
- (5) **Application Rate.** 0.75 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots (338 Feet/Second)
- (7) **Flush:** With water, triple rinse, then air purge

**8. SPRAY MIXING AND LOADING:** 90 gallons will be loaded

**9. TRANSPORTATION:** 2 six packs + 2 staff vehicles (or equivalent)

**10. LODGING: Best Western Kelly Inn**

1510 26<sup>th</sup> Ave SW Minot ND 58701

(701) 852-4300

**11. CONTACTS:**

**Minot AFB ND: DSN prefix: 453- Commercial area code and prefix (701) 723—**

**a. Minot AFB ND: DSN prefix: 453- Commercial area code and prefix (701) 723 -**

1. **Base Operations:** x2347 (SSgt Factor), Airfield Manager: TSgt Eddie (b) (6) x(b) (6)/TSgt (b) (6) x(b) (6) FAX: 3637
2. **Environmental Officer:** (b) (6)
3. **Base Civil Engineer:** Lt Col (b) (6)
4. **Pest Management:** (b) (6) (cell: (b) (6))
5. **Public Affairs:** Capt (b) (6)
6. **Weather:** TSgt (b) (6) /Capt (b) (6)
7. **Billeting:** SSgt (b) (6) , TSgt (b) (6) (if you have problems w/this number use (b) (6))
8. **Fire Dept:** x2461
9. **Transient Alert:** x3153, closes at 1730L
10. **Minot AFB Twr** – x3330
11. **Minot Int'l Twr (Magic City Twr)** (b) (6)

**b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Ext 1236; FAX 1022
4. 910 OG/CC: LtCol (b) (6)
5. 910 Base Ops: Airfield Manager: Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181
6. 757 AS/DO: Maj (b) (6)
7. 757 AS/DOO: Ops Admin: SMSgt (b) (6) ; FAX 1657
8. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) or 1652; FAX 1616
9. 910 LG/CC: Ext 1225
10. 910 LG/LGM: Ext 1352
11. Maintenance Control: Ext 1348
12. LG/LGMS: Spray Maintenance: SMSgt (b) (6) Cell: (b) (6)
13. 910 LG/LGL: Ext 1137
14. Omega/SATO Travel: Ext 1772; (800) 285-6342
15. Supervisor of Flight Desk: 1069, FAX: 1371
16. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Spray Maintenance (b) (6)
  - (b) (6) cell: 8(b) (6)



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



18 APR 2006

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Grand Forks AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks AFB ND.

**2. Capability:** Spray Aircraft 89-9108 available 15-19 May 2006

**3. Concept of Operations:**

**15 May (Monday)**

0900: Showtime  
1100: Depart KYNG  
1300: Land KGFK/Safety Briefing  
1500: Spray In Brief (CPMP, MC, AC).

**16 May (Tuesday):**

0430: Show time  
0530 Load Chemical  
0600: Take off KGFK (Larvicide Spray Sortie)  
0550: Sunrise

**17 May (Wednesday):**

0430: Show time  
0530 Load Chemical  
0600: Take off KGFK (Larvicide Spray Sortie)  
0549: Sunrise

**18 May (Thursday):**

0430: Show time  
0530 Load Chemical  
0600: Take off KGFK (Larvicide Spray Sortie)  
0547: Sunrise

**19 May (Friday):**

0800: Show time  
1000: Take off KGFK  
1400: Land KYNG

#### 4. Spray Parameters:

- a. **Altitude:** 100' AGL for Larvicide swath when no trees are present.
- b. **Swath Width.** 200 feet for LV or as determined by the CPMP
- c. **Flow Rate.** 1.86 gallons/minute LV
- d. **Application Rate.** 0.75 oz/acre Altosid<sup>®</sup>)
- e. **Ground Speed:** 200 Knots
- f. **Proposed spray area:** Approximately 1,800 acres

5. **Mission Commander:** Major (b) (6)

6. **Aircraft Commander:** Capt (b) (6)

7. Support at Grand Forks AFB ND has been coordinated with the organization's Environmental/Spray Coordinator Ms (b) (6), DSN (b) (6).

7. HQ AFRC/DOOM approval via email.

// Signed //

(b) (6), Maj, USAFR  
AERIAL SPRAY CHIEF



# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 15-19 May 2006

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) Pilots: MAJ (b) (6), COL (b) (6)
- 2) Navigators: LTC (b) (6)
- 3) Flight Engineers: MSG (b) (6)
- 4) Spray Operators: MSG (b) (6), MSG (b) (6), MSG (b) (6)

##### b. Maintenance:

- 1) Spray Maintenance: TSG (b) (6), TSG (b) (6), TSG (b) (6)
- 2) Crew Chief(s): MSG (b) (6), TSG (b) (6)
- 3) Avionics: TSG (b) (6)

##### c. Entomologists/Ground Support: CPT (b) (6)

#### 2. SCHEDULE: (All Local Times) PPR: 051501CA

##### 15 May (Monday)

0900: Showtime  
1100: Depart KYNG  
1300: Land KGFK/Safety Briefing  
1400: Spray In Brief (CPMP, MC, AC).

##### 16 May (Tuesday):

0430: Show time  
0530 Load Chemical  
0600: Take off KGFK (Larvicide Spray Sortie)  
0550: Sunrise

##### 17 May (Wednesday):

0430: Show time  
0530 Load Chemical  
0600: Take off KGFK (Larvicide Spray Sortie)  
0549: Sunrise

##### 18 May (Thursday):

0430: Show time  
0530 Load Chemical  
0600: Take off KGFK (Larvicide Spray Sortie)  
0547: Sunrise

##### 19 May (Friday):

0800: Show time  
1000: Take off KGFK  
1400: Land KYNG

#### 3. ITEMS TO TAKE

a. **Mission Commander:** Cellular Phone, Mission Folder

b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder,  
1 UHF Radio, Water Sensitive Cards, Card Holders with  
Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors,  
Project Notebook, Entomologist's Tool Kit, Trakstar Receiver and Antenna

c. **Navigator:** Maps/Map Bag, Validation Map

d. **Spray Operator:** Safety Gear, Calibration Tables

e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

**4. PPR: 051501CA**

**5. RADIO FREQUENCIES: Air To Ground Primary** UHF 392.2; VHF 123.45  
KRDR Tower 124.9 V; Grand Forks International 118.4 V

**6. CONFIGURATION: SP2G**

- a. System:** 2-Module System/ Fuselage Booms
- b. Nozzle Tips/Orientation:**  
Larvicide: Raindrop nozzles straight back
- c. Number:**  
Larvicide: fuselage only, 12 total (6 each side) straight back
- d. Booms:** Fuselage
- e. Aircraft:** 899108
- f. Mission Identifier:** QZNRKA311125

**7. SPRAY PARAMETERS:**

- a. Larvicide**
  - (1) **Area to be treated:** 1608
  - (2) **Altitude:** 100' for Larvicide application
  - (3) **Swath Width.** 200 feet
  - (4) **Flow Rate.** 186 gallons/minute
- b. Application Rate.** 2 gallons/acre (water with 0.75 oz of Altosid®)
- c. Ground Speed:** 200 Knots

**8. SPRAY MIXING AND LOADING: (For Larvicide Spray Sorties)**

- a. Composition of each Gallon:**
  - (1) 0.375 ounces of Altosid® 20
  - (2) 0.64 ounces of AirexDC™ drift retardant
  - (3) Water
- b. Typical load:** (2 tanks of 450 gallons each)
  - (1) Fill with 450 gallons of water/tank. Total water in tanks = 900 gal.
  - (2) Total water added = 900 gallons
  - (3) Add 1.33 (1 1/3) gallons of Altosid® per tank (2 2/3 gallons total).
  - (4) 2.5 gal AirexDC per tank (5 Gal total) while agitating approximately 15 min
  - (5) Total quantity mix. 908 gallons
- c. Final Load for complete flush**
  - (1) Fill tanks with the amount of water necessary for a proper system flush
- d. Mixing Instructions:**  
SHAKE WELL BEFORE USING. Altosid® may separate on standing and must be thoroughly agitated prior to dilution.  
PRECAUTIONARY STATEMENT: Spray solution should be used within 48 hours; always agitate before spraying.

**9. TRANSPORTATION: 3 x 6 Paks and 1 van provided by 319 CES, Col (b) (6) has a staff car. Transportation (bus) will be provided to the In-Brief , vehicles will be picked up there.**

- 1-Aircrew**
- 1-Spray MX**
- 1-Crew Chiefs & Specialists**

**10. LODGING: On Base Billeting:** DSN 362-3070/6189 or (701) 594-8431, FAX 362-3069

- Prime Knight DSN 362-3844 or (701) 747-3844
- 17 Rooms Reserved

## 11. CONTACTS:

### a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205

- (1) **Base Operations:** Airfield Manager DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx
- (2) **Environmental Officer:** (b) (6), DSN (b) (6), FAX 6155
- (3) **Base Civil Engineer:** Lt Col (b) (6)
- (4) **Pest Management:** DSN 362-4289, FAX 3432
- (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
- (6) **Weather:** DSN 362-4396
- (6) **Billeting:** DSN 362-3070/6189 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844

### b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 Base Ops: Airfield Manager, Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Ext 1503 or 1652; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL:Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist (b) (6)



DEPARTMENT OF THE AIR FORCE  
757 Airlift Squadron – Aerial Spray Operations  
3976 King Graves Rd Unit 24  
Vienna OH 44473-5924

**910 AW AERIAL SPRAY UNIT -- POST-MISSION REPORT  
MINOT AFB ADULT MOSQUITO CONTROL & ARMY CORPS  
OF ENGINEERS PROPERTY NEAR WILLISTON 15-22 JUL 2009**

**1. MISSION BASICS:**

- a. Installation Sprayed: Minot AFB, North Dakota and Army Corps of Engineers Property near Williston, ND.
- b. Mission Duration: 15-22 July 2009
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date/s: 20 & 21 July 2009
- e. Time/s of Application (Local): 2020-2140 (20 Jul) & 1957-2133 (21 Jul)
- f. Acres Treated: 24,364 (20 Jul) & 16,972 (21 Jul) = 41,336 acres
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6) Pest control supervisor/spray coordinator, DSN (b) (6) (b) (6) Land Manager, (b) (6)
- h. Date Spray Map Last Approved: 15, 20 July 2009
- i. Date of Waste Generation Letter: 17 July 2006
- j. Installation In-Briefing: (When/Where/Briefer/s): 16 Jul; 5 CES Conference Room; Maj (b) (6) (Mission Commander)

**2. OPERATIONAL:**

- a. Mission Commander: Maj (b) (6)
- b. Certified PMP/Entomologists (Category 11): Maj (b) (6) Maj (b) (6) (b) (6) safety briefer)
- c. Aircrew:
  - Pilots: LtCol (b) (6) LtCol (b) (6)
  - Navigators: LtCol (b) (6) Capt (b) (6)
  - Flight Engineers: MSgt (b) (6)
  - Spray Operators: MSgt (b) (6) , SSgt (b) (6) MSgt (b) (6)
- d. Maintenance:
  - Spray Maintenance: TSgt (b) (6) SSgt (b) (6) SrA (b) (6) (b) (6)
  - Crew Chief(s): SRA (b) (6) A1C (b) (6)
  - Avionics: SSgt (b) (6)

**Flying Data:**

- (1) Spray Sorties/Hours: 2 sorties (2.9 + 2.5) = 5.4
- (2) Ferry Sorties/Hours: 2 sorties (4.2 + 3.5) = 7.7

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Trumpet<sup>®</sup> EC Concentrate (78% naled); Zenivex (20% etofenprox)
- b. EPA Registration Number: 59639-90-5481 Trumpet; 2724-791 Zenivex
- c. Formulation Sprayed: Emulsified Concentrate; E20
- d. Gallons Pesticide Loaded: 60 gal Zenivex (20 Jul); 90 gal Trumpet (21 Jul)
- e. Gallons Pesticide Applied: 60 gal (20 Jul) & 90 gal (21 Jul)
- f. Gallons and Name Diluent Used: 50 gal BVA-13 with Zenivex
- g. Gallons and Name of Flush Used: 150 gal; water
- h. Other Additives Used: None
- i. Application Rate: 0.32 oz/acre (20 Jul); 0.68 oz/acre (21 Jul)

### 4. APPLICATION EQUIPMENT:

- a. Aircraft Type (Tail Number): 99107
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet<sup>®</sup> 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 10-8005s total (5 each side-20 Jul) and 16- 8005's (8 each side-21 Jul) oriented straight down
- f. Pressure: 35-37 psi
- g. Flow Rate: 4.4 gallons per minute (20 Jul); 5.3 gallons per minute (21 Jul)

### 5. APPLICATION PARAMETERS:

- a. Swath Width Flown: 2000'
- b. Spray offset: 4000' (20 Jul); 2000' (21 Jul)
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

### 6. WEATHER OBSERVATIONS:

- a. Winds (Direction/Speed):
  - (1) Ground: 5-8 knots @ 280° (20 Jul) & 7 knots @ 310° (21 Jul)
  - (2) Release Altitude: 12-18 knots @ 290° (20 Jul) & 12 knots @ 310 (21 Jul)
- b. Temperature (Degrees Fahrenheit): 70-64° (20 Jul) & 70° (21 Jul)
- c. Relative humidity: 39-58% (16 Jul) & 53% (17 Jul)
- d. Cloud Cover: Scattered clouds
- e. Source: Ground observations and aircraft

### 7. SPRAY MONITORING (Pre- and Post-Treatment):

- a. Monitoring in Williston was done with New Jersey light traps, wild-collected mosquitoes in bioassay cages, droplet density collectors, and landing counts.
- b. Minot AFB Pest Control Shop (5 CES/CEOUE) collected 119 mosquitoes/trap night and 56 mosquitoes/trap night the night following the application (47% reduction). No data was reported from the city of Minot, but judging the excellent environmental conditions and results at the AFB, we expect significant reduction in mosquito activity.

8. **REMARKS:** This was the 1<sup>st</sup> year of spray operations conducted for the Army Corps of Engineers and surrounding areas. A large larviciding project was completed earlier in the year and adult mosquitoes had been depressed relative to previous years (see attachment 1). However, large numbers of adult mosquitoes were present in Williston just before the spray with pre-spray landing counts recorded at over 100+/per minute and traps were collecting over 300 females in 12 hrs. This area was treated with Zenivex, a newly EPA registered mosquito adulticide with low mammalian toxicity. We gathered efficacy data for this application with help from (b) (6) (Leading Edge Associates, LLC); caged mosquitoes exhibited a 95% mortality rate within 24 hrs of the application (see attachment 2). In addition, 2 hr post-spray landing



rates dropped to 0 from a pre-spray rate of 100+/minute. Attachment 3 shows the area treated around Williston on 20 July. However, landing rates and trap counts had rebounded to 75% of the original density within two days following sprays. Several strategies may need to be considered for future missions to increase the period of relief from mosquitoes, including: increasing the size of the spray area to buffer the Williston residents from mosquitoes migrating into the area, delaying sprays until more adults have emerged, adding an additional application a few days after the first. Strategies for next year will be discussed with the local vector control personnel. This was the last application for the Williston area this year. Pending funding of the project next year, we hope to apply larvicides and complete additional operational work with Zenivex.

This was the 5<sup>th</sup> year of spray operations conducted at Minot AFB and the city of Minot to control adult mosquitoes. Areas treated are shown in Attachment 4. The City of Surrey (approximately 2500 acres) was added east of Minot. Significant spring rainfall produced ponds of water in all fields surrounding Minot AFB. Moderate levels of mosquito abundance were reduced by this application and we consider these results to be acceptable. Because the mosquito species *Aedes vexans* has a peak flight period close to sunset, it is this timeframe which is particularly important to utilize for optimal control. On this sortie, events were time quite well, with the final spray application taking place only minutes before sunset.

Once again the 5<sup>th</sup> CES at Minot AFB provided outstanding support for our operation; the people at Minot AFB are great to work with. Special thanks go out to Ms. (b) (6) and SrA (b) (6) for making this mission proceed smoothly through their conscientious and diligent work.

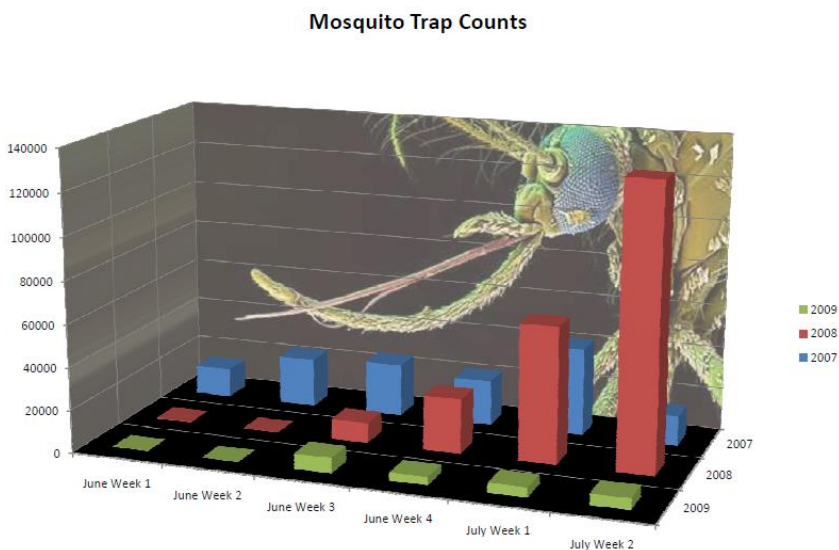
//signed//

(b) (6), MAJ, USAFR  
Entomologist and DoD Certified Applicator

//signed//

(b) (6) MAJ, USAFR  
Entomologist and DoD Certified Applicator

Attachment 1. Mosquito numbers collected in traps, Williston ND., 2007-2009. Wide-area larviciding may have contributed to lower numbers of adult mosquitoes in Williston in 2009.

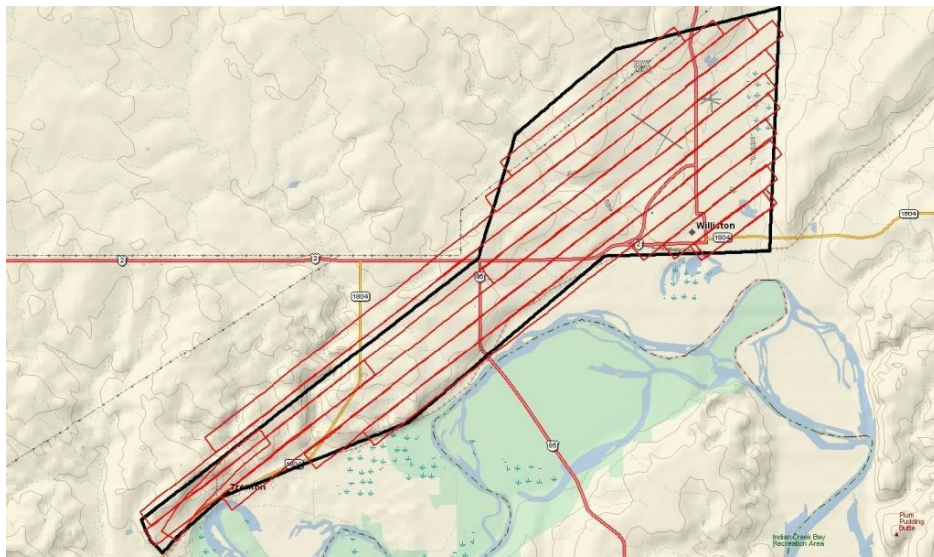


Attachment 2. 24-hr mortality observed in caged mosquitoes following Zenivex spray at Williston, ND.

Cage Location	24-hrs Post Mortality		
	Dead	Total	% mortality

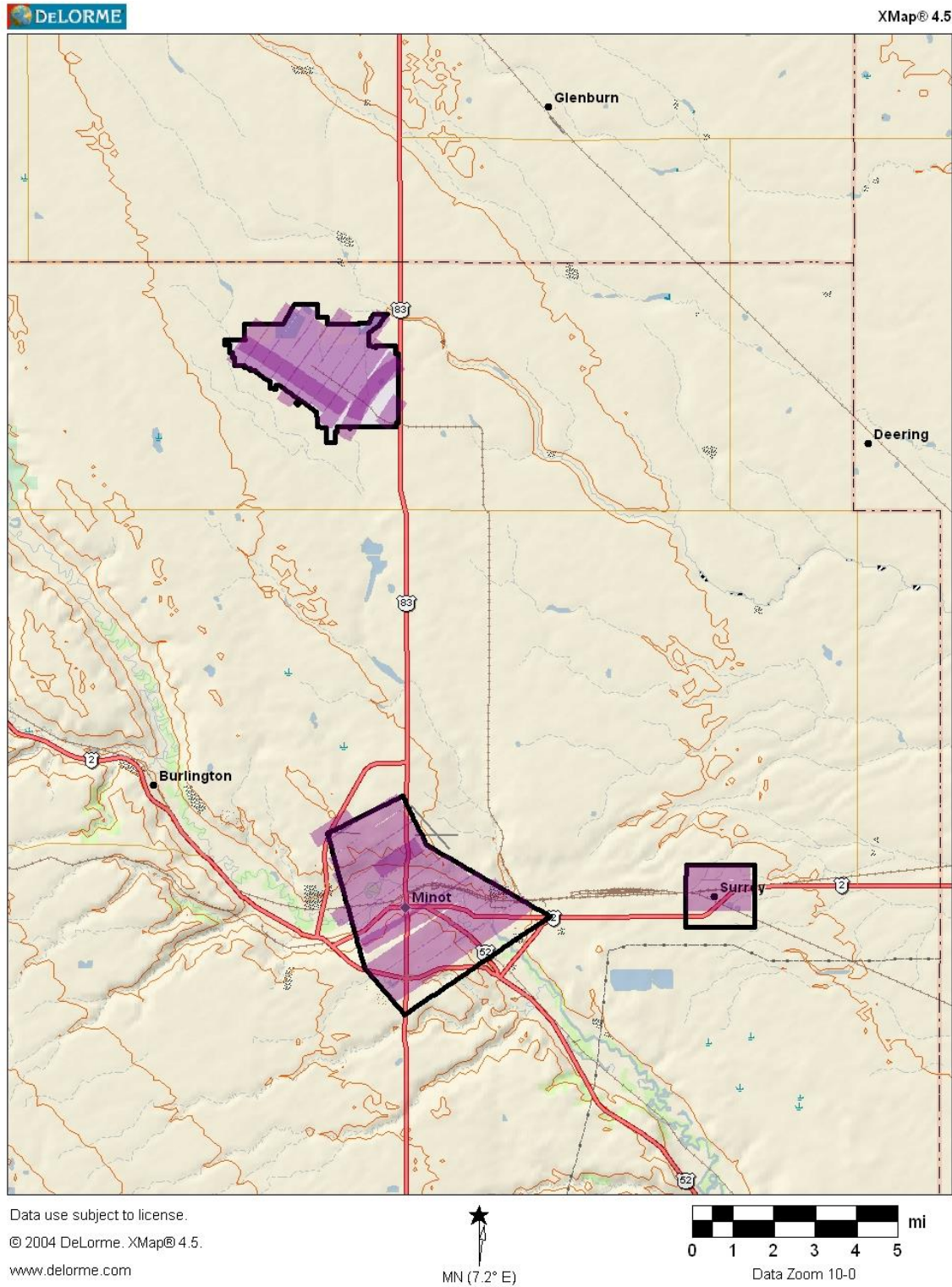
Brotherinlaw (control)	2	27	7%
Walmart	19	20	95%
Ol'			
Police St	24	26	92%
Bermuda	29	29	100%
Skunk Hollow	23	25	92%

Attachment 3. Shows the Williston area spray block. The black outline represents the proposed treatment area. The red lines are the track of the aircraft while spraying. Areas sprayed outside the spray block were treated so that the pesticide would drift back into the target area with the prevailing wind direction.





Attachment 4. Shows the Minot Area spray blocks. The black outline represents the proposed treatment area. The purple blocks are the track of the aircraft while spraying. Areas sprayed outside the spray block were treated so that the pesticide would drift back into the target area with the prevailing wind direction.



11 June 2001

**MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497 -0198)**

**FROM: 757 AS/DOS**

**SUBJECT: Capability and Concept of Operations for Aerial Spray at Grand Forks AFB ND Control of Mosquitoes**

1. **Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks AFB ND.
2. **Capability:** Spray Aircraft Available on 15 – 22 June 2001
3. **Concept of Operations:**
  - a. **15 Jun 01 (Friday):**
    - 1000 Take Off KYNG **PPR Not Required**
    - 1230 Land KRDR
    - 1240 Safety Briefing (upon arrival)
  - b. **16 Jun 01 (Saturday):**
    - 0340 Show Time for all personnel  
Times for chemical mix & load determined by Spray MX Superv
    - 0530 Take Off KRDR
    - 0543 Begin larvicide spray
  - c. **17 Jun 01 (Sunday):**
    - 0340 Show Timefor all personnel  
Times for chemical mis/load determined by Spray MS Superv
    - 0530 Take Off KRDR
    - 0541 Begin larvicide spray

**FLUSH BETWEEN LARVICIDE AND ADULTICIDE MISSIONS**

- d. **18 Jun 01 (Monday):**
  - 1730 Load Chemical
  - 1930 Take-Off KRDR
  - 2110 Land KRDR
- e. **19 Jun 01 (Tuesday):**
  - 1730 Load Chemical
  - 1931 Take-Off KRDR
  - 2110 Land KRDR



# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 15-22 JUNE 2001

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: MAJ (b) (6)
- (2) Pilots: MAJ (b) (6) , 1LT (b) (6)
- (3) Navigators: LTC (b) (6) ; CAPT (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: MSG (b) (6) , MSG (b) (6) , TSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSG (b) (6) , TSG (b) (6) , TSG (b) (6) ,
- (2) Crew Chief(s): TSG (b) (6) , SRA (b) (6)
- (3) Avionics: TSG (b) (6)

##### c. Entomologists/Ground Support: LTC (b) (6) & 1LT (b) (6)

#### 2. SCHEDULE: (All Local Times)

##### 15 JUNE (Friday)

0800: Show at KYNG  
1000: Depart KYNG  
1230: Land KRDR/Safety Briefing  
1345: Meet Base Commander  
1400: In-brief

##### 16 JUNE (Saturday):

1730: Show time  
1930: Take Off KRDR  
2130: Sunset/Land

##### 17 JUNE (Sunday):

1730: Show time  
1930: Take Off KRDR  
2130: Sunset/Land

#### NOTE: FLUSH BETWEEN ADULTICIDE/LARVICIDE MISSIONS

##### 18 JUNE (Monday):

0528: Sunrise  
1300: Aircrew Report  
1330: Take Off KRDR for Flush  
1500: Land KRDR  
2130: Sunset

##### 19 JUNE (Tuesday):

0430: Report  
0529: Sunrise  
0614: Take Off KRDR  
0615: Begin larvicide spray (aiming for two lifts if weather permits)  
2131: Sunset

**20 JUNE (Wednesday)**

0330: Report

0514: Take Off KRDR

0515: Begin larvicide spray (aiming for two lifts if weather permits)

0530: Sunrise

2132: Sunset

**21 JUNE (Thursday)**

0330: Report

0514: Take Off KRDR

0515: Begin larvicide spray

0531: Sunrise

2133: Sunset

**22 JUNE (Friday)**

TBA: Out-brief

1100: Take Off KRDR

1500: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Mission Commander:** Hand Held GPS, 1 Cellular Phone
- b. **Entomologist:** 1 Cellular Phones, Wind Gauge, 2 Compasses, Pest Safety Binder, 2 Signal Mirrors, 1 UHF Radio, 10 Packs Water Sensitive Cards, 3 Boxes Card Holders with Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Toshiba Computers, 1 SATLOC Manual, Project Notebook, 2 Anemometers, Entomologist's Tool Kit, Trakstar Receiver and Antenna, Batteries, Kodak Camera
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

**4. PPR:** Not required weekdays**5. RADIO FREQUENCIES:** Air To Ground Primary 392.2; VHF 123.45**6. SPRAY CONFIGURATION:**

- a. **System:** 2-Module System/Stainless Steel ULV Wing Booms and Fuselage Booms
- b. **Nozzle Tips/Orientation:**
  - (1) Larvicide: Raindrop nozzles straight back
  - (2) ULV: 8008 TeeJet oriented straight down
- c. **Number:**
  - (1) Larvicide: Fuselage only, 6 total (3 each side) 45° back
  - (2) ULV: wing only, 6 8008s total (3 each side)
- d. **Booms:** Full Wing or Fuselage Booms as required (see above)
- e. **Aircraft:** 105; **Mission Identifier:** QZNRKA463166

## 7. **SPRAY PARAMETERS:**

- a. **Altitude:** 100' AGL for larvicide swath when no trees are present. 150' for ULV application
- b. **Swath Width.** 90 feet for larvicide; 1500 feet for ULV or as determined by the PMP
- c. **Flow Rate.** 83.6 gallons/minute larvicide; 3.3 gallons/minute ULV
- d. **Application Rate.** 2 gal/acre (water with 0.75 oz of Altosid®), larvicide; 0.60 oz/acre Trumpet, ULV
- e. **Ground Speed:** 200 Knots

## 8. **SPRAY MIXING AND LOADING:**

- a. Composition of each Gallon:
  - (1) 0.375 ounces of Altosid 20
  - (2) 0.08 ounces of Control® drift retardant
  - (3) Water
- b. First Load (2 tanks of 475 gallons each + sump of 35 gallons)
  - (1) Fill with 475 gallons of water/tank. Total water in tanks = 950 gal.
  - (2) 35 gallons of water in sump
  - (3) Total water added = 985 gallons
  - (4) Add 1.5 gallons of Altosid® per tank (3 gallons total).
  - (5) Add 1 bottle of Control®/tank while agitating approximately 15 min
  - (6) Total quantity mix. 988 gallons
- c. Subsequent Loads (2)
  - (1) Fill with 475 gallons of water/tank. Total water = 950 gal
  - (2) Add 1.4 gallons of Altosid® per tank. Total Altosid® = 2.8 gal
  - (3) Add 1 bottle of Control/Tank.
  - (4) Total quantity mix. 952.8 Gallons (does not include 35 Gal already mixed in sump)
- d. Final Load (1 tank only)
  - (1) Fill with 450 gallons of water. Total water = 450 gal
  - (2) Add 1.3 gallons of Altosid®.
  - (3) Add 1 bottle of Control®.
  - (4) Total quantity of mix 451.3 gallons (Does not include 35 Gal already mixed in sump)
- e. Mixing Instructions:
  - SHAKE WELL BEFORE USING. Altosid may separate on standing and must be thoroughly agitated prior to dilution.
  - PRECAUTIONARY STATEMENT: Spray solution should be used within 48 hours; always agitate before spraying.

## 9. **SPRAY MIXING AND LOADING:**

The amount of Trumpet to load will be determined on site

## 10. CONTACTS:

- a. **319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks ND 58205**  
**DSN 362-xxxx; Commercial (701) 747-xxxx**
- (1) **Base Operations:** (b) (6) Airfield Manager or 1LT (b) (6) DSN (b) (6)
  - (2) **Environmental Officer:** (b) (6), DSN (b) (6), FAX 6155
  - (3) **Base Civil Engineer:** LTC(b) (6)
  - (4) **Pest Management:** SSG (b) (6), DSN (b) (6), FAX 3432
  - (5) **Public Affairs:** Capt. (b) (6) x5608 or x5023 off duty CPx6711
  - (6) **Billeting:** DSN 362-3070/6189, (701) 594-8431; FAX 362-3069  
Prime Knight: DSN 362-3844; (701) 747-3844  
**CONTRACT QUARTERS:** Best Western, (701) 746-5411
  - (7) **Utilities shop:** MSG (b) (6), Superintendent DSN (b) (6)
- b. **910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext
- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
  - (2) 910 AW Command Post: Ext 1315; FAX 1161
  - (3) 910 AW/PA: Ext 1236; FAX 1022
  - (4) 910 OG/CC: Ext 1257 / 1179
  - (5) 910 OSF/OSA: Airfield Manager: (b) (6)
    - Assistant Air Field Manager (ACAM), (b) (6)
  - (6) 757 AS/DO: LtC (b) (6)
  - (7) 757 AS/DOO: Ops Admin: SMSgt(b) (6)
  - (8) 757 AS/DOS: Aerial Spray Office, (b) (6); FAX 1616
  - (9) 910 LG/CC: Ext 1225
  - (10) 910 LG/LGM: CMSgt (b) (6)
  - (11) Maintenance Control: Ext 1348910
  - (12) LG/LGMS: Spray Maintenance: Ext 1132/1586
  - (13) 910 LG/LGL: CMSgt (b) (6)
  - (14) Omega/SATO Travel: Ext 1772; (800) 285 – 6342
  - (15) Supervisor of Flight Desk: 1069, FAX: 1371
  - (16) Cellular Spray Phones:
    - PMP/Entomologist: (b) (6)
    - Mission Commander: (b) (6)
    - Spray Maintenance:(b) (6); Pager(b) (6)



# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT

### 1. MISSION BASICS:

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 15-22 June 2001
- c. Purpose of Application: Control nuisance and vector mosquitoes (adult & larval stages)
- d. Application Date/s: 16 Jun, 18-21 Jun 01
- e. Time/s of Application (Zulu): 0010-0255Z (16 Jun); 1130-1315Z (19 Jun); 1140-1255Z and 1405-1505Z (Jun 20); 1135-1325Z (21 Jun)
- f. Acres Treated: 22,400 (16 Jun); 478 (19 Jun); 754 (20 Jun); 461 (21 Jun)
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6), Environmental Officer, DSN (b) (6) and SSG (b) (6), NCOIC Pest Management Shop, DSN (b) (6)
- h. Date Spray Map Last Approved: 15 June 2001
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): 15 June, CE Conference Room, LTC (b) (6) and MAJ (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: MAJ (b) (6)
- b. Certified PMP/s (Category 11): LTC (b) (6), 1LT (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander: MAJ (b) (6)
  - (2) CoPilot: 1LT (b) (6)
  - (3) Navigator(s): LTC (b) (6), CAPT (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
  - Spray Operators: MSG (b) (6), SSG (b) (6)
- d. Safety Briefer: 1LT (b) (6)
- e. Spray Maintenance: TSG (b) (6), TSG (b) (6), TSG (b) (6)
- f. Spray Ground Monitors: LTC (b) (6), 1LT (b) (6)
- g. Crew Chiefs: TSG (b) (6), SRA (b) (6)
- h. Avionics: TSG (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 5/8.5
  - (2) Ferry Sorties/Hours: 2/6.2

### 3. PESTICIDES:

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled), Altosid Liquid Larvicide Concentrate (20% methoprene)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481, Altosid Liquid Larvicide Concentrate 272446
- c. Gallons Pesticide Loaded: 105 Gal Trumpet® (16 June); 2.8 Gal (19 Jun); 4.5 (20 Jun); 2.7 Altosid®
- d. Gallons Pesticide Applied: 105 Gal Trumpet® (16 June); 2.8 Gal (19 Jun); 4.5 (20 Jun); 2.7 Altosid®
- e. Gallons and Name of Flush Used: Water
- f. Other Additives Used: Control® drift reduction agent
- g. Application Rate: 0.60 Oz/acre Trumpet®; .75 Oz/acre Altosid®

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 899105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms; fuselage
- d. Nozzle Type/Size: TeeJet® 8008 Flat Fan; Raindrop nozzles
- e. Nozzle Orientation & Number Used: 8008 6 straight down; raindrop 10 straight back
- f. Pressure (PSI): 40 (16 Jun) & 40-50 (19-21 Jun)
- g. Flow Rate: 3.3 GPM for ULV; 186 GPM for LV (19-21 Jun)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1500' ULV; 200' LV (19 Jun); 150' LV (20 Jun)
- b. Spray Off Set: 3000' (16 Jun); 200' (19-21 Jun)
- c. Spray Release Altitude: 150' ULV; 100'/150' LV
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 270° (16 Jun) & 290-330° (19-21 Jun)
  - (1) Ground: 2-4 Knots (16 Jun); 2-10 knots (18-21 Jun)
  - (2) Release Altitude: 8-10 knots (Jun 16); 6-18 Knots (19-21 Jun)
- b. Temperature (Degrees Fahrenheit): 65-73° 16-21 Jun
- c. Dew Point: 48-54 °F (16-21 Jun) during applications
- d. Cloud Cover: Clear (16 Jun); Partly Cloudy/light showers/clear (19-21 Jun)
- e. Source: Ground observations and National Weather Service

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. The Grand Forks AFB Public Health Unit conducts adult mosquito trapping and larval sampling to monitor mosquito densities on base. Prior to the 16 June application, mosquito traps collected greater than 40 mosquitoes per night. This exceeds the accepted nuisance level, thus, indicating a need for mosquito control.
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito traps/larval dip samples
  - (2) Results: The Grand Forks AFB Public Health Unit did not place traps on the first few days following the spray. Therefore, relative adult mosquito abundance was not quantified following the spray. The Grand Forks AFB Pest Management Shop is coordinating with the Public Health Unit to ensure that surveillance trapping is in place by the next application. Larval counts will be made in spray blocks that were treated with Altosid® larvicide to determine the insecticide's efficacy.

**8. REMARKS:** This is the first spray application at Grand Forks AFB using Trumpet® EC and Altosid® Concentrate. The use of both Ultra Low Volume and Low Volume sprays in order to treat the adults and larvae had not been accomplished by the 910 AW/757 AS before. This mission has proven to be an excellent training opportunity because the use of multiple spray configurations are needed during a contingency operations. The planning and flexibility displayed by the Grand Forks AFB spray coordinators and operations personnel, as well as, the 910<sup>th</sup> Airlift Wing Spray Team was commendable and essential to the success of this mission. The next spray mission to Grand Forks AFB is scheduled 29 June - 03 July 2001 and will be specifically to control adult mosquitoes.

**(b) (6)**

**(b) (6)** **1Lt, USAFR**  
**Certified Pest Management Professional**

Aerial Spray Mission Set up Check list  
Minot/Williston 15-24 July 2009

Pre Planning:

2 Months out:

1. Confirm Dates with Entos
2. Request Range Times

1-2 Months out:

3. Arrange Cars/Hotels

1. Concept Message sent to AFRC DOOM, Aerial Spray SITREP and 22AF CP
2. Set up flights
  - a. Flying Planner-
  - b. Aircraft Scheduled – Ext 1672
  - c. Input Flights into SMS
  - d. Add Mission ID's to Local Flying Schedule- Send to Current Ops
  - e. Email to : Susie (757 orderly room), (b) (6) (TMO), (b) (6) , (b) (6) , (b) (6) , (b) (6) , Plans Contact list.: MSN ID, Rental Car Info
3. Build Mission Plan:
  - a. Contact Spray/Maintenance: (b) (6) (spray), (b) (6) (Maint/crew chiefs), (b) (6) (avionics)
  - b. Arrange PPR
  - c. Arrange Billeting-
  - d. Arrange Vehicles/transportation- DSN 453-3121
  - e. Arrange for Ravens when needed ((b) (6) )
4. Contact Plans and set up a concept briefing:
  - a. Send copy of Mission Plan to the Plans office
  - b. Plans will coordinate with Maint, SF, etc. to be at meeting
5. Build Folders:
  - a. Setup sheet/Form 33
  - b. Suitability reports
  - c. Billeting Letters
  - d. mission notes
  - e. Sunrise/Sunset tables

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **Minot AFB, ND and Williston ACE, ND**

### **15-24 July 2009**

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Minot AFB, North Dakota and the developed areas surrounding the Army Corp of Engineers property near Williston, ND.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Pilots: LTC (b) (6) , LTC (b) (6)
- (2) Navigators: LTC (b) (6) , Capt (b) (6)
- (3) Flight Engineers: MSgt (b) (6)
- (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6) , SSgt (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: TSgt (b) (6) , MSgt (b) (6) , SSgt (b) (6)
- (2) Crew Chief(s): SRA (b) (6) , A1C (b) (6)
- (3) Avionics: SSgt (b) (6)

##### **c. Entomologists:** Maj (b) (6) , Maj (b) (6) , LTC (b) (6) (TR arriving at MOT @ 1300 hrs, 18 Jul)

#### **2. SCHEDULE: (All Local Times)**

- a. 15 Jul (Wednesday)
  - 1505L Show KYNG
  - 1705L Depart KYNG
  - 1940L Land KMIB
- b. 16 Jul (Thursday) Spray Minot AFB
  - 1800L Show KMIB
  - 2000L Depart KMIB
  - 2145L Land KMIB
- c. 17 Jul (Friday) WX Backup for Minot AFB
  - 0500L Show KMIB
  - 0700L Depart KMIB
  - 0845L Land KMIB
- d. 18 Jul (Saturday) Static Display for Minot AFB Air Show
- e. 19 Jul (Sunday) Down Day Per User's Request
- f. 20 Jul (Monday) Spray Williston
  - 1800L Show KMIB
  - 2000L Depart KMIB
  - 2200L Land KMIB
- g. 21 Jul (Tuesday) Spray Minot or Williston Backup
  - 1800L Show KMIB
  - 2000L Depart KMIB
  - 2200L Land KMIB
- h. 22-23 Jul (Wednesday & Thursday) WX Backup for Minot and Williston
  - 1800L Show KMIB
  - 2000L Depart KMIB
  - 2200L Land KMIB
- i. 24 Jul (Friday)
  - 1000L Show KMIB
  - 1200L Depart KMIB
  - 1635L Land KYNG

#### **3. ITEMS TO TAKE**

- a. **Mission Commander:** Cellular Phone, Mission Folder
- b. **Entomologist:** Cell Phone, Wind Gauge, Compass, Pest Safety Binder, 1 UHF Radio, 1 VHF radio Project Notebook
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment

**4. PPR: 1501WX**

**5. RADIO FREQUENCIES: Air To Ground Primary VHF 123.45**

Minot AFB Tower 120.65 V, 236.6, 253.5; Minot International 118.2 V or Unicom 122.95

**6. CONFIGURATION: SP2G**

- a. **System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. **Nozzle Tips/Orientation:** ULV (adulticide): 8005 Tee Jet oriented straight down
- c. **Number:** ULV: 8 8005s total (4 each side) for 1000' swaths and 16 8005's (8 each side) for 2000' swaths at Williston 8 8003s (4 each side)
- d. **Aircraft:** 89-9107
- e. **Mission Identifier:** QZNRKA592196

**7. SPRAY PARAMETERS:**

**a. Adulticide (Minot AFB- Trumpet)**

- (1) **Area to be treated:** 14,000 acres
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 1000 feet for AFB; 2000' City of Minot or as determined by the PMP
- (4) **Flow Rate.** 2.7 gallons/minute for 1000' swaths; 5.5 gal/min for 2000' swaths
- (5) **Application Rate.** 0.75 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots (338 Feet/Second)
- (7) **Flush:** With water, triple rinse, then air purge

**b. Adulticide (Williston ACE - Zenivex)**

- (1) **Area to be treated:** ~6,500 acres
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 2000' City of Williston or as determined by the PMP
- (4) **Flow Rate.** 2.2 gal/minute
- (5) **Application Rate.** 0.035 lbs/acre A.I. Zenivex, ULV (0.30 oz/acre)
- (6) **Ground Speed:** 200 Knots (338 Feet/Second)
- (7) **Flush:** With water, triple rinse, then air purge

**8. SPRAY MIXING AND LOADING:** See Ento

**9. TRANSPORTATION:** 2 six packs (MC, MX) + 1 fifteen pax van (Ops). Trans will pick you up at the plane and take you to Motorpool. POC: SRA Wheel

**10. LODGING:** International Inn, 1505 N Broadway, Minot. (701) 833-0773 Billeting POC: (b) (6) DSN 453-6161  
Non-A's will be at the International Inn front desk upon check-in

**11. CONTACTS:**

**a. Minot AFB ND: DSN prefix: 453- Commercial area code and prefix (701) 723 -**

- 1. **Base Operations:** x2347 (SSgt (b) (6) Airfield Manager: TSgt (b) (6) (b) (6) /TSgt (b) (6) FAX: 3637
- 2. **Environmental Officer:** (b) (6)
- 3. **Base Civil Engineer:** Lt Col (b) (6)
- 4. **Pest Management:** (b) (6) (cell: (b) (6)
- 5. **Public Affairs:** Capt (b) (6)
- 6. **Weather:** TSgt (b) (6) /Capt (b) (6)
- 7. **Billeting:** SSgt (b) (6) , TSgt (b) (6) (if you have problems w/this number use (b) (6)
- 8. **Fire Dept:** x2461
- 9. **Transient Alert:** x3153, closes at 1730L
- 10. **Minot AFB Twr** x3330
- 11. **Minot Int'l Twr (Magic City Twr)** (b) (6)

**b. Williston**

**1. Vector control district:** (b) (6)

**2. Army Corps of Engineers:** (b) (6) , office; (b) (6) , cell

**3. Williston ADS** 125.925

**c. 910 AW, Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX Toll Free 1 - 800 - 278 - 7046,+2 + Ext

**1.** 910 AW/CC: Col (b) (6)

**2.** 910 AW Command Post: Ext 1315; FAX 1161

**3.** 910 AW/PA: Ext 1236; FAX 1022

**4.** 910 OG/CC: LtCol (b) (6)

**5.** 910 Base Ops: Airfield Manager: Ext 1182

- Assistant Air Field Manager (ACAM), Ext 1181

**6.** 757 AS/DO: Maj (b) (6)

**7.** 757 AS/DOO: Ops Admin: SMSgt (b) (6) ; FAX 1657

**8.** 757 AS/DOS: Aerial Spray Office, Maj (b) (6) ; FAX 1616

**9.** 910 LG/CC: Ext 1225

**10.** 910 LG/LGM: Ext 1352

**11.** Maintenance Control: Ext 1348

**12.** LG/LGMS: Spray Maintenance: (b) (6) Cell: (b) (6)

**13.** 910 LG/LGL: Ext 1137

**14.** Omega/SATO Travel: Ext 1772; (800) 285-6342

**15.** Supervisor of Flight Desk: 1069, FAX: 1371

**16.** Cellular Spray Phones:

- Mission Commander: (b) (6)

- Spray Maintenance: (b) (6)

- (b) (6) cell (b) (6)

-(b) (6) cell: (b) (6)

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **Grand Forks AFB, ND**

### **16-18 APR 2001**

**Purpose and benefit:** Site survey in preparation for adulticide and larvicide application to control vector mosquitoes.

Monday 16 April Depart YNG 1300L for Grand Forks Land 1515L

Hotel Ramada Inn  
1205 North 43rd Street  
Grand Forks ND 58203  
701-775-3951

(Non-availability packet at base operations)

Tuesday 17 April

0900 Meet with (b) (6) (Environmental Office) and (b) (6) (Flightline Manager) and perhaps 2 individuals representing local townships.

1030 Tour of the aircraft

- > We can park the plane near the side of the Bravo Ramp and people can walk
- > out to it. Lets decide on a time and one of our people will escort the
- > people out there. You won't need a letter.
- > Tell the people to park in the Base Ops parking lot and come in  
-flightline manager

1200 Aerial survey of surrounding regions  
Ground survey for mosquito breeding sites  
Visit support shops and personnel

1430 Meeting with all participants (Pest Management/Environmental, local community representatives, public affairs, civil engineering, support group representative, fire dept., etc.

Wednesday 18 April Depart RDR 0900L for YNG Land 1300L

#### Phone numbers

GRAND FORKS AFB, EMERADO ND

DSN 362-XXXX, Commercial 701-747-xxxx

\*Operator Assist 362-3000

(b) (6), Environmental x(b) (6)

Cellular Phones with 910<sup>th</sup> personnel:

- Mission Commander: (b) (6)
- Spray Maintenance: (b) (6)
- PMP/Entomologist Cellular Spray Phone: (b) (6)





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



12 DEC 2006

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Avon Park, FL

1. Purpose/Objectives/Benefits: Perform proficiency and continuation training for aerial spray aircrew and ground crew. Concurrently, a flight demonstration conducted with the Florida Mosquito Control Association is scheduled.
2. Capability: Spray Aircraft Available, 16-18 Jan 2006.
3. Concept of Operations:
  - 16 JAN (Tuesday): PPR # - Not Req
    - 0900: Show Time KYNG
    - 1100: Depart KYNG
    - 1400: Land KAGR
  - 17 JAN (Wednesday): Range Times TBD, call AGR Tower & Fire Dept
    - 0530: Show Time
    - 0700: Depart to Lee County airport for Mosquito Control Association
    - 0930: Training at Range
    - 1330: Land
  - 18 JAN (Thursday):
    - 0800: Show Time
    - 0930: Depart
    - 1130: Land
    - 1300 Depart KAGR
    - 1600 Arrive KYNG
4. Spray Configuration:
  - a. MASS – SP2G
  - a. Aircraft Number: 90-9107
  - b. Mission Identifier: QZNRKA411016
5. Mission Protocols:
  - A. Aircrew spray operation training at 100'-150' AGL over Avon Park Bombing Range.
  - B. Flight demonstration with Florida Mosquito Control Association:

Spray aircraft will participate in an demonstration with the Florida Mosquito Control Association during their short course on aerial spray. Entomologists from the 757 AS will be on the ground working with the spray course personnel during the exercise. The exercise will simulate the application of mosquito larvicide down a runway at Buckingham Army airfield using water. Water sensitive cards will be used in collection and analysis of spray. A SSS is in the process to obtain approval of the demonstration.
6. Aircraft Commander: Major (b) (6)

7. Support required at Avon Park Bombing Range is thru the Range Manager.
8. If you have any questions concerning this mission please contact DSN (b) (6) .

//SIGNED//

(b) (6) , CPT, USAFR  
Assistant Chief Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON – AERIAL SPRAY FLIGHT**  
**3976 King Graves Rd Unit 26**  
**Vienna OH 44473-5926**

19 January 2007

MEMORANDUM FOR 757 AS/DO

FROM: 757 AS/DOS

**SUBJECT:** Aerial Spray Demonstration at the FMCA Aerial Spray Fly-in.

**1. Purpose:** To complete initial and continuing spray training for aircrew, and to conduct a training exercise/demonstration with the Florida Mosquito Control Association, simulating a typical larvicide application.

**2. Participants:**

**a. Aircrew:**

1. Pilots: Maj (b) (6) (b) (6) Capt (b) (6)
2. Navigators: Maj (b) (6) (b) (6)
3. Flight Engineers: Msgt (b) (6)
4. Spray Operators: Msgt (b) (6) , Msgt (b) (6) , Msgt (b) (6)

**b. Maintenance:**

1. Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6)
2. Avionics: None
3. Crew Chiefs: (b) (6) (b) (6) (b) (6)

**c. Entomologists:** Capt (b) (6)

**d. Admin Support:** SMSgt (b) (6) (b) (6)

**3. Spray Configuration:**

Mass-SP2G  
Aircraft Number: 99107  
Mission Identifier: QZNRKA411016

**4. Spray Parameters:**

Booms—Fuselage only.  
Nozzles—Raindrop.  
Number of Nozzles— 6 per side  
Airspeed—200 knots ground speed.  
Altitude—100' AGL.  
Flow Rate-- 186 Gallons/Minute  
Spray—Water Only

**5. Itinerary:**

16 January: Personnel Arrive at Avon Park from YARS. Total ferry time was 3.5 hours (KYNG-KAGR).

17 January: One training/demonstration mission of 1.5 hrs was flown. The pest management professional was in place at the Lee County Mosquito control district at Buckingham Airfield and directed spray operations for the demonstration. The aircraft flew a total of 3 passes during the demonstration. The first pass was down the centerline of runway 24 and was a dry pass to check conditions. A line of water sensitive cards was deployed perpendicular to and centered on the runway to determine the effective width of the swath. The second pass was similar to the first, although water was dispensed from the system. Spray on time for this pass was 15 seconds. Wind conditions were 040 at 10 degrees and resulted in a left-hand drift. Following the first wet pass, the cards were collected and new cards were redeployed. The aircraft then made a 3<sup>rd</sup> and final pass, though swath lane was shifted 200 feet to the right (pilots' perspective) to compensate for the drift. The second set of cards were then collected and analyzed, and the demonstration was complete. The pest management professional also took part in the Aerial Spray Fly-Inn, and conducted a television interview with the local broadcast news who were covering the event. Total demonstration and training time for aircrew was 1.5 hours.

18 January: Personnel return to YARS from Avon Park. Total ferry time was 3.2 hours. (KAGR-KYNG).

**Comments:** This is the second year we have conducted aerial spray demonstrations at the FMCA fly-in. The Pest Management Professionals consider it critical to maintain dialogue with municipal mosquito control agencies, and demonstrations such as this one allow a tremendous opportunity to interact, to share the latest research and techniques regarding aerial spray, and to help individuals outside of the DoD understand the mission of the Aerial Spray Flight. All of the feedback received from the participants at the Fly-Inn about the demonstration was positive. The organizers of the event were very pleased with the outcome of the demonstration, and considered it an excellent learning tool for the participants. We have been invited back next year.

//signed//

(b) (6) CAPT, USAFR  
Research Entomologist

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **AVON PARK, FL**

### **16-18 Jan 07 DRAFT**

**PURPOSE/OBJECTIVE/BENEFIT:** Complete initial spray training/continuation training for aircrew. Second, aerial spray will run a training exercise with the Florida Mosquito Control Association. 1 or 2 passes will be flown down the runway with a LV/HV spray of water applied to water sensitive cards set up by FMCA. Contact PMP to coordinate times and radio communications.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

1. Pilots: Maj (b) (6) Capt (b) (6)
2. Navigators: Maj (b) (6)
3. Flight Engineers: Msgt (b) (6)
4. Spray Operators: Msgt (b) (6), Msgt (b) (6), Msgt (b) (6)

##### **b. Maintenance:**

1. Spray Maintenance: (b) (6)
2. Avionics: None
3. Crew Chiefs: (b) (6)

c. **Entomologists:** Capt (b) (6) \* Will fly down with us, but will make his own Hotel's

d. **Admin Support:** SMS (b) (6) (b) (6)

#### **2. SCHEDULE: (All time Local) All times and sequence of events are subject to change depending upon the needs of the testing and training.**

16 JAN (Tuesday): PPR # - Not Req  
0900: Show Time KYNG  
1100: Depart KYNG  
1400: Land KAGR

17 JAN (Wednesday): Range Times 0930-1330, call AGR Tower & Fire Dept  
0600: Show Time  
0730: Depart: Fly to Lee County airport for exercise with Mosquito Control Association  
0930: Training at Range  
1330: Land

18 JAN (Thursday):  
0800: Show Time  
1000: Depart KAGR  
1300: Arrive KYNG

#### **3. ITEMS TO TAKE:**

- a. **Navigator:** Maps with Spray Areas Marked
- b. **Certified Pest Management Professionals:** Capt (b) (6) on ground at Buckingham

#### **4. AIR TO GROUND FREQUENCIES:**

- a. **Spray: Primary 392.2; Secondary 340.8**
- b. **Interplane: Primary 123.45; Secondary 122.9**
- c. **Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2**
- d. **Avon Park: TWR-292.2 (p), 126.15, 276.6 (s) Hrs 0730-2300 M-F, S-S per flying schedule DSN 968-7138**



- e. MacDill: TWR-123.7; GND-118.575; ATIS-133.825; CMD POST-311.0; PTD-372.2
- f. **Buckingham Army Airfield- CTAF 122.9 (Flight exercise location) N26-38.6 W081-42.6**

**5. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 99107
- c. Mission Identifier: QZNRKA411016

**6. MISSION PROTOCOLS:**

- a. Maps in mission folder

**7. CONTACTS:**

- a. Quarters: (JTR Lodging/\$62)  
**--Holiday Inn Express Sebring (863) 386-1115, Fax (863) 386-4109**  
**Reservations under (b) (6) POC is (b) (6)**  
-- Quality Inn (863) 385-4500 (\$64 w/Tax Exempt Form) FAX (863) 382-4793  
-- Sebring/Avon Park: Inn on the Lakes, (863) 471-9400, Group Reservation:  
<http://www.innonthelakessebring.com> POC is (b) (6)  
-- Jacaronda (863) 453-2211; 19 East Main St, Avon Park, FL \$ 27.29  
-- Oak Tree Inn (863) 453-3165  
-- Days Inn (863) 382-1148, 800 329-7466
- b. Transportation:  
**Avon Park Enterprise POC (b) (6) (b) (6) (863) 452-5483; Fax (863) 452-5947**  
3 Van \$61.99; 2 Full size car \$40.99 (+ TAXES); Unlimited mileage  
(All vehicles will be at Avon Park Flight Ramp, keys will be with tower)  
**(b) (6) Van/SUV**  
**(b) (6) (b) (6) – Full Size**  
  
Sebring Enterprise POC Gina (863) 385-6969; Fax (863) 385-3416
- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350  
(1) Weather: MacDill AFB Forecaster (DSN 968-2854)  
(2) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)  
(3) Range Manager, (b) (6), DSN (b) (6)  
(3) MacDill AFB Ops Gp CC 968-3014
- d. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX  
DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN  
Avon Control Tower & Range Control Scheduling DSN 968-7176  
Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number  
(1) Range Operations Manager: (b) (6), Bldg 236,(b) (6)  
(2) Avon Range Control Tower: ext 176  
(1) Flight Chief of Civ Engineer: (b) (6), Bldg 29, (b) (6)  
(2) Chief, Environmental Flight: (b) (6), Bldg 29,(b) (6) also Wildlife Biologist (b) (6)  
(3) Fuels: ext 118 or Cel 863-655-6455  
(4) Range Support Manager: Mr (b) (6) Bldg 29, (b) (6)  
(5) Range Control/Schedule: (b) (6) (b) (6) Bldg 41, (b) (6)  
**See Attached Avon Park Org directory for additional listings**  
(9) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)  
Range VHF: 126.15

e. **Sebring AP:** Mgr: Mr (b) (6) (b) (6) (fuel needs)  
BEEPER: 1 (863) 999-8622 ENTER YOUR PHONE# ENTER #  
Asst Mgr: (b) (6)  
**Fuel is coordinated for 20k at 0730L on 18 Jan.**

f. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046, +2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Capt (b) (6) ; FA (b) (6)
4. 910 OG/CC: Col (b) (6) (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6) (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) cell, (b) (6)





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



2 May 05

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Parris Island  
MCRD SC for Control of Sand fly and Mosquitoes

1. Objective/Purpose/Benefits of the Spray Mission. Spray Parris Island MCRD SC for control of biting midges and mosquitoes. Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCDR SC at the request of the Parris Island MCRD/MCAS Environmental Coordinator.

2. Capability: Spray Aircraft 89-9107 available on 16-19 May 05

3. Concept of Operations:

**15 May (Monday):**

**PPR # 292-01**

1000: Show Time  
1200: Take off KYNG  
1400: Land KNBC  
1415: Safety Briefing

**16 May (Tuesday):** see www.beaufort.usmc mil for weather, etc

1500: Show Time  
1530: Weather decision /Load Chemical  
1800: Take off KNBC  
2015: Sunset

**17 May (Wednesday):** Weather Backup/Training

1500: Show Time  
1530: Weather decision /Load Chemical  
1800: Take off KNBC  
2015: Sunset

**18 May (Thursday):**

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

4. Spray Parameters:

- a. Acreage: 7,500 Acres (Only areas determined by PMP)
- b. Altitude: 150 Ft AGL
- c. Pesticide: Dibrom® Concentrate
- d. Deploy: 2.0 Hrs
- e. Re-Deploy: 2.0 Hrs
- f. Spray Time: 16 Minutes per Sortie (or as called by PMP)

5. Aircraft Commander: Capt (b) (6) ]

6. Mission Commander: Maj (b) (6) ]

7. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator (b) (6) DSN (b) (6)

8. HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616, ATTN: 757 AS/DOS.

// SIGNED //

(b) (6) (b) (6) Major, USAFR  
Chief of Aerial Spray

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **PARRIS ISLAND MCRD, SC**

### **16-19 May 2005**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCRD, SC.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Mission Commander: MAJ (b) (6)(b) (6)
- (2) Pilots: MAJ (b) (6)(b) (6) CPT (b) (6)
- (3) Navigators: MAJ (b) (6)(b) (6)
  - (a) Flight Engineers: MSG (b) (6)
  - (a) Spray Operators: SMS (b) (6) , MSG (b) (6) , MSG (b) (6)(5)

##### **b. Maintenance:**

- (1) Spray Maintenance: SMS (b) (6) TSG (b) (6) , TSG (b) (6)  
MSG (b) (6)
- (2) Crew Chiefs: MSgt (b) (6) , SRA (b) (6)
- (3) Avionics: SMS (b) (6)

##### **c. Pest Management Professionals/Entomologist:** CPT (b) (6) (b) (6)

Gov Vehicles provided by Parris Island MCRD: 2 Crew Vans & 1 Staff Car

#### **2. PLANNED SEQUENCE OF EVENTS:** (All times local)

##### **16 May (Monday):** PPR # 136-01

0900: Show Time  
1100: Take off KYNG  
1400: Land KNBC  
1415: Safety Briefing

##### **17 May (Tuesday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

1500: Show Time  
1530: Weather decision /Load Chemical  
1800: Take off KNBC  
2015: Sunset

##### **18 May (Wednesday):** Weather Backup/hot spot treatments

1500: Show Time  
1530: Weather decision /Load Chemical  
1800: Take off KNBC  
2015: Sunset

##### **19 May (Thursday):**

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

#### **3. ITEMS TO TAKE:**

##### **a. Entomologist/CPMP:**

- (1) Wind Gauge & Compass
- (2) UHF/VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder
- (4) DGPS Computers & Maps
- (5) Oil Sensitive Papers

##### **b. Navigators:**

- (1) Maps
- (2) Templates

c. **Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

4. **SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** Open for ULV spray; 8 8005's oriented straight down (4 per side)
- d. **Differential GPS:** Installed
- e. **Aircraft:** 89-9107      **Mission Identifier:** QZNRKA143136

5. **SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 0.75 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 2.72 gallons/Minute

6. **AMOUNT OF SPRAY MATERIAL AVAILABLE:** Load 60 gallons of Dibrom® Concentrate per mission

7. **PPR REQUIREMENTS: 136-01**

8. **PARKING PLAN:** Beaufort MCAS Ramp

9. **AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
Hilton Head Arpt: 118.8 CTAF (Check on the chart in Beaufort Base Ops)  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 392.2; Secondary 340.8**

10. **TRANSPORTATION:** Parris Island will provide two vans and staff car for transportation to and from quarters and for messing.

11. **SPRAY MONITORING/TESTING:** Ground monitoring by CPMP & Parris Island MCRD Project Coordinator.

12. **CONTACTS:**

- a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX
  - (1) Environmental Coordinator (Spray Coordinator):  
(b) (6) DSN (b) (6) ; (cellular) (b) (6) ; (b) (6) DSN (b) (6) ;  
FAX (843) 228-2616; (b) (6) ; (b) (6)
  - (2) Assistant Chief of Staff I & L: Col (b) (6) , DSN (b) (6)
  - (3) Pest Control Foreman: DSN 335-3663
  - (4) P.I. Motor Pool: (b) (6) DSN (b) (6)
  - (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
  - (6) Thrifty Car Rental: (843) 522-9996

- (7) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)  
 (7) P.I. Rifle Range: DSN: 335-3183/3624
- b. Beaufort MCAS SC:** (Commercial (843) 228-XXXX)
- (1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6) ; (b) (6) DSN (b) (6)  
 (2) Fuels: DSN: (b) (6)  
 (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
 DSN: (b) (6) Base Ops is ext 7301/2/3  
 (After duty hours: (b) (6) DSN: (b) (6) )
- (4) Trans Alert/VAL: DSN: 335-7110  
 (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)
- c. Beaufort County Mosquito Control:** (b) (6)
- d. Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) DSN: (b) (6)
- e. Quarters: JTR Seasonal Rate 1 Oct-14 Mar L/\$70, M/\$44**  
**Hampton Inn (\$70/Night) POC Theresa, Confirm #86790095 (843) 986-0600 (FAX 0494)**
- Ramada Inn (843) 524-2144/Fax 1704  
 Hampton Inn (843) 986-0600 (FAX 0494)  
 Sleep Inn (843) 522-3361 FAX (843) 522-9929  
 Parris Island Billeting DSN: 335-2744 (FAX: 3815); (843) 228-3960  
 Comfort Inn (843) 525-9366 (FAX 1529)  
 Best Western (Sea Island Motel) (843) 524- 4121  
 Port Royal Days Inn (843) 524-1551  
 Best Western Pt South (I-95) (843) 726-8101
- f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
 Toll Free 1 - 800 - 278 - 7046,+2 + Ext
- (1) 910 AW/CC: Col (b) (6)  
 (2) 910 AW Command Post: Ext 1315; FAX 1161  
 (3) 910 AW/PA: Capt (b) (6) FAX 1022  
 (4) 910 OG/CC: LtC (b) (6) (b) (6)  
 (4) 910 OG: Airfield Manager, (b) (6) (b) (6)  
 (5) 757 AS/DO: Maj (b) (6) (b) (6)  
 (6) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371  
 (7) 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657  
 (8) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) FAX 1616  
 (9) 910 LG/CC: Ext 1225  
 (10) 910 LG/LGM: CMS (b) (6)  
 (11) Maintenance Control: Ext 1327  
 (12) 910 LG/LGMS: Spray Maintenance, SMS (b) (6)  
 (13) Omega/SATO Travel: Ext 1772; 1-800-285-6342  
 (14) Cellular Spray Phones:  
 - Mission Commander: (b) (6)  
 - Entomologist: (b) (6) , (b) (6) cell (b) (6)

**910 AW AERIAL SPRAY**  
**PMP'S POST-MISSION REPORT**  
**PARRIS ISLAND MARINE CORPS RECRUIT DEPOT**  
**16-19 MAY 2005**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 16-19 May 2005
- c. Purpose of Application: Biting Midge (*Culicoides* spp.) and Mosquito Control
- d. Application Date: 18 May 2005
- e. Time/s of Application (Local): 1800-1900 hrs
- f. Acres Treated: 853 (approx. 10% of the projected area)
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6) Spray Coordinator  
(NREAO), DSN (b) (6)
- h. Date Spray Map Last Approved: 17 May 2005
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 17 May 2005; Assistant Chief of Staff,  
Installation and Logistics (COL (b) (6) Maj (b) (6) Capt (b) (6) et al.

**2. OPERATIONAL:**

- a. **Aircrew:**
  - (1) Mission Commander: MAJ (b) (6)(b) (6)
  - (2) Pilots: MAJ (b) (6)(b) (6) CPT (b) (6)
  - (3) Navigators: MAJ (b) (6)(b) (6)
    - (a) Flight Engineers: MSG (b) (6)
    - (a) Spray Operators: SMS (b) (6) , MSG (b) (6) , MSG (b) (6)(5)
- b. **Maintenance:**
  - (1) Spray Maintenance: SMS (b) (6) TSG (b) (6) , TSG (b) (6)  
MSG (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6) , SRA (b) (6)
  - (3) Avionics: SMS (b) (6)
- c. **Certified Applicator/Entomologist:** CPT (b) (6) (b) (6)
- d. Flying Data:
  - (1) Spray Sorties/Hours: 1 Sortie/1.0 hr
  - (2) Ferry Sorties/Hours: 2 Ferries/4.2 Hrs

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate
- d. Gallons Pesticide Loaded: 60 gal Dibrom<sup>®</sup>
- e. Gallons Pesticide Applied: 5 gallons
- f. Gallons and Name Diluent Used: None
- g. Gallons and Name of Flush Used: 17 gallons Marvel Oil
- h. Other Additives Used: None
- i. Application Rate: 0.75 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99107
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 8 oriented straight down (4 per side)
- f. Pressure: 40 PSI
- g. Flow Rate: 2.73 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000
- b. Spray Off Set: 2000 feet
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: ESE/5 knots
  - (2) Release Altitude: ESE/10 knots
- b. Temperature (Degrees Fahrenheit): 75° F
- c. Humidity: 70 %
- d. Cloud Cover: Scattered clouds
- e. Source: Ground observations at the MCRD Marina and at the small arms range.

Observations at spray altitude are from Doppler radar on the aircraft (SCNS).

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern: not used
- b. Effectiveness: Effects were not measured because a leak halted the spray application early (see below).

**8. Results:** The sortie planned for 17 May was weather cancelled because of severe thunderstorms. Early on the 18 May spray sortie, a fitting connector from the MASS system hose to the right fuselage boom was found to be leaking Dibrom. The aircrew shut the system down, donned oxygen masks, and contacted the mission commander and certified applicator on the ground. The lines were air purged and the aircraft returned to the Marine Corps Air Station (MCAS), Beaufort. On the ground, the crew assessed themselves as not affected by any potential negative effects from inhaling insecticide. In fact, only the loadmaster/spray operator in the rear of the aircraft reported smelling any odor. Spray maintenance used proper personal protective equipment, investigated the leak and determined that the cleanup procedures would use up the additional available window of time for the application and, thus, no additional sorties were possible that day. Both the loadmaster and spray maintenance supervisor estimated that approximately 1 quart of Dibrom had leaked from the system. The mission commander and certified applicator interviewed all aircrew members and spray maintenance personnel. Spray maintenance personnel worked with a safety observer and cleaned the airframe. All cleanup materials were properly disposed of with MCAS, Beaufort. The spray maintenance supervisor determined the leak was a result of tight tolerances between the hose connection and the fuselage adapter, which allowed the connection to appear secured when it actually wasn't. The adapters have been corrected and positive hose connection has been confirmed. Additional details along with a report from spray maintenance are available from the POC below. The 757<sup>th</sup> AS will coordinate with the Parris Island NREAO to make another application, if warranted by insect numbers.

//Signed/

(b) (6) (b) (6)

CAPT, USAFR

DOD CERTIFIED PEST MANAGEMENT PROFESSIONAL



# AERIAL SPRAY OPERATIONAL SCHEDULE

## MINOT AFB, ND

### 16-20 JUL 07

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Minot AFB and City of Minot, ND.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: Capt (b) (6) (b) (6) 1LT (b) (6) (b) (6)
- (2) Navigators: LTC (b) (6)
- (3) Flight Engineers: MSG (b) (6)
- (4) Spray Operators: MSG (b) (6) , MSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: MSG (b) (6) (Lead), TSG (b) (6) , TSG (b) (6) , SSG (b) (6)
- (2) Crew Chief(s): TSG (b) (6) , TSG (b) (6)
- (3) Avionics: SRA (b) (6)

##### c. Entomologist: MAJ (b) (6)

#### 2. SCHEDULE: (All Local Times)

##### 16 JUL (Monday):

0900 Show time  
1100 Depart KYNG  
1345 Land KMIB  
1500 Installation Brief

##### 17 JUL (Tuesday):

1500 Calibration System  
1730 Show time/WX Decision  
1800 Load Chemical  
2000 Take off KMIB (Adulticide Spray Sortie)  
2141 Sunset

##### 18 JUL (Wednesday):

1730 Show time/WX Decision  
1800 Load Chemical  
2000 Take off KMIB (Adulticide Spray Sortie)  
2140 Sunset

##### 19 JUL (Thursday): Training/Weather back up

1730 Show time/WX Decision  
1800 Load Chemical  
2000 Take off KMIB (Adulticide Spray Sortie)  
2139 Sunset

##### 20 JUL (Friday)

1000 Show time  
1200 Depart KMIB  
1630 Land YNG

#### 3. ITEMS TO TAKE

- a. **Mission Commander:** Cellular Phone, Mission Folder
- b. **Entomologist:** Cell Phone, Wind Gauge, Compass, Pest Safety Binder,  
1 VHF radio Project Notebook
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment

**4. KMIB PPR: 07-01KB**

**5. RADIO FREQUENCIES: Air To Ground Primary UHF 392.2; VHF 123.45**

Minot AFB Tower 120.65 V, 236.6, 253.5; Minot International 118.2 V, 393.1 or Unicom 122.95

**6. CONFIGURATION: SP2G**

**a. System:** 2-Module System/Stainless Steel ULV Fuselage Booms

**b. Nozzle Tips/Orientation:** ULV (adulicide): 8005 Tee Jet oriented straight down

**c. Number:** 13

**e. Aircraft:** 89-9105

**f. Mission Identifier:** QZNRKA539197

**7. SPRAY PARAMETERS:**

**a. Adulicide**

(1) **Area to be treated:** 14,169 acres (Minot )

(2) **Altitude:** 150' for Adulicide application

(3) **Swath Width.** 2000

(4) **Flow Rate.** 5.45

(5) **Application Rate.** 0.75 oz/acre

(6) **Ground Speed:** 200 Knots (338 Feet/Second)

(7) **Flush:** With water, triple rinse, then air purge

**8. SPRAY MIXING AND LOADING:** Amount of Trumpet will be determined on site.

**9. TRANSPORTATION:**

Minot: 4 six PACs, 2 Ops, 2 Mx

**10. LODGING:**

**MINOT:** Holiday Inn (\$45/night) , Com 701-852-2504 out the main gate then South HWY 83 turn into Broadway St, Left on Burdick Expressway for 2 miles, across from State Fair Grounds, 2200 Burdick is the street address.

**11. CONTACTS:**

**Minot AFB ND: DSN prefix: 453- Commercial area code and prefix (701) 723—**

1. **Base Operations:** x2347, Airfield Manager: TSgt (b) (6) x(b) (6)/TSgt (b) (6) FAX: 3637
2. **Environmental Officer:** (b) (6)
3. **Base Civil Engineer:** Lt Col (b) (6)
4. **Pest Management:** (b) (6) (cell: (b) (6) , SrA (b) (6) (b) (6)
5. **Public Affairs:** Capt (b) (6)
6. **Weather:** TSgt (b) (6) /Capt (b) (6)
7. **Billeting:** SSgt (b) (6) , TSgt (b) (6) (if you have problems w/this number use (b) (6)
8. **Fire Dept:** x2461
9. **Transient Alert:** x3153, closes at 1730L
10. **Minot AFB Twr** – x-3330
11. **Minot Int'l Twr (Magic City Twr)** (b) (6)

**b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Col (b) (6) (b) (6)
- (5) 910 Base Ops: Airfield Manager: Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6) (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS((b) (6) ; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, CAPT (b) (6) (b) (6) ; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: SMG (b) (6) Cell: (b) (6) (b) (6)
- (13) 910 LG/LGL: Ext 1137

(14) Omega/SATO Travel: Ext 1772; (800) 285-6342

(15) Supervisor of Flight Desk: 1069, FAX: 1371

(16) Cellular Spray Phones:

- Entomologist's cell:
- Mission Commander:
- Spray Maintenance

(b) (6)

# 910 AW AERIAL SPRAY UNIT -- POST-MISSION REPORT

## MINOT AFB ADULT MOSQUITO CONTROL 16-20 JULY 2007

### 1. MISSION BASICS:

- a. Installation Sprayed: Minot AFB, North Dakota
- b. Mission Duration: 16-20 July 2007
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date/s: 17 & 18 July 2007
- e. Time/s of Application (Local): 2020-2150 (17 Jul) & 2000-2212 (18 Jul)
- f. Acres Treated: 5,158 (17 Jul) & 9,011 (18 Jul) = 14,169 acres
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6), Pest control supervisor/spray coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 16 July 2007
- i. Date of Waste Generation Letter: 17 July 2006
- j. Installation In-Briefing: (When/Where/Briefer/s): 17 Jul; MAJ (b) (6) CPT (b) (6)  
(b) (6) LT (b) (6) (b) (6) LTC (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: CPT (b) (6); (b) (6)
- b. Certified PMP/s (Category 11): MAJ (b) (6)
- c. Aircrew:
  - (1) Pilots: CPT (b) (6); (b) (6) LT (b) (6) (b) (6)
  - (2) Navigators: LTC (b) (6)
  - (3) Flight Engineers: MSG (b) (6)
  - (4) Spray Operators: MSG (b) (6), MSG (b) (6)
- d. Maintenance:
  - (1) Spray Maintenance: MSG (b) (6) (lead), TSG (b) (6), TSG (b) (6), SSG (b) (6)
  - (2) Crew Chief(s): TSG (b) (6), TSG (b) (6)
  - (3) Avionics: SRA (b) (6)
- e. Safety Briefer: MAJ (b) (6)
- f. Flying Data:
  - (1) Spray Sorties/Hours:  $1.5 + 2.2 = 3.7$
  - (2) Ferry Sorties/Hours:  $4.2 + 3.4 = 7.6$

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Trumpet® Concentrate
- b. EPA Registration Number: 59639-90-5481
- c. Formulation Sprayed: Emulsified Concentrate
- d. Gallons Pesticide Loaded: 30 Gal Trumpet® (17 Jul); 60 gal (18 Jul); 90 gallons total
- e. Gallons Pesticide Applied: 30 Gal (17 Jul) & 60 Gal (18 Jul)
- f. Gallons and Name Diluent Used: None
- g. Gallons and Name of Flush Used: 100 gallons; water
- h. Other Additives Used: None
- i. Application Rate: 0.75 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 13 oriented straight down
- f. Pressure: 42 (17 Jul) & 39 (18 Jul) psi
- g. Flow Rate: 5.45 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray offset: 2000' (17 Jul); 2000' (18 Jul)
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 4-7 knots @ 60° (17 Jul) & 6-7 knots @ 90° (18 Jul)
  - (2) Release Altitude: 8-15 Knots @ 60° (17 Jul) & 6-15 knots @ 90-110° (18 Jul)
- b. Temperature (Degrees Fahrenheit): 82°(17 Jul) & 74° (18 Jul)
- c. Relative humidity: 80% (17 Jul) & 76% (18 Jul)
- d. Cloud Cover: Overcast (17 Jul) & Clear (18 Jul)
- e. Source: Ground observations and aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. No data have been collected from the city of Minot to date.

**8. REMARKS:** This represents the 3<sup>rd</sup> year of spray operations conducted at Minot AFB and the city of Minot to control mosquitos. 2006 had been a particularly dry year, with 2007 being slightly wetter than average. These conditions probably resulted in a smaller than usual population of *Aedes vexans* mosquitos, and a larger than normal population of *Culex tarsalis* mosquitos. Mosquito control was good immediately following application. However, the trap collected the day following application yielded over 100 mostly *Culex* mosquitos. Prior to application, the trap count had been slightly over 200 mosquitos caught per night. Since *Culex* mosquitos are most active at night, difficulty in controlling this species is not surprising, since our application times are day/dusk, and effective control demands adulticide application when the target species is most active. This data highlights the importance of being able to spray at night to control disease vectors such as *Culex* mosquitos.

On-site equipment calibration was also conducted at Minot. This procedure took less than 1 hour, and insured accurate pesticide application rates. I strongly recommend on-site calibrations with actual pesticides for ULV applications.

As usual, the people at Minot AFB were great to work with. Many thanks to (b) (6) and the staff at Minot for taking care of a lot of details and being very helpful.

//signed//

(b) (6) MAJ USAFR  
Cat 11 Pest Management Professional

**Attachment 1. Map depicting the spray areas of Minot AFB and Minot, ND city (red polygons) and the track of the aircraft during each sortie.**







DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



27 JUN 07

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Minot AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Minot AFB ND and the city of Minot and surrounding areas. Operations will consist of Adulticide applications.

**2. Capability:** Spray Aircraft available 16-20 Jul 07

**3. Concept of Operations:**

**16 JUL (Monday):**

0900 Show time  
1100 Depart KYNG  
1345 Land KMIB  
1500 Installation Brief

**17 JUL (Tuesday):**

1500 Calibration System  
1730 Show time/WX Decision  
1800 Load Chemical  
2000 Take off KMIB (Adulticide Spray Sortie)  
2141 Sunset

**18 JUL (Wednesday):**

1730 Show time/WX Decision  
1800 Load Chemical  
2000 Take off KMIB (Adulticide Spray Sortie)  
2140 Sunset

**19 JUL (Thursday): Training/Weather back up**

1730 Show time/WX Decision  
1800 Load Chemical  
2000 Take off KMIB (Adulticide Spray Sortie)  
2139 Sunset

**20 JUL (Friday)**

1000 Show time  
1200 Depart KRDR  
1630 Land YNG

**4. Spray Parameters:**



- a. **Altitude:** 150' AGL
- b. **Swath Width.** as determined by the CPMP
- c. **Flow Rate.** 4.36 gallons/minute ULV
- d. **Application Rate.** 0.60 oz/acre
- e. **Chemical:** Trumpett
- f. **Ground Speed:** 200 Knots
- g. **Proposed spray area:** Approximately 20,000 acres

5. **Aircraft Commander:** Capt (b) (6) (b) (6)

// SIGNED //

(b) (6) (b) (6) CAPTAIN, USAFR  
Assistant Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
**3976 King Graves Rd Unit 26**  
**Vienna OH 44473-5926**

2 June 2008

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Langley AFB, VA.

1. Objective/Purpose/Benefits of the Spray Mission: Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes around LFI and the surrounding communities.

2. Capability: Aerial Spray C-130 Aircraft available 16-20 JUN 08

3. Concept of Operations:

**16 JUN (Monday):**

0900: Show time  
1100: Takeoff KYNG  
1230: Land KLFI w/safety briefing immediately following  
1400: Installation briefing  
1600: Showtime, WX decision, load chemical  
1800: Takeoff KLFI  
2027: Sunset  
2030: Land KLFI

**17 JUN (Tuesday):**

1600: Show time, WX decision, load chemical  
1800: Takeoff KLFI  
2028: Sunset  
2030: Land KLFI

**18 JUN (Wednesday):**

1600: Showtime, WX decision, load chemical  
1650: Takeoff KLFI  
2028: Sunset  
2030: Land KLFI

**19 JUN (Thursday):**

1600: Showtime, WX decision, load chemical  
1800: Takeoff KLFI  
2028: Sunset  
2030: Land KLFI

**20 JUN (Friday) Deploy to YNG**

1230: Show Time  
1430: Takeoff KLFI  
1600: Land KYNG

4. Spray Parameters:

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom<sup>®</sup> Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.6 Gallons/Minute
- f. **Acreage:** Approximately 125,000 acres on the peninsula
- g. **Swath Width:** 2000 foot

5. Aircraft Commander: Capt (b) (6) (b) (6)

6. Any questions please contact me at DSN (b) (6)

// SIGNED //

(b) (6) (b) (6) CAPTAIN, USAFR  
Assistant Chief of Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 16-20 JUN 08 CH1

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes around LFI and the surrounding communities.

**1. 910 AW PARTICIPANTS:**

**a. Aircrew:**

- (1) Mission Commander: LTC (b) (6)
- (2) Pilots: CAPT (b) (6) MAJ (b) (6)
- (3) Navigator: MAJ (b) (6)
- (4) Flight Engineers: Cmsgt (b) (6)
- (5) Spray Operators: MSG (b) (6) Tsgt (b) (6) (b) (6)

**b. Maintenance:**

- (1) Spray Maintenance: MSG (b) (6) TSG (b) (6) TSG (b) (6) SRA (b) (6)
- (2) Crew Chiefs: SSG (b) (6) SRA (b) (6)
- (2) Avionics: TSG (b) (6)

**c. Entomologists:** CPT (b) (6) MAJ (b) (6) (b) (6) (In place)

**d. Vehicles:**

**- Enterprise Rental Car on Langley AFB**

2 FS (b) (6) (b) (6)

Six pac (b) (6)

Pickup (b) (6) )

**e. Billeting Office:** COM: (757) 764-4667 POC TSG (b) (6)

DSN 574-4667, EXT 2528; FAX 574-3038

**Courtyard by Marriot –1917 Coliseum Dr (800) 321 -2211**

- Non Available slips are in mission folder behind lodging info

**2. PPR:** SPRAY01 06-16RS01

**3. SCHEDULE: (All times local)**

**16 JUN (Monday):**

0900: Show time  
1100: Takeoff KYNG  
1230: Land KLFI w/safety briefing immediately following  
1400: Installation briefing  
1600: Showtime, WX decision, load chemical  
1800: Takeoff KLFI  
2027: Sunset  
2030: Land KLFI

**17 JUN (Tuesday):**

1600: Show time, WX decision, load chemical  
1800: Takeoff KLFI  
2028: Sunset  
2030: Land KLFI

**18 JUN (Wednesday):**

1600: Showtime, WX decision, load chemical  
1650: Takeoff KLFI  
2028: Sunset  
2030: Land KLFI

**19 JUN (Thursday):**

1230: Show Time  
1430: Takeoff KLFI  
1600: Land KYNG

3. **ITEMS TO TAKE:**
  - a. **Entomologist:** Kestrel Weather Monitor, Compass, PCM Card, Pest Safety Binder, VHF Radios, Laptop Computer
  - b. **Navigator:** Maps/Map Bag, Validation Map
  - c. **Spray Operator:** Safety Gear, Calibration Tables
  - d. **Spray Maintenance:** Deployment Kit/Supply Kit
4. **NOTIFICATION NECESSARY FOR THIS MISSION:**
  - a. **Langley Tower:** DSN 574-5326
  - b. **Langley Base Ops:** DSN 574-2504
  - c. **Consideration calls:**
    - i. Newport News
    - ii. Ft Eustis/Felker AAF Tower
    - iii. Norfolk NS/Chambers Tower
5. **PARKING PLAN:** Taxi Way Foxtrot or as directed by Transient Alert.
6. **RADIO FREQUENCIES:**
  - a. **Felker AAF Tower (Ft Eustis): 126.3, 269.25, 248.2, 241.0**
    - (1) Ops phone DSN878-3588
    - (2) Tower phone DSN 878-3530
    - (3) Flight Service 122.2
  - b. **Newport News-Williamsburg Int: CTAF – 118.7** (Operating Hours 1000Z-0200Z)
    - (1) Ground – **121.9** or 348.6 (phone 877-0221 ops)
    - (2) Tower – **118.7** (phone DSN 877-2862) voice mail 7-2962
    - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
  - c. **Langley AFB:** Tower DSN 574-7999
    - (1) Tower - **125.0** or 253.5
    - (2) Ground - **121.7** or 275.8
    - (3) Clearance – **118.85** or 271.3
    - (4) Metro - **239.8**
  - d. **Norfolk NAS (Chambers Fld): Tower –124.3, 379.15,** Tower Supervisor DSN 262-3443
  - e. **Norfolk Approach: 125.7**
  - f. **Spray Ground: Primary 392.2; Secondary: 308.6**
7. **IN-BRIEFING:** 1430 hrs; CE Conference Room
8. **SPRAY CONFIGURATION:**
  - a. **System:** SP2G - MASS ULV; Fuselage booms
  - b. **Nozzle Tips/Orientation:** ten 8005 nozzles -- straight down
  - c. **Aircraft:** 89-9105
  - d. **Mission Identifier:** QZNRKA657168
9. **SPRAY PARAMETERS:**
  - a. **Altitude:** 150' AGL
  - b. **Ground Speed:** 200 KNOTS
  - c. **Pesticide:** Dibrom® Concentrate
  - d. **Application Rate:** 0.5 oz/acre
  - e. **Flow Rate:** 3.6 Gallons/Minute
  - f. **Acreage:** Potentially 125,000 acres on the peninsula but final acreage TBD
  - g. **Swath Width:** 2000 foot
10. **PESTICIDE LOADING:**
  - a. **How Much Pesticide:** see entomologist
  - b. **Where:** Taxi Way F Aero Club Ramp
  - c. **When:** 1600 hrs each day pending weather and heat index.
  - d. **Furnished by Installation:**
    - (1) Pesticide
    - (2) Loading Equipment/Crew
    - (3) Hazardous Waste Disposal
    - (4) Two B-5 or B-1 Stands

**11. CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**

**a. LANGLEY AFB VA:**

Wing Commander: DSN 574-5321  
Mission Support Group Commander: DSN 574-7995  
Civil Engineer: DSN 574-2025  
Deputy Chief/Civil Engineer: Ms. (b) (6)  
Environmental Coordinator: DSN 574-3987; FAX 3503  
Base Operations: DSN 574-2504  
Langley Control Tower: DSN 574-5326  
Weather: Langley AFB, DSN 574-5907  
Ft Eustis: DSN 297-5300/3343  
Command Post: DSN 574-5411  
Pest Control Foreman: (b) (6), DSN (b) (6), cell phone (b) (6)  
Pest Control/Environmental NCOIC: MSgt (b) (6)  
Public Affairs: DSN 574-2018/2010/2019  
Fuels: DSN 574-4312/3623/4224  
Motor Pool: 574-7514/5712 (2 vans and 1 staff vehicle were requested)  
ACC PMP: (b) (6) DSN (b) (6), cell phone (b) (6)  
Fire Department Comm: 757-764-2222

**b. FT EUSTIS VA:** Environmental Coordinator: DSN 927- 4152/2375

**c. Hampton Mosquito Control:** 757 850-3305

**d. York County Mosquito Control:** (757)-890-3780

**e. Poquoson:** Jerry Cagle (757) 868-3590

**f. City of Portsmouth Biologist:** (757) 393-8666

**g. Newport News Mosq. Control:** (757) 269-2750

**h. Camp Peary:** (757) 229-2121 Ext 2263, (b) (6) or (b) (6)

**i. Ft Monroe: ?**

**j. Newport News/Williamsburg Int.:**

- (1) Fixed Base Operator: Flight Int 877-6401
- (2) Flight Service: 877-0209
- (3) Tower: 877-2962
- (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

**k. Norfolk NAS VA:** DSN 564-2442/7598 or COM (757)-444-2442/7598

**l. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Col (b) (6), (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Capt (b) (6) (b) (6) FAX 1022
- (4) 910 OG/CC: Col (b) (6) (b) (6) (b) (6)
- (5) 910 OS/OSA: Airfield Manager, (b) (6) (b) (6)
- (6) 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
- (7) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (8) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6); FAX 1657
- (9) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) x-(b) (6) Capt (b) (6) (b) (6) Ext (b) (6)  
FAX 1616
- (10) 910 LG/CC: Ext 1225
- (11) 910 LG/LGM: Ext 1352
- (12) Maintenance Control: Ext 1327
- (13) 910 LG/LGMS: Spray Maintenance, Ext 1132
- (14) 910 LG/LGL, Ext 1137
- (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) cell (b) (6)

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT-Langley AFB 16-20 June 2008

### 1. MISSION BASICS:

- a. Installation Sprayed: Langley AFB and surrounding areas
- b. Mission Duration: 16-20 June 2008
- c. Purpose of Application: Control of adult mosquitoes transmitting arboviruses
- d. Application Dates: 17-18 June 2008
  - e. Times of Application (GMT): 2300-2352 (17 June); 2155-0016 (18 June)
  - f. Acres Treated: 39860 total: 3350 (17 June); 36510 (18 June)
- g. Project Coordinator (Name, Phone #): (b) (6), (b) (6)
- h. Date Spray Map Last Approved: 16 Aug, 2009
- i. Date of Waste Generation Letter: 4 April 1996
- j. Installation In-Briefing: 1 CE Conference Room, Langley AFB; 16 June 2008; LTC (b) (6) (b) (6) LTC (b) (6) (b) (6) MAJ (b) (6)
- k. Mission identifier: QZNRKA657168

### 2. OPERATIONAL:

- a. Mission Commander: LTCOL (b) (6)
- b. Certified PMPs (Category 11): LTC (b) (6) (b) (6) MAJ (b) (6)
- c. Aircrew:
  - (1) Pilots: CPT (b) (6) (b) (6) MAJ (b) (6)
  - (2) Navigator(s): MAJ (b) (6)
  - (3) Flight Engineer: CMS (b) (6)
  - (4) Spray Operators: MSG (b) (6) (b) (6), MSG (b) (6), TSG (b) (6)
- d. Safety Briefer: MAJ (b) (6)
- e. Spray Maintenance: MSG (b) (6), TSG (b) (6), TSG (b) (6) SRA (b) (6)
- f. Crew Chiefs: SSG (b) (6) SRA (b) (6)
- g. Avionics: TSG (b) (6)
- h. Flying Data:
  - (1) Spray Sorties/Hours: 2/0.9 (17 June), 2.4 (18 June)
  - (2) Ferry Sorties/Hours: 2/1.6 (16 June), 1.6 (19 June)
  - (3) Training Sorties/Hours: 1/0.6 (16 June; WX CNX)

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 180 (16 June)
- e. Gallons Pesticide Applied: 15 (17 June); 160 (18 June)
- f. Gallons and Name Diluent Used: 10 gallons marvel oil
- g. Gallons and Name of Flush Used:
- h. Other Additives Used: n/a
- i. Application Rate: 0.5 oz/acre

### 4. APPLICATION EQUIPMENT:

- a. Aircraft Type (Tail Number): 90-9105
- b. Spray System (Modules Used) and System ID #: SP2G MASS ULV
- c. Spray System Configuration: 2-Module System/Fuselage Booms



- d. Nozzle Type/Size: TeeJet 8010 flat fan nozzles
- e. Nozzle Orientation & Number Used: 6 straight down; 3 left, 3 right
- f. Pressure (PSI): 46
- g. Flow Rate: 3.63 gpm

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 feet
- b. Spray Off Set: 2000 feet
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed in knots): 290°/10 (17 June); 355°/8 (18 June)
- b. Temperature (°F): 80-84 degrees (17-18 June)
- c. Cloud Cover: 50 % OVC (17 June); Clear (18 June)
- d.. Source: at altitude during spray

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Normal projected off-sets based on MASS system characterization
- b. Effectiveness:
  - (1) Technique/s Used: carbon dioxide-baited traps were used to monitor mosquito densities pre- and post-treatment
  - (2) Results: Traps place in treated areas showed significant reductions in mosquito populations. The Harris creek area demonstrated declines in populations from over 1000 mosquitos collected pre-spray, to 0 mosquitos collected post-spray. Unfortunately, our coverage was limited this year due to technical difficulties, thus complete data is not available.

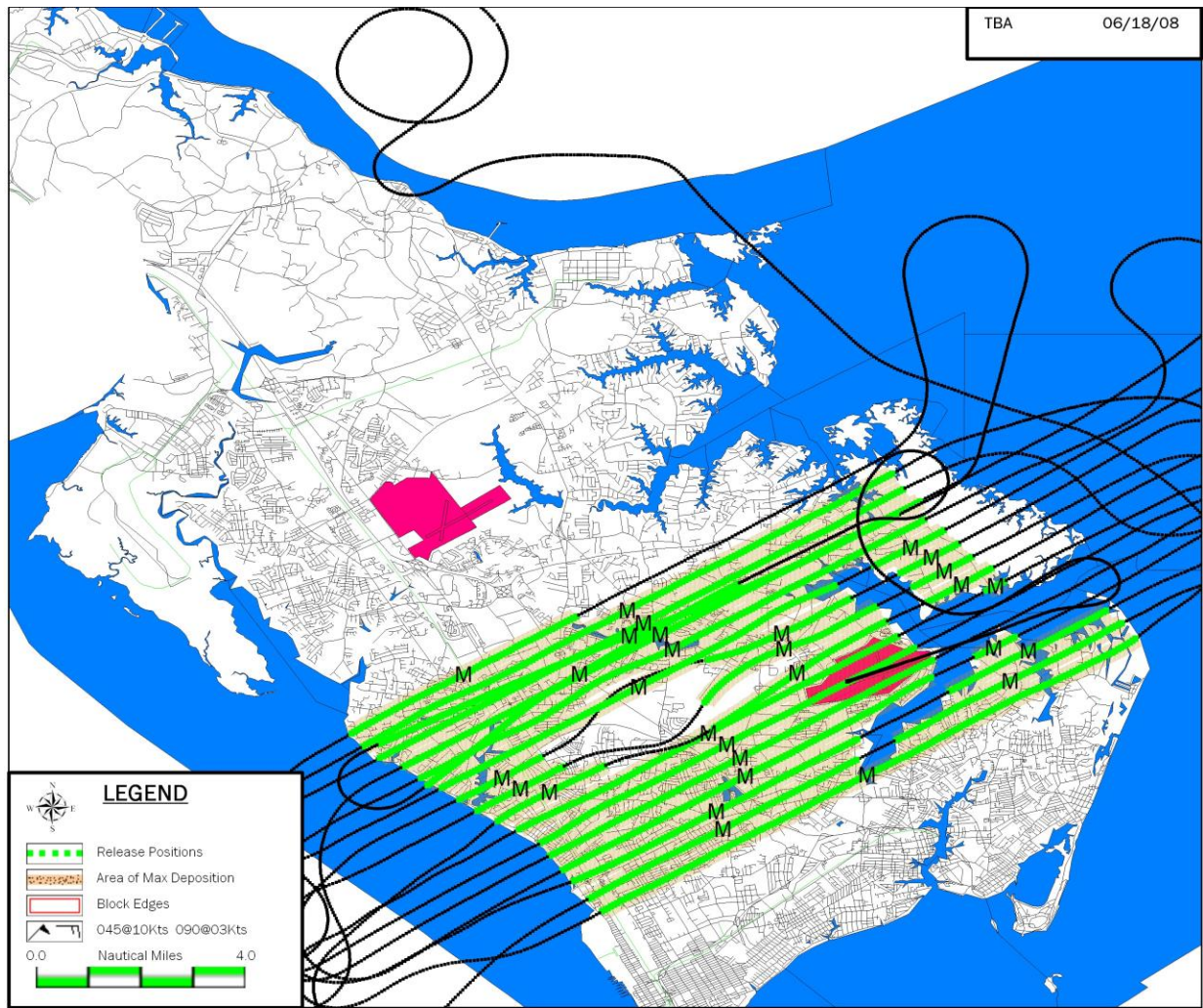
- 8. REMARKS:** Significant difficulties were encountered on this mission. Weather for the first 2 evenings was uncooperative, with extremely turbulent air associated with microbursts and unstable air. On 17 June, only one pass was attempted before calling the spray activities off. In addition, significant nozzle clogging was experienced, rendering the spray system inoperative on 17 June. Further investigation revealed that the supplied stocks of Dibrom were contaminated with some type of grainy, black material. The speculation was that either elements of stainless steel closed loading system incorporated into the drums of Dibrom had corroded severely, causing the material to accumulate, or that the material had simply spontaneously crystallized (see pictures in attachment 2). The local AMVAC technical representative, Mr. (b) (6), came at the request of LTC (b) (6)/(b) (6) to investigate, and collected samples for analysis. The results of that analysis are pending. To attempt to minimize nozzle fouling, 8010 nozzles were opted for on the final day of spraying. A significant portion of the Southern Langley peninsula was completed on 18 June (see Attachment 1). Unfortunately, spray operations had to cease because of an air show scheduled at Langley for the remainder of that week and weekend. However, in the areas that were treated, control was effective, and there were no complaints about spray operations. Many thanks to aerial spray maintenance for working the problem of the chemical contamination, and many thanks as usual to the staff at the pest control shop at Langley AFB.

//Signed//

(b) (6)

MAJ USAFR  
Certified Pest Management Professional

**Attachment 1. Map depicting sprayed areas and aircraft track over Langley Peninsula. 18 June 2008.**



**Attachment 2. Photos of contaminated and possibly corroded Dibrom drum loading devices.**







DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



MEMORANDUM FOR HQ AFRC/DOOM

2 Sep 05

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Hill AFB/UTTR UT  
Annual Weed Control Spray Mission on the Utah Test and Training Range (UTTR)

1. **Capability:** Two aircraft will be available 16-23 Sep 05 for the requested spray mission. The RAS will provide mission support 16-17 & 22-23 Sep 05.
2. **Concept of Operations:**
  - a. **16 Sep (Friday):**
    - 0800 Show at KYNG
    - 0810 Pre-Mission Briefing
    - 0830 LM's released to assist in loading aircraft
    - 1000 Spray Aircraft 99107 Take-Off KYNG
    - 1005 Spray Aircraft 99108 Take-Off KYNG
    - 1000 RAS Aircraft 91022 Take-Off KYNG
    - 1330 Land HIF
    - 1400 Safety Brief
  - b. **17- Sep (Saturday) – 21 Sep (Wednesday):** Schedule of daily events will be determined by the Mission Commander as required.  
**(Range times 0600-1500)**
    - 0430 Ground Support Team departs for UTTR
    - 0515 FEs, Crew Chiefs, & Spray MX report and Mix/Load Chemical
    - 0700-1200 Target areas sprayed as designated by PMP
  - c. **22 Sep (Thursday):** Flush and clean up day.  
Schedule of daily events will be determined by the Mission Commander as required. Support Aircraft returns to Hill AFB.
  - d. **23 Sep (Friday):**
    - 0700 Aircrew report for duty
    - 0730 All personnel report
    - 0900-0915 Spray Aircrafts & Support aircraft take-off
    - 1600-1700 Mission completed, all personnel and aircraft arrive at KYNG
3. **Spray Parameters and Sequencing:** (See attached Operational Schedule)
4. **Mission Commander:** Maj (b) (6) (6) ]
5. **Aircraft Commanders:** Maj's (b) (6) (6) (b) (6) (6) (b) (6) (6) (6) ]  
(b) (6) (6) (6) ] Capt (b) (6) (6) (6) (6) ]
6. **Support required at Hill AFB and the UTTR has been completed.**  
  
(b) (6) (6) (6) ] Maj, USAFR  
Aerial Spray Mission Commander  
757 AS/DOS

# SPRAY OPERATIONAL SCHEDULE

## UTAH TEST AND TRAINING RANGE MISSION

### 16-23 SEPTEMBER 2005

Aircrew 1 A/C #107, Report Time: 0805 Take Off: 1005 Arrive: 1330L QZNRKA946259  
Aircrew 2 A/C #108, Report Time: 0810 Take Off: 1010 Arrive: 1335L QZNRKA947259  
Support A/C #022, Report Time: 0800 Take Off: 1000 Arrive: 1340L

**PURPOSE/BENEFIT/OBJECTIVE:** To control vegetation on Targets 21, 24 and Nord LZ at the Utah Test and Training Range (UTTR)

#### 1. AIRCREW 1: AC 107-In place CALLSIGN: SPRAY 07

- a. Pilots: MAJ (b) (6) MAJ (b) (6), CPT (b) (6)
- b. Navigators: LTC (b) (6) (b) (6)
- c. Flight Engineers: MSG (b) (6), SRA (b) (6) (b) (6)
- d. Spray Operators: SMS (b) (6), MSG (b) (6), MSG (b) (6)
- e. Crew Chiefs: MSG (b) (6), SRA (b) (6)

#### AIRCREW 2: AC 108-In place CALL SIGN: SPRAY 08

- a. Pilots: MAJ (b) (6) (b) (6) MAJ (b) (6) (b) (6) MAJ (b) (6)
- b. Navigator: LTC (b) (6)
- c. Flight Engineer: MSG (b) (6)
- d. Spray Operators: MSG (b) (6), MSG (b) (6), TSG (b) (6)
- e. Crew Chiefs: TSG (b) (6), SSG (b) (6)

#### SUPPORT CREW AC 022

- a. Pilots: LTC (b) (6), 1LT (b) (6)
- b. Navigator: 2LT (b) (6)
- c. Flight Engineer: MSG (b) (6)
- d. Loadmasters: MSG (b) (6)
- e. Crew Chiefs: TSG (b) (6), SRA (b) (6)

#### 2. MISSION SUPPORT:

- a. Mission Commander: MAJ (b) (6)
- b. Entomologist: CPT (b) (6)
- b. Spray Maintenance: MSG (b) (6), TSG (b) (6), TSG (b) (6)  
TSG (b) (6), \*TSG (b) (6), TSG (b) (6)

#### 3. UTTR GROUND PARTY:

- a. Entomologist/Pest Management Professional(s): \*In place  
\*LTC (b) (6) (b) (6) \*LTC (b) (6) \*MAJ (b) (6) (b) (6) CPT (b) (6)

#### 4. MAINTENANCE: \*In place

- a. 910 MA Supervisor: \*SMS (b) (6)
- b. Avionics/Hydraulics: MSG (b) (6), TSG (b) (6), TSG (b) (6) (b) (6)
- c. Engine/Propulsion: TSG (b) (6) TSG (b) (6) TSG (b) (6)

#### 5. COM: MSG (b) (6), MSG (b) (6), TSG (b) (6), SSG (b) (6),

**6. IN-BRIEFING: (UTTR Staff)**

- a. When/Time:** 16 Sep 05, 1400
- b. Where:** Air Freight Terminal
- c. Who: EVERYONE!!**
- d. Briefing Plan**
  - a. Billeting- See item **g** below
  - b. Vehicles- See item **h** below
  - c. Schedule of events
  - d. Weather call
  - e. Cellular Phone numbers for all personal

**7. PLANNED SEQUENCE OF EVENTS: Hill AFB Tower Control and Runway Hours 24/7**

**NOTE: Scheduling reflects no weather or maintenance delays.**

**ALL TIMES MAY BE ADJUSTED BY MISSION COMMANDER.**

**DUTY DAY FOR CIVILIANS WILL BE STD DAY (8 HOURS).**

**MILITARY STATUS PERSONNEL WILL WORK AS  
REQUIRED WITHIN CREW REST CONSTRAINTS.**

**Tower Control, Runway & Airfield hours 24/7**

**UTTR RANGE TIMES: 0600-1500L**

**END OF EACH DAY LOAD GROUND TANKS WITH THE APPROPRIATE MIX.**

**ALL MX & A/C PERSONNEL WILL REMAIN ON DUTY UNTIL AIRCRAFT IS PRE-  
FLIGHTED FOR THE NEXT DAY OR RELEASED BY THE AIRCRAFT  
COMMANDER.**

**16 Sep (Fri):**

0800 Show at KYNG  
0810 Mission Brief  
1000 Aircraft 07 Take off  
1005 Aircraft 08 Take off  
1010 Aircraft 22 Take off – AFRC RAS  
1330 Arrive Hill AFB  
1400 Mission Commander/Safety Briefing

**17-22 Sep (Sat-Thur): (First Spray Sortie, Range Times 0600-1500 (1200Z-2100Z 18-23 Sep)**

0500: Spray Maintenance starts on first full day of mission and adjust as directed  
0500: Show time, aircrew Spray 07  
0530: Show time, aircrew Spray 08  
0712: Sunrise (see attach Sunrise/Sunset Chart in mission folders)  
0715: Spray 07 Take off  
0745: Spray 08 Take off  
0715-1400: Spray 07 & 08 spray UTTR Targets as directed by the MC  
**\*NOTE: Spray 07 & 08 will alternate show/take off each day**  
**\*\* NOTE: First crew to base ops files flight plans and gets weather brief for second crew**

**22 Sep (Thur): Weather Back-up/Flush, Clean Up; Support Aircraft arrives at Hill**

0530: Show time aircrew Spray 07  
0600: Show time aircrew Spray 08  
0715-1200 Spray 07 & Spray 08 Flush sorties, plan 2 sorties each pending spray mx

**23 Sep (Fri): All personnel and aircraft return to YNG**

0700: All Aircrew report  
0730: All Personnel report

0900: Aircraft 07 Takes off  
0905: Aircraft 08 Takes off  
0910: Aircraft 022 Takes off  
1600: Lands YNG

## 8. ITEMS TO TAKE:

- a. **PMP:**
  - (1) Project Notebook with Recording Sheets and Maps
  - (2) Laptop Computer and Batteries
  - (3) 2 Compasses and Stop Watch
  - (4) 2 Signal Mirrors and 2 Spot Lights
  - (5) Measuring Wheels and Tape
  - (6) Entomologists' Tool Kit
  - (7) UHF/VHF Radios and VHF Radios
  - (8) Cellular Phone
- b. **Mission Commander:** Cellular Phone, Mission Info
- c. **Navigator:** Maps
- d. **Spray Maintenance:**
  - (1) MASS Spares and Spill Kit
  - (2) Tools and Other Equipment
  - (3) Herbicide Safety Binder
  - (4) Safety Equipment
- e. **Maintenance:** Applicable Equipment

## 9. SPRAY CONFIGURATION: SP3G

- a. Two Aircraft, Systems 3 and 5
- b. MASS Modules 1, 2 and 3
- c. UHV Fuselage booms oriented straight back

10. **PPR REQUIREMENTS:** All required, see Form 33 setup sheets for aircraft

11. **PARKING PLAN:** Air Freight Ramp – on West side of the airfield, Spots 11/12  
Alternate Spot 10 for support aircraft

## 12. RADIO FREQUENCIES:

- **Clover Range Control:** UHF 285.65, 275.9, 361.4
- **Eagle Tower:** UHF 351.0; Mawk 4 (**Gary Potter**)
- **Diddle Knoll & Spray Ops Freq:** UHF 398.1 (Primary), 383.2 (Back-up); VHF 134.1, 118.45
- **Spray Inter plane:** UHF 237.05 / VHF 138.375
- **Spray Ground to Spray Maintenance:** See Iridium Phones
- **Base OPS:** 139.3
- **HF Operations:** 04912.35 (p), 10923.35, 12208.35, 14827.35
- **Communications Ground Freq:** LMR nets are trunked at Hill.
  
- **IRIDIUM PHONES**
  - Mission Commander (b) (6)
  - Maintenance Supervisor (b) (6)
  - Entomologist/Pest Management (b) (6)

## 13. SPRAY PARAMETERS:

- a. **Herbicide:** Krovar 1DF®
- b. **Application Rate:** 22.5 gal/acre (10 lbs of Krovar in 22.4 gal of water)
- c. **Acreage:** 1,283 Acres (Targets 21, 24 and a couple passes on Nord LZ)
- d. **Ground Speed:** 200 Knots (337.55 ft/sec)
- e. **Spray Altitude:** 100 Feet AGL



- f. Swath Width:** 35 Feet
- g. Flow Rate:** 366.1 Gallons/Minute

**14. HERBICIDE LOADING: (For Partial Loads Use Table on Last Page)**

**a. Sequence for Loading 1,000 Gallon Mixing Tank:**

- (1) Fill with water up to 750 Gallon Mark, then add:
  - (a) 450 Pounds of Krovar 1DF® (9 bags, 50 # each)
  - (b) 4.0 Gallons (15,140 ml) of StaPut®
  - (c) 64 Ounces (1,892 ml) of Foam Fighter F®
  - (d) 200 Ounces (5,913 ml) Hi-Light® Dye
- (e) Add Water to 1,000 Gallon Mark and Agitate for 30 Minutes

**b. When:** Start at 0515 Hours on first full day of spraying and adjust as necessary through end of the daily mission as called by Mission Commander.

**c. Items to be furnished by installation:**

- (1) Krovar 1 DF® (12,660 pounds)
- (2) Foam Fighter F® (15 gallons)
- (3) StaPut® Additive (114 gallons)
- (4) Hi-Light® Dye (45 gallons)
- (5) Remove Nutra-Sol Tank Cleaner
- (6) Loading Personnel and All Loading Equipment
- (7) All Necessary Cleanup and Hazardous Waste Disposal
- (8) Aircraft Support Equipment and TA Support
- (9) Wash Rack and Fuel Priority

**15. SPRAY MONITORING AND TESTING.** By CPMP & ground support personnel

**16. CONTACTS:** (Commercial prefix (801) 777-XXXX; DSN 777-xxxx)

**a. 388<sup>th</sup> RANS/RSO, Range Control Officer/Installation Spray Coordinator:**

- (b) (6) 6066 Cedar Lane, Bldg 1274S; (b) (6) ; FAX: 9205
- Cell Phone # (801) 558-4100, (b) (6) (b) (6) Cell Phone (b) (6)
- **Hill Range Control:** 7-9386, Current OPS; 7-9385
- **Range Scheduler:** 7-9386
- **Eagle Tower:** 7-1515/6
- **Clover Operations:** 7-7575
- **Clover Commander:** 7-1550
- **388<sup>th</sup> RANS/RSL Radio Freq Monitor:** 7-6715
- **388<sup>th</sup> RANS/RSR Resource Monitor:** 5-4257

**b. Environmental Coordinator:** (b) (6)

**c. OASIS RANGE SUPPORT DIRECTORATE:**

Oasis Chief: 75 CEG/CEU Ron Short, 7-1550  
Oasis Civil Engineering: (b) (6)  
North Range Security: 7-1521/2/4

**d. Hill AFB Base OPS: 7-1861; WX 7-2885**

- **Aerial Spray OPS Bldg 900 Deployment Center,** (b) (6)

**e. Entomology:** (b) (6)

**f. Weather:** Hill AFB: 7-2018; **UTTR:** 7-1516/63 ASOS at Eagle Range 6-1765 Need Dash1 daily at 0530

**g. Billeting: Comfort Inn for deployed main body**

- **Billeting Office Mountain View Inn, DSN 777-0802/1844, FAX 775-2014 COM (801) 777-0802; FAX 775-2014**
  - **Comfort Inn (\$48+Tax) 877 North 499 West, 801 544-5577**
  - **Quarters for UTTR Support Personnel**
    - **Montego Bay (Wendover): 1-(877)-666-8346**
- Holiday Inn (Odgen): 1-800-999-6841 or 801 399-5671  
Airport Hilton Inn: 1-800-648-9668 or 801 539-1515  
Ogden Park: 247 24<sup>th</sup>, 801 627-1190/800 421-7599  
La Quinta Inns: 1965 N 1200 W Layton, 801 776-6700  
Alana Motel: 116 N Main Street, Clearfield, 801 825-2221 or 2321

**h. Car Contact:**

- (1) **Enterprise Rental Car (b) (6) on Base at BX 801 825-0800 FAX 801 825-0090**  
**Confirmation number: #768104 for all vehicles**

**1 SUV 4 Wheel Drive @ \$60/day 16-23 Sep 05 pick up at SLC IAP**

CPT (b) (6) (b) (6) (LTC (b) (6) (b) (6) CPT (b) (6)-1 SUV from airport)

**3 ea Mid Size @ \$41/day 16-23 Sep 05**

MAJ (b) (6) MAJ (b) (6) MAJ (b) (6)

**4 ea Mini Van @ \$60/day 16-23 Sep 05**

SMS (b) (6) MSG (b) (6) MSG (b) (6) MSG (b) (6)

- (2) **Hill Motor Pool: All Reserved under (b) (6) 4 total Confirmation #9063142**

1x Gov Mini Van Crew Chiefs-MSG (b) (6)

2x Mx Specialists-MSG (b) (6) TSG (b) (6)

1x Supt Crew 16-23 Sep-LTC (b) (6)

**i. Hill AFB:**

Base Commander: Col (b) (6)  
Airfield Manager: (b) (6)  
Base Operations: 7-1861; FAX: 7-2221  
Weather: 7-2018  
Transit Alert: 7-3956  
C-130 Maintenance Contact: 7-3984  
Fuels: 7-7423/7-7311 available 0900-1800 daily after hours contact CP  
Billeting: 7-1844  
Chow Hall: 7-3428 Breakfast M-F 0530-0730, S-S 0700-1900  
Golf Course: 7-1108

**j. Hill Public Affairs: 7-5201**

**k. Supply Contact: 7-5391 (922 OE)**

- l. Youngstown ARS, OH:** Commercial (330) 609-XXXX or DSN 346-XXXX  
910 AW Direct Dial-In/Voice Mail: 1-800-278-7046+2+Ext  
Command Post: 1315; FAX 1161  
910 AW/CC: 1243  
910 AW/PA: 1236; FAX 1022  
910 AW/FM: Comptroller: 1216  
910 OG/OSS: Supervisor of Flight Desk: 1069; FAX 1371  
910 OG/CC: 1257/1179  
757 AS/DO Admin: SMS (b) (6) (b) (6) ; FAX 1657  
757 AS/DOS: Aerial Spray Operations, 1111; FAX 1616

910 MX/LG/CC: 1225  
Maintenance Control: 1344  
Spray Maintenance: 1132/1586  
Omega/SATO Travel: 1772; 1-800-285-6342  
Cellular Spray Phones:  
- PMP: (330) 233-2346  
- Mission Commander: (b) (6)  
- Spray Maintenance: (b) (6)

**17. SEQUENCING:**

**a.** Target sequencing is determined by UTTR personnel based upon EOD clearance schedule and airspace scheduling.

**b.** Spray ops aircraft must stay south of Base Leg Knoll during turns on north run on Target 21. Coordination with range control is essential to assure that this portion of the range is released for air operations.

**c. When** winds blow directly from one side of the target to the middle of the target or during early morning when wind speed is low, ground monitors will direct the “dress up” of the target edges.

**d. Spraying Priorities:**

- (1) Target 21
- (2) Target 24
- (3) NORDLZ

**f. Multiple-Target Alignments for Possible Future Operations.**

Whenever possible, multiple in line targets will be treated on the same pass to facilitate aircraft line-up and turning efficiency (in which case two separate ground-monitoring and marking parties will be required).

- (1) The west edges of Targets 21 & 24 are contiguous and can be treated on the same pass with a spray-off gap between targets.

**18. GENERAL TARGET INFORMATION:**

**a. Target 21:**

- (1) Dimensions: 4,980' X 7,770'
- (2) Acreage: 888
- (3) Acres Sprayed in 2004: 888
- (4) Aircraft Loads: 18,869 Gal
- (5) Sorties: 17
- (6) Passes (35' Swath): 157
- (7) Spray-On Time/Pass: 23 Seconds
- (8) Spray Heading: 00/180

**b. Target 24:**

- (1) Dimensions: 1,600' X 6,080'
- (2) Acreage: 223
- (3) Acres Sprayed in 2004: 223
- (4) Aircraft Loads: 5,263 Gal
- (5) Sorties: 7
- (6) Passes (35' Swath): 47
- (7) Spray-On Time/Pass: 18 Seconds
- (8) Spray Heading: 00/180

**UTTR GEOGRAPHIC LOCATION**

Target areas on UTTR are geographically located in northwestern Utah, directly west of the Great Salt Lake and Hill Air Force Base. The complex is positioned between 40 and 41 degrees north latitude and

close to 113 degrees ten minutes west longitude. The targets are within range 12 west and Township two and three north, Salt Lake Baseline Meridian.

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# SPRAY OPERATIONAL SCHEDULE

## UTAH TEST AND TRAINING RANGE MISSION

### 16-26 MARCH 2010

**PURPOSE/BENEFIT/OBJECTIVE:** Aerial spray herbicide mission controlling Halogeton on Targets 21, 24, and Wildcat at the Utah Test and Training Range(UTTR) aiding vegetation control for bombing mission test evaluations and unexploded ordnance recovery.

#### 1. AIRCREW1: AC 108-CALL SIGN: SPRAY 06

- a. Pilots: MAJ (b) (6); (b) (6), Capt (b) (6), (b) (6), MAJ (b) (6), Maj (b) (6)
- b. Navigators: LTC (b) (6)
- c. Flight Engineers: TBD
- d. Spray Operators: TBD
- e. Crew Chiefs: TBD

#### AIRCREW 2: AC 108- CALL SIGN: SPRAY 08

- f. Pilots: MAJ (b) (6), Maj (b) (6), Capt (b) (6), Maj (b) (6)
- g. Navigators: TBD
- h. Flight Engineers: TBD
- i. Spray Operators: TBD
- j. Crew Chiefs: TBD

#### 2. MISSION SUPPORT:

- a. Mission Commander: TBD
  - 1. Makes final decision on all changes to the schedule
  - 2. Confirm all hotel information is correct upon check in
  - 3. Report flight data to AFRC daily (See contact info on reporting sheet)
- b. Entomologists: Maj (b) (6) (b) (6), LtCol (b) (6) (b) (6)
- c. ARMS: TBD

#### 3. UTTR GROUND PARTY:

- a. Entomologist/Pest Management Professional(s): TBD 3 aircrew who will swap with aircrew above ½ way through

#### 4. MAINTENANCE:

- a. 910 MX Supervisor: \*SMSgt (b) (6) (27 Mar 09);
- b. 910 Spray MX: Tsgt (b) (6) (27 Mar 09), Tsgt (b) (6) (27 Mar 09), Tsgt (b) (6) (b) (6) (27Mar09), Ssgt (b) (6), SRA (b) (6), Tsgt (b) (6) (1 Apr), Tsgt (b) (6) (1 Apr)
- c. Instruments/Avionics: Tsgt (b) (6), Tsgt (b) (6)
- d. Hydraulics/Electrician: Tsgt (b) (6), Ssgt (b) (6)
- e. Engine: Tsgt (b) (6)

#### 5. COMM: None

#### 6. IN-BRIEFING: (UTTR Staff)

- a. When/Time: 17 Mar 2010, 1400
- b. Where: Air Freight Ramp/Base Operations
- c. Who: EVERYONE!! Do Not leave area until cleared out by the MC.
- d. Briefing Plan
  - a. Vehicles- See item 16.h below
  - b. FLT Line Driving
  - c. Schedule of events
  - d. Billeting- See item 16.g below
  - e. Weather call

f. Cellular Phone numbers for all personnel

**7. PLANNED SEQUENCE OF EVENTS: Hill AFB Tower Control and Runway Hours 24/7**

**NOTES:**

1. Scheduling reflects no weather or maintenance delays. In the event of weather or maintenance delays, the missions will be adjusted as required. ALL TIMES SUBJECT TO ADJUSTMENT BY MISSION COMMANDER
2. DUTY DAY FOR CIVILIANS WILL BE AS REQUIRED WITHIN CREW REST CONSTRAINTS.
3. Tower Control, Runway & Airfield hours 24/7
4. UTTR RANGE TIMES: 1500-2000Z
5. ALL MX & A/C PERSONNEL WILL REMAIN ON DUTY UNTIL AIRCRAFT IS PRE-FLIGHT COMPLETE AND RELEASED BY THE MISSION COMMANDER.

**a. 16 March (Tuesday)**

**Vader?? MI: ?????? PPR: ????**

0800 Show KYNG

1000 Depart KYNG with extra crew, maintenance, and support equipment

1330 Land KHIF drop off extra crew, maintenance, and support equipment

Time TBD: MC, Maint, and extra crew members work out logistics of buildings, access cards, vehicles, and obtain billeting information prior to crews arriving on 17 March.

**b. 17 March (Wednesday)**

**PPR: AS0101**

0900 Show KYNG load spray module

1100 Spray ?? Depart KYNG

1105 Spray ?? Depart KYNG

1430 Spray ?? Arrive KHIF

1435 Spray ?? Land KHIF

**c. 18-19 March (Thursday-Friday) 2 sorties as wx permits each day.**

0500 Show KHIF Spray ?? crew 1; 0545 Spray ?? Crew 2 (Alternating daily)

0530 Weather call and mixing begin

0700 Depart KHIF

1300 Land KHIF

\*\*Weekend flying is currently unavailable due to range funding. If wx delayed, then weekend operations will be considered as a last resort per Hill AFB.

**d. 22-25 March (Monday-Thursday) 2 sorties as wx permits each day.**

0500 Show KHIF

0530 Weather call and mixing begin

0700 Depart KHIF

1300 Land KHIF

**25 March Support Aircraft**

0700 Show KYNG

0900 Depart KYNG

1230 Arrive KHIF

**e. 26 March (Friday) All personnel**

0700 Show KHIF

1000/1005/1010 Depart KHIF

1600/1605/1610 Land KYNG

\*\*If completed early, the aircrews and airframes may return early. TBD by the mission commander.

## 8. ITEMS TO TAKE:

- a. **PMP:**
  - (1) Project Notebook with Recording Sheets and Maps
  - (2) Laptop Computer and Batteries
  - (3) 2 Compasses and Stop Watch
  - (4) 2 Signal Mirrors and 2 Spot Lights
  - (5) Measuring Wheels and Tape
  - (6) Entomologists' Tool Kit
  - (7) UHF/VHF Radios and VHF Radios
  - (8) Cellular Phone
- b. **Mission Commander:** Mission Folder, Cellular Phone
- c. **Navigator:** Maps
- d. **Spray Maintenance:**
  - (1) MASS Spares and Spill Kit
  - (2) Tools and Other Equipment
  - (3) Herbicide Safety Binder
  - (4) Safety Equipment
- e. **Maintenance:** Applicable Equipment

## 9. SPRAY CONFIGURATION: SP3G

- a. Two Aircraft and Systems
- b. MASS Modules 1, 2 and 3
- c. UHV Fuselage booms oriented straight back

## 10. PPR REQUIREMENTS: All required, see Form 33 setup sheets for aircraft

## 11. PARKING PLAN: Forestry Ramp and Building requested

## 12. RADIO FREQUENCIES:

- **Clover Range Control:** UHF 285.65, 275.9, 361.4 (p)
- **Eagle Tower:** UHF 351.0; Mawk 4 (**Matt Bolduc**)
- **Diddle Knoll & Spray Ops Freq:** UHF 398.1 (Primary), 383.2 (Back-up); VHF 134.1, 118.45
- **Spray Inter plane:** UHF 237.05 / VHF 138.375
- **Spray Ground to Spray Maintenance:** See Iridium Phones
- **Base OPS:** 139.3
- **HF Operations:** Designated by Comm. See attached list.
- **Communications Ground Freq:** LMR nets are trunked at Hill.

### - IRIDIUM PHONES

- Mission Commander (b) (6)
- Entomologist/Pest Management at UTTR (b) (6)

## 13. SPRAY PARAMETERS:

- a. **Herbicide:** Krovar 1DF®
- b. **Application Rate:** 22.5 gal/acre (10 lbs of Krovar in 22.4 gal of water)
- c. **Acreage:** 1,283 Acres (Targets 21, 24 and a couple passes on Nord LZ)
- d. **Ground Speed:** 200 Knots (337.55 ft/sec)
- e. **Spray Altitude:** 100 Feet AGL
- f. **Swath Width:** 35 Feet
- g. **Flow Rate:** 366.1 Gallons/Minute

## 14. HERBICIDE LOADING: (For Partial Loads Use Table on Last Page)

- a. **Sequence for Loading 1,000 Gallon Mixing Tank:**



- (1) Fill with water up to 750 Gallon Mark, then add:
  - (a) 450 Pounds of Krovar 1DF® (9 bags, 50 # each)
  - (b) 4.0 Gallons (15,140 ml) of StaPut®
  - (c) 64 Ounces (1,892 ml) of Foam Fighter F®
  - (d) 200 Ounces (5,913 ml) Hi-Light® Dye
  - (e) Add Water to 1,000 Gallon Mark and Agitate for 30 Minutes
- b. When:** Start at 0500 Hours on first full day of spraying and adjust as necessary through end of the daily mission as called by Mission Commander.

**c. Items to be furnished by installation:**

- (1) Krovar 1 DF® (12,660 pounds)
- (2) Foam Fighter F® (15 gallons)
- (3) StaPut® Additive (114 gallons)
- (4) Hi-Light® Dye (45 gallons)
- (5) Remove Nutra-Sol Tank Cleaner
- (6) Loading Personnel and All Loading Equipment
- (7) All Necessary Cleanup and Hazardous Waste Disposal
- (8) Aircraft Support Equipment and TA Support
- (9) Wash Rack and Fuel Priority

**15. SPRAY MONITORING AND TESTING.** By CPMP & ground support personnel

**16. CONTACTS:** Commercial prefix (801) 777-XXXX; DSN 777-xxxx

**a. 388<sup>th</sup> RANS/RSO, Range Control Officer/Installation Spray Coordinator:**

(b) (6) : 6066 Cedar Lane, Bldg 1274S; (b) (6) ; FAX: 9205  
Cell Phone # (b) (6)

(b) (6)

- **Hill Range Control:** 7-9386, Current OPS; 7-9385
- **Range Scheduler:** 7-9386
- **Eagle Tower:** 7-1515/6
- **Clover Operations:** 7-7575
- **Clover DO: 586-3103**
- **388<sup>th</sup> RANS/RSL Radio Freq Monitor:** 7-6715
- **388<sup>th</sup> RANS/RSR Resource Monitor:** 5-4257

**b. Environmental Coordinator:** (b) (6)

**c. OASIS RANGE SUPPORT DIRECTORATE:**

Oasis Chief: 75 CEG/CEU (b) (6)

Oasis Civil Engineering: (b) (6)

North Range Security: 7-1521/2/4

**d. Hill AFB Base OPS:** 7-1861

**e. Entomology:** (b) (6)

**f. Weather:** Hill AFB: 7-2018; UTTR: 7-1516/63  
ASOS at Eagle Range 6-1765/1795  
Need Dash1 daily at 0600

**f. Billeting:** Billeting Office Mountain View Inn, DSN 777-0802/1844, FAX 775-2014

**Off base lodging:** Hilton Garden Layton, UT  
801-416-8899 762 West Heritage Park Blvd Layton, UT 84041

**Nugget (Wendover): 1-(800)-848-7300 (UTTR Personnel)**

**h. Car Contact:**

1. **Enterprise Rental Car (b) (6) at BX 801-825-0080  
8 SUV's, 1 LG SUV, 2 St Car (Requested)**

**MC/Entomologists/ARMS- 1 SUV**

**Spray Crew1 – 2 SUV's –**

**Spray Crew2 – 2 SUV's –**

**Spray MX – 1 LG SUV –**

**MX Specialists – 1 SUV –**

**Crew Chiefs – 1 Standard Car –**

**Mx Super – 1 Standard Car**

**Range: 2 SUV's**

2. **Hill Motor Pool: 75 LRS/Dispatch DSN 777-1843, All Reserved: 1 total  
Still no vehicles available at this time! If they come available, some rentals may be cancelled.**

**i. Hill AFB: Base Commander: Col (b) (6)**

**Airfield Manager: (b) (6)**

**Base Operations: (b) (6) ; (b) (6) ; FAX: 7-2221**

**Sponsor: LtCol (b) (6) , 514FLT (b) (6)**

**Weather: 7-2018**

**Transit Alert: 7-3886**

**C-130 Maintenance Contact: 7-2478**

**Fuels: 7-7423/7-7311 available 0900-1800 daily after hours contact CP**

**Billeting: 7-1844**

**Chow Hall: 7-3428 Breakfast M-F 0530-0730, S-S 0700-1900**

**Golf Course: 7-1108**

**Public Affairs: 7-5201**

**Supply: 7-5391 (922 OE)**

**j. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

**Toll Free 1 - 800 - 278 - 7046, + Ext**

- (1) **910 AW/CC: Col (b) (6)**
- (2) **910 AW Command Post: Ext 1315; FAX 1161**
- (3) **910 AW/PA: Capt (b) (6) ; FAX 1022**
- (4) **910 OG/CC: Col (b) (6) (b) (6)**
- (4) **910 OS/OSA: Airfield Manager, Ext 1186/1526**
- (5) **757 AS/DO: Maj (b) (6) (b) (6)**
- (6) **910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371**
- (7) **757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657**
- (8) **757 AS/DOS: Aerial Spray Office, LTC (b) (6) (b) (6) , Capt (b) (6)  
(b) (6) ; FAX 1616**
- (9) **910 LG/CC: Ext 1225**
- (10) **910 LG/LGM: Ext 1352**
- (11) **Maintenance Control: Ext 1327**
- (12) **910 LG/LGMS: Spray Maintenance, Ext 1132**
- (13) **910 LG/LGL, Ext 1137**
- (14) **Omega/SATO Travel: Ext 1772; 1-800-285-6342**
- (15) **Cellular Spray Phones:**
  - **Mission Commander: (b) (6)**

- Entomologist: (b) (6) cell(b) (6)
- Spray Maintenance: (b) (6) (Sms (b) (6))

**17. SEQUENCING:**

- a. Target sequencing is determined by UTTR personnel based upon EOD clearance schedule and airspace scheduling.
- b. Spray ops aircraft must stay south of Base Leg Knoll during turns on north run on Target 21. Coordination with range control is essential to assure that this portion of the range is released for air operations.
- c. When winds blow directly from one side of the target to the middle of the target or during early morning when wind speed is low, ground monitors will direct the “dress up” of the target edges.
- d. **Spraying Priorities:**
  - (1) Target 21
  - (2) Target 24
  - (3) Wildcat (Rinse/excess material)
- k. **Multiple-Target Alignments for Possible Future Operations.**  
Whenever possible, multiple in line targets will be treated on the same pass to facilitate aircraft line-up and turning efficiency (in which case two separate ground-monitoring and marking parties will be required).
  - (1) The west edges of Targets 21 & 24 are contiguous and can be treated on the same pass with a spray-off gap between targets.

**18. GENERAL TARGET INFORMATION:**

- a. **Target 21:**
  - (1) Dimensions: 4,980' X 7,770'
  - (2) Acreage: 888
  - (3) Acres Sprayed in 2004: 888
  - (4) Aircraft Loads: 18,869 Gal
  - (5) Sorties: 17
  - (6) Passes (35' Swath): 157
  - (7) Spray-On Time/Pass: 23 Seconds
  - (8) Spray Heading: 00/180
- b. **Target 24:**
  - (1) Dimensions: 1,600' X 6,080'
  - (2) Acreage: 223
  - (3) Acres Sprayed in 2004: 223
  - (4) Aircraft Loads: 5,263 Gal
  - (5) Sorties: 7
  - (6) Passes (35' Swath): 47
  - (7) Spray-On Time/Pass: 18 Seconds
  - (8) Spray Heading: 00/180
- c. WildCat  
Box coordinates:
 

NW Corner:	N402650.85	W1131629.59
NE Corner:	N402647.49	W1131621.76
SE Corner:	N402539.63	W1131711.16
SW Corner:	N402543.14	W1131719.00

**UTTR GEOGRAPHIC LOCATION**

Target areas on UTTR are geographically located in northwestern Utah, directly west of the Great Salt Lake and Hill Air Force Base. The complex is positioned between 40 and 41 degrees north latitude and close to 113

degrees ten minutes west longitude. The targets are within range 12 west and Township two and three north, Salt Lake Baseline Meridian.



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

25 Nov 09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Hill AFB/UTTR UT

1. Aerial Spray flight proficiency training will be accomplished on targets 21, 24, and Wildcat at the Utah Test and Training Range(UTTR) applying Krovar controlling vegetation (i.e Halogenton) growth aiding bombing mission test evaluations and unexploded ordinance recovery. Two Spray configured C-130's will be available 17-26 March 10 for the requested spray mission. One Support C-130 will be used for position and deposition of spray ground personnel and maintenance equipment.

2. Concept of Operations:

- a. 16 March (Tuesday)
  - 0800 Show KYNG
  - 1000 Depart KYNG with extra crew, maintenance, and support equipment
  - 1330 Land KHIF drop off extra crew, maintenance, and support equipment
- b. 17 March (Wednesday)
  - 0800 Show KYNG load spray module
  - 1000 1<sup>st</sup> Spray aircraft depart KYNG
  - 1005 2<sup>nd</sup> Spray aircraft depart KYNG
  - 1330 1<sup>st</sup> Spray aircraft Land KHIF
  - 1335 2<sup>nd</sup> Spray aircraft Land KHIF
- c. 18-19 March (Thursday-Friday)
  - 0500 Show KHIF
  - 0745 Depart KHIF
  - 1300 Land KHIF
  - \*\* 2 sorties planned each day per aircraft
- d. 22-25 March (Monday-Thursday)
  - 0500 Show KHIF
  - 0745 Depart KHIF
  - 1300 Land KHIF
  - \*\* 2 sorties planned each day per aircraft

- e. 26 March (Friday)
  - 0800 Show KHIF
  - 1000 1<sup>st</sup> Spray aircraft depart KHIF
  - 1005 2<sup>nd</sup> Spray aircraft depart KHIF
  - 1600 1<sup>st</sup> Spray aircraft land KYNG
  - 1605 2<sup>nd</sup> Spray aircraft land KYNG

- 3. Maj (b) (6) (b) (6) will act as Mission Commander.
- 4. Maj (b) (6) and Maj (b) (6) (b) (6) will act as Aircraft Commanders
- 5. Support required at Hill AFB and the UTTR has been completed.

(b) (6) (b) (6) Maj, USAFR  
Assistant Chief of Aerial Spray



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



30 Mar 06

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Parris Island MCRD SC for Control of Sand fly and Mosquitoes

1. Objective/Purpose/Benefits of the Spray Mission. Spray Parris Island MCRD SC for control of biting midges and mosquitoes. Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCDR SC at the request of the Parris Island MCRD/MCAS Environmental Coordinator.

2. Capability: Spray Aircraft 89-9108 available on 17-20 Apr 06

3. Concept of Operations:

**17 Apr (Monday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

1330: Show Time  
1530: Take off KYNG  
1730: Land KNBC  
1800: Safety Briefing/installation brief

**18 Apr (Tuesday):**

1500: Showtime  
1530: Load Chemical/Wx Decision  
1730: Take off KNBC  
1955: Sunset

**19 Apr (Wednesday)** Wx back up or training

1500: Showtime  
1530: Load Chemical/Wx Decision  
1730: Take off KNBC  
1955: Sunset

**20 Apr (Thursday):** Return YNG

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

4. Spray Parameters:

- a. Acreage: 7,500 Acres (Only areas determined by PMP)
- b. Altitude: 150 Ft AGL
- c. Pesticide: Dibrom® Concentrate
- d. Deploy: 2.0 Hrs
- e. Re-Deploy: 2.0 Hrs
- f. Spray Time: 16 Minutes per Sortie (or as called by PMP)

5. Aircraft Commander: Maj (b) (6)

6. Mission Commander: Major (b) (6)



7. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator Mr. (b) (6) DSN (b) (6) .
8. Four official Air Force Artists will accompany the 757AS to take pictures. All details are worked out the 910AW Public Affairs, MSgt (b) (6) . The artists and Public Affairs representative will get picked up by another 910AW aircraft on 20 Apr 06.

// SIGNED //

(b) (6) (b) (6) Major, USAFR  
Chief of Aerial Spray



# AERIAL SPRAY OPERATIONAL SCHEDULE

## PARRIS ISLAND MCRD, SC

### 17-20 APR 2006 **Change 1**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCRD, SC.

#### 1. 910 AW PARTICIPANTS:

- a. **Mission Commander:** Maj (b) (6)
- b. **Aircrew:**
  - (1) **Pilots:** Maj (b) (6), Maj (b) (6),
  - (2) **Navigators:** LTC (b) (6)
  - (3) **Flight Engineers:** CMS (b) (6)
  - (4) **Spray Operators:** MSgt (b) (6) son, MSgt (b) (6)
- c. **Maintenance:**
  - (1) **Spray Maintenance:** TSG (b) (6), MSgt (b) (6), TSG (b) (6)
  - (2) **Crew Chiefs:** TSG (b) (6), SRA (b) (6)
  - (3) **Avionics:** TSG (b) (6)
- d. **Pest Management Professionals/Entomologist:** MAJ (b) (6) (b) (6)
- e. **Public Affairs:** TSG (b) (6)
- f. **AF Artists:** (b) (6), (b) (6), (b) (6)

Gov Vehicles provided by Parris Island MCRD: 2 Crew Vans & 1 Staff Car keys and vehicles at Base Ops, Beaufort MCAS.

#### 2. PPR REQUIREMENTS: 107-02

#### 3. PLANNED SEQUENCE OF EVENTS: (All times local)

**17 Apr (Monday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc **PPR 107-02**

1030: Show Time  
1230: Take off KYNG  
1430: Land KNBC  
1500: Safety Briefing/installation brief

**18 Apr (Tuesday):**

1500: Showtime  
1530: Load Chemical/Wx Decision  
1730: Take off KNBC (We will aim to begin the application 1.5 hrs prior to sunset for best success against biting midges)  
1955: Sunset

**19 Apr (Wednesday)** Wx back up or training

1500: Showtime  
1530: Load Chemical/Wx Decision  
1730: Take off KNBC  
1955: Sunset

**20 Apr (Thursday):** Return YNG

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

#### 4. ITEMS TO TAKE:

- a. **Mission Commander:**

- (1) 20 Rooms reserved at Hampton Inn, ensure no rooms charged on Current Ops Credit card.

**b. Entomologist/CPMP:**

- (1) Wind Gauge & Compass
- (2) UHF/VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder
- (4) DGPS Computers & Maps

**c. Navigators:**

- (1) Maps
- (2) Templates

**d. Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** 6 open for ULV spray; 6 8003's oriented straight down (3 per side)
- c. **Differential GPS:** Installed
- d. **Aircraft:** 89-9108
- e. **Mission Identifier:** QZNRKA194107

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

**a. Pesticide:**

Anvil® 10+10  
Sumithrin (synthetic pyrethrin) and Piperonyl Butoxide  
Signal Word: Caution  
Antidote: not applicable  
Flushing Agent: Marvel Mystery Oil

- b. **Application:** 0.62 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 2.25 gallons/Minute

- 7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Load 40 gallons of Anvil per mission. Depending on coverage we will likely have some material left over. Spray maintenance will download; save for next mission.

- 8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
Hilton Head Arpt: 118.8 CTAF  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 392.2; Secondary 340.8**

- 10. TRANSPORTATION:** Parris Island will provide two vans and staff car for transportation to and from quarters and for messing.

- 11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP & Parris Island MCRD Project Coordinator.

- 12. CONTACTS:**

a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX

- (1) Environmental Coordinator (Spray Coordinator):  
(b) (6) DSN (b) (6) , Cel (b) (6) ; (b) (6) (b) (6) , Cel (b) (6)  
FAX (843) 228-2616; (b) (6)
- (2) Assistant Chief of Staff I & L: DSN 335-2511
- (3) Pest Control Foreman: DSN 335-3663
- (4) P.I. Motor Pool: DSN 335-2233
- (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
- (6) Thrifty Car Rental: (843) 522-9996
- (7) Enterprise Rental Agency: (843) 524-0194; FAX 9627
- (8) P.I. Rifle Range: DSN: 335-3183/3624

b. **Beaufort MCAS SC:** (Commercial (843) 228-XXXX)

- (1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6) ; (b) (6) DSN (b) (6)
- (2) Fuels: DSN: 335-7049/7448/7168
- (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
DSN: (b) (6) . Base Ops is ext 7301/2/3  
(After duty hours: (b) (6) DSN: (b) (6) )
- (4) Trans Alert/VAL: DSN: 335-7110
- (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)

c. **Beaufort County Mosquito Control:** (b) (6)

d. **Naval Occupational Health/Preventive Medicine:** DSN: 335-2551, ext 5509

e. **Quarters:**

**20 Rooms at Hampton Inn (\$114/Night) POC Amy, Group Res:** (b) (6) **Confirm #80855614**  
(843)986-0600 (FAX 0494) **3 Smoking Rooms-**(b) (6)

Ramada Inn	(843) 524-2144/Fax 1704
Hampton Inn	(843) 986-0600 (FAX 0494)
Sleep Inn	(843) 522-3361 FAX (843) 522-9929
Parris Island Billeting	DSN: 335-2744 (FAX: 3815); (843) 228-3960
Comfort Inn	(843) 525-9366 (FAX 1529)
Best Western (Sea Island Motel)	(843) 524- 4121
Port Royal Days Inn	(843) 524-1551
Best Western Pt South (I-95)	(843) 726-8101

f. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Capt (b) (6) ; FAX 1022
- (4) 910 OG/CC: Col (b) (6) (b) (6)
- (4) 910 OG: Airfield Manager, (b) (6)
- (5) 757 AS/DO: Maj (b) (6) (b) (6)
- (6) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Capt (b) (6) (b) (6) ; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: CMS (b) (6)
- (11) Maintenance Control: Ext 1327
- (12) 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
- (13) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (14) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) cell, (b) (6)

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**PARRIS ISLAND MCRD, SC 17-20 APR 2006**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 17-20 APR 2006
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 18 Apr 2006
- e. Time/s of Application (Local): 1745-1940
- f. Acres Treated: 7,432
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6)  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 18 Apr 2006
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 18 Apr; Assistant Chief of Staff, Installations and Logistics, COL (b) (6) ; briefed by Maj (b) (6) /Maj (b) (6)

**2. OPERATIONAL:**

- a. **Mission Commander:** Maj (b) (6)(6)
- b. **Aircrew:**
  - (1) Pilots: Maj (b) (6)(3) Maj (b) (6) ,
  - (2) Navigators: LTC (b) (6)
  - (3) Flight Engineers: CMS (b) (6)
  - (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) , MSgt (b) (6) , TSgt(b) (6)
  - (2) Crew Chiefs: TSgt (b) (6) , SrA (b) (6)
  - (3) Avionics: TSgt (b) (6)
- d. **Entomologist:** MAJ (b) (6) (b) (6)
- e. **Public Affairs:** TSG (b) (6)
- f. **AF Artists:** (b) (6)
- g. **Flying Data:**
  - (1) Spray Sorties/Hours: 1/1.9
  - (2) Ferry Sorties/Hours: 2/4.4

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Anvil® 10+10 (10% Sumithrin and 10% Piperonyl Butoxide)
- b. EPA Registration Number: 1021-1688-8329
- c. Gallons Pesticide Loaded: 36 gal Anvil® (18 Apr)
- d. Gallons Pesticide Applied: 36 gal (18 Apr)
- e. Gallons and Name of Flush Used: 8 gal/marvel oil
- f. Application Rate: 0.62 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99108
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 6 oriented straight down
- f. Pressure: 30-55 p.s.i.
- g. Flow Rate: 2.25 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 1000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS (19 Apr):**

- a. Winds (Direction/Speed):
  - (1) Ground: 110°/2-5 Knots
  - (2) Release Altitude: 080° /5-7 Knots
- b. Temperature (Degrees Fahrenheit): 69° F dropping to 63° F
- c. Relative Humidity: 60-67%
- d. Cloud Cover: Partly Cloudy
- e. Source: Ground observations at the MCRD Rifle Range/Aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: visual observation of aircraft course (GPS)
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: Weekly collections of midges and mosquitoes with carbon-dioxide baited traps/landing rates in regions frequented by recruits involved in training.
  - (2) Results: Poor control was noted in all areas sampled.

**8. REMARKS:** We utilized a widely accepted mosquito insecticide, Anvil 10+10, for this mission to evaluate the usefulness of this compound in controlling biting midges. This insecticide is classified as a synthetic pyrethroid and is representative of a class of chemicals related to a compound occurring naturally in Chrysanthemums. Biting midge activity levels during this mission were moderate-high based on trap collections from the previous two weeks and landing counts from the day prior. Ground monitors reported that the target pest (*Culicoides* spp.) was very active during the application. Attachment 1 shows the path of the aircraft while making the application. The spraying which occurred outside the spray block is necessary to let the wind drift material over the spray block and is representative of normal spray operations. Post spray sampling indicated poor control. Midge landing rates were equal to pre-spray rates. Attachment 2 shows relative numbers before and after sprays on Parris Island and a non-spray area (Spring Island). There are always natural fluctuations in numbers of midges collected between trap dates. However, we would expect collections to drop to nearly zero following an effective application. In this case, we had a slight increase in midges at Parris Island and a slight decrease at Spring Island where no applications were made.

Taking in account these simple measurements and anecdotal information from post-spray landing rates, the results indicate poor efficacy for this application. More detailed sampling will be carried out during the next scheduled application. A second application scheduled for 19 April was cancelled due to adverse weather conditions (thunderstorms/high winds).

The next Parris Island mission is scheduled for 1-5 May 2006 and will involve further evaluations of Anvil for biting midge control. Final analysis of material will be discussed once evaluations are completed.

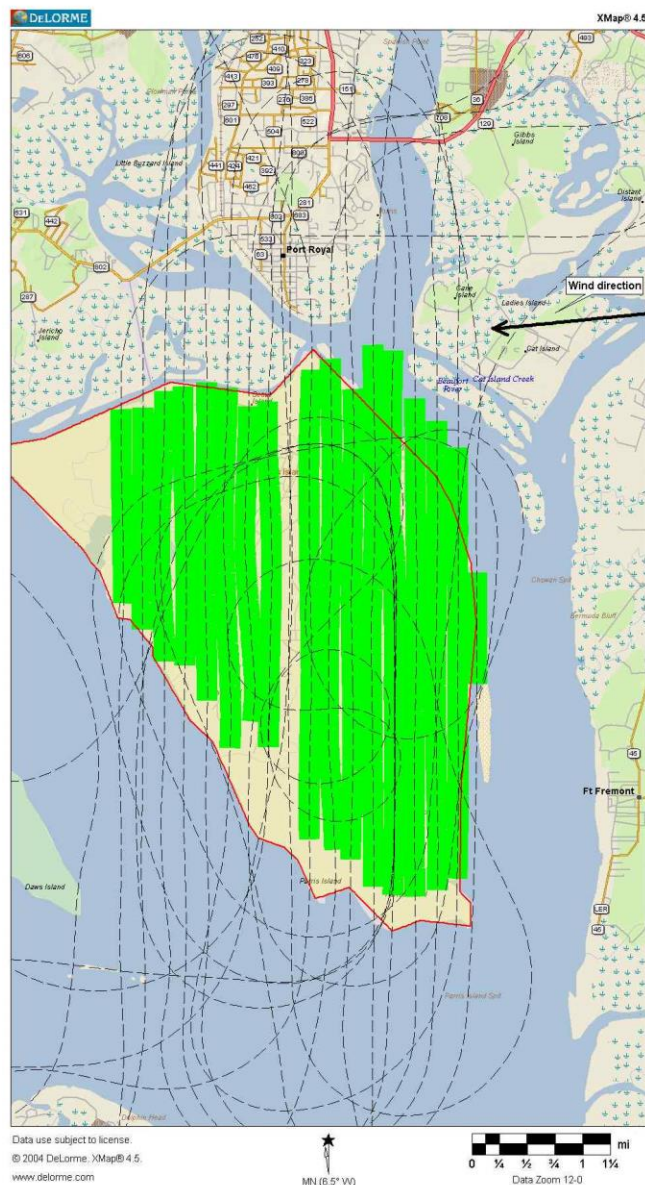
//signed//

(b) (6) (b) (6)

MAJ, USAFR

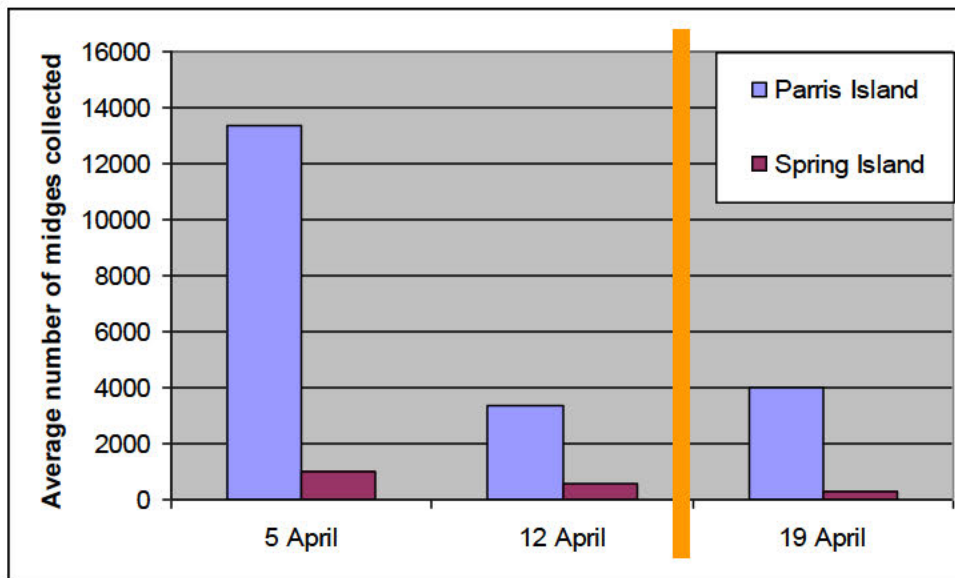
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

**Attachment 1. Flight path of aircraft while making Anvil application, 18 Apr 06. Green indicates active spraying.**





**Attachment 2.** Relative numbers before and after sprays on Parris Island and a non-spray area (Spring Island). Orange vertical line indicates spray date (18 April 2006).





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



4 May 04

MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497 -0198)

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Parris Island  
MCRD SC for Control of Sandfly and Mosquitoes

1. Objective/Purpose/Benefits of the Spray Mission. Spray Parris Island MCRD SC for control of biting midges and mosquitoes. Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCDR SC at the request of the Parris Island MCRD/MCAS Environmental Coordinator.

2. Capability: Spray Aircraft Available on 17-20 May 04

3. Concept of Operations:

a. 17 May 04 (Monday):

0730 Show Time  
0930 Take Off KYNG  
1130 Land KNBC  
1200 Safety Briefing  
1430 Load Chemical  
1630 Take Off KNBC  
1830 Land KNBC

b. 18 May 04 (Tuesday):

1430 Load Chemical  
1630 Take Off KNBC  
1830 Land KNBC

c. 19 May 04 (Wednesday):

1430 Load Chemical  
1630 Take Off KNBC  
1830 Land KNBC

d. 20 May 04 (Thursday):

1000 Take Off KNBC  
1200 Land KYNG

4. Spray Parameters:

- a. Acreage: 7,500 Acres (Only areas determined by PMP)
- b. Altitude: 150 Ft AGL
- c. Pesticide: Dibrom® Concentrate (naled)
- d. Deploy: 1.6 Hrs
- e. Re-Deploy: 1.6 Hrs
- f. Spray Time: 16 Minutes per Sortie (or as called by PMP)

5. Aircraft Commander: Major (b) (6) (b) (6)

6. Mission Commander: Major (b) (6) (b) (6)

7. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator Mr. (b) (6) DSN (b) (6) .

8. HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616, ATTN: 757 AS/DOS.

(b) (6) (b) (6) Major, USAFR  
Chief of Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## PARRIS ISLAND MCRD, SC

### 17-20 May 2004

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCRD, SC.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: MAJ (b) (6) (b) (6)
- (2) Pilots: MAJ (b) (6) (b) (6) , MAJ (b) (6)
- (3) Navigators: MAJ (b) (6) (b) (6)
  - (a) Flight Engineers: MSG (b) (6) , TSG (b) (6)
  - (a) Spray Operators: SMS (b) (6) , MSG (b) (6) , TSG (b) (6) (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: MSG (b) (6) TSG (b) (6) , SSG (b) (6)
- (2) Crew Chiefs: SSG (b) (6) , SRA (b) (6)
- (3) Avionics: SSG (b) (6)

##### c. Pest Management Professionals/Entomologist: CPT (b) (6) (b) (6) (Ground Mission Cmdr)

#### 2. PLANNED SEQUENCE OF EVENTS: (All times local)

##### 17 May (Monday):

0830: Show Time  
1000: Take off KYNG  
1200: Land KNBC **PPR # 13801**  
1230: Safety Briefing/weather decision (by 1600 hrs)  
1630: Load Chemical  
1830: Take off KNBC  
2032: Sunset (end of spray)  
2100: Land  
Note: This is a single spray event, we will RTB the following date following successful application

##### 18 May (Tuesday): see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

1600: Show Time/weather decision  
1630: Load Chemical  
1830: Take off KNBC  
2032: Sunset (end of spray)  
2100: Land

##### 19 May (Wednesday):

1600: Show Time/weather decision  
1630: Load Chemical  
1830: Take off KNBC  
2032: Sunset (end of spray)  
2100: Land

##### 20 May (Thursday):

0900: Show Time  
1100: Take off KNBC  
1300: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Entomologist/CPMP:**
  - (1) Wind Gauge & Compass
  - (2) UHF/VHF Radios and Cellular Phone
  - (3) Pesticide Safety Binder
  - (4) DGPS Computers & Maps
  - (5) Oil Sensitive Papers
  - (6) Trackstar Equipment
- b. **Navigators:**
  - (1) Maps
  - (2) Templates
  - (3) Laptop Computer
- c. **Spray Maintenance:**
  - (1) Spill Kit
  - (2) Safety Equipment
  - (3) Loading and Clean-up Equipment and Supplies

**4. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Wing Booms
- c. **Nozzles:** Open for ULV spray; 6, 8008's oriented straight down
- d. **Differential GPS:** Installed
- e. **Aircraft:** 105; **Mission Identifier:** QZNRKA

**5. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: HAN
- b. **Application:** 1 Ounce Dibrom®/Acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 3.634 Gallons/Minute

**6. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Load 60 gallons of Dibrom® Concentrate per mission and 25 gallons HAN in flush tank.

**7. PPR REQUIREMENTS:** Required:

**8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
Hilton Head Arpt: 123.0 UNI  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 392.2; Secondary 340.8**

**10. TRANSPORTATION:** Parris Island will provide two vans and staff car for transportation to and from quarters and for messing.

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP & Parris Island MCRD Project Coordinator.

**12. CONTACTS :**

a. **Parris Island MCRD SC: (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX**

- (1) Environmental Coordinator (Spray Coordinator):  
(b) (6) DSN (b) (6) ; (cellular) (b) (6) (b) (6)  
FAX (843) 228-2616; (b) (6)
- (2) Assistant Chief of Staff I & L: Col (b) (6) , DSN (b) (6)
- (3) Pest Control Foreman: DSN 335-3663
- (4) P.I. Motor Pool: (b) (6) DSN (b) (6)
- (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
- (6) Thrifty Car Rental: (843) 522-9996
- (7) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)
- (7) P.I. Rifle Range: DSN: 335-3183/3624

b. **Beaufort MCAS SC:**

- (1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6) ; (b) (6) DSN (b) (6)
- (2) Fuels: DSN: 335-7049/7448/7168
- (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
DSN: 3(b) (6) . Base Ops is ext 7301/2/3  
(After duty hours: (b) (6) DSN: (b) (6) )
- (4) Trans Alert/VAL: DSN: 335-7110
- (5) Weather: DSN 335-7001/7926/7/9 (www:beaufort.usmc.mil)

c. **Beaufort County Mosquito Control: (b) (6)**

d. **Naval Occupational Health/Preventive Medicine: Lt Cdr (b) (6) DSN: (b) (6)**

e. **Quarters: JTR Seasonal Rate 15 Mar – 30 Sep L/\$95, M/\$44, MAX/\$142**

**Ramada Inn (\$59/Night) (843) 524-2144 (FAX 843-524-1704) Conf #**

**GP0000332**

Hampton Inn (843) 986-0600 (FAX 0494)

Sleep Inn, (b) (6) ) (843) 522-3361 FAX (843) 522-9929  
Parris Island Billeting (b) (6) ) DSN: 335-2744 (FAX: 3815); (843) 228-3960  
Comfort Inn (843) 525-9366 (FAX 1529)(b) (6)  
Best Western (Sea Island Motel) (843) 524- 4121  
Port Royal Days Inn (843) 524-1551  
Best Western Pt South (I-95) (843) 726-8101

f. **Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 OSF/OSA: Airfield Manager: (b) (6) (b) (6)  
- Assistant Air Field Manager (ACAM),(b) (6)
- (6) 757 AS/DO: Lt Col (b) (6)
- (7) 757 AS/DOO: Ops Admin, SMS (b) (6)
- (8) 757 AS/DOS: Aerial Spray Office, (b) (6) ; FAX 1616
- (9) Supervisor of Flight Desk: 1069, FAX: 1371
- (10) 910 LG/LGM: Ext 1352
- (11) 910 LG/CC: Ext 1225
- (12) 910 LG: Maintenance Control, Ext 1348
- (13) 910 LG/LGL: CMS (b) (6)
- (14) 910 LG/LGMS: Spray Maintenance, Ext 11321586
- (15) Omega/SATO Travel: Ext 1772; (800) 285 – 6342
- (16) Cellular Spray Phones:  
Mission Commander: (b) (6)  
Entomologist: (b) (6)  
Spray Maintenance: (b) (6)  
(b) (6) (b) (6) Cell Number: (b) (6)

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT

### 1. MISSION BASICS:

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 17-20 May 2004
- c. Purpose of Application: Biting Midge (*Culicoides* spp.) and Mosquito Control
- d. Application Date/s:
- e. Time/s of Application (Local):
- f. Acres Treated:
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6)  
Environmental/Spray Coordinator, DSN(b) (6)
- h. Date Spray Map Last Approved: 17 May 2004
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 17 May; Assistant Chief of Staff, Installation and Logistics, Capt (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: Maj (b) (6) (b) (6)
- b. Certified PMP/s (Category 11): Capt (b) (6) (b) (6)
- c. Aircrew:
  - Pilots: Maj (b) (6) (b) (6) Maj (b) (6)
  - (2) Navigator: Maj (b) (6) (6)
  - (3) Flight Engineer(s): MSG (b) (6) , TSG (b) (6)
  - (4) Spray Operators: SMS (b) (6) , MSG (b) (6) , TSG (b) (6) (6)
- d. Safety Briefer: Capt (b) (6) (b) (6)
- e. Spray Maintenance: MSG (b) (6) TSG (b) (6) , SSG (b) (6)
- f. Spray Ground Monitor: Capt (b) (6) (b) (6)
- g. Crew Chiefs: SSG (b) (6) SRA (b) (6)
- h. Avionics: SSG (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: Sorties/ Hrs
  - (2) Ferry Sorties/Hours: 2 Ferry(s)/4.3 Hrs

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate
- d. Gallons Pesticide Loaded:
- e. Gallons Pesticide Applied:
- f. Gallons and Name Diluent Used: None
- g. Gallons and Name of Flush Used: 50 gallons VM & P NAPHTHA
- h. Other Additives Used: None
- i. Application Rate: 1 Oz/Acre



**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number):
- b. Spray System (Modules Used) and System ID #:
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8008 Flat Fan
- e. Nozzle Orientation & Number Used: 6 oriented straight down
- f. Pressure: 40 PSI
- g. Flow Rate: 3.6 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000
- b. Spray Off Set: 3000 feet
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground:
  - (2) Release Altitude:
- b. Temperature (Degrees Fahrenheit):
- c. Humidity:
- d. Cloud Cover:
- e. Source:

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - Technique/s Used: Oil Sensitive Cards (OSC) wrapped on 1-meter dowels.
  - (2) Results: Good coverage throughout spray area; swath determination was based on historical conditions.
- b. Effectiveness: (see remarks).

**8. REMARKS:**

(b) (6) (b) (6) **Capt, AFRC**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL**

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **AVON PARK, FL**

### **17-21 NOVEMBER 2003**

**PURPOSE/OBJECTIVE/BENEFIT:** Test fuselage spray configuration and droplet characteristic for future high-pressure spray system.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Aircraft Commander: LtC (b) (6) (b) (6)
- (2) Pilots: \*LtC (b) (6) (b) (6) Maj (b) (6) (b) (6)
- (3) Navigators: Maj (b) (6) (b) (6)
- (4) Flight Engineers: MSG (b) (6) ; SMS (b) (6)
- (5) Spray Operators: CMS (b) (6) , \*SMS (b) (6) , TSG (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: \*\*\*SMS (b) (6) , TSG (b) (6) , TSG (b) (6)  
SSG (b) (6)
- (2) Crew Chiefs: SRA (b) (6) , \*\*TSG (b) (6)

##### **c. Entomologists: \*\*\*Capt (b) (6) (b) (6)**

##### **d. Comm Squadron:**

- 16-21 Nov: MSG (b) (6) (b) (6) TSG (b) (6)
- 17-21 Nov: SSG (b) (6) , SSG (b) (6) (b) (6)

**Enterprise (Avon Park/Sebring) (863) 452-5483; FAX( 863) 452-5947**

**Vehicles: 2 \*Full size/\$45; 1 \*\*Mid Size; 2 \*\*\*Vans/\$75**

#### **2. SCHEDULE: (All time Local)**

17 NOV (Monday): No range time. PPR # - N/A

1000: Show Time

1200: Depart

1500: Land

18 NOV (Tuesday): Range Times 1000-1200, call AGR Tower & Fire Dept

0730: Show Time

0930: Depart

1215: Land

19 NOV (Wednesday): Range Times 1000-1200

0730: Show Time

0930: Depart

1215: Land

20 NOV (Thursday): Range Times 1000-1200

0730: Show Time

0930: Depart

1215: Land

21 NOV (Friday):

0900: Depart

1200: Land KYNG

### **3. ITEMS TO TAKE:**

- a. **Navigator:** Maps with “No-Spray” Areas Marked
- b. **Certified Pest Management Professionals:**
  - (1) Water-Sensitive Cards
  - (2) 1 Signal Mirror
  - (3) 1 Spot Light
  - (4) 1 Engineer Wheel
  - (5) Ground Maps
  - (6) Laptop Computer
  - (7) Digital Camera
  - (8) Oil-sensitive cards
  - (9) Spinners
  - (10) Wooden dowels

### **4. AIR TO GROUND FREQUENCIES:**

- a. Spray: Primary 392.2; Secondary 340.8
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. Avon Park: TWR-292.2 (p), 126.15, 276.6 (s)
- e. MacDill: TWR-123.7; GND-121.65; ATIS-133.825; CMD POST-311.0; PTD-372.2

### **5. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 99106
- c. Mission Identifier: QZNRKA246320

### **6. SPRAY PARAMETERS (use for all tests):**

- a. Booms -- Fuselage only.
- b. Nozzles – 8008 TeeJet
- c. Number of Nozzles – 4 per side (8 total) oriented straight down
- d. Airspeed -- 200 knots ground speed.
- e. Altitude -- 150’ above ground level.
- f. Wind -- Headwind/tailwind.
- g. Flow Rate – 3.6 gallons/minute

### **7. MISSION PROTOCOLS:**

#### **A. ULV Water test for aircraft contamination (Tuesday)**

20 water sensitive cards per side (40 cards) will be taped to rear fuselage and tail section of the aircraft (empennage). Spray aircraft will enter spray area on Avon Park range and go to “spray-on” for one minute with water at 150’ AGL. After landing, the cards will be inspected for presence of water. Test can be repeated if it is deemed appropriate and/or there is enough range time left.

#### **B. ULV oil test for aircraft contamination (Wednesday)**

20 oil sensitive cards per side (40 cards) will be taped to rear fuselage and tail section of the aircraft (empennage). Spray aircraft will enter spray area on Avon range and go to “spray-on” for one minute with soybean oil at 150’ AGL. After landing, the cards will be inspected for presence of water. Test can be repeated if it is deemed appropriate and/or there is enough range time left.

**C. ULV droplet characterization test using fuselage spray configuration and into the wind (Thursday)**

Glass droplet collectors will be deployed over a 2000 ft transect at 200 ft intervals. Aircraft will fly with either tailwind or headwind over center collector, which will be indicated by a vehicle, lamp, or mirror flash (coordinated prior to takeoff). Spray will be turned on for 30 seconds prior to and 30 after the collecting point (assuming headwind) maintain 150' AGL. Glass droplet collectors will be collected after waiting 15 minutes for droplets to settle; droplets will be counted and measured.

**8. CONTACTS:**

- a. Quarters:  
-- **Sebring/Avon Park: Quality Inn** (863) 385-4500 (\$69)  
  
--MacDill Lodging: DSN: 968-4259, FAX 2660 (Gp 968-2617/2594)
- b. Transportation:  
**Avon Park/Sebring: Enterprise (863) 452-5483; Fax (863) 452-5947**  
2 Vans \$75; 2 Full size car \$45; 1 Mid Size \$41 + \$2 state surcharge; Unlimited mileage  
(All vehicles will be at Avon Park Flight Ramp)
- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350  
(1) Weather: MacDill AFB Forecaster (DSN 968-2854)  
(2) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)  
Sgt (b) (6) or Sgt (b) (6) FAX DSN 968-4098  
(3) MacDill AFB Ops Gp CC: COL (b) (6) (b) (6)
- d. **Patrick AFB:** Rescue Squadron: DSN prefix 854  
LTC (b) (6) – CC – (b) (6)  
LTC (b) (6) – DO – (b) (6)  
LTC (b) (6) (b) (6) – Flight Ops – (b) (6)  
CPT (b) (6) – Tactics – (b) (6)  
Maintenance Ops Center - MOC –Ext 2261/2262/2264 (Juan)
- e. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX  
DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN  
Avon Control Tower & Range Control Scheduling DSN 968-7176  
Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number  
(1) Range Operations Manager: (b) (6) , Bldg 236, (b) (6)  
(2) Avon Range Control Tower: ext 176  
(3) Flight Chief of Civ Engineer: (b) (6) , Bldg 29,(b) (6)  
(4) Chief, Environmental Flight: (b) (6) , Bldg 29, (b) (6)  
(5) Fuels: ext 118  
(6) Range Support Manager: Mr (b) (6) Bldg 29, (b) (6)  
(7) Range Control/Schedule: (b) (6) (b) (6) Bldg 41, (b) (6)  
**See Attached Avon Park Org directory for additional listings**  
  
(8) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)  
Range VHF: 126.15
- f. **Sebring AP:**  
Mgr: Mr (b) (6) (fuel needs)

g. **Other Quarters:**

Sebring FL: Chateau Elan Sebring Airport Inn (863) 655-6252  
Inn On The Lakes (863) 471-9400  
Avon Park: (JTR Lodging \$64/Meals \$28)  
Chateau Elan Airport Inn \$64, (863) 655-6252  
**Quality Inn (863) 385-4500, FAX: (863) 385-0250**  
Jacaronda (863) 453-2211; 19 East Main St, Avon Park, FL \$ 27.29  
Oak Tree Inn (863) 453-3165  
Days Inn (863) 382-1148, 800 329-7466

h. **Youngstown ARS: DSN: 346-XXXX; (330) 609-XXXX; 1 - 800 - 278 - 7046, + Ext**

- (1) 910 AW/CC: Ext 1243
- (2) 910 AW Command Post: Ext 1315, FAX 1161
- (3) 910 AW/PA: Ext 1236, FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 OG/OSA: Airfield Manager: (b) (6)
- (6) 757 AS/DO: LTC (b) (6)
- (7) 757 AS/DOO: Ops Admin, SMS (b) (6), FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, (b) (6), FAX 1616
- (9) 910 LG/CC: LTC (b) (6)
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
- (13) 910 LG/LGL: CMS (b) (6)
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Cellular Spray Phones:  
PMP: (b) (6)  
Mission Cmdr: (b) (6)  
Spray MX: (b) (6)

Communications being provided

HF Radio (non-secure) provided and maintained by the CF

**HF** - Frequencies available from AFRC

10923.35 kHz, Primary channel 1

12202.35 kHz, Alt 2

14327.35 kHz, Alt 3

16282.35 kHz, Alt 4

20705.35 kHz Alt 5

UHF - total 3 - One to be stationed at Avon Park maintenance area - One will go out with the Doc's along with an operator

**UHF** - Frequencies available from AFRC

256.2 MHz

**LMR** - Frequencies available from AFRC

413.18 MHz - Scope Shield (Provided by CF) total 4

**Iridium Phones** - total 4 - 500 minutes per phone (non-secure)

**STU III** - We will be bringing crypto for this if needed. (SECRET)

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **MINOT AFB, ND**

### **17-23 JULY 2006**

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Minot AFB, City of Minot, Grand Forks AFB, and City of Grand Forks in North Dakota. A secondary mission is to participate in the Grand Forks AFB air show using the aerial spray plane stay as a static display.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Pilots: LTC (b) (6) , Maj (b) (6)
- (2) Navigators: MAJ (b) (6)
- (3) Flight Engineers: MSG (b) (6)
- (4) Spray Operators: MSG (b) (6) , MSG (b) (6) , SSG (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: TSG (b) (6) (lead), MSG (b) (6) , TSG (b) (6) , SSG (b) (6)
- (2) Crew Chief(s): MSG (b) (6) , SRA (b) (6)
- (3) Avionics: TSG (b) (6)

##### **c. Entomologist: LTC (b) (6) MAJ (b) (6) (b) (6)**

#### **2. SCHEDULE: (All Local Times)**

##### **17 JUL (Monday): PPR: CW198001**

0900 Show time  
1100 Depart KYNG  
1345 Land KMIB  
1500 Installation Brief

##### **18 JUL (Tuesday):**

1800 Show time/WX Decision  
1830 Load Chemical  
2030 Take off KMIB (Adulticide Spray Sortie)  
2139 Sunset

##### **19 JUL (Wednesday):**

1800 Show time/WX Decision  
1830 Load Chemical  
2030 Take off KKMIB (Adulticide Spray Sortie)  
2138 Sunset

##### **20 JUL (Thursday): Training/Weather back up**

1800 Show time/WX Decision  
1830 Load Chemical  
2030 Take off KMIB (Adulticide Spray Sortie)  
2137 Sunset

##### **21 JUL (Friday) PPR: 072105-MH**

0900 Show time  
1030 Take off KMIB  
1115 Land KRDR – Position for Grand Forks Airshow static display  
1200 KRDR airfield closes

##### **22 JUL (Saturday)**

**Airshow Static Display**

##### **23 JUL (Sunday)**

0800 Show time  
1000 Depart KRDR  
1430 Land YNG

#### **3. ITEMS TO TAKE**

- a. Mission Commander:** Cellular Phone, Mission Folder

- b. **Entomologist:** Cell Phone, Wind Gauge, Compass, Pest Safety Binder,  
1 UHF Radio, 1 VHF radio Project Notebook
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment

**4. KMIB PPR: CW197001, KRDR PPR: 072105-MH**

**5. RADIO FREQUENCIES: Air To Ground Primary UHF 392.2; VHF 123.45**  
Minot AFB Tower 120.65 V, 236.6, 253.5; Minot International 118.2 V, 393.1 or Unicom 122.95

**6. CONFIGURATION: SP2G**

- a. **System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. **Nozzle Tips/Orientation:** ULV (adulticide): 8005 Tee Jet oriented straight down
- c. **Number:** ULV: various configurations; see entomologist
- e. **Aircraft:** 89-9105
- f. **Mission Identifier:** QZNRKA906198

**7. SPRAY PARAMETERS:**

- a. **Adulticide**
  - (1) **Area to be treated:** 14,000 acres (Minot)
  - (2) **Altitude:** 150' for Adulticide application
  - (3) **Swath Width.** TBD
  - (4) **Flow Rate.** Various flow rates; see entomologist
  - (5) **Application Rate.** Various flow rates; see entomologist
  - (6) **Ground Speed:** 200 Knots (338 Feet/Second)
  - (7) **Flush:** With water, triple rinse, then air purge

**8. SPRAY MIXING AND LOADING:** Amount of Trumpet will be determined on site.

**9. TRANSPORTATION:**

Minot: **4 six PACs, 2 Ops, 2 Mx**  
Grand Forks: **3 x 6 PACs provided by 319 CES**

**10. LODGING:**

**MINOT:** Holiday Inn, Com 701-852-2504—out the main gate then South HWY 83 turn into Broadway St, Left on Burdick Expressway for 2 miles, across from State Fair Grounds, 2200 Burdick is the street address.

**GRAND FORKS:** Ramada Inn, Com 800- 570-3951--Located at the Junction of I-29 & Hwy. #2, Exit 141

**11. CONTACTS:**

**Minot AFB ND: DSN prefix: 453- Commercial area code and prefix (701) 723—**

- 1. **Base Operations:** x2347, Airfield Manager: MSgt (b) (6) x(b) (6)/TSgt(b) (6) x(b) (6) FAX: 3637
- 2. **Environmental Officer:** (b) (6)
- 3. **Base Civil Engineer:** Lt (b) (6)
- 4. **Pest Management:** (b) (6) (cell: (b) (6) ), A1C (b) (6) x(b) (6)
- 5. **Public Affairs:** Maj. (b) (6)
- 6. **Weather:** TSgt (b) (6) /Capt (b) (6)
- 7. **Billeting:** SSgt (b) (6) , TSgt (b) (6) (if you have problems w/this number use ((b) (6) )
- 8. **Fire Dept:** x2461
- 9. **Transient Alert:** x3153, closes at 1730L
- 10. **Minot AFB Twr** – x-3330
- 11. **Minot Int'l Twr (Magic City Twr)** (b) (6)

**Grand Forks AFB, ND:**

**319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**

- (1) **Base Operations:** Airfield Manager DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx
- (2) **Environmental Officer:** (b) (6) , DSN (b) (6) , FAX 6155
- (3) **Base Civil Engineer:** Lt Col (b) (6)
- (4) **Pest Management:** DSN 362-4289, FAX 3432
- (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
- (6) **Weather:** DSN 362-4396
- (6) **Billeting:** DSN 362-3070/6189 or (701) 594-8431, FAX 362-3069



**b. 910 AW, Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Col (b) (6) (b) (6)
- (5) 910 Base Ops: Airfield Manager: Ext 1182
  - Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6) (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) 57
- (8) 757 AS/DOS: Aerial Spray Office, CAPT (b) (6) 5(b) (6) ; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: SMG (b) (6) Cell: (b) (6)
- (13) 910 LG/LGL: Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - Entomologist (b) (6) cell): (b) (6)
  - Mission Commander (b) (6) cell): (b) (6)
  - Spray Maintenance (b) (6)

# 910 AW AERIAL SPRAY UNIT -- POST-MISSION REPORT

## MINOT AFB ADULT MOSQUITO CONTROL & STATIC

### DISPLAY GRAND FORKS AFB 17-23 JULY 2006

#### 1. MISSION BASICS:

- a. Installation Sprayed: Minot AFB, North Dakota (Further travel to Grand Forks for static display of ULV mosquito spray configuration)
- b. Mission Duration: 17-23 July 2006
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date/s: 18 & 19 July 2006
- e. Time/s of Application (Local): 2030-2145 (18 Jul) & 2030-2216 (19 Jul); 1405-1451 (20 Jul flush sortie)
- f. Acres Treated: 5,158 (18 Jul) & 9,011 (19 Jul) = 14,169 acres
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6), Pest control supervisor/spray coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 17 July 2006
- i. Date of Waste Generation Letter: 17 July 2006
- j. Installation In-Briefing: (When/Where/Briefer/s): 17 Jul; Deputy Base Civil Engineer, (b) (6); LTC (b) (6) MAJ (b) (6)

#### 2. OPERATIONAL:

- a. Mission Commander: LTC (b) (6)
- b. Certified PMP/s (Category 11): LTC (b) (6) & MAJ (b) (6) (b) (6)
- c. Aircrew:
  - (1) Pilots: LTC (b) (6), Maj (b) (6) (3)
  - (2) Navigators: MAJ (b) (6)
  - (3) Flight Engineers: MSG (b) (6)
  - (4) Spray Operators: MSG (b) (6), MSG (b) (6) SSG (b) (6)
- d. Maintenance:
  - (1) Spray Maintenance: TSG (b) (6) (lead), MSG (b) (6), TSG (b) (6), SSG (b) (6)
  - (2) Crew Chief(s): MSG (b) (6), SRA (b) (6)
  - (3) Avionics: TSG (b) (6)
- e. Safety Briefer: MAJ (b) (6)
- f. Flying Data:
  - (1) Spray Sorties/Hours:  $1.3+1.8+0.8 = 3.9$
  - (2) Ferry Sorties/Hours:  $4.2+.0.9+3.0 = 8.1$

#### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Trumpet<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-90-5481
- c. Formulation Sprayed: Emulsified Concentrate
- d. Gallons Pesticide Loaded: 60 Gal Trumpet<sup>®</sup> (18 Jul); 30 gal (19 Jul); 90 gallons total
- e. Gallons Pesticide Applied: 30 Gal (18 Jul) & 60 Gal (19 Jul)
- f. Gallons and Name Diluent Used: None
- g. Gallons and Name of Flush Used: 80 gallons; water
- h. Other Additives Used: None
- i. Application Rate: 0.75 oz/acre (18 Jul); 0.85 oz/acre (19 Jul)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 13 oriented straight down
- f. Pressure: 35 (18 Jul) & 33 (19 Jul) psi
- g. Flow Rate: 5.45 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray offset: 2000' (18 Jul); 2000' (19 Jul)
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 4-7 knots @ 290-310° (18 Jul) & 6-7 knots @ 320° (19 Jul)
  - (2) Release Altitude: 8-15 Knots @ 290-310° (18 Jul) & 6-15 knots @ 320-330° (19 Jul)
- b. Temperature (Degrees Fahrenheit): 85° (18 Jul) & 75° (19 Jul)
- c. Relative humidity: 38% (18 Jul) & 44% (19 Jul)
- d. Cloud Cover: Partly Cloudy (18 Jul) & Partly Cloudy (19 Jul)
- e. Source: Ground observations and aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Effectiveness:
  - (1) Technique/s Used: Daily mosquito trapping.
  - (2) Results: Mosquito numbers reduced by over 95% relative to pre-spray counts.

**8. REMARKS:** Mosquito activity had been low to medium at Minot AFB as a result of below average precipitation. Nonetheless, mosquito traps using carbon dioxide had collected around 150 mosquitoes per night prior to the spray. Additionally, several dead crows had been found in the area, indicating possible West Nile virus activity. These factors justify aerial applications per the Minot Environmental Assessment regarding mosquito control. Applications were made over Minot AFB and Minot City during the final hour before sunset to maximize target pest exposure (*Aedes vexans* and *Culex tarsalis*). The flight paths for the spray sorties are shown for both nights in Attachment 1 (A & B). Trap counts from the morning after the spray dropped to below 5 mosquitoes, representing a 95% reduction in mosquito activity. This is the last programmed spray flight to Minot AFB this year. Projected dates and types of sprays (adult mosquito or mosquito larvae) will be coordinated for next year. Many thanks to Minot AFB personnel (especially PA, Pest Control Shop, and Transportation) who did an excellent job; without their participation, this mission could not have been a success. En route to home station from Minot AFB, the spray team traveled to Grand Forks AFB, as invited Air Show participants and provided a static display of the ULV configuration and short video. Many favorable comments were received from air show attendees living in the Grand Forks area regarding the reduction of mosquitoes from Air Force applications.

**(b) (6)**

(b) (6) (b) (6)

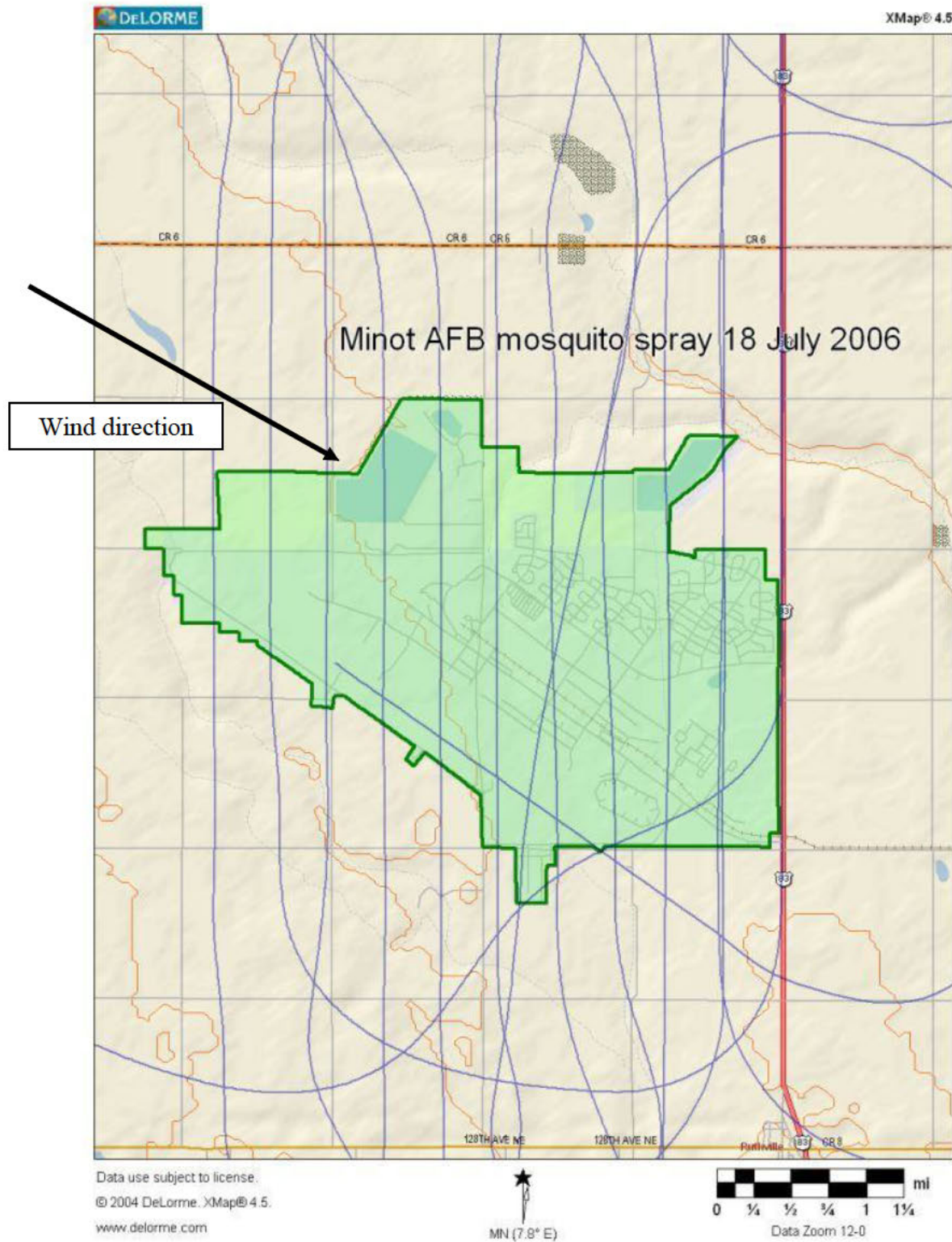
**Maj, USAFR**

**DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

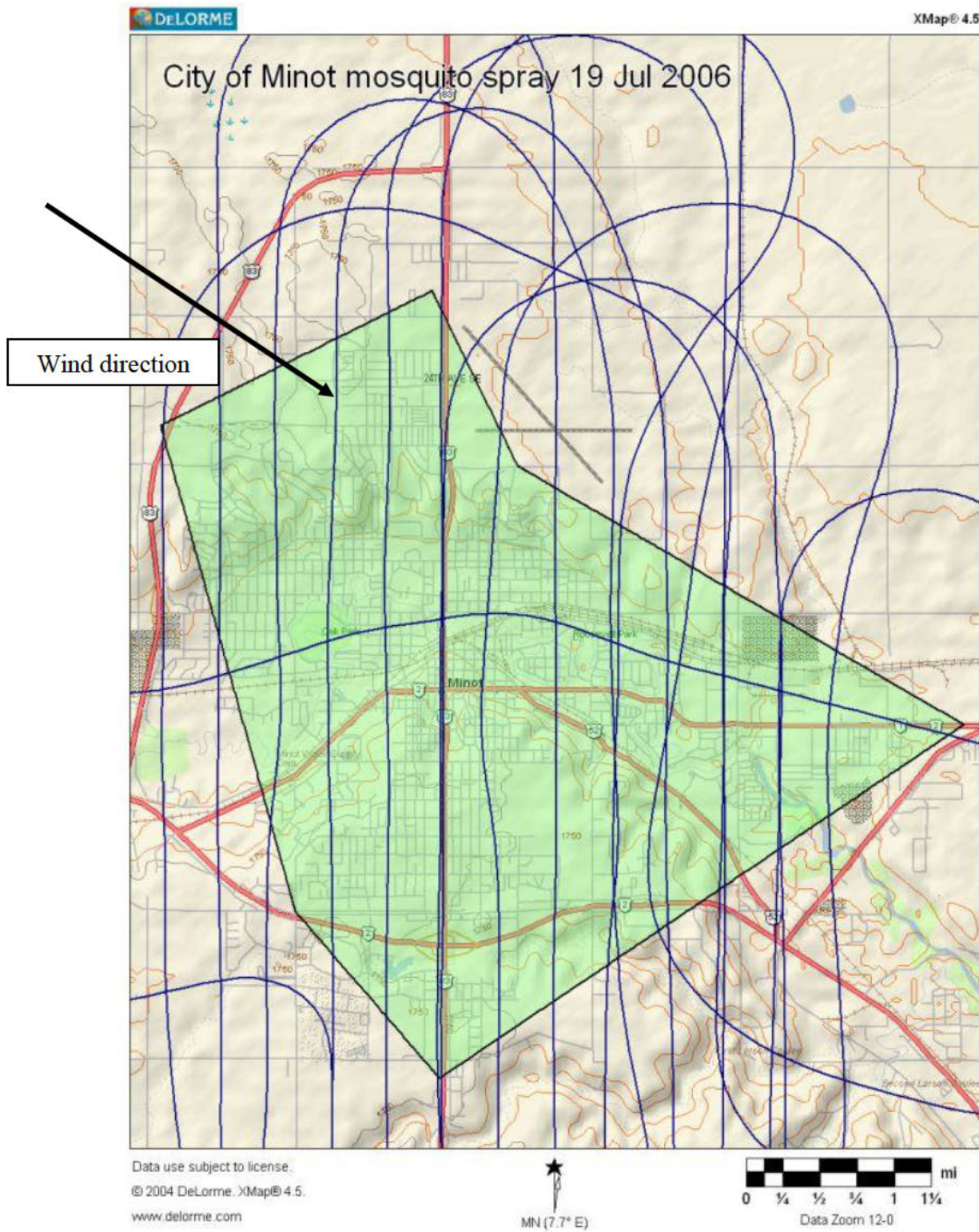


**Attachment 1.**

**A. Path of spray aircraft over Minot AFB, ND on 18 July 2006 to control adult mosquitoes. Blue lines indicate path of aircraft, green polygon is the spray block.**



B. Path of spray aircraft over Minot, ND on 19 July 2006 to control adult mosquitoes. Blue lines indicate path of aircraft, green polygon is the spray block.







DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



MEMORANDUM FOR HQ AFRC/DOOM (FAX: 497-0198)

18 Sep 04

FROM: 757 AS/DOS (DSN (b) (6) 1531; FAX 346-1616)

SUBJECT: Capability and Concept of Operations for Aerial Spray at Hill AFB/UTTR UT  
Annual Weed Control Spray Mission on the Utah Test and Training Range (UTTR)

1. **Capability:** Two aircraft will be available 17-24 Sep 04 for the requested spray mission. The support aircraft are available 17-18 & 23-24 Sep 04 in support of the mission.

2. **Concept of Operations:**

a. **17 Sep (Friday):**

0800 Show at KYNG  
0810 Pre-Mission Briefing  
0830 LM's released to assist in loading aircraft  
1000 Support Aircraft 19123 Take-Off KYNG  
1005 Spray Aircraft 99107 Take-Off KYNG  
1010 Spray Aircraft 99108 Take-Off KYNG  
1330 Land HIF  
1345 Safety Brief

b. **18 Sep (Saturday) – 22 Sep (Wednesday):** Schedule of daily events will be determined by the Mission Commander as required.

**(Range times 0600-1600)**

0430 Ground Support Team departs for UTTR  
0515 FEs, Crew Chiefs, & Spray MX report and Mix/Load Chemical  
0700-1200 Target areas sprayed as designated by PMP

c. **23 Sep (Thursday):** Flush and clean up day.

Schedule of daily events will be determined by the Mission Commander as required. Support Aircraft returns to Hill AFB.

d. **24 Sep (Friday):**

0800 Aircrew report for duty  
0830 All personnel report  
1000-1015 Spray Aircrafts & Support aircraft take-off  
1700-1800 Mission completed all personnel and aircraft arrive at KYNG

3. **Spray Parameters and Sequencing:** (See attached Operational Schedule)
4. **Mission Commander:** Lt Col (b) (6)
5. **Support required at Hill AFB and the UTTR has been completed.**

(b) (6) (b) (6) Maj, USAFR  
Aerial Spray Mission Commander  
757 AS/DOS

Attachment  
Spray Operations Schedule





- 6. IN-BRIEFING:** (UTTR Staff)
- a. **When/Time:** 17 Sep 04, 1530
  - b. **Where:** Air Freight Terminal
  - c. **Who:** Everyone
  - d. **Briefing Plan**
    - a. Billeting
    - b. Vehicles
    - c. Schedule of events
    - d. Weather call
    - e. Cellular Phone numbers for all personal

- 7. PLANNED SEQUENCE OF EVENTS:** Hill AFB Tower Control and Runway Hours 24/7  
**NOTE: Scheduling reflects no weather or maintenance delays.**

**ALL TIMES MAY BE ADJUSTED BY MISSION COMMANDER.  
DUTY DAY FOR CIVILIANS WILL BE STD DAY (8 HOURS).  
MILITARY STATUS PERSONNEL WILL WORK AS  
REQUIRED WITHIN CREW REST CONSTRAINTS.**

**Tower Control, Runway & Airfield hours 24/7**

**RANGE TIMES: 0600-1600L  
END OF EACH DAY LOAD GROUND TANKS WITH THE APPROPRIATE MIX.  
ALL MX & A/C PERSONNEL WILL REMAIN ON DUTY UNTIL AIRCRAFT IS  
PRE-FLIGHTED FOR THE NEXT DAY OR RELEASED BY THE AIRCRAFT  
COMMANDER.**

**17 Sep (Fri):** Ground Support personnel depart for Wendover Stateline Inn

**18-23 Sep (Sat-Thur):** (First Spray Sortie, Range Times 0600-1600 (1200Z-  
2200Z 18-24 Sep)

0500L: Spray Maintenance starts on first full day of mission and adjust as directed

0712L: Sunrise (see attach Sunrise/Sunset Chart)

0700-1400L: Spray UTTR Targets as directed

Targets as directed by the Mission Commander or Ground Support Director

**23 Sep (Thur):** Weather Back-up/Flush, Clean Up; Support Aircraft arrives at Hill

**24 Sep (Fri):** All personnel and aircraft return to YNG

0800L: All Aircrew report

0830L: All Personnel report

1000L: Spray Aircraft Takes Off Hill AFB

1005L: Spray Aircraft Takes Off Hill AFB

1010L: Support Aircraft Takes off Hill AFB

1700L: Spray Lands YNG

1715L: Support A/C Lands YNG

**8. ITEMS TO TAKE:**

**a. PMP:**

- (1) Project Notebook with Recording Sheets and Maps
- (2) Laptop Computer and Batteries

- (3) 2 Compasses and Stop Watch
- (4) 2 Signal Mirrors and 2 Spot Lights
- (5) Measuring Wheels and Tape
- (6) Entomologists' Tool Kit
- (7) UHF/VHF Radios and VHF Radios
- (8) Cellular Phone
- b. Mission Commander:** Cellular Phone, Mission Info
- c. Navigator:** Maps
- d. Spray Maintenance:**
  - (1) MASS Spares and Spill Kit
  - (2) Tools and Other Equipment
  - (3) Herbicide Safety Binder
  - (4) Safety Equipment
- e. Maintenance:** Applicable Equipment

**9. SPRAY CONFIGURATION:**

- a.** Two Aircraft, Systems 3 and 5
- b.** MASS Modules 1, 2 and 3
- c.** UHV Fuselage booms oriented straight back

**10. PPR REQUIREMENTS:** All required, see Form 33 setup sheets for aircraft

**11. PARKING PLAN:** Air Freight Ramp – on West side of the airfield, Spots 11/12  
Alternate Spot 10 for support aircraft

**12. RADIO FREQUENCIES:**

- **Clover Range Control:** UHF 285.65, 275.9, 361.4
- **Eagle Tower:** UHF 351.0; Mawk 4 ((b) (6) )
- **Diddle Knoll & Spray Ops Freq:** UHF 398.1 (Primary), 383.2 (Back-up); VHF 134.1, 118.45
- **Spray Inter plane:** UHF 349.35
- **Spray Ground to Spray Maintenance:** See Iridium Phones
- **Base OPS:** 139.3
- **HF Operations:** 11215.4 (p), 13213.4, 15011.4, 20904.5
- **Communications Ground Freq:** LMR nets are trunked at Hill. Requesting Hill Spectrum Manager support.
- **IRIDIUM PHONES**
  - Mission Commander ((b) (6))
  - Maintenance Supervisor ((b) (6))
  - Entomologist/Pest Management ((b) (6))

**13. SPRAY PARAMETERS:**

- a. Herbicide:** Krovar 1DF®
- b. Application Rate:** 22.5 gal/acre (10 lbs of Krovar in 22.4 gal of water)
- c. Acreage:** 1,283 Acres (Targets 21, 24 and a couple passes on Nord LZ)
- d. Ground Speed:** 200 Knots (337.55 ft/sec)
- e. Spray Altitude:** 100 Feet AGL
- f. Swath Width:** 35 Feet
- g. Flow Rate:** 366.1 Gallons/Minute

**14. HERBICIDE LOADING: (For Partial Loads Use Table on Last Page)**

**a. Sequence for Loading 1,000 Gallon Mixing Tank:**

- (1) Fill with water up to 750 Gallon Mark, then add:
  - (a) 450 Pounds of Krovar 1DF® (9 bags, 50 # each)
  - (b) 4.0 Gallons (15,140 ml) of StaPut®
  - (c) 64 Ounces (1,892 ml) of Foam Fighter F®
  - (d) 200 Ounces (5,913 ml) Hi-Light® Dye
  - (e) Add Water to 1,000 Gallon Mark and Agitate for 30 Minutes

**b. When:** Start at 0515 Hours on first full day of spraying and adjust as necessary through end of the daily mission as called by Mission Commander.

**c. Items to be furnished by installation:**

- (1) Krovar 1 DF® (12,660 pounds)
- (2) Foam Fighter F® (15 gallons)
- (3) StaPut® Additive (114 gallons)
- (4) Hi-Light® Dye (45 gallons)
- (5) Remove Nutra-Sol Tank Cleaner
- (6) Loading Personnel and All Loading Equipment
- (7) All Necessary Cleanup and Hazardous Waste Disposal
- (8) Aircraft Support Equipment and TA Support
- (9) Wash Rack and Fuel Priority

**15. SPRAY MONITORING AND TESTING.** By CPMP & ground support personnel

**16. CONTACTS:** (Commercial prefix (801) 777-XXXX; DSN 777-xxxx

**a. 388<sup>th</sup> RANS/RSO, Range Control Officer/Installation Spray Coordinator:**

- (b) (6), 6066 Cedar Lane, Bldg 1274S; 777-5345; FAX: 9205  
Cell Phone # (b) (6) (b) (6) (b) (6) Cell Phone (b) (6)
- **Hill Range Control:** 7-9386, Current OPS; 7-9385
  - **Range Scheduler:** 7-9386
  - **Eagle Tower:** 7-1515/6
  - **Clover Operations:** 7-7575
  - **Clover Commander:** LTC (b) (6)
  - **388<sup>th</sup> RANS/RSL Radio Freq Monitor:** TSG (b) (6)
  - **388<sup>th</sup> RANS/RSR Resource Monitor:** 5-4257

**b. Environmental Coordinator:** (b) (6)

**c. OASIS RRANGE SUPPORT DIRECTORATE:**

Oasis Chief: 75 CEG/CEU (b) (6)  
Oasis Civil Engineering: (b) (6) (b) (6)  
North Range Security: 7-1521/2/4

**d. Hill AFB Base OPS: 7-2221; WX 7-2885**

- **Aerial Spray OPS Bldg 900 Deployment Center,** (b) (6)

**e. Entomology:** (b) (6)

**f. Weather:** Hill AFB: 7-2018; UTTR: 7-1516/63 ASOS at Eagle Range 6-1765  
Need Dash1 daily at 0530

**g. Quarters:** Comfort Inn for deployed main body

- **Billeting Office Mountain View Inn, DSN 777-0802/1844, FAX 775-2014 COM (801) 777-0802; FAX 775-2014**
- **Comfort Inn (\$48+Tax) 877 North 499 West 801 544-5577**
- **Quarters for UTTR Support Personnel**
- **Montego Bay (Wendover): 1-(877)-666-8346**
- Holiday Inn (Odgen): 1-800-999-6841 or 801 399-5671
- Airport Hilton Inn: 1-800-648-9668 or 801 539-1515
- Ogden Park: 247 24<sup>th</sup>, 801 627-1190/800 421-7599
- La Quinta Inns: 1965 N 1200 W Layton, 801 776-6700
- Alana Motel: 116 N Main Street, Clearfield, 801 825-2221 or 2321

**h. Car Contact:**

- (1) Enterprise Rental Car (Eric) on Base at BX 801 825-0800 FAX 801 825-0090 Confirmation number: #768104 for all vehicles**

**1 SUV 4 Wheel Drive @ \$60/day 17-24 Sep 04 pick up at SLC IAP**  
 CPT (b) (6) , LTC (b) (6) (b) (6) CPT (b) (6)

**4 ea Mini-Size @ \$41/day 17-24 Sep 04**  
 MAJ (b) (6) MAJ (b) (6) LTC (b) (6) MSG (b) (6) SSG (b) (6)

**5 ea Mini Van @ \$60/day 17-24 Sep 04**  
 MSG (b) (6) MSG (b) (6) SMS (b) (6) SMS (b) (6) MSG (b) (6)

- (2) Hill Motor Pool: All Reserved under (b) (6); 4 total**  
 1 Gov Mini Van Crew Chiefs 17-24 Sep, Confirmation # 7656637, 1  
 Mx Specialist 18-24 Sep #7656642, 1 Supt Crew 18-24 Sep  
 #7656642, 1 extra 18-24 Sep #7656642

**i. Hill AFB:**

Base Commander: Col (b) (6)  
 Airfield Manager: (b) (6)  
 Base Operations: 7-1861; FAX: 7-2221  
 Weather: 7-2018  
 Transit Alert: 7-3956  
 C-130 Maintenance Contact: 7-3984  
 Fuels: 7-7423/7-7311 available 0900-1800 daily after hours contact CP  
 Billeting: 7-1844  
 Chow Hall: 7-3428 Breakfast M-F 0530-0730, S-S 0700-1900  
 Golf Course: 7-1108

**j. Hill Public Affairs: 7-5201**

**k. Supply Contact: 7-5391 (922 OE)**

**l. Youngstown ARS, OH: Commercial (330) 609-XXXX or DSN 346-XXXX**  
 910 AW Direct Dial-In/Voice Mail: 1-800-278-7046+2+Ext  
 Command Post: 1315; FAX 1161  
 910 AW/CC: 1243  
 910 AW/PA: 1236; FAX 1022

910 AW/FM: Comptroller: 1216  
910 OG/OSS: Supervisor of Flight Desk: 1069; FAX 1371  
910 OG/CC: 1257/1179  
757 AS/DO Admin: SMS (b) (6) (b) (6) ; FAX 1657  
757 AS/DOS: Aerial Spray Operations, 1111; FAX 1616  
910 MX/LG/CC: 1225  
Maintenance Control: 1344  
Spray Maintenance: 1132/1586  
Omega/SATO Travel: 1772; 1-800-285-6342  
Cellular Spray Phones:  
- PMP: (b) (6)  
- Mission Commander: (b) (6)  
- Spray Maintenance: (b) (6)

**17. SEQUENCING:**

**a.** Target sequencing is determined by UTTR personnel based upon EOD clearance schedule and airspace scheduling. Target 21 is the priority.

**b.** Spray ops aircraft must stay south of Base Leg Knoll during turns on north run on Target 21. Coordination with range control is essential to assure that this portion of the range is released for air operations.

**c. When** winds blow directly from one side of the target to the middle of the target or during early morning when wind speed is low, ground monitors will direct the "dress up" of the target edges.

**d. Spraying Priorities:**

- (1) Target 21
- (2) Target 24
- (3) NORDLZ

**e. Multiple-Target Alignments for Possible Future Operations.**

Whenever possible, multiple in line targets will be treated on the same pass to facilitate aircraft line-up and turning efficiency (in which case two separate ground-monitoring and marking parties will be required).

- (1) The west edges of Targets 21 & 24 are contiguous and can be treated on the same pass with a spray-off gap between targets.

**18. GENERAL TARGET INFORMATION:**

**a. Target 21:**

- (1) Dimensions: 4,980' X 7,770'
- (2) Acreage: 888
- (3) Acres Sprayed in 2002: 888
- (4) 2000 Aircraft Loads: 18,869 Gal
- (5) Sorties: 17
- (6) Passes (35' Swath): 157
- (7) Spray-On Time/Pass: 23 Seconds
- (8) Spray Heading: 00/180

**b. Target 24:**

- (1) Dimensions: 1,600' X 6,080'
- (2) Acreage: 223
- (3) Acres Sprayed in 2002: 223
- (4) 2000 Aircraft Loads: 5,263 Gal
- (5) Sorties: 7
- (6) Passes: 47

- (7) Spray-On Time/Pass: 18 Seconds
- (8) Spray Heading: 00/180

### **UTTR GEOGRAPHIC LOCATION**

Target areas on UTTR are geographically located in northwestern Utah, directly west of the Great Salt Lake and Hill Air Force Base. The complex is positioned between 40 and 41 degrees north latitude and close to 113 degrees ten minutes west longitude. The targets are within range 12 west and Township two and three north, Salt Lake Baseline Meridian.



# 910 AW AERIAL SPRAY--PMP'S POST-MISSION REPORT

## UTAH TEST AND TRAINING RANGE

### 17-24 SEPTEMBER 2004

#### 1. MISSION BASICS:

- a. **Installation Sprayed:** Utah Test and Training Range, UT
- b. **Mission Duration:** 17-24 Sep 04
- c. **Purpose of Application:** Weed Control over designated UTTR targets/facilitate UXO recovery
- d. **Date/s and Time/s of Application (Local):** 20 Sept: 1340-1750 Z. 21 Sept: 1320-1911Z. 22 Sept: 1300-1851 Z 23 Sept 1400-1530 Z.
- e. **Acres Treated:** 1038 acres
- f. **Project Coordinator/s (Name/Rank, Title, Phone #):** (b) (6) , Aerial Spray Coordinator, Hill/UTTR AFB, DSN(b) (6)
- g. **Date Spray Map Last Approved:** 17 Sep 04
- h. **Date of Waste Generation Letter:** N/A
- i. **Installation In-Briefing: (When/Where/Briefer/s):** 17 Sep/1430, Base OPS, LtC (b) (6) /Maj (b) (6) Capt (b) (6)

#### 2. OPERATIONAL:

- a. **Mission Commander:** LtC (b) (6)
- b. **Certified PMP (Category 11):** LtC (b) (6) (b) (6) LtC (b) (6) Maj (b) (6)(b) (6) Capt (b) (6)
- c. **Aircrew:**
  - (1) Aircraft CMDR/Pilot: Maj (b) (6) (b) (6) Maj (b) (6)3
  - (2) Navigators: Maj (b) (6)(b) (6) Maj (b) (6)6
  - (3) Flight Engineer: MSG (b) (6) , MSG (b) (6) , SRA (b) (6) (b) (6)
  - (4) Spray Operators: MSG (b) (6) , MSG (b) (6) , TSG (b) (6) , TSG (b) (6)6
- d. **Safety Briefer:** Capt (b) (6)
- e. **Spray Maintenance/Pesticide Loaders:** SMS (b) (6) TSG (b) (6) , TSG (b) (6)  
TSG (b) (6) TSG (b) (6) SSG (b) (6) SSG (b) (6)
- f. **Spray Ground Monitors:** LtC (b) (6) (b) (6) LtC (b) (6) Maj (b) (6)(b) (6) Capt (b) (6)
- g. **Crew Chief(s):** MSG (b) (6) , TSG (b) (6) , SSG (b) (6) , SRA (b) (6)
- h. **910 MA/LG Superv:** SMS (b) (6)
- i. **Avionics/Hydraulics:** MSG (b) (6) , MSG (b) (6) , SSG (b) (6)
- j. **Engine/Propulsion:** TSG (b) (6) , SSG (b) (6) (b) (6) SSG (b) (6)
- k. **Flying Data:** Spray A/C 899106: Ferry: 2, Hours: 10.3; Spray Sorties: 7, Hours: 8.8.  
Spray A/C 909107: Ferry: 2, Hours: 10.2; Spray Sorties: 8, Hours: 10.1.  
Support A/C 923023, Ferry: 2, Hours: 10.3

#### 3. PESTICIDE:

- a. **Trade Name (% Active Ingredient):** Krovar I DF®
- b. **EPA Registration Number:** 352-505
- c. **Formulation Sprayed:** 10 pounds in 22.5 gallons of water per acre
- d. **Gallons Pesticide Loaded:** 1800 per sortie
- e. **Gallons Pesticide Applied:** 23036 gallons
- f. **Gallons and Name Diluent Used:** 23036 gallons water
- g. **Other Additives Used:** 14 Gal Foam Fighter F®, 114 Gal StaPut®, 45 Gal Hi-Light® Dye
- h. **Application Rate:** 22.5 Gal per acre

**4. APPLICATION EQUIPMENT:**

- a. **Aircraft Type (Tail Number):** C-130H (899106 and 909107)
- b. **Spray System (Modules Used) and System ID #:** Modules 1, 2, and 3; Systems 3 and 5.
- c. **Spray System Configuration:** SP-3G
- d. **Nozzle Type/Size:** 3 inch herbicide nozzles.
- e. **Nozzle Orientation & Number Used:** 2, oriented straight back.
- f. **Pressure:** 40 psi
- g. **Flow Rate:** 366 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. **Swath Width Flown:** 35 feet.
- b. **Spray Off Set:** Variable, determined by spotters on the ground.
- c. **Spray Release Altitude:** 100 feet.
- d. **Ground Speed:** 200 knots.

**6. WEATHER OBSERVATIONS (Ground Wind Direction (degrees)/Speed (knots):**

- a. **20 Sep:** 310-320/7-12
- b. **21 Sep:** 0/1-4
- c. **22 Sep:** 090-152/4-6
- d. **23 Sep:** Variable/0-2

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. **Deposition Monitoring:**
  - (1) Technique/s Used: Ground/Aircraft direct observation of dye markings
  - (2) Results: Spray off-set determined via direct observation of application coverage
- b. **Effectiveness:**
  - (1) Technique/s Used: Visual field observations of coverage and amount of spring vegetation germination.
  - (2) Results: (See Remarks)

- 8. REMARKS:** Ground coverage was complete with no skips in sprayed areas. Mission goals were met (Targets 21 & 24 treated). Two airframes are critical to this mission. In contrast to last years' mission (2003) 2, aircraft minimized turn-around time and relieved the workload on the aircrews. UTTR staff and Hill AFB provided excellent support as did the Aerial Spray Maintenance personnel who worked uncommonly long shifts. The 910<sup>h</sup> Communications Flight deployed on this spray mission and enhanced the operation through their equipment and knowledge. Communications with spray maintenance and spray operations are impossible with cellular phones and are difficult and awkward via VHF or UHF communications. Satellite phones provided by the Communications flight made communications much more streamlined. Stakes on targets 21 & 24 should be replaced and synchronized using the western target edges as the starting point. Diddle Knoll was found to serve as an excellent target Command and Control Site, since targets 21 & 24 can be monitored simultaneously. It does not replace the need for monitors on target, however.

//signed//

(b) (6) **Capt, USAFR**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL**

Distribution via Staff Summary Sheet (AF Form 1768):

757 AS/DOS, 757 AS/DO, 910 OG/CC, 910 LG/CC, 910 AW/CC

E-Mail Distribution:

AFRC/DOOM, AFRC/PA, AFRC/HO

22 AF/DO

910 AW/HO, 910 AW/XP, 910 LGMS

12 March 2001

MEMORANDUM FOR HQ AFRC/DOZO, Lt Col (b) (6)

FROM: 757 AS/DOS (b) (6) DSN (b) (6) FAX 346-1616)

SUBJECT: 18-24 Mar 01 Oil Spill Exercise Mission Flight Info

1. Aircraft Commander/Pilot: Maj (b) (6) (b) (6)
2. Co-Pilot: Capt (b) (6) (b) (6)
3. Navigator(s): Maj (b) (6) , Capt (b) (6) (b) (6) Lt Col (b) (6)
4. Flight Engineer: MSG (b) (6)
5. Loadmaster(s): MSG (b) (6) , TSG (b) (6)
6. Crew Chief: MSG (b) (6)
7. Aircraft Tail Number: 909107 Mission Identifier: QZNRKA729077
8. Destination: KAST (Astoria OR)
9. Depart KYNG: 1100, 18 Mar 01
10. Purpose: Oil Spill Exercise with the PAC Northwest USCG
11. Ground Support Team:
  - LTC (b) (6) CPMP/Entomologist
  - Capt (b) (6) , Toxicologist
  - SMS (b) (6) , Superv, Spray Maintenance
  - MSG (b) (6) , Spray Maintenance
  - TSG (b) (6) Spray Maintenance
  - SSG (b) (6) , Spray Maintenance
  - (b) (6) , Avionics
  - TSG (b) (6) , Security Forces (SP)
  - TSG (b) (6) , Security Forces (SP)
  - SSG (b) (6) , Security Forces (SP)
12. Flight Info Extracted From AFTO Form 781's:
  - 18 Mar 01 KYNG-KAST 1513-2214 Flight Time: 7.0
  - 20 Mar 01 KAST-KAST 1830-2000 Flight Time: 1.5
  - 20 Mar 01 KAST-KAST 2015-2120 Flight Time: 1.1
  - 21 Mar 01 KAST-KAST 1805-1905 Flight Time: 1.0
  - 21 Mar 01 KAST-KAST 1915-2001 Flight Time: 0.8
  - 22 Mar 01 KAST-KAST 1755-1847 Flight Time: 0.9
  - 22 Mar 01 KAST-KAST 1855-2030 Flight Time: 1.6
  - 23 Mar 01 KAST-KHIF 1750-2000 Flight Time: 2.2
  - 24 Mar 01 KHIF-KYNG 1714-2130 Flight Time: 4.3

PERSONAL DATA PRIVACY ACT OF 1974 (5 U.S.C. 552a)  
Please destroy upon completion of this request.



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



31 Mar 05

MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497 -0198)

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Parris Island  
MCRD SC for Control of Sand fly and Mosquitoes

1. Objective/Purpose/Benefits of the Spray Mission. Spray Parris Island MCRD SC for control of biting midges and mosquitoes. Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCDR SC at the request of the Parris Island MCRD/MCAS Environmental Coordinator.

2. Capability: Spray Aircraft 89-9106 available on 18-21 Apr 05

3. Concept of Operations:

**18 Apr (Monday):**

**PPR # 292-01**

1000: Show Time  
1200: Take off KYNG  
1400: Land KNBC  
1415: Safety Briefing

**19 Apr (Tuesday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

1400: Show Time  
1500: Weather decision /Load Chemical  
1630: Take off KNBC  
1955: Sunset

**20 Apr (Wednesday):** Weather Backup

1400: Show Time  
1500: Weather decision /Load Chemical  
1630: Take off KNBC  
1956: Sunset

**21 Apr (Thursday):**

0900: Show Time  
1100: Take off KNBC  
1300: Land KYNG

4. Spray Parameters:

- a. Acreage: 7,500 Acres (Only areas determined by PMP)
- b. Altitude: 150 Ft AGL
- c. Pesticide: Dibrom® Concentrate
- d. Deploy: 2.0 Hrs
- e. Re-Deploy: 2.0 Hrs
- f. Spray Time: 16 Minutes per Sortie (or as called by PMP)

5. Aircraft Commander: Capt (b) (6) ]

6. Mission Commander: Major (b) (6) ]

7. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator Mr. (b) (6) DSN (b) (6) .

8. HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616, ATTN: 757 AS/DOS.

// SIGNED //

(b) (6) (b) (6) Major, USAFR  
Chief of Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## PARRIS ISLAND MCRD, SC

### 18-21 Apr 2005

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCRD, SC.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: MAJ (b) (6)(b) (6)
- (2) Pilots: MAJ (b) (6)(b) (6) MAJ (b) (6) , CPT (b) (6)(b) (6)
- (3) Navigators: MAJ (b) (6)
  - (a) Flight Engineers: CMS (b) (6)
  - (a) Spray Operators: CMS (b) (6)(5) , MSG (b) (6) , MSG (b) (6) MSG (b) (6)(5)

##### b. Maintenance:

- (1) Spray Maintenance: CMS (b) (6) , TSG (b) (6) , TSG (b) (6) TSG (b) (6) , TSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6) , MSG (b) (6)
- (3) Avionics: TSG (b) (6)

##### c. Pest Management Professionals/Entomologist: LTC (b) (6) CPT (b) (6)(b) (6)

Gov Vehicles provided by Parris Island MCRD: 2 Crew Vans & 1 Staff Car

#### 2. PLANNED SEQUENCE OF EVENTS: (All times local)

##### 18 Apr (Monday):

- 1000: Show Time
- 1200: Take off KYNG
- 1400: Land KNBC
- 1415: Safety Briefing

##### 19 Apr (Tuesday): see www.beaufort.usmc mil for weather, etc

- 1400: Show Time
- 1500: Weather decision /Load Chemical
- 1755: Take off KNBC
- 1955: Sunset

##### 20 Apr (Wednesday): Weather Backup

- 1400: Show Time
- 1500: Weather decision /Load Chemical
- 1755: Take off KNBC
- 1956: Sunset

##### 21 Apr (Thursday):

- 0900: Show Time
- 1100: Take off KNBC
- 1300: Land KYNG

#### 3. ITEMS TO TAKE:

##### a. Entomologist/CPMP:

- (1) Wind Gauge & Compass
- (2) UHF/VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder
- (4) DGPS Computers & Maps
- (5) Oil Sensitive Papers
- (6) Trackstar Equipment

##### b. Navigators:

- (1) Maps



(2) Templates

c. **Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

4. **SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** Open for ULV spray; 6, 8008's oriented straight down
- d. **Differential GPS:** Installed
- e. **Aircraft:** 89-9106      **Mission Identifier:** QZNRKA997108

5. **SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 1 Ounce Dibrom®/Acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 3.634 Gallons/Minute

6. **AMOUNT OF SPRAY MATERIAL AVAILABLE:** Load 60 gallons of Dibrom® Concentrate per mission and 25 gallons HAN in flush tank.

7. **PPR REQUIREMENTS: 108-01**

8. **PARKING PLAN:** Beaufort MCAS Ramp

9. **AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
Hilton Head Arpt: 123.0 UNI  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 392.2; Secondary 340.8**

10. **TRANSPORTATION:** Parris Island will provide two vans and staff car for transportation to and from quarters and for messing. In addition, LTC (b) (6) and Capt (b) (6) will have cars on their orders.

11. **SPRAY MONITORING/TESTING:** Ground monitoring by CPMP &Parris Island MCRD Project Coordinator.

12. **CONTACTS:**

- a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX
  - (1) Environmental Coordinator (Spray Coordinator):  
(b) (6) DSN (b) (6) ; (cellular) (b) (6) (b) (6) DSN (b) (6) ;  
FAX (843) 228-2616; (b) (6) ; (b) (6)
  - (2) Assistant Chief of Staff I & L: Col (b) (6) , DSN (b) (6)
  - (3) Pest Control Foreman: DSN 335-3663
  - (4) P.I. Motor Pool: (b) (6) DSN (b) (6)
  - (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
  - (6) Thrifty Car Rental: (843) 522-9996

- (7) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)  
 (7) P.I. Rifle Range: DSN: 335-3183/3624  
**b. Beaufort MCAS SC:** (Commercial (843) 228-XXXX)  
 (1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6) ; (b) (6) DSN (b) (6)  
 (2) Fuels: DSN: 335-7049/7448/7168  
 (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
 DSN: (b) (6) Base Ops is ext 7301/2/3  
 (After duty hours: (b) (6) DSN: (b) (6) )  
 (4) Trans Alert/VAL: DSN: 335-7110  
 (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)  
**c. Beaufort County Mosquito Control:** (b) (6)  
**d. Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) DSN: (b) (6)  
**e. Quarters: JTR Seasonal Rate 1 Oct-14 Mar L/\$70, M/\$44**  
**Sleep Inn (\$70/Night) Confirm # 2167 POC: Walter (843) 522-3361 FAX (843) 522-9929**

Ramada Inn	(843) 524-2144/Fax 1704
Hampton Inn	(843) 986-0600 (FAX 0494)
Sleep Inn	(843) 522-3361 FAX (843) 522-9929
Parris Island Billeting	DSN: 335-2744 (FAX: 3815); (843) 228-3960
Comfort Inn	(843) 525-9366 (FAX 1529)
Best Western (Sea Island Motel)	(843) 524- 4121
Port Royal Days Inn	(843) 524-1551
Best Western Pt South (I-95)	(843) 726-8101

- f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
 Toll Free 1 - 800 - 278 - 7046,+2 + Ext
- (1) 910 AW/CC: Col (b) (6)
  - (2) 910 AW Command Post: Ext 1315; FAX 1161
  - (3) 910 AW/PA: Capt (b) (6) FAX 1022
  - (4) 910 OG/CC: Col (b) (6) (b) (6)
  - (4) 910 OG: Airfield Manager, (b) (6) (b) (6)
  - (5) 757 AS/DO: Maj (b) (6) ((b) (6)
  - (6) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
  - (7) 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
  - (8) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) ; FAX 1616
  - (9) 910 LG/CC: Ext 1225
  - (10) 910 LG/LGM: CMS (b) (6)
  - (11) Maintenance Control: Ext 1327
  - (12) 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
  - (13) Omega/SATO Travel: Ext 1772; 1-800-285-6342
  - (14) Cellular Spray Phones:
    - Mission Commander: (b) (6)
    - Entomologist: (b) (6) , (b) (6) cell (b) (6)

**910 AW AERIAL SPRAY**  
**PMP'S POST-MISSION REPORT**  
**PARRIS ISLAND MARINE CORPS RECRUIT DEPOT**  
**18-21 APRIL 2005**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 18-21 April 2005
- c. Purpose of Application: Biting Midge (*Culicoides* spp.) and Mosquito Control
- d. Application Date: 19 April 2005
- e. Time/s of Application (Local): 1750-1950 (19 April 2005)
- f. Acres Treated: 7,296
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6)  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 18 April 2005
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 18 April 2005; Assistant Chief of Staff, Installation and Logistics (COL (b) (6) ), Maj (b) (6) Lt Col (b) (6) et al

**2. OPERATIONAL:**

- a. **Aircrew:**
  - (1) Mission Commander: MAJ (b) (6) (b) (6)
  - (2) Pilots: MAJ (b) (6) (b) (6) MAJ (b) (6) , CPT (b) (6) (b) (6)
  - (3) Navigators: MAJ (b) (6)
    - (a) Flight Engineers: CMS (b) (6)
    - (a) Spray Operators: MSG (b) (6) , MSG (b) (6) MSG (b) (6) (b) (6)
- b. **Maintenance:**
  - (1) Spray Maintenance: CMS (b) (6) , TSG (b) (6) , TSG (b) (6) TSG (b) (6) (b) (6) , TSG (b) (6)
  - (2) Crew Chiefs: MSG (b) (6) , MSG (b) (6)
  - (3) Avionics: TSG (b) (6)
- c. **Pest Management Professionals/Entomologists:** LTC (b) (6) CPT (b) (6) (b) (6)
- d. **Flying Data:**
  - (1) Spray Sorties/Hours: 1 Sortie/2.0 Hrs, 1 Spray training sortie 1.2 hrs
  - (2) Ferry Sorties/Hours: 2 Ferries/5.0 Hrs

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate
- d. Gallons Pesticide Loaded: 60 gal Dibrom<sup>®</sup>
- e. Gallons Pesticide Applied: 57 gallons
- f. Gallons and Name Diluent Used: None
- g. Gallons and Name of Flush Used: 17 gallons Marvel Oil
- h. Other Additives Used: None
- i. Application Rate: 1 Oz/Acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8008 Flat Fan
- e. Nozzle Orientation & Number Used: 6 oriented straight down
- f. Pressure: 40 PSI (21-44 recorded)
- g. Flow Rate: 3.6 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000
- b. Spray Off Set: 2000 feet
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 175-200/3-8 knots
  - (2) Release Altitude: 200/10 knots
- b. Temperature (Degrees Fahrenheit): 73° F
- c. Humidity: 43 %
- d. Cloud Cover: Scattered clouds
- e. Source: Ground observations at the MCRD Marina and at the small arms range.

Observations at spray altitude are from Doppler radar on the aircraft (SCNS).

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern: not used
- b. Effectiveness: pre/post-spray surveillance of midge and mosquito populations were carried out using carbon dioxide baited traps; 24 hrs prior and 24 hrs after the application. Effect of the spray on non-target insects was also monitored. Results are discussed in section 8 and figures presented in Attachment 1.

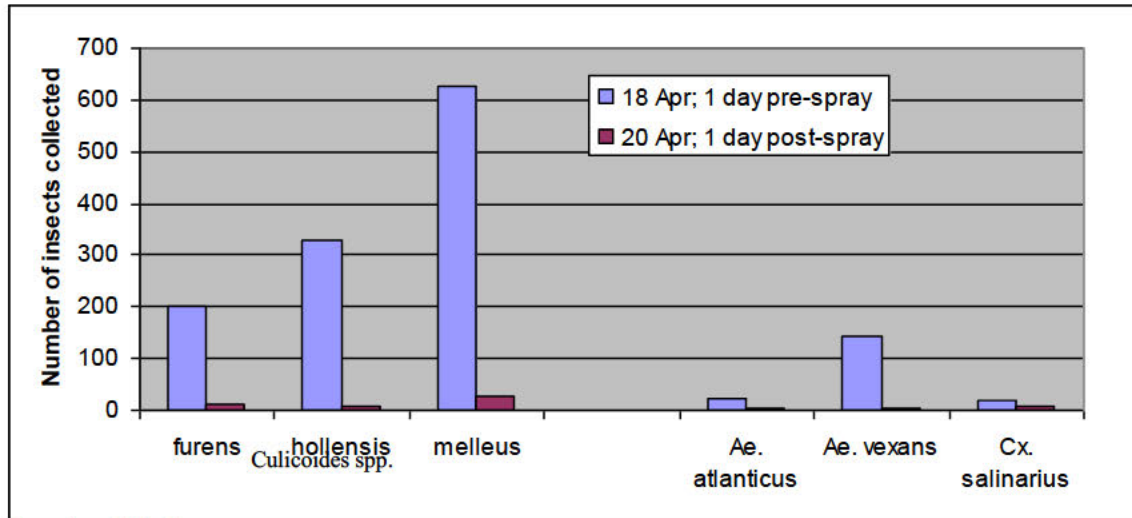
**8.** Using data from the ongoing MCRD/757<sup>th</sup> AS midge/mosquito surveillance project the timing of this application appears to have been projected perfectly to be synchronized with high titers of biting insects. The primary nuisance mosquito was *Aedes vexans*, which will bite in the shade during the day and breeds in temporary pools during spring months. The most abundance biting midge (sand flea) was *Culicoides hollensis*. Excellent control was achieved during this single application (see attachment 1). Attachment 2 shows the path of the aircraft over the Depot as the crew made the application. Because there was not an eagle nesting this year, the application covered the entire Depot. Steady winds from the south added to mission success by assuring an even distribution of chemical. Low numbers of biting insects remained the norm into the weekend. This should improve conditions for those training outdoors by reducing the number of insect related dermatitis cases and overall exposure to mosquito-borne viruses. Non-target insects, especially insects larger than mosquitoes did not appear to be adversely affected by the spray, since their numbers remained steady or quickly rebounded in our collections. Non-target insects will be identified and counted for a detailed analysis available next year. The 757<sup>th</sup> AS has coordinated with the Parris Island NREAO to make another application, if warranted by insect numbers, 16-19 May 2005.

//Signed/

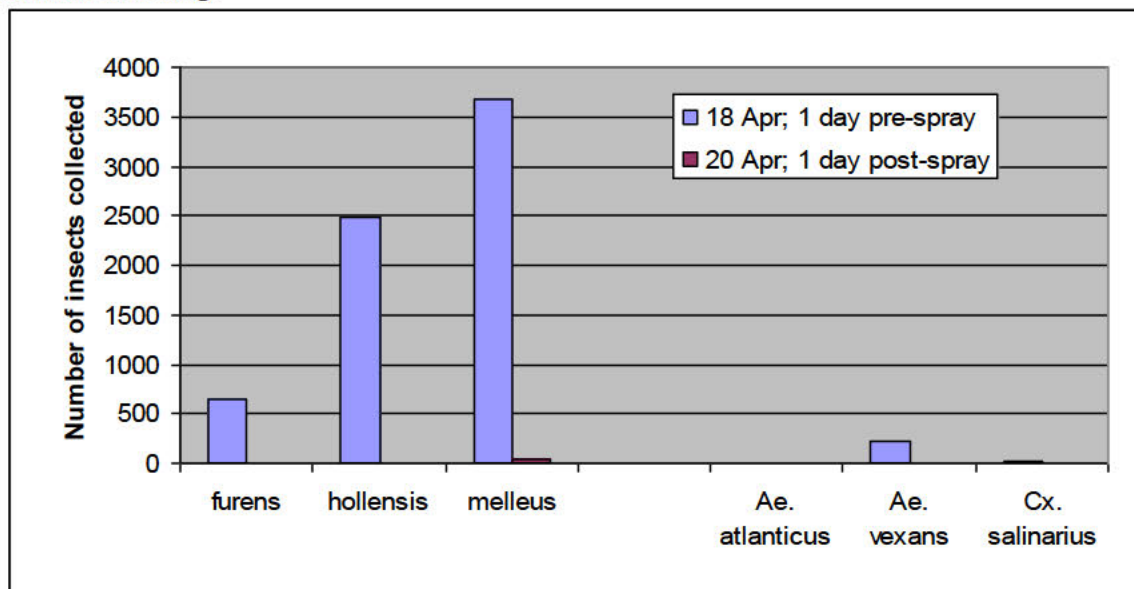
(b) (6) (b) (6) CAPT, USAFR  
CERTIFIED PEST MANAGEMENT PROFESSIONAL

**Attachment 1. Levels of midges (3 names on left) and mosquitoes (3 names on right) before and after sprays at 3 locations on the Parris Island MCRD, SC.**

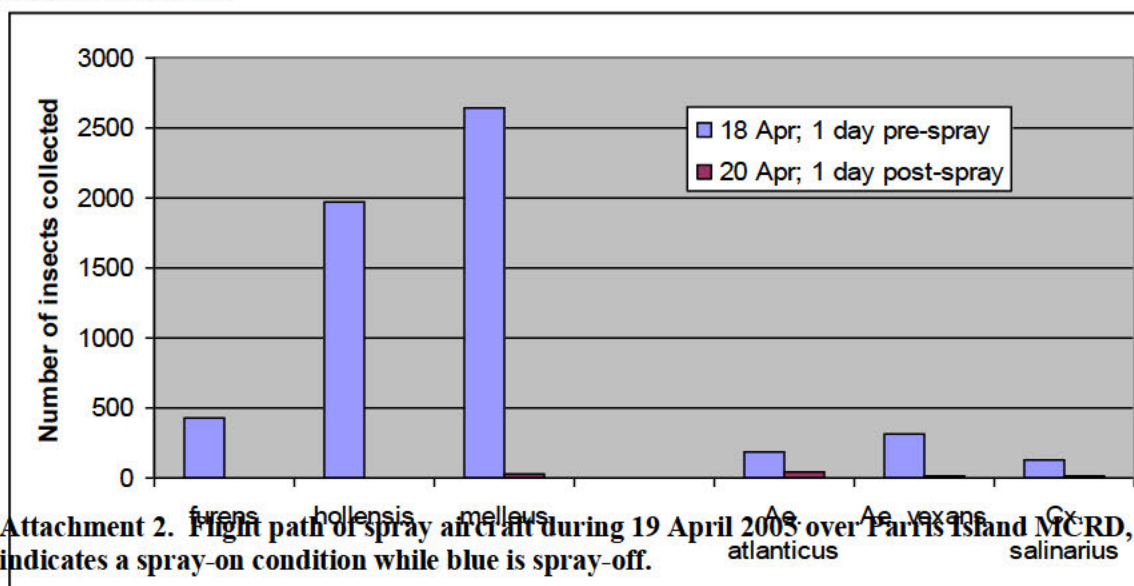
Location: Golf Course



Location: Rifle Range



Location: Horse Island



Attachment 2. Flight path of spray aircraft during 19 April 2005 over Paris Island MCRD, SC. Red indicates a spray-on condition while blue is spray-off.







DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



10 Jul 05

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Minot AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Minot AFB ND.

**2. Capability:** Spray Aircraft 89-9107 available 18-22 Jul 05

**3. Concept of Operations:**

**18 Jul (Monday)**

0900: Show at KYNG  
1100: Depart KYNG  
1300: Land KMIB/Safety Briefing  
1500: Spray In Brief (CPMP, MC, AC)

**19 Jul (Tuesday):**

1730: Show time  
1800 Load Chemical  
1930: Take off KMIB (Adulticide Spray Sortie)  
2137: Sunset

**20 Jul (Wednesday):**

1730: Show time  
1800 Load Chemical  
1930: Take off KMIB (Adulticide Spray Sortie))  
2136: Sunset

**21 Jul (Thursday):**

1730: Show time  
1800 Load Chemical  
1930: Take off KMIB (Adulticide Spray Sortie)  
2135: Sunset

**22 Jul (Friday):**

1130: Show time  
1330: Take off KMIB  
1730: Land KYNG

**4. Spray Parameters:**



- a. **Altitude:** 150' AGL for Adulticide swaths when no trees are present.
- b. **Swath Width.** 1000 feet for ULV or as determined by the CPMP
- c. **Flow Rate.** 4.36 gallons/minute ULV
- d. **Application Rate.** 0.60 oz/acre Trumpet
- e. **Ground Speed:** 200 Knots
- f. **Proposed spray area:** Approximately 6,000 acres

5. **Mission Commander:** Maj (b) (6)

6. **Aircraft Commander:** Maj (b) (6)

// Signed //

(b) (6) (b) (6) Maj, USAFR  
AERIAL SPRAY CHIEF

# AERIAL SPRAY OPERATIONAL SCHEDULE

## MINOT AFB, ND

### 18-22 Jul 05

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Minot AFB, North Dakota.

1. **910 AW PARTICIPANTS:** 910AW/CC Col (b) (6) , Public Affairs: Cpt (b) (6) (b) (6) MSG (b) (6)

**a. Aircrew:**

- (1) Mission Commander: Maj (b) (6)
- (2) Pilots: Maj Bart (b) (6) Maj (b) (6)
- (3) Navigators: Maj (b) (6) , Maj (b) (6)
- (3) Flight Engineers: MSG (b) (6) , MSG (b) (6)
- (4) Spray Operators: SMS (b) (6) , MSG (b) (6) , MSG (b) (6) , SSG (b) (6)

**b. Maintenance:**

- (1) Spray Maintenance: SMS (b) (6) MSG (b) (6) , TSG (b) (6) , TSG (b) (6)
- (2) Crew Chief(s): TSG (b) (6) , SSG (b) (6)
- (3) Avionics: MSG (b) (6)

**c. Entomologists/Ground Support:** Maj (b) (6) (b) (6) Capt (b) (6)

2. **SCHEDULE: (All Local Times)**

**18 Jul (Monday)**

0900: Show at KYNG  
1100: Depart KYNG  
1300: Land KMIB/Safety Briefing  
1500: Spray In Brief (CPMP, MC, AC)

**19 Jul (Tuesday):**

1730: Show time  
1800 Load Chemical  
1930: Take off KMIB (Adulticide Spray Sortie)  
2137: Sunset

**20 Jul (Wednesday):**

1730: Show time  
1800 Load Chemical  
1930: Take off KMIB (Adulticide Spray Sortie)  
2136: Sunset

**21 Jul (Thursday):**

1730: Show time  
1800 Load Chemical  
1930: Take off KMIB (Adulticide Spray Sortie)  
2135: Sunset

**22 Jul (Friday):**

1130: Show time  
1330: Take off KMIB  
1730: Land KYNG

3. **ITEMS TO TAKE**

- a. Mission Commander:** Cellular Phone, Mission Folder
- b. Entomologist:** Cell Phone, Wind Gauge, Compass, Pest Safety Binder,  
1 UHF Radio, 1 Measuring wheel, 2 Signal Mirrors,  
Project Notebook, Entomologist's Tool Kit
- c. Navigator:** Maps/Map Bag, Validation Map
- d. Spray Operator:** Safety Gear, Calibration Tables
- e. Spray Maintenance:** Deployment Kit, Support Equipment

**4. PPR: 1801CW**

**5. RADIO FREQUENCIES: Air To Ground Primary** UHF 392.2; VHF 123.45  
Minot AFB Tower 120.65 V, 236.6, 253.5; Minot International 118.2 V or Unicom 122.95

**6. CONFIGURATION: SP2G**

- a. System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. Nozzle Tips/Orientation:** ULV (adulicide): 8005 Tee Jet oriented straight down
- c. Number:** ULV: 6 8005s total (3 each side)
- e. Aircraft:** 89-9107
- f. Mission Identifier:** QZNRKA620199

**7. SPRAY PARAMETERS:**

- a. Adulicide**
  - (1) **Area to be treated:** 4,951 acres
  - (2) **Altitude:** 150' for Adulicide application
  - (3) **Swath Width.** 1000 feet for ULV or as determined by the PMP
  - (4) **Flow Rate.** 2.72 gallons/minute ULV
  - (5) **Application Rate.** 0.75 oz/acre Trumpet, ULV
  - (6) **Ground Speed:** 200 Knots (338 Feet/Second)
  - (7) **Flush:** With water, triple rinse, then air purge

**8. SPRAY MIXING AND LOADING:** The amount of Trumpet to load will be determined on site

**9. TRANSPORTATION:** 4 six packs, 2 Ops, 2 Mx

**10. LODGING:** International Inn Hotel, Com 701-852-3161, MC will pick up non A slips at the hotel, billeting is faxing them.  
Go South on Hwy 83 from the base. It will be on the right hand side about a ¼ mile south of the airport.

**11. CONTACTS:**

**a. Minot AFB ND: DSN prefix: 453- Commercial area code and prefix (701) 723---**

- (1) **Base Operations:** x2347, Airfield Manager: SSgt (b) (6) / MSgt (b) (6)
- (2) **Environmental Officer:** (b) (6)
- (3) **Base Civil Engineer:** Lt Col (b) (6)
- (4) **Pest Management:** (b) (6), MSgt(b) (6)
- (5) **Public Affairs:** Maj. D.J. (b) (6)
- (6) **Weather:** TSgt(b) (6) /Lt (b) (6)
- (7) **Billeting:** SSgt (b) (6), SSgt(b) (6)
- (8) **Fire Dept:** x2461
- (9) **Transient Alert:** x3153, closes at 1730L

**b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 Base Ops: Airfield Manager: (b) (6) (b) (6)
  - Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6) (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6); FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Ext 1652; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL: Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - PMP/Entomologist: (b) (6)
  - Mission Commander: (b) (6)
  - Spray Maintenance: (b) (6)

# **910 AW AERIAL SPRAY**

## **PMP'S POST-MISSION REPORT**

### **Minot AFB, ND (11-22 July 2005)**

#### **1. MISSION BASICS:**

- a. Installation Sprayed: Minot AFB, ND
- b. Mission Duration: 18-22 July 2005
- c. Purpose of Application: Control nuisance and vector mosquitoes (adult stage)
- d. Application Date: 19-20 July 2005
- e. Time of Application (Local): 1915-2136 (19 July); 1935-2135 (20 July)
- f. Acres Treated: 14,163
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) , Pest Controller, DSN (b) (6)
- h. Date Spray Map Last Approved: 18 June 2005
- i. Date of Waste Generation Letter: 18 June 2005
- j. Installation In-Briefing: (When/Where/Briefer/s): 18 June 2005; Minot AFB CE Building  
MAJ (b) (6) MAJ (b) (6) (b) (6) CAPT (b) (6) (b) (6) .

#### **2. OPERATIONAL:**

- a. Mission Commander: MAJ (b) (6)
- b. Certified PMP/s (Category 11): CAPT (b) (6) MAJ (b) (6) (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander: MAJ (b) (6) (b) (6)
  - (2) CoPilot: MAJ (b) (6)
  - (3) Navigator: MAJ (b) (6) , MAJ (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6) , MSG (b) (6)
  - (5) Spray Operators: SMS (b) (6) , MSG (b) (6) , MSG (b) (6) , SSG (b) (6) (b) (6)
- d. Safety Briefer: CAPT (b) (6)
- e. Spray Maintenance: MSG (b) (6) , SSG (b) (6) , TSG (b) (6)
- f. Spray Ground Monitors: CAPT (b) (6) MAJ (b) (6) (b) (6)
- g. Crew Chiefs: TSG (b) (6) , SSG (b) (6)
- h. Avionics: MSG (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 2/4.4 (flush sortie on 21 July)
  - (2) Ferry Sorties/Hours: 2/7.4

#### **3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-548127
- c. Gallons Pesticide Loaded: 90 (19 July)
- d. Pesticide Applied: 82 (19-20 July)
- e. Other Additives Used: none
- f. Gallons and Name of Flush Used: 150 gallons water
- g. Application Rate: 0.75 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 89-9107
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: TeeJet 8005
- e. Nozzle Orientation & Number Used: 6 straight down (July 19); 11 (July 20)
- f. Pressure (PSI): 14-18
- g. Flow Rate: 2.72 gallons per minute (19 July); 5.44 gallons per minute (20 July)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000 feet (Minot AFB), 2000 feet (City of Minot)
- b. Spray Off Set: 2000 feet
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 knots (338 feet/second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 300°/5 knots (July 19); 090°/3 knots (July 20)
  - (2) Altitude: 310°/8 knots (July 19); 090°/5 knots (July 20)
- b. Temperature: 76-82 °F
- c. Dew Point: 52-55 °F
- d. Cloud Cover: Clear
- e. Source: Ground/altitude observations

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Techniques and results:

The Air Force Base (Minot AFB) conducts adult mosquito trapping. Public health reported mosquito trap counts in excess of 3000/trap, indicating extremely high mosquito populations, probably due to the extremely wet season. At this time, trap counts were not submitted for the day following the application and results are pending. However, comments from local personnel indicate that the application was quite effective, and written comments were received from the citizens of the city of Minot to the same effect.

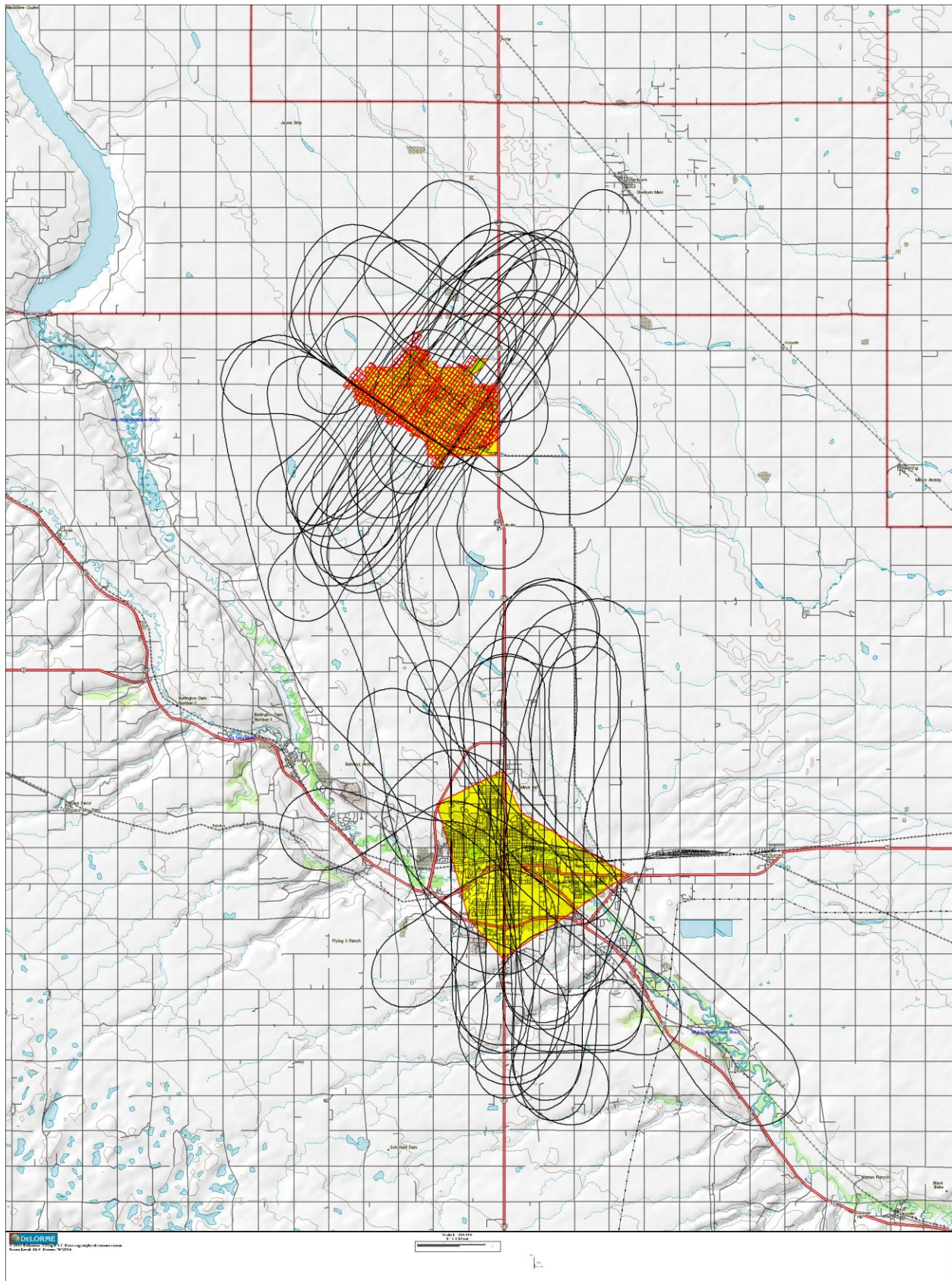
- 8. REMARKS:** This was the first aerial spray mission conducted at Minot AFB and the City of Minot, ND. Operationally, the mission went extremely well, due in large part to excellent weather conditions for aerial application of pesticides. The 910<sup>th</sup> received outstanding support from the Pest control shop as well as the Civil Engineering section. Both of these groups went out of their way to meet our needs. There was extensive involvement by 910<sup>th</sup> public affairs personnel in this mission. A static display of the C-130 for the public was conducted, with approximately 200 participants. In addition, several aircrew members (MAJ((b) (6)(S)) MAJ((b) (6)(b) (6)) availed themselves for interviews for the local television media, with overall positive effect. With the continued support of Minot AFB, we hope to make this mission a recurring one.

//Signed//

(b) (6) CAPT, USAFR  
DoD Certified Pest Management Professional



Attachment 1. Aircraft track and spray areas July 19-20 at Minot AFB and the City of Minot.



# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 18-22 JUN 07 DRAFT

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes around LFI and the surrounding communities.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: Maj (b) (6) (b) (6)
- (2) Pilots: LTC (b) (6) CPT (b) (6)
- (3) Navigator: LTC (b) (6), MAJ (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: Msg (b) (6) MSG (b) (6), MSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSG (b) (6), MSG (b) (6), TSG (b) (6), TSG (b) (6)
- (2) Crew Chiefs: TSG (b) (6), TSG (b) (6)
- (2) Avionics: TSG (b) (6)

##### c. Entomologists: CPT (b) (6) MAJ (b) (6) (In place)

##### d. Vehicles:

- Vehicle Dispatch: Will supply us with 2x9pax vans and 2 cars
- MC / Entomologist: One Car
- Ops: One van (9 pax), one car
- Mx: One Van (9 Pax)

##### e. Billeting Office: COM: (757) 764-4667 POC TSG Cox DSN 574-4667, EXT 2528; FAX 574-3038

##### Holiday Inn - 1815 W Mercury Blvd

- Non Available slips are in mission folder behind lodging info

#### 2. PPR: SPRAY01 0925TX01

#### 3. SCHEDULE: (All times local)

##### 18 JUN (Monday):

- 1000: Show Time
- 1200 Take Off YNG
- 1330 Land KLF w/ Safety Briefing immediately following
- 1430: Installation Briefing
- 1530 Calibrate system with Dibrom

##### 19 JUN (Tuesday):

- 1430 Show time
- 1500 Wx/Decision, load Dibrom
- 1650 Take off LFI
- 2027 Sunset

##### 20 JUN (Wednesday):

- 1430 Show time
- 1500 Wx/Decision, load Dibrom
- 1650 Take off LFI
- 2027 Sunset

##### 21 JUN (Thursday):

- 1430 Show time
- 1500 Wx/Decision, load Dibrom
- 1650 Take off LFI
- 2028 Sunset



## **22 JUN (Friday) Deploy to YNG**

1000: Show Time

1200: Take off KNBC

1400: Land KYNG

### **3. ITEMS TO TAKE:**

- a. **Entomologist:** Kestrel Weather Monitor, Compass, PCM Card, Pest Safety Binder, UHF Radios, Laptop Computer
- b. **Navigator:** Maps/Map Bag, Validation Map
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit/Supply Kit

### **4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Langley Tower:** DSN 574-5326
- b. **Langley Base Ops:** DSN 574-2504

### **5. PARKING PLAN:** Taxi Way Foxtrot or as directed by Transient Alert.

### **6. RADIO FREQUENCIES:**

- a. **Felker AAF Tower (Ft Eustis): 126.3, 269.25, 248.2, 241.0**
  - (1) Ops phone DSN878-3588
  - (2) Tower phone DSN 878-3530
  - (3) Flight Service 122.2
- b. **Newport News-Williamsburg Int: CTAF – 118.7 (Operating Hours 1000Z-0200Z)**
  - (1) Ground – **121.9** or 348.6 (phone 877-0221 ops)
  - (2) Tower – **118.7** (phone DSN 877-2862) voice mail 7-2962
  - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
- c. **Langley AFB: Tower DSN 574-7999**
  - (1) Tower - **125.0** or 253.5
  - (2) Ground - **121.7** or 275.8
  - (3) Clearance – **118.85** or 271.3
  - (4) Metro - **239.8**
- d. **Norfolk NAS (Chambers Fld): Tower –124.3, 379.15, Tower Supervisor DSN 262-3443**
- e. **Norfolk Approach: 124.9**
- f. **Spray Ground: Primary 392.2; Secondary: 308.6**

### **7. IN-BRIEFING:** 1430 hrs; CE Conference Room

### **8. SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS ULV; Fuselage booms
- b. **Nozzle Tips/Orientation:** ten 8005 nozzles -- straight down
- c. **Aircraft:** 89-9106
- d. **Mission Identifier:** QZNRKA373169

### **9. SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.6 Gallons/Minute
- f. **Acreage:** Potentially 125,000 acres on the peninsula but final acreage TBD
- g. **Swath Width:** 2000 foot

### **10. PESTICIDE LOADING:**

- a. **How Much Pesticide:** see entomologist
- b. **Where:** Taxi Way F Aero Club Ramp
- c. **When:** 1600 hrs each day pending weather and heat index.
- d. **Furnished by Installation:**
  - (1) Pesticide

- (2) Loading Equipment/Crew
- (3) Hazardous Waste Disposal
- (4) Two B-5 or B-1 Stands

**11. CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**

**a. LANGLEY AFB VA:**

Wing Commander: DSN 574-5321  
 Mission Support Group Commander: DSN 574-7995  
 Civil Engineer: DSN 574-2025  
 Deputy Chief/Civil Engineer: Ms (b) (6)  
 Environmental Coordinator: DSN 574-3987; FAX 3503  
 Base Operations: DSN 574-2504  
 Langley Control Tower: DSN 574-5326  
 Weather: Langley AFB, DSN 574-5907  
 Ft Eustis: DSN 297-5300/3343  
 Command Post: DSN 574-5411  
 Pest Control Foreman: (b) (6) DSN (b) (6) cell phone (b) (6)  
 Pest Control/Environmental NCOIC: MSgt (b) (6)  
 Public Affairs: DSN 574-2018/2010/2019  
 Fuels: DSN 574-4312/3623/4224  
 Motor Pool: 574-7514/5712 (2 vans and 1 staff vehicle were requested)  
 ACC PMP: (b) (6) (b) (6) DSN (b) (6), cell phone (b) (6)  
 Fire Department Comm: 757-764-2222

**b. FT EUSTIS VA: Environmental Coordinator: DSN 927- 4152/2375**

**c. Hampton Mosquito Control: 757 850-3305**

**d. York County Mosquito Control: (757)-890-3780**

**e. Poquoson: (b) (6)**

**f. City of Portsmouth Biologist: (757) 393-8666**

**g. Newport News Mosq. Control: (757) 269-2750**

**h. Camp Peary: (757) 229-2121 Ext 2263, (b) (6) or (b) (6)**

**i. Ft Monroe: ?**

**j. Newport News/Williamsburg Int.:**

- (1) Fixed Base Operator: Flight Int 877-6401
- (2) Flight Service: 877-0209
- (3) Tower: 877-2962
- (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

**k. Norfolk NAS VA: DSN 564-2442/7598 or COM (757)-444-2442/7598**

**l. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Capt (b) (6); FAX 1022
- (4) 910 OG/CC: Col (b) (6) (b) (6)
- (5) 910 OS/OSA: Airfield Manager, (b) (6)
- (6) 757 AS/DO: Maj (b) (6) (b) (6)
- (7) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (8) 757 AS/DOO: Ops Admin: SMS (b) (6) FAX 1657
- (9) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6), Capt (b) (6) (b) (6); FAX 1616
- (10) 910 LG/CC: Ext 1225
- (11) 910 LG/LGM: Ext 1352
- (12) Maintenance Control: Ext 1327
- (13) 910 LG/LGMS: Spray Maintenance, Ext 1132
- (14) 910 LG/LGL, Ext 1137
- (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) cell (b) (6)



# AFRC Setup Sheet Mission ID # QZNRKA373169

Original: Y	Rev #: 0	Rejected: N	Schdlr Name: (b) (6)	Wing: 910AW	Squad: 757AS	MDS: C130H
Msn Type: SPRAY			OG/CC (b) (6)	As of Date: 30/May/2007 11:33:49		ICAO: KLF1

PA Approval #:	Air Show #:	Allocation #:	NRA/Denton #:
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Acft Cmdr: (b) (6)	Last 4 SSN: (b) (6)	Call Sign: SPRAY08	Crew Type: BASIC
Close Watch: N	GDSS Input By:	Tail #: 909108	SRT:
Crew [MO/FO]: 0 / 0	Crew [ME/FE]: 0 / 0	JCS Pri: 5A1	GDSS Input Date:

Departure Date: 18/Jun/2007	Mission ID: QZNRKA373169	AMC Mission ID:
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LINE	ICAO	FLY TIME	ARRIVE	arr actual	AP	GRND TIME	DEPART	dep actual	DP	REMARKS	airdrop actual		airland actual	
1	KYNG	00:00				000:00	7169/1400		O	DEPART YNG	pax:	cargo:	pax:	cargo:
2	KLF1	01:15	7169/1515		S	005:35	7169/2050		S	SPRAY LFI	pax:	cargo:	pax:	cargo:
3	KLF1	02:00	7169/2250		S	022:00	7170/2050		S	SPRAY LFI	pax:	cargo:	pax:	cargo:
4	KLF1	02:00	7170/2250		S	022:00	7171/2050		S	SPRAY LFI	pax:	cargo:	pax:	cargo:
5	KLF1	02:00	7171/2250		S	022:00	7172/2050		S	SPRAY LFI	pax:	cargo:	pax:	cargo:
6	KLF1	02:00	7172/2250		S	017:10	7173/1600		S	RETURN YNG	pax:	cargo:	pax:	cargo:
7	KYNG	01:15	7173/1715		U	000:00				TERMINATE	pax:	cargo:	pax:	cargo:

MISSION JUSTIFICATION: AERIAL APPLICATION OF INSECTICIDE TO CONTROL THE POPULATION OF NUISANCE AND DISEASE CARRYING MOSQUITOES AROUND LFI AND THE SURROUNDING COMMUNITIES

CIVIL/ANG JUSTIFICATION:

AIRCRAFT SECURITY STATEMENT/FORCE PROTECTION: PROVIDED BY LANGLEY AFB MILITARY POLICE ON LANGLEY AFB, VA

INCENTIVE, ORIENTATION, MEDIA, AND FAMILIARIZATION FLIGHTS:

JEPPESEN'S APPROVED:

VERBATIM GDSS REMARK: AFRC COMMAND CENTER: 1-800-223-1784 EXT. 7-0680

Approved By:	TWG Approval: N	OG/CC Approval: N	NAF/CC Approval: N
Wing Notification Date:	AFRC/DO Approval: N	DOOM Approval: N	Sequence #: 276313



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926

30 May 07

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Langley AFB, VA.

1. Objective/Purpose/Benefits of the Spray Mission: Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes around LFI and the surrounding communities.

2. Capability: Aerial Spray C-130 Aircraft available 18-22 JUN 07

3. Concept of Operations:

**18 JUN (Monday):**

1000: Show Time  
1200 Take Off YNG  
1330 Land KLF w/ Safety Briefing immediately following  
1430: Installation Briefing  
1500 Wx/Decision, load Dibrom  
1650 Take off LFI  
2027 Sunset

**19 JUN (Tuesday):**

1430 Show time  
1500 Wx/Decision, load Dibrom  
1650 Take off LFI  
2027 Sunset

**20 JUN (Wednesday):**

1430 Show time  
1500 Wx/Decision, load Dibrom  
1650 Take off LFI  
2027 Sunset

**21 JUN (Thursday):**

1430 Show time  
1500 Wx/Decision, load Dibrom  
1650 Take off LFI  
2028 Sunset

**22 JUN (Friday) Deploy to YNG**

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG



4. Spray Parameters:

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom<sup>®</sup> Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.6 Gallons/Minute
- f. **Acreage:** Approximately 125,000 acres on the peninsula
- g. **Swath Width:** 2000 foot

5. Aircraft Commander: Capt (b) (6) (b) (6)

6. Any questions please contact me at DSN:(b) (6)

// SIGNED //

(b) (6) (b) (6) CAPTAIN, USAFR  
Assistant Chief of Aerial Spray



DEPARTMENT OF THE AIR FORCE

757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



12 Oct 04

MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497 -0198)

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Parris Island  
MCRD SC for Control of Sand fly and Mosquitoes

1. Objective/Purpose/Benefits of the Spray Mission. Spray Parris Island MCRD SC for control of biting midges and mosquitoes. Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCDR SC at the request of the Parris Island MCRD/MCAS Environmental Coordinator.

2. Capability: Spray Aircraft 89-9108 available on 18-22 Oct 04

3. Concept of Operations:

18 Oct (Monday):

PPR # 292-01

1000: Show Time  
1200: Take off KYNG  
1400: Land KNBC  
1415: Safety Briefing

19 OCT (Tuesday):

1330: Show Time  
1430: Weather decision /Load Chemical  
1630: Take off KNBC  
1845: Sunset

20 OCT (Wednesday): Weather Backup

1330: Show Time  
1430: Weather decision /Load Chemical  
1630: Take off KNBC  
1844: Sunset

21 OCT (Thursday):

1300: Show Time  
1400: Weather decision /Load Chemical  
1600: Take off KNBC  
1843: Sunset

22 OCT (Friday):

0800: Show Time  
1000: Take off KNBC  
1200: Land KYNG

4. Spray Parameters:

- a. Acreage: 7,500 Acres (Only areas determined by PMP)
  - b. Altitude: 150 Ft AGL
  - c. Pesticide: Dibrom® Concentrate (naled)
  - d. Deploy: 1.6 Hrs
  - e. Re-Deploy: 1.6 Hrs
  - f. Spray Time: 16 Minutes per Sortie (or as called by PMP)
5. Aircraft Commander: Capt (b) (6) (b) (6)
6. Mission Commander: Major (b) (6) (b) (6)
7. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator Mr. (b) (6) DSN (b) (6) .
8. HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616, ATTN: 757 AS/DOS.

// SIGNED //

(b) (6) (b) (6) Major, USAFR  
Chief of Aerial Spray



# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **PARRIS ISLAND MCRD, SC**

### **18-22 OCT 2004**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCRD, SC.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Mission Commander: CPT (b) (6)
- (2) Pilots: MAJ (b) (6) (b) (6) MAJ (b) (6) (b) (6)
- (3) Navigators: MAJ (b) (6)
  - (a) Flight Engineers: MSG (b) (6) , SSG (b) (6) (b) (6)
  - (a) Spray Operators: SMS (b) (6) , MSG (b) (6) , MSG (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: TSG (b) (6) , TSG (b) (6) , SSG (b) (6)
- (2) Crew Chiefs: TSG (b) (6) (b) (6) TSG (b) (6) (b) (6)
- (3) Avionics: SMS (b) (6)

##### **c. Pest Management Professionals/Entomologist:** CPT (b) (6) (b) (6)

Gov Vehicles provided by Parris Island MCRD: 2 Crew Vans & 1 Staff Car

#### **2. PLANNED SEQUENCE OF EVENTS:** (All times local)

##### **18 Oct (Monday):** PPR # 292-01

1000: Show Time  
1200: Take off KYNG  
1400: Land KNBC  
1415: Safety Briefing

##### **19 OCT (Tuesday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

1330: Show Time  
1430: Weather decision /Load Chemical  
1630: Take off KNBC  
1845: Sunset

##### **20 OCT (Wednesday):** Weather Backup

1330: Show Time  
1430: Weather decision /Load Chemical  
1630: Take off KNBC  
1844: Sunset

##### **21 OCT (Thursday):**

1300: Show Time  
1400: Weather decision /Load Chemical  
1600: Take off KNBC  
1843: Sunset

##### **22 OCT (Friday):**

0800: Show Time  
1000: Take off KNBC  
1200: Land KYNG

**3. ITEMS TO TAKE:**

**a. Entomologist/CPMP:**

- (1) Wind Gauge & Compass
- (2) UHF/VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder
- (4) DGPS Computers & Maps
- (5) Oil Sensitive Papers
- (6) Trackstar Equipment

**b. Navigators:**

- (1) Maps
- (2) Templates
- (3) Laptop Computer

**c. Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

**4. SPRAY CONFIGURATION: SP-2G**

- a. Mass:** 2-Module System (PI)
- b. Booms:** Stainless Steel ULV Fuselage Booms
- c. Nozzles:** Open for ULV spray; 6, 8008's oriented straight down
- d. Differential GPS:** Installed
- e. Aircraft:** 89-9108      **Mission Identifier:** QZNRKA077292

**5. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

**a. Pesticide:**

Dibrom® Concentrate (naled)  
Organophosphate Insecticide  
Signal Word: Danger  
Antidote: Atropine, 2-PAM  
Flushing Agent: HAN

- b. Application:** 1 Ounce Dibrom®/Acre
- c. Spray Altitude:** 150 Feet
- d. Swath Width:** 1,000 Feet
- e. Ground Speed:** 200 Knots (338 Feet/Second)
- f. Acreage:** 7,500 Acres
- g. Spray-On Time:** 16 Minutes
- h. Flow Rate:** 3.634 Gallons/Minute

**6. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Load 60 gallons of Dibrom® Concentrate per mission and 25 gallons HAN in flush tank.

**7. PPR REQUIREMENTS: 292-01**

**8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
Hilton Head Arpt: 123.0 UNI  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 392.2; Secondary 340.8**

**10. TRANSPORTATION:** Parris Island will provide two vans and staff car for transportation to and from quarters and for messing. In addition, Capt (b) (6) and Capt (b) (6) has rental car on their orders if needed.

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP & Parris Island MCRD Project Coordinator.

**12. CONTACTS:**

**a. Parris Island MCRD SC: (MCRD/MCAS Com: (843) 228-XXXX; Off Station Com: (843) 525-XXXX)**

- (1) Environmental Coordinator (Spray Coordinator):  
(b) (6) DSN (b) (6) ; (cellular) (b) (6) ; (b) (6) DSN (b) (6) ;  
FAX (843) 228-2616; (b) (6) (b) (6)
- (2) Assistant Chief of Staff I & L: Col (b) (6) DSN (b) (6)
- (3) Pest Control Foreman: DSN 335-3663
- (4) P.I. Motor Pool: (b) (6) DSN (b) (6)
- (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
- (6) Thrifty Car Rental: (843) 522-9996
- (7) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)
- (7) P.I. Rifle Range: DSN: 335-3183/3624

**b. Beaufort MCAS SC: (Commercial (843) 228-XXXX)**

- (1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6) ; (b) (6) DSN (b) (6)
- (2) Fuels: DSN: 335-7049/7448/7168
- (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
DSN: 335-7301/7302/7874/7853/7310. Base Ops is ext 7301/2/3  
(After duty hours: (b) (6) DSN:(b) (6)
- (4) Trans Alert/VAL: DSN: 335-7110
- (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)

**c. Beaufort County Mosquito Control: (b) (6)**

**d. Naval Occupational Health/Preventive Medicine: Lt Cdr (b) (6) DSN: (b) (6)**

**e. Quarters: JTR Seasonal Rate 1 Oct-14 Mar L/\$75, M/\$44**

**Ramada Inn (\$50/Night) JoAnne (843) 524-2144 (FAX 843-524-1704) Conf Gp Cd "AIR"**

Hampton Inn	(843) 986-0600 (FAX 0494)
Sleep Inn	(843) 522-3361 FAX (843) 522-9929
Parris Island Billeting	DSN: 335-2744 (FAX: 3815); (843) 228-3960
Comfort Inn	(843) 525-9366 (FAX 1529)
Best Western (Sea Island Motel)	(843) 524- 4121
Port Royal Days Inn	(843) 524-1551
Best Western Pt South (I-95)	(843) 726-8101

**f. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Capt (b) (6) FAX 1022
- (4) 910 OG/CC: LtC (b) (6) (b) (6)
- (4) 910 OG: Airfield Manager, (b) (6) (b) (6)
- (5) 757 AS/DO: LtC (b) (6)
- (6) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) ; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: CMS (b) (6)
- (11) Maintenance Control: Ext 1327
- (12) 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
- (13) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (14) Cellular Spray Phones:
- Mission Commander: (b) (6)
  - Entomologist: (b) (6) , (b) (6) cell (b) (6)

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT

### 1. MISSION BASICS:

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 18-22 October 2004
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 19 Oct 2004
- e. Time/s of Application (Local): 1630-1751 (19 Oct)
- f. Acres Treated: 7,040 (19 Oct)
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6)  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 19 Oct 2004
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 19 Oct; Assistant Chief of Staff,  
Installation and Logistics, Col (b) (6) Capt (b) (6) Capt (b) (6) (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: CAPT (b) (6) (b) (6)
- b. Certified PMP/s (Category 11): CAPT (b) (6) (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander/Co-pilot: MAJ (b) (6) MAJ (b) (6)
  - (2) Navigator: MAJ (b) (6)
  - (3) Flight Engineer(s): MSG (b) (6), SSG (b) (6)(b) (6)
  - (5) Spray Operators: MSG (b) (6) TSG (b) (6)
- d. Safety Briefer: CAPT (b) (6) (b) (6)
- e. Spray Maintenance: TSG (b) (6), TSG (b) (6), SSG (b) (6)
- f. Crew Chiefs: MSG (b) (6), TSG (b) (6)
- g. Avionics: SMS (b) (6)
- h. Flying Data:
  - (1) Spray Sorties/Hours: 1/1.4
  - (2) Ferry Sorties/Hours: 2/4.5

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 60 Gal Dibrom<sup>®</sup> (19 Oct)
- e. Gallons Pesticide Applied: 55 Gal (19 Oct)
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 20 gal/marvel oil
- h. Other Additives Used: None
- i. Application Rate: 1 Oz/Acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99108
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8008 Flat Fan
- e. Nozzle Orientation & Number Used: 6 oriented straight down
- f. Pressure: 20-31 (19 Oct) p.s.i.
- g. Flow Rate: 3.6 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 1000' (19 Oct)
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): (19 Oct)
  - (1) Ground: 210°/2-5 Knots
  - (2) Release Altitude: 220° /5-7 Knots
- b. Temperature (Degrees Fahrenheit): 78° (19 Oct)
- c. Relative Humidity: 73% (19 Oct)
- d. Cloud Cover: Partly Cloudy, with front approaching (19 Oct)
- e. Source: Ground observations at the MCRD Rifle Range/Aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Oil Sensitive Cards (OSC) wrapped on 1 meter dowels
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: Weekly collections of midges and mosquitoes with carbon-dioxide baited traps
  - (2) Results: The efficacy will be determined by the following weeks' collections from traps; results are expected to be favorable based on the coverage observed on the indicator cards.

**8. REMARKS:** A single application was made over the Parris Island MCRD on 19 Oct 04. Midge activity levels were moderate-low based on trap collections from the day prior. This mission was flown about 30 minutes earlier than desired in order to accommodate quiet hours at the Beaufort MCAS. As a result, only 95% of the area was covered. Ground monitors reported the target pest (*Culicoides* spp.) was active during the application. A second application was cancelled when weather conditions on 21 Oct did not meet required minimums for spray sorties (e.g.,  $\geq 1500$  ft ceiling). The relative efficacy will be determined by trap collections the following week. The next Parris Island mission will be scheduled for spring of 2005.

//signed//

(b) (6) (b) (6) **CAPT, USAFR**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL**

**9 August 2002**

**MEMORANDUM FOR HQ AFRC/DOOM** (FAX: 497-0198)

**FROM:** 757 AS/DOS ((b) (6)) 1531; FAX 346-1616)

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Langley AFB

1. **Purpose/Objectives/Benefits:** Control nuisance and vector mosquitoes in order to improve working conditions for members operating at Langley AFB VA.
2. **Capability:** Spray Aircraft Available 18-23 August 2002.
3. **Concept of Operations:**
  - a. **18 Aug (Sunday):**
    - 1200 Show at KYNG
    - 1400 Take-Off KYNG
    - 1530 Land KLFI
    - 1545 Safety Brief
  - b. **19 Aug (Monday):**
    - 0900 In-Briefing with Langley AFB, CE Conference Room
    - 1400 Show Time/Weather Decision
    - 1430 Load Chemical
    - 1700 Take-Off KLFI, Spray Areas Designated by PMP
    - 2030 Land KLFI
  - c. **20 Aug (Tuesday):**
    - 1100 Daily meeting for PMP/MC in the hotel lobby
    - 1400 Show Time/Weather Decision
    - 1430 Load Dibrom
    - 1700 Take-Off KLFI, Spray Areas Designated by PMP
    - 2030 Land KLFI
  - d. **21 Aug (Wednesday):**
    - 1100 Daily meeting for PMP/MC in the hotel lobby
    - 1400 Show Time/Weather Decision
    - 1430 Load Dibrom
    - 1700 Depart KLFI, Spray Areas Designated by PMP
    - 2030 Land KLFI

**e. 22 Aug (Thursday):**

1100 Daily meeting for PMP/MC in the hotel lobby  
1400 Show Time/Weather Decision  
1430 Load Dibrom  
1700 Depart KLFI, Spray Areas Designated by PMP  
2030 Land KLFI

**f. 23 Aug (Friday):**

0900 Report  
1100: Depart KLFI  
1230: Land KYNG

**4. Spray Parameters:**

- a. Acreage: approximately 86,000 Acres
- b. Altitude: 150 Ft AGL
- c. Ground Speed: 200 Knots
- d. Pesticide: Dibrom® Concentrate
- e. Application Rate: 0.5 Ounce per Acre
- f. Flow Rate: 1.8 Gal per Minute at Craney Island; 3.6 Gallons per Minute for Langley AFB designated areas
- g. Swath Width: 1000' swaths at Craney Island; 2000' to 2500' swaths at Langley AFB
- h. System: SP2G – MASS ULV; Modules 1 and 2
- i. Nozzle Tips/Number/Orientation: 8008/8 oriented straight down for 2000' swaths; 8008/4 oriented straight down for 1000' swaths oriented straight down
- j. Aircraft Tail Number: 99106
- k. Deploy/Re-Deploy Time: 3.2 hrs
- l. Spray Time: 3.50 hrs (or as called by PMP)

**5. Aircraft/Mission Commander: Major (b) (6) (b) (6)**

**6. Support required at Langley AFB has been requested via FAX message.**

**7. If you have any questions concerning this mission please contact DSN (b) (6)**

(b) (6) (b) (6) Major, USAFR  
Chief, Aerial Spray  
757 AS/DOS (DSN 346-1531)



# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 18-23 AUGUST 2002

**Purpose/Objectives/Benefits:** control nuisance and vector mosquitoes in order to improve working conditions and lower the incidence of arthropod borne illness for members operating at Langley AFB and surrounding communities.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: Maj (b) (6)
- (2) Pilots: Maj (b) (6) (b) (6), Capt (b) (6), Lt (b) (6) (b) (6)
- (3) Navigators: Maj (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: MSG (b) (6), MSG (b) (6), TSG (b) (6), MSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: SMS (b) (6), MSG (b) (6) TSG (b) (6), TSG (b) (6), SSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6) SRA (b) (6)
- (3) Avonics: TSG (b) (6)

##### c. Certified Pest Management Professionals: CPT (b) (6) (b) (6)

Gov Vehicles: 2 ea 9 pax van, 1 staff, 1 pick-up truck

#### 2. SCHEDULE: (All time Local)

##### 18 AUG (Sunday):

**PPR # 721CL01**

1200: Show at KYNG  
1400: Depart KYNG  
1530: Land KLF  
1545: Safety Briefing

##### 19 AUG (Monday):

0900: In-Briefing at CE Conference Room  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
1952: Sunset

##### 20 AUG (Tuesday):

1100: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
1951: Sunset

##### 21 AUG (Wednesday):

1100: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
1949: Sunset

**22 AUG (Thursday):**

1100: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
1948: Sunset

**23 AUG (Friday):**

0900: Report  
1100: Depart KLFI  
1230: Land KYNG

**3. ITEMS TO TAKE:**

- |                              |   |
|------------------------------|---|
| <b>a. Entomologist:</b>      | Cellular Phones, Kestrel Weather Monitor, Compass, Pest Safety Binder, Signal Mirrors, UHF Radio, Satloc Ground Tracker and Laptop Computer |
| <b>b. Navigator:</b>         | Maps/Map Bag, Validation Map, Laptop Computer   |
| <b>c. Spray Operator:</b>    | Safety Gear, Calibration Tables   |
| <b>d. Spray Maintenance:</b> | Deployment Kit  |

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. Langley Tower:** DSN 574-5326
- b. Langley Base Ops:** DSN 574-2504

**5. PARKING PLAN:** Langley Aero Club ramp or as directed.

**6. RADIO FREQUENCIES:**

- a. Felker AAF Tower (Ft Eustis): 126.3, 248.2, 241.0**
  - (1) Ops phone 878-3588
  - (2) Tower phone 878-3530
  - (3) Flight Service 122.2
- b. Newport News-Williamsburg Int: (Operating Hours 1000Z-0200Z)**
  - (1) Ground – **121.9 or 348.6** (phone 877-0221 ops)
  - (2) Tower – **124.9 or 280.1** (phone 877-2962)
  - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
  - (4) CTAF – **118.7**
- c. Langley AFB: Tower OIC MSG (b) (6) Lt (b) (6) 1st OSS SQ**
  - (1) Tower - **125.0 or 253.5** (phone 4-5326)
  - (2) Ground - **121.7 or 275.8**
  - (3) Clearance – **118.85 or 271.3**
  - (4) Metro - **239.8**
- d. Norfolk NAS (Chambers Fld): Tower - 124.3, 126.375, 340.2, 318.7**
- e. Spray Ground: Primary 392.2 / 308.6 Secondary**

7. **IN-BRIEFING:** Required; IAW the Schedule above.
8. **SPRAY CONFIGURATION:**
- System:** SP2G - MASS ULV; Modules 1 and 2
  - Nozzle Tips/Orientation:** 8 8008's for 2000' swathes and 4 8008's for 1000' swathes oriented straight down.
  - Aircraft:** 99106
9. **SPRAY PARAMETERS:**
- Altitude:** 150' AGL
  - Ground Speed:** 200 KNOTS
  - Pesticide:** Dibrom® Concentrate
  - Application Rate:** 0.5 oz/acre
  - Flow Rate:** 1.8 Gallons/Minute at Craney Island; 3.6 Gallons/Minute at Langley areas
  - Acreage:** Approximately 86,000 Acres
  - Swath Width:** 1,000 Feet at Craney Island; 2,000 Feet at Langley areas.
10. **PESTICIDE LOADING:**
- How Much Pesticide:** 334 Gallons for 86,000 acres sprayed.
  - Where:** Aero Club Ramp
  - When:** 1430 hrs each day.
  - Furnished by Installation:**
    - Pesticide
    - Loading Equipment/Crew
    - Hazardous Waste Disposal
    - Two B-5 or B-1 Stands
11. **SPRAY MONITORING OR TESTING:**  
The local mosquito control districts and Langley Pest Control will conduct mosquito surveillance using either trapping or biting count pre- and post-spray data to determine spray effectiveness. Oil sensitive cards will be used to confirm application within the spray blocks.
12. **CONTACTS:** LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX
- LANGLEY AFB VA:**
    - Wing Commander: Col (b) (6) , DSN (b) (6)
    - Base Commander: Col (b) (6) , DSN(b) (6)
    - Spray Coordinator: (b) (6)(b) (6) DSN(b) (6) ; Fax 3503
    - Civil Engineer: Lt Col (b) (6)
    - Deputy Operations Chief: Lt Col(b) (6)
    - Deputy Chief/Civil Engineer: (b) (6)
    - Base Operations: DSN 574-2504
    - Langley Control Tower: Lt (b) (6) DSN (b) (6)
    - Weather: Langley AFB, DSN 574-5907
    - Ft Eustis: DSN 297-5300/3343
    - Command Post: DSN 574-5411

Pest Control Foreman: (b) (6) , DSN (b) (6) or Home (b) (6)  
Pest Control/Environmental NCOIC: MSG (b) (6)  
Public Affairs: DSN 574-2018/2010/2019  
Fuels: DSN 574-4312/3623/4224  
Motor Pool: 574-7505/5712 (3 vans and 1 staff vehicle supplied by (b) (6) )  
ACC PMP: (b) (6)(b) (6) DSN (b) (6) , cell phone (b) (6)

**b. Billeting Office: COM: (757) 764-4667 EXT 2519 (ATTN: SSG (b) (6)**  
**DSN 574-4667, EXT 2519; FAX 574-3038**

**- Contract Quarters:**

**Quality Inn, 1809 W Mercury Blvd, Hampton VA (757) 838-5011**  
**Group #298785, \$79 per night**

**c. FT EUSTIS VA:**

Environmental Coordinator: (b) (6) and (b) (6) , DSN (b) (6) )  
Entomology Shop: DSN 927-3405/2585; Com. (757)-878-XXXX

**d. Craney Island: (b) (6)**

**e. Hampton Mosquito Control: (b) (6) ,(b) (6) home**  
Beeper (b) (6)

**f. York County Control: (b) (6) or (b) (6) ((b) (6)**

**g. Poquoson: (b) (6)**

**h. City of Portsmouth Biologist: (b) (6)**

**i. Newport News Mosq. Control: (b) (6)**

**j. Newport News/Williamsburg Int.:**

- (1) Fixed Base Operator: Flight Int 877-6401
- (2) Flight Service: 877-0209
- (3) Tower: 877-2962
- (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

**k. Norfolk NAS VA: DSN 564-2442/7598 or COM (757)-444-2442/7598**

**l. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Lt (b) (6) ; FAX 1022
- (4) 910 OG/CC: LtC (b) (6)
- (5) 910 OS/OSA: Airfield Manager, (b) (6) (b) (6)
- (6) 757 AS/DO: LtC (b) (6) (b) (6)
- (7) 910 OSF Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (8) 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
- (9) 757 AS/DOS: Aerial Spray Office, (b) (6) ; FAX 1616
- (10) 910 LG/CC: Ext 1225
- (11) 910 LG/LGM: CMS((b) (6))(b) (6)
- (12) Maintenance Control: Ext 1327
- (13) 910 LG/LGMS: Spray Maintenance, Ext 1132/1586
- (14) 910 LG/LGL: CMS (b) (6)
- (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6)
  - Spray Maintenance: (b) (6)

# 910 AW AERIAL SPRAY PMP'S POST-MISSION REPORT

## 1. MISSION BASICS:

- a. Installation Sprayed: Langley AFB
- b. Mission Duration: 18-23 August 2002
- c. Purpose of Application: Adult Mosquito Control
- d. Application Dates and times (Local): 20 Aug (1650-1900); 21 Aug (1655-1945);  
22 Aug (1750-2005)
- e. Acres Treated: 41,216 (20 Aug); 57,600 (21 Aug); 4,864 (22 Aug)
- f. Project Coordinator (Name/Title, Phone #): (b) (6), Pest Control Manager (b) (6)
- g. Date Spray Map Last Approved: 22 Jul 02
- h. Date of Waste Generation Letter: 4 April 1996
- i. Installation In-Briefing: (When/Where/Briefer/s): 19 Aug 02, CE Conference Room, Langley AFB;  
Maj (b) (6) Maj (b) (6) (b) (6)

## 2. OPERATIONAL:

- a. Mission Commander: Maj (b) (6) (b) (6)
- b. Certified PMP's (Category 11): LtCol (b) (6) (b) (6) Maj (b) (6) (b) (6) Capt (b) (6) (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander/Pilot: Maj (b) (6) (b) (6)
  - (2) Co-Pilot(s): Capt (b) (6), 1Lt (b) (6) (b) (6) (observing)
  - (3) Navigator: Maj (b) (6)
  - (4) Flight Engineer(s): SMS (b) (6)
  - (5) Spray Operators: MSG (b) (6), TSG (b) (6)
- d. Safety Briefer: Capt (b) (6) (b) (6)
- e. Spray Maintenance/Pesticide Loaders: MSG (b) (6), MSG (b) (6) (b) (6),  
TSG (b) (6), TSG (b) (6)
- f. Crew Chief(s): MSG (b) (6), SRA (b) (6)
- g. Avionics: TSG (b) (6)
- h. Flying Data:
  - (1) Spray Sorties/Hours: 3 Sorties; 7.3 Hours
  - (2) Ferry Sorties/Hours: 2 Ferries; 3.0 Hours

## 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom® Concentrate (97% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom® Concentrate (neat)
- d. Gallons Pesticide Loaded: 240 (20 Aug); 146 (21 Aug); 19 (22 Aug)
- e. Gallons Pesticide Applied: 161 (20 Aug); 225 (21 Aug); 19 (22 Aug)
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 75 gallons 20-22 (Aug) HAN
- h. Application Rate: 0.5 ounce/acre

4. APPLICATION EQUIPMENT:

- a. Aircraft Type (Tail Number): C-130 (99106 & 99105 22 & 23 Aug)
- b. Spray System (Modules Used) and System ID #: System SP2G - MASS ULV; Modules 1 & 2
- c. Spray System Configuration: ULV Wing Booms; Modules 1 and 2/MASS ULV
- d. Nozzle Type/Size: 8008 TeeJet (Flat Fan)
- e. Nozzle Orientation & Number Used: 8 8008's for 2000' swathes;  
4 8008's for 1000' swathes; oriented straight down
- f. Pressure: 45-55 psi
- g. Flow Rate: 3.6 gallons/minute; 1.8 gal/min on Craney Island

5. APPLICATION PARAMETERS:

- a. Swath Width Flown: 1000 ft at Craney Island & 2000 ft on Langley Peninsula
- b. Spray Off Set: 2000-4000' depending on wind speed
- c. Spray Release Altitude: 150 feet AGL
- d. Ground Speed: 200 knots

6. WEATHER OBSERVATIONS:

- a. Winds (Direction/Speed): 070° @ 7 mph (20-22 Aug)
- b. Temperature (Degrees Fahrenheit): 87-86° (20 Aug); 82-77° (21 Aug); 84-82° (Aug 22)
- c. Relative Humidity: 43-55% (Aug 20); 62-74% (21 Aug); 62-58% (22 Aug)
- d. Cloud Cover: cloudy to overcast
- e. Source: Ground observations/aircraft

7. SPRAY MONITORING (Pre- and Post-Treatment):

- a. Effectiveness:
  - (1) Technique/s Used: carbon dioxide-baited traps were used to monitor mosquito densities
  - (2) Results: 93% average reduction of mosquitoes collected by Langley AFB Pest Management.

8. REMARKS: The need for a spray application was determined by absolute numbers of mosquitoes in surveillance traps and by the threat of encephalitis transmission (West Nile Virus/Eastern Equine Encephalitis). Birds and mosquitoes have recently been found to be carrying these viruses in and around the Tidewater region. Three complete spray sorties were flown and a 0.5 oz/acre application rate was used. 1LT (b) (6) observed the flight as part of his spray co-pilot training. A 93% decrease in mosquito activity was observed at Langley. Other local mosquito abatement officials reported a significant decrease in the number of mosquitoes, as well.

(b) (6)

(b) (6) (b) (6) Capt, USAFR  
CERTIFIED PEST MANAGEMENT PROFESSIONAL



# AERIAL SPRAY OPERATIONAL SCHEDULE

## MACDILL AFB / AVON PARK, FL

### 18 - 23 JAN 2000

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander/Navigator: LTC (b) (6) (b) (6) (18-23)
- (2) Pilots: LTC (b) (6) (18-21), MAJ (b) (6) (b) (6) (18-23),  
CAPT (b) (6) (b) (6) (21-23)
- (3) Navigators: MAJ (b) (6) (18-21), Maj (b) (6) (21-23)
- (4) Flight Engineers: MSG (b) (6) (18-21),  
(21-23) MSG (b) (6) & TSG (b) (6)
- (5) Spray Operators: (18-23) CMS (b) (6), MSG (b) (6) \*\*  
TSG (b) (6) & (21-23) TSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: SMS (b) (6), SSG (b) (6), SSG (b) (6) \*
- (2) Crew Chiefs: SSG (b) (6) \*, TSG (b) (6)

##### c. Certified PMP/Entomologist: MAJ (b) (6) 1LT (b) (6) (b) (6) (21-23)

##### d. Ground Support: TSG (b) (6) & SSG (b) (6) \*

\*Mid Size Car/\$39 per day, \*\*Van/\$73 per day; Interprise Agency Confirmation # 485554 (Dave)

#### 2. SCHEDULE: (All time Local)

**18 JAN (Tuesday):** No range time.

**PPR # - 018RJ1**

0830: Show at KYNG

1200: Depart YNG

1500: Land MCF

**19 JAN (Wednesday): Range Time 0800-0900**

: Sunrise

Call Tower and Fire Dept at AGR

0730: Depart MCF

Entomologists at MacDill

0930: Land MCF

Determine Max. Flow Rate at Avon / Overwater

**20 JAN (Thursday): Range Time 0800-0900 and 1230-1300**

**Test Day – According to Parameter section**

: Sunrise

0730: Depart MCF

0930: Land MCF

1200: Depart MCF

1330: Land MCF

**21 JAN (Friday):**

1000: Depart MCF for Swap-out

1300: Land YNG

Entomologists at MacDill

1700: Depart YNG

2000: Land MCF

**22 JAN (Saturday): Range Time 0800-1230**

**Test Day – According to Parameter section**

1000: Depart MCF

1245: Land MCF



**23 JAN (Sunday):**

0900: Depart MCF

1200: Land YNG

**3. ITEMS TO TAKE:**

- a. **Navigator:** Maps with “No-Spray” Areas Marked and Laptop Computer
- b. **Certified Pest Management Professionals:**
  - (1) 1000 Kromecoat Cards
  - (2) 4 Boxes of Plastic Card Holders & Index Cards
  - (3) 2 Signal Mirrors
  - (4) 2 Spot Lights
  - (5) 2 Measuring Wheels
  - (6) Weather Monitoring Equipment
  - (7) UHF Radio with Antenna and VHF Radio
  - (8) 2 Laptop Computers with Mapping System
  - (9) Digital Camera
  - (10) SATLOC Trackstar Equipment

**4. AIR TO GROUND FREQUENCIES:**

- a. Spray: Primary 392.2; Secondary 340.8
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. Avon Park: TWR-292.2 (p), 126.15, 276.6 (s)
- e. MacDill: TWR-123.7; GND-121.65; ATIS-133.825; CMD POST-311.0; PTD-372.2

**5. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 09107

**6. SPRAY PARAMETERS:**

- a. Ground Speed. 170 Knots
- b. Altitude AGL. 100 Feet
- c. Swath Width. 35 Feet
- d. Application Rate. 86.75 gal/acre
- e. Total Spray-On Time/Load. 45 Seconds
- f. Spray-On Time/Pass. 8 Seconds
- g. Number of Passes/Load. 5

**7. LOADING AND MIXING:**

- a. Configuration
  - (1) Nozzles. 3 Inch Ultra-High Volume (UHV) Fuselage (1 each side)
  - (2) Nozzle Orientation. Straight Back
- b. Flow Rate. 1000 Gal/Min
- c. Spray Mix 20 Jan 2000: 950 Gal Water, 2 Gal StaPut in each tank (4 gal total), 320 Oz Hi-Light Dye, 70 Gal Water in sump.
- d. Spray Mix 22 Jan 2000: 950 Gal Water, 1 pint Control in each tank (1 quart total), 320 Oz Hi-Light Dye, 70 Gal Water in sump.

**8. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Unlimited.

## 9. CONTACTS:

- a. **Quarters:** MacDill Billeting: DSN: 968-2638/4259 DSN: 968-2660 FAX  
Billeting Group reservations: 968-2617/2594 (SSG Fuller)
- b. **Transportation:** Enterprise at MacDill:, (813)-840-2613 / 8310 FAX (Dave)
- c. **MacDill AFB:** DSN prefix 968 Comm. (813)-828-xxxx  
Base Operations – Ext 2350
- d. **Patrick AFB:** Rescue Squadron: DSN prefix 854  
LTC (b) (6) – CC - (b) (6)  
LTC (b) (6) – DO – (b) (6)  
LTC (b) (6) (b) (6) – Flight Ops – (b) (6)  
CPT (b) (6) (b) (6) – Tactics – (b) (6)  
Maintenance Ops Center - MOC – x2261, 2262, 2264 (Juan)
- e. **Avon Park, Fla.** Commercial prefix (941) 452-4XXX  
DSN 968-7+Avon Park Extension XXX)  
DSN Access from Avon Range phones: 4+94+DSN  
DSN 968-7176 or 7138 for Tower (Chris Spear)  
Local phone calls from Avon Range:  
Sebring 82 + number  
Avon Park 81 + number
  - (1) Installation Coordinator/Engineer: (b) (6) or (b) (6) ((b) (6) )  
FAX 189/218; (b) (6) ((b) (6) ) after hours: (b) (6)
  - (2) Pest Control: (b) (6)
  - (3) Forestry/Wildlife: (b) (6) (b) (6)
  - (4) Weather: MacDill Forecaster (DSN 968-2854)
  - (5) Quarters: Avon Park/Sebring JTR Lodgings=\$55/Meals=\$30  
**Holiday Inn \$64.95; 1-800-654-7235; (941) 385-4500, 452-6200;**  
**FAX: (941) 382-4792**  
Jacaronda (941) 453-2211; 19 East Main St, Avon Park, FL 33825  
\$ 27.29 / night (No rooms 19-23/01)  
Inn On The Lakes (941) 471-9400; \$59 +Tax (Non-avail 21/01)  
Econolodge (941) 453-2000; \$59.95 +Tax (Non-Avail 19-23/01)  
Oak Tree Inn (941) 453-3165  
Days Inn (941) 382-1148 800 329-7466
  - (6) Fuels: (b) (6)
  - (7) Airfield Manager: (b) (6)
  - (8) Asst Airfield Mgr: (b) (6) Fax (233)
  - (9) Range/Tower NCOIC: (b) (6)
  - (10) Range Manager: Mr (b) (6)
  - (11) Range Coordination Center: (Ext 138/242)
  - (12) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)  
Sgt (b) (6) or Sgt (b) (6) FAX DSN 968-4098
  - (13) Fire Department: ((b) (6) ) Mr (b) (6) (Chief)
  - (14) Prison Snack Bar: Hours 0800-1100; 1300-1600)
  - (15) Sebring AP:  
Mgr: Mr (b) (6) (b) (6) (fuel needs)  
(1) BEEPER: 1 (b) (6)  
a) ENTER YOUR PHONE#  
b) ENTER #  
Asst Mgr: (b) (6)
  - (16) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)
  - (17) Range VHF: 126.15
  - (18) MacDill AFB Ops Gp CC COL (b) (6)

f. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: B GEN (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: LT (b) (6) (b) (6)
- (4) 910 OG/CC: COL (b) (6)
- (5) 910 OG/OSA: Airfield Manager: (b) (6) / (b) (6); FAX 1371
- (6) 757 AS/DO: LTC (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6)
- (8) 757 AS/DOS: Aerial Spray Office, Ext 1111; FAX 1616
- (9) 910 LG/CC: LTC (b) (6)
- (10) 910 LG/LGM: CMS (b) (6) 3 (b) (6)
- (11) Maintenance Control: Ext 1348
- (12) 910 LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL: CMS (b) (6)
- (14) Omega/SATO Travel: Ext 1772; (800) 285 - 6342
- (15) Cellular Spray Phones: (b) (6)

**MEMORANDUM FOR 757 AS/DO**

**FROM:** 757 AS/DOS

**SUBJECT:** Avon Park Ultra-High Volume Test, 18-23 January 2000

1. **PURPOSE:** The purpose for this test was first to work with MacDill AFB CE personnel, Jason Kirkpatrick and Lewis Lantner, on a statement of need for aerial spray for mosquito control for the MacDill Air Force Base. And, second, to test ultra-high volume (UHV) dispersal for simulation of critical area decontamination at Avon Park Air Force Bombing Range.
2. **PARTICIPANTS:** All personnel participating in this mission are listed in Attachment 1, the Avon Park Operational Schedule for January 18-23, 2000.
3. **SCHEDULE OF EVENTS:** The daily schedule of events is included in Attachment 1.
4. **OVERVIEW OF MISSION.** The UHV test was conducted with our C-130 flying at 170 knots and 100 feet above ground level (AGL). The flow rate was 650 gallons per minute. The test material used was water with highlight dye collected on kromekote cards. Using these methods, it was determined that three passes over the same swath line gave 82% coverage, four passes gave 90% coverage, and five passes gave 92% coverage for critical area decontamination across a 35 ft swath width (Figure 1). This is much better than in previous tests that required ten passes to exceed 90% coverage with the aircraft flying at 200 knots and the flow rate at 407 gallons per minute. However it was determined that as the number of passes increases, the amount of additional coverage diminishes; 8% between pass three and four, and 2% between pass four and five. This is because the spray droplets overlap, dry between passes, and do not spread out enough.

**5. CONCLUSIONS/RECOMMENDATIONS:**

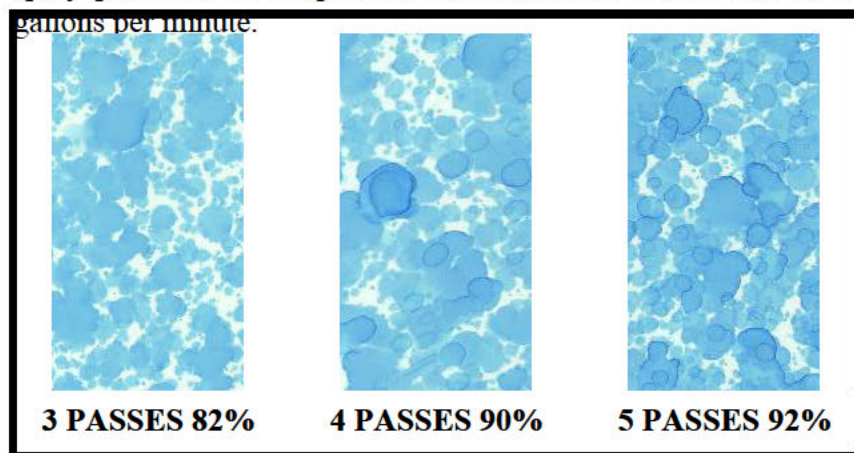
a. It was concluded that a statement of need for aerial spray for mosquito control needed to be prepared and approved before aerial mosquito control can resume at MacDill Air Force Base. The current environmental assessment adequately addresses mosquito species present, the pesticide to be used, and environmental concerns.

b. Two things need to be tried in the next test for critical area decontamination. First, increase the flow rate. Theoretically, we can increase flow rate by removing the three-inch restriction plate in the four-inch line to the fuselage booms, a minor modification. Second, add a spreading agent to our spray solution to cause the droplets to spread instead of beading.

(b) (6) Maj, AFRC  
Research Entomologist

Attachment  
Operational Schedule

**Figure 1.** Percent coverage with an increasing number of aerial spray passes at an airspeed of 170 knots and a flow rate of 650 gallons per minute.



# AERIAL SPRAY OPERATIONAL SCHEDULE

## SANTA BARBARA CA

### OIL SPIL EXERCISE

#### 18 – 24 MAR 2001

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: Maj (b) (6)
- (2) Pilots: Maj (b) (6) (b) (6) CAPT (b) (6) (b) (6)
- (3) Navigators: Lt Col (b) (6) (b) (6) Maj (b) (6) ,
- (4) Flight Engineers:
- (5) Spray Operators:

##### b. Maintenance:

- (1) Spray Maintenance: MSG (b) (6) , TSG (b) (6)  
TSG (b) (6) , SSG (b) (6)
- (2) Crew Chiefs: TSG (b) (6) , SRA (b) (6)
- (3) Avionics: TSG (b) (6)

##### c. Ground Support/Certified Pest Management Professionals: Lt Col (b) (6) Capt (b) (6)

##### d. Security Forces: `

##### e. Public Affairs:

#### 2. SCHEDULE: (All time Local)

##### 1 Apr (Monday):

##### PPR # 21

0800: Show at Home  
1000: Depart KYNG  
1600: Land KAST  
1630: Safety Briefing

##### 2 Apr (Tuesday): Meeting/Ground Training Day

0830: In-Flight Safety Briefings  
MX Will Configure A/C  
1600-1700: Show & Tell  
1730-1900: Social Hour

##### 3 Apr (Wednesday):

0830: Show Time  
1000-1130: 1<sup>st</sup> Sortie  
1200-1300: 2<sup>nd</sup> Sortie  
14400-1530: 3<sup>rd</sup> Sortie  
1600: De-Brief

##### 4 Apr (Thursday): Training/Clean Up Day

##### 5 Apr (Friday):

0800: Show Time  
1000: Depart  
1700: Land

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Cellular Phones, Wind Gauge, Compass, Pest Safety Binder, Signal Mirrors, UHF Radio, Satloc Ground Tracker
- b. **Navigator:** Maps/Map Bag, Validation Map, Laptop Computer
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit, Ground Loading Station, Spray Booms for Testing and Oil Spill Exercise

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Tower:**
- b. **Base Ops:** (503) 861-6201

**5. PARKING PLAN:** The Forest Service Ramp located at the west end of Santa Barbara Regional Airport

**6. RADIO FREQUENCIES Call Sign:**

- a. **US Coast Guard Air Station Ops Center Radio Frequency:**
- b. **US Coast Guard Air Station Ops Center Call Sign:**
- c. **Spray Ground: Primary / Secondary**

**7. IN-BRIEFING:** Required. See the Schedule, or as determined by Mission Commander.

**8. SPRAY CONFIGURATION:**

- a. **MASS – SP2G**
- b. **Aircraft Number:**
- c. **Mission Identifier: QZNRKA**

**9. SPRAY PARAMETERS:**

**FOR OVERWATER EXERCISE**

- a. **Nozzles –** Raindrop nozzles oriented straight back.
- b. **8 (16 total) on each fuselage boom; evenly spaced.**
- c. **Booms –** fuselage only
- d. **Airspeed –** 170 knots ground speed.
- e. **Altitude –** 100 feet above water.
- f. **Application Rate –** 7 Gal/Acre
- g. **Flow Rate –** 277 Gal/Min
- h. **Spray --** water only.
- i. **Number of passes –** 6 per sortie. Do not decrease flow rate in order to increase passes.
- j. **Pressure –** 40 psi

**3 Apr 02 – 3 SORTIES**

- a. **Nozzles –** Raindrop nozzles oriented straight back.
- b. **Booms –** Full fuselage and wing booms.
- c. **Number of Nozzles; 68; 14 on each wing boom and 20 on each fuselage boom; evenly spaced.**
- d. **Ball valve configuration to isolate booms; adapter for high volume spray.**
- e. **Airspeed –** 170 knots ground speed.
- f. **Altitude –** 150 feet above ground level



- g. Spray -- water with Control drift retardant, one bottle per tank.
- h. Number of passes – 3 per sortie; pass 1 head wind with both wing booms – switch to fuselage booms 2 seconds before second card line; pass 2 tail wind with both wing booms – switch to fuselage booms 8 seconds before second card line; pass 3 head wind with both wing booms and fuselage booms for both card lines.
- i. Pressure – 80 psi for first sortie; 40 psi for second sortie.
- j. Flow rate. – system flow rate for each pass at each pressure will be given to spray ground via radio.

## **10. LOADING: Water**

- a. **How Much:**
- b. **Where:**
- c. **When:**
- d. **Furnished by Installation:**
  - (1) Water
  - (2) Truck
  - (3) Two B-5 or B-1 Stands

## **11. TRANSPORTATION: Enterprise**

4 Mid-Size/\$50: Maj (b) (6) ,LM, SP, Crew Chief)  
 2 Vans/\$65: Lt Col (b) (6) & Spray MX

## **12. QUARTERS: JTR Lodging/\$114, Meals/\$36, Max/\$152**

- a. **Holiday Inn (805) 964-6241 or Best Western South Coast Inn (800) 350-3614**

## **13. CONTACTS:**

- a. **Santa Barbara CA:**
  - (1) Santa Barbara Regional Airport:
  - (2) City Police:
  - (3) County Sheriff:
  - (4) State Police:
  - (5) US Coast Guard:
    - (a) Ops C/C:
    - (b) Ops:
    - (c) Ops Chief:
    - (d) Maintenance:
- c. **Seattle WA:** USCG 915 Second Ave, Room 3506, Seattle WA 98174-1067  
 FAX (206) 220-7225
  - (1) (b) (6) , USCG D13 (DRAT) (b) (6)  
 e-mail (b) (6)
  - (2) (b) (6) , USCG D13 (DRAT 1) (b) (6)  
 e-mail (b) (6)
- d. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
 Toll Free 1 - 800 - 278 - 7046, + Ext
  - (1) 910 AW/CC: BGEN (b) (6) (b) (6)
  - (2) 910 AW Command Post: Ext 1315, FAX 1161
  - (3) 910 AW/PA: Lt (b) (6) (b) (6) (b) (6)
  - (4) 910 OG/CC: Ext 1257 / 1179, FAX 1172
  - (5) 910 OSF/OSA Airfield Manager: (b) (6)

- (6) 757 AS/DO Operations Officer: LTC (b) (6)
- (7) 757 AS/DOO Ops Admin: SMS (b) (6), FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Ext 1111, FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: CMS (b) (6)5(b) (6)
- (11) Maintenance Control: Ext 1348
- (12) 910 LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL: CMS (b) (6)
- (14) Omega/SATO Travel: Ext 1772; 1- (800) 285 - 6342
- (15) Cellular Phones:
  - Mission Commander (b) (6)
  - PMP Ground Support (b) (6)
  - Spray Maintenance (b) (6)

3 May 2001

**MEMORANDUM FOR 757 AS/DO**

FROM: 757 AS/DOS

**SUBJECT: High Volume Oil Spill Dispersal Test at Astoria Oregon, 18-24 March 2001**

1. Purpose: Conduct over water oil spill dispersal training with the U.S. Coast Guard and characterize spray aircraft for into wind oil spill dispersal. Six spray sorties totaling 6.9 hours and three ferry sorties totaling 13.5 hours were flown for the exercise.
2. Traveler(s): The participants are listed in Attachment 1, the Astoria OR Aerial Spray Operational Schedule for 18-24 March 2001.
3. Itinerary: The itinerary is listed in the Astoria Operational Schedule.
4. Discussion:
  - a. Previous spray characterization tests were done for crosswind spray application. Uneven patterns and gaps in spray deposition along with observations of spray falling from aircraft spray booms indicate that spray from different sections of our spray booms deposit in different areas downwind of the aircraft. Observations indicate that better spray patterns might be achieved by flying parallel to the wind.
  - b. Previous experience also indicates that spray volume from fuselage booms is higher than from wing booms. Fourteen nozzle sites were open for each wing boom, and 20 nozzle sites for each fuselage boom. Forty psi of pressure was used in all boom sections. High volume raindrop nozzles rated at 20 gallons per minute at 40 psi were used for the characterization. The test solution was water with 20 ounces of Control<sup>®</sup> per 500 gallons of water as a drift retardant.
  - c. Characterization trials were flown parallel with the wind on 21 and 22 March 2001. Those on 21 March were flown at 150 feet above ground level and those on 22 March were flown at 175 feet above ground level.
5. Conclusions and Recommendations:
  - a. The discussion of results is given in averages for the trials at each altitude flown. Because of the limited sample size and highly variable data, the data were not analyzed statistically and the differences between averages may not be statistically significant.

b. Spray application with the wind produced more even spray distribution than previous crosswind applications although there were still gaps between spray deposition from the wing booms and the fuselage boom (Figure 1). This gap was an average of 31 feet on either side of deposition from the fuselage boom when flown at 150 feet above ground level (AGL), and an average of 15 feet on either side of deposition from the fuselage boom when flown at 175 feet AGL. Either flying at 200 feet AGL or increasing the length of the fuselage booms would probably close the 15-foot gap. If gaps in spray deposition were closed, the effective swath width would be 280 feet at 150 feet AGL and 300 feet at 175 feet AGL. The effective swath from the fuselage boom was 93 feet at 150 feet AGL and 125 feet at 175 feet AGL. The distance between the effective swaths from the two wing booms was 155 feet at both altitudes.

c. The average flow rate from the wing booms was 290 gallons per minute (GPM). At 170 knots ground speed and 150 feet AGL, this calculates to 6 gallons per acre (GPA) for the effective swath. At 175 feet AGL it calculates to 5 GPA. However, the recovery rate on the ground averaged only 0.7 GPA or 12% on March 21 when flown at 150 feet AGL and 0.79 GPA or 14% on March 22 when flown at 175 feet AGL. In contrast, the average flow rate from the fuselage booms was 460 GPM. This calculates to 12.5 GPA for the effective swath from the fuselage booms when flown at 170 knots ground speed and 150 feet AGL and 9.3 GPA for the effective swath from the fuselage booms when flown at 175 feet AGL. The recovery on the ground was 89% when flown at 150 feet AGL on March 21 and 65% when flown at 175 feet on March 22. The spray from the wing booms is probably broken into smaller droplets than that from the fuselage booms, and all of it is entrapped in the wingtip vortices causing it to remain aloft longer before it deposits than spray from the fuselage booms. Therefore, evaporation, wind drift, and possibly drying from the engine exhaust combine to cause much less recovery from the wing booms. Photographs from the spray operation seem to show exhaust from the outboard engines also being entrapped in the wingtip vortices (Figure 2). Spraying volatile compounds, such as the aqueous solution used in this test, from the wing booms is ineffective unless addition of anti-evaporative compounds can be used to prevent loss.

d. The average volume median diameter was 275 microns for spray from the fuselage booms, and 200 microns or 27% less for spray from the wing booms. However, since much of the spray from the wing booms was not recovered, the true volume median diameter from the wings was probably much less.

e. We need to repeat the testing several times to get enough data for statistical analysis. We also need to test at a third altitude of 200 feet and with longer fuselage booms. Anti-evaporative compounds need to be tested in an effort to increase recovery of spray from the wing booms.

(b) (6) Lt Col, USAFR  
Research Entomologist

Attachments

1. Operational Schedule
2. Figure 1 & Figure 2



Figure 1. High volume characterization of a C-130 aircraft configured for aerial spray showing gaps in spray between wing booms and fuselage booms.

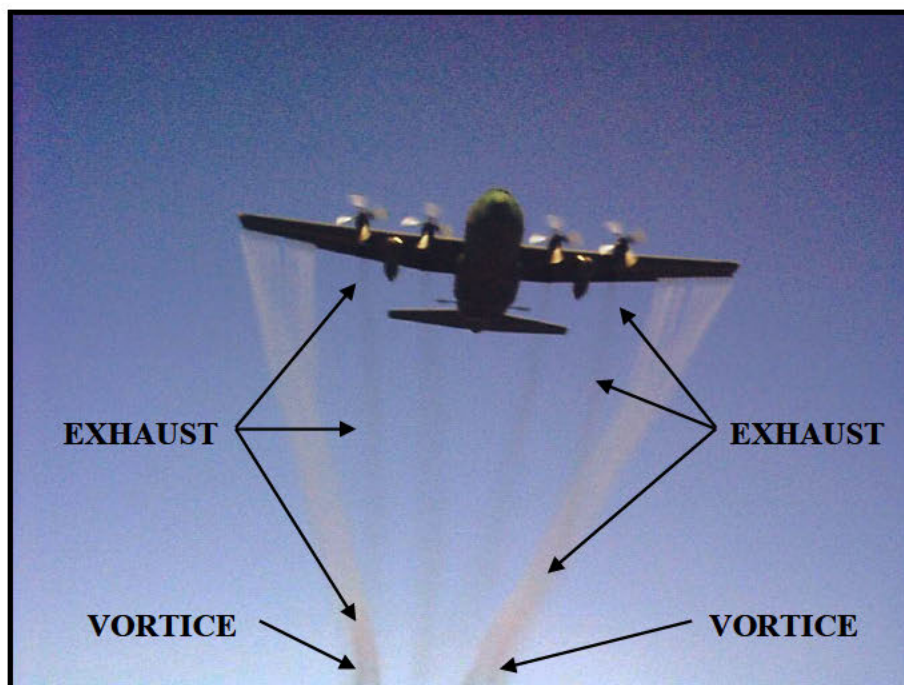


Figure 2. C-130 aerial spray trial that shows the entrainment of both spray and exhaust from the outboard engines in the wingtip vortices.

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 19 - 25 MAY 2002

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander/Pilot: Capt (b) (6) (b) (6)
- (2) Co-Pilots: (19-22) Maj (b) (6) , 22-25) Capt (b) (6) (b) (6)
- (3) Navigators: (19-22) Lt Col (b) (6) , (22-25) Maj (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: MSgt (b) (6) , MSgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: MSgt (b) (6) TSgt (b) (6) , SSgt (b) (6)
- (2) Crew Chiefs: SSgt (b) (6) , (b) (6)
- (3) Avonics: TSgt (b) (6) , TSgt (b) (6)

##### c. Certified Pest Management Professionals: Lt (b) (6) (b) (6) Maj (b) (6) (b) (6) & Capt (b) (6) (b) (6)

#### 2. SCHEDULE: (All time Local)

##### 19 MAY (Sunday):

**PPR # 0519MEO1**

1200: Show at KYNG  
1400: Depart KYNG  
1600: Land KLFI  
1630: Safety Briefing

##### 20 MAY (Monday):

0554: Sunrise  
1300: In-Briefing at Henry's (Pest Control Shop)  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Depart KLFI  
2011: Sunset  
2030: Land KLFI

##### 21 MAY (Tuesday):

0553: Sunrise  
1300: In-Briefing at Henry's (Pest Control Shop)  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Depart KLFI  
2011: Sunset  
2030: Land KLFI



**22 MAY (Wednesday):**

0552: Sunrise  
1300: In-Briefing at Henry's (Pest Control Shop)  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Depart KLFI  
2012: Sunset  
2030: Land KLFI

**23 MAY (Thursday):**

0552: Sunrise  
1300: In-Briefing at Henry's (Pest Control Shop)  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Depart KLFI  
2013: Sunset  
2030: Land KLFI

**24 MAY (Friday):**

0551: Sunrise  
1300: In-Briefing at Henry's (Pest Control Shop)  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Depart KLFI  
2014: Sunset  
2030: Land KLFI

**25 MAY (Saturday):**

0800: Report  
1000: Depart KLFI  
1130: Land KYNG

**3. ITEMS TO TAKE:**

- |                              |  |
|------------------------------|--|
| <b>a. Entomologist:</b>      | Cellular Phones, Wind Gauge, Compass,<br>Pest Safety Binder, Signal Mirrors, UHF Radio,<br>Satloc Ground Tracker |
| <b>b. Navigator:</b>         | Maps/Map Bag, Validation Map, Laptop Computer  |
| <b>c. Spray Operator:</b>    | Safety Gear, Calibration Tables  |
| <b>d. Spray Maintenance:</b> | Deployment Kit   |

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- |                             |   |
|-----------------------------|---|
| <b>a. Langley Tower:</b>    | DSN 574-5326 (Contacted 18 May 99, 0700L, DSN 574-2508) |
| <b>b. Langley Base Ops:</b> | DSN 574-2504 (Contacted 10 May 99, 1000L)               |

**5. PARKING PLAN:** Langley Aero Club ramp or as directed.

**6. RADIO FREQUENCIES:**

- a. **Felker AAF Tower (Ft Eustis): 126.3, 248.2, 241.0**
  - (1) Ops phone 878-3588
  - (2) Tower phone 878-3530
  - (3) Flight Service 122.2
- b. **Newport News-Williamsburg Int:** (Operating Hours 1000Z-0200Z)
  - (1) Ground - **121.9 or 348.6** (phone 877-0221 ops)
  - (2) Tower – **124.9 or 280.1** (phone 877-2962)
  - (4) FSS – 122.1R, 122.2, 122.65, OR 124.9
  - (5) CTAF – **118.7**
- c. **Langley AFB:** Tower OIC MSG (b) (6) Lt (b) (6) 1st OSS SQ (23665)
  - (1) Tower - **125.0 or 253.5** (phone 4-5326)
  - (2) Ground - **121.7 or 275.8**
  - (3) Clearance – **118.85 or 271.3**
  - (4) Metro - **239.8**
- d. **Norfolk NAS (Chambers Fld):** Tower - **124.3, 126.375, 340.2, 318.7**
- e. **Spray Ground: Primary 392.2 / 308.6 Secondary**

**7. IN-BRIEFING:** Required; IAW the Schedule above.

**8. SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS ULV; Modules 1 and 2
- b. **Nozzle Tips/Orientation:** 7 8008's for 2500' swathes and 5 8008's for 1000' swathes (unless temperatures are above 85 degrees then use 8010's – 6 for 2500' swathes and 2 or 3 for 1000' swathes), Oriented down.
- c. **Aircraft:** 99106

**9. SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL depending upon weather conditions
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 0.5 Ounce/Acre
- e. **Flow Rate:** 1.8 Gallons/Minute at Craney Island; 4.5 Gallons/Minute at Langley areas
- f. **Acreage:** Approximately 82,000 Acres
- g. **Swath Width:** 1,000 Feet at Craney Island; 2,500 Feet at Langley areas.

**10. PESTICIDE LOADING:**

- a. **How Much Pesticide:** 320 Gallons for 82,000 acres sprayed.
- b. **Where:** Aero Club Ramp
- c. **When:** 1430 Hours each day.
- d. **Furnished by Installation:**
  - (1) Pesticide
  - (2) Loading Equipment/Crew
  - (3) Hazardous Waste Disposal
  - (3) Two B-5 or B-1 Stands

## 11. SPRAY MONITORING OR TESTING:

The local mosquito control districts will put out cages of live mosquitoes and oil-sensitive cards to monitor the control. Also, light trap data and biting count data will be collected pre- and post-spray by the base and the mosquito control districts to determine spray effectiveness.

## 12. CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX

### a. LANGLEY AFB VA:

Wing Commander: BG (b) (6) DSN (b) (6)  
Base Commander: Col (b) (6) DSN (b) (6)  
Spray Coordinator: (b) (6)(b) (6) DSN (b) (6) Fax 3503  
Civil Engineer: LtC (b) (6)  
Deputy Chief/Civil Engineer: (b) (6)  
Base Operations: DSN 574-2504  
Langley Control Tower: Lt (b) (6) DSN (b) (6)  
Weather: Langley AFB, DSN 574-5907  
Ft Eustis: DSN 297-5300/3343  
Command Post: Maj (b) (6) , DSN (b) (6)  
Pest Control Foreman: (b) (6) , DSN (b) (6) or Home (b) (6)  
Public Affairs: Capt (b) (6) , DSN (b) (6)  
Fuels: Capt (b) (6) , DSN (b) (6)  
Motor Pool: (b) (6) (3 vans and 1 staff vehicle supplied by (b) (6) )  
ACC PMP: (b) (6)(b) (6) DSN (b) (6)

### b. Billeting Office: DSN 574-4667/2606 (Gp Reservations) FAX 574-3038

QUALITY INN, \$79, GP #298652, (757) 838-5011 1819 W Mercury Blvd  
Candlewood Hotel: (757-766-8976), 401 Butler Farm Rd  
Comfort Inn: 827-5052  
Days Inn: 826-4810  
Fairfield Inn: 827-7400  
Hampton Inn: 838-8484  
Holiday Inn Coliseum: 838-0200  
King James: 245-2801  
La Quinta: (757)-827-8680  
Red Roof Inn: 838-1870  
Ramada Inn: 757-599-4460  
Sheraton: 838-5011

### c. FT EUSTIS VA:

Environmental Coordinator: (b) (6) , DSN (b) (6)  
Entomology Shop: (b) (6) , DSN (b) (6) ; Com. (757)-878-XXXX

### d. Craney Island: MR. (b) (6) , (b) (6) FAX (757)484-3844 Home (b) (6)

### e. Hampton Mosquito Control: (b) (6) , (b) (6) Beeper (b) (6)

### f. York County Control: (b) (6)

### g. Newport News/Williamsburg Int.:

- (1) Fixed Base Operator: Flight Int 877-6401
- (2) Flight Service: 877-0209
- (3) Tower: 877-2962
- (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

### h. Norfolk NAS VA: DSN 564-2442/7598 or COM (757)-444-2442/7598

**i. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315
- (3) 910 AW/PA: Lt (b) (6) ; FAX 1161
- (4) 910 OG/CC: Lt Col (b) (6)
- (5) 910 OS/OSA: Airfield Manager, (b) (6) (b) (6)
- (6) 757 AS/DO: LtC (b) (6)
- (7) 910 OSF Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (8) 757 AS/DOO: Ops Admin: SMS (b) (6)
- (9) 757 AS/DOS: Aerial Spray Office, Ext 1111; FAX 1616
- (10) 910 LG/CC: Lt Col (b) (6)
- (11) 910 LG/LGM: CMS (b) (6) (b) (6)
- (12) Maintenance Control: Ext 1327
- (13) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
- (14) 910 LG/LGL: CMS (b) (6)
- (15) Omega/SATO Travel: Ext 1772; 1- (800) 285 – 6342
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - PMP/Ground Support: (b) (6)
  - Spray MX: (b) (6)



**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON-AERIAL SPRAY**  
**3976 King Graves Rd Unit 26**  
**Vienna OH 44473-5926**

8 OCT 2008

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Parris Island MCRD

1. Objective/Purpose/Benefits of the Spray Mission. Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training Parris Island MCRD SC.

2. Capability: Spray Aircraft available on 20-23 OCT 08

3. Concept of Operations:

**20 OCT (Monday): Deploy to KNBC**

1300: Show Time  
1500: Takeoff KYNG  
1700: Land KNBC  
1730: Safety Briefing

**21 OCT (Tuesday): Adulticide Spray**

TBD Installation Brief  
1415: Showtime/WX Decision  
1445: Load Chemical  
1645: Take off KNBC (Start Spray 1.5 hrs prior to Sunset)  
1843: Sunset

**22 OCT (Wednesday): WX Backup/Clean System**

1415: Showtime/WX Decision  
1445: Load Chemical  
1645: Takeoff KNBC  
1842: Sunset

**23 OCT (Thursday): Redeploy to KYNG**

1000: Show Time  
1200: Takeoff KNBC  
1400: Land KYNG

4. Spray Parameters:
  - a. Acreage: 7,500 Acres (Only areas determined by PMP)
  - b. Altitude: 150 Ft AGL
  - c. Pesticide: Dibrom® Concentrate;
  - d. Deploy: 2.0 Hrs
  - e. Re-Deploy: 2.0 Hrs
  - f. Spray Time: 16 Minutes
5. Aircraft Commander: Capt (b) (6) (b) (6)
6. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator Mr. (b) (6) DSN (b) (6)

// SIGNED //  
(b) (6) (b) (6) CAPT, USAFR  
757 Aerial Spray

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **PARRIS ISLAND MCRD, SC**

### **20-23 OCT 08**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Pilots: Maj (b) (6) Capt (b) (6)
- (2) Navigators: Maj (b) (6)
- (3) Flight Engineers: MSgt (b) (6)
- (4) Spray Operators: MSgt (b) (6) MSgt (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: MSgt (b) (6) TSgt (b) (6) TSgt (b) (6)
- (2) Crew Chiefs: TSgt (b) (6) SRA (b) (6)
- (3) Avionics: SSgt (b) (6)

##### **c. Pest Management Professionals/Entomologist:** Maj (b) (6)

#### **2. PPR REQUIREMENTS: 294-01**

**3. PLANNED SEQUENCE OF EVENTS:** (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

##### **20 OCT (Monday): Deploy to KNBC**

1300: Show Time  
1500: Takeoff KYNG  
1700: Land KNBC  
1730: Safety Briefing

##### **21 OCT (Tuesday): Adulticide Spray**

TBD Installation Brief  
1415: Showtime/WX Decision  
1445: Load Chemical  
1645: Takeoff KNBC  
1843: Sunset

##### **22 OCT (Wednesday): WX Backup/Clean System**

1415: Showtime/WX Decision  
1445: Load Chemical  
1645: Takeoff KNBC  
1842: Sunset

##### **23 OCT (Thursday): Redeploy to KYNG**

1000: Show Time  
1200: Takeoff KNBC  
1400: Land KLFJ

#### **4. ITEMS TO TAKE/NOTES:**

##### **a. Mission Commander:**

- (1) Mission Commander Cell Phone

##### **b. Entomologist/CPMP:**

- (1) Wind Gauge & Compass
- (2) VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder

##### **c. Navigators:**



- (1) Maps
- (2) Templates

**d. Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** 9 open for 8005's oriented straight down
- d. **Differential GPS:** Installed
- e. **Aircraft:** 89-9105
- f. **Mission Identifier:** QZNRKA119294

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 0.75 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 2.72 gallons/Minute

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading two drums of Dibrom

**8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
Hilton Head Arpt: 118.8 CTAF  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 123.4**

**10. TRANSPORTATION:** Parris Island will provide two vans and staff car for transportation to and from quarters and for messing.

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP &Parris Island MCRD Project Coordinator.

**12. CONTACTS:**

- a. **Parris Island MCRD SC: (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX)**
  - (1) Environmental Coordinator (Spray Coordinator):  
(b) (6) DSN 335-3102, Cel (b) (6) ; (b) (6) (b) (6) , Cel 8(b) (6)  
FAX (843) 228-2616; (b) (6) 335-2630
  - (2) Assistant Chief of Staff I & L: Col (b) (6) , DSN(b) (6)
  - (3) Pest Control Foreman: DSN 335-3663
  - (4) P.I. Motor Pool: (b) (6) DSN (b) (6)
  - (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
  - (6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)
  - (7) P.I. Rifle Range: DSN: 335-3183/3624
- b. **Beaufort MCAS SC:** (Commercial (843) 228-XXXX)
  - (1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6) ; (b) (6) DSN (b) (6)

- c. **Beaufort County Mosquito Control:** (b) (6)
- d. **Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) DSN: (b) (6)
- e. **Quarters:**

<b>Holiday Inn and Suites</b>	<b>\$94/night</b>
<b>(843)379-3100 2225 Boundary St Beaufort, SC 29902</b>	
Ramada Inn	(843) 524-2144/Fax 1704
Hampton Inn	(843) 986-0600 (FAX 0494)
Sleep Inn	(843) 522-3361 FAX (843) 522-9929
Parris Island Billeting	DSN: 335-2744 (FAX: 3815); (843) 228-3960
Comfort Inn	(843) 525-9366 (FAX 1529)
Best Western (Sea Island Motel)	(843) 524- 4121
Port Royal Days Inn	(843) 524-1551
Best Western Pt South (I-95)	(843) 726-8101

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- 3

**910 AW AERIAL SPRAY  
PMP'S POST-MISSION REPORT-PARRIS ISLAND MCRD  
20-23 Oct 2008**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island MCRD, South Carolina
- b. Mission Duration: 20-23 Oct 2008
- c. Purpose of Application: Control of biting midges and adult mosquitoes
- d. Application Dates: 22 Oct 2008
- e. Times of Application (Local): 1655-1840
- f. Acres Treated: 5078
- g. Project Coordinator (Name, Phone #): (b) (6) (b) (6)
- h. Date Spray Map Last Approved: 06 May 2008
- i. Date of Waste Generation Letter: 10 April 2000.
- j. Installation In-Briefing: 21 Oct, 2008 Maj (b) (6) Maj (b) (6) Maj (b) (6) Capt (b) (6)
- k. Mission identifier: QZNRKA119294

**2. OPERATIONAL:**

- a. Mission Commander: MAJ (b) (6)
- b. Certified PMPs (Category 11): MAJ (b) (6)
- c. Aircrew:
  - (1) Pilots: MAJ (b) (6) (b) (6) CPT (b) (6)
  - (2) Navigator(s): MAJ (b) (6)
  - (3) Flight Engineer: MSGT (b) (6)
  - (4) Spray Operators: MSG (b) (6) MSG (b) (6)
- d. Safety Briefer: MAJ (b) (6)
- e. Spray Maintenance: TSG (b) (6), TSG (b) (6), TSG (b) (6)
- f. Crew Chiefs: SMS (b) (6), SRA (b) (6)
  - (1) Spray Sorties/Hours: 1/1.7 (22 Oct)
  - (2) Ferry Sorties/Hours: 2/2.4 (20 Oct), 2.0 (23 Oct)
  - (3) Training Sorties/Hours: 1/1.4 (21 Oct)

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 60
- e. Gallons Pesticide Applied: 30.0
- f. Gallons and Name Diluent Used: None
- g. Gallons and Name of Flush Used: 10 Gallons Marvel Oil
- h. Other Additives Used: n/a
- i. Application Rate: 0.76 oz/acre

#### **4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 90-9105
- b. Spray System (Modules Used) and System ID #: SP2G MASS ULV
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: TeeJet 8005 flat fan nozzles
- e. Nozzle Orientation & Number Used: 7 straight down; 4 left, 3 right
- f. Pressure (PSI): 40
- g. Flow Rate: approx 2.7 gpm

#### **5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000 feet
- b. Spray Off Set: 2000 feet
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 Knots (338 Feet/Second)

#### **6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed in knots): Ground; 040@7.0 knots average; airplane 060 @12 knots average.
- b. Temperature (°F): Ground; 72° at 1700
- c. Humidity: Ground; 62% at 1700
- d. Cloud Cover: 0%
- e. Source: Ground observations/at altitude during spray

#### **7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Normal projected off-sets based on MASS system characterization.
- b. Effectiveness:
  - (1) Technique/s Used: light traps were used to monitor biting midge and mosquito densities pre- and post-treatment. In addition, ground monitors confirmed midge and mosquito activity at time of spraying
  - (2) Results: Post mission trap counts are pending. Monitors report good control.

#### **8. REMARKS**

This final spray of the 2008 season was quite successful from an operational standpoint. There were no equipment failures of any kind. The only issue experienced was inappropriate weather conditions on the 21<sup>st</sup> of October. The weather actually proved to be “too nice” to spray (there was absolutely no wind whatsoever). The acreage covered was less than originally planned because of high tide conditions. No spray was applied over open water. Once again, thanks to (b) (6) of Parris Island MRD for excellent coordination of the spray activities.

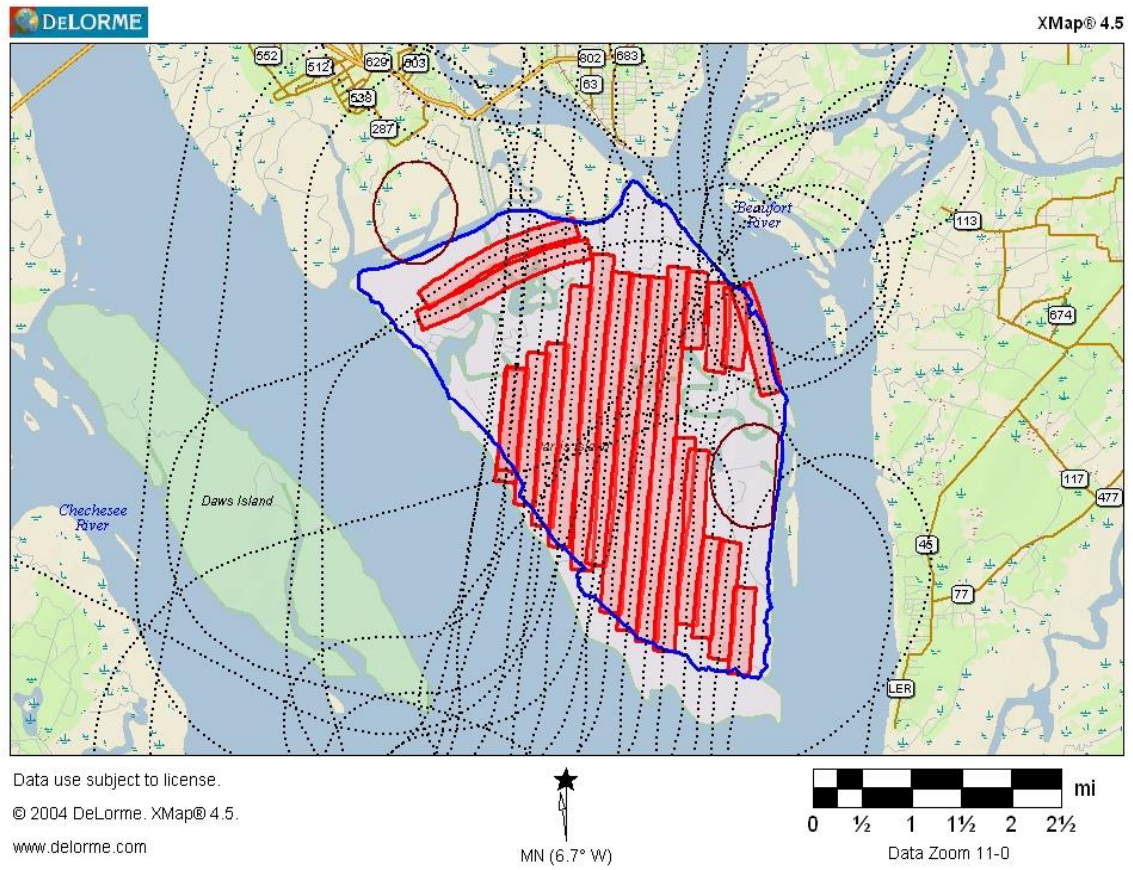
//signed//

(b) (6)

**MAJ USAFR**

**Certified Pest Management Professional**

**Figure 1. Map representation of area sprayed 22 Oct, 2008. Shaded blocks represent application areas. Brown circles represent exclusionary areas (eagle nests).**



15 October 2002

MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497 -0198)

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Parris Island  
MCRD SC for Control of Sandfly and Mosquitoes

1. Objective/Purpose/Benefits of the Spray Mission. Spray Parris Island MCRD SC for control of biting midges and mosquitoes. Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCDR SC at the request of the Parris Island MCRD/MCAS Environmental Coordinator.
2. Capability: Spray Aircraft Available on 20 – 24 October 2002
3. Concept of Operations:
  - a. 20 Oct 02 (Sunday):
    - 0900 Take Off KYNG
    - 1100 Land KNBC
    - 1330 Safety Briefing
  - b. 21 Oct 02 (Monday):
    - 1400 Load Chemical
    - 1630 Take Off KNBC
    - 1900 Land KNBC
  - c. 22 Oct 02 (Tuesday):
    - 1400 Load Chemical
    - 1645 Take Off KNBC
    - 1900 Land KNBC
  - d. 23 Oct 02 (Wednesday):
    - 1400 Load Chemical
    - 1645 Take Off KNBC
    - 1900 Land KNBC
  - e. 24 Oct 02 (Thursday):
    - 1200 Take Off KNBC
    - 1400 Land KYNG

4. Spray Parameters:

- a. Acreage: 7,500 Acres (Only areas determined by PMP)
- b. Altitude: 150 Ft AGL
- c. Pesticide: Dibrom® Concentrate (naled)
- d. Deploy: 1.6 Hrs
- e. Re-Deploy: 1.6 Hrs
- f. Spray Time: 16 Minutes per Sortie (or as called by PMP)

5. Aircraft Commander/Mission Commander: Major (b) (6) (b) (6)

6. Mission Commander: Major (b) (6) (b) (6)

7. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator Mr. (b) (6) DSN(b) (6) .

8. HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616, ATTN: 757 AS/DOS.

(b) (6) (b) (6) Major, USAFR  
Chief, Aerial Spray (757 AS/DOS)



# AERIAL SPRAY OPERATIONAL SCHEDULE

## PARRIS ISLAND MCRD, SC

### 20-26 OCT 2000

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: LTC (b) (6) (b) (6)
- (2) Pilots:
  - (a) 20-22 Oct: Capt (b) (6) (b) (6) Capt (b) (6) (b) (6)
  - (b) 22—26 Oct: LTC (b) (6) , Maj (b) (6) (3)
- (3) Navigators: Capt (b) (6) (6)
- (3) Flight Engineers:
  - (a) 20-22 Oct: MSG (b) (6)
  - (b) 22-26 Oct: MSG (b) (6)
- (5) Spray Operators:
  - (a) 20-22 Oct: MSG (b) (6)
  - (b) 20-26 Oct: MSG (b) (6) , MSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: SMS (b) (6) , TSG (b) (6) TSG (b) (6) , TSG (b) (6)
- (2) Crew Chiefs: TSG (b) (6) , SSG (b) (6)
- (3) Avionics: TSG (b) (6) (20-26 Oct)

##### c. Pest Management Professionals/Entomologist: Lt (b) (6) (b) (6) (20-26 Oct)

##### d. Ground Safety: MSG (b) (6) (22-26 Oct)

#### 2. PLANNED SEQUENCE OF EVENTS: (All times local)

##### 20 OCT (Friday):

- 1500: Take off KYNG
- 1700: Land KNBC **PPR # 294-01 (Gunnery Sergeant Gilson)**
- 1730: Safety Briefing

##### 21 OCT (Saturday):

- 1400: Load Chemical
- 1630: Take off KNBC
- 1843: Sunset (see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc)
- 1900: Land KNBC

##### 22 OCT (Sunday):

- 1100: Take off KNBC
- 1300: Land KYNG
- 1330: Take off KYNG
- 1530: Land KNBC

##### 23 OCT (Monday):

- 1400: Load Chemical
- 1630: Take off KNBC
- 1841: Sunset
- 1900: Land KNBC

##### 24 OCT (Tuesday):

- 1400: Load Chemical
- 1630: Take off KNBC
- 1840: Sunset
- 1900: Land KNBC

##### 25 OCT (Wednesday):

- 1400: Load Chemical
- 1630: Take off KNBC
- 1839: Sunset
- 1900: Land KNBC

##### 26 OCT (Thursday):

- 1200: Take off KNBC
- 1400: Land KYNG

### 3. ITEMS TO TAKE:

a. **Entomologist/CPMP:**

- (1) Wind Gauge, Compass, and Signal Mirrors
- (2) UHF/VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder
- (4) Calibration Tables
- (5) DGPS Computers & Maps
- (6) Oil Sensitive Papers
- (7) Trackstar Equipment

b. **Navigators:**

- (1) Maps
- (2) Templates
- (3) Laptop Computer

c. **Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (4) Loading and Clean-up Equipment and Supplies

### 4. SPRAY CONFIGURATION: SP-2G

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Wing Booms
- c. **Nozzles:** Open for ULV spray; 6, 8008's oriented straight down
- e. **Differential GPS:** Installed
- f. **Aircraft:** 09105

### 5. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)

a. **Pesticide:**

Dibrom® Concentrate (naled)  
Organophosphate Insecticide  
Signal Word: Danger  
Antidote: Atropine, 2-PAM  
Flushing Agent: HAN

b. **Application:** 1 Ounce Dibrom®/Acre

c. **Spray Altitude:** 150 Feet

d. **Swath Width:** 1,000 Feet

e. **Ground Speed:** 200 Knots (338 Feet/Second)

f. **Acreage:** 7,500 Acres

g. **Spray-On Time:** 16 Minutes

h. **Flow Rate:** 3.634 Gallons/Minute

### 6. AMOUNT OF SPRAY MATERIAL AVAILABLE:

Load 60 gallons of Dibrom® Concentrate per mission and 25 gallons HAN in flush tank.

### 7. PPR REQUIREMENTS:

Required:

### 8. PARKING PLAN:

Beaufort MCAS Ramp

### 9. AIR TO GROUND RADIO FREQUENCIES:

Air Traffic Control: 119.05 Beaufort MCAS TWR  
Hilton Head Arpt: 123.0 UNI  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 392.2; Secondary 340.8**

### 10. TRANSPORTATION:

Parris Island will provide two vans for transportation to and from quarters and for messing. There will be an additional vehicle for the CPMP/Entomologists.

### 11. SPRAY MONITORING OR TESTING:

Ground monitoring by CPMP and Parris Island MCRD Project Coordinator.

## 12. CONTACTS :

- a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX
- (1) Environmental Coordinator (Spray Coordinator):  
(b) (6) DSN (b) (6) ; (cellular) (b) (6) ; (b) (6) DSN (b) (6)  
FAX (843) 228-2616; (b) (6) (b) (6) ; (b) (6)
  - (2) Assistant Chief of Staff I & L: Col (b) (6) & Cpt (b) (6) , DSN (b) (6)
  - (3) Pest Control Foreman: (b) (6) DSN (b) (6)
  - (4) P.I. Motor Pool: (b) (6) DSN (b) (6)
  - (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
  - (5) Thrifty Car Rental: (843) 525-9996
  - (6) P.I. Rifle Range: DSN: 335-3183/3624
- b. **Beaufort MCAS SC:** (Commercial (843) 228-XXXX)
- (1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6) ; (b) (6) DSN (b) (6)
  - (2) Fuels: DSN: 335-7049/7448/7168
  - (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
DSN: (b) (6) . Base Ops is ext 7301/2/3  
(After duty hours: (b) (6) DSN: (b) (6) )
  - (4) Trans Alert/VAL: DSN: 335-7110
  - (5) Weather: DSN 335-7001/7926/7/9 (www:beaufort.usmc.mil)
- c. **Beaufort County Mosquito Control:** (b) (6)
- d. **Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) DSN: (b) (6)
- e. **Quarters:**
- Hampton Inn**, \$68, 2342 Boundary St, Beaufort SC, (843) 986-0600 (FAX 0494)
- Parris Island Billeting (Linda Davidson) DSN: 335-2744 (FAX: 3815); (843) 228-3960
- Comfort Inn (843) 525-9366 (FAX 1529)(Gigi)
- Best Western (Sea Island Motel) (843) 524- 4121
- Port Royal Days Inn (843) 524-1551
- Beaufort Ramada 1-800-272-6232
- Holiday Inn (843) 524-2144 (\$60.23)
- Best Western Pt South (I-95) 1-843-726-8101
- f. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX
- Toll Free 1 - 800 - 278 - 7046,+2 + Ext
- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
  - (2) 910 AW Command Post: Ext 1315; FAX 1161
  - (3) 910 AW/PA: Ext 1236; FAX 1022
  - (4) 910 OG/CC: Col (b) (6)
  - (5) 910 OSF/OSA: Airfield Manager: (b) (6) (b) (6)  
- Assistant Air Field Manager (ACAM), (b) (6)
  - (6) 757 AS/DO: LtC (b) (6)
  - (7) 757 AS/DOO: Ops Admin: SMSgt (b) (6)
  - (8) 757 AS/DOS: Aerial Spray Office, (b) (6) FAX 1616
  - (9) 910 LG/CC: Ext 1225
  - (10) 910 LG/LGM: CMSgt (b) (6) (b) (6)
  - (11) Maintenance Control: Ext 1348910
  - (12) LG/LGMS: Spray Maintenance: Ext 1132/1586
  - (13) 910 LG/LGL: CMSgt (b) (6)
  - (14) Omega/SATO Travel: Ext 1772; (800) 285 – 6342
  - (15) Cellular Spray Phones: (330) 720 - 0695/0697
  - (16) Supervisor of Flight Desk: 1069, FAX: 1371

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT

### 1. MISSION BASICS:

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 20-26 Oct 2000
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 21, 24, & 25 October 2000
- e. Time/s of Application (Local): 1640-1905 (21 Oct), 1645-1845 (24 Oct), & 1650-1820 (25 Oct)
- f. Acres Treated: 7,680 (21 Oct), 4,480 (24 Oct), & 3,200 (25 Oct)
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6)  
Environmental/Spray Coordinator, DSN(b) (6)
- h. Date Spray Map Last Approved: 10 April 2000
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 23 Oct; Assistant Chief of Staff, Installation and Logistics, COL (b) (6) LTC (b) (6) & 1LT (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: LTC (b) (6) (b) (6)
- b. Certified PMP/s (Category 11): 1LT (b) (6) (b) (6)
- c. Aircrew:
  - (1) Pilots: LTC (b) (6) (22-26 Oct), MAJ (b) (6) & CAPT (b) (6) (b) (6) (20-22 Oct)
  - (2) Navigator: CAPT (b) (6) (b) (6)
  - (3) Flight Engineer(s): MSG (b) (6) (20-22 Oct) & (b) (6) (22-26 Oct)
  - (5) Spray Operators: MSG (b) (6), MSG (b) (6), MSG (b) (6) (20-22 Oct), SSG (b) (6) (22-26 Oct)
- d. Safety Briefer: 1LT (b) (6)
- e. Spray Maintenance: SMS (b) (6), SSG (b) (6), TSG (b) (6), & TSG (b) (6) (b) (6)
- f. Spray Ground Monitor: LTC (b) (6) (b) (6) & 1LT (b) (6) (b) (6)
- g. Crew Chiefs: TSG (b) (6) & SSG (b) (6)
- h. Flying Data:
  - (1) Spray Sorties/Hours: 3 Sorties/5.9 Hrs
  - (2) Ferry Sorties/Hours: 4 Ferry(s)/8.8 Hrs

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate
- d. Gallons Pesticide Loaded: 60 gal Dibrom<sup>®</sup> (21 & 24 Oct); 120 gallons total
- e. Gallons Pesticide Applied: 60 gal (21 Oct), 35 gal (24 Oct), & 25 gal (25 Oct)
- f. Gallons and Name Diluent Used: None
- g. Gallons and Name of Flush Used: VM & P NAPHTHA
- h. Other Additives Used: None
- i. Application Rate: 1 Oz/Acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8008 Flat Fan
- e. Nozzle Orientation & Number Used: 6 oriented straight down
- f. Pressure: 40 (21 Oct), 40 (24 Oct), & 40 (25 Oct) PSI
- g. Flow Rate: 3.6 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off Set: 1000' (21 Oct); 2000' (24-25 Oct)
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 130°/5 (21 Oct), 060°/8 (24 Oct), & 040°/7 (25 Oct)
  - (1) Ground: 2-7 Knots
  - (2) Release Altitude: 5-9 Knots
- b. Temperature (Degrees Fahrenheit): 75° (21 Oct), 75° (24 Oct), & 77° (25 Oct)
- c. Dew Point: 52-58 °F (21, 24-25 Oct)
- d. Cloud Cover: Clear (21, 24-25 Oct)
- e. Source: Ground observations at the MCRD Marina and NOAA.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Oil Sensitive Cards (OSC) wrapped on 1 meter dowels; vertical drift was monitored on the flagpole at the Marina (50 ft. vertical distribution).
  - (2) Results: Good coverage throughout spray area; swath determination was based on historical conditions.
- b. Effectiveness:
  - (1) Technique/s Used: Landing counts taken at 4 localities during a one-hour period that corresponded with the previous day's spray sortie on 22 Oct. Light trap collection from 1 or two days.
  - (1) Results: Average landing counts on 22 Oct were 8/min. Light trap collections for the two days following the first spray showed moderate levels of midge activity. The efficacy of the second and third sorties was determined by the MCRD's Environmental Coordinator. A significant reduction in midge numbers were observed initially, however, by the fifth day after the last spray midge numbers were reported to have increased to the original proportions (see remarks).

**8. REMARKS:** The primary pest species of biting midge at Parris Island MCRD is *Culicoides hollensis*. This midge displays a distinct seasonal emergence pattern in April and in October. We have tried to time our applications to correspond with the peak emergence period for this pest in order to disrupt its breeding cycle. Unfortunately, timing of the peak activity is still poorly understood and a rapid resurgence of midge numbers by five days following this application is presumed to be a result of continued emergence. To better understand this problem, we are implementing an increased monitoring program to better assess the optimum spray period. We plan to continue a high level of monitoring for the next few years and apply our results to the present IPM program. This was the final spray mission for the season. The next spray mission to Parris Island MCRD is scheduled April 8 – 13, 2001.

**13 September 2002**

**MEMORANDUM FOR HQ AFRC/DOOM** (FAX: 497-0198)

**FROM:** 757 AS/DOS ((b) (6)) 1531; FAX 346-1616)

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Hill AFB/UTTR UT  
Annual Weed Control Spray Mission on the Utah Test and Training Range (UTTR)

**1. Capability:** Two aircraft will be required for this mission. Two Spray aircraft are available 20-28 Sep 02 in support of the Hill AFB mission request. Support aircraft available 20 & 27/28 Sep 02 in support of the mission.

**2. Concept of Operations:**

**a. 20 Sep (Friday):**

0730 Show at KYNG  
0810 Pre-Mission Briefing  
0830 LM's released to assist in loading aircraft  
1005 Spray aircraft 99105 Take-Off KYNG  
1010 Spray aircraft 99108 Take-Off KYNG  
1015 Support Aircraft 19142 Take-Off KYNG  
1330 Land HIF  
1345 Safety Brief

**b. 21 Sep (Saturday) – 26 Sep (Friday):**

**(Range times 0700-1400, 21-26 Sep 02)**

0430 Ground Support Team departs for UTTR  
0515 FEs, Crew Chiefs, & Spray MX report and Mix/Load Chemical  
0700-1400 Target areas sprayed as designated by PMP

**c. 26 Sep (Thur):** Weather back-up.

**d. 27 Sep (Fri):** Flush and clean up day.

Schedule of daily events will be determined by the Mission Commander as required.  
Support Aircraft returns to Hill AFB

**f. 28 Sep (Sat):**

0800 Aircrew report for duty  
0830 All personnel report  
1000-1015 Spray Aircrafts & Support aircraft take-off  
1700-1800 Mission completed all personnel and aircraft arrive at KYNG

3. **Spray Parameters and Sequencing:** (See attached Operational Schedule)
4. **Mission Commander:** Lt Col (b) (6) (b) (6)
5. Support required at Hill AFB and the UTTR has been completed.

(b) (6) (b) (6) Major, USAFR  
Aerial Spray Operations Scheduler  
757 AS/DOS

Attachment  
Spray Operations Schedule



## **SPRAY OPERATIONAL SCHEDULE UTAH TEST AND TRAINING RANGE MISSION 20-28 SEPTEMBER 2002**

20 Sep – Spray #1 A/C #105, Report Time: 0800 Take Off: 1000 Arrive: 1600  
- Spray #2 A/C #107, Report Time: 0800 Take Off: 1005 Arrive: 1605  
- Support A/C #143, Report Time: 0800 Take Off: 1010 Arrive: 1610

**PURPOSE/BENEFIT/OBJECTIVE:** To control vegetation on selected targets at the Utah Test and Training Range (UTTR)

### **1. AIRCREW:**

- a. **Pilots:** LtC (b) (6) (b) (6) Maj (b) (6) (b) (6) Cpt (b) (6) (b) (6) Lt (b) (6) (b) (6)
- b. **Navigators:** LtC (b) (6) (b) (6) Maj (b) (6) (b) (6) Maj (b) (6) (b) (6)  
Maj (b) (6) (b) (6), (20-24 Sep) LtC (b) (6) (b) (6)
- c. **Flight Engineers:** MSG (b) (6) (b) (6), SMS (b) (6) (b) (6)
- d. **Spray Operators:** MSG (b) (6) (b) (6), MSG (b) (6) (b) (6), MSG (b) (6) (b) (6),  
MSG (b) (6) (b) (6), TSG (b) (6) (b) (6)

### **2. AIRCRAFT/MASS SUPPORT:**

- a. **Mission Commander.** LtC (b) (6) (b) (6)
- b. **Admin Support.** MSG (b) (6) (b) (6)
- c. **Spray Maintenance:** SMS (b) (6) (b) (6), TSG (b) (6) (b) (6), TSG (b) (6) (b) (6)  
SSG (b) (6) (b) (6), SSG (b) (6) (b) (6),  
- 15-21 SEP 02: TSG (b) (6) (b) (6), SSG (b) (6) (b) (6)

### **3. UTTR GROUND PARTY:**

- a. **Entomologist/Pest Management Professional(s):** LtC (b) (6) (b) (6) Maj (b) (6) (b) (6)
- b. **Recorder.** (b) (6) (b) (6)
- c. **DuPont Participants.** (b) (6) (b) (6)

### **4. MAINTENANCE:**

- a. **910 MA Com Nav & MX Supervisor.** SMS (b) (6) (b) (6)
- b. **R & R & Asst MX Superv.** SMS (b) (6) (b) (6)
- c. **AGE:** TSG (b) (6) (b) (6)
- d. **Propulsion.** TSG (b) (6) (b) (6)
- e. **Hydraulic.** MSG (b) (6) (b) (6)
- f. **Environmental/Electric.** TSG (b) (6) (b) (6)
- g. **Engine Shop.** TSG (b) (6) (b) (6)
- h. **Crew Chief:** MSG (b) (6) (b) (6), MSG (b) (6) (b) (6),  
TSG (b) (6) (b) (6), SRA (b) (6) (b) (6)

- 5. **910 Com Flt Personnel:** SMS (b) (6) (b) (6), TSG (b) (6) (b) (6), TSG (b) (6) (b) (6),  
SSG (b) (6) (b) (6), SSG (b) (6) (b) (6), SRA (b) (6) (b) (6)

**6. IN-BRIEFING:** (UTTR Staff)

- a. **When/Time:** 20 Sep 02, 1630
- b. **Where:** Base Operations
- c. **Who:** LtC (b) (6) LtC (b) (6) SMS (b) (6)

**7. ITEMS TO TAKE:**

- a. **PMP:**
  - (1) Project Notebook with Recording Sheets and Maps
  - (2) LapTop Computer and Batteries
  - (3) 2 Compasses and Stop Watch
  - (4) 2 Signal Mirrors and 2 Spot Lights
  - (5) Measuring Wheels and Tape
  - (6) Entomologists' Tool Kit
  - (7) UHF/VHF Radios and VHF Radios
  - (8) Cellular Phone
- b. **Mission Commander:** Cellular Phone
- c. **Navigator:** Maps
- d. **Spray Maintenance:**
  - (1) MASS Spares and Spill Kit
  - (2) Tools and Other Equipment
  - (3) Pesticide Safety Binder
  - (4) Safety Equipment
- e. **Maintenance:** Aircraft Engine Spares

**8. SPRAY CONFIGURATION:**

- a. Two Aircraft, Systems 3 and 5
- b. MASS Modules 1, 2 and 3
- c. UHV Fuselage booms oriented straight back

**9. PPR REQUIREMENTS:** V05/07 PPR #MK2001

**10. PARKING PLAN:** Air Freight Ramp – on West side of the airfield, Spots 11/12

**11. RADIO FREQUENCIES:**

- **Clover Control:** UHF 339.0, 275.9, 361.4
- **Eagle Tower:** UHF 351.0; **MAWK 3 & 4**
- **Spray Ground Freq:** VHF 134.1, 118.45; UHF 398.1 (Primary), 383.2 (Back-up)
- **Spray Ground to Spray Maintenance:** **G MNT 1NO (on UTTR Brick)**
- **Base OPS:** 139.3

**12. SPRAY PARAMETERS:**

- a. **Pesticide:** Krovar 1DF®
- b. **Application Rate:** 22.5 gal/acre (10 lbs of Krovar in 22.4 gal of water)
- c. **Acreage:** 1,283 Acres (Targets 21, 24 and 13)
- d. **Ground Speed:** 200 Knots (337.55 ft/sec)
- e. **Spray Altitude:** 100 Feet AGL
- f. **Swath Width:** 35 Feet
- g. **Flow Rate:** 366.1 Gallons/Minute

**13. PESTICIDE LOADING: (For Partial Loads Use Table on Last Page)**

**a. Sequence for Loading 1,000 Gallon Mixing Tank:**

- (1) Fill with water up to 750 Gallon Mark, then add:
  - (a) 450 Pounds of Krovar 1DF® (9 bags, 50 # each)
  - (b) 4.0 Gallons (15,140 ml) of StaPut®
  - (c) 64 Ounces (1,892 ml) of Foam Fighter F®
  - (d) 200 Ounces (5,913 ml) Hi-Light® Dye
  - (e) Add Water to 1,000 Gallon Mark and Agitate for 30 Minutes

**b. When:** Start at 0515 Hours on first full day of spraying and adjust as necessary through end of the daily mission as called by Mission Commander.

**c. Items to be Furnished by Installation:**

- (1) Krovar 1 DF® (12,660 pounds)
- (2) Foam Fighter F® (15 gallons)
- (3) StaPut® Additive (114 gallons)
- (4) Hi-Light® Dye (45 gallons)
- (5) Remove Nutra-Sol Tank Cleaner
- (6) Loading Personnel and All Loading Equipment
- (7) All Necessary Cleanup and Hazardous Waste Disposal
- (8) Aircraft Support Equipment and TA Support
- (9) Wash Rack and Fuel Priority

**14. SPRAY MONITORING AND TESTING.** By CPMP & ground support personnel

**15. CONTACTS:** (Commercial prefix (801) 777-XXXX; DSN 777-xxxx

**a. 388<sup>th</sup> RANS/DOO, Range Control Officer/Installation Spray Coordinator:**

(b) (6), 6066 Cedar Lane, Bldg 1274S; (b) (6); FAX: 9205  
- Cell Phone # (b) (6)

**b. Environmental Coordinator:** (b) (6), (b) (6)

**c. 75th Range Support Squadron:**

Clover Commander: Lt Col (b) (6)  
Oasis Commander: Maj (b) (6)  
Civil Engineering: (b) (6)  
Clover Operations: (b) (6) (b) (6)  
Eagle Tower: (b) (6) or (b) (6) (b) (6)  
Range Control: 7-9386 Current OPS; Future OPS 7-9385  
North Range Security: 7-1521/2/4

**d. Hill AFB Base OPS: 7-2221; WX 7-2885**

- Aerial Spray OPS Work Center/Bldg 904: DSN 777-6200

**e. Range Scheduler:** (b) (6)

**f. 388<sup>th</sup> RANS/RM Resource Monitor:** (b) (6)

**g. Pest Control:** (b) (6)

**h. Weather:** Hill AFB: 7-2018; UTTR: 7-1516/63

**i. Quarters:**

**Billeting Office Mountain View Inn, DSN 777-0802/4007, FAX 775-2014  
COM (801) 777-0802; FAX 775-2014**

- **Comfort Inn (\$48+Tax) 877 North 499 West 801 544-5577**
- **Quarters for LtC (b) (6) & Maj (b) (6)**
  - **La Quinta Inn \$75 4905 W Wiley Post Way, Salt Lake City, 801 366-4444**
  - **State Line Inn (Wendover): 775-664-2221, 800-848-7300; FAX 775-664-4192**  
**Fri-Sat \$79 + Tax; Sun-Thur \$34.95 + Tax (LtC (b) (6) & Maj (b) (6))**  
**Check-In 21 Sep 02 for 5 nights/Confirmation #:**

Holiday Inn (Odgen): 1-800-999-6841 or 801 399-5671

Airport Hilton Inn: 1-800-648-9668 or 801 539-1515

Ogden Park: 247 24<sup>th</sup>, 801 627-1190/800 421-7599

La Quinta Inns: 1965 N 1200 W Layton, 801 776-6700

Alana Motel: 116 N Main Street, Clearfield, 801 825-2221 or 2321

Nevada Crossing: (\$49.50), Box 2457 Wendover NV, 800 537-0207

**j. Car Contact:**

**(1) Enterprise Rental Car (Daffi) (801) 773-8999, FAX (801) 775-0248;  
on Base at BX 801 825-0800**

**1 Full Size 15-21 Sep 02 pick up at SLC IAP and Turn in at Hill**

- TSG Lamantia

**6 ea Full-Size @ \$38/day – 20-28 Sep 02**

- LtC (b) (6) Maj (b) (6) Maj (b) (6) MSG (b) (6)
- SMS (b) (6) SMS (b) (6)

**6 ea Mini Van @ \$55/day – 20 – 28 Sep 02**

- MSG (b) (6) SMS (b) (6) SMS (b) (6) MSG (b) (6) MSG (b) (6)
- reserved in SMS (b) (6) name

**(2) Hill Motor Pool: 1 Gov Mini Van Crew Chiefs**

**k. Hill AFB:**

Base Commander: Col (b) (6)

Airfield Manager: (b) (6)

Base Operations: 7-1861; FAX: 7-2221

C-130 Maintenance Contact: 7-3984

Fuels: 7-7423/7-7311

Transit Alert: 7-3956

Weather: 7-2885

**l. Hill Public Affairs: 7-5201**

**m. Supply Contact: 7-5391 (922 OE)**

- n. **Youngstown ARS, OH:** Commercial (330) 609-XXXX or DSN 346-XXXX  
910 AW Direct Dial-In/Voice Mail: 1-800-278-7046+2+Ext  
Command Post: 1315; FAX 1161  
910 AW/CC: 1243  
910 AW/PA: 1236; FAX 1022  
910 AW/FM: Comptroller: 1216  
910 OG/OSF: Supervisor of Flight Desk: 1069; FAX 1371  
910 OG/CC: 1257/1179  
757 AS/DO Admin: SMS (b) (6) (b) (6) ; FAX 1657  
757 AS/DOS: Aerial Spray Operations, 1111; FAX 1616  
910 MX/LG/CC: 1225  
Maintenance Control: 1344  
Spray Maintenance: 1132/1586  
Omega/SATO Travel: 1772; 1-800-285-6342  
Cellular Spray Phones:  
- PMP: (b) (6)  
- Mission Commander: (b) (6)  
- Spray Maintenance: (b) (6)

**16. SEQUENCING:**

- a. Target sequencing will be determined by UTTR personnel based upon EOD clearance schedule. All spray turns will be made south of Base Leg Knoll when spraying Targets 21, 24, and 23 to allow for maximum utilization of Eagle Range.
- b. Whenever possible, two targets will be treated on one pass. This will necessitate having two separate ground-monitoring and marking parties.
- c. When winds blow directly from one side of the target to the middle of the target, ground monitors will direct the "dress" up of the target edges.
- d. **Spraying Priorities:**  
(1) Nord LDC Runway  
(2) Target 21  
(2) Target 24  
(3) Target 13
- e. **Multiple-Target Alignments.**  
(1) The west edge of Target 23 lines up 1/4 mile west of the west edge of Target 21.  
(2) The west edge of Target 24 lines up with the west edge of Target 21.  
(3) When treating Targets 21 and 23 together on the same pass, treat the western-most stake on Target 23 and stake 139 on Target 21. If treating the east edge of Target 23, start with stake 90 on Target 21. When treating Targets 23 and 21 on the same passes, use stakes 90-139 on Target 21. Be sure to save treatment of stakes 90-139 on Target 21 until treating Targets 21 and 23 together.  
**(4) When treating Targets 21 and 24 together, treat the west edge of Target 24 while aligned with stake 89 on Target 21. Be sure to save stakes 45-89 on Target 21 to treat concurrently with Target 13.**  
**(5) Target 13 should be treated concurrently with stake 45 on Target 21 and those stakes to the east of stake 45.**

**17. GENERAL TARGET INFORMATION:**

**a. Target 21:**

- (1) Dimensions: 4,980' X 7,770'
- (2) Acreage: 888
- (3) Acres Sprayed in 2001: 888
- (4) 2000 Aircraft Loads: 18,869 Gal
- (5) Sorties: 17
- (6) Passes (35' Swath): 157
- (7) Spray-On Time/Pass: 23 Seconds
- (8) Spray Heading: 00/180

**b. Target 24:**

- (1) Dimensions: 1,600' X 6,080'
- (2) Acreage: 223
- (3) Acres Sprayed in 2001: 223
- (4) 2000 Aircraft Loads: 5,263 Gal
- (5) Sorties: 7
- (6) Passes: 47
- (7) Spray-On Time/Pass: 18 Seconds
- (8) Spray Heading: 00/180

**c. Target 13:**

- (1) Dimensions: 3 Concentric Circles, Approximately 2000' diameter
- (2) Acreage: 72
- (3) Acres Sprayed in 2000: 40
- (4) Sorties: 4
- (5) Passes: 29
- (6) Spray-On Time/Pass: 13.5 Seconds
- (7) Aircraft Heading: 00/180

**18. PLANNED SEQUENCE OF EVENTS: Hill AFB Tower Control and Runway Hours 0620L**

**NOTE: Scheduling reflects no weather or maintenance delays.**

**20 Sep (Friday):**

0800L: Report

1005-1015L: 1005, Spray #1 A/C , 1010, Spray #2 A/C & 1015 Support A/C Take-off

1330L: Hill

**ALL TIMES MAY BE ADJUSTED BY MISSION COMMANDER.**

**DUTY DAY FOR CIVILIANS WILL BE STD DAY (8 HOURS).**

**MILITARY STATUS PERSONNEL WILL WORK AS  
REQUIRED WITHIN CREW REST CONSTRAINTS.**

**Tower Control, Runway & Airfield hours start at 0700L**

**RANGE TIMES: 0700-1400 each day (21-25 SEP)**  
**END OF EACH DAY LOAD GROUND TANKS WITH THE APPROPRIATE MIX.**  
**ALL MX & A/C PERSONNEL WILL REMAIN ON DUTY UNTIL AIRCRAFT IS**  
**PRE-FLIGHTED FOR THE NEXT DAY OR RELEASED BY THE AIRCRAFT**  
**COMMANDER.**

**21 Sep (Sat):** (First Spray Sortie, Range Times 0700-1400, 21-25 Sep)

0430L: Ground Support personnel depart for UTTR

0500L: Spray Maintenance start on first full day of mission and adjust as directed

0616L: Sunrise (see attach Sunrise/Sunset Chart)

0700-1300L: Spray Targets as directed

**22-25 Sep (Sun-Wed):** Using 22 Sep schedule spray UTTR Targets as directed  
by the Mission Commander or Ground Support Director

**26 Sep (Thu):** Weather Back-up/Flush

**27 Sep (Fri):** Clean-Up; Support Aircraft arrives at Hill AFB

**28 Sep (Saturday):** All personnel and aircraft return to YNG

0800L: All Aircrew report

0830L: All Personnel report

1000L: Spray Aircraft Takes Off Hill AFB

1015L: Support A/C Takes off Hill AFB

1700L: Spray Lands YNG

1715L: Support A/C Lands YNG

## **19. CALCULATIONS:**

### **a. FEET/SECOND:**

$6,076.1 \text{ FT/NAUT MI} \times 200 \text{ N/HR} / 60 \text{ MIN/HR} / 60 \text{ SEC/MIN}$

<< 337.55 FEET PER SECOND >>

### **b. ACRES TREATED/MINUTE:**

$35 \text{ FOOT SWATH} \times 337.55 \text{ FT/SEC} \times 60 \text{ SEC/MIN}$

<< 708,855 SQUARE FEET PER MINUTE >>

$708,855 \text{ SQ FT/MIN} / 43,560 \text{ SQ FT/AC}$

<< 16.27 ACRES PER MINUTE >>

### **c. SPRAY-ON TIME/LOAD:**

$1,750 \text{ GALLONS/LOAD} / 366.1 \text{ GAL/MIN} = 4.78 \text{ MIN/LOAD}$

OR 4 MIN 47 SEC/LOAD OR 287 SEC/LOAD



## **UTTR GEOGRAPHIC LOCATION AND TARGET DIMENSIONS**

Target areas on UTTR are geographically located in northwestern Utah, directly west of the Great Salt Lake and Hill Air Force Base. The complex is positioned between 40 and 41 degrees north latitude and close to 113 degrees ten minutes west longitude. The targets are within range 12 west and Township two and three north, Salt Lake Baseline Meridian.

**TARGET 13.** The target is located east of and between targets 23 and 24. Target 13 is three concentric circles. The spray area is 2000 feet in diameter and contains approximately 72 acres. Orientation is generally N-S, although exact spray lines will depend on marker set-up.

**TARGET 21.** The target is the most northerly of the southern group. Target is a large, rectangular area 5000' X 7800'. Orientation is NNE-SSW using right patterns of SSW-NNE using left patterns. Target and surrounding terrain are flat.

**TARGET 22.** Target is located approximately three N.M. N.E. of CBU Valley. Target is a rectangle 2400' X 3700'. To assist in identification, Target 1, a circular target, is located immediately SE of 22. Target orientation is SE to NW with left patterns.

**TARGET 23.** Target is located about three N.M. SSW of Target 21. Target 23 is a rectangle approximately 1850' X 4500'. Terrain is flat. Target orientation is NNE-SSW using right patterns or SSW-NNE using left patterns.

**TARGET 24.** Target is located about one N.M. SSW of Target 23. Target 24 is a 1500' X 6000' rectangle. Orientation is the same as Target 21. Terrain is flat.

**TARGET 26.** Personnel from MMETA, or 6501st RS will be aboard aircraft to assist in identification and orientation of target. Target is located west of Target 21. Target is rectangle 100' X 6000'. Terrain is flat and can be flown as desired.

**CBU VALLEY.** CBU Valley is located on the northeast corner of the range. Spray line is oriented northwest/southwest (320/140). Spray can be accomplished both directions with turn around over the lake bed northwest and at the head of the valley southeast. Alternatively, spray will be northwest using left patterns. The ground rises gradually to the southeast of the target requiring higher power going southeast, lower going northwest.

**EAGLE TARGET.** Eagle is located southwest of CBU Valley and approximately six NM northwest of Target 21. Targets are the run-in areas to the strafing targets and the

bombing targets. Spray line from the northeast run-ins is 023, and spray line for the west run-ins is 293. The centerline is marked by a row of tires. Bombing run-ins are triangular 5200' X 600' at the wide end and 50' at the narrow end. Orientation is northeast to southwest on one and northwest to southeast to the other.

**BIG POPPA.** Big Poppa is a circle 3250' in diameter located N.E. of CBU Valley. Orientation of spray lines is SSW to NNE. The target is dished with higher terrain on the east side and northeast quadrant. Off the target, the terrain rises rapidly to the east. Leaving the northeast quadrant, there is a ridge line about 150' - 200' high to overfly. Patterns are left hand.

**WILDCAT MOUNTAIN.** Target is a simulated airfield located about 30 NM southwest of the northern end of Cedar Mountain. The spray area consists of a runway, parallel taxiway and parking ramp. The runway is 200' X 10,200' the Orientation is NE to SW with left patterns. Target area is flat but the terrain rises rapidly to the west.

# 910 AW AERIAL SPRAY PMP'S POST-MISSION REPORT

## 1. MISSION BASICS:

- a. **Installation Sprayed:** Hill AFB/UTTR UT
- b. **Mission Duration:** 20-28 Sep 02
- c. **Purpose of Application:** Weed Control over designated UTTR targets
- d. **Date/s and Time/s of Application (Zulu):** See Spray Operations Summary Chart
- e. **Acres Treated:** See Spray Operations Summary Chart
- f. **Project Coordinator/s (Name/Rank, Title, Phone #):** (b) (6), Aerial Spray Coordinator, Hill/UTTR AFB, DSN 777-5345; LTC (b) (6) (b) (6)
- g. **Date Spray Map Last Approved:** 11 Sep 02
- h. **Date of Waste Generation Letter:** N/A
- i. **Installation In-Briefing: (When/Where/Briefer/s):** 20 Sep/1400, Base OPS, LtC (b) (6) (b) (6)

## 2. OPERATIONAL:

- a. **Mission Commander:** LtC (b) (6) (b) (6)
- b. **Certified PMP (Category 11):** LtC (b) (6) (b) (6) Maj (b) (6) (b) (6)
- c. **Aircrew:**
  - (1) Aircraft CMDR & Pilots: Maj (b) (6) (b) (6) Capt (b) (6) (b) (6)
  - (2) Co-Pilots: LtC (b) (6) (b) (6) Lt (b) (6) (b) (6)
  - (3) Navigators: LtC (b) (6) (b) (6) Maj (b) (6) (b) (6) Maj (b) (6) (b) (6) Maj (b) (6) (b) (6)  
LtC (b) (6) (21-23 Sep)
  - (4) Flight Engineer(s): SMS (b) (6), MSG (b) (6)
  - (5) Spray Operators: MSG (b) (6), MSG (b) (6), MSG (b) (6)  
TSG (b) (6)
- d. **Safety Briefer:** LTC (b) (6) (b) (6)
- e. **Spray Maintenance/Pesticide Loaders:** MSG (b) (6), TSG (b) (6);  
TSG (b) (6), TSG (b) (6)
- f. **Spray Ground Monitors:** LtC (b) (6) (b) (6) Maj (b) (6) (b) (6) (b) (6)
- g. **Crew Chief(s):** MSG (b) (6), MSG (b) (6), TSG (b) (6) SRA (b) (6)
- h. **910 MA/LG Superv:** SMS (b) (6)
- i. **R & R:** SMS (b) (6)
- j. **AGE:** TSG (b) (6)
- k. **Propulsion:** TSG (b) (6)
- l. **Hydraulic:** MSG (b) (6)
- m. **Environmental/Electric:** TSG (b) (6)
- n. **Engine Shop:** TSG (b) (6)
- o. **Flying Data:** (See Spray Data Charts)
  - (1) Spray A/C 899105: Ferry: 2, Hours: 10.4; Spray Sorties: 9, Hours: 12.6
  - (2) Spray A/C 899107: Ferry: 2, Hours: 10.5; Spray Sorties: 10, Hours: 14.4
  - (3) Support A/C 923024, 20/21 Sep, Ferry: 2, Hours: 10.2
  - (4) Support A/C 919143, 27/28 Sep, Ferry: 2, Hours: 10.1

3. **PESTICIDE:**

- a. **Trade Name (% Active Ingredient):** Krovar I DF®
- b. **EPA Registration Number:** 352-505
- c. **Formulation Sprayed:** 10 pounds in 22.5 gallons of water per acre
- d. **Gallons Pesticide Loaded:** 1,800 per sortie
- e. **Gallons Pesticide Applied:** 26,225 gallons
- f. **Gallons and Name Diluent Used:** 25,200 gallons water
- g. **Other Additives Used:** 15 Gal Foam Fighter F®, 114 Gal StaPut®, 45 Gal Hi-Light® Dye
- h. **Application Rate:** 22.5 Gal per acre

4. **APPLICATION EQUIPMENT:**

- a. **Aircraft Type (Tail Number):** C-130H 899105 and 909107
- b. **Spray System (Modules Used) and System ID #:** 3 and 5.
- c. **Spray System Configuration:** SP-3G
- d. **Nozzle Type/Size:** 3 inch herbicide nozzles.
- e. **Nozzle Orientation & Number Used:** 2, oriented straight back.
- f. **Pressure:** 40 psi
- g. **Flow Rate:** 366 gallons per minute

5. **APPLICATION PARAMETERS:**

- a. **Swath Width Flown:** 35 feet.
- b. **Spray Off Set:** Variable, determined by spotters on the ground.
- c. **Spray Release Altitude:** 100 feet.
- d. **Ground Speed:** 200 knots.

6. **WEATHER OBSERVATIONS (Ground Wind Direction (degrees)/Speed (knots):**

- a. **21 Sep:** North – 310-010/4-15
- b. **22 Sep:** 21-300/0-9
- c. **23 Sep:** 140-200/0-4
- d. **24 Sep:** 140-200/0-4
- e. **25 Sep:** Flush

7. **SPRAY MONITORING (Pre- and Post-Treatment):**

- a. **Deposition Pattern:**
  - (1) Technique/s Used: Ground Observation
  - (2) Results: Spray off-set determined each day
- b. **Effectiveness:**
  - (1) Technique/s Used: Visual field observations
  - (2) Results: (See Remarks)

8. **REMARKS:** Ground coverage was complete with no skips in sprayed areas. Eight passes totaling 17 seconds were flown over NORD LDZ. Efficacy will be determined by field observation next spring.

**CERTIFIED PEST MANAGEMENT PROFESSIONALS**

(b) (6) (b) (6) Lt Col, USAFR  
(b) (6) (b) (6) Maj, USAFR

**(Signature/Date)**

(b) (6) (b) (6) 20 Oct 02  
(b) (6) (b) (6) 20 Oct 02

Attachments: Summary & Daily Charts

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 21-25 JUL 08 DRAFT

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes at LFI and the surrounding communities.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: Maj (b) (6)
- (2) Pilots: Capt (b) (6) Capt (b) (6)
- (3) Navigator: LTC (b) (6) (b) (6)
- (4) Flight Engineers: MSgt (b) (6) SSgt (b) (6)
- (5) Spray Operators: MSgt (b) (6) MSG (b) (6)

##### b. Maintenance:

1. Spray Maintenance: TSgt (b) (6) MSgt (b) (6) TSgt (b) (6) SRA (b) (6)
2. Crew Chiefs: TSgt (b) (6) SRA (b) (6)
3. Avionics: SSgt (b) (6)

##### c. Entomologists: MAJ (b) (6) (b) (6)

##### d. Vehicles:

- Vehicle Dispatch: Will supply us with 2x9pax vans and 2 cars
- MC / Entomologist: One Car
- Ops: One van (9 pax), one car
- Mx: One Van (9 Pax)

##### e. Billeting Office: COM (757) 764-4667, DSN 574-4667, FAX 574-3038, POC TSG (b) (6) EXT 2528 Holiday Inn - 1815 W Mercury Blvd, 18 rooms blocked// cxd 11 july 08

#### 2. PPR: call 7 days out (14 Jul)

#### 3. SCHEDULE: (All times local)

##### 21 JUL (Monday):

- 1100 Show Time
- 1300 Takeoff KYNG
- 1430 Land KLFI w/ Safety Briefing immediately following
- 1530 Installation Briefing

##### 22 JUL (Tuesday):

- 1530 Show time
- 1600 WX Decision, load Dibrom
- 1800 Takeoff KLFI
- 2020 Sunset

##### 23 JUL (Wednesday):

- 1530 Show time
- 1600 WX Decision, load Dibrom
- 1800 Takeoff KLFI
- 2020 Sunset

##### 24 JUL (Thursday):

- 1530 Show time
- 1600 WX Decision, load Dibrom
- 1800 Takeoff KLFI
- 2019 Sunset

##### 25 JUL (Friday):

1000 Show Time  
1200 Takeoff KLF1  
1400 Land KYNG

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Kestrel Weather Monitor, Compass, PCM Card, Pest Safety Binder, UHF Radios, Laptop Computer
- b. **Navigator:** Maps/Map Bag, Validation Map
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit/Supply Kit

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Langley Tower:** DSN 574-5326
- b. **Langley Base Ops:** DSN 574-2504

**5. PARKING PLAN:** Taxi Way Foxtrot or as directed by Transient Alert.

**6. RADIO FREQUENCIES:**

- a. **Felker AAF Tower (Ft Eustis): 126.3, 269.25, 248.2, 241.0**
  - (1) Ops phone DSN878-3588
  - (2) Tower phone DSN 878-3530
  - (3) Flight Service 122.2
- b. **Newport News-Williamsburg Int: CTAF – 118.7 (Operating Hours 1000Z-0200Z)**
  - (1) Ground – 121.9 or 348.6 (phone 877-0221 ops)
  - (2) Tower – 118.7 (phone DSN 877-2862) voicemail 7-2962
  - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
- c. **Langley AFB: Tower DSN 574-7999**
  - (1) Tower - 125.0 or 253.5
  - (2) Ground - 121.7 or 275.8
  - (3) Clearance - 118.85 or 271.3
  - (4) Metro - 239.8
- d. **Norfolk NAS (Chambers Fld): Tower –124.3, 379.15, Tower Supervisor DSN 262-3443**
- e. **Norfolk Approach: 124.9**
- f. **Spray Ground: Primary 392.2; Secondary: 308.6**

**7. IN-BRIEFING:** 1430 hrs; CE Conference Room

**8. SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS ULV; Fuselage booms
- b. **Nozzle Tips/Orientation:** ten 8005 nozzles -- straight down
- c. **Aircraft:** 89-9106
- d. **Mission Identifier:**

**9. SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.6 Gallons/Minute
- f. **Acreage:** Potentially 125,000 acres on the peninsula but final acreage TBD
- g. **Swath Width:** 2000 foot

**10. PESTICIDE LOADING:**

- a. **How Much Pesticide:** see entomologist
- b. **Where:** Taxi Way F Aero Club Ramp
- c. **When:** 1600 hrs each day pending weather and heat index.
- d. **Furnished by Installation:**
  - (1) Pesticide
  - (2) Loading Equipment/Crew
  - (3) Hazardous Waste Disposal
  - (4) Two B-5 or B-1 Stands

**11. CONTACTS:** LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX



**a. LANGLEY AFB VA:**

Wing Commander: DSN 574-5321

Mission Support Group Commander: DSN 574-7995

Civil Engineer: DSN 574-2025

Deputy Chief/Civil Engineer: (b) (6)

Environmental Coordinator: DSN 574-3987; FAX 3503

Base Operations: DSN 574-2504

Langley Control Tower: DSN 574-5326

Weather: Langley AFB, DSN 574-5907

Ft Eustis: DSN 297-5300/3343

Command Post: DSN 574-5411

Pest Control Foreman: (b) (6), DSN (b) (6), cell phone (b) (6)

Pest Control/Environmental NCOIC: MSgt (b) (6)

Public Affairs: DSN 574-2018/2010/2019

Fuels: DSN 574-4312/3623/4224

Motor Pool: 574-7514/5712

ACC PMP: (b) (6) DSN (b) (6) cell phone (b) (6)

Fire Department Comm: 757-764-2222

**b. FT EUSTIS VA: Environmental Coordinator: DSN 927- 4152/2375**

**c. Hampton Mosquito Control: 757 850-3305**

**d. York County Mosquito Control: (757)-890-3780**

**e. Poquoson: Jerry Cagle (757) 868-3590**

**f. City of Portsmouth Biologist: (757) 393-8666**

**g. Newport News Mosq. Control: (757) 269-2750**

**h. Camp Peary: (757) 229-2121 Ext 2263, (b) (6)**

**i. Ft Monroe: (b) (6)**

**j. Newport News/Williamsburg Int.:**

(1) Fixed Base Operator: Flight Int 877-6401

(2) Flight Service: 877-0209

(3) Tower: 877-2962

(4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

**k. Norfolk NAS VA: DSN 564-2442/7598 or COM (757)-444-2442/7598**

**l. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX Toll Free 1 - 800 - 278 - 7046, + Ext**

(1) 910 AW/CC: Col (b) (6)

(2) 910 AW Command Post: Ext 1315; FAX 1161

(3) 910 AW/PA: Capt (b) (6) FAX 1022

(4) 910 OG/CC: Col (b) (6) (b) (6)

(5) 910 OS/OSA: Airfield Manager, (b) (6)

(6) 757 AS/DO: Maj (b) (6) Ext 1793

(7) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371

(8) 757 AS/DOO: Ops Admin: SMS (b) (6) FAX 1657

(9) 757 AS/DOS: Aerial Spray Office, LTC (b) (6) Capt (b) (6) (b) (6); FAX 1616

(10) 910 LG/CC: Ext 1225

(11) 910 LG/LGM: Ext 1352

(12) Maintenance Control: Ext 1327

(13) 910 LG/LGMS: Spray Maintenance, Ext 1132

(14) 910 LG/LGL, Ext 1137

(15) Omega/SATO Travel: Ext 1772; 1-800-285-6342

(16) Cellular Spray Phones:

- Mission Commander: (b) (6)

- Entomologist: (b) (6) (b) (6) cell (b) (6)





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON-AERIAL SPRAY  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926

14 APR 2008

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at King's Bay NSB, GA

1. Objective/Purpose/Benefits of the Spray Mission. Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Kings Bay NSB, GA.

2. Capability: Spray Aircraft available on 21-24 APR 2008

3. Concept of Operations:

**21 APR (Monday)**

0900 Show  
1100 Depart YNG  
1400 Land KNIP  
1500 Safety Brief

**22 APR (Tuesday)**

TBD Brief  
1500 Weather call/Crew show  
1600 Load Chemical  
1800 Depart KNIP  
Sunset: 1959

**23 APR (Wednesday)**

TBD Brief  
1500 Weather call/Crew show  
1600 Load Chemical  
1800 Depart KNIP  
Sunset: 2000

**24 APR (Thursday)**

1000 Show  
1200 Depart KNIP  
1500 Land KYNG

4. Spray Parameters:

- a. Acreage: 15000 Acres (Only areas determined by PMP)
- b. Altitude: 150 Ft AGL
- c. Pesticide: Dibrom® Concentrate;
- d. Deploy: 3.0 Hrs/ Redeploy: 3.0
- f. Spray Time: 30 Minutes

5. Aircraft Commander LTC (b) (6) (b) (6)

6. Support required at Kings Bay NSB has been coordinated.

// SIGNED //

(b) (6) (b) (6) CAPT, USAFR  
Assistant Chief of Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## NSB, KINGS BAY, GA

### 21-24 April 2008 **Change 4**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at NSB, Kings Bay, GA.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: MC: Col (b) (6) (b) (6) LTC (b) (6) (b) (6) Maj (b) (6) ,
- (2) Navigators: Maj (b) (6) (b) (6)
- (3) Flight Engineers: Msgt (b) (6) (b) (6) ,
- (4) Spray Operators: Msgt (b) (6) (b) (6) Tsgt (b) (6) , Msgt (b) (6) , Msgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: Tsgt (b) (6) , Tsgt (b) (6) , Tsgt (b) (6)
- (2) Crew Chiefs: Tsgt (b) (6) , Ssgt (b) (6)
- (3) Avionics: (b) (6)

##### c. Entomologist: LTC (b) (6)

#### 2. PPR REQUIREMENTS: 421-01

#### 3. PLANNED SEQUENCE OF EVENTS: (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

##### 21 APR (Monday)

0900 Show  
1100 Depart YNG  
1400 Land KNIP  
1500 Safety Brief

**22 APR (Tuesday)** Aircraft will squawk 5107 prior to entering P-50 Call Sign Spray01. Ensure pilots are given this squawk from ATC!! Flight plan: KNIP – Kings Bay – KNIP at 3000' on IFR flight plan with delay at Kings Bay.

TBD Brief  
1500 Weather call/Crew show  
1600 Load Chemical  
1800 Depart KNIP  
Sunset: 1959

##### 23 APR (Wednesday)

TBD Brief  
1500 Weather call/Crew show  
1600 Load Chemical  
1800 Depart KNIP  
Sunset: 2000

##### **NBC Backup Plan**

1400 Depart KNIP  
1500 Arrive KNBC  
1600 Wx Call/Load Chemical  
1800 T/O NBC  
2000 Land NBC and pick up spray personnel  
2100 Depart NBC for KNIP

**24 APR (Thursday) \*\*Departure time will slip depending upon Wednesday evening completion time.**

1000 Show  
1200 Depart KNIP  
1500 Land KYNG

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

- (1) Mission Commander Cell Phone

##### b. Entomologist:

- (1) Wind Gauge & Compass
- (2) VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder

**c. Navigators:**

- (1) Maps
- (2) Templates

**d. Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** size = 8005; 15 open for 5.5; oriented straight down (Kings Bay); 2.7 for PI and 7 8005s.
- d. **Differential GPS:** Wingman Installed
- e. **Aircraft:** 89-9105
- f. **Mission Identifier:** QZNRKA263112

**6. Adult mosquito control spray Parameters: (Kings Bay)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 1.0 oz/acre or 0.75 oz/acre see entomologist
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 2,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 15,000 Acres
- g. **Spray-On Time:** 32 Minutes
- h. **Flow Rate:** 7.4 gallons/minute or 5.55 gal/min see entomologist

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading 3 or 4 drums of Dibrom for Kings Bay (see entomologist).

**8. PARKING PLAN NAS Jacksonville, FL** at the Hot cargo ramp. Personnel will need to be taken to and from the aircraft via Transient Alert. Please plan this accordingly into your schedule for showing at the aircraft since you will not be able to transit back and forth without the assistance of TA.

**9. AIR TO GROUND RADIO FREQUENCIES:**

Navy Jax Ops-	310.2	Tower	120.0/340.2
Ground	128.6/336.4	<b>Spray Ground:</b>	<b>123.45 VHF</b>
ATIS	281.0		

**10. TRANSPORTATION:**

Enterprise Car Rental: 904-772-7007

5 FS Cars ((b) (6)) ) \$40/day+5gov policy

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP and by NSB Kings Bay pest control.

**12.. Quarters: On Base NAS Jacksonville 16 ROOMS**

**904-542-3138**

*Hampton Inn Jacksonville-Orange Park (904)-777-5313 \$79/night*  
6135 Youngerman Circle, Jacksonville, FL 32244

**13. CONTACTS:**

**a. Naval Submarine Base Kings Bay, GA (Com: (912) 573-xxxx; DSN 573-xxxx)**

- (1) Spray Coordinator: (b) (6)  
Backup is LT (b) (6) Office: (b) (6) Cell: (b) (6)
- (2) Strategic Weapons Facility Atlantic (SWFLANT), (b) (6)

**b. Naval Air Station Jacksonville, FL (NAS JAX)**

- (1) For requesting PPR: DSN 942-2511
- (2) Transient line office, DSN 942-3843
- (3) Weather 942-2535
- (4) Tower – 942-2516
- (5) Fire and Crash – 942-3677
- (6) Cargo Handling (Hazmat) - 942-1137

**b. FAA JAX Center.** Mr. (b) (6), Mission Specialist (b) (6)

**\*\*Contact ASAP if mission is CNX or delayed.**

**f. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Capt (b) (6); FAX 1022
4. 910 OG/CC: Col (b) (6) (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6) (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6); FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - (b) (6) (b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## MCRD, PARRIS ISLAND, SC

### 21-24 April 2008

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: MC: Col (b) (6) (b) (6) LTC (b) (6) (b) (6) Maj (b) (6) ,
- (2) Navigators: Maj (b) (6) (b) (6)
- (3) Flight Engineers: Msgt (b) (6) (b) (6)
- (4) Spray Operators: Msgt (b) (6) (b) (6) , Tsgt (b) (6) , Msgt (b) (6) , Msgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: Tsgt (b) (6) , Tsgt (b) (6) , Tsgt (b) (6)
- (2) Crew Chiefs: Tsgt (b) (6) , Ssgt (b) (6)
- (3) Avionics: (b) (6)

##### c. Entomologist: LTC (b) (6)

#### 2. PPR REQUIREMENTS: 112-04

**3. PLANNED SEQUENCE OF EVENTS:** (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

##### 21 APR (Monday)

0900 Show  
1100 Depart YNG  
1300 Land KNBC  
1315 Safety Brief

##### 22 APR (Tuesday)

TBD Brief  
1600 Weather call/Crew show  
1630 Load Chemical  
1800 Depart KNBC  
Sunset: 1959

##### 23 APR (Wednesday)

TBD Brief  
1600 Weather call/Crew show  
1630 Load Chemical  
1800 Depart KNBC  
Sunset: 2000

##### 24 APR (Thursday) **\*\*Departure time will slip depending upon Wednesday evening completion time.**

1000 Show  
1200 Depart KNBC  
1400 Land KYNG

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

(1) Mission Commander Cell Phone

**b. Entomologist:**

- (1) Wind Gauge & Compass
- (2) VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder

**c. Navigators:**

- (1) Maps
- (2) Templates

**d. Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** size = 8005; 7 open
- d. **Differential GPS:** Wingman Installed
- e. **Aircraft:** 89-9105
- f. **Mission Identifier:** QZNRKA263112

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 0.75 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 8 Minutes
- h. **Flow Rate:** 2.7 gallons/Minute

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading 1.5 drums of Dibrom

**8. PARKING PLAN:** NAS Beaufort, SC. Please limit number of vehicles and trips on the flight line

**9. AIR TO GROUND RADIO FREQUENCIES:**

Beaufort Tower: 119.05 MCAS TWR  
Beaufort Approach 123.7  
Hilton Head Arpt: 118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 123.4 V**

**10. TRANSPORTATION:** Parris Island will provide vehicles for transportation to and from quarters and for messing. Vehicles will be at Base Operations.

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP & Parris Island MCRD Project Coordinator.

**12. CONTACTS:**

- a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX

- (1) Environmental Coordinator (Spray Coordinator):  
(b) (6) DSN (b) (6) Cel (b) (6) ; (b) (6) (b) (6) Cel (b) (6)  
FAX (843) 228-2616; (b) (6) (b) (6)
- (2) Assistant Chief of Staff I & L: COL (b) (6) (b) (6) , DSN (b) (6)
- (3) Pest Control: DSN 335-2364
- (4) P.I. Motor Pool: (b) (6) , DSN (b) (6)
- (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
- (6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)
- (7) P.I. Rifle Range: DSN: 335-3183/3624

**b. Beaufort MCAS SC:**

(Commercial (843) 228-XXXX)

- (1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6) ; (b) (6) DSN (b) (6)
- (2) Fuels: DSN: 335-7049/7448/7168
- (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
DSN: (b) (6) . Base Ops is ext 7301/2/3  
(After duty hours: (b) (6) DSN: (b) (6)
- (4) Trans Alert/VAL: DSN: 335-7110
- (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)

**c. Beaufort County Mosquito Control: (b) (6)**

**d. Naval Occupational Health/Preventive Medicine: LtJG (b) (6) DSN: (b) (6)**

**e. Quarters:**

**14 Rooms Holiday Inn and Suites \$136/night (843) 379-3100**

Comfort Inn and Suites night (843) 379-9400  
 Ramada Inn (843) 524-2144/Fax 1704  
 Hampton Inn (843) 986-0600 (FAX 0494)  
 Sleep Inn (843) 522-3361 FAX (843) 522-9929  
 Parris Island Billeting DSN: 335-2744 (FAX: 3815); (843) 228-3960  
 Comfort Inn (843) 525-9366 (FAX 1529)  
 Best Western (Sea Island Motel) (843) 524- 4121  
 Port Royal Days Inn (843) 524-1551

**f. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Capt (b) (6) ; FAX 1022
4. 910 OG/CC: Col (b) (6) (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6) (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)



16 April 2002

MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497 -0198)

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Parris Island  
MCRD SC for Control of Sandfly and Mosquitoes

1. Objective/Purpose/Benefits of the Spray Mission. Spray Parris Island MCRD SC for control of biting midges and mosquitoes. Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCDR SC at the request of the Parris Island MCRD/MCAS Environmental Coordinator.

2. Capability: Spray Aircraft Available on 21 April through 25 April 2002

3. Concept of Operations:

a. 21 Apr 02 (Sunday):

1400 Take Off KYNG

1600 Land KNBC

1630 Safety Briefing

b. 22 Apr 02 (Monday):

1430 Load Chemical

1630 Take Off KNBC

1900 Land KNBC

c. 23 Apr 02 (Tuesday):

1400 Load Chemical

1630 Take Off KNBC

1900 Land KNBC

d. 24 Apr 02 (Wednesday):

1400 Load Chemical

1700 Take Off KNBC

1900 Land KNBC

e. 25 Apr 02 (Thursday):

1200 Take Off KNBC

1400 Land KYNG

4. Spray Parameters:

- a. Acreage: 7,500 Acres (Only areas determined by PMP)
- b. Altitude: 150 Ft AGL
- c. Pesticide: Dibrom® Concentrate (naled)
- d. Deploy: 1.6 Hrs
- e. Re-Deploy: 1.6 Hrs
- f. Spray Time: 16 Minutes per Sortie (or as called by PMP)

5. Aircraft Commander/Mission Commander: Capt (b) (6) (b) (6)

6. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator Mr. (b) (6) DSN(b) (6)

7. HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616, ATTN: 757 AS/DOS.

(b) (6) (b) (6) Major, USAFR  
Chief, Aerial Spray (757 AS/DOS)

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **PARRIS ISLAND MCRD, SC**

### **21-25 APR 2002**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCRD, SC.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Mission Commander: Capt (b) (6)
- (2) Pilots: Capt (b) (6) (b) (6) Capt (b) (6)
- (3) Navigators: Maj (b) (6) , Maj (b) (6) (b) (6)
- (4) Flight Engineers: MSG (b) (6) , SMS (b) (6)
- (5) Spray Operators: MSG (b) (6) , TSG (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: SMS (b) (6) , TSG (b) (6)  
TSG (b) (6) , SSG (b) (6)
- (2) Crew Chiefs: TSG (b) (6) , SSG (b) (6) ,
- (3) Avionics: TSG (b) (6) SRA (b) (6)

##### **c. Pest Management Professionals/Entomologist:** Capt (b) (6) (b) (6)

#### **2. PLANNED SEQUENCE OF EVENTS:** (All times local)

##### **21 APR (Sunday):**

1400: Take off KYNG  
1600: Land KNBC  
1630: Safety Briefing

**PPR # 111-01**

##### **22 APR (Monday):**

1400: Facility In-Brief and Load Chemical  
1630: Take off KNBC HAN 10 Gallon boom flush.  
1900: Land KNBC  
1957: Sunset

##### **23 APR (Tuesday):**

1400: Load Chemical  
1630: Take off KNBC  
1900: Land KNBC  
1958: Sunset

##### **24 APR (Wednesday):**

1400: Load Chemical  
1630: Take off KNBC  
1900: Land KNBC  
1959: Sunset

##### **25 APR (Thursday):**

1200: Take off KNBC  
1400: Land KYNG

### 3. ITEMS TO TAKE:

a. **Entomologist/CPMP:**

- (1) Wind Gauge, Compass, and Signal Mirrors
- (2) UHF/VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder, Calibration Tables, and Oil Sensitive Papers
- (4) DGPS Computers, Trackstar Equipment, and Maps

b. **Navigators:**

- (1) Maps
- (2) Templates
- (3) Laptop Computer

c. **Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

### 4. SPRAY CONFIGURATION: SP-2G

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Wing Booms
- c. **Nozzles:** Open for ULV spray; 6, 8008's oriented straight down
- d. **Differential GPS:** Installed
- e. **Aircraft Tail #:** 105
- f. **Mission Identifier:** QZNRKA321111

### 5. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)

a. **Pesticide:**

Dibrom® Concentrate (naled)  
Organophosphate Insecticide  
Signal Word: Danger  
Antidote: Atropine, 2-PAM  
Flushing Agent: HAN

- b. **Application:** 1 Ounce Dibrom®/Acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 3.634 Gallons/Minute

### 6. AMOUNT OF SPRAY MATERIAL AVAILABLE: Load 60 gallons of Dibrom® Concentrate per sortie and 25 gallons of HAN in flush tank.

### 7. PPR REQUIREMENTS: Required: PPR # 111-01

### 8. PARKING PLAN: Beaufort MCAS Ramp

## 9. AIR TO GROUND RADIO FREQUENCIES:

Air Traffic Control: 119.05 Beaufort MCAS TWR  
Hilton Head Arpt: 123.0 UNI  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 392.2; Secondary 340.8**

**10. TRANSPORTATION:** Parris Island will provide two vans for transportation to/from quarters and dining. An additional vehicle will be available for the CPMP/Entomologists/Ground Support personnel.

**11. SPRAY MONITORING OR TESTING:** CPMP and Parris Island MCRD Project Coordinator.

## 12. CONTACTS:

a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX

- (1) Environmental Coordinator (Spray Coordinator):  
- (b) (6) DSN (b) (6) , (cellular) (b) (6) ; (b) (6) DSN (b) (6) ;  
- FAX (843) 228-2616; (b) (6) (b) (6) , (cellular) (b) (6) ; (b) (6) (b) (6)
- (2) Assistant Chief of Staff I & L: Col (b) (6) & Cpt (b) (6) DSN 335-2511
- (3) Pest Control Foreman: DSN 335-3663
- (4) P.I. Motor Pool: (b) (6) DSN (b) (6)
- (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
- (5) Thrifty Car Rental: (843) 525-9996
- (6) P.I. Rifle Range: DSN: 335-3183/3624

b. **Beaufort MCAS SC:**

- (1) Beaufort MCAS Environmental: (Commercial (843) 228-XXXX) (b) (6) DSN (b) (6) ; (b) (6) DSN (b) (6)
- (2) Fuels: DSN: 335-7049/7448/7168
- (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
DSN: (b) (6) (b) (6)
- (4) Base Ops: DSN 335- 7301/2/3  
(After duty hours: (b) (6) DSN: (b) (6)
- (5) Trans Alert/VAL: DSN: 335-7110
- (6) Weather: DSN 335-7001/7926/7/9 ([www.beaufort.usmc.mil](http://www.beaufort.usmc.mil))

c. **Beaufort County Mosquito Control:** (b) (6) (b) (6)

d. **Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) DSN: (b) (6)

e. **Quarters: JTR (Seasonal 15 Mar-30 Sep) Lodging/\$95, Meals/\$40, Max/\$137**

- Hampton Inn, \$95+Tax, (b) (6) , (843) 986-0600 (FAX 0494) Confirmation #88198804 21-25 Apr  
(Check-In 21 Apr – Check-Out 25 Apr )
- Sleep Inn, \$72+Tax, (b) (6) 843-522-3361, FAX: 843-522-9929
- Parris Island Billeting (b) (6) , DSN: 335-2744, FAX 3815); (843) 228-3960
- Comfort Inn, (843) 525-9366 (FAX 1529)(Gigi)
- Best Western (Sea Island Motel), (843) 524- 4121
- Port Royal Days Inn, (843) 524-1551
- Beaufort Ramada, 1-800-272-6232
- Holiday Inn, (843) 524-2144
- Best Western, Pt South, (I-95) 1-843-726-8101

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257
- (5) 910 OSF/OSA: Airfield Manager, Mr (b) (6) (b) (6)
- (6) 757 AS/DO: LtC Hart, Ext 1793
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) Ext 1239; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, (b) (6) (b) (6) ; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: CMS (b) (6) (b) (6)
- (11) Maintenance Control: Ext 1348
- (12) 910 LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL: CMS (b) (6) (b) (6)
- (14) Omega/SATO Travel: Ext 1772; (800) 285 – 6342
- (15) LG: Taxi Service to/from Airport: (b) (6) (b) (6) , FAX 1768
- (16) Supervisor of Flight Desk: 1069, FAX: 1371
- (17) Cellular Phones:
  - PMP/Entomologist Cellular Spray Phone: (b) (6) or (b) (6)
  - Mission Commander: (b) (6)
  - Spray Maintenance: (b) (6)

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT

### 1. MISSION BASICS:

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 21-25 April 2002
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 23 April 2002  
Time/s of Application (Local): 1925-1945 hrs
- f. Acres Treated: 7,680
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6) Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 7 April 2002
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-briefing: (When/Where/Briefer/s): Assistant Chief of Staff, Installation and Logistics, Col Semmler (Office); (b) (6) & Capt (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: Capt (b) (6)
- b. Certified PMP/s (Category 11): Capt (b) (6) (b) (6)
- c. Aircrew:
  - (1) Pilots: Capt (b) (6), Capt (b) (6)
  - (2) Navigator(s): Maj (b) (6), Maj (b) (6)
  - (3) Flight Engineer(s): SMS (b) (6), MSG (b) (6)
  - (5) Spray Operators: MSG (b) (6), TSG (b) (6)
- d. Safety Briefer: Capt (b) (6)
- e. Spray Maintenance: SMS (b) (6), TSG (b) (6), TSG (b) (6), SSG (b) (6)
- f. Spray Ground Monitors: Capt (b) (6) (b) (6)
- g. Crew Chiefs: TSG (b) (6), SSG (b) (6) (b) (6)
- h. Avionics: (b) (6), SRA (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 2/4.1
  - (2) Ferry Sorties/Hours: 2/4.3

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate
- d. Gallons Pesticide Loaded: 60
- e. Gallons Pesticide Applied: 60
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 15 gal of Heavy Aromatic Naptha
- h. Other Additives Used: None
- i. Application Rate: 1 oz/acre



**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System; Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8008 Flat Fan
- e. Nozzle Orientation & Number Used: straight down; 6
- f. Pressure: 37 p.s.i.
- g. Flow Rate: 3.6 gallons/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000 foot
- b. Spray Off Set: 2000 foot
- c. Spray Release Altitude: 150 AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground (Knots): 6 knots/140-160°
  - (2) Release Altitude: 7 knots/130°
- b. Temperature (Degrees Fahrenheit): 78°
- c. Relative Humidity: 33%
- d. Cloud Cover: clear
- e. Source: direct observation

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Oil Sensitive Cards (OSC) wrapped on 1 meter dowels
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: Comprehensive insect trapping program
  - (2) Results: A noticeable reduction of midge activity was observed the day following the spray. Carbon dioxide baited traps showed a 50-99 % decrease in biting midge species, depending on trap location, and 90-99 % decrease in the salt marsh mosquito, *Ochlerotatus taeniorhyncus*.

- 8. REMARKS:** We continue to get excellent support from the staff at Parris Island MCRD, which helps us in keeping our members mission qualified. Furthermore, the trapping program is helping us pinpoint the seasonal activity peaks for the three pest species of biting midges at Parris Island, which in turn will allow to project our application with better accuracy. We plan to continue trapping insects on a weekly basis during the coming year. The next scheduled mission to Parris Island is 20-25 October 2002.

**(b) (6)**

**(b) (6) (b) (6) CAPT, USAFR  
CERTIFIED PEST MANAGEMENT PROFESSIONAL**

# AERIAL SPRAY OPERATIONAL SCHEDULE

## CHERRY POINT NC

### LAVICIDE TEST

### 21 - 25 AUG 2000

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander/Pilot: \*Capt (b) (6) (b) (6)
- (2) Co-Pilot: Maj (b) (6) (b) (6)
- (3) Navigator: MAJ (b) (6)
- (4) Flight Engineer: MSG (b) (6)
- (5) Spray Operators: MSG (b) (6) & \*MSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: \*SMS (b) (6), TSG (b) (6), SSG (b) (6)
- (2) Crew Chief: MSG (b) (6)
- (3) Avionics: (b) (6)

##### c. Certified Pest Management Professionals: \*Maj (b) (6) 1LT (b) (6) (b) (6)

##### d. 910 AW Public Affairs. \*Lt (b) (6) (b) (6)

##### e. Lockheed Representatives. (b) (6) (b) (6), (b) (6)

\*U-SAFE RENTAL CAR AGENCY Mid-Size \$36.95 per day

#### 2. SCHEDULE: (All time Local)

##### 21 AUG (Monday):

**PPR # 234-1      Call Sign: Vader07**

0800: Show at KYNG

1000: Depart KYNG

1230: Land KNKT (Safety Briefing upon arrival)

1500: Meet with (b) (6), Craven County Health Department, 2818 Neuse Boulevard, New Bern, NC.

**Test will be done 22-24 Aug starting at sunrise for 2 hrs each day**

##### 22 AUG (Tuesday):

0500: Report

0633: Sunrise

0634: Start of Test

0834: End of Test

1946: Sunset

##### 23 AUG (Wednesday):

0500: Report

0634: Sunrise

0635: Start of Test

0835: End of Test

1945: Sunset

##### 24 AUG (Thursday):

0500: Report

0635: Sunrise

0636: Start of Test

0836: End of Test

1944: Sunset

##### 25 AUG (Friday):

0800: Report

1000: Depart KNKT

1230: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Cellular Phones, Wind Gauge, Compass, UHF Radio, Pest Safety Binder, Signal Mirrors, Satloc Trackstar, kromekote cards, swath kit.
- b. **Navigator:** Maps/Map Bag, Validation Map, Laptop Computer
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Base Ops:** DSN 582-2233
- b. **Trans Alert:** Gunney Commins, 582-2312/3232/2427
- c. **Fire Department:** Gunney Notar, 582-3231

**5. PARKING PLAN:** as directed.

**6. RADIO FREQUENCIES:**

**7. IN-BRIEFING:** Determined by Mission Commander

**8. SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS Modules 1 and 2
- b. **Nozzle Tips/Orientation:** Ultra-high volume herbicide booms.
- c. **Aircraft:** 99107; Mission Identifier: QZNRKA502234

**9. SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL depending upon weather conditions
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** VectoBac *Bti*
- d. **Application Rate:** 24 ounces in 10 gal water per acre.
- f. **Flow Rate:** 233 gallons/minute
- g. **Swath Width:** 50 feet.

**10. PESTICIDE LOADING:**

- a. **How Much Pesticide:**
- b. **Where:**
- c. **When:** 0600 (22-24 Aug)
- d. **Furnished by Installation:**
  - (1) Pesticide
  - (2) Loading Equipment/Crew
  - (3) Hazardous Waste Disposal
  - (1) Two B-5 or B-1 Stands

**11. SPRAY MONITORING OR TESTING:**

The local mosquito control districts will put out cages of live mosquitoes and oil-sensitive cards to monitor the control. Also, light trap data and biting count data will be collected pre- and post-spray by the base and the mosquito control districts to determine spray effectiveness.

**12. QUARTERS.**

**Billeting Office: DSN 574-4667 Contract Quarters:**

- HOLIDAY INN \$64 +TAX, 1800-949-2629

**13. U-SAFE Rental Car, \$36.95 day, 1000 free miles; 252-447-3999; FAX 252-447-2439**

Confirmation Number: MCCSCPT001 (Lt (b) (6) (b) (6))

Confirmation Number: MCCSCPT002 (Maj (b) (6))

Confirmation Number: MCCSCPT003 (Capt (b) (6) (b) (6))

Confirmation Number: MCCSCPT004 (SMS (b) (6) )

**14. CONTACTS:**

**a. Vector Control Program Manager, Craven Co., NC. (b) (6)**

**b. C.O., Preventive Medicine, Cherry Point NC. Lt (b) (6)**

**c. Extension Entomologist, NCSU, (b) (6)**

**d. Field R&D Specialist, Valent Biosciences, (b) (6)**

**e. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, + Ext

(1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243

(2) 910 AW Command Post: Ext 1315

(3) 910 AW/PA: Lt (b) (6) (b) (6) ; FAX 1161

(4) 910 OG/CC: Col (b) (6) / 1179

(4) 910 OS/OSA: Airfield Manager, (b) (6) (b) (6) (b) (6)

(5) 757 AS/DO: LtC (b) (6) , Ext 1258

(6) 910 OSF Supervisor of Flight Desk (SOF): 1069; FAX 1371

(7) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) FAX 1657

(8) 757 AS/DOS: Aerial Spray Office, (b) (6) (b) (6) FAX 1616

(9) 910 LG/CC: (b) (6)

(10) 910 LG/LGM: CMS (b) (6) (b) (6) (b) (6)

(11) Maintenance Control: Ext 1327

(12) 910 LG/LGMS: Spray Maintenance: Ext 1132/1586

(13) 910 LG/LGL: CMS (b) (6) (b) (6)

(14) Omega/SATO Travel: Ext 1772; 1-800-285-6342

(15) Cellular Spray Phones: (b) (6)

# 910 AW AERIAL SPRAY PMP'S POST-MISSION REPORT

## 1. MISSION BASICS:

- a. Installation Sprayed: Cherry Point NC
- b. Mission Duration: 21-25 Aug 00
- c. Purpose of Application: Lavicide Testing
- d. Application Date(s) and time(s) (Local): (see paragraph 8, Remarks)
- e. Acres Treated: N/A – Tests with bioassays repeated on same swaths
- f. Project Coordinator/s (Name/Rank, Title):
  - (1) (b) (6), Craven County Vector Control Program Manager
  - (2) Lt (b) (6), C.O Preventive Medicine of Cherry Point NC
  - (3) (b) (6), Extension Entomologists
  - (4) (b) (6), Field R&D Specialist, Valent Biosciences
- g. Date Spray Map Last Approved: 22 Aug 00
- h. Date of Waste Generation Letter:
- i. Installation In-Briefing: (When/Where/Briefer/s): 1500, 21 Aug 00/Craven Co Health Department  
Maj (b) (6) 1Lt (b) (6) (b) (6) & Capt (b) (6) (b) (6)

## 2. OPERATIONAL:

- a. Mission Commander: Capt (b) (6) (b) (6)
- b. Certified PMP/s (Category 11): Maj (b) (6) 1Lt (b) (6) (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander: Capt (b) (6) (b) (6)
  - (2) Co-Pilot(s): Maj (b) (6) (b) (6)
  - (3) Navigator: Maj (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
  - (5) Spray Operators: MSG (b) (6), MSG (b) (6)
- d. Safety Briefer: Lt (b) (6)
- e. Spray Maintenance/Pesticide Loaders: SMS (b) (6), TSG (b) (6), TSG (b) (6)
- f. Crew Chief(s): MSG (b) (6)
- g. Public Affairs: Lt (b) (6) (b) (6)
- h. Lockheed PA Representatives: (b) (6) (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 5 Sortie; 6.5 Hours
  - (2) Ferry Sorties/Hours: 2 Ferries; 3.4 Hours

## 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): VectoBac *Bti*
- b. EPA Registration Number:
- c. Formulation Sprayed: Water Dispersible Granule
- d. Pounds Pesticide Loaded: 220.4
- e. Pounds Pesticide Applied: 220.4
- f. Gallons and Name Diluent Used: 2,260 Water
- g. Gallons and Name of Flush Used: 2,000 Water
- h. Other Additives Used: StaPut; Hi-Lite dye
- i. Application Rate:
  - (1) 22 Aug: 0.93 Oz/Gal Water (860 Gal)
  - (2) 23 Aug: 1 Oz/Gal Water (800 Gal)
  - (3) 24 Aug: 3.2 Oz/Gal Water (600 Gal)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): C-130 (99107)
- b. Spray System (Modules Used) and System ID #: Modules 1 and 2 of SP2G - MASS ULV
- c. Spray System Configuration: Fuselage Booms (22 Aug); Fuselage & Wing Booms (23 & 24 Aug)
- d. Nozzle Type/Size: 3" Nozzles (22 Aug); 8070 Flat Fan (23 & 24 Aug)
- e. Nozzle Orientation/Total: 2/Straight Back (22 Aug); 70/Straight Back (23 Aug); 24/Straight Back (24 Aug)
- f. Pressure: 40 PSI
- g. Flow Rate: 233 gpm (22 Aug); 488 gpm (23 Aug); 163 gpm (24 Aug)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 50 feet (22 Aug); 350 feet (23 & 24 Aug)
- b. Spray Off Set: 75 feet (22 Aug); No off-set 23 Aug; 100 feet (24 Aug)
- c. Spray Release Altitude: 150 feet AGL
- d. Ground Speed: 200 knots ground speed

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 350°/3.4 mph (22 Aug); Calm (23 Aug); 160°/2.5 mph (24 Aug)
  - (2) Release Altitude: 350° 6 Knots (22 Aug); 230° 4 Knots (23 Aug); 160° 8 Knots (24 Aug)
- b. Temperature (Degrees Fahrenheit): 62.5° (22 Aug); 65° (23 Aug); 73° (24 Aug)
- c. Relative Humidity: 84.5% (22 Aug); 93% (23 Aug); 82.5% (24 Aug)
- d. Cloud Cover: Clear (22 & 23 Aug); 80% Cloud Cover (24 Aug)
- e. Source: Ground Observations

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Kromekote Cards
  - (2) Results: Good disposition in open and under moderate forest canopy;  
Poor deposition under heavy forest canopy
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito larvae bioassays
  - (2) Results: (See Remarks)

**8. REMARKS:**

- a. 22 Aug: 10 gal/acre application rate; 98% mortality of mosquito larvae in open and under moderate forest canopy; 73% mortality under heavy canopy.
- b. 23 Aug: 3 gal/acre application rate; 94% mortality in open; 79% mortality under moderate forest canopy; 54% mortality under heavy canopy.
- c. 24 Aug: 1 gal/acre application rate; 98% mortality in open; 4% mortality under moderate canopy; 1% mortality under heavy canopy.

(b) (6) **PhD, Maj, USAFR**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL**

FILENAME: 21-25 Aug 00 PMP Report

OPR: (b) (6)



**DEPARTMENT OF THE AIR FORCE**  
**Air Reserve Command**

**TO: 757 AS/DOS**

**26 Jan. 02**

**SUBJECT: SITE SURVEY REPORT**

**FROM: 910 MXS/LGMZ**

1. Aerial Spray MXS attended a site survey of the proposed exercise site with Coast Guard representatives @ Santa Barbara, CA. (21-25 Jan. 02).
2. Attendees were as follows:
  - (b) (6) USCG Dist. #13 Marine Safety
  - Lt. Commander (b) (6) USCG Dist. #11 Commander Marine Safety
  - (b) (6) USAFR, Aerial Spray Maint. Flight Chief
  - Charles Foley local FFA manager Central CA. Hub
  - (b) (6) (b) (6) assistant manager Central CA. Hub
  - (b) (6) airport manager
  - (b) (6) airport operations specialist
  - (b) (6) Clean Seas local operations manager
  - Lt. (b) (6) Santa Barbara County Sheriff's Dept. Training Branch
  - Lt. Col. (b) (6) California Air Guard Maint. Officer
3. Attendees met with Exxon Oil Rep. and flew over natural oil seeps of the coast of Santa Barbara. Something we should attempt to practice while we are flying our sorties over the coordinated spray site south of Santa Barbara @ Carpenter City location.
4. We will be parking the Aircraft @ the Forest Service ramp, located at the west end of Santa Barbara Regional Airport. ( See Airport Map, Parking spot outlined in Green). The ramp is fenced in and has a limited access gate and roving security patrols hourly. (Need for Ravens?). If we take Ravens they can store weapons @ the Santa Barbara County Sheriff's Dept.
5. Clean Seas will supply the surface vessels @ the Oil Spill location. (2-3 vessels). One 45' cleanup vessel and two 21' work boats for transportation. The spray site can be viewed from shoreline. So there should be several observers from the USCG, commercial applicators, oil company rep's. and the local news agencies.
6. California Air Guard @ Oxnard, CA. will supply ground support equipment @ Santa Barbara. Coast Guard Strike team will pick up the items and transport them from Oxnard to Santa Barbara. POC's for Oxnard: (b) (6)

(b) (6) , transportation mgr. DSN (b) (6) , Reed Allen, powered and non-power ground support equipment mgr. DSN (b) (6) , Lt. Col. (b) (6) , 146<sup>th</sup> MXS officer, DSN (b) (6) .

7. Quarters will be @ either Holiday Inn, Phone #805-964-6241 or Best Western South Coast Inn, Phone #800-350-3614 @ \$114.00 per night. Airport has several car rental facilities, or we can call local Enterprise Company for rentals. Mid size cars @ \$50.00 per day and Vans @ \$65.00 per day.
8. Santa Barbara County Fire Department will supply water truck for our reload exercises. The USCG Strike team will use 55 gal. drums filled with water to simulate a re-supply exercise for the water truck.
9. Aircraft & ground support equipment fuel will be supplied by Mercury Air at the airport.
10. The exercise is planned to proceed as follows:
  - A. 1 Apr. 02 C-130 departs Youngstown ARS, OH.
  - B. 2 Apr. 02 Meeting/Ground Training day. This will include inflight safety briefings for Aircraft commanders. Begins @ 0830, location TDA. Aircraft/Spray Mxs crew will configure aircraft with oil spill booms & have aircraft ready for Show & Tell @ 1600-1700. Happy Hour will be @ Elephant Bar 1730-1900 hrs.
  - C. 3 Apr. 02 0800 crew show @ TBA for final coordination briefings. 0830 Mxs will show at aircraft for preparation for 1000 takeoff for spray site loaded with 1000 gals of water. 1130 hrs C-130 aircraft returns to base for engine running upload exercise. 1200 hrs C-130 takeoff for spray site. 1330 hrs C-130 returns to base for engine running upload exercise. 1400 hrs C-130 takes off for spray site. 1530 hrs C-130 returns to base for termination of exercise. 1600 hrs hot wash @ Forest service meeting room for aircrew/mxs/uscg/clean seas and Exxon/mobile.
  - D. 4 Apr. 02 C-130 can depart for home station or have an additional training day @ location. Water can be supplied @ parking site with water hydrant, but aircraft will have to self-contained start because ground support equipment will departing this date with USCG strike team.
  - E. 5 Apr. 02 C-130 departs for YARS?
11. Suggest we take a Public Affairs rep. With us to coordinate with press and USCG PA rep. For any additional info please contact me at (b) (6)

(b) (6) WS-09/E8 USAFR  
Aerial Spray Maintenance Flight Chief



**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
**3976 King Graves Rd Unit 26**  
**Vienna OH 44473-5926**

27 JUN 08

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Langley AFB, VA.

1. Objective/Purpose/Benefits of the Spray Mission: Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes around LFI and the surrounding communities.

2. Capability: Aerial Spray C-130 Aircraft available 21-25 JUL 08

3. Concept of Operations:

**21 JUL (Monday):**

1000 Show Time  
1200 Takeoff KYNG  
1330 Land KLFI w/ Safety Briefing immediately following  
1430 Installation Briefing

**22 JUL (Tuesday):**

1500 Show time  
1530 WX Decision, load Dibrom  
1730 Takeoff KLFI  
2020 Sunset

**23 JUL (Wednesday):**

1500 Show time  
1530 WX Decision, load Dibrom  
1730 Takeoff KLFI  
2020 Sunset

**24 JUL (Thursday):**

1500 Show time  
1530 WX Decision, load Dibrom  
1730 Takeoff KLFI  
2019 Sunset

**25 JUL (Friday): Deploy to YNG**

1000 Show Time

1200 Takeoff KLFI

1400 Land KYNG

4. Spray Parameters:

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom<sup>®</sup> Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.6 Gallons/Minute
- f. **Acreage:** Approximately 125,000 acres on the peninsula
- g. **Swath Width:** 2000 foot

5. Aircraft Commander: Capt (b) (6) (b) (6)

6. Mission Commander: Maj (b) (6) (b) (6)

6. Any questions please contact me at DSN (b) (6)

// SIGNED //

(b) (6) (b) (6)

757 Aerial Spray

CAPT, USAFR

21 May 2001

**MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497 -0198)**

**FROM: 757 AS/DOS**

**SUBJECT: Capability and Concept of Operations for Aerial Spray at Grand Forks AFB ND Control of Mosquitoes**

1. **Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks AFB ND.
2. **Capability:** Spray Aircraft Available on 21 – 25 May 2001
3. **Concept of Operations:**
  - a. **21 May 01 (Monday):**

1100	Take Off KYNG	<b><u>PPR Not Required</u></b>
1330	Land KRDR	
1430	Safety Briefing	
  - b. **22 May 01 (Tuesday):**

0340	Show Timefor all personnel	
	Times for chemical mis/load determined by Spray MS Superv	
0530	Take Off KRDR	
0543	Begin larvicide spray	
  - c. **23 May 01 (Wedday):**

0340	Show Timefor all personnel	
	Times for chemical mis/load determined by Spray MS Superv	
0530	Take Off KRDR	
0541	Begin larvicide spray	
  - d. **24 May 01 (Thursday):**

1730	Load Chemical	
1930	Take-Off KRDR	
2110	Land KRDR	
  - e. **25 May 01 (Friday):**

TBA	Out-Brief	
1100	Take Off KRDR	
1500	Land KYNG	

**4. Spray Parameters:**

- a. **Acreage:** 5000 Acres (Only areas determined by PMP)
  - b. **Altitude:** 150 Ft AGL & 150 Ft ULV
  - c. **Pesticide:** Altosid®
  - d. **Deploy:** 3.3 Hrs
  - e. **Re-Deploy:** 3.0 Hrs
  - f. **Spray Time:** Will be determined by PMP
- 5. Mission Commander:** LtC (b) (6) (b) (6)
- 6. Aircraft Commander:** LtC (b) (6) (b) (6)
- 7.** Support required at Grand Forks AFB ND has been coordinated with the organization's Environmental/Spray Coordinator Ms (b) (6) (b) (6) DSN (b) (6) .
- 8.** HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616, ATTN: 757 AS/DOS.

(b) (6) (b) (6) Lt Col, USAFR  
Chief, Aerial Spray Operations

# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 21-25 MAY 2001

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: LTC (b) (6) (b) (6)
- (2) Pilots: LTC (b) (6) (b) (6) Major (b) (6) (b) (6)
- (3) Navigators: MAJ (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: MSG (b) (6), MSG (b) (6), MSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: SMS (b) (6) (b) (6) TSG (b) (6) (b) (6) TSG (b) (6) (b) (6)  
SSG (b) (6) (b) (6)
- (2) Crew Chiefs: MSG (b) (6), TSG (b) (6)
- (3) Avionics: TSG (b) (6)

##### c. Entomologists/Ground Support: LTC (b) (6) & 1LT (b) (6) (b) (6)

#### 2. SCHEDULE: (All Local) Times

##### 21 MAY (Monday)

0800: Show at KYNG  
1100: Depart KYNG  
1330: Land KRDR/Safety Briefing  
1430: In-brief

##### 22 MAY (Tuesday):

0340: Show time  
0530: Take Off KRDR  
0543: Sunrise  
0543: Begin larvicide spray (aiming for two lifts if weather permits)

##### 23 MAY (Wednesday):

0340: Show time  
0530: Take Off KRDR  
0541: Sunrise  
0541: Begin larvicide spray (aiming for two lifts if weather permits)

##### 24 MAY (Thursday):

1730: Load chemical  
1930: Take Off KRDR (Begin ULV sortie)  
2110: Land KRDR  
2111: Sunset

##### 25 MAY (Friday):

TBA: Out-brief  
1100: Take Off KRDR  
1500: Land KYNG



### 3. ITEMS TO TAKE:

- a. **Mission Commander:** Hand Held GPS, 1 Cellular Phone
- b. **Entomologist:** 1 Cellular Phones, Wind Gauge, 2 Compasses, Pest Safety Binder, 2 Signal Mirrors, 1 UHF Radio, 10 Packs Water Sensitive Cards, 3 Boxes Card Holders with Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Toshiba Computers, 1 SATLOC Manual, Project Notebook, 2 Anemometers, Entomologist's Tool Kit, Trakstar Receiver and Antenna, Batteries, Kodak Camera
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

### 4. PPR: Not required weekdays

### 5. RADIO FREQUENCIES: Air To Ground Primary 392.2

### 6. SPRAY CONFIGURATION:

- a. **System:** 2-Module System/Stainless Steel ULV Wing Booms and Fuselage Booms
- b. **Nozzle Tips/Orientation:**
  - i. larvicide: Raindrop nozzles 45° back
  - ii. ULV: 8008 TeeJet oriented straight down
- c. **Number:**
  - i. larvicide: Fuselage only, 6 total (3 each side) 45° back
  - ii. ULV: wing only, 4 8008s total (2 each side)
- d. **Booms:** Full Wing or Fuselage Booms as required (see above)
- e. **Aircraft:** 99108

### 7. SPRAY PARAMETERS:

- a. **Altitude:** 150' AGL for both applications on swath when no trees are present for larvicide. 150' for ULV application
- b. **Swath Width.** 90 feet for larvicide; 1000 feet for ULV.
- c. **Flow Rate.** 83.6 gallons/minute larvicide; 2.18 gallons/minute ULV
- d. **Application Rate.** 2 gal/acre (water with 0.75 oz of Altosid®), larvicide; 0.60 oz/acre Trumpet, ULV
- e. **Ground Speed:** 200 Knots

**8. SPRAY MIXING AND LOADING:  
Tuesday & Wednesday 22 & 23 May**

- a. Composition of each Gallon:
- (1) 0.375 ounces of Altosid 20
  - (2) 0.08 ounces of Control® drift retardant
  - (3) Water
- b. First Load (2 tanks of 475 gallons each + sump of 70 gallons)
- (1) Fill with 475 gallons of water/tank. Total water in tanks = 950 gal.
  - (2) 70 gallons of water in sump
  - (3) Total water added = 1,020 gallons
  - (4) Add 1.5 gallons of Altosid® per tank (3 gallons total).
  - (5) Add 1 bottle of Control®/tank while agitating approximately 15 min
  - (6) Total quantity mix. 1023 gallons
- c. Subsequent Loads (2)
- (1) Fill with 475 gallons of water/tank. Total water = 950 gal
  - (2) Add 1.4 gallons of Altosid® per tank. Total Altosid® = 2.8 gal
  - (3) Add 1 bottle of Control/Tank.
  - (4) Total quantity mix. 952.8 Gallons (does not include 70 Gal already mixed in sump)
- d. Final Load (1 tank only)
- (1) Fill with 450 gallons of water. Total water = 450 gal
  - (2) Add 1.3 gallons of Altosid®.
  - (3) Add 1 bottle of Control®.
  - (4) Total quantity of mix 451.3 gallons (Does not include 70 Gal already mixed in sump)
- e. Mixing Instructions:
- SHAKE WELL BEFORE USING. Altosid may separate on standing and must be thoroughly agitated prior to dilution.
- PRECAUTIONARY STATEMENT: Spray solution should be used within 48 hours; always agitate before spraying.

**SPRAY MIXING AND LOADING:**

**Thursday 24 May**

The amount of Trumpet to load will be determined on site

**9. CONTACTS:**

- a. **319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks ND 58205**  
**DSN 362-xxxx; Commercial (701) 747-xxxx**
- (1) **Base Operations:** (b) (6) Airfield Manager or 1LT (b) (6) DSN (b) (6)
  - (2) **Environmental Officer:** (b) (6) (b) (6) DSN (b) (6) FAX 6155
  - (3) **Base Civil Engineer:** LTC (b) (6)
  - (4) **Pest Applicator:** SSG (b) (6) , DSN (b) (6) , FAX 3432
  - (5) **Billeting:** DSN 362-3070/6189, (701) 594-8431; FAX 362-3069  
Prime Knight: DSN 362-3844; (701) 747-3844  
- Lakeview Inn, 3350 32<sup>nd</sup> Ave, (701) 775-5000

**b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 OSF/OSA: Airfield Manager: (b) (6) (b) (6) (b) (6)
  - Assistant Air Field Manager (ACAM), (b) (6)
- (6) 757 AS/DO: LtC Mike Deckman, Ext 1258
- (7) 757 AS/DOO: Ops Admin: SMSgt (b) (6) (b) (6)
- (8) 757 AS/DOS: Aerial Spray Office, (b) (6) (b) (6) ; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: CMSgt (b) (6) (b) (6) (b) (6)
- (11) Maintenance Control: Ext 1348910
- (12) LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL: CMSgt (b) (6) (b) (6)
- (14) Omega/SATO Travel: Ext 1772; (800) 285 – 6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - PMP/Entomologist: (b) (6)
  - Mission Commander: (b) (6)
  - Spray Maintenance: (b) (6) ; Pager (b) (6)

15 July 2002

**MEMORANDUM FOR HQ AFRC/DOOM** (FAX: 497-0198)

**FROM:** 757 AS/DOS (b) (6) (b) (6) FAX 346-1616)

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Langley AFB

1. **Purpose/Objectives/Benefits:** Control nuisance and vector mosquitoes in order to improve working conditions for members operating at Langley AFB VA.
2. **Capability:** Spray Aircraft Available 21-26 Jul 02.
3. **Concept of Operations:**
  - a. **21 Jul (Sunday):**
    - 1200 Show at KYNG
    - 1400 Take-Off KYNG
    - 1530 Land KLFI
    - 1545 Safety Brief
  - b. **22 Jul (Monday):**
    - 1100 In-Briefing with Langley AFB, CE Conference Room
    - 1400 Show Time/Weather Decision
    - 1430 Load Chemical
    - 1700 Take-Off KLFI, Spray Areas Designated by PMP
    - 2020 Land KLFI
  - c. **23 Jul (Tuesday):**
    - 1100 Daily meeting for PMP/MC in the hotel lobby
    - 1400 Show Time/Weather Decision
    - 1430 Load Dibrom
    - 2020 Sunset
  - d. **24 Jul (Wednesday):**
    - 1100 Daily meeting for PMP/MC in the hotel lobby
    - 1400 Show Time/Weather Decision
    - 1430 Load Dibrom
    - 1700 Depart KLFI, Spray Areas Designated by PMP
    - 2019 Land KLFI

**e. 25 Jul (Thursday):**

1100 Daily meeting for PMP/MC in the hotel lobby  
1400 Show Time/Weather Decision  
1430 Load Dibrom  
1700 Depart KLFI, Spray Areas Designated by PMP  
2019 Land KLFI

**f. 26 Jul (Friday):**

0900 Report  
1100: Depart KLFI  
1230: Land KYNG

**4. Spray Parameters:**

- a. Acreage: approximately 86,000 Acres
- b. Altitude: 150 Ft AGL
- c. Ground Speed: 200 Knots
- d. Pesticide: Dibrom® Concentrate
- e. Application Rate: 0.5 Ounce per Acre
- f. Flow Rate: 1.8 Gal per Minute at Craney Island; 3.6 Gallons per Minute for Langley AFB designated areas
- g. Swath Width: 1000' swaths at Craney Island; 2000' to 2500' swaths at Langley AFB
- h. System: SP2G – MASS ULV; Modules 1 and 2
- i. Nozzle Tips/Number/Orientation: 8008/8 oriented straight down for 2000' swaths; 8008/4 oriented straight down for 1000' swaths oriented straight down
- j. Aircraft Tail Number: 99106
- k. Deploy/Re-Deploy Time: 3.2 hrs
- l. Spray Time: 3.50 hrs (or as called by PMP)

**5. Aircraft/Mission Commander: Major (b) (6) (b) (6)**

**6. Support required at Langley AFB has been requested via FAX message.**

**7. If you have any questions concerning this mission please contact DSN (b) (6)**

(b) (6) (b) (6) Major, USAFR  
Chief, Aerial Spray  
757 AS/DOS (b) (6) )

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 21-26 JULY 2002

**Purpose/Objectives/Benefits:** control nuisance and vector mosquitoes in order to improve working conditions and lower the incidence of arthropod borne illness for members operating at Langley AFB and surrounding communities.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: MAJ (b) (6) (b) (6)
- (2) Pilots: MAJ (b) (6) (b) (6) MAJ (b) (6)
- (3) Navigators: Maj (b) (6) (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: CMS (b) (6) MSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: SMS (b) (6) , TSG (b) (6) TSG (b) (6) ,  
SSG (b) (6)
- (2) Crew Chiefs: SSG (b) (6) , SRA (b) (6)
- (3) Avonics: TSG (b) (6) , TSG (b) (6)

##### c. Certified Pest Management Professionals, LTC (b) (6) (b) (6) MAJ (b) (6) (b) (6) CPT (b) (6) (b) (6)

Gov Vehicles: 9 pax van, 6 pax van, sedan, 1/2 ton truck

#### 2. SCHEDULE: (All time Local)

##### 21 JUL (Sunday):

**PPR # 721CL01**

1200: Show at KYNG  
1400: Depart KYNG  
1530: Land KLF  
1545: Safety Briefing

##### 22 JUL (Monday):

0900: In-Briefing at CE Conference Room  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
2020: Sunset

##### 23 JUL (Tuesday):

1100: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
2020: Sunset

##### 24 JUL (Wednesday):

1100: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
2019: Sunset

**25 JUL (Thursday):**

1100: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
2019: Sunset

**26 JUL (Friday):**

0900: Report  
1100: Depart KLFI  
1230: Land KYNG

**3. ITEMS TO TAKE:**

- |                              |   |
|------------------------------|---|
| <b>a. Entomologist:</b>      | Cellular Phones, Kestrel Weather Monitor, Compass, Pest Safety Binder, Signal Mirrors, UHF Radio, Satloc Ground Tracker and Laptop Computer |
| <b>b. Navigator:</b>         | Maps/Map Bag, Validation Map, Laptop Computer   |
| <b>c. Spray Operator:</b>    | Safety Gear, Calibration Tables   |
| <b>d. Spray Maintenance:</b> | Deployment Kit  |

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- |    |                                       |
|----|---------------------------------------|
| a. | <b>Langley Tower:</b> DSN 574-5326    |
| b. | <b>Langley Base Ops:</b> DSN 574-2504 |

**5. PARKING PLAN:** Langley Aero Club ramp or as directed.

**6. RADIO FREQUENCIES:**

- |  |   |
|--|---|
| <b>a. Felker AAF Tower (Ft Eustis): 126.3, 248.2, 241.0</b>                |   |
| (1)  | Ops phone 878-3588                                  |
| (2)  | Tower phone 878-3530                                |
| (3)  | Flight Service 122.2                                |
| <b>b. Newport News-Williamsburg Int: (Operating Hours 1000Z-0200Z)</b>     |   |
| (1)  | Ground - <b>121.9 or 348.6</b> (phone 877-0221 ops) |
| (2)  | Tower – <b>124.9 or 280.1</b> (phone 877-2962)      |
| (1)  | FSS – 122.1R, 122.2, 122.65, OR 124.9               |
| (2)  | CTAF – <b>118.7</b>                                 |
| <b>c. Langley AFB: Tower OIC MSG (b) (6) Lt (b) (6) 1st OSS SQ</b>         |   |
| (1)  | Tower - <b>125.0 or 253.5</b> (phone 4-5326)        |
| (2)  | Ground - <b>121.7 or 275.8</b>                      |
| (3)  | Clearance – <b>118.85 or 271.3</b>                  |
| (4)  | Metro - <b>239.8</b>                                |
| <b>d. Norfolk NAS (Chambers Fld): Tower - 124.3, 126.375, 340.2, 318.7</b> |   |
| <b>e. Spray Ground: Primary 392.2 / 308.6 Secondary</b>                    |   |



7. **IN-BRIEFING:** Required; IAW the Schedule above.
8. **SPRAY CONFIGURATION:**
- a. **System:** SP2G - MASS ULV; Modules 1 and 2
  - b. **Nozzle Tips/Orientation:** 8 8008's for 2000' swathes and 4 8008's for 1000' swathes oriented straight down.
  - c. **Aircraft:** 99106
9. **SPRAY PARAMETERS:**
- a. **Altitude:** 150' AGL
  - b. **Ground Speed:** 200 KNOTS
  - c. **Pesticide:** Dibrom<sup>®</sup> Concentrate
  - d. **Application Rate:** 0.5 Ounce/Acre
  - e. **Flow Rate:** 1.8 Gallons/Minute at Craney Island; 3.6 Gallons/Minute at Langley areas
  - f. **Acreage:** Approximately 86,000 Acres
  - g. **Swath Width:** 1,000 Feet at Craney Island; 2,000 Feet at Langley areas.
10. **PESTICIDE LOADING:**
- a. **How Much Pesticide:** 334 Gallons for 86,000 acres sprayed.
  - b. **Where:** Aero Club Ramp
  - c. **When:** 1430 each day.
  - d. **Furnished by Installation:**
    - (1) Pesticide
    - (2) Loading Equipment/Crew
    - (3) Hazardous Waste Disposal
    - (4) Two B-5 or B-1 Stands
11. **SPRAY MONITORING OR TESTING:**
- The local mosquito control districts and Langley Pest Control will conduct mosquito surveillance using either trapping or biting count pre- and post-spray data to determine spray effectiveness. Oil sensitive cards will be used to confirm application within the spray blocks.
12. **CONTACTS:** LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX
- a. **LANGLEY AFB VA:**
    - Wing Commander: Col (b) (6) , DSN (b) (6)
    - Base Commander: Col (b) (6) , DSN (b) (6)
    - Spray Coordinator: (b) (6) DSN <sup>(b)</sup> (b) (6) ; Fax 3503
    - Civil Engineer: Lt Col (b) (6) (b) (6)
    - Deputy Operations Chief: Lt Col (b) (6)
    - Deputy Chief/Civil Engineer: (b) (6) (b) (6)
    - Base Operations: DSN 574-2504
    - Langley Control Tower: Lt (b) (6) DSN (b) (6)
    - Weather: Langley AFB, DSN 574-5907
    - Ft Eustis: DSN 297-5300/3343
    - Command Post: DSN 574-5411

Pest Control Foreman: (b) (6) (b) (6) DSN (b) (6) or Home (b) (6)  
Pest Control/Environmental NCOIC: MSG (b) (6)  
Public Affairs: DSN 574-2018/2010/2019  
Fuels: DSN 574-4312/3623/4224  
Motor Pool: 574-7505/5712 (3 vans and 1 staff vehicle supplied by (b) (6) )  
ACC PMP: (b) (6) (b) (6) DSN (b) (6) , cell phone (b) (6)

**b. Billeting Office: COM: (757) 764-4667 EXT 2519 (ATTN: SSG (b) (6)**  
**DSN 574-4667, EXT 2519; FAX 574-3038**

**- Contract Quarters:**

**Quality Inn, 1809 W Mercury Blvd, Hampton VA (757) 838-5011**  
**Group #298683, \$79 per night**

**c. FT EUSTIS VA:**

Environmental Coordinator: (b) (6) and (b) (6) , DSN (b) (6) )  
Entomology Shop: DSN 927-3405/2585; Com. (757)-878-XXXX

**d. Craney Island: (b) (6)**

**e. Hampton Mosquito Control: (b) (6) , (b) (6) home**  
**Beeper (b) (6)**

**f. York County Control: (b) (6) (b) (6)**

**g. Poquoson: (b) (6)**

**h. City of Portsmouth Biologist: (b) (6)**

**i. Newport News Mosq. Control: (b) (6)**

**j. Newport News/Williamsburg Int.:**

- (1) Fixed Base Operator: Flight Int 877-6401
- (2) Flight Service: 877-0209
- (3) Tower: 877-2962
- (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

**k. Norfolk NAS VA: DSN 564-2442/7598 or COM (757)-444-2442/7598**

**l. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

**Toll Free 1 - 800 - 278 - 7046, + Ext**

- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Lt (b) (6) (b) (6) FAX 1022
- (4) 910 OG/CC: LtC (b) (6)
- (5) 910 OS/OSA: Airfield Manager, (b) (6) (b) (6) (b) (6)
- (6) 757 AS/DO: LtC (b) (6) (b) (6) (b) (6)
- (7) 910 OSF Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (8) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) ; FAX 1657
- (9) 757 AS/DOS: Aerial Spray Office, (b) (6) (b) (6) FAX 1616
- (10) 910 LG/CC: Ext 1225
- (11) 910 LG/LGM: CMS (b) (6) (b) (6) (b) (6)
- (12) Maintenance Control: Ext 1327
- (13) 910 LG/LGMS: Spray Maintenance, Ext 1132/1586
- (14) 910 LG/LGL: CMS (b) (6) (b) (6)
- (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6)
  - Spray Maintenance: (b) (6)

# 910 AW AERIAL SPRAY PMP'S POST-MISSION REPORT

## 1. MISSION BASICS:

- a. Installation Sprayed: Langley AFB
- b. Mission Duration: 21-26 July 2002
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date(s) and time(s) (Local): 1715-2020 (22 July) & 1720-1940 (25 July)
- e. Acres Treated: 62,208 (22 July) & 16,128 (25 July)
- f. Project Coordinator/s (Name/Title, Phone #):  
Langley AFB: (b) (6)
- g. Date Spray Map Last Approved: 22 Jul 02
- h. Date of Waste Generation Letter: 4 April 1996
- i. Installation In-Briefing: (When/Where/Briefer/s): 22 Jul 02, CE Conference Room, Langley AFB;  
Maj (b) (6) & Maj (b) (6)

## 2. OPERATIONAL:

- a. Mission Commander: Major (b) (6) (b) (6)
- b. Certified PMP/s (Category 11): Capt (b) (6) (b) (6) Maj (b) (6) (b) (6) LTC (b) (6) (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander/Pilot: MAJ (b) (6) (b) (6)
  - (2) Co-Pilot(s): Maj (b) (6)
  - (3) Navigator: Maj (b) (6) (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
  - (5) Spray Operators: CMS (b) (6), MSG (b) (6)
- d. Safety Briefer: Capt (b) (6) (b) (6)
- e. Spray Maintenance/Pesticide Loaders: MSG (b) (6), TSG (b) (6),  
TSG (b) (6) SSG (b) (6)
- f. Crew Chief(s): SSG (b) (6), SRA (b) (6)
- g. Avonics: TSG (b) (6), TSG (b) (6)
- h. Flying Data:
  - (1) Spray Sorties/Hours: 3 Sorties; 6.8 Hours
  - (2) Ferry Sorties/Hours: 2 Ferries; 3.2 Hours

## 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (97% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 330
- e. Gallons Pesticide Applied: 330
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 48 HAN
- h. Other Additives Used:
- i. Application Rate: 1.0 oz/acre at Craney Island & 0.5 acre elsewhere

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): C-130 (99106)
- b. Spray System (Modules Used) and System ID #: System SP2G - MASS ULV; Modules 1 and 2
- c. Spray System Configuration: ULV Wing Booms; Modules 1 and 2/MASS ULV
- d. Nozzle Type/Size: 8008 TeeJet<sup>®</sup> Flat Fan
- e. Nozzle Orientation & Number Used: 8 8008's for 2000' swathes; 7 8008's for 1000' swathes (and higher flow rate); oriented straight down
- f. Pressure: 45-55 psi
- g. Flow Rate: 3.6 gallons/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000 ft at Craney Island & 2000 ft on Langley Peninsula
- b. Spray Off Set: 2000-4000 depending on wind speed
- c. Spray Release Altitude: 150 feet AGL
- d. Ground Speed: 200 knots

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 22 July 210° @ 4-8 knots; 25 July 060-075° @ 4-8 knots
- b. Temperature (Degrees Fahrenheit): 22 July 85-90°; 25 July 75-78°
- c. Relative Humidity: 22 July 40-60%; 25 July 83%
- d. Cloud Cover: 22 July scattered clouds; 25 July overcast skies
- e. Source: Ground observations/aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Oil sensitive cards on dowels
  - (2) Results: all cards within spray area were positive for spray
- b. Effectiveness:
  - (1) Technique/s Used: carbon dioxide-baited traps were used to monitor mosquito densities
  - (2) Results: 91% decrease in mosquito numbers, on average.

**8. REMARKS:** This was the first spray of the Langley AFB region for 2002. The need for an application was determined by nuisance level mosquitoes in surveillance traps and the threat of encephalitis transmission (West Nile Virus/Eastern Equine Encephalitis). Birds and mosquitoes have recently been found to be carrying these viruses. Three spray sorties were flown with one of these cancelled because of weather before any chemical was released. A 0.5 oz/acre application rate was used on the Langley Peninsula and 1.0 oz/acre rate was used at Craney Island, based on relative mosquito numbers between the locations. The Langley AFB Pest Management Shop felt that this was an extremely well timed application, based on the emergence of salt marsh mosquitoes just prior to the application and the subsequent drop in mosquito numbers after the spray. A 91% decrease in mosquito activity was observed at Langley. Other local mosquito abatement officials reported a significant decrease in the number of mosquitoes, as well. The next spray at Langley AFB is scheduled for 18-23 August.

(b) (6)

(b) (6)

Capt, USAFR

**CERTIFIED PEST MANAGEMENT PROFESSIONAL**

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT

### SMOKY HILL ANGR, KS 21-28 Oct 2006

#### 1. MISSION BASICS:

- a. **Installation Sprayed:** Smoky Hill ANGR, Salina KS
- b. **Mission Duration:** 21-28 October 2006
- c. **Purpose of Application:** Control of Musk Thistle (*Cardus nutans*) on Smoky Hill, ANGR.
- d. **Application Date/s:** 22-24 Oct 06  
**Time/s of Application (Zulu):** 1533-1945 (22 Oct); 1505-1651 (23 Oct); 1450-1625 (24 Oct)
- e. **Acres Treated:** 3221
- f. **Project Coordinator/s (Name/Rank, Title, Phone #):** (b) (6), Aerial Spray Coordinator, Smoky Hill ANGR, DSN (b) (6)
- g. **Date Spray Map Last Approved:** 7 Nov 05
- h. **Date of Waste Generation Letter:** N/A

#### 2. OPERATIONAL:

- a. **Mission Commander:** LTC (b) (6) (b) (6)
- b. **Certified PMP (Category 11):** CPT (b) (6)
- c. **Aircrew:**
  - (1) Aircraft Pilots: MAJ (b) (6) (b) (6)
  - (2) Co-Pilot: 1 LT (b) (6) (b) (6)
  - (3) Navigator: LTC (b) (6) (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
  - (5) Spray Operators: MSG (b) (6) (b) (6) MSG (b) (6) (b) (6) SRA (b) (6)
- d. **Safety Briefer:** CPT (b) (6)
- e. **Spray Maintenance/Pesticide Loaders:** TSG (b) (6) ; TSG (b) (6) ; TSG (b) (6) (b) (6)
- f. **Spray Ground Monitors:** CAPT (b) (6)
- g. **Crew Chief(s):** MSG (b) (6) ; TSG (b) (6)
- h. **Avionics:** (b) (6) (b) (6)
- i. **AGE:** TSG (b) (6)
- j. **Engine:** None
- k. **Ground Support/CPM Professionals:** CAPT (b) (6)
- l. **Security Police:** TSG (b) (6) (b) (6) TSG (b) (6) ; SSG (b) (6) ; A1C (b) (6) (b) (6)
- m. **Flying Data:**
  - 1. Spray Sorties/Hours: 2/2.6 (22 Oct); 1/1.8 (23 Oct); 1/1.6 (24 Oct); 1/0.9 (ULV Training): Total 4/6.0
  - 2. Ferry Sorties/Hours:
    - (a) Spray A/C 909107 Ferry Sorties/Hours: 1/3.6 (21 Oct); 2.7 (28 Oct)

#### 3. PESTICIDE:

- a. **Trade Name (% Active Ingredient):** Tordon® 22K
- b. **EPA Registration Number:** 62719-6
- c. **Formulation Sprayed:** Tordon® 22K mixed with water, AirEx DC and Prevent foam control
- d. **Gallons Pesticide Loaded:** 240 gallons Tordon® 22K
- e. **Gallons Pesticide Applied:** 240 gallons Tordon® 22K
- f. **Gallons and Name Diluent Used:** 6047 gallons of water
- g. **Gallons and Name of Flush Used:** 200 gallons of water



- h. **Other Additives Used:** 14 gallons of AirexDC® per load
- i. **Application Rate:** 2 gallons spray/acre (water with 10 oz. of Tordon® and Drift control)

**4. APPLICATION EQUIPMENT:**

- a. **Aircraft Type (Tail Number):** 909107
- b. **Spray System (Modules Used) and System ID #:** 3-Module system
- c. **Spray System Configuration:** Fuselage Booms
- d. **Nozzle Type/Size:** 8070 Flat Fan TeeJet®
- e. **Nozzle Orientation & Number Used:** 40 Fuselage (20 each side, straight back)
- f. **Pressure:** 55-61 PSI (22-23 Oct); 51-59 PSI (24 Oct)
- g. **Flow Rate:** 215-281 GPM (22 Oct); 257-324 GPM (23 Oct); 265-294 GPM (24 Oct)

**5. APPLICATION PARAMETERS:**

- a. **Swath Width Flown:** 300'
- b. **Spray Off Set:** 3 swath widths
- c. **Spray Release Altitude:** 100-150 depending on wind speed
- d. **Ground Speed:** 200 Knots

**6. WEATHER OBSERVATIONS:**

- a. **Winds (Direction/Speed):**  
Ground: 270°/8 KT (22 Oct); 150/4 KT (23 Oct); 180/8 KT (24 Oct)
- b. **Temperature Range During Application (°F):** 56°- 75°
- c. **Cloud Cover:** 0% (22-24 Oct)
- d. **Source:** Ground observations

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. **Deposition Pattern:**  
(1) Ground monitors observed/confirmed swath width from ground positions
- b. **Effectiveness:**  
(1) Technique/s Used: Visual field observations will be carried out in the spring by the Smoky Hill Staff.

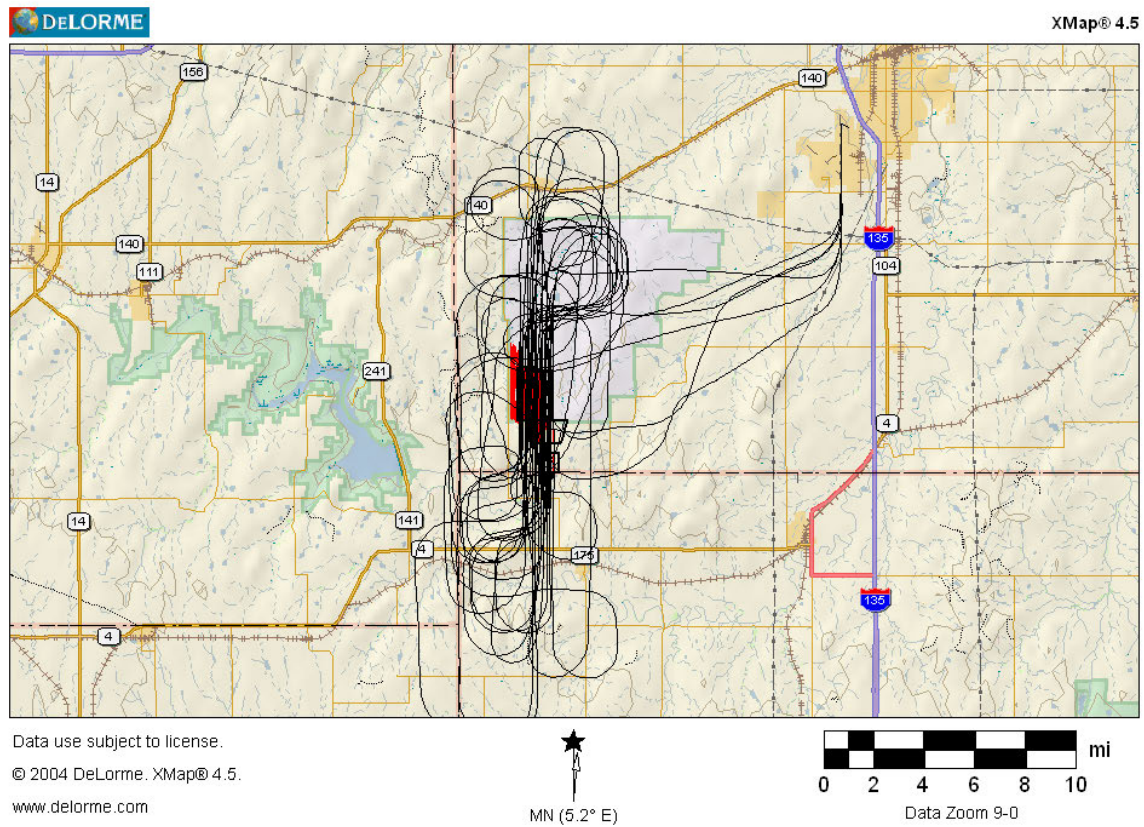
- 8. REMARKS:** Musk thistle has been reduced to the point that spray flights are not required every year; which speaks highly of the effectiveness of prior missions in controlling thistles. This year frost conditions resulted in later takeoff times. However the mission was completed in 4 lifts in 3 days. Additional acreage was covered at the range managers' discretion in order to completely use up the available herbicide and cover some "hot spots". Apart from the frost, meteorological conditions were favorable for the application. Colder temperatures resulted in less evaporation and thus, good coverage. As usual, coordination of the host facility was excellent and ensured a smoothly run mission.

//Signed//

(b) (6) **CAPT, USAFR**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL**



Attachment 1. Spray blocks, area treated and track of aircraft on spray sorties conducted 22-24 October 2006 at the Smokey Hill ANG Range, Salina Kansas.



# AERIAL SPRAY OPERATIONAL SCHEDULE

## SMOKY HILL ANG RANGE, KS

### 21-28 OCT 2006

**PURPOSE/OBJECTIVE/BENEFIT:** Control musk thistle at the Smoky Hill ANGR, to improve grazing areas, to eliminate the Range as a source of infestation to neighboring farms from wind-blown musk thistle seeds and to support state and local noxious weed control efforts.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: LTC (b) (6)
- (2) Pilots: MAJ (b) (6), 1Lt (b) (6)
- (3) Navigators: LTC (b) (6)
- (4) Flight Engineers: Msgt (b) (6)
- (5) Spray Operators: Msgt (b) (6), SRA (b) (6)

##### b. Maintenance:

- (1) Spray MX: TSG (b) (6), SSG (b) (6), Tsgt (b) (6)
- (2) Crew Chiefs: MSG (b) (6), Tsgt (b) (6)
- (3) Avionics: (b) (6)
- (4) AGE: TSG (b) (6)
- (5) Engine: None

##### c. Ground Support/CPM Professionals: CPT (b) (6)

##### d. Security Police: TSG (b) (6), Tsgt (b) (6), SSG (b) (6), A1C (b) (6)

#### 2. SCHEDULE: (All Local) Times

**Range Schedule: 0700-1200 Local Daily\* Check with Range Scheduler for any changes**  
**21 OCT (Saturday) \* Support Aircraft will depart 1 hour after Spray aircraft**

0900: Show at KYNG

1100: Depart KYNG

1430: Land KSLN/Safety Briefing

A/R: Maintenance configures aircraft; Aircrew plan next day's mission

##### **22 OCT (Sunday): 1 or 2 Spray Sorties**

0545: Show time

0747: Sunrise

0745: Take Off KSLN

Range time (Coordinate MARSA as needed after 1200)

1200: Land KSLN

##### **23 OCT (Monday): 1 or 2 Spray Sorties**

0545: Show time

0748: Sunrise

0745: Take Off KSLN

Range time (Coordinate MARSA as needed after 1200)

1200: Land KSLN

**24 OCT (Tuesday): 1 or 2 Spray Sorties**

0545: Show time

0749: Sunrise

0745: Take Off KSLN

Range time (Coordinate MARSA as needed after 1200)

1200: Land KSLN

**25 OCT (Wednesday): 1 or 2 Spray Sorties**

0545: Show time

0750: Sunrise

0745: Take Off KSLN

Range time (Coordinate MARSA as needed after 1200)

1200: Land KSLN

**26 OCT (Thursday): 1 or 2 Spray Sorties**

0545: Show time

0751: Sunrise

0745: Take Off KSLN

Range time (Coordinate MARSA as needed after 1200)

1200: Land KSLN

**27 OCT (Friday): 1 or 2 Spray Sorties/ System cleanout and purge**

0545: Show time

0752: Sunrise

0745: Take Off KSLN

Range time (Coordinate MARSA as needed after 1200)

1200: Land KSLN

**28 OCT (Saturday) Return**

0800: Show time

1000: Take Off KSLN

1230: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Mission Commander:** Hand Held GPS, 1 Cellular Phone
- b. **Entomologist:** 1 Cellular Phone, Wind Gauge, 2 Compasses, 1 UHF Radio, Pest Safety Binder, 2 Signal Mirrors, 10 Packs Water Sensitive Cards, 3 Boxes Card Holders with Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Toshiba Computers, 1 SATLOC Manual, Project Notebook, 2 Anemometers, Entomologist's Tool Kit, Trakstar Receiver and Antenna, Batteries
- c. **Navigator:** Maps/Map Bag, Validation Map,
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Stake Bed Truck, Support Equipment

**4. NOTIFICATION NECESSARY FOR THIS MISSION:** None Required.

**5. PARKING PLAN:** North Ramp (same as last time) Highway Patrol Ramp (by the Civil Air Patrol Hangar).

**6. RADIO FREQUENCIES:**

- a. **Air To Ground:** Primary 392.2; VHF 123.45

**b. Salina:** CTAF: 119.3, UNICOM: 122.95, ATIS: 120.15, TWR: 119.3 / 257.7, GND: 121.9 / 397.9, NG OPS: 49.95 / 304.6

**c. Smoky Hill:** Primary 316.9, Secondary 304.9; Victor Freq: 139.7 Smoky Hill departure. Expect IFR clearance from KCC on 363.2 UHF 134.9 VHF. Advise them you are departing R3601

**7. IN-BRIEFING:** Upon Arrival.

**8. SPRAY CONFIGURATION:** (Note: File support a/c Chap 3 to AFJI 24-204)

**a. System:** SP-3G

**b. Nozzle Tips/Orientation:** 8070 Flat Fan TeeJet/90° straight back

**c. Number:** Fuselage. 40 Total (20 each side)

**d. Booms:** Fuselage Booms.

**e. Aircraft:** 90-9107

**f. Mission Identifier:** QZNRKA087294

**9. SPRAY PARAMETERS:**

**Altitude:** 100' AGL

**Swath Width.** 300 feet.

**Flow Rate.** 279 Gallons/Minute (approximately 2941 acres to be sprayed)

**Application Rate.** 2 Gal spray/Acre (water with 2 Oz of AirexDC® & 10 Oz of Tordon®)

**Ground Speed:** 200 Knots

**Total Acres:** 2941

**10. SPRAY MIXING AND LOADING:**

**a. Composition of Each Gallon:**

(1) 5 Ounces of Tordon® 22K

(2) 1 Ounce of AirexDC® Drift Retardant

(3) 122 Ounces of Water

**b. First Load** (4 Tanks of 425 Gallons Each + Sump of 70 Gallons)

(1) Fill to 425 Gal Water/Tank using the pump on the water tanker truck.

This is done by putting the filler hose into the rear tank with all tanks open to the common sump.  
Total water in tanks = 1700 Gal.

(2) 70 Gal/Water in Sump

(3) Total Water Added = 1,770 Gallons

(4) Upload 17.25 Gal/Tordon® 22K/Tank (69 Gallons Total for 4 Tanks + sump) with the ULV uploading system.

Add 3.5 GalAirexDC®/Tank (14 Gallons Total for 4 Tanks + sump) while agitating approximately 15 min

(6) Total Quantity Mix. 1853 Gallons

**c. Subsequent Loads** (2)

(1) Fill to 425 Gal/Water/Tank. Total Water = 1700 Gal

(2) Add 16.5 Gal/Tordon 22K/Tank. Total Tordon 22K = 66 Gal

(3) Add 3.25 Gal AirexDC®/Tank. Total AirexDC® = 13 Gal

(4) Total quantity Mix. 1779 Gallons (does not include 70 Gal already mixed in Sump)

**d. Final** (fourth) Load

(1) Fill to 253 Gal/Water/Tank. Total Water = 1012 Gal (or as necessary determined by PMP)

(2) Add 10 Gal/Tordon 22K/Tank. Total Tordon 22K = 40 Gal

(3) Add 2 Gal AirexDC®/Tank. Total AirexDC® = 8 Gal

(4) Total quantity Mix. 1060 Gallons (does not include 70 Gal already mixed in Sump)

**e. Total gallons of spray mixture for the spray project is 5412. Tordon 22K required is 211 Gal. AirexDC® required is 41 Gal.**

f. Mixing Time/Load. Agitate by recirculating each mix for approximately 15 minutes.

**11. SPRAY MONITORING OR TESTING: Performed by the CPMPs**

**NOTES:**

Ideal to have westerly wind to spray west boundary.

Ideal to have easterly wind to spray east boundary.

(November winds expected to be predominately from the north)

**12. Quarters: JTR Rate Lodging/\$60 Meals/\$28**

**Fairfield Inn \$60+tax, (785) 823-6900 FAX (785) 823-0996)/Debbie**

Holiday Inn, I70, \$59, Gp Reservations/Gala 785-823-5606/8574 fax

Comfort Inn, (785) 826-1711 (Support crew(s) billeting); (Adjacent to Fairfield Inn)

Ramada inn, (785) 825-8211

Hampton Inn (on Schilling Rd.); Phone (785) 823-9800

Red Coach Inn, (785) 825-2111

**13. Transportation: Hertz Rental Agency (Scott) (785)-827-7237; Fax (785)-827-3160**

Vehicles will be at America Jet FBO

OPS 3 Full Size-(b) (6) (b) (6) (b) (6)

MX 2 Full Size- (b) (6)

- SF 2 Full Size- (b) (6)

- Support 2 Full Size on 21-22(b) (6) (b) (6) (b) (6) and also 27-29 OCT((b) (6) (b) (6) (b) (6)

**14. CONTACTS:**

**A. Smoky Hill Range, Salina, KS (DSN 743- Com 785)**

- RANGE COMMANDER, LTC (b) (6) (b) (6) DSN (b) (6) COM (b) (6) (b) (6)

- Scheduling DSN 743-7600 ext **147** or 148 Sgt (b) (6) (b) (6)

(1) HQ ANGRC/CEVP:

- (b) (6) DSN(b) (6)

- (b) (6) DSN (b) (6)

(2) NATURAL RESOURCES MGR/ SPRAY COORDINATOR:

- TSgt (b) (6) : DSN (b) (6) COM (b) (6)

(3) **SALINA AIRPORT: SALINA AIRPORT AUTHORITY: (785) 827-8077**

- (b) (6) (b) (6) and (b) (6) (b) (6) -Operations Manager will supply gate security cards to MX/OPS/SF enter the north ramp. Parking will be on North Ramp by big Hanger, same as previous missions.

(4) ARMY NATL GUARD HELO UNIT:

- OPS OFFICER, CW4 (b) (6) : DSN (b) (6) ; COM (b) (6)

(5) **FBO: AMERICA JET, (b) (6) (b) (6) -File Flight Plans and fuel**

(6) STATE WILDLIFE REP:

- (b) (6) (DIST FISHERY BIOLOGIST),(b) (6)

(7) DOW ELANCO REP: (b) (6) or (b) (6)

SALINE COUNTY FARM/ NOXIOUS WEED DIR:

- (b) (6) (b) (6) FAX (913) 826-6534

(8) **SALINA AIRPORT AUTHORITY (PA) – (b) (6)**

(b) (6) cel, (b) (6) home.

**Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6) (b) (6)

2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Capt (b) (6) (b) (6) FAX 1022
4. 910 OG/CC: Col (b) (6) (b) (6) (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) (b) (6) (b) (6) 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6) (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6)

13 September 2001

MEMORANDUM FOR HQ AFRC/DOOM (FAX: 497-0198)

FROM: 757 AS/DOS ((b) (6)) 1531; FAX 346-1616)

SUBJECT: Capability and Concept of Operations for Aerial Spray at Hill AFB/UTTR UT  
Annual Weed Control Spray Mission on the Utah Test and Training Range (UTTR)

1. **Capability:** Two aircraft will be required for this mission. Two Spray aircraft are available 21-29 Sep 01 in support of the Hill AFB mission request. Support aircraft available 21 & 28/29 Sep in support of the mission.

2. **Concept of Operations:**

a. **21 Sep (Friday):**

0730 Show at KYNG  
0810 Pre-Mission Briefing  
0830 LM's released to assist in loading aircraft  
1005 Spray aircraft 99105 Take-Off KYNG  
1010 Spray aircraft 99108 Take-Off KYNG  
1015 Support Aircraft 19142 Take-Off KYNG  
1330 Land LFI  
1345 Safety Brief

b. **22 Sep (Saturday) – 28 Sep (Friday):**

**(Range times 0700-1400, 22-28 Sep 01)**

0500 Ground Support Team departs for UTTR  
0515 FEs, Crew Chiefs, & Spray MX report and Mix/Load Chemical  
0700-1400 Target areas sprayed as designated by PMP

c. **26 Sep (Wed):** Weather back-up.

d. **27 & 28 Sep Thu & Fri):** Flush and clean up day.  
Schedule of daily events will be determined by the Mission Commander as required.

e. **28 Sep (Fri):** Clean up; Support Aircraft returns to Hill AFB

f. **29 Sep (Sat):**

0800 Aircrew report for duty  
0830 All personnel report  
1000-1015 Spray Aircrafts & Support aircraft take-off  
1700-1800 Mission completed all personnel and aircraft arrive at KYNG



3. **Spray Parameters and Sequencing:** (See attached Operational Schedule)
4. **Mission Commander:** Lt Col (b) (6)
5. Support required at Hill AFB and the UTTR has been completed.

(b) (6) Lt Col, USAFR  
Aerial Application Director  
757 AS/DOS

Attachment  
Spray Operations Schedule

**SPRAY OPERATIONAL SCHEDULE  
UTAH TEST AND TRAINING RANGE MISSION  
FOR WEED CONTROL  
21-29 SEPTEMBER 2001**

21 Sep - Support A/C # 19142 0800 Report Time; 1015 Take Off; ARV @ Hill AFB 1330L

21 Sep – Spray #1 A/C #99105 0800 Report Time; 1005 Take Off Arrive @ Hill AFB 1330L

21 Sep – Spray #2 A/C #99108 0800 Report Time; 1010 Take Off Arrive @ Hill AFB 1330L

**1. AIRCREW:**

- a. **Air Craft Commander/Pilots:** LtC (b) (6) (b) (6) Maj (b) (6) (b) (6)  
Maj (b) (6) Maj (b) (6) Capt (b) (6) (b) (6)
- b. **Navigators:** LtC (b) (6) (b) (6) Maj (b) (6) ; LtC (b) (6) (21-24 Sep)
- c. **Flight Engineers:** MSG (b) (6) (b) (6) SMS (b) (6) (b) (6)
- d. **Spray Operators:** CMS (b) (6) (b) (6) MSG (b) (6) (b) (6) MSG (b) (6) (b) (6)  
MSG (b) (6) (b) (6) TSG (b) (6) (b) (6)

**2. AIRCRAFT/MASS SUPPORT:**

- a. **Mission Commander.** LtC (b) (6) (b) (6)
- b. **Spray Maintenance:** MSG (b) (6) (b) (6) TSG (b) (6) , TSG (b) (6) ,  
TSG (b) (6) , TSG (b) (6)

**3. UTTR GROUND PARTY:**

- a. **Entomologist/Certified Pest Management Professional(s):**  
LtC (b) (6) LtC (b) (6) (b) (6) Maj (b) (6) (b) (6)
- b. **Toxicologist.** Capt (b) (6)
- c. **Recorder.** (b) (6)
- d. **DuPont Participants.** (b) (6)

**4. MAINTENANCE:**

- a. **910 MA/LG Supervisor.** CMS (b) (6)
- b. **Com Nav.** TSG (b) (6)
- c. **AGE.** TSG (b) (6)
- d. **Propulsion.** TSG (b) (6)
- e. **R & R.** TSG (b) (6)
- f. **Hydraulic.** MSG (b) (6)
- g. **Environmental/Electric.** TSG (b) (6)
- h. **Engine Shop.** SMS (b) (6)
- i. **Crew Chief(s):** TSG (b) (6) , SRA (b) (6) , SSG (b) (6) ,  
SSG (b) (6)

- 5. **910 Com Flt Personnel:** SMS (b) (6) , MSG (b) (6) (b) (6)  
MSG (b) (6) , TSG (b) (6) , TSG (b) (6) , TSG (b) (6)

- 6. **IN-BRIEFING:** (UTTR Staff)

- a. **When/Time:** 21 Sep 01, 1500
- b. **Where:** Building 1, Northwest Corner of Base Ops, (b) (6) Office)
- c. **Who:** LtC (b) (6) LtC (b) (6) CMS (b) (6) , TSG (b) (6)

**7. ITEMS TO TAKE:**

- a. **LtC (b) (6)**
  - (1) Weather Equipment: Compasses, Anamometer
  - (2) UHF/VHF Radios
  - (3) First Aid Kit
  - (4) Signal Mirrors, Spot Lights
  - (5) Cards, Card Holders, Card Boxes, Measuring Wheel
  - (6) Cellular Phone
  - (7) Swath Kit (3 Trunks)
  - (8) LapTop Computer
- b. **Mission Comamnder:** Cellular Phone
- c. **Navigator:** Maps
- d. **Spray Maintenance:**
  - (1) MASS Spares and Spill Kit
  - (2) Tools and Other Equipment
  - (3) Pesticide Safety Binder
  - (4) Safety Equipment
- e. **Maintenance:** Aircraft Engine Spares

**8. SPRAY CONFIGURATION:**

- a. Two Aircraft, Systems 3 and 5
- b. MASS Modules 1, 2 and 3
- c. UHV Fuselage booms oriented straight back

**9. PPR REQUIREMENTS:** None required.

**10. PARKING PLAN:** CC Alert Area, Two Spots Near Building 772

**11. RADIO FREQUENCIES:**

- **Clover Control:** UHF 339.0, 275.9, 361.4
- **Eagle Tower:** UHF 351.0; **MAWK 3 & 4** (Lee/Moose)
- **Spray Ground Freq:** VHF 134.1, 118.45; UHF 383.2 (Primary), 398.1 (Back-up)

**12. SPRAY PARAMETERS:**

- a. **Pesticide:** Krovar 1DF®
- b. **Application Rate:** 22.5 gal/acre (10 lbs of Krovar in 22.4 gal of water)

- c. **Acreage:** 1,283 Acres (Targets 21, 24 and 13)
- d. **Ground Speed:** 200 Knots (337.55 ft/sec)
- e. **Spray Altitude:** 100 Feet AGL
- f. **Swath Width:** 35 Feet
- g. **Flow Rate:** 366.1 Gallons/Minute

**13. PESTICIDE LOADING: (For Partial Loads Use Table on Last Page)**

- a. **Sequence for Loading 1,000 Gallon Mixing Tank:**
  - (1) Fill with water up to 750 Gallon Mark, then add:
    - (a) 450 Pounds of Krovar 1DF® (9 bags, 50 # each)
    - (b) 4.0 Gallons (15,140 ml) of StaPut®
    - (c) 64 Ounces (1,892 ml) of Foam Fighter F®
    - (d) 200 Ounces (5,913 ml) Hi-Light® Dye
  - (2) Add Water to 1,000 Gallon Mark and Agitate for 30 Minutes
- b. **Where:** ACC Alert, Two Spots, Near Bldg 772
- c. **When:** Start at 0515 Hours on first full day of spraying and adjust as necessary through end of the daily mission as called by Mission Commander.
- d. **Items to be Furnished by Installation:**
  - (1) Krovar 1 DF® (12,660 pounds)
  - (2) Foam Fighter F® (15 gallons)
  - (3) StaPut® Additive (114 gallons)
  - (4) Hi-Light® Dye (45 gallons)
  - (5) Remove Nutra-Sol Tank Cleaner
  - (6) Loading Personnel and All Loading Equipment
  - (7) All Necessary Cleanup and Hazardous Waste Disposal
  - (8) Aircraft Support Equipment and TA Support
  - (9) Wash Rack and Fuel Priority

**14. SPRAY MONITORING AND TESTING.** By CPMP & ground support

**15. CONTACTS:** (Commercial prefix (801) 777-XXXX; DSN 777-xxxx

- a. **388<sup>th</sup> RANS/DOO, Range Control Officer/Installation Spray Coordinator:**  
 (b) (6) , 6066 Cedar Lane, Bldg 1274S; (b) (6) (6) ; FAX: 9205 or  
 (b) (6)
- b. **Environmental Coordinator:** (b) (6) & (b) (6)
- c. **75th Range Support Squadron:**  
 Commander: Maj (b) (6)  
 Civil Engineering: (b) (6) (b) (6)  
 Clover Operations: (b) (6) (b) (6) (b) (6)  
 Eagle Tower: (b) (6) or (b) (6) (b) (6)

Range Control: 7-9386 Current OPS; Future OPS 7-9385

North Range Security: 7-1521/2/4

**Aerial Spray OPS Center: 777-6837, (801) 777-6837;**

- **ATOC FAX 777-2677 (801) 775-2677**

d. **Range Scheduler: (b) (6)**

e. **388<sup>th</sup> RANS/RM Resource Monitor: (b) (6)**

f. **Pest Control: (b) (6)**

g. **Weather:** Hill AFB: 7-9460/7-2018; UTTR: 7-1516/63

h. **Quarters:**

**Billeting Office Mountain View Inn, DSN 777-0802/4007, FAX 777-2014**

**COM (801) 777-0802; FAX 777-2014**

- **Contract Quarters: Comfort Inn, 877 N 400 W Layton UT  
(801) 544-5577, FAX 7377**

- **La Quinta Inn \$75 4905 W Wiley Post Way, Salt Lake City UT 801 366-4444  
(b) (6) (b) (6) (b) (6) (b) (6)**

- **\*State Line Inn (Wendover): 775-644-2221, 800-848-7300; FAX 775-664-4192**

**Fri-Sat \$79 + Tax; Sun-Thur \$34.95 + Tax**

**Check-In 22 Sep 01 for 6 nights/Confirmation #:**

**(b) (6) (b) (6) , (b) (6) (b) (6) (b) (6) (b) (6)**

Holiday Inn (Odgen): 1-800-999-6841 or 801 399-5671

Airport Hilton Inn: 1-800-648-9668 or 801 539-1515

Ogden Park: 247 24<sup>th</sup>, 801 627-1190/800 421-7599

La Quinta Inns: 1965 N 1200 W Layton, 801 776-6700

Alana Motel: 116 N Main Street, Clearfield, 801 825-2221 or 2321

Nevada Crossing: (\$49.50), Box 2457 Wendover NV, 800 537-0207

i. **Car Contact:**

(1) **Enterprise Rental Car (801) 773-8999, FAX (801) 773-8688;**

-- **on Base (801) 825-0080 (Julie), Located on Base Bldg 450 near Billeting  
0730-1800 M-F; 0730-1200 Saturday**

1 ea 4-Wheel Drive @ \$55/day, 200 mi/day or 1400 mil/wk

2 ea Full-Size @ \$38/day

5 ea Mid-Size Car @ \$34/day

6 ea Mini Van @ \$55/day, unlimited mileage/Gov Ins

**Rental Vehicles assigned as follows:**

(a) 4 Wheel Drive Vehicle: LtC (b) (6)

(b) 2 Full-Size: LtC (b) (6) CMS (b) (6)

(c) 5 Mid Size Vehicles:

LtC (b) (6) Maj (b) (6) SMS (b) (6) Maj (b) (6) LtC (b) (6)

(d) 6 ea Mini Vans:

CMS (b) (6) MSG (b) (6) MSG (b) (6) TSG (b) (6) TSG (b) (6)

TSG Rhodes

**(2) Hill Motor Pool:** 1 Gov Mini Van Crew Chiefs

**j. Hill AFB:**

Airfield Manager: (b) (6)

Base Operations: 7-1861

C-130 Maintenance Contact: 7-3984

Fuels: 7-7423/7-7311

Transit Alert: 7-3956

**k. Hill Public Affairs:** 7-5201

**l. Supply Contact:** 7-5391 (922 OE)

**m. Youngstown ARS, OH:** Commercial (330) 609-XXXX or DSN 346-XXXX

910 AW Direct Dial-In/Voice Mail: 1-800-278-7046+2+Ext

Command Post: 1315; FAX 1161

910 AW/CC: 1243

910 AW/PA: 1236; FAX 1022

910 AW/FM: Comptroller: 1216

910 OG/OSF: Supervisor of Flight Desk: 1069; FAX 1371

910 OG/CC: 1257/1179

757 AS/DO Admin: SMS (b) (6) (b) (6) (b) (6) FAX 1657

757 AS/DOS, Entomology Office: Capt (b) (6) (b) (6) (b) (6); FAX 1616

910 MX/LG/CC: 1225

Maintenance Control: 1344

Spray Maintenance: 1132/1586

Omega/SATO Travel: 1772; 1-800-285-6342

Cellular Spray Phones:

- PMP: (b) (6)
- Mission Commander: (b) (6)
- Spray Maintenance: (b) (6)

**16. SEQUENCING:**

**a.** Target sequencing will be determined by UTTR personnel based upon EOD clearance schedule. All spray turns will be made south of Base Leg Knoll when spraying Targets 21, 24, and 23 to allow for maximum utilization of Eagle Range.

**b.** Whenever possible, two targets will be treated on one pass. This will necessitate having two separate ground-monitoring and marking parties.

**c.** When winds blow directly from one side of the target to the middle of the target, ground monitors will direct the "dress" up of the target edges.

**d. Spraying Priorities:**

- (1) Wildcat Demarcation Line 4 passes (West to East & East to West)
- (2) Target 21
- (2) Target 24
- (3) Target 23

**e. Multiple-Target Alignments.**

- (1) The west edge of Target 23 lines up 1/4 mile west of the west edge of Target 21.
- (2) The west edge of Target 24 lines up with the west edge of Target 21.
- (3) When treating Targets 21 and 23 together on the same pass, treat the western-most stake on Target 23 and stake 139 on Target 21. If treating the east edge of Target 23, start with stake 90 on Target 21. When treating Targets 23 and 21 on the same passes, use stakes 90-139 on Target 21. Be sure to save treatment of stakes 90-139 on Target 21 until treating Targets 21 and 23 together.
- (4) When treating Targets 21 and 24 together, treat the west edge of Target 24 while aligned with stake 89 on Target 21. Be sure to save stakes 45-89 on Target 21 to treat concurrently with Target 13.
- (5) Target 13 should be treated concurrently with stake 45 on Target 21 and those stakes to the east of stake 45.

## **17. GENERAL TARGET INFORMATION:**

### **a. Target 21:**

- (1) Dimensions: 4,980' X 7,770'
- (2) Acreage: 888
- (3) Acres Sprayed in 2000: 801
- (4) 2000 Aircraft Loads: 18,869 Gal
- (5) Sorties: 14
- (6) Passes (35' Swath): 138
- (7) Spray-On Time/Pass: 23 Seconds
- (8) Spray Heading: 00/180

### **b. Target 23:**

- (1) Dimensions: 1,493' X 4,514'
- (2) Acreage: 155
- (3) Acres Sprayed in 1998: 155
- (4) 1998 Aircraft Loads: 3,565 Gal
- (5) 1998 Passes: 48
- (6) Aircraft Heading: 00/180
- (7) Spray-On Time/Pass: 13.5 Seconds

### **c. Target 24:**

- (1) Dimensions: 1,600' X 6,080'
- (2) Acreage: 223
- (3) Acres Sprayed in 2000: 218
- (4) 2000 Aircraft Loads: 5,263 Gal
- (5) Sorties: 6
- (6) Passes: 41
- (7) Spray-On Time/Pass: 18 Seconds
- (8) Spray Heading: 00/180

## **18. PLANNED SEQUENCE OF EVENTS: Hill AFB Tower Control and Runway Hours 0620L**



**NOTE: Scheduling reflects no weather or maintenance delays.**

**21 Sep (Friday):**

0800L: Report

1005-1015L: 1005, Spray #1 A/C , 1010, Spray #2 A/C & 1015 Support A/C Take-off

1330L: Hill

**ALL TIMES MAY BE ADJUSTED BY MISSION COMMANDER.**

**DUTY DAY FOR CIVILIANS WILL BE STD DAY (8,9,10 HOURS).**

**MILITARY STATUS PERSONNEL WILL WORK AS**

**REQUIRED WITHIN CREW REST CONSTRAINTS.**

**Tower Control, Runway & Airfield hours start at 0700L**

**RANGE TIMES: 0700-1400 each day (22-28 SEP)**

**END OF EACH DAY LOAD GROUND TANKS WITH THE APPROPRIATE MIX.**

**ALL MX & A/C PERSONNEL WILL REMAIN ON DUTY UNTIL AIRCRAFT IS PRE-**

**FLIGHTED FOR THE NEXT DAY OR RELEASED BY THE AIRCRAFT**

**COMMANDER.**

**22 Sep (Sat):** (First Spray Sortie, Range Times 0700-1400, 22-28 Sep)

0430L: Ground Support personnel depart for UTTR

0500L: Spray Maintenance start on first full day of mission and adjust as directed

0616L: Sunrise (see attach Sunrise/Sunset Chart)

0700-1300L: Spray Targets as directed

**23-26 Sep (Sun-Wed):** Using 22 Sep schedule spray UTTR Targets as directed by the Mission Commander or Ground Support Director

**27 Sep (Thu):** Weather Back-up/Spray Characterization for Mt Home AFB Oct Mission

**28 Sep (Fri):** Clean-Up; Support Aircraft arrives at Hill AFB

**29 Sep (Saturday):** All personnel and aircraft return to YNG

0800L: All Aircrew report

0830L: All Personnel report

1000L: Spray Aircraft Takes Off Hill AFB

1015L: Support A/C Takes off Hill AFB

1700L: Spray Lands YNG

1715L: Support A/C Lands YNG

## **19. CALCULATIONS:**

**a. FEET/SECOND:**

6,076.1 FT/NAUT MI X 200 N/HR / 60 MIN/HR / 60 SEC/MIN

<< 337.55 FEET PER SECOND >>

**b. ACRES TREATED/MINUTE:**

35 FOOT SWATH x 337.55 FT/SEC X 60 SEC/MIN

<< 708,855 SQUARE FEET PER MINUTE >>

708,855 SQ FT/MIN / 43,560 SQ FT/AC

<< 16.27 ACRES PER MINUTE >>

**c. SPRAY-ON TIME/LOAD:**

1,750 GALLONS/LOAD / 366.1 GAL/MIN = 4.78 MIN/LOAD

OR 4 MIN 47 SEC/LOAD OR 287 SEC/LOAD

## **UTTR GEOGRAPHIC LOCATION AND TARGET DIMENSIONS**

Target areas on UTTR are geographically located in northwestern Utah, directly west of the Great Salt Lake and Hill Air Force Base. The complex is positioned between 40 and 41 degrees north latitude and close to 113 degrees ten minutes west longitude. The targets are within range 12 west and Township two and three north, Salt Lake Baseline Meridian.

**TARGET 13.** The target is located east of and between targets 23 and 24. Target 13 is three concentric circles. The spray area is 2000 feet in diameter and contains approximately 72 acres. Orientation is generally N-S, although exact spray lines will depend on marker set-up.

**TARGET 21.** The target is the most northerly of the southern group. Target is a large, rectangular area 5000' X 7800'. Orientation is NNE-SSW using right patterns of SSW-NNE using left patterns. Target and surrounding terrain are flat.

**TARGET 22.** Target is located approximately three N.M. N.E. of CBU Valley. Target is a rectangle 2400' X 3700'. To assist in identification, Target 1, a circular target, is located immediately SE of 22. Target orientation is SE to NW with left patterns.

**TARGET 23.** Target is located about three N.M. SSW of Target 21. Target 23 is a rectangle approximately 1850' X 4500'. Terrain is flat. Target orientation is NNE-SSW using right patterns or SSW-NNE using left patterns.

**TARGET 24.** Target is located about one N.M. SSW of Target 23. Target 24 is a 1500' X 6000' rectangle. Orientation is the same as Target 21. Terrain is flat.

**TARGET 26.** Personnel from MMETA, or 6501st RS will be aboard aircraft to assist in identification and orientation of target. Target is located west of Target 21. Target is rectangle 100' X 6000'. Terrain is flat and can be flown as desired.

**CBU VALLEY.** CBU Valley is located on the northeast corner of the range. Spray line is oriented northwest/southwest (320/140). Spray can be accomplished both directions with turn around over the lake bed northwest and at the head of the valley southeast. Alternatively, spray will be northwest using left patterns. The ground rises gradually to the southeast of the target requiring higher power going southeast, lower going northwest.

**EAGLE TARGET.** Eagle is located southwest of CBU Valley and approximately six NM northwest of Target 21. Targets are the run-in areas to the strafing targets and the bombing targets. Spray line from the northeast run-ins is 023, and spray line for the west run-ins is 293. The centerline is marked by a row of tires. Bombing run-ins are triangular 5200' X 600' at the wide end and 50' at the narrow end. Orientation is northeast to southwest on one and northwest to southeast to the other.

**BIG POPPA.** Big Poppa is a circle 3250' in diameter located N.E. of CBU Valley. Orientation of spray lines is SSW to NNE. The target is dished with higher terrain on the east side and northeast quadrant. Off the target, the terrain rises rapidly to the east. Leaving the northeast quadrant, there is a ridge line about 150' - 200' high to overfly. Patterns are left hand.

**WILDCAT MOUNTAIN.** Target is a simulated airfield located about 30 NM southwest of the northern end of Cedar Mountain. The spray area consists of a runway, parallel taxiway and parking ramp. The runway is 200' X 10,200' the Orientation is NE to SW with left patterns. Target area is flat but the terrain rises rapidly to the west.

# **SPRAY OPERATIONAL SCHEDULE**

## **UTAH TEST AND TRAINING RANGE MISSION**

### **21-29 SEPTEMBER 2001**

21 Sep – Spray #1 A/C #99105 0800 Report Time; 1005 Take Off Arrive @ Hill AFB 1330L

21 Sep – Spray #2 A/C #99108 0800 Report Time; 1010 Take Off Arrive @ Hill AFB 1330L

21 Sep - Support A/C #923021 0800 Report Time; 1015 Take Off; ARV @ Hill AFB 1330L

#### **1. AIRCREW:**

- a. **Air Craft Commander/Pilots:** LtC (b) (6) (b) (6) Maj (b) (6) (b) (6) Maj (b) (6)  
Capt (b) (6) (b) (6) (21-24), Cpt (b) (6) (b) (6) (24-29)
- b. **Navigators:** LtC (b) (6) (b) (6) Maj (b) (6) , LtC (b) (6) (21-24), LtC (b) (6) (21-22)
- c. **Flight Engineers:** MSG (b) (6) , SMS (b) (6)
- d. **Spray Operators:** CMS (b) (6) , MSG (b) (6) , MSG (b) (6) ,  
TSG (b) (6) TSG (b) (6) (b) (6)

#### **2. AIRCRAFT/MASS SUPPORT:**

- a. **Mission Commander.** LtC (b) (6) (b) (6)
- b. **Admin Support.** MSG (b) (6)
- c. **Spray Maintenance:** MSG (b) (6) (b) (6) TSG (b) (6) , TSG (b) (6) ,  
TSG (b) (6) , TSG (b) (6)

#### **3. UTTR GROUND PARTY:**

- a. **Entomologist/Certified Pest Management Professional(s):**  
LtC (b) (6) LtC (b) (6) (b) (6) Maj (b) (6) (b) (6)
- b. **Toxicologist.** Capt (b) (6)
- c. **Recorder.** (b) (6)
- d. **DuPont Participants.** (b) (6)

#### **4. MAINTENANCE:**

- a. **910 MA/LG Supervisor.** CMS (b) (6)
- b. **Com Nav.** TSG (b) (6)
- c. **AGE.** TSG (b) (6)
- d. **Propulsion.** TSG (b) (6)
- e. **R & R.** TSG (b) (6)
- f. **Hydraulic.** MSG (b) (6)
- g. **Environmental/Electric.** TSG (b) (6)
- h. **Engine Shop.** SMS (b) (6)
- i. **Crew Chief:** TSG (b) (6) , SRA (b) (6) , SSG (b) (6) , SRA (b) (6)

- 5. **910 Com Flt Personnel:** SMS (b) (6) , MSG (b) (6) (b) (6)  
MSG (b) (6) , TSG (b) (6) , TSG (b) (6) , TSG (b) (6)

#### **6. IN-BRIEFING:** (UTTR Staff)

- a. **When/Time:** 21 Sep 01, 1500
- b. **Where:** Building 1, Northwest Corner of Base Ops, (b) (6) Office)
- c. **Who:** LtC (b) (6) LtC (b) (6) CMS (b) (6) , TSG (b) (6)

#### **7. ITEMS TO TAKE:**

- a. **LtC** (b) (6)

- (1) Weather Equipment: Compasses, Anemometer
- (2) UHF/VHF Radios
- (3) First Aid Kit
- (4) Signal Mirrors, Spot Lights
- (5) Cards, Card Holders, Card Boxes, Measuring Wheel
- (6) Cellular Phone
- (7) Swath Kit (3 Trunks)
- (8) Laptop Computer

**b. Mission Commander:** Cellular Phone

**c. Navigator:** Maps

**d. Spray Maintenance:**

- (1) MASS Spares and Spill Kit
- (2) Tools and Other Equipment
- (3) Pesticide Safety Binder
- (4) Safety Equipment

**e. Maintenance:** Aircraft Engine Spares

## **8. SPRAY CONFIGURATION:**

- a.** Two Aircraft, Systems 3 and 5
- b.** MASS Modules 1, 2 and 3
- c.** UHV Fuselage booms oriented straight back

## **9. PPR REQUIREMENTS:** MK2108 (all three a/c)

## **10. PARKING PLAN:** Pads on West Transport area

## **11. RADIO FREQUENCIES:**

- **Clover Control:** UHF 339.0, 275.9, 361.4

- **Eagle Tower:** UHF 351.0; **MAWK 3 & 4** (Lee/Moose)

- **Spray Ground Freq:** VHF 134.1, 118.45; UHF 383.2 (Primary), 398.1 (Back-up)

## **12. SPRAY PARAMETERS:**

- a. Pesticide:** Krovar 1DF®
- b. Application Rate:** 22.5 gal/acre (10 lbs of Krovar in 22.4 gal of water)
- c. Acreage:** 1,283 Acres (Targets 21, 24 and 13)
- d. Ground Speed:** 200 Knots (337.55 ft/sec)
- e. Spray Altitude:** 100 Feet AGL
- f. Swath Width:** 35 Feet
- g. Flow Rate:** 366.1 Gallons/Minute

## **13. PESTICIDE LOADING: (For Partial Loads Use Table on Last Page)**

**a. Sequence for Loading 1,000 Gallon Mixing Tank:**

- (1) Fill with water up to 750 Gallon Mark, then add:

- (a) 450 Pounds of Krovar 1DF® (9 bags, 50 # each)
- (b) 4.0 Gallons (15,140 ml) of StaPut®
- (c) 64 Ounces (1,892 ml) of Foam Fighter F®
- (d) 200 Ounces (5,913 ml) Hi-Light® Dye
- (2) Add Water to 1,000 Gallon Mark and Agitate for 30 Minutes

**b. When:** Start at 0515 Hours on first full day of spraying and adjust as necessary through end of the daily mission as called by Mission Commander.

**c. Items to be Furnished by Installation:**

- (1) Krovar 1 DF® (12,660 pounds)
- (2) Foam Fighter F® (15 gallons)
- (3) StaPut® Additive (114 gallons)
- (4) Hi-Light® Dye (45 gallons)
- (5) Remove Nutra-Sol Tank Cleaner
- (6) Loading Personnel and All Loading Equipment
- (7) All Necessary Cleanup and Hazardous Waste Disposal
- (8) Aircraft Support Equipment and TA Support
- (9) Wash Rack and Fuel Priority

**14. SPRAY MONITORING AND TESTING.** By CPMP & ground support

**15. CONTACTS:** (Commercial prefix (801) 777-XXXX; DSN 777-xxxx

**a. 388<sup>th</sup> RANS/DOO, Range Control Officer/Installation Spray Coordinator:**

(b) (6) , 6066 Cedar Lane, Bldg 1274S; (b) (6) FAX: 9205 or  
(b) (6)

**b. Environmental Coordinator:** (b) (6)

**c. 75th Range Support Squadron:**

Commander: Maj (b) (6) (b) (6)

Civil Engineering: (b) (6)

Clover Operations: (b) (6)

Eagle Tower: (b) (6)

Range Control: 7-9386 Current OPS; Future OPS 7-9385

North Range Security: 7-1521/2/4

**d. Aerial Spray OPS Center/Bldg 1A: DSN 586-1161 & 1340, FAX 586-1163**

**e. Range Scheduler:** (b) (6)

**f. 388<sup>th</sup> RANS/RM Resource Monitor:** (b) (6)

**g. Pest Control:** (b) (6)

**h. Weather:** Hill AFB: 7-9460/7-2018; UTTR: 7-1516/63

**i. Quarters:**

Billeting Office Mountain View Inn, DSN 777-0802/4007, FAX 777-2014  
COM (801) 777-0802; FAX 777-2014



- **Contract Quarters: Comfort Inn, 877 N 400 W Layton UT**  
(801) 544-5577, FAX 7377
  - **La Quinta Inn \$75 4905 W Wiley Post Way, Salt Lake City UT 801 366-4444**  
(b) (6) (b) (6) (b) (6) (b) (6)
  - **\*State Line Inn (Wendover): 775-664-2221, 800-848-7300; FAX 775-664-4192**  
**Fri-Sat \$79 + Tax; Sun-Thur \$34.95 + Tax**  
**Check-In 22 Sep 01 for 6 nights/Confirmation #:**  
(b) (6)
- Holiday Inn (Odgen): 1-800-999-6841 or 801 399-5671  
 Airport Hilton Inn: 1-800-648-9668 or 801 539-1515  
 Ogden Park: 247 24<sup>th</sup>, 801 627-1190/800 421-7599  
 La Quinta Inns: 1965 N 1200 W Layton, 801 776-6700  
 Alana Motel: 116 N Main Street, Clearfield, 801 825-2221 or 2321  
 Nevada Crossing: (\$49.50), Box 2457 Wendover NV, 800 537-0207

**j. Car Contact:**

- (1) **Enterprise Rental Car** (801) 773-8999, FAX (801) 773-8688;  
 -- **on Base (801) 825-0080** (b) (6) Located on Base Bldg 450 near Billeting  
 0730-1800 M-F; 0730-1200 Saturday  
 1 ea 4-Wheel Drive @ \$55/day, 200 mi/day or 1400 mil/wk  
 2 ea Full-Size @ \$38/day  
 5 ea Mid-Size Car @ \$34/day  
 6 ea Mini Van @ \$55/day, unlimited mileage/Gov Ins  
**Rental Vehicles assigned as follows:**  
 (a) 4 Wheel Drive Vehicle: LtC (b) (6)  
 (b) 2 Full-Size: LtC (b) (6) CMS (b) (6)  
 (c) 5 Mid Size Vehicles:  
     LtC (b) (6) Maj (b) (6) SMS (b) (6) Maj (b) (6) ,MSG (b) (6)  
 (d) 6 ea Mini Vans:  
     CMS (b) (6) MSG (b) (6) MSG (b) (6) TSG (b) (6) TSG (b) (6)  
     TSG (b) (6)  
 (2) **Hill Motor Pool:** 1 Gov Mini Van Crew Chiefs

**k. Hill AFB:**

Airfield Manager: (b) (6)  
 Base Operations: 7-1861  
 C-130 Maintenance Contact: 7-3984  
 Fuels: 7-7423/7-7311  
 Transit Alert: 7-3956

**l. Hill Public Affairs: 7-5201**

**m. Supply Contact: 7-5391 (922 OE)**

**n. Youngstown ARS, OH:** Commercial (330) 609-XXXX or DSN 346-XXXX  
 910 AW Direct Dial-In/Voice Mail: 1-800-278-7046+2+Ext  
 Command Post: 1315; FAX 1161  
 910 AW/CC: 1243  
 910 AW/PA: 1236; FAX 1022  
 910 AW/FM: Comptroller: 1216  
 910 OG/OSF: Supervisor of Flight Desk: 1069; FAX 1371

910 OG/CC: 1257/1179

757 AS/DO Admin: SMS (b) (6) (b) (6) (b) (6) FAX 1657

757 AS/DOS, Entomology Office: Capt (b) (6) (b) (6) (b) (6) FAX 1616

910 MX/LG/CC: 1225

Maintenance Control: 1344

Spray Maintenance: 1132/1586

Omega/SATO Travel: 1772; 1-800-285-6342

Cellular Spray Phones:

- PMP: (b) (6)
- Mission Commander: (b) (6) (b) (6)
- Spray Maintenance: (b) (6)

## 16. SEQUENCING:

a. Target sequencing will be determined by UTTR personnel based upon EOD clearance schedule. All spray turns will be made south of Base Leg Knoll when spraying Targets 21, 24, and 23 to allow for maximum utilization of Eagle Range.

b. Whenever possible, two targets will be treated on one pass. This will necessitate having two separate ground-monitoring and marking parties.

c. When winds blow directly from one side of the target to the middle of the target, ground monitors will direct the "dress" up of the target edges.

d. **Spraying Priorities:**

- (1) Wildcat Demarcation Line 4 passes (West to East & East to West)
- (2) Target 21
- (2) Target 24
- (3) Target 23

e. **Multiple-Target Alignments.**

- (1) The west edge of Target 23 lines up 1/4 mile west of the west edge of Target 21.
- (2) The west edge of Target 24 lines up with the west edge of Target 21.
- (3) When treating Targets 21 and 23 together on the same pass, treat the western-most stake on Target 23 and stake 139 on Target 21. If treating the east edge of Target 23, start with stake 90 on Target 21. When treating Targets 23 and 21 on the same passes, use stakes 90-139 on Target 21. Be sure to save treatment of stakes 90-139 on Target 21 until treating Targets 21 and 23 together.
- (4) When treating Targets 21 and 24 together, treat the west edge of Target 24 while aligned with stake 89 on Target 21. Be sure to save stakes 45-89 on Target 21 to treat concurrently with Target 13.
- (5) Target 13 should be treated concurrently with stake 45 on Target 21 and those stakes to the east of stake 45.

## 17. GENERAL TARGET INFORMATION:

a. **Target 21:**

- (1) Dimensions: 4,980' X 7,770'
- (2) Acreage: 888
- (3) Acres Sprayed in 2000: 801
- (4) 2000 Aircraft Loads: 18,869 Gal
- (5) Sorties: 14
- (6) Passes (35' Swath): 138

(7) Spray-On Time/Pass: 23 Seconds

(8) Spray Heading: 00/180

**b. Target 23:**

(1) Dimensions: 1,493' X 4,514'

(2) Acreage: 155

(3) Acres Sprayed in 1998: 155

(4) 1998 Aircraft Loads: 3,565 Gal

(5) 1998 Passes: 48

(6) Aircraft Heading: 00/180

(7) Spray-On Time/Pass: 13.5 Seconds

**c. Target 24:**

(1) Dimensions: 1,600' X 6,080'

(2) Acreage: 223

(3) Acres Sprayed in 2000: 218

(4) 2000 Aircraft Loads: 5,263 Gal

(5) Sorties: 6

(6) Passes: 41

(7) Spray-On Time/Pass: 18 Seconds

(8) Spray Heading: 00/180

**18. PLANNED SEQUENCE OF EVENTS: Hill AFB Tower Control and Runway Hours 0620L**

**NOTE: Scheduling reflects no weather or maintenance delays.**

**21 Sep (Friday):**

0800L: Report

1005-1015L: 1005, Spray #1 A/C , 1010, Spray #2 A/C & 1015 Support A/C Take-off

1330L: Hill

**ALL TIMES MAY BE ADJUSTED BY MISSION COMMANDER.**

**DUTY DAY FOR CIVILIANS WILL BE STD DAY (8,9,10 HOURS).**

**MILITARY STATUS PERSONNEL WILL WORK AS**

**REQUIRED WITHIN CREW REST CONSTRAINTS.**

**Tower Control, Runway & Airfield hours start at 0700L**

**RANGE TIMES: 0700-1400 each day (22-28 SEP)**

**END OF EACH DAY LOAD GROUND TANKS WITH THE APPROPRIATE MIX.**

**ALL MX & A/C PERSONNEL WILL REMAIN ON DUTY UNTIL AIRCRAFT IS**

**PRE-FLIGHTED FOR THE NEXT DAY OR RELEASED BY THE AIRCRAFT COMMANDER.**

**22 Sep (Sat):** (First Spray Sortie, Range Times 0700-1400, 22-28 Sep)

0430L: Ground Support personnel depart for UTTR

0500L: Spray Maintenance start on first full day of mission and adjust as directed

0616L: Sunrise (see attach Sunrise/Sunset Chart)

0700-1300L: Spray Targets as directed

**23-26 Sep (Sun-Wed):** Using 22 Sep schedule spray UTTR Targets as directed by the Mission Commander or Ground Support Director

**27 Sep (Thu):** Weather Back-up/Spray Characterization for Mt Home AFB Oct Mission

**28 Sep (Fri):** Clean-Up; Support Aircraft arrives at Hill AFB

**29 Sep (Saturday):** All personnel and aircraft return to YNG

0800L: All Aircrew report

0830L: All Personnel report

1000L: Spray Aircraft Takes Off Hill AFB

1015L: Support A/C Takes off Hill AFB

1700L: Spray Lands YNG

1715L: Support A/C Lands YNG

## **19. CALCULATIONS:**

### **a. FEET/SECOND:**

$6,076.1 \text{ FT/NAUT MI} \times 200 \text{ N/HR} / 60 \text{ MIN/HR} / 60 \text{ SEC/MIN}$

$<< 337.55 \text{ FEET PER SECOND} >>$

### **b. ACRES TREATED/MINUTE:**

$35 \text{ FOOT SWATH} \times 337.55 \text{ FT/SEC} \times 60 \text{ SEC/MIN}$

$<< 708,855 \text{ SQUARE FEET PER MINUTE} >>$

$708,855 \text{ SQ FT/MIN} / 43,560 \text{ SQ FT/AC}$

$<< 16.27 \text{ ACRES PER MINUTE} >>$

### **c. SPRAY-ON TIME/LOAD:**

$1,750 \text{ GALLONS/LOAD} / 366.1 \text{ GAL/MIN} = 4.78 \text{ MIN/LOAD}$

$\text{OR } 4 \text{ MIN } 47 \text{ SEC/LOAD OR } 287 \text{ SEC/LOAD}$

## **UTTR GEOGRAPHIC LOCATION AND TARGET DIMENSIONS**

Target areas on UTTR are geographically located in northwestern Utah, directly west of the Great Salt Lake and Hill Air Force Base. The complex is positioned between 40 and 41 degrees north latitude and close to 113 degrees ten minutes west longitude. The targets are within range 12 west and Township two and three north, Salt Lake Baseline Meridian.

**TARGET 13.** The target is located east of and between targets 23 and 24. Target 13 is three concentric circles. The spray area is 2000 feet in diameter and contains approximately 72 acres. Orientation is generally N-S, although exact spray lines will depend on marker set-up.

**TARGET 21.** The target is the most northerly of the southern group. Target is a large, rectangular area 5000' X 7800'. Orientation is NNE-SSW using right patterns of SSW-NNE using left patterns. Target and surrounding terrain are flat.

**TARGET 22.** Target is located approximately three N.M. N.E. of CBU Valley. Target is a rectangle 2400' X 3700'. To assist in identification, Target 1, a circular target, is located immediately SE of 22. Target orientation is SE to NW with left patterns.

**TARGET 23.** Target is located about three N.M. SSW of Target 21. Target 23 is a rectangle approximately 1850' X 4500'. Terrain is flat. Target orientation is NNE-SSW using right patterns or SSW-NNE using left patterns.

**TARGET 24.** Target is located about one N.M. SSW of Target 23. Target 24 is a 1500' X 6000' rectangle. Orientation is the same as Target 21. Terrain is flat.

**TARGET 26.** Personnel from MMETA, or 6501st RS will be aboard aircraft to assist in identification and orientation of target. Target is located west of Target 21. Target is rectangle 100' X 6000'. Terrain is flat and can be flown as desired.

**CBU VALLEY.** CBU Valley is located on the northeast corner of the range. Spray line is oriented northwest/southwest (320/140). Spray can be accomplished both directions with turn around over the lake bed northwest and at the head of the valley southeast. Alternatively, spray will be northwest using left patterns. The ground rises gradually to the southeast of the target requiring higher power going southeast, lower going northwest.

**EAGLE TARGET.** Eagle is located southwest of CBU Valley and approximately six NM northwest of Target 21. Targets are the run-in areas to the strafing targets and the bombing targets. Spray line from the northeast run-ins is 023, and spray line for the west run-ins is 293. The centerline is marked by a row of tires. Bombing run-ins are triangular 5200' X 600' at the wide end and 50' at the narrow end. Orientation is northeast to southwest on one and northwest to southeast to the other.

**BIG POPPA.** Big Poppa is a circle 3250' in diameter located N.E. of CBU Valley. Orientation of spray lines is SSW to NNE. The target is dishd with higher terrain on the east side and northeast quadrant. Off the target, the terrain rises rapidly to the east. Leaving the northeast quadrant, there is a ridge line about 150' - 200' high to overfly. Patterns are left hand.

**WILDCAT MOUNTAIN.** Target is a simulated airfield located about 30 NM southwest of the northern end of Cedar Mountain. The spray area consists of a runway, parallel taxiway and parking ramp. The runway is 200' X 10,200' the Orientation is NE to SW with left patterns. Target area is flat but the terrain rises rapidly to the west.

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**PARRIS ISLAND MCRD, SC 22-25 JUN 2009**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 22-25 June 2009
- c. Purpose of Application: Mosquito Control
- d. Application Date/s: 24 June 2009
- e. Time/s of Application (Local): 1915-2105
- f. Acres Treated: 7,122
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6)  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 23 Jun 2009
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 24 Jun; Assistant Chief of Staff,  
Installations and Logistics, COL (b) (6) briefed by Maj (b) (6)
- k. Mission Identifier: QZNRKA465173

**2. OPERATIONAL:**

- a. **Mission Commander:** Maj (b) (6) (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Maj (b) (6) (b) (6) Capt (b) (6) (b) (6)
  - (2) Navigators: Maj (b) (6)
  - (3) Flight Engineers: MSgt (b) (6)
  - (4) Spray Operators: MSgt (b) (6) (b) (6) MSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) TSgt (b) (6) , TSgt (b) (6)  
(b) (6)
  - (2) Crew Chiefs: SSgt (b) (6) , SRA (b) (6)
  - (3) Avionics: MSgt (b) (6)
- d. **Entomologist:** Maj (b) (6) (b) (6)
- e. **Flying Data:**
  - (1) Spray Sorties/Hours: 1/1.8
  - (2) Ferry Sorties/Hours: 2/4.1

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 60 gal Dibrom<sup>®</sup>
- e. Gallons Pesticide Applied: 54 gal
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 10 gal/marvel oil
- h. Other Additives Used: None
- i. Application Rate: 1.0 oz/acre



**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8008 Flat Fan
- e. Nozzle Orientation & Number Used: 8 oriented straight down
- f. Pressure: 55 p.s.i.
- g. Flow Rate: 3.6 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 1000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS (19 Apr):**

- a. Winds (Direction/Speed):
  - (1) Ground: 190-210°/3-5 Knots
  - (2) Release Altitude: 220° /5-7 Knots
- b. Temperature (Degrees Fahrenheit): 82° F
- c. Relative Humidity: 65%
- d. Cloud Cover: Partly Cloudy
- e. Source: Ground observations at the MCRD Rifle Range/Aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: visual observation of aircraft course (GPS)
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito and midge numbers were determined prior to spraying using CO<sub>2</sub>-baited traps. Post-spray monitoring was carried out by Natural Resources personnel.
  - (2) Results: Average reduction at 2 trap sites (golf course & village housing) was 90% two days following application, marked improvement was reported by other personnel on the Depot.

**8. REMARKS:** Significant rainfall promoted mosquito numbers to rise in June. A corrosion problem with a drum of Dibrom forced extended handling procedures and the window of opportunity was lost on 23 June which forced that evenings sortie to cancel. The following evening, environmental conditions were excellent and the entire installation was treated (Attachment 1). The mission was subsequently carried out without additional incident and the Parris Island Environmental staff reported good control. The next application is projected for the second week in October and we plan to test the efficacy of a new formulation of pesticide against biting midges.

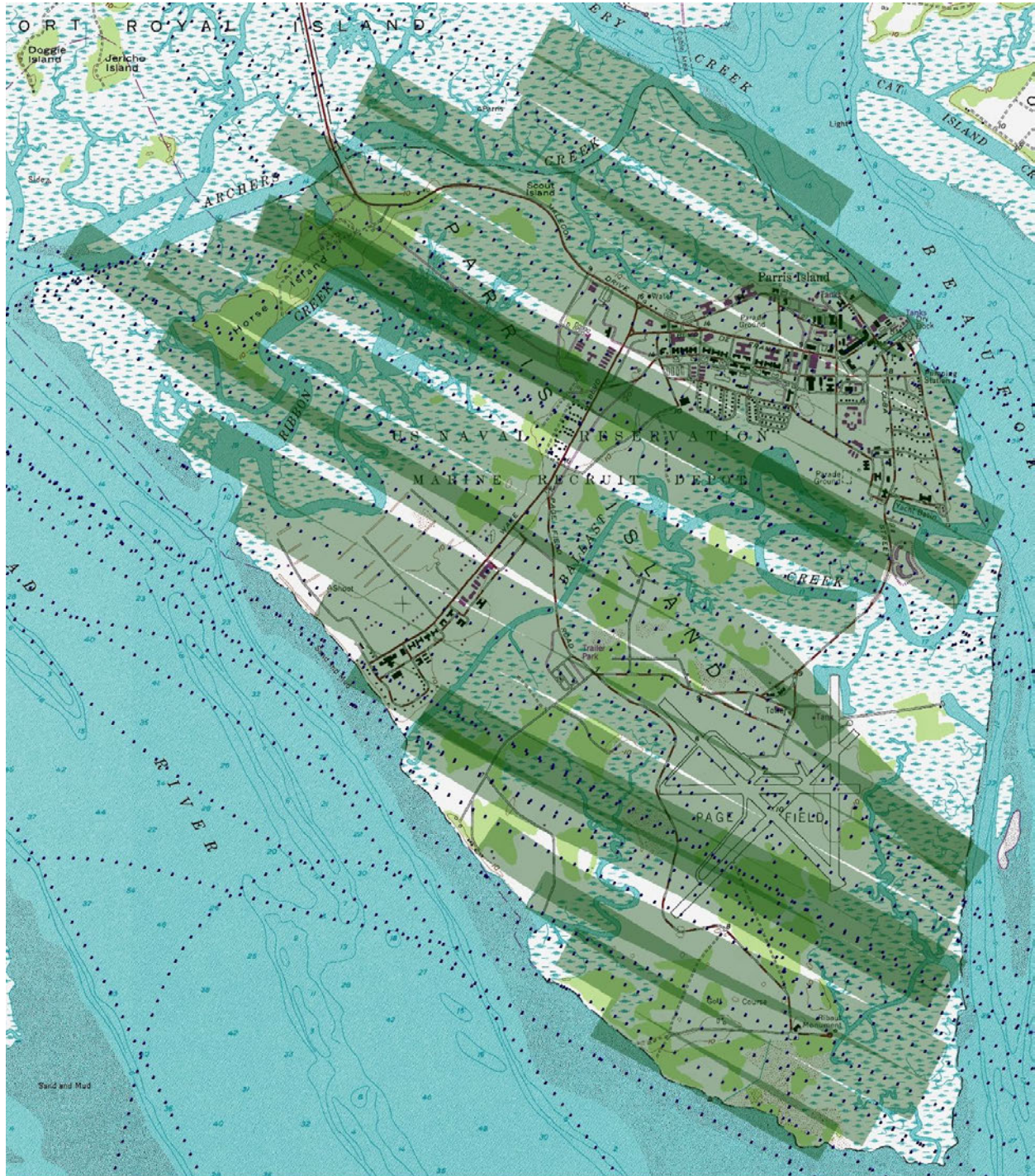
//signed//

(b) (6) (b) (6)

**MAJ, USAFR**

**DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

**Attachment 1. Flight path of aircraft while making Dibrom application, 24 Jun 09. Green shading is the projected swath width and dots represent the path of the aircraft.**





# AERIAL SPRAY OPERATIONAL SCHEDULE

## AVON PARK, FL

22-26 FEB 2009

**PURPOSE/OBJECTIVE/BENEFIT:** Flight testing of spray deposition and spray flow pattern around LAIRCM equipped aircraft. Aerial Spray flight training for aircrews over Avon Park Bombing range.

### 1. 910 AW PARTICIPANTS:

#### a. Aircrew:

1. Pilots: Maj (b) (6) (b) (6) Capt (b) (6) (b) (6) Maj (b) (6) , Maj (b) (6)
2. Navigators: Maj (b) (6) (b) (6)
3. Flight Engineers: Msgt (b) (6)

#### b. Spray Operators: Sms (b) (6) , Msgt (b) (6) Msgt (b) (6)

#### c. Maintenance:

1. Spray Maintenance: Smsgt (b) (6) Msgt (b) (6) , Msgt (b) (6)
2. Avionics: Ssgt (b) (6) , Ssgt (b) (6)
3. Crew Chiefs: Tsg (b) (6) , SRA (b) (6)
4. Engine Shop: Tsg (b) (6) (b) (6)

#### d. Entomologist/Ground Support: None

### 2. SCHEDULE: (All time Local) All times and sequence of events are subject to change depending upon the needs of the testing and range.

22 Feb (Monday):

1100: Show time

1300: Depart KYNG

1600: Land KAGR

23 Feb (Tuesday): Range schedule 1200-1500

Ground testing of QIS: Complete remaining ground testing items as required. Upon completion of ground items, flight testing of the EMI will be conducted at MCF. Upon completion of testing, the crew will depart out to KAGR

0800 or TBA Show Time

1200 or TBA Take Off

1500 Land Time

**\*\*Schedule for remainder of week will be flexible depending upon the QIS testing.**

24 Feb (Wednesday): Range schedule 1200-1500

1000 Show at aircraft

1200 T/O MCF

**\*\* Training at Avon Park Range or overwater**

1500 Land MCF

25 Feb (Thursday): Range schedule 1200-1500

1000: Show time

1200: Takeoff KAGR

1500: Land KAGR

26 Feb (Friday):

0900: Show time

1100: Depart KAGR

1430: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Navigator:** Maps with "No-Spray" Areas Marked  
Mission computer

**4. AIR TO GROUND FREQUENCIES:**

- a. **Spray: Primary 392.2; Secondary 340.8**
- b. **Interplane: Primary 123.45; Secondary 122.9**
- c. **Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2**
- d. **Avon Park: TWR-292.2 (p), 126.15, 276.6 (s) Hrs 0700-2300 M-F, S-S per flying schedule  
DSN 968-7138**
- e. **MacDill: TWR-123.7; GND-118.575; ATIS-133.825; CMD POST-311.0; PTD-372.2**

**5. SPRAY CONFIGURATION:**

- a. **MASS – SP2G**
- b. **Aircraft Number: 89-9105**
- c. **Nozzle Tips/Orientation: LV/HV 14 Raindrop nozzles oriented straight back**
- d. **Mission Identifier: QZNRKA346011**

**6. MISSION PROTOCOLS:**

- a. **Altitude:** 100 and 150 AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Chemical:** Water
- d. **Application Rate:** TBD based on spray operator training needs
- e. **Flow Rate:** TBD
- f. **Acreage:** Configuration for training only.
- g. **Swath Width:** TBD depending upon training profile each day

**7. CONTACTS:**

- a. **Quarters:**  
**Springhill Suites**  
813-639-9600  
4835 W Cypress St Tampa, FL 33607
- b. **Transportation:**  
**Vehicles: 4 Vans - \$80/day;**  
Enterprise Rental MacDill AFB:  
(813) 840 2613 Attn: (b) (6)  
Van – (b) (6) (b) (6) (b) (6) (b) (6)
- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350
  - 1. **Weather:** MacDill AFB Forecaster (DSN 968-2854)
  - 2. **Range Scheduling MacDill:** DSN 968-4641 (Current Ops Scheduling)
  - 3. **MacDill AFB Ops Gp CC** 968-3014

d. **Avon Park, Fla. Commercial prefix (863) 452-4XXX**

DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN

Avon Control Tower & Range Control Scheduling DSN 968-7176

Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number

1. Range Operations Manager: (b) (6)
2. Avon Range Control Tower: ext 176
3. Flight Chief of Civ Engineer: (b) (6) Bldg 29, (b) (6)
4. Chief, Environmental Flight: (b) (6), Bldg 29, (b) (6) also Wildlife Biologist (b) (6)
5. Fuels: ext 118 or Cel (b) (6)(b) (6)
6. Range Support Manager: Mr (b) (6) Bldg 29, (b) (6)
7. Range Control/Schedule: (b) (6) (b) (6) Bldg 41, (b) (6)

**See Attached Avon Park Org directory for additional listings**

8. Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)  
Range VHF: 126.15

f. **Sebring AP: Mgr: (b) (6) (b) (6) (fuel needs)**

BEEPER: 1 (863) 999-8622 ENTER YOUR PHONE# ENTER #

Asst Mgr: (b) (6) x-

g. **Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1- 800-278-7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Maj (b) (6) (b) (6) ; FAX 1022
4. 910 OG/CC: LtCol (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMSgt (b) (6) (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342

**15. Cellular Spray Phones:**

- Mission Commander: (b) (6)
- Entomologist: (b) (6)
- Spray Maintenance: (b) (6)



**SPRAY OPERATIONAL SCHEDULE  
HILL AFB/DUGWAY DECON DEMO  
22-26 MAY 2000**

**1. AIRCREW: (C-130 Tail #105)**

- a. **Pilots:** LTC (b) (6) , Maj (b) (6)
- b. **Navigators:** MAJ (b) (6)
- c. **Flight Engineers:** TSG (b) (6)
- d. **Spray Operators:** SMS (b) (6) , MSG (b) (6)
- e. **Spray MX:** SMS (b) (6) , TSG (b) (6) , SSG (b) (6)
- f. **Maintenance:** TSG (b) (6)
- g. **Crew Chief:** SSG (b) (6)
- h. **Decon Project Officers:** Maj (b) (6) Capt (b) (6)

**2. SCHEDULE:**

**22 MAY 00 (MON):**

0800: REPORT TO 910 AW  
1000: TAKE OFF/910 AW  
1300: LAND AT HILL AFB

**23 MAY 00 (TUES): Range Flt Hrs over Sector Echo & Sierra, 1745Z-2000Z**  
AS DIRECTED BY A/C COMMANDER

**24 MAY 00 (WED): DECON DEMO OVER DUGWAY PROVING GROUND**

0800: REPORT TO C-130  
0830: PREPARE A/C FOR DECON DEMO OVER TARGET AREA  
0900-1400: DEMO OVER TARGET AREA AT DUGWAY

**25 MAY 00 (THUR): Range Flt Hrs over Sector Echo & Sierra, 1500Z-2000Z**  
AS DIRECTED BY A/C COMMANDER

**26 MAY 00 (FRI):**

0630: REPORT TO C130  
0830: TAKE OFF FROM HILL AFB  
1730: LAND AT 910 AW

**3. PARKING PLAN. Transit Ramp**

**4. RADIO FREQUENCIES:**

**Clover Control:** UHF 339.0, 275.9

**Eagle Tower:** UHF 351.0; **MAWK 3 & 4** (Lee/Moose)

**Spray Ground Freq:** VHF 134.1, 118.45; UHF 383.2 (Primary) or 398.1 (Back-up)

**5. CAR CONTACT:**

**Enterprise Rental Car (801) 773-8999;**

**On Base (801) 825-0080, FAX (801) 775-8999**

1 ea Mid Size \$36 per day: Maj (b) (6) Confirmation #771862

1 ea Mid Size \$36 per day: LtC (b) (6) Confirmation #771864

1 ea Mid size \$36 per day: SMS (b) (6) Confirmation #771871

1 Van \$55 per day: SSG (b) (6) (b) (6) Confirmation #771874

**5. QUARTERS:**

Billeting Office Mountain View Inn, DSN 777-0802, FAX 775-2014

Com: (801) 777-0802

**COMFORT INN**, \$40, (801) 544-5577, 877 N 400W (use South Gate)

**6. HILL AFB:**

Airfield Manager: 7-2161/2

Base Operations: 7-1861

C-130 Maintenance Contact: 7-3984

Fuels: 7-7423/7-7311

Transit Alert: 7-3956

Public Affairs: 7-5201

Supply: 7-5391

**7. 910 AW: COMMERCIAL (330) 609-xxxx OR DSN 346-xxxx**

Cellular Phones: (b) (6)

910 AW Direct Dial-In: 1-800-278-7046

Command Post: 1315, FAX 1161

910 AW/CC: 1243

910 AW/PA: 1236

910 AW/FM Comptroller: 1216

Supervisor of Flight Desk (SOF): 1069, FAX 1371

910 OG/CC: 1257/1179

757 AS/DO: 1258

757 AS/DO Admin: 1239/1702

757 AS/DOS Aerial Spray Operations: 1111, FAX 1616

910 MA/CC: 1225

Maintenance Control: 1344

Spray Maintenance: 1132/1586



**9. DECON DEMO SCHEDULE/PARAMETERS:**

**Time ON TARGET:** 1030L/24 MAY 00

**10. SPRAY CONFIGURATION:**

a. MASS: SP2G

b. Aircraft Number: 9105

**11. SPRAY PARAMATERS:**

a. Ground Speed. 170 Knots

b. Altitude AGL. 100 Feet

c. Swath Width. 35 Feet

d. Application Rate. 50.6 gal/acre

e. Total Spray-On Time/Load. 80 Seconds

f. Spray-On Time/Pass. 15 Seconds

g. Number of Passes/Load. 5

**12. MASS:**

a. Configuration

(1) Nozzles. 3 Inch Ultra-High Volume (UHV) Fuselage (1 each side.)

(2) Nozzle Orientation. Straight Back

b. Flow Rate. 700 Gal/Min

c. Spray Mix 24 MAY 2000: 950 Gal Water, 2 Gal StaPut in each tank  
(4 gal total), 320 Oz Hi-Light Dye, 70 Gal Water in sump.

# 910 AW AERIAL SPRAY PMP'S POST-MISSION REPORT

## 1. MISSION BASICS:

- a. **Installation Sprayed:** Hill AFB/UTTR UT
- b. **Mission Duration:** 22-26 Sep 01
- c. **Purpose of Application:** Weed Control over designated UTTR targets
- d. **Date/s and Time/s of Application (Zulu):** See Spray Operations Summary Chart
- e. **Acres Treated:** See Spray Operations Summary Chart
- f. **Project Coordinator/s (Name/Rank, Title, Phone #):** (b) (6), Aerial Spray Coordinator, Hill/UTTR AFB, DSN (b) (6); LTC (b) (6) LTC (b) (6) (b) (6)
- g. **Date Spray Map Last Approved:** 11 Sep 01
- h. **Date of Waste Generation Letter:** N/A
- i. **Installation In-Briefing: (When/Where/Briefer/s):** 21 Sep 01/1500, Base OPS, LtC (b) (6) (b) (6)

## 2. OPERATIONAL:

- a. **Mission Commander:** LTC (b) (6) (b) (6)
- b. **Certified PMP (Category 11):** LTC (b) (6) LTC (b) (6) (b) (6) MAJ (b) (6) (b) (6)
- c. **Aircrew:**
  - (1) Aircraft CMDR & Pilots: LTC (b) (6) (b) (6) MAJ (b) (6) (b) (6)
  - (2) Co-Pilots: MAJ (b) (6) (b) (6) CPT (b) (6) (b) (6) (21-24 Sep), CPT (b) (6) (b) (6) (24-29 Sep)
  - (2) Navigators: LTC (b) (6) (b) (6) Maj (b) (6), LTC (b) (6) (21-24 Sep), LTC (b) (6) (21-22 Sep)
  - (4) Flight Engineer(s): SMS (b) (6), MSG (b) (6)
  - (5) Spray Operators: CMS (b) (6), MSG (b) (6), MSG (b) (6), MSG (b) (6), TSG (b) (6) (b) (6)
- d. **Safety Briefer:** LTC (b) (6)
- e. **Spray Maintenance/Pesticide Loaders:** MSG (b) (6) (b) (6) TSG (b) (6); TSG Michael Lamantia, TSG (b) (6)
- f. **Spray Ground Monitors:** LTC (b) (6) LTC (b) (6) (b) (6) MAJ (b) (6) (b) (6) CPT (b) (6) Fadem, (b) (6)
- g. **Crew Chief(s):** TSG (b) (6) SSG (b) (6) SRA (b) (6) SRA (b) (6)
- h. **910 MA/LG Superv:** CMS (b) (6)
- i. **Com Nav:** TSG (b) (6)
- j. **AGE:** TSG (b) (6)
- k. **Propulsion:** TSG (b) (6)
- l. **R & R:** TSG (b) (6)
- m. **Hydraulic:** MSG (b) (6)
- n. **Environmental/Electric:** TSG (b) (6)
- o. **Engine Shop:** SMS (b) (6)
- p. **Flying Data:** (See Spray Data Charts)
  - (1) Spray A/C 899105: Ferry: 2, Hours: 11.2; Spray Sorties: 10, Hours: 15.3
  - (2) Spray A/C 899106: Ferry: 2, Hours: 10.8; Spray Sorties: 9, Hours: 13.6
  - (3) Support A/C 923021, 21 Sep, Ferry: 2, Hours: 6.5
  - (4) Support A/C 919141, 28-29 Sep, Ferry: 2, Hours: 10.4

**3. PESTICIDE:**

- a. **Trade Name (% Active Ingredient):** Krovar I DF®
- b. **EPA Registration Number:** 352-505
- c. **Formulation Sprayed:** 10 pounds in 22.5 gallons of water per acre
- d. **Gallons Pesticide Loaded:** 29,110
- e. **Gallons Pesticide Applied:** 29,110
- f. **Gallons and Name Diluent Used:** 28,812 gallons water
- g. **Other Additives Used:** 15 Gal Foam Fighter F®, 114 Gal StaPut®, 45 Gal Hi-Light® Dye
- h. **Application Rate:** 22.5 Gal per acre

**4. APPLICATION EQUIPMENT:**

- a. **Aircraft Type (Tail Number):** C-130H 899105 and 899106
- b. **Spray System (Modules Used) and System ID #:** 3 and 5.
- c. **Spray System Configuration:** SP-3G
- d. **Nozzle Type/Size:** 3 inch herbicide nozzles.
- e. **Nozzle Orientation & Number Used:** 2, oriented straight back.
- f. **Pressure:** 40 psi
- g. **Flow Rate:** 366 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. **Swath Width Flown:** 35 feet.
- b. **Spray Off Set:** Variable, determined by spotters on the ground.
- c. **Spray Release Altitude:** 100 feet.
- d. **Ground Speed:** 200 knots.

**6. WEATHER OBSERVATIONS (Ground Wind Direction (degrees)/Speed (knots):**

- a. **22 Sep:** North – 310-010/4-15
- b. **23 Sep:** 21-300/0-9
- c. **24 Sep:** 140-200/0-4
- d. **25 Sep:** 100-330/0-10

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. **Deposition Pattern:**
  - (1) Technique/s Used: Ground Observation
  - (2) Results: Spray off-set determined each day
- b. **Effectiveness:**
  - (1) Technique/s Used: Visual field observations
  - (2) Results: (See Remarks)

**8. REMARKS:** Ground coverage was complete with no skips in sprayed areas. The east side of Target 23 was not sprayed. Efficacy will be determined by field observation next spring.

**CERTIFIED PEST MANAGEMENT PROFESSIONAL**

(b) (6)

**PhD, Lt Col, USAFR**

# AERIAL SPRAY OPERATIONAL SCHEDULE

## PARRIS ISLAND MCRD, SC

### 22-27 APR 2001

#### 1. 910 AW PARTICIPANTS:

- a. **Aircrew:**
- |     |                           |             |             |
|-----|---------------------------|-------------|-------------|
| (1) | <u>Mission Commander:</u> | LTC         |             |
| (2) | <u>Pilots:</u>            | LTC         |             |
| (3) | <u>Navigators:</u>        | Maj (b) (6) | Maj (b) (6) |
| (3) | <u>Flight Engineers:</u>  | MSG         |             |
| (5) | <u>Spray Operators:</u>   | MSG         |             |
- b. **Maintenance:**
- |     |                           |     |  |
|-----|---------------------------|-----|--|
| (1) | <u>Spray Maintenance:</u> | SMS |  |
| (2) | <u>Crew Chiefs:</u>       | TSG |  |
| (3) | <u>Avionics:</u>          | TSG |  |
- c. **Pest Management Professionals/Entomologist:** Lt (b) (6) (b) (6)
- d. **Ground Safety:** MSG

#### 2. PLANNED SEQUENCE OF EVENTS: (All times local)

- 22 APR (Sunday):
- |       |                 |              |
|-------|-----------------|--------------|
| 1500: | Take off KYNG   |              |
| 1700: | Land KNBC       | <u>PPR #</u> |
| 1730: | Safety Briefing |              |
- 23 APR (Monday):
- |       |  |  |
|-------|--|--|
| 1400: | Load Chemical  |  |
| 1630: | Take off KNBC  |  |
| :     | Sunset (see <a href="http://www.beaufort.usmc.mil">www.beaufort.usmc.mil</a> for weather, etc) |  |
| 1900: | Land KNBC  |  |
- 24 APR (Tuesday):
- |       |               |  |
|-------|---------------|--|
| 1400: | Load Chemical |  |
| 1630: | Take off KNBC |  |
| :     | Sunset        |  |
| 1900: | Land KNBC     |  |
- 25 APR (Wednesday):
- |       |               |  |
|-------|---------------|--|
| 1400: | Load Chemical |  |
| 1630: | Take off KNBC |  |
| :     | Sunset        |  |
| 1900: | Land KNBC     |  |
- 26 APR (Thursday):
- |       |               |  |
|-------|---------------|--|
| 1400: | Load Chemical |  |
| 1630: | Take off KNBC |  |
| :     | Sunset        |  |
| 1900: | Land KNBC     |  |
- 27 APR (Friday):
- |       |               |  |
|-------|---------------|--|
| 1200: | Take off KNBC |  |
| 1400: | Land KYNG     |  |

#### 3. ITEMS TO TAKE:

- a. **Entomologist/CPMP:**
- |     |   |
|-----|---|
| (1) | Wind Gauge, Compass, and Signal Mirrors |
| (2) | UHF/VHF Radios and Cellular Phone       |
| (3) | Pesticide Safety Binder                 |
| (4) | Calibration Tables                      |
| (5) | DGPS Computers & Maps                   |
| (6) | Oil Sensitive Papers                    |
| (7) | Trackstar Equipment                     |
- b. **Navigators:**
- |     |      |
|-----|------|
| (1) | Maps |
|-----|------|

- (2) Templates
- (3) Laptop Computer
- c. **Spray Maintenance:**
  - (1) Spill Kit
  - (2) Safety Equipment
  - (4) Loading and Clean-up Equipment and Supplies

#### 4. **SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Wing Booms
- c. **Nozzles:** Open for ULV spray; 6, 8008's oriented straight down
- e. **Differential GPS:** Installed
- f. **Aircraft:** 0910?

#### 5. **SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: HAN
- b. **Application:** 1 Ounce Dibrom®/Acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 3.634 Gallons/Minute

#### 6. **AMOUNT OF SPRAY MATERIAL AVAILABLE:** Load 60 gallons of Dibrom® Concentrate per mission and 25 gallons HAN in flush tank.

#### 7. **PPR REQUIREMENTS:** Required: PPR #

#### 8. **PARKING PLAN:** Beaufort MCAS Ramp

#### 9. **AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
Hilton Head Arpt: 123.0 UNI  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 392.2; Secondary 340.8**

#### 10. **TRANSPORTATION:** Parris Island will provide two vans for transportation to and from quarters and for messing. There will be an additional vehicle for the CPMP/Entomologists.

#### 11. **SPRAY MONITORING OR TESTING:** Ground monitoring by CPMP and Parris Island MCRD Project Coordinator.

#### 12. **CONTACTS:**

- a. **Parris Island MCRD SC: (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX**
  - (1) Environmental Coordinator (Spray Coordinator):
    - (b) (6) DSN (b) (6) (cellular) (b) (6) (b) (6) DSN (b) (6)
    - FAX (843) 228-2616; (b) (6) (b) (6) ; (b) (6) (b) (6)
  - (2) Assistant Chief of Staff I & L: Col (b) (6) & Cpt (b) (6) , DSN (b) (6)
  - (3) Pest Control Foreman: (b) (6) DSN (b) (6)

- (4) P.I. Motor Pool: (b) (6) DSN (b) (6)  
 (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)  
 (5) Thrifty Car Rental: (843) 525-9996  
 (6) P.I. Rifle Range: DSN: 335-3183/3624  
**b. Beaufort MCAS SC:** (Commercial (843) 228-XXXX)  
 (1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6) ; (b) (6) DSN (b) (6)  
 (2) Fuels: DSN: 335-7049/7448/7168  
 (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
 DSN: 3(b) (6) (b) (6). Base Ops is ext 7301/2/3  
 (After duty hours: (b) (6) DSN: (b) (6) )  
 (4) Trans Alert/VAL: DSN: 335-7110  
 (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)  
**c. Beaufort County Mosquito Control:** (b) (6) (b) (6)  
**d. Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) DSN: (b) (6)  
**e. Quarters:**  
**Sleep Inn, \$67.10, (Joy), 843-522-3361, FAX: 843-522-9929**  
 Hampton Inn, \$68, 2342 Boundary St, Beaufort SC, (843) 986-0600 (FAX 0494)  
 Parris Island Billeting (Linda Davidson) DSN: 335-2744 (FAX: 3815); (843) 228-3960  
 Comfort Inn (843) 525-9366 (FAX 1529)(b) (6)  
 Best Western (Sea Island Motel) (843) 524- 4121  
 Port Royal Days Inn (843) 524-1551  
 Beaufort Ramada 1-800-272-6232  
 Holiday Inn (843) 524-2144 (\$60.23)  
 Best Western Pt South (I-95) 1-843-726-8101  
**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
 Toll Free 1 - 800 - 278 - 7046,+2 + Ext  
 (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243  
 (2) 910 AW Command Post: Ext 1315; FAX 1161  
 (3) 910 AW/PA: Ext 1236; FAX 1022  
 (4) 910 OG/CC: Col (b) (6)  
 (5) 910 OSF/OSA: Airfield Manager: (b) (6) (b) (6) (b) (6)  
 - Assistant Air Field Manager (ACAM), (b) (6)  
 (6) 757 AS/DO: LtC (b) (6)  
 (7) 757 AS/DOO: Ops Admin: SMSgt (b) (6) (b) (6) 9  
 (8) 757 AS/DOS: Aerial Spray Office, (b) (6) (b) (6) ; FAX 1616  
 (9) 910 LG/CC: Ext 1225  
 (10) 910 LG/LGM: CMSgt (b) (6) (b) (6) (b) (6)  
 (11) Maintenance Control: Ext 1348910  
 (12) LG/LGMS: Spray Maintenance: Ext 1132/1586  
 (13) 910 LG/LGL: CMSgt (b) (6) (b) (6)  
 (14) Omega/SATO Travel: Ext 1772; (800) 285 – 6342  
 (15) Cellular Spray Phones: (b) (6)  
 (16) Supervisor of Flight Desk: 1069, FAX: 1371

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **PARRIS ISLAND MCRD, SC**

### **22-27 OCT 2001**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCRD, SC.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Mission Commander: Maj (b) (6) (b) (6)
- (2) Pilots: Capt (b) (6) (b) (6) Capt (b) (6) (b) (6)
- (3) Navigators: Maj (b) (6) (b) (6)
  - (a) Flight Engineers: MSG (b) (6)
  - (a) Spray Operators: MSG (b) (6) CMS (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: MSG (b) (6) TSG (b) (6) , TSG (b) (6) , TSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6) , TSG (b) (6)
- (3) Avionics: TSG (b) (6)

##### **c. Pest Management Professionals/Entomologist:** Capt (b) (6) (b) (6) Maj (b) (6) (b) (6) LtC (b) (6)

#### **2. PLANNED SEQUENCE OF EVENTS:** (All times local)

##### **22 OCT (Monday):**

0900: Show Time  
1100: Take off KYNG  
1300: Land KNBC  
1330: Safety Briefing

**PPR # 295-01**

##### **23 OCT (Tuesday):**

1300: Show Time  
1400: Load Chemical  
1630: Take off KNBC  
1841: Sunset  
1900: Land KNBC

##### **24 OCT (Wednesday):** Weather Back-up, see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

1300: Show Time  
1400: Load Chemical  
1645: Take off KNBC  
1840: Sunset  
1900: Land KNBC

##### **25 OCT (Thursday):**

1300: Show Time  
1400: Load Chemical  
1645: Take off KNBC  
1839: Sunset  
1900: Land KNBC

##### **26 OCT (Friday):** Weather Back-up,

1300: Show Time  
1400: Load Chemical  
1645: Take off KNBC  
1838: Sunset  
1900: Land KNBC

##### **27 OCT (Saturday):**

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG



### 3. ITEMS TO TAKE:

- a. **Entomologist/CPMP:**
  - (1) Wind Gauge, Compass, and Signal Mirrors
  - (2) UHF/VHF Radios and Cellular Phone
  - (3) Pesticide Safety Binder
  - (4) Calibration Tables
  - (5) DGPS Computers & Maps
  - (6) Oil Sensitive Papers
  - (7) Trackstar Equipment
- b. **Navigators:**
  - (1) Maps
  - (2) Templates
  - (3) Laptop Computer
- c. **Spray Maintenance:**
  - (1) Spill Kit
  - (2) Safety Equipment
  - (4) Loading and Clean-up Equipment and Supplies

### 4. SPRAY CONFIGURATION: SP-2G

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Wing Booms
- c. **Nozzles:** Open for ULV spray; 6, 8008's oriented straight down
- d. **Differential GPS:** Installed
- e. **Aircraft:** 09107 **Mission Identifier:** QZNRKA10728295

### 5. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: HAN
- b. **Application:** 1 Ounce Dibrom®/Acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 3.634 Gallons/Minute

### 6. AMOUNT OF SPRAY MATERIAL AVAILABLE: Load 60 gallons of Dibrom® Concentrate per mission and 25 gallons HAN in flush tank.

### 7. PPR REQUIREMENTS: Required: 295-01

### 8. PARKING PLAN: Beaufort MCAS Ramp

### 9. AIR TO GROUND RADIO FREQUENCIES:

Air Traffic Control: 119.05 Beaufort MCAS TWR  
Hilton Head Arpt: 123.0 UNI  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 392.2; Secondary 340.8**

### 10. TRANSPORTATION: Parris Island will provide two vans for transportation to and from quarters and for messing. There will be an additional vehicle for the CPMP/Entomologists. Enterprise Rental Agency: (843) 525-0494

### 11. SPRAY MONITORING OR TESTING: Ground monitoring by CPMP and Parris Island MCRD Project Coordinator.

## 12. CONTACTS :

- a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX
- (1) Environmental Coordinator (Spray Coordinator):  
(b) (6) DSN (b) (6) ; (cellular) (b) (6) ; (b) (6) DSN (b) (6)  
FAX (843) 228-2616; (b) (6) (b) (6) (b) (6) (b) (6)
- (2) Assistant Chief of Staff I & L: Col (b) (6) & Cpt (b) (6) , DSN (b) (6)
- (3) Pest Control Foreman: (b) (6) DSN (b) (6)
- (4) P.I. Motor Pool: (b) (6) DSN 335-2233
- (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
- (5) Thrifty Car Rental: (843) 525-9996
- (6) P.I. Rifle Range: DSN: 335-3183/3624
- b. **Beaufort MCAS SC:** (Commercial (843) 228-XXXX)
- (1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6) ; (b) (6) DSN (b) (6)
- (2) Fuels: DSN: 335-7049/7448/7168
- (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
DSN: (b) (6) . Base Ops is ext 7301/2/3  
(After duty hours: (b) (6) DSN: (b) (6)
- (4) Trans Alert/VAL: DSN: 335-7110
- (5) Weather: DSN 335-7001/7926/7/9 (www:beaufort.usmc.mil)
- c. **Beaufort County Mosquito Control:** (b) (6) (b) (6)
- d. **Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) DSN: (b) (6)
- e. **Quarters:**
- Hampton Inn**, \$70, 2342 Boundary St, Beaufort SC, (843) 986-0600 (FAX 0494)
- Parris Island Billeting (Linda Davidson) DSN: 335-2744 (FAX: 3815); (843) 228-3960
- Comfort Inn (843) 525-9366 (FAX 1529)(Gigi)
- Best Western (Sea Island Motel) (843) 524- 4121
- Port Royal Days Inn (843) 524-1551
- Beaufort Ramada 1-800-272-6232
- Holiday Inn (843) 524-2144 (\$60.23)
- Best Western Pt South (I-95) 1-843-726-8101
- Sleep Inn (843) 522-3361 FAX (843) 522-9929
- f. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX
- Toll Free 1 - 800 - 278 - 7046,+2 + Ext
- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 OSF/OSA: Airfield Manager: (b) (6) (b) (6) (b) (6)  
- Assistant Air Field Manager (ACAM), (b) (6)
- (6) 757 AS/DO: LtC (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6)
- (8) 757 AS/DOS: Aerial Spray Office, (b) (6) (b) (6) (b) (6) FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: CMS (b) (6) (b) (6) (b) (6)
- (11) Maintenance Control: Ext 1348910
- (12) LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL: CMSgt (b) (6) (b) (6)
- (14) Omega/SATO Travel: Ext 1772; (800) 285 – 6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:  
Mission Commander: (b) (6)  
Entomologist: (b) (6)  
Spray Maintenance: (b) (6)

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT

### 1. MISSION BASICS:

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 22-26 Oct 2001
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 23 Oct 2001
- e. Time/s of Application (Local): 1645-1905
- f. Acres Treated: 6912
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6) Environmental/Spray Coordinator, DSN(b) (6)
- h. Date Spray Map Last Approved: 22 October 2001
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 22 Oct, Office of the Assistant Chief of Staff I & L, MAJ (b) (6) & CAPT (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: MAJ (b) (6) (b) (6)
- b. Certified PMP/s (Category 11): LTC (b) (6) MAJ (b) (6) (b) (6) & CAPT (b) (6) (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander: MAJ (b) (6) (b) (6)
  - (2) Co-pilot: CAPT (b) (6) (b) (6)
  - (3) Navigator(s): MAJ (b) (6) (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
  - (5) Spray Operators: CMS (b) (6) & MSG (b) (6)
- d. Safety Briefer: CAPT (b) (6) (b) (6)
- e. Spray Maintenance: MSG (b) (6) TSG (b) (6), TSG (b) (6), & TSG (b) (6)
- f. Spray Ground Monitors: LTC (b) (6) MAJ (b) (6) (b) (6) & CAPT (b) (6) (b) (6)
- g. Crew Chiefs: MSG (b) (6) & TSG (b) (6)
- h. Avionics: TSG (b) (6)
- i. Flying Data:
  - (1) Spray Sorties: 1 Hours: 2.4
  - (2) Ferry Sorties: 2 Hours: 4.3

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate
- d. Gallons Pesticide Loaded: 60 Gal Dibrom<sup>®</sup>
- e. Gallons Pesticide Applied: 54 Gal Dibrom<sup>®</sup>
- f. Gallons and Name of Flush Used: 15 gal VM & P NAPHTHA
- g. Other Additives Used: None
- h. Application Rate: 1 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99107
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8008 Flat Fan
- e. Nozzle Orientation & Number Used: 6 oriented straight down
- f. Pressure: 40 psi
- g. Flow Rate: 3.6 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off Set: 3000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 160-180°
  - (1) Ground: 4-7 Knots
  - (2) Release Altitude: 6-11 Knots
- b. Temperature (Degrees Fahrenheit): 79 °F
- c. Dew Point: 68 °F
- d. Cloud Cover: Clear
- e. Source: Ground observations at the MCRD Marina and Rifle Range

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Oil Sensitive Cards (OSC) wrapped on 1 meter dowels
  - (2) Results: Good coverage throughout spray area, as determined by OSC cards and spinners.
- b. Effectiveness:
  - (1) Technique/s Used: Landing counts taken at 3 localities prior and after application. Trapping midges using carbon-dioxide baited traps.
  - (2) Results: Following the first spray sortie, no biting midges were found at any of the survey locations. Traps counts were reduced by 80-100% following the spray.

**8. REMARKS:** Environmental conditions were excellent during this application and it showed in the results. Mosquitoes (primarily *Aedes taeniorhynchus*) rivaled midges in overall numbers prior to the spray and thus, were a significant portion of the pest population. Trap counts were radically lower on the day following the spray and landing count surveys showed a 100% reduction in midge activity. Cooler weather and high winds (12-20 knots) kept midge activity very low through the end of the week. Our next application at Parris Island MCRD is scheduled for 7-11 Apr 2002.

(b) (6)

(b) (6) (b) (6) **Capt, USAFR**  
**Certified Pest Management Professional**



**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
**3976 King Graves Rd Unit 26**  
**Vienna OH 44473-5926**



**MEMORANDUM FOR HQ AFRC/DOOM**

15 FEB 08

**FROM:** 757 AS/DOS

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Hill AFB/UTTR UT  
Annual Weed Control Spray Mission on the Utah Test and Training Range (UTTR)

1. **Capability:** Two aircraft will be available 12-21 Mar 08 for the requested spray mission. The 910AW will provide mission support 12-13 & 20-21 Mar 08.

2. **Concept of Operations:**

**12 Mar (Wednesday)**

0800 Show at KYNG  
0815 Mission Brief  
1000 Spray01 Take off (Crew Per the flying schedule, not spray plan)  
1005 Spray02 Take off (Crew Per the flying schedule, not spray plan)  
1010 Support aircraft Take off  
1330, 1335, 1340 Arrive Hill AFB  
1400 Mission Commander/Safety/Flight operations/ and In-processing Briefings

**13-14 Mar (First Spray Sortie, Range Times (1500Z-2000Z))**

0600: Show time, aircrew 1 (Crew according to spray plan)  
0630: Show time, aircrew 2 (Crew according to spray plan)  
0743: Sunrise  
0800: Spray 01 Take off  
0830: Spray 02 Take off  
0800-1700: Spray 01 & 02 spray UTTR Targets as directed by the MC

**15-16 Mar- Weather back up only; Hill range closed unless needed due to delays**

**17-19 Mar (First Spray Sortie, Range Times (1500Z-2000Z))**

0600: Show time, aircrew 1 (Crew according to spray plan)  
0630: Show time, aircrew 2 (Crew according to spray plan)  
0735: Sunrise  
0800: Spray 01 Take off  
0830: Spray 02 Take off  
0800-1700: Spray 01 & 02 spray UTTR Targets as directed by the MC

**20 Mar : Finish spray areas/Weather Back-up/Flush, Clean Up;**

0600: Show time, aircrew Spray 1  
0630: Show time, aircrew Spray 2  
0732: Sunrise (see attach Sunrise/Sunset Chart in mission folders)  
0800: Spray 01 Take off  
0830: Spray 02 Take off

**\*\*Flush sorties, plan 2 sorties each pending spray mx approval on clean tanks**

**21 Mar (Thur) All aircrew and aircraft return to YNG**

0700: All Aircrew report  
0730: All Personnel report  
0900: Spray01 Takes off  
0905: Spray02 Takes off  
0910: Support airplane Takes off  
1600: Lands YNG

3. **Spray Parameters and Sequencing:**

- a. **Herbicide:** Krovar 1DF®
- b. **Application Rate:** 22.5 gal/acre (10 lbs of Krovar in 22.4 gal of water)
- c. **Acreage:** 1,283 Acres (Targets 21, 24 and Nord LZ)
- d. **Ground Speed:** 200 Knots (337.55 ft/sec)
- e. **Spray Altitude:** 100 Feet AGL
- f. **Swath Width:** 35 Feet
- g. **Flow Rate:** 366.1 Gallons/Minute

4. **Mission Commander:** Lt Col (b) (6) (b) (6)

5. **Aircraft Commanders:** Maj's (b) (6) (b) (6) Capt (b) (6) (b) (6)

6. **Support required at Hill AFB and the UTTR has been completed.**

(b) (6) (b) (6) Capt, USAFR  
Assistant Chief of Aerial Spray



**SPRAY OPERATIONAL SCHEDULE**  
**UTAH TEST AND TRAINING RANGE MISSION**  
**22-29 MARCH 2007 CH 2**

22 Mar A/C #105, MI: QZNRKA464081 Report Time: 0800 Take Off: 1000 Arrive: 1330L  
22 Mar A/C #106, MI: QZNRKA465081 Report Time: 0805 Take Off: 1005 Arrive: 1335L  
22 Mar Supt A/C #103, QDNRKA898081 Report Time: 0810 Take Off: 1010 Arrive: 1340L

**PURPOSE/BENEFIT/OBJECTIVE:** To control *Halogeton* on Targets 21, 24 and Nord LZ at the Utah Test and Training Range (UTTR).

**1. AIRCREW 1: AC 106-In place CALL SIGN: SPRAY 06**

- a. **Pilots:** MAJ (b) (6) (b) (6) Maj (b) (6) , Capt (b) (6) , \*Maj (b) (6)
- b. **Navigators:** LtCol (b) (6) ,
- c. **Flight Engineers:** MSgt (b) (6)
- d. **Spray Operators:** MSgt (b) (6) , MSgt (b) (6) (b) (6) MSgt (b) (6)
- e. **Crew Chiefs:** MSgt (b) (6)

**AIRCREW 2: AC 105-In place CALL SIGN: SPRAY 07**

- a. **Pilots:** Capt (b) (6) (b) (6) Capt (b) (6) , 1Lt (b) (6) (b) (6)
- b. **Navigator:** Maj (b) (6) (b) (6) LTC (b) (6) (b) (6)
- c. **Flight Engineer:** MSgt (b) (6)
- d. **Spray Operators:** MSgt (b) (6) , MSgt (b) (6) (b) (6)
- e. **Crew Chiefs:** TSgt (b) (6)

**2. MISSION SUPPORT:**

- a. **Mission Commander:** LTC (b) (6) (b) (6)
  - 1. Makes final decision on all changes to the schedule
  - 2. Confirm all hotel information is correct upon check in (to prevent extra hotel rooms on our account)
  - 3. Report flight data to AFRC (See contact info on reporting sheet)
  - 4. Plan minimum of 2-3 sorties per day/plane to accomplish in 3 days with 1 additional day for wx back up. Final day is for flush and rinse. (Need 18 sorties for these areas)
- b. **Entomologists:** Maj (b) (6) (b) (6) Capt (b) (6)
- c. **ARMS:** TSgt (b) (6)

**3. UTTR GROUND PARTY:**

- a. **Entomologist/Pest Management Professional(s):** \*In place \*Maj (b) (6) (b) (6) \*LTC (b) (6)  
SMSgt (b) (6) (b) (6)

**4. MAINTENANCE: \*In place**

- a. **910 MX Supervisor:** \*SMSgt (b) (6) In place 18 Mar 07
- b. **910 Spray MX:** \* TSgt (b) (6) (b) (6) - In place 18 Mar 07, MSgt (b) (6) , TSgt (b) (6) TSgt
- c. **Instruments/Avionics:** TSgt (b) (6) , TSgt (b) (6)
- d. **Hydraulics/Electrician:** MSgt (b) (6) , TSgt (b) (6)
- e. **Engine/Propulsion:** TSgt (b) (6)

- 5. **COMM:** MSgt (b) (6) , MSgt (b) (6) (b) (6) TSgt (b) (6) ,  
TSgt (b) (6)

**6. IN-BRIEFING: (UTTR Staff)**



- a. **When/Time:** 22 Mar 2006 , 1400-1430
- b. **Where:** Building 777
- c. **Who:** EVERYONE!! Do Not leave Forestry area until cleared out by the MC.
- d. **Briefing Plan**
  - a. Billeting- See item **16.g** below
  - b. Vehicles- See item **16.h** below
  - c. Schedule of events
  - d. Weather call
  - e. Cellular Phone numbers for all personnel

**7. PLANNED SEQUENCE OF EVENTS:** Hill AFB Tower Control and Runway Hours 24/7

**NOTES:**

- 1. Scheduling reflects no weather or maintenance delays. In the event of weather or maintenance delays, the missions will be adjusted as required. ALL TIMES SUBJECT TO ADJUSTMENT BY MISSION COMMANDER
- 2. DUTY DAY FOR CIVILIANS WILL BE AS REQUIRED WITHIN CREW REST CONSTRAINTS.
- 3. Tower Control, Runway & Airfield hours 24/7
- 4. UTTR RANGE TIMES: 0600-1500L
- 5. END OF EACH DAY LOAD GROUND TANKS WITH THE APPROPRIATE MIX.  
ALL MX & A/C PERSONNEL WILL REMAIN ON DUTY UNTIL AIRCRAFT IS PRE-FLIGHT COMPLETE AND RELEASED BY THE MISSION COMMANDER.

**22 Mar (Thursday)**

- 0800 Show at KYNG
- 0815 Mission Brief
- 1000 Vader 06 Take off (Crew Per the flying schedule, not spray plan)
- 1005 Vader 05 Take off (Crew Per the flying schedule, not spray plan)
- 1010 Vader 03 AFRC Support aircraft Take off
- 1330, 1335, 1340 Arrive Hill AFB
- 1400 Mission Commander/Safety Briefing/In-processing briefings: No one leaves for Hotels or anywhere else without the approval of the mission commander. (All mission details must be completed prior to departing the spray building:
  - 1. Rental cars assigned/picked up
  - 2. Personnel and luggage transportation arranged
  - 3. Cell Phone roster complete
  - 4. UTTR Range operation brief

**23-27 Mar (Fri-Tue):** (First Spray Sortie, **Range Times 0700-1500** (1200Z-2100Z))

- 0530: Spray Maintenance starts on first full day of mission and adjust as directed
- 0530: Show time, aircrew Spray 06 (Crew according to spray plan)
- 0600: Show time, aircrew Spray 05 (Crew according to spray plan)
- 0727: Sunrise (see attach Sunrise/Sunset Chart in mission folders)
- 0715: Spray 06 Take off
- 0745: Spray 05 Take off
- 0730-1700: Spray 06 & 05 spray UTTR Targets as directed by the MC
- \*NOTE: Spray 06 & 05 will alternate show & take off each day**
- \*NOTE: First crew to base ops files flight plans and gets weather brief for both crews**

**28 Mar (Wed):** Finish spray areas/Weather Back-up/Flush, Clean Up; Support Aircraft arrives

- 0530: Show time, aircrew Spray 06
- 0600: Show time, aircrew Spray 05
- 0727: Sunrise (see attach Sunrise/Sunset Chart in mission folders)
- 0715: Spray 06 Take off
- 0745: Spray 05 Take off
- \*\*Flush sorties, plan 2 sorties each pending spray mx approval on clean tanks**

**29 Mar (Thur)** All personnel and aircraft return to YNG  
 0700: All Aircrew report  
 0730: All Personnel report  
 0900: Aircraft 06 Takes off  
 0905: Aircraft 05 Takes off  
 0910: Support airplane Takes off  
 1600: Lands YNG

# 8. ITEMS TO TAKE:

- a. **PMP:**
  - (1) Project Notebook with Recording Sheets and Maps
  - (2) Laptop Computer and Batteries
  - (3) 2 Compasses and Stop Watch
  - (4) 2 Signal Mirrors and 2 Spot Lights
  - (5) Measuring Wheels and Tape
  - (6) Entomologists' Tool Kit
  - (7) UHF/VHF Radios and VHF Radios
  - (8) Cellular Phone
- b. **Mission Commander:** Mission Folder, Cellular Phone
- c. **Navigator:** Maps
- d. **Spray Maintenance:**
  - (1) MASS Spares and Spill Kit
  - (2) Tools and Other Equipment
  - (3) Herbicide Safety Binder
  - (4) Safety Equipment
- e. **Maintenance:** Applicable Equipment

# 9. SPRAY CONFIGURATION: SP3G

- a. Two Aircraft, Systems 3 and 5
- b. MASS Modules 1, 2 and 3
- c. UHV Fuselage booms oriented straight back

# 10. PPR REQUIREMENTS: All required, see Form 33 setup sheets for aircraft

106- WL2207  
 105- WL2208  
 103- WL2209

# 11. PARKING PLAN: Forestry (Alert) Ramp – on East side of the airfield.

# 12. RADIO FREQUENCIES:

- **Clover Range Control:** UHF 285.65, 275.9, 361.4 (p)
- **Eagle Tower:** UHF 351.0; Mawk 4 (b) (6)
- **Diddle Knoll & Spray Ops Freq:** UHF 398.1 (Primary), 383.2 (Back-up); VHF 134.1, 118.45
- **Spray Inter plane:** UHF 237.05 / VHF 138.375
- **Spray Ground to Spray Maintenance:** See Iridium Phones
- **Base OPS:** 139.3
- **HF Operations:** Designated by Comm. See attached list.
- **Communications Ground Freq:** LMR nets are trunked at Hill.

## - IRIDIUM PHONES

- Mission Commander (b) (6)
- Maintenance Supervisor (b) (6)
- Entomologist/Pest Management (b) (6)

# 13. SPRAY PARAMETERS:

- a. **Herbicide:** Krovar 1DF®
- b. **Application Rate:** 22.5 gal/acre (10 lbs of Krovar in 22.4 gal of water)

- c. **Acreage:** 1,283 Acres (Targets 21, 24 and a couple passes on Nord LZ)
- d. **Ground Speed:** 200 Knots (337.55 ft/sec)
- e. **Spray Altitude:** 100 Feet AGL
- f. **Swath Width:** 35 Feet
- g. **Flow Rate:** 366.1 Gallons/Minute

**14. HERBICIDE LOADING: (For Partial Loads Use Table on Last Page)**

**a. Sequence for Loading 1,000 Gallon Mixing Tank:**

- (1) Fill with water up to 750 Gallon Mark, then add:
  - (a) 450 Pounds of Krovar 1DF® (9 bags, 50 # each)
  - (b) 4.0 Gallons (15,140 ml) of StaPut®
  - (c) 64 Ounces (1,892 ml) of Foam Fighter F®
  - (d) 200 Ounces (5,913 ml) Hi-Light® Dye
  - (e) Add Water to 1,000 Gallon Mark and Agitate for 30 Minutes

**b. When:** Start at 0530 Hours on first full day of spraying and adjust as necessary through end of the daily mission as called by Mission Commander.

**c. Items to be furnished by installation:**

- (1) Krovar 1 DF® (12,660 pounds)
- (2) Foam Fighter F® (15 gallons)
- (3) StaPut® Additive (114 gallons)
- (4) Hi-Light® Dye (45 gallons)
- (5) Remove Nutra-Sol Tank Cleaner
- (6) Loading Personnel and All Loading Equipment
- (7) All Necessary Cleanup and Hazardous Waste Disposal
- (8) Aircraft Support Equipment and TA Support
- (9) Wash Rack and Fuel Priority

**15. SPRAY MONITORING AND TESTING.** By CPMP & ground support personnel

**16. CONTACTS:** Commercial prefix (801) 777-XXXX; DSN 777-xxxx

**a. 388<sup>th</sup> RANS/RSO, Range Control Officer/Installation Spray Coordinator:**

(b) (6) 6066 Cedar Lane, Bldg 1274S; (b) (6) FAX: 9205  
Cell Phone #(b) (6)

(b) (6)

- **Hill Range Control:** 7-9386, Current OPS; 7-9385
- **Range Scheduler:** 7-9386
- **Eagle Tower:** 7-1515/6
- **Clover Operations:** 7-7575
- **Clover Commander:** 7-1550
- **388<sup>th</sup> RANS/RSL Radio Freq Monitor:** 7-6715
- **388<sup>th</sup> RANS/RSR Resource Monitor:** 5-4257

**b. Environmental Coordinator:** (b) (6)

**c. OASIS RANGE SUPPORT DIRECTORATE:**

Oasis Chief: 75 CEG/CEU (b) (6)

Oasis Civil Engineering: (b) (6)

North Range Security: 7-1521/2/4

**d. Hill AFB Base OPS:** 7-1861

**e. Entomology:** (b) (6) (b) (6)

**f. Weather:** Hill AFB: 7-2018; UTTR: 7-1516/63  
ASOS at Eagle Range 6-1765/1795  
Need Dash1 daily at 0530

**g. Billeting: Marriott POC: (b) (6)**

See roster for assigned Hotels

**Courtyard by Marriott, 1803 Woodland Park, Layton Ut 84041 (801) 217-2300**

**TownePlace Suites by Marriott, 1743 Woodland Park, Layton UT 84041 (801) 779-2422**

**Fairfield by Marriott, 1740 1200 WN, Layton, UT 84041 (801) 444-1600**

**Nugget (Wendover): 1-(800)-848-7300 (UTTR Personnel)**

**- Billeting Office Mountain View Inn, DSN 777-0802/1844, FAX 775-2014**

**COM (801) 777-0802; FAX 775-2014**

**POC (b) (6)**

- Holiday Inn Express, Layton UT 1695 Woodland Park Dr

Comfort Inn (\$48+Tax) 877 North 499 West, 801 544-5577

Holiday Inn (Odgen): 1-800-999-6841 or 801 399-5671

Airport Hilton Inn: 1-800-648-9668 or 801 539-1515

Ogden Park: 247 24<sup>th</sup>, 801 627-1190/800 421-7599

La Quinta Inns: 1965 N 1200 W Layton, 801 776-6700

Alana Motel: 116 N Main Street, Clearfield, 801 825-2221 or 2321

**h. Car Contact:**

**1. Enterprise Rental Car (b) (6) at BX 801-825-0080**

- Layton Office 801 593-6007

**2 ea Full Size @ \$209/week 22-29 Mar 07**

MC - LtCol (b) (6)

MX NCOIC- SMSgt (b) (6)

**10 ea SUV/Mini Van @ \$329/week 22-29 Mar 07**

Spray 06 Crew – 2 Suvs – Ltc (b) (6) MSgt (b) (6)

Spray 05 Crew – 2 Suvs –, Maj (b) (6) MSgt (b) (6)

Entomologist – 1 Suv – Maj (b) (6) (b) (6)

Spray MX – 1 Suv – TSgt (b) (6)

Crew Chiefs – 1 Suv – MSgt (b) (6)

MX Specialists – 1 Suv – MSgt (b) (6)

Com – 2 Suv – MSgt (b) (6) MSgt (b) (6)

**2. Hill Motor Pool: 75 LRS/Dispatch DSN 777-1843, All Reserved: 1 total**

8 Pax Supt Crew 22-29 Mar 07

6 pax minivan

7 pax truck

**i. Hill AFB: Base Commander: Col (b) (6)**

Airfield Manager: (b) (6)

Base Operations: 7-1861; FAX: 7-2221

Weather: 7-2018

Transit Alert: 7-3886

C-130 Maintenance Contact: 7-2478

Fuels: 7-7423/7-7311 available 0900-1800 daily after hours contact CP

Billeting: 7-1844

Chow Hall: 7-3428 Breakfast M-F 0530-0730, S-S 0700-1900

Golf Course: 7-1108

Public Affairs: 7-5201

Supply: 7-5391 (922 OE)

**j. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, + Ext

(1) 910 AW/CC: Col (b) (6) (b) (6)

(2) 910 AW Command Post: Ext 1315; FAX 1161

(3) 910 AW/PA: Capt (b) (6) (b) (6) ; FAX 1022

(4) 910 OG/CC: Col (b) (6) (b) (6) (b) (6)

(4) 910 OS/OSA: Airfield Manager, (b) (6)

- (5) 757 AS/DO: Maj (b) (6) (b) (6)
- (6) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) Capt (b) (6)  
(b) (6) (b) (6) FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1327
- (12) 910 LG/LGMS: Spray Maintenance, Ext 1132
- (13) 910 LG/LGL, Ext 1137
- (14) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (15) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) cell (b) (6) (6)
  - Spray Maintenance: (b) (6)

**17. SEQUENCING:**

- a. Target sequencing is determined by UTTR personnel based upon EOD clearance schedule and airspace scheduling.
- b. Spray ops aircraft must stay south of Base Leg Knoll during turns on north run on Target 21. Coordination with range control is essential to assure that this portion of the range is released for air operations.
- c. When winds blow directly from one side of the target to the middle of the target or during early morning when wind speed is low, ground monitors will direct the “dress up” of the target edges.
- d. **Spraying Priorities:**
  - (1) Target 21
  - (2) Target 24
  - (3) NORDLZ

**f. Multiple-Target Alignments for Possible Future Operations.**

Whenever possible, multiple in line targets will be treated on the same pass to facilitate aircraft line-up and turning efficiency (in which case two separate ground-monitoring and marking parties will be required).

- (1) The west edges of Targets 21 & 24 are contiguous and can be treated on the same pass with a spray-off gap between targets.

**18. GENERAL TARGET INFORMATION:**

- a. **Target 21:**
  - (1) Dimensions: 4,980' X 7,770'
  - (2) Acreage: 888
  - (3) Acres Sprayed in 2004: 888
  - (4) Aircraft Loads: 18,869 Gal
  - (5) Sorties: 17
  - (6) Passes (35' Swath): 157
  - (7) Spray-On Time/Pass: 23 Seconds
  - (8) Spray Heading: 00/180
- b. **Target 24:**
  - (1) Dimensions: 1,600' X 6,080'
  - (2) Acreage: 223
  - (3) Acres Sprayed in 2004: 223
  - (4) Aircraft Loads: 5,263 Gal
  - (5) Sorties: 7
  - (6) Passes (35' Swath): 47
  - (7) Spray-On Time/Pass: 18 Seconds
  - (8) Spray Heading: 00/180

- c. **Nord LZ-** Any remaining chemical will be used to touch up target

### **UTTR GEOGRAPHIC LOCATION**

Target areas on UTTR are geographically located in northwestern Utah, directly west of the Great Salt Lake and Hill Air Force Base. The complex is positioned between 40 and 41 degrees north latitude and close to 113 degrees ten minutes west longitude. The targets are within range 12 west and Township two and three north, Salt Lake Baseline Meridian.





DEPARTMENT OF THE AIR FORCE  
YOUNGSTOWN AIR RESERVE STATION  
AERIAL SPRAY FLIGHT  
VIENNA OH 44473-5924



## 910 AW AERIAL SPRAY--PMP'S POST-MISSION REPORT UTAH TEST AND TRAINING RANGE 22-29 MARCH 2007

### 1. MISSION BASICS:

- a. **Installation Sprayed:** Utah Test and Training Range, UT
- b. **Mission Duration:** 22-29 March 2007
- c. **Purpose of Application:** Weed control on UTTR targets; facilitate UXO recovery
- d. **Application Dates:** See Summary Spray Chart
- e. **Acres Treated:** 1,222 acres
- f. **Project Coordinator/s (Name/Rank, Title, Phone #):** (b) (6) Aerial Spray Coordinator, Hill/UTTR AFB, DSN (b) (6)
- g. **Date Spray Map Last Approved:** 22 March 2007
- h. **Date of Waste Generation Letter:** N/A
- i. **Installation In-Briefing: (When/Where/Briefer/s):** 22 March 2007, LtCol (b) (6) (b) (6)

### 2. OPERATIONAL:

- a. **Mission Commander:** LtCol (b) (6) (b) (6)
- b. **Pesticide mixing and loading (Certified PMPs):** Maj (b) (6) (b) (6) Capt (b) (6)
- c. **Aircrew:**  
AIRCREW 1: AC 106  
Pilots: MAJ (b) (6) (b) (6) Maj (b) (6) Capt (b) (6) Maj (b) (6) (b) (6)  
Navigators: LtCol (b) (6)  
Flight Engineers: MSgt (b) (6)  
Spray Operators: MSgt (b) (6) MSgt (b) (6) (b) (6) MSgt (b) (6)  
Crew Chiefs: MSgt (b) (6)  
  
AIRCREW 2:  
Pilots: Capt (b) (6) (b) (6) Capt (b) (6) 1Lt (b) (6) (b) (6)  
Navigator: Maj (b) (6) (b) (6)  
Flight Engineer: MSgt (b) (6)  
Spray Operators: MSgt (b) (6) MSgt (b) (6) (b) (6) (b) (6)  
Crew Chiefs: TSgt (b) (6)  
  
d. **Safety Briefer:** Maj (b) (6) (b) (6)  
e. **Spray Maintenance/Pesticide Loaders:** SMSgt (b) (6) TSgt (b) (6) (b) (6) MSgt (b) (6) TSgt (b) (6) TSgt (b) (6) TSgt (b) (6) (b) (6)  
f. **Spray Ground Monitors:** LtCol (b) (6) Maj (b) (6) (b) (6) SMSgt (b) (6)  
g. **ARMS:** TSgt (b) (6)



- h. **Avionics:** TSgt (b) (6) , TSgt (b) (6)
- i. **Engine/Propulsion:** TSgt (b) (6)
- j. **Hydraulics/Electrician:** MSgt (b) (6) , TSgt (b) (6)
- k. **Flying Data:** (See Spray Data Charts)
  - (1) Spray A/C 899105, 899106: Ferry: 4, Hours: 23.4; Spray Sorties: 15, Hours: 21.9
  - (2) Support A/C Ferry: 2, Hours: 11.6

**3. PESTICIDE:**

- a. **Trade Name (% Active Ingredient):** Krovar DF® (40% Bromacil: 40% Diuron)
- b. **EPA Registration Number:** 352-505
- c. **Formulation Sprayed:** 10 pounds in 22.5 gallons of water per acre
- d. **Gallons Pesticide Loaded:** 1,801 gallons/sortie average (11,830 Pounds of Krovar: Active Ingredients: 4,732 Bromacil and 4,732 lbs Diuron )
- e. **Gallons Pesticide Applied:** 25,210 gallons as formulated
- f. **Gallons of water used as a diluent:** 26,175 gallons
- g. **Other Additives Used:** 119 Gal No Foam, 112.4 Gal StaPut®, 442.6 Gal Hi-Light® Dye
- h. **Application Rate:** 22.5 Gal per acre

**4. APPLICATION EQUIPMENT:**

- a. **Aircraft Type (Tail Number):** C-130H 899105 and 909106
- b. **Spray System (Modules Used) and System ID #:** 3 and 5
- c. **Spray System Configuration:** SP-3G
- d. **Nozzle Type/Size:** 3 inch herbicide nozzles
- e. **Nozzle Orientation & Number Used:** 2, oriented straight back.
- f. **Pressure:** 40 psi
- g. **Flow Rate:** 366 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. **Swath Width Flown:** 35 feet
- b. **Spray Off Set:** Variable, determined by PMP on the target
- c. **Spray Release Altitude:** 100 feet
- d. **Ground Speed:** 200 knots

**6. WEATHER OBSERVATIONS Ground Wind Direction (degrees)/Speed (knots):**

- a. **23 Mar:** 340-360/3-9
- b. **24 Mar:** 345-040/3-11
- c. **25 Mar:** 315-020/2-6
- d. **26 Mar:** 200-090/1-10

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. **Deposition Monitoring:**
  - (1) Technique/s Used: Ground/Aircraft direct observation of dye markings

(2) Results: Spray off-set determined via direct observation of application coverage

**b. Effectiveness:**

(1) Technique/s Used: Visual field observations of coverage and amount of spring vegetation germination.

(2) Results: (See Remarks)

- 8. REMARKS:** Ground coverage was complete with no skips in sprayed areas. Targets 21 & 24 were covered quickly and efficiently with the combined cooperation of experienced aircrew and ground monitors. While spray maintenance personnel repaired the engines and pumps on the mixing spheres prior to the start of the mission, one of the spheres still had a minor leak by the end of the week. This underscores the need for new equipment as the spherical mixers have already outlived their expected lifespan. Funding has been identified for building new mixing apparatus and they will hopefully be available in 2008. The formula mixing process was accomplished in a timely and proficient manner by the synergistic cooperation of 757th entomologists supplementing an adept team of pest controllers from the 75 CES/CESE, headed by (b) (6) (b) (6). Incoming Spray Coordinators (b) (6) and (b) (6) (388 RANS/RSO) did an excellent job securing the success of this mission via effective pre-coordination on all spray issues; a sincere thank you from the Air Force Spray Flight. New herbicides will be considered for use in the coming seasons as we intend to invite chemical companies to provide material for test plots on the UTTR this fall or next spring. This action will be coordinated between 757 AS/DOS, 75 CES/CESE, and 388 RANS/RSO.

(b) (6)

(b) (6) (b) (6)

**Maj, USAFR**

**DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

Attachment: Summary Spray Chart

Attachment 1: Summary Spray Chart

**22 – 29 March 2007**

**SPRAY OPERATIONS SUMMARY FOR UTAH TEST AND TRAINING RANGE**

DATE	SORTIE #	AIRCRAFT #	SPRAY ON TIME (min+sec)	TARGET	PASSES	ACRES	GALLONS SPRAYED	FLYING HOURS
23	1	105	5+09	21,24	8	83	1681	1.4
23	2	105	5+04	21,24	7	83	1767	1.3
23	3	106	5+22	21,24	9	88	1848	1.3
23	4	106	5+33	24,21	9	89	1717	1.4
24	5	105	5+07	24,21	8	83	1818	1.2
24	6	106	5+07	24,21	11	83	1750	1.7
24	7	105	5+16	21	13	86	1849	1.4
24	8	106	6+00	21	14	97	1905	1.7
24	9	105	5+30	21	14	89	1808	1.4
25	10	106	5+20	21	14	87	1853	1.3
25	11	106	6+03	21	16	97	1972	1.7
25	12	105	4+54	21	12	79	1743	1.4
25	13	105	5+23	21	13	87	1837	1.5
26	14	106	5+35	21,NORD LZ	13	91	1662	2.2
27	Flush	105	Flush/Rinse	21	Flush	n/a	n/a	1.0
		Totals	75 +11		161	1,222	25,210	21.9



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



3 APR 07

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Parris Island MCRD SC for Control of Sand fly and Mosquitoes

1. Objective/Purpose/Benefits of the Spray Mission. Spray Parris Island MCRD SC for control of biting midges and mosquitoes. Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCDR SC at the request of the Parris Island MCRD/MCAS Environmental Coordinator.

2. Capability: Spray Aircraft available on 23-26 Apr 07

3. Concept of Operations:

**23 APR (Monday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

Check Rifle Range: None

1500: Show Time

1700: Take Off YNG

1900: Land KNBC

**24 APR (Tuesday):** Wx back up, training,

1300: Safety Briefing

1430: Installation in-brief

1500: Showtime

1530: Load Chemical/Wx Decision

1745: Take off KNBC (Training, Then Spray)

1959: Sunset

**25 APR (Wednesday):** Wx back up, training, or redeploy to YNG

1500: Showtime

1530: Load Chemical/Wx Decision

1745: Take off KNBC (Training, then Spray)

1959: Sunset

**26 APR (Thursday):**

1000: Show Time

1200: Take off KNBC

1400: Land KYNG

4. Spray Parameters:

a. Acreage: 7,500 Acres (Only areas determined by PMP)

b. Altitude: 150 Ft AGL

c. Pesticide: Dibrom® Concentrate

d. Deploy: 2.0 Hrs

e. Re-Deploy: 2.0 Hrs

f. Spray Time: 16 Minutes per Sortie (or as called by PMP)

5. Aircraft Commander: Maj (b) (6) (c) (6)

6. Mission Commander: Maj (b) (6) (c) (6)

7. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator Mr. (b) (6) DSN (b) (6) .

// SIGNED //

(b) (6) (b) (6) CAPTAIN, USAFR  
Assistant Chief Aerial Spray

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**PARRIS ISLAND MCRD, SC 23-26 APR 2007**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 23-26 April 2007
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 24 & 25 Apr 2007
- e. Time/s of Application (Local): 1830-1915 (24 Apr); 1830-2015 (25 Apr)
- f. Acres Treated: 7,765 total; 341 acres (Apr 24); 7,424 acres (25 Apr)
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6)  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 24 Apr 07
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 24 Apr; Assistant Chief of Staff,  
Installations and Logistics Conference Rm, (b) (6) (b) (6) briefed by Col (b) (6) Maj  
(b) (6)

**2. OPERATIONAL:**

- a. **Mission Commander:** Col (b) (6) (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Maj (b) (6) (b) (6) Maj (b) (6) Capt (b) (6)
  - (2) Navigators: LTC (b) (6) , LTC (b) (6)
  - (3) Flight Engineers: Msgt (b) (6) , Msgt (b) (6)
  - (4) Spray Operators: Msgt (b) (6) Msgt (b) (6)
- b. **Maintenance:**
  - (1) Spray Maintenance: TSG (b) (6) TSG (b) (6) TSG (b) (6)
  - (2) Crew Chiefs: TSG (b) (6) , TSG (b) (6)
  - (3) Avionics: SRA (b) (6)
- c. **Entomologist:** Maj (b) (6) (b) (6)
- d. **Flying Data:**
  - (1) Spray Sorties/Hours: 3/3.2 (1 training sortie 0.8 hrs 24 Apr)
  - (2) Ferry Sorties/Hours: 2/4.0

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 60 Gal Dibrom<sup>®</sup> (24 Apr)
- e. Gallons Pesticide Applied: 2 gal (24 Apr); 58 gal (25 Apr)
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 8 gal/marvel oil
- h. Other Additives Used: None
- i. Application Rate: 0.75 oz/acre (24 Apr); 1.0 oz/acre (25Apr)



**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99108
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan (24 Apr); 8008 (25Apr)
- e. Nozzle Orientation & Number Used: 10 oriented straight down (24 Apr); 12 (25 Apr)
- f. Pressure: 20-25 p.s.i.
- g. Flow Rate: 2.7 gallons per minute (24 Apr); 5.4 gallons per minute (25 Apr)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000' (24 Apr); 1500' (25 Apr)
- b. Spray Off-set: dependent on wind speed
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 180°/3 knots (24 Apr); 140-160°/3 knots
  - (2) Release Altitude: 180°/10 knots (24 Apr); 130°/10 (25 Apr)
- b. Temperature (Degrees Fahrenheit): 74°F dropping to 65°F (24 Apr); 72-68°F (25 Apr)
- c. Relative Humidity: 67% (24 Apr); 74% (25 Apr)
- d. Cloud Cover: Partly Cloudy (24 Apr); Cloudy (25 Apr)
- e. Source: Ground observations at the MCRD Rifle Range/Marina/Aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: visual observation of aircraft course (GPS); 2 Bald eagle's nests were given a 0.5 mile radius for no-fly
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: Weekly collections of midges and mosquitoes with light traps and landing rates in regions frequented by recruits involved in training
  - (2) Results: Control efficacy will be determined by Parris Island MCRD staff.

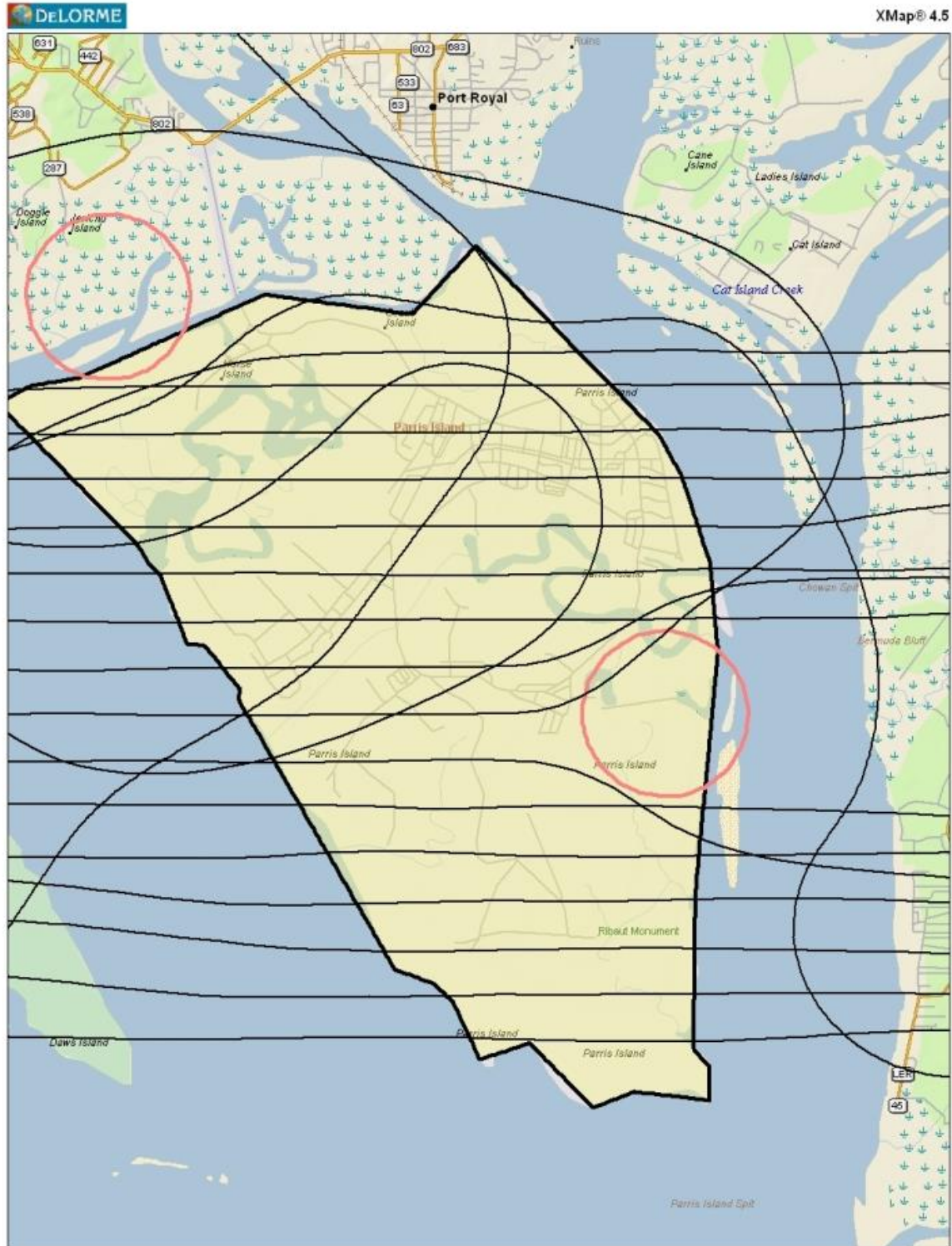
**8. REMARKS:** The 24 Apr application was aborted because of the lack of either analog or digital indication of flow rate. The problem was overcome by increasing the flow rate. Swath width was increased to 1,500 feet and 1 oz/acre for a flow rate of 5.4 gallons per minute; additionally, 8008 nozzles were used. Biting midge (sandflea) activity levels were moderate based on personal observations; deer flies (*Chrysops* sp.) were also present. The application was confined to 1.25 hours prior to sunset to correspond with peak flight period of the pests. The path of the aircraft on 25 April, is shown in attachment 1. Two bald eagle nest sites were purposefully avoided by a 0.5 radius. The relative efficacy will be determined by trap collections but highly conducive meteorological conditions suggest that the result should be excellent. Post flight data were called into the AFRC Command Post after each mission. Six calls each day were received from home station and AFRC Command Post looking for updated information after deployed crew had already called-in the information in question. The next Parris Island mission is scheduled for 30 April 2007.

//signed//

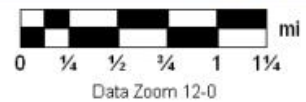
(b) (6) (b) (6) MAJ, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL



**Attachment 1. Flight path of aircraft while making Dibrom application, 23 Apr 07. The yellow polygon represents the spray area; red circles indicate location of bald eagle nests and were avoided.**



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 www.delorme.com



# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **PARRIS ISLAND MCRD, SC**

### **23-26 April 2007**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Mission Commander: Maj (b) (6) (b) (6)
- (2) Pilots: Maj (b) (6) , TBD
- (3) Navigator: LTC (b) (6) (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: Msg (b) (6) MSG (b) (6)

##### **b. Maintenance:**

1. Spray Maintenance: TSG (b) (6) , MSG (b) (6) Tsgt (b) (6) (b) (6) SRA (b) (6) (b) (6)
2. Crew Chiefs: Msg (b) (6) (b) (6) SSG (b) (6) (b) (6)
3. Avionics: SSG (b) (6) (b) (6)

##### **c. Entomologists: MAJ (b) (6) (b) (6)**

Gov Vehicles provided by Parris Island MCRD:

#### **2. PPR REQUIREMENTS: 113-01**

**3. PLANNED SEQUENCE OF EVENTS:** (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

##### **9 JUL (Monday):**

1000: Show Time  
1200 Take Off YNG  
1400 Land KLF w/ Safety Briefing immediately following  
1500: Installation Briefing  
\*\*If weather for Tuesday looks questionable, plan to spray on Monday night.

##### **10 JUL (Tuesday):**

1630 Show time  
1700 Wx/Decision, load Dibrom  
1845 Take off LFI  
2032 Sunset

##### **11 Jul (Wednesday):**

1630 Show time  
1700 Wx/Decision, load Dibrom  
1845 Take off LFI  
2032 Sunset

##### **12 JUL (Thursday):**

1100: Show Time  
1300: Take off KNBC  
1500: Land KYNG

#### **4. ITEMS TO TAKE/NOTES:**

##### **a. Mission Commander:**

- (1) Mission Commander Cell Phone

**b. Entomologist/CPMP:**

- (1) Wind Gauge & Compass
- (2) UHF/VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder

**c. Navigators:**

- (1) Maps
- (2) Templates

**d. Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** 10 flat fan 8005 nozzles (5 per side) oriented straight down
- d. **Differential GPS:** Installed
- e. **Aircraft:** 90-9107
- f. **Mission Identifier:** QZNRKA030113

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 0.75 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 2.72 gallons/Minute

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading two drums of Dibrom

**8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

- Air Traffic Control: 119.05 Beaufort MCAS TWR
- Hilton Head Arpt: 118.8 CTAF
- Beaufort Co Arpt: 122.7 UNI
- Spray Ground: Primary 392.2; Secondary 340.8**

**10. TRANSPORTATION:** Parris Island will provide two vans and staff car for transportation to and from quarters and for messing.

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP & Parris Island MCRD Project Coordinator.

**12. CONTACTS:**

- a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX
  - (1) Environmental Coordinator (Spray Coordinator):

(b) (6) DSN (b) (6), Cel (b) (6) (b) (6), Cel (b) (6)

FAX (843) 228-2616; (b) (6) (b) (6)

(2) Assistant Chief of Staff I & L: Col (b) (6), DSN (b) (6)

(3) Pest Control Foreman: DSN 335-3663

(4) P.I. Motor Pool: (b) (6) DSN (b) (6)

(5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)

(6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)

(7) P.I. Rifle Range: DSN: 335-3183/3624

**b. Beaufort MCAS SC: (Commercial (843) 228-XXXX)**

(1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6); (b) (6) DSN (b) (6)

(b) (6) (b) (6)

(2) Fuels: DSN: 335-7049/7448/7168

(3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
DSN: (b) (6), Base Ops is ext 7301/2/3  
(After duty hours: (b) (6) DSN: (b) (6))

(4) Trans Alert/VAL: DSN: 335-7110

(5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)

**c. Beaufort County Mosquito Control: (b) (6) (b) (6)**

**d. Naval Occupational Health/Preventive Medicine: Lt Cdr (b) (6) DSN: (b) (6)**

**e. Quarters:**

Comfort Inn \$57.50 (M,T) \$70.00 (W)

Ramada Inn (843) 524-2144/Fax 1704

Hampton Inn (843) 986-0600 (FAX 0494)

Sleep Inn (843) 522-3361 FAX (843) 522-9929

Parris Island Billeting DSN: 335-2744 (FAX: 3815); (843) 228-3960

Comfort Inn (843) 525-9366 (FAX 1529)

Best Western (Sea Island Motel) (843) 524- 4121

Port Royal Days Inn (843) 524-1551

Best Western Pt South (I-95) (843) 726-8101

**f. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6) (b) (6)

2. 910 AW Command Post: Ext 1315; FAX 1161

3. 910 AW/PA: Capt (b) (6) (b) (6); FAX 1022

4. 910 OG/CC: Col (b) (6) (b) (6) (b) (6)

5. 910 OG: Airfield Manager, Ext 1186/1526

6. 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)

7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371

8. 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6); FAX 1657

9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) (b) (6) (b) (6) FAX 1616

10. 910 LG/CC: Ext 1225

11. 910 LG/LGM: Ext 1352

12. Maintenance Control: Ext 1327

13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6) (b) (6)

14. Omega/SATO Travel: Ext 1772; 1-800-285-6342

15. Cellular Spray Phones:

- Mission Commander: (b) (6)

- Entomologist: (b) (6) cell, (b) (6)



# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 23-26 JUL 2007

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks AFB, North Dakota and the city of Grand Forks if requested.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) Pilots: LtCol (b) (6) Capt (b) (6)
- 2) Navigators: LtCol (b) (6) (b) (6) Maj (b) (6)
- 3) Flight Engineers: MSgt (b) (6) , TSgt (b) (6)
- 4) Spray Operators: SMSgt (b) (6) , MSgt (b) (6)

##### b. Maintenance:

- 1) Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , SSgt (b) (6) , Sra (b) (6)
- 2) Crew Chief(s): Sra (b) (6) , SSgt (b) (6)
- 3) Avionics: SSgt (b) (6)

##### c. Entomologists/Ground Support: Maj (b) (6) (b) (6)

#### 2. SCHEDULE: (All Local Times)

##### 23 JUL (Monday)

1100: Showtime  
1300: Depart KYNG  
1500: Land KRDR/Safety Briefing  
1600: Spray In Brief (CPMP, MC, AC).  
1830: Load Chemical/WX Decision  
2000: Takeoff KRDR  
2115: Sunset

##### 24 JUL (Tuesday):

1700: Show time  
1730 Load Chemical  
1930: Take off KRDR (Adulticide Spray Sortie)  
2114: Sunset

##### 25 JUL (Wednesday):

1700: Show time  
1730 Load Chemical  
1930: Take off KRDR (Adulticide Spray Sortie)  
2113: Sunset

##### 26 JUL (Thursday):

0945: Show time  
1145: Depart KRDR  
1545 Land KYNG

#### 3. ITEMS TO TAKE

- a. **Mission Commander:** Cellular Phone, Mission Folder
- b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder,  
1 VHF Radio, Water Sensitive Cards, Card Holders with  
Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors,  
Project Notebook, Entomologist's Tool Kit, Trakstar Receiver and Antenna
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

#### 4. PPR: 072301AM

#### 5. RADIO FREQUENCIES: Air To Ground Primary VHF 123.45 KRDR Tower 124.9 V; Grand Forks International 118.4 V

#### 6. CONFIGURATION: SP2G

- a. **System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. **Nozzle Tips/Orientation:** ULV (adulticide): 8005 Tee Jet oriented straight down
- c. **Number:** ULV: 14 8005s total (7 each side)
- e. **Aircraft:** 89-9106
- f. **Mission Identifier:** QZNRKA624204

**7. SPRAY PARAMETERS:**

**a. Adulticide**

- (1) **Area to be treated:** 11488 acres (Grand Forks AFB) and city of Grand Forks
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 2000 feet
- (4) **Flow Rate.** 7.26 gallons/minute ULV
- (5) **Application Rate.** 1.0 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots
- (7) **Flush:** With water, triple rinse, then air purge

**8. SPRAY MIXING AND LOADING:** The amount of Trumpet to load will be determined on site

**9. TRANSPORTATION:** four SIX-PACKS provided

**10. LODGING:** On base billeting.

**Billeting :** DSN 362-7200 or (701) 594-8431, FAX 362-3069  
 -- Prime Knight DSN 362-3844 or (701) 747-3844  
 16 Rooms Reserved

**11. CONTACTS:**

**a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**

- (1) **Base Operations:** Airfield Manager DSN 362-4409  
 -- DSN 362-xxxx or (701) 747-xxxx20
- (2) **Pest Management NCOIC:** TSgt (b) (6) , DSN (b) (6) FAX 3432)
- (3) **Base Civil Engineer:** Lt Col (b) (6)
- (4) **Environmental Officer:** (b) (6) DSN(b) (6) , FAX 6155
- (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
- (6) **Weather:** DSN 362-4396
- (6) **Billeting:** DSN 362-3070/6189/7200 or (701) 594-8431, FAX 362-3069  
 -- Prime Knight DSN 362-3844 or (701) 747-3844

**b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC:, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Col (b) (6) (b) (6) (b) (6)
- (5) 910 Base Ops: Airfield Manager: Ext 1182  
 - Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) Ext 1239; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, CAPT (b) (6) (b) (6) (b) (6) ; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: SMG (b) (6) (b) (6) Cell: (b) (6)
- (13) 910 LG/LGL: Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - Entomologist (b) (6)
  - Mission Commander: (b) (6)
  - Spray Maintenance



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



18 Aug 04

MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497-0198)

FROM: 757 AS/DOS

SUBJECT: Ch1, Capability and Concept of Operations for Aerial Spray at Grand Forks AFB ND,

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks AFB ND.

**2. Capability:** Spray Aircraft Available 23-27 Aug 04

**3. Concept of Operations:**

**23 Aug (Monday)**

0800: Show at KYNG  
1000: Depart KYNG  
1200: Land KRDR/Safety Briefing  
1430: In-brief

**24 Aug (Tuesday)**

1530: Show time  
1700: Take off KRDR (Adulticide Spray Sortie)  
2026: Sunset

**25 Aug (Wednesday)**

1530: Show time  
1700: Take off KRDR (Adulticide Spray Sortie)  
2024: Sunset

**26 Aug (Thursday)**

1530: Show time  
1700: Take Off KRDR (Adulticide Spray Sortie)  
2022: Sunset

**27 Aug (Friday)**

0900: Show time  
1100: Depart KRDR  
1600: Land KYNG

**4. Spray Parameters:**

**a. Altitude:** 150' AGL for Adulticide swath when no trees are present.



- b. **Swath Width.** 2000 feet for ULV or as determined by the PMP
- c. **Flow Rate.** 4.35 gallons/minute ULV
- d. **Application Rate.** 0.60 oz/acre Trumpet<sup>®</sup>), ULV
- e. **Ground Speed:** 200 Knots
- f. **Proposed spray area:** Approximately 40,000 acres
- g. **Mission Identifier:** QZNRKA906234

5. **Mission Commander/Aircraft Commander:** Major (b) (6)5)

6. Support required at Grand Forks AFB ND has been coordinated with the organization's Environmental/Spray Coordinator Ms (b) (6) (b) (6) DSN (b) (6) .

7. HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616, ATTN: 757 AS/DOS.

// SIGNED //

(b) (6) (b) (6) Maj, USAFR  
AERIAL SPRAY CHIEF

# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 23 – 27 Aug 04

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: MAJ (b) (6)5
- (2) Pilots: LTC (b) (6) (b) (6)
- (3) Navigators: MAJ (b) (6)6
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: TSG (b) (6) TSG (b) (6) (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSG (b) (6) TSG (b) (6) TSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6) , MSG (b) (6)
- (3) Avionics: MSG (b) (6)

##### c. Entomologists/Ground Support: Capt (b) (6) MAJ (b) (6) (b) (6)

#### 2. SCHEDULE: (All Local Times)

##### 23 Aug (Monday)

0800: Show at KYNG  
1000: Depart KYNG  
1200: Land KRDR/Safety Briefing

##### 24 Aug (Tuesday)

1300: In-brief with Grand Forks Staff  
1530: Show time  
1700: Take off KRDR (Adulticide Spray Sortie)  
2026: Sunset

##### 25 Aug (Wednesday)

1530: Show time  
1700: Take off KRDR (Adulticide Spray Sortie)  
2024: Sunset

##### 26 Aug (Thursday)

1530: Show time  
1700: Take Off KRDR (Adulticide Spray Sortie)  
2022: Sunset

##### 27 Aug (Friday)

0900: Show time  
1100: Depart KRDR  
1500: Land KYNG

### 3. REQUIRED ITEMS

- a. **Mission Commander:** Hand Held GPS, 1 Cellular Phone
- b. **Entomologist:** 1 Cellular Phones, Wind Gauge, 2 Compasses, Pest Safety Binder, 1 UHF Radio, 10 Packs Water Sensitive Cards, 3 Boxes Card Holders with Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors, 2 Toshiba Computers, 1 SATLOC Manual, Project Notebook, 2 Anemometers, Entomologist's Tool Kit, Trakstar Receiver and Antenna, Batteries, Kodak Camera
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

4. **PPR:** 082301TK

5. **RADIO FREQUENCIES:** Air To Ground Primary 392.2; VHF 123.45  
KRDR Tower 124.9 V; Grand Forks Int'l 118.4 V

### 6. CONFIGURATION: SP2G

- a. **System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. **Nozzle Tips/Orientation:** ULV (adulicide): 8008 Tee Jet oriented straight down
- c. **Number:** ULV: 8 8008s total (4 each side)
- d. **Booms:** Fuselage
- e. **Aircraft:** #89-9106
- f. **Mission Identifier:** QZNRKA906234

### 7. SPRAY PARAMETERS:

#### a. Adulicide

- (1) **Area to be treated:** 21767
- (2) **Altitude:** 150' for Adulicide application
- (3) **Swath Width.** 2000 feet for ULV or as determined by the PMP
- (4) **Flow Rate.** 4.36 gallons/minute ULV
- (5) **Application Rate.** 0.60 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots
- (7) **Flush:** With water, triple rinse, then air purge

### 8. SPRAY MIXING AND LOADING:

The amount of Trumpet to load will be determined on site

### 9. TRANSPORTATION: 2 Vans & 1 Staff provided by 319 CES

### 10. CONTACTS:

#### a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205

- (1) **Base Operations:** Gene Crouse Airfield Manager or 1 LT Fielder, DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx
- (2) **Environmental Officer:** (b) (6) (b) (6) DSN (b) (6) , FAX 6155
- (3) **Base Civil Engineer:** Lt Col (b) (6)
- (4) **Pest Management:** TSGT (b) (6) , DSN (b) (6) , FAX 3432
- (5) **Public Affairs:** Capt (b) (6), DSN (b) (6) (off duty CP ext (b) (6))
- (6) **Billeting:** DSN 362-3070/6189 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844

#### b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046, +2 + Ext

- (1) 910 AW/CC: Col (b) (6) (b) (6) (b) (6)

- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: LTC (b) (6) (b) (6) (b) (6)
- (5) 910 OSS/OSA: Airfield Manager: (b) (6) (b) (6) (b) (6)
  - Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/CC: LTC (b) (6) (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Ext 1111; FAX 1616
- (9) 910 LG/CC: LTC (b) (6)
- (10) 910 LG/LGM: CMS (b) (6)
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: Ext 1132/1586
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flying (SOF): 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - PMP/Entomologist: (b) (6)
  - Mission Commander: (b) (6)
  - Spray Maintenance: (b) (6)

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT

### 1. MISSION BASICS:

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 23-27 August, 20-04
- c. Purpose of Application: Control nuisance and vector mosquitoes
- d. Application Dates: 24 August
- e. Time/s of Application (Local): 1700
- f. Acres Treated: 7246
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6) (b) (6) Environmental Officer, DSN 362-4655
- h. Date Spray Map Last Approved: 23 Aug 2004
- i. Installation In-Briefing: (When/Where/Briefer/s): CE Conference Room, MAJ (b) (6) Maj (b) (6) (b) (6) (b) (6) Capt (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: Maj (b) (6) (5)
- b. Certified PMP/s (Category 11): Maj (b) (6) (b) (6) Capt (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander: Maj (b) (6) (5)
  - (2) Pilot(s): Maj (b) (6) (5) LTC (b) (6) (b) (6)
  - (3) Navigator: Maj (b) (6) (6)
  - (4) Flight Engineer: MSG (b) (6)
  - (5) Spray Operators: TSG (b) (6) TSG (b) (6) (b) (6)
- d. Safety Briefer: Capt (b) (6)
- e. Spray Maintenance: TSG (b) (6) TSG (b) (6) TSG (b) (6)
- f. Spray Ground Monitors: Capt (b) (6)
- g. Crew Chiefs: MSG (b) (6) , MSG (b) (6)
- h. Avionics: MSG (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 1 sorties/ 2.7 hours
  - (2) Ferry Sorties/Hours: 2 sorties/6.5 hours

### 3. PESTICIDES:

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-548127
- c. Gallons Pesticide Loaded: 35 Trumpet® EC
- d. Gallons Pesticide Applied: 35 Trumpet® EC
- e. Gallons and Name of Flush Used: 90 gallons water
- f. Other Additives Used: none
- g. Application Rate: 0.6-0.7 oz/acre Trumpet® EC

### 4. APPLICATION EQUIPMENT:

- a. Aircraft Type (Tail Number): 909106 Mission Identification # QZNRKA906234
- b. Spray System (Modules Used) and System ID #: Modules 1 and 2 of SP2G ULV
- c. Spray System Configuration: 2-Module System & Fuselage Booms
- d. Nozzle Number & Orientation Used: 8 nozzles (8008); straight down
- e. Pressure (PSI): 18-41
- f. Flow Rate: 4.36 gallons/minute 2000' swaths

### 5. APPLICATION PARAMETERS:

- a. Swath Width Flown: 2000
- b. Spray Off Set: 2000
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 Knots

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - 1) Ground: 270 degrees at 10 knots
  - 2) Release Altitude: 230 degrees at 12 knots
- b. Temperature (Degrees Fahrenheit): 72°
- c. Cloud Cover: partly cloudy
- d. Relative humidity: 70-80%
- e. Source: Direct observation

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Validation of spray area:
  - (1) Technique/Used: PMP onboard aircraft verified spray area
- b. Effectiveness:
  - (1) Technique/s Used: Trapping of mosquitoes by Public Health and 757 AS personnel
  - (2) Results: Decrease in mosquito activity following application

**8. REMARKS:**

This was a regularly scheduled application at Grand Forks AFB to control adult mosquitoes. Upon arrival mosquito counts were anecdotally low, as public health operations were severely understaffed, and had not been running insect collection traps. Further, uncharacteristically cold weather might have contributed to relatively few instances of mosquito attack. Traps deployed by 757<sup>th</sup> Entomologists indicated nightly mosquito counts in an individual trap at 35 prior to pesticide application, and 2 following application. Further information from public health is pending.

//signed//

(b) (6) **Capt, USAFR**  
**Certified Pest Management Professional**

18 July 2001

MEMORANDUM FOR HQ AFRC/DOOM (FAX: 497-0198)

FROM: 757 AS/DOS ((b) (6)) ((b) (6)); FAX 346-1616)

SUBJECT: Concept of Operations for Aerial Spray Training at Avon Park AFR/MacDill AFB FL

1. **Purpose/Objectives/Benefits:** This training mission will provide ULV, LV, HV and UHV training for the aircrew, on-hand training for the spray operators and ground training for the spray maintenance personnel. Continuous aerial spray training is required for all spray mission participants.
2. **Capability:** Spray Aircraft Available 23-27 Jul 01.
3. **Concept of Operations:**
  - a. **23 Jul (Monday):**
    - 1030 Show at KYNG
    - 1330 Take-Off KYNG
    - 1700 Land KMCI
    - 1715 Safety Brief
  - b. **24 Jul (Tuesday):** 1200-1400 Range Times Tues, Wed and Thurs
    - 0800 Show Time/Weather Decision/Load Water
    - 1145 Depart LMCF/Call Tower & Fire Department at AGR
    - 1200-1400 Spray water over designated area of the Avon Park Bombing Range
    - 1445 Land KMCF
  - c. **25 Jul (Wednesday):** 1200-1400 Range Times Tues, Wed and Thurs
    - 0800 Show Time/Weather Decision/Load Water
    - 1145 Depart LMCF/Call Tower & Fire Department at AGR
    - 1200-1400 Spray water over designated area of the Avon Park Bombing Range
    - 1445 Land KMCF
  - d. **26 Jul (Thursday):** 1200-1400 Range Times Tues, Wed and Thurs
    - 0800 Show Time/Weather Decision/Load Water
    - 1145 Depart LMCF/Call Tower & Fire Department at AGR
    - 1200-1400 Spray water over designated area of the Avon Park Bombing Range
    - 1445 Land KMCF
  - e. **27 Jul (Friday):**
    - 0830: Report
    - 0900: Out-Briefing
    - 1000: Depart KLFI
    - 1130: Land KYNG



4. **Spray Parameters:**
- a. Acreage: N/A
  - b. Altitude: 150 Ft AGL
  - c. Ground Speed: 200 Knots
  - d. Pesticide: N/A (Training with dyed water only)
  - e. Application Rate: 0.5 Ounce per Acre
  - f. Flow Rate: Approximately 307 Gallons per minute
  - g. Swath Width: 300' swaths over designated area of Avon Park Bombing Range
  - h. System: SP2G – MASS ULV; Modules 1 and 2
  - i. Nozzle Tips/Number/Orientation: Will be determined by Mission Commander.
  - j. Aircraft Tail Number: 99106
  - k. Deploy/Re-Deploy Time: 3.5 hrs
  - l. Spray Time: 2 hrs (or as called by Mission Commander)
5. **Mission Commander:** Major (b) (6) (b) (6)
6. Support required at MacDill AFB and Avon Park Bombing Range AFB have been approved via telephone conversations with MacDill AFB Ops and the Range Manager at Avon Park AFRB.
7. This mission replaces the Langley AFB Mosquito Control Mission (23-29 Jul 01). If you have any questions concerning this mission please contact DSN (b) (6)

(b) (6) (b) (6) Major, USAFR  
Chief, Aerial Spray  
757 AS/DOS

27 July 2001

MEMORANDUM FOR 757 AS/DO

FROM: 757 AS/DOS

SUBJECT: Aerial Spray Training Mission Report,  
Avon Park AFR/MacDill AFB FL (23-27 July 2001)

**1. PURPOSE.** The primary purpose of this mission was to provide initial and upgrade refresher UHV, HV, LV, ULV training over water and land to the aircrew which also included training on the DGPS. The Spray Maintenance personnel received training on the mixing, loading and downloading procedures.

- a. The Spray Maintenance personnel loaded 1000 gallons of water into the SP2G MASS System for a simulated spray sortie each day.
- b. Five 8008 raindrop nozzles on each side of the wing booms were oriented straight back for the UHV and HV training sorties while one nozzle per side was oriented straight back for the ULV and LV training sorties.
- c. A total of 14.2 Flight Time was logged during this mission.

(1) Total Ferrys: 3    Total Ferry Flight Hours: 7.2  
(2) Total Sorties: 3    Total Sortie Flight Hours: 7.0

**2. TRAINING:**

- a. Capt(b) (6) completed spray qualification training in the Navigator's category.
- b. TSG (b) (6) (b) (6) received initial training in the Spray Operator's category.
- c. MSG (b) (6) (b) (6) received initial Spray Maintenance training. TSG (b) (6) (b) (6) received continuation training in the Spray Maintenance category.
- d. The remaining aircrew and participants accomplished currency training as required.

**3. ITINERARY.** The mission departed Youngstown on 23 Jul (1330L), however the aircraft had to return for the transponder to be replaced and proceeded on/or about 1400L to MacDill AFB FL. During this mission the crewmembers worked out of MacDill AFB and flew the C130 over Avon Park AFR Bombing Range for the duration of the training sorties as scheduled.

**4. EXECUTION.** The deployment and briefings went as planned. The in-briefing was with all crewmembers and ground support participants in attendance. No problems were experienced during the mission.

**5. SUPPORT.** Contract quarters and rental car support were excellent. MacDill AFB and Avon Park AFR personnel were exceptionally cooperative.

(b) (6) (b) (6)  
Mission Commander

Major, AFRC

Attachment  
Aerial Spray Operational Schedule

Distribution made via Staff Summary Sheet:

910 AW/CC

910 OG/CC

910 LG/CC, LGMS

910 AW/PA

757 AS/DO, DOT

cc: 910 AW/HO



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



16 JUL 2007

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Grand Forks AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks AFB ND.

**2. Capability:** Spray Aircraft available 23-26 JUL 2007

**3. Concept of Operations:**

**23 JUL (Monday)**

1100: Showtime  
1300: Depart KRDR  
1500: Land KGFK/Safety Briefing  
1600: Spray In Brief (CPMP, MC, AC).  
1830 Load Chemical/WX Decision  
2000 Takeoff KRDR  
Sunset 2115

**24 JUL (Tuesday):**

1500: Show time for Calibration testing (See note in configuration)  
1830 Load Chemical  
2000: Take off KRDR (Adulticide Spray Sortie)  
Sunset: 2115

**25 JUL (Wednesday):**

1730: Show time  
1800 Load Chemical  
2000: Take off KRDR (Adulticide Spray Sortie)  
Sunset: 2115

**26 JUL (Thursday):**

1130: Show time  
1330: Take off KGFK  
1730: Land KYNG

**4. Spray Parameters:**

**a. Adulticide**

- (1) **Area to be treated:** 11488 acres (Grand Forks AFB)
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 2000 feet
- (4) **Flow Rate.** 7.26 gallons/minute ULV
- (5) **Application Rate.** 1.0 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots
- (7) **Flush:** With water, triple rinse, then air purge

**5. Aircraft Commander:** LTC (b) (6)(5)

**6.** Support at Grand Forks AFB ND has been coordinated with the organization's Environmental/Spray Coordinator.

**7.** HQ AFRC/DOOM approval via email.

// Signed //

(b) (6) (b) (6) CAPT, USAFR  
Assistant Chief Aerial Spray

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT

### 1. MISSION BASICS:

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 23-27 May 2005
- c. Purpose of Application: Control nuisance and vector mosquitoes (larval stages)
- d. Application Date/s: 24, 25, and 26 May, 2005
- e. Time/s of Application (Zulu): 0925-1015 (24 May); 0650-1000 (25 May); 0820-1455 (26 May)
- f. Acres Treated: 1673.0
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6), Environmental Officer, DSN (b) (6)
- h. Date Spray Map Last Approved: 23 May 2005
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): 23 May, 2005 CAPT (b) (6) MAJ (b) (6) COL (b) (6) (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: MAJ (b) (6)
- b. Certified PMP/s (Category 11): CAPT (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander: COL (b) (6) (b) (6) LTC (b) (6)
  - (2) CoPilot: CAPT (b) (6) (b) (6) MAJ (b) (6)
  - (3) Navigator(s): MAJ (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
- d. Spray Operators: MSG (b) (6), MSG (b) (6) MSG (b) (6) (b) (6)
- e. Safety Briefer: CAPT (b) (6)
- f. Spray Maintenance: MSG (b) (6), TSG (b) (6), SSG (b) (6)
- g. Spray Ground Monitors: CAPT (b) (6)
- h. Crew Chiefs: SRA (b) (6), TSGT (b) (6)
- i. Avionics: MSG (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 7/6.6
  - (2) Ferry Sorties/Hours: 2/6.0

### 3. PESTICIDES:

- a. Trade Name (% Active Ingredient): Altosid Liquid Larvicide Concentrate (20% methoprene)
- b. EPA Registration Number: Altosid Liquid Larvicide Concentrate 272446
- c. Gallons Pesticide Loaded: 5.678 Gal Altosid® (24 May); 5.678 Gal Altosid® (25 May) Gallons Pesticide Applied: 5.678 Gal Altosid® (25 May); 5.678 Gal Altosid® (26 May) ; 5.678 Gal Altosid® ; Gallons and Name of Flush Used: Water (483 Gallons).
- d. Other Additives Used: AirexDC® drift reduction agent
- e. Application Rate: 0.75 Oz/acre Altosid®



**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 9107
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: Raindrop nozzles
- e. Nozzle Orientation & Number Used: 10 straight back
- f. Pressure (PSI): 36-68 (24 May); 41-53 (25 May) & 49-57 (26 May)
- g. Flow Rate: 155-189 gpm (24 May); 184-192 gpm (25 May) & 170-188 gpm (26 May)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 200' LV (24, 25, and 26 May)
- b. Spray Off Set: 200' (24, 25, and 26 May)
- c. Spray Release Altitude: 100'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 310° (24 May); 300° (25 May); 290° (26 May)  
(1) Ground: 8 knots (24 May); 10 knots (25 May); 9 knots (26 May)
- b. Temperature (Degrees Fahrenheit): 45-73° (24-26 May)
- c. Dew Point: 48-54 °F (24-26 May) during applications
- d. Cloud Cover: Mostly Cloudy/ showers (24 May); Mostly Cloudy/ showers (25 May); Partly Cloudy (26 May)
- e. Source: Ground observations

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. The Grand Forks AFB Environmental officer conducts adult mosquito trapping and larval sampling to determine mosquito densities on base. Prior to the 24-26 May application, no systematized monitoring was conducted, however, increased larval densities within spray blocks was observed by the environmental officer. In addition, larval dip sampling was conducted at 4 locations on the base by the entomologist.
- b. Effectiveness:
  - (1) Technique/s Used: Larval dip samples
  - (2) Results: Pre application averages at the 4 locations ranged from 6 larvae/dip to 215 larvae/dip. The greatest numbers were collected in the swales adjacent to the golf course. Other sampling locations included the ditches to the west of the horse barns, the ditches to the north of the smokehouse, and the area west of the alert pad by the perimeter road. The Grand Forks AFB Environmental section will conduct larval counts in spray blocks that were treated with Altosid® larvicide to determine the insecticide's efficacy.

**8. REMARKS:** This is the fourth spray season at Grand Forks AFB. The use of Low Volume sprays in order to treat mosquito larvae has been accomplished by the 910 AW/757 AS before. Despite the fact that several operational difficulties were encountered, this mission was completed to the satisfaction of the customer. One of the principle difficulties encountered was with the MASS system. Apparently, a flow control valve had been installed incorrectly, resulting in an overpressure which in turn resulted in multiple seal failures. New procedures regarding pre-operational checks have been instituted insuring future incidents of this type may be avoided. Poor weather also contributed to operational difficulties. On 24 May, an attempt was made to spray in a light rain. However, forward visibility was impaired and further spray activity was aborted.

//Signed//

(b) (6) ] CAPT, USAFR  
Certified Pest Management Professional



# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT

### 1. MISSION BASICS:

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 23-27 May 2005
- c. Purpose of Application: Control nuisance and vector mosquitoes (larval stages)
- d. Application Date/s: 24, 25, and 26 May, 2005
- e. Time/s of Application (Zulu): 0925-1015 (24 May); 0650-1000 (25 May); 0820-1455 (26 May)
- f. Acres Treated: 1673.0
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6), Environmental Officer, DSN (b) (6)
- h. Date Spray Map Last Approved: 23 May 2005
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): 23 May, 2005 CAPT (b) (6) MAJ (b) (6) COL (b) (6) (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: MAJ (b) (6)
- b. Certified PMP/s (Category 11): CAPT (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander: COL (b) (6) (b) (6) LTC (b) (6)
  - (2) CoPilot: CAPT (b) (6) (b) (6) MAJ (b) (6)
  - (3) Navigator(s): MAJ (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
- d. Spray Operators: MSG (b) (6), MSG (b) (6) MSG (b) (6) (b) (6)
- e. Safety Briefer: CAPT (b) (6)
- f. Spray Maintenance: MSG (b) (6), TSG (b) (6), SSG (b) (6)
- g. Spray Ground Monitors: CAPT (b) (6)
- g. Crew Chiefs: SRA (b) (6), TSGT (b) (6)
- h. Avionics: MSG (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 7/6.6
  - (2) Ferry Sorties/Hours: 2/6.0

### 3. PESTICIDES:

- a. Trade Name (% Active Ingredient): Altosid Liquid Larvicide Concentrate (20% methoprene)
- b. EPA Registration Number: Altosid Liquid Larvicide Concentrate 272446
- c. Gallons Pesticide Loaded: 5.678 Gal Altosid® (24 May); 5.678 Gal Altosid® (25 May) Gallons Pesticide Applied: 5.678 Gal Altosid® (25 May); 5.678 Gal Altosid® (26 May) ; 5.678 Gal Altosid® ; Gallons and Name of Flush Used: Water (483 Gallons).
- d. Other Additives Used: AirexDC® drift reduction agent
- e. Application Rate: 0.75 Oz/acre Altosid®

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 9107
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: Raindrop nozzles
- e. Nozzle Orientation & Number Used: 10 straight back
- f. Pressure (PSI): 36-68 (24 May); 41-53 (25 May) & 49-57 (26 May)
- g. Flow Rate: 155-189 gpm (24 May); 184-192 gpm (25 May) & 170-188 gpm (26 May)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 200' LV (24, 25, and 26 May)
- b. Spray Off Set: 200' (24, 25, and 26 May)
- c. Spray Release Altitude: 100'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 310° (24 May); 300° (25 May); 290° (26 May)  
(1) Ground: 8 knots (24 May); 10 knots (25 May); 9 knots (26 May)
- b. Temperature (Degrees Fahrenheit): 45-73° (24-26 May)
- c. Dew Point: 48-54 °F (24-26 May) during applications
- d. Cloud Cover: Mostly Cloudy/ showers (24 May); Mostly Cloudy/ showers (25 May); Partly Cloudy (26 May)
- e. Source: Ground observations

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. The Grand Forks AFB Environmental officer conducts adult mosquito trapping and larval sampling to determine mosquito densities on base. Prior to the 24-26 May application, no systematized monitoring was conducted, however, increased larval densities within spray blocks was observed by the environmental officer. In addition, larval dip sampling was conducted at 4 locations on the base by the entomologist.
- b. Effectiveness:
  - (1) Technique/s Used: Larval dip samples
  - (2) Results: Pre application averages at the 4 locations ranged from 6 larvae/dip to 215 larvae/dip. The greatest numbers were collected in the swales adjacent to the golf course. Other sampling locations included the ditches to the west of the horse barns, the ditches to the north of the smokehouse, and the area west of the alert pad by the perimeter road. The Grand Forks AFB Environmental section will conduct larval counts in spray blocks that were treated with Altosid® larvicide to determine the insecticide's efficacy.

**8. REMARKS:** This is the fourth spray season at Grand Forks AFB. The use of Low Volume sprays in order to treat mosquito larvae has been accomplished by the 910 AW/757 AS before. Despite the fact that several operational difficulties were encountered, this mission was completed to the satisfaction of the customer. One of the principle difficulties encountered was with the MASS system. Apparently, a flow control valve had been installed incorrectly, resulting in an overpressure which in turn resulted in multiple seal failures. New procedures regarding pre-operational checks have been instituted insuring future incidents of this type may be avoided. Poor weather also contributed to operational difficulties. On 24 May, an attempt was made to spray in a light rain. However, forward visibility was impaired and further spray activity was aborted.

//Signed//

(b) (6) **CAPT, USAFR**  
**Certified Pest Management Professional**

**C A N C E L L E D**  
**AERIAL SPRAY OPERATIONAL SCHEDULE**  
**PARRIS ISLAND MCRD, SC**  
**23-28 MARCH 2003**  
**C A N C E L L E D**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCRD, SC.

**1. 910 AW PARTICIPANTS:**

**a. Aircrew:**

- (1) Mission Commander: Maj (b) (6) (b) (6)
- (2) Pilots: Maj (b) (6) (b) (6)
- (3) Navigators: Maj (b) (6) (b) (6)
- (4) Flight Engineers:
- (5) Spray Operators:

**b. Maintenance:**

- (1) Spray Maintenance: MSG (b) (6) TSG (b) (6) , TSG (b) (6) , SSG (b) (6)
- (2) Crew Chiefs: SSG (b) (6) , SSG (b) (6)
- (3) Avionics: SMS (b) (6) (?)

**c. Pest Management Professionals/Entomologist:** Capt (b) (6) (b) (6)

**2. PLANNED SEQUENCE OF EVENTS:** (All times local)

**23 MAR (Sunday):**

1300: Show Time  
1500: Take off KYNG  
1600: Land KNBC  
1630: Safety Briefing

PPR # \_\_\_\_\_

**24 MAR (Monday):**

1400: Facility In-Brief  
1430: Load Chemical  
1630: Take off KNBC  
1800: Land KNBC  
1837: Sunset

HAN 10 Gallon boom flush.

**25 MAR (Tuesday):**

1400: Load Chemical  
1630: Take off KNBC  
1800: Land KNBC  
1838: Sunset

**26 MAR (Wednesday):**

1400: Load Chemical  
1630: Take off KNBC  
1800: Land KNBC  
1838: Sunset

**27 MAR (Thursday):**

1400: Load Chemical  
1630: Take off KNBC  
1800: Land KNBC  
1839: Sunset

**28 MAR (Friday):**

1200: Take off KNBC  
1400: Land KYNG

**C A N C E L L E D**

# CANCELLED

## 3. ITEMS TO TAKE:

### a. Entomologist/CPMP:

- (1) Wind Gauge, Compass, and Signal Mirrors
- (2) UHF/VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder, Calibration Tables, and Oil Sensitive Papers
- (4) DGPS Computers, Trackstar Equipment, and Maps

### b. Navigators:

- (1) Maps
- (2) Templates
- (3) Laptop Computer

### c. Spray Maintenance:

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

## 4. SPRAY CONFIGURATION: SP-2G

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Wing Booms
- c. **Nozzles:** Open for ULV spray; 6, 8008's oriented straight down
- d. **Differential GPS:** Installed
- e. **Aircraft Tail #:** 09106
- f. **Mission Identifier:** QZNRKA082

## 5. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)

### a. **Pesticide:**

Dibrom® Concentrate (naled)  
Organophosphate Insecticide  
Signal Word: Danger  
Antidote: Atropine, 2-PAM  
Flushing Agent: HAN

- b. **Application:** 1 Ounce Dibrom®/Acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 3.634 Gallons/Minute

## 6. AMOUNT OF SPRAY MATERIAL AVAILABLE: Load 60 gallons of Dibrom® Concentrate per sortie and 25 gallons of HAN in flush tank.

## 7. PPR REQUIREMENTS: Required: PPR #

## 8. PARKING PLAN: Beaufort MCAS Ramp

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## 9. AIR TO GROUND RADIO FREQUENCIES:

Air Traffic Control: 119.05 Beaufort MCAS TWR  
Hilton Head Arpt: 123.0 UNI  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 392.2; Secondary 340.8**

**10. TRANSPORTATION:** Parris Island will provide two vans for transportation to/from quarters and dining. An additional vehicle will be available for the CPMP/Entomologists/Ground Support personnel.

**11. SPRAY MONITORING OR TESTING:** CPMP and Parris Island MCRD Project Coordinator.

## 12. CONTACTS :

**a. Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX

- (1) Environmental/Spray Coordinator:  
(b) (6) DSN (b) (6) (cellular) (b) (6) ; (b) (6) DSN (b) (6)  
FAX (843) 228-2616; (b) (6) (b) (6) ; (b) (6) (b) (6)-(b) (6)
- (2) Assistant Chief of Staff I & L: Col J. (b) (6) , DSN (b) (6)
- (3) Pest Control Foreman: DSN 335-3663
- (4) P.I. Motor Pool: (b) (6) DSN (b) (6)
- (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
- (6) Thrifty Car Rental: (843) 522-9996
- (7) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)
- (8) P.I. Rifle Range: DSN: 335-3183/3624

**b. Beaufort MCAS SC:**

- (1) Beaufort MCAS Environmental: (Commercial (843) 228-XXXX) (b) (6) DSN (b) (6) ; (b) (6) DSN (b) (6)
- (2) Fuels: DSN: 335-7049/7448/7168
- (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
DSN: (b) (6) . Base Ops is ext (b) (6)  
(After duty hours: (b) (6) DSN: (b) (6)
- (4) Trans Alert/VAL: DSN: 335-7110
- (5) Weather: DSN 335-7001/7926/7/9 (www:beaufort.usmc.mil)

**c. Beaufort County Mosquito Control:** (b) (6) (b) (6)

**d. Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) DSN: (b) (6)

**e. Quarters: JTR seasonal 15 Mar-30 Sep Lodging/\$95 Meals/\$44 Max \$141**

**Comfort Inn** (843) 525-9366 (FAX 1529)(b) (6)  
Hampton Inn, 2342 Boundary St, Beaufort SC; (843) 986-0600 (FAX 0494)  
Best Inn, 2448 Boundary St, Beaufort SC; (800) 237-8466; FAX 843 524-7264  
Howard Johnson Express Inn, 3651 Trask Pkwy, Beaufort SC; (900) 446-4656; FAX (843) 524-2027  
Sleep Inn, \$72+Tax, (b) (6) 843-522-3361, FAX: 843-522-9929  
Parris Island Billeting (b) (6) ) DSN: 335-2744 (FAX: 3815); (843) 228-3960  
Best Western (Sea Island Motel) (843) 524- 4121  
Port Royal Days Inn (843) 524-1551  
Beaufort Ramada 1-800-272-6232  
Holiday Inn (843) 524-2144  
Best Western Pt South (I-95) 1-843-726-8101

# CANCELLED

**CANCELLED**

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257
- (5) 910 OSF/OSA, Airfield Manager: (b) (6) (b) (6) (b) (6)
- (6) 910 OSF, Supervisor of Flight Desk: 1069, FAX: 1371
- (7) 757 AS/DO: LtC (b) (6) (b) (6)
- (8) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) FAX 1657
- (9) 757 AS/DOS: Aerial Spray Office: (b) (6) (b) (6) FAX 1616
- (10) 910 LG/CC: Ext 1225
- (11) 910 LG/LGM: Ext 1352
- (12) 910 LG, Maintenance Control: Ext 1348
- (13) 910 LG/LGMS, Spray Maintenance: Ext 1132/1586
- (14) 910 LG/LGL: CMS (b) (6) Ext 1137
- (15) Omega/SATO Travel: Ext 1772; (800) 285 – 6342
- (16) LG: Taxi Service to/from Airport: (b) (6) Ext 1758, FAX 1768
- (17) Cellular Phones:
  - PMP/Entomologist Cellular Spray Phone: (b) (6)
  - Mission Commander: (b) (6)
  - Spray Maintenance: (b) (6)

**CANCELLED**



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



16 May 04

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Grand Forks AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks AFB ND.

**2. Capability:** Spray Aircraft 89-9107 available 23-28 May 05

**3. Concept of Operations:**

**23 MAY (Monday)**

0900: Show at KYNG  
1100: Depart KYNG  
1300: Land KRDR/Safety Briefing  
1500: Spray In Brief

**24 MAY (Tuesday):**

0430: Show time  
0600: Take off KGFK (Larvicide Spray Sortie)  
0539: Sunrise

**25 MAY (Wednesday):**

0430: Show time  
0600: Take off KGKF (Larvicide Spray Sortie)  
0538: Sunrise

**26 MAY (Thursday):**

0430: Show time  
0600: Take off KGFK (Larvicide Spray Sortie)  
0537: Sunrise

**27 MAY (Friday):**

0430: Show time  
0600: Take off KGFK (Larvicide Spray Sortie)  
0537: Sunrise

**28 MAY (Saturday):**

0800: Show time  
1000: Take off KGFK  
1400: Land KYNG



#### 4. Spray Parameters:

- a. **Altitude:** 100' AGL for Larvicide swath when no trees are present.
- b. **Swath Width.** 200 feet for LV or as determined by the CPMP
- c. **Flow Rate.** 1.86 gallons/minute LV
- d. **Application Rate.** 0.75 oz/acre Altosid®)
- e. **Ground Speed:** 200 Knots
- f. **Proposed spray area:** Approximately 1,800 acres

5. **Mission Commander:** Major (b) (6) (b) (6)

6. **Aircraft Commander:** Capt (b) (6) (b) (6)

6. Support including Security Forces for the aircraft parking at Grand Forks Intl Airport due to Grand Forks AFB runway closure required at Grand Forks AFB ND has been coordinated with the organization's Environmental/Spray Coordinator Ms (b) (6) (b) (6) DSN (b) (6) .

7. HQ AFRC/DOOM approval via email.

// Signed //

(b) (6) (b) (6) Maj, USAFR  
AERIAL SPRAY CHIEF

# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 23-28 MAY 05

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: MAJ (b) (6) (5)
- (2) Pilots: COL (b) (6) (b) (6) LTC (b) (6) , CPT (b) (6) (b) (6)
- (3) Navigators: MAJ (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: MSG (b) (6) , MSG (b) (6) MSG (b) (6) (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSG (b) (6) , TSG (b) (6) , MSG (b) (6)
- (2) Crew Chief(s): TSgt (b) (6) , SRA (b) (6)
- (3) Avionics: MSG (b) (6)

##### c. Entomologists/Ground Support: CPT (b) (6)

#### 2. SCHEDULE: (All Local Times) PPR: N/A

##### 23 MAY (Monday)

0900: Show at KYNG  
1100: Depart KYNG  
1300: Land KRDR/Safety Briefing  
1500: Spray In Brief (CPMP, MC, AC, COL (b) (6))

##### 24 MAY (Tuesday):

0430: Show time  
0600: Take off KGFK (Larvicide Spray Sortie)  
0539: Sunrise

##### 25 MAY (Wednesday):

0430: Show time  
0600: Take off KGFK (Larvicide Spray Sortie)  
0538: Sunrise

##### 26 MAY (Thursday):

0430: Show time  
0600: Take off KGFK (Larvicide Spray Sortie)  
0537: Sunrise

##### 27 MAY (Friday):

0430: Show time  
0600: Take off KGFK (Larvicide Spray Sortie)  
0537: Sunrise

##### 28 MAY (Saturday):

0800: Show time  
1000: Take off KGFK  
1400: Land KYNG

#### 3. ITEMS TO TAKE

a. **Mission Commander:** Cellular Phone, Mission Folder

b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder,  
1 UHF Radio, Water Sensitive Cards, Card Holders with  
Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors,  
Project Notebook, Entomologist's Tool Kit, Trakstar Receiver and Antenna

c. **Navigator:** Maps/Map Bag, Validation Map

d. **Spray Operator:** Safety Gear, Calibration Tables

e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

**4. PPR: Not Required**

**5. RADIO FREQUENCIES: Air To Ground Primary** UHF 392.2; VHF 123.45  
KRDR Tower 124.9 V; Grand Forks International 118.4 V

**6. CONFIGURATION: SP2G**

- a. System:** 2-Module System/ Fuselage Booms
- b. Nozzle Tips/Orientation:**  
Larvicide: Raindrop nozzles straight back
- c. Number:**  
Larvicide: fuselage only, 10 total (5 each side) straight back
- d. Booms:** Fuselage
- e. Aircraft:** #9107
- f. Mission Identifier:** QZNRKA288143

**7. SPRAY PARAMETERS:**

- a. Larvicide**
  - (1) **Area to be treated:**
  - (2) **Altitude:** 100' for Larvicide application
  - (3) **Swath Width.** 200 feet
  - (4) **Flow Rate.** 186 gallons/minute
- b. Application Rate.** 2 gallons/acre (water with 0.75 oz of Altosid®)
- c. Ground Speed:** 200 Knots

**8. SPRAY MIXING AND LOADING: (For Larvicide Spray Sorties)**

- a. Composition of each Gallon:**
  - (1) 0.375 ounces of Altosid® 20
  - (2) 0.64 ounces of AirexDC™ drift retardant
  - (3) Water
- b. Typical load:** (2 tanks of 450 gallons each)
  - (1) Fill with 450 gallons of water/tank. Total water in tanks = 900 gal.
  - (2) Total water added = 900 gallons
  - (3) Add 1.33 (1 1/3) gallons of Altosid® per tank (2 2/3 gallons total).
  - (4) 2.5 gal AirexDC per tank (5 Gal total) while agitating approximately 15 min
  - (5) Total quantity mix. 908 gallons
- c. Final Load for complete flush**
  - (1) Fill tanks with the amount of water necessary for a proper system flush
- d. Mixing Instructions:**

SHAKE WELL BEFORE USING. Altosid® may separate on standing and must be thoroughly agitated prior to dilution.

PRECAUTIONARY STATEMENT: Spray solution should be used within 48 hours;  
always agitate before spraying.

**9. TRANSPORTATION: Some 5 vehicle combination of vans and 6 packs provided by 319 CES. Transportation provided to lodging, vehicles will be picked up there. Col (b) (6) has a staff car.**

**10. CONTACTS:**

- a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**
  - (1) **Base Operations:** Airfield Manager DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx
  - (2) **Environmental Officer:** (b) (6) (b) (6) DSN (b) (6) , FAX 6155
  - (3) **Base Civil Engineer:** Lt Col (b) (6)
  - (4) **Pest Management:** DSN 362-4289, FAX 3432
  - (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
  - (6) **Weather:** DSN 362-4396
  - (6) **Billeting:** DSN 362-3070/6189 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844
- b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext
  - (1) 910 AW/CC: Col (b) (6) (b) (6)
  - (2) 910 AW Command Post: Ext 1315; FAX 1161
  - (3) 910 AW/PA: Ext 1236; FAX 1022
  - (4) 910 OG/CC: Ext 1257 / 1179
  - (5) 910 Base Ops: Airfield Manager: (b) (6) (b) (6) (b) (6)

- Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Ext 1652; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL:Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - PMP/Entomologist:
  - Mission Commander:
  - Spray Maintenance:

(b) (6)

16 July 2001

MEMORANDUM FOR HQ AFRC/DOOM (FAX: 497-0198)

FROM: 757 AS/DOS ((b) (6)) ((b) (6)); FAX 346-1616)

SUBJECT: Capability and Concept of Operations for Aerial Spray at Langley AFB

1. **Purpose/Objectives/Benefits:** Control nuisance and vector mosquitoes in order to improve working conditions for members operating at Langley AFB VA.
2. **Capability:** Spray Aircraft Available 23-29 Jul 01.
3. **Concept of Operations:**
  - a. **23 Jul (Monday):**
    - 1030 Show at KYNG
    - 1330 Take-Off KYNG
    - 1500 Land KLFI
    - 1515 Safety Brief
  - b. **24 Jul (Tuesday):**
    - 1000 -Briefing with the Craney Island personnel
    - 1100 Briefing with Langley AFB, CE Conference Room
    - 1400 Show Time/Weather Decision
    - 1430 Load Chemical
    - 1700 Take-Off KLFI, Spray Areas Designated by PMP
    - 2000 Land KLFI
  - c. **25 Jul (Wednesday):**
    - 1400 Show Time/Weather Decision
    - 1430 Load Dibrom
    - 1700 Depart KLFI, Spray Areas Designated by PMP
    - 2000 Land KLFI
  - d. **26 Jul (Thursday):**
    - 1400 Show Time/Weather Decision
    - 1430 Load Chemical
    - 1700 Take-Off KLFI, Spray Areas Designated by PMP
    - 2000 Land KLFI
  - e. **27 Jul (Friday):**
    - 1400 Show Time/Weather Decision
    - 1430 Load Chemical
    - 1700 Take-Off KLFI, Spray Areas Designated by PMP
    - 2000 Land KLFI

**f. 28 Jul (Saturday):**

1400 Show Time/Weather Decision  
1430 Load Chemical  
1700 Take-Off KLFI, Spray Areas Designated by PMP  
2000 Land KLFI

**g. 29 Jul (Sunday):**

0830: Report  
0900: Out-Briefing  
1000: Depart KLFI  
1130: Land KYNG

**4. Spray Parameters:**

- a. Acreage: approximately 114,000 Acres
- b. Altitude: 150 Ft AGL
- c. Ground Speed: 200 Knots
- d. Pesticide: Dibrom<sup>®</sup> Concentrate
- e. Application Rate: 0.5 Ounce per Acre
- f. Flow Rate: 1.8 Gal per Minute at Craney Island; 4.5 Gallons per Minute for 2500' swaths and 3.6 Gallons per Minute for 2000' swaths on the Peninsula
- g. Swath Width: 1000' swaths at Craney Island; 2000' to 2500' swaths at Langley AFB designated spray areas
- h. System: SP2G – MASS ULV; Modules 1 and 2
- i. Nozzle Tips/Number/Orientation: 8008/8 oriented straight down for 2500' swaths; 8008/7 oriented straight down for 2000' swaths; 8008/5 oriented straight down for 1000' swaths; if temperatures are above 85 degrees use 8010/6 for 2500' swaths and 2 – 3 for 1000' swaths all oriented straight down.
- j. Aircraft Tail Number: 99106
- k. Deploy/Re-Deploy Time: 3.2 hrs
- l. Spray Time: 3.50 hrs (or as called by PMP)

**5. Mission Commander: Major (b) (6) (b) (6)**

**6. Support required at Langley AFB has been requested via FAX message.**

**7. If you have any questions concerning this mission please contact DSN (b) (6)**

(b) (6) (b) (6) Major, USAFR  
Chief, Aerial Spray  
757 AS/DOS (DSN (b) (6) )

# AERIAL SPRAY OPERATIONAL SCHEDULE

## MACDILL AFB / AVON PARK, FL

### TRAINING

### 23- 27 JUL 2001

**PURPOSE/OBJECTIVES/BENEFITS:** UHV, HV, LV and standard ULV aerial spray training with dyed water over designated areas on the bombing range.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: Maj (b) (6) (b) (6)
- (2) Pilot: Maj (b) (6)
- (3) Navigators: Maj (b) (6) , Maj (b) (6) , Capt (b) (6)
- (4) Flight Engineer: MSG (b) (6)
- (5) Spray Operators: TSG (b) (6) , MSG (b) (6) , TSG (b) (6) (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: MSG (b) (6) MSG (b) (6) (b) (6) TSG (b) (6)
- (2) Crew Chiefs: TSG (b) (6) , SSG (b) (6)
- (3) Avionics: MSG (b) (6)

#### 2. SCHEDULE: (All time Local)

##### 23 Jul (Monday):

**PPR # - 204KG02**

1030: Show at KYNG  
1330: Depart KYNG  
1700: Land KMCF

##### 24 Jul (Tuesday): Range Times 1200-1400 Tuesday, Wednesday & Thursday

0800: Show Time  
1145: Depart KMCF Call Tower and Fire Dept at AGR  
1200-1400: Range Time  
1445: Land KMCF

##### 25 Jul (Wednesday): Range Times 1200-1400 Tuesday, Wednesday & Thursday

0800: Show Time  
1145: Depart KMCF Call Tower and Fire Dept at AGR  
1200-1400: Range Time  
1445: Land MCF

##### 26 Jul (Thursday): Range Times 1200-1400 Tuesday, Wednesday & Thursday

0800: Show Time  
1145: Depart KMCF Call Tower and Fire Dept at AGR  
1200-1400: Range Time  
1445: Land MCF

##### 27 Jul (Friday):

0800: Show Time  
1000: Depart KMCF  
1330: Land KYNG



### 3. ITEMS TO TAKE:

- a. **Navigator:** Maps with “No-Spray” Areas Marked and Laptop Computer
- b. **Certified Pest Management Professionals:** Not Required

### 4. AIR TO GROUND FREQUENCIES:

- a. Spray: Primary 392.2; Secondary 340.8
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. Avon Park: TWR-292.2 (p), 126.15, 276.6 (s)
- e. MacDill: TWR-123.7; GND-121.65; ATIS-133.825; CMD POST-311.0; PTD-372.2

### 5. SPRAY CONFIGURATION:

- a. MASS – SP2G
- b. Aircraft Number: 09106

### 6. SPRAY PARAMETERS:

- a. Nozzles – Raindrop oriented straight back.
- b. Number of Nozzles: 5 8808 per side for UHV. 1 nozzle per side for LV training and standard ULV.
- c. Airspeed – 200 knots ground speed.
- d. Altitude – 100 to 150 feet above ground level
- e. Spray -- water only.

### 7. LOADING AND MIXING: Water only. Mixing and loading will be determined for each day’s training mission by the Mission Commander.

### 8. CONTACTS:

- a. Quarters: **MacDill** Billeting: DSN: 968-4259, FAX 2660; Prime Knight 968-4361, Fax 3669  
**Sail Port Inn \$75, Rocky Point Tampa FL 813 281-9599 (Fax 813 281-9510)**
- b. Transportation: **MacDill**: Enterprise, (813)-840-2613 / 8310 FAX ((b) (6))  
3 Full Size \$45 ((b) (6)) ((b) (6)) /((b) (6)) 1 Mid Size \$41 ((b) (6))
- c. **MacDill AFB**: DSN prefix 968; Commercial (813) 828-xxxx  
- Base Operations – Ext 2350
- d. **Patrick AFB**: Rescue Squadron DSN prefix 854  
LTC ((b) (6)) – CC -((b) (6))  
LTC ((b) (6)) – DO – ((b) (6))  
LTC ((b) (6)) ((b) (6)) – Flight Ops – ((b) (6))  
CPT ((b) (6)) – Tactics – ((b) (6))  
Maintenance Ops Center - MOC – x2261, 2262, 2264 ((b) (6))
- e. **Avon Park**, Fla. Commercial prefix (941) 452-4XXX  
DSN 968-7+Avon Park Extension XXX)  
DSN Access from Avon Range phones: 4+94+DSN  
DSN 968-7176 or 7138 for Tower ((b) (6)) ((b) (6))  
Local phone calls from Avon Range:  
Sebring 82 + number  
Avon Park 81 + number  
  - (1) Installation Coordinator/Engineer: ((b) (6))((b) (6)) or ((b) (6))  
FAX 189/218; ((b) (6)) ) after hours: ((b) (6))
  - (2) Pest Control: ((b) (6))
  - (3) Forestry/Wildlife: ((b) (6)) or ((b) (6))
  - (4) Weather: MacDill Forecaster (DSN 968-2854)
  - (5) Quarters:

Quality Inn (863) 385-4500, FAX: (863) 385-0250  
Econolodge (941) 453-2000  
Oak Tree Inn (941) 453-3165  
Days Inn (941) 382-1148, 800 329-7466

- (6) Fuels: (b) (6)
- (7) Airfield Manager: (b) (6)
- (8) Asst Airfield Mgr: (b) (6) ; Fax (233)
- (9) Range/Tower NCOIC: (b) (6)
- (10) Range Manager: Mr (b) (6)
- (11) Range Coordination Center: (Ext 138/242)
- (12) Range Scheduling MacDill: DSN **968-4641** (Current Ops Scheduling)  
Sgt (b) (6) or Sgt (b) (6) FAX DSN 968-4098
- (13) Fire Department: (Ext 293) Mr (b) (6) (Chief)
- (14) Prison Snack Bar: Hours 0800-1100; 1300-1600
- (15) Sebring AP:  
Mgr: Mr (b) (6) (b) (6) (fuel needs)  
(1) BEEPER: 1 (941) 999-8622  
a) ENTER YOUR PHONE#  
b) ENTER #

Asst Mgr: (b) (6) , (b) (6)

- (16) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)
  - (17) Range VHF: 126.15
  - (18) MacDill AFB Ops Gp CC COL (b) (6) (b) (6)
- f. **Youngstown** ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046, + Ext
- (1) 910 AW/CC: B GEN (b) (6) Ext 1243
  - (2) 910 AW Command Post: Ext 1315, FAX 1161
  - (3) 910 AW/PA: LT (b) (6) , FAX 1022
  - (4) 910 OG/CC: Ext 1257 / 1179
  - (5) 910 OG/OSA: Airfield Manager: (b) (6)
  - (6) 757 AS/DO: LTC (b) (6)
  - (7) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) , FAX 1657
  - (8) 757 AS/DOS: Aerial Spray Office, (b) (6) (b) (6) , FAX 1616
  - (9) 910 LG/CC: LTC (b) (6)
  - (10) 910 LG/LGM: CMS (b) (6) (b) (6) (b) (6)
  - (11) Maintenance Control: Ext 1348
  - (12) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
  - (13) 910 LG/LGL: CMS (b) (6) (b) (6)
  - (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
  - (15) Cellular Phones:
    - Mission Commander, (b) (6)
    - Entomologist, (b) (6)
    - Spray MX, (b) (6) Pager (b) (6) Prime Knight (b) (6)



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



5 May 04

MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497-0198)

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Grand Forks AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks AFB ND.

**2. Capability:** Spray Aircraft Available 23-29 May 04

**3. Concept of Operations:**

**23 SEP (Sunday)**

1000: Show at KYNG  
1200: Depart KYNG  
1430: Land KRDR/Safety Briefing  
1530: In-brief

**24 SEP (Monday):**

0539: Sunrise  
0530: Show time  
0640: Take off KRDR (Larvicide Spray Sortie)  
0940: Land KRDR

**25 SEP (Tuesday):**

0538: Sunrise  
0530: Show time  
0640: Take off KRDR (Larvicide Spray Sortie)  
0940: Land KRDR

**26 SEP (Wednesday):**

0537: Sunrise  
0530: Show time  
0640: Take off KRDR (Larvicide Spray Sortie)  
0940: Land KRDR

**27 SEP (Thursday):**

0537: Sunrise  
0530: Show time  
0640: Take off KRDR (Larvicide Spray Sortie)  
0940: Land KRDR

**28 SEP (Friday):**

0536: Sunrise

0530: Show time

0640: Take off KRDR (Larvicide Spray Sortie)

0940: Land KRDR

**29 SEP (Saturday):**

0800: Show time/Out Brief

1000: Take Off KRDR

1230: Land KYNG

**4. Spray Parameters:**

- a. **Altitude:** 150' AGL for Larvicide swath when no trees are present.
- b. **Swath Width.** 2000 feet for ULV or as determined by the PMP
- c. **Flow Rate.** 4.35 gallons/minute ULV
- d. **Application Rate.** 0.60 oz/acre Trumpet<sup>®</sup>), ULV
- e. **Ground Speed:** 200 Knots
- f. **Proposed spray area:** Approximately 40,000 acres

**5. Mission Commander/Aircraft Commander:** Major (b) (6)

**6.** Support required at Grand Forks AFB ND has been coordinated with the organization's Environmental/Spray Coordinator Ms (b) (6) DSN (b) (6) .

**7.** HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616, ATTN: 757 AS/DOS.

(b) (6) (b) (6) Maj, USAFR  
AERIAL SPRAY CHIEF

# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 23-29 MAY 04

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: LTC (b) (6)
- (2) Pilots: LTC (b) (6) MAJ (b) (6)
- (3) Navigators: MAJ (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: MSG (b) (6), MSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: SMS (b) (6), TSG (b) (6), SRA (b) (6)
- (2) Crew Chief(s): SRA (b) (6), SRA (b) (6)
- (3) Avionics: SSG (b) (6)

##### c. Entomologists/Ground Support: CPT (b) (6) (b) (6) CPT (b) (6)

#### 2. SCHEDULE: (All Local (b) (6) PPR: 052301LC

##### 23 MAY (Sunday)

1000: Show at KYNG

1200: Depart KYNG

1430: Land KRDR/Safety Briefing

In-brief (will conduct via conference call on Thursday May 20 at 1000)

##### 24 MAY (Monday):

0430: Show time

0530: Take off KRDR (Larvicide Spray Sortie)

0539: Sunrise (begin spray)

##### 25 MAY (Tuesday):

0430: Show time

0530: Take off KRDR (Larvicide Spray Sortie)

0538: Sunrise (begin spray)

##### 26 MAY (Wednesday):

0430: Show time

0530: Take off KRDR (Larvicide Spray Sortie)

0537: Sunrise (begin spray)

##### 27 MAY (Thursday):

0537: Sunrise

0630: Show time

0730: Take off KRDR (System flush)

0940: de-configure; return to KYNG

**Note: Four sorties are required for the spray block. Plus, a final sortie will be needed for a complete flush of the system followed by spray equipment inspection**

#### 3. ITEMS TO TAKE

a. **Mission Commander:** Hand Held GPS, 1 Cellular Phone

b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder, 1 UHF Radio, Water Sensitive Cards, Card Holders with Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors, Project Notebook, Entomologist's Tool Kit, Trakstar Receiver and Antenna

c. **Navigator:** Maps/Map Bag, Validation Map

d. **Spray Operator:** Safety Gear, Calibration Tables

e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

#### 4. PPR: 052301LC

#### 5. RADIO FREQUENCIES: Air To Ground Primary UHF 392.2; VHF 123.45

KRDR Tower 124.9 V; Grand Forks Int'l 118.4 V

## 6. CONFIGURATION: SP2G

**a. System:** 2-Module System/ Fuselage Booms

**b. Nozzle Tips/Orientation:**

Larvicide: Raindrop nozzles straight back

**c. Number:**

Larvicide: fuselage only, 10 total (5 each side) straight back

**d. Booms:** Fuselage

**e. Aircraft:** #9105

**f. Mission Identifier:** QZNRK 276 144

## 7. SPRAY PARAMETERS:

**a. Larvicide**

(1) **Area to be treated:**

(2) **Altitude:** 100' for Larvicide application

(3) **Swath Width.** 200 feet

(4) **Flow Rate.** 186 gallons/minute

**b. Application Rate.** 2 gallons/acre (water with 0.75 oz of Altosid®)

**c. Ground Speed:** 200 Knots

## 8. SPRAY MIXING AND LOADING: (For Larvicide Spray Sorties)

**a. Composition of each Gallon:**

(1) 0.375 ounces of Altosid® 20

(2) 0.64 ounces of AirexDC™ drift retardant

(3) Water

**b. Typical load:** (2 tanks of 450 gallons each)

(1) Fill with 450 gallons of water/tank. Total water in tanks = 900 gal.

(2) Total water added = 900 gallons

(3) Add 1.33 (1 1/3) gallons of Altosid® per tank (2 2/3 gallons total).

(4) 2.5 gal AirexDC per tank (5 Gal total) while agitating approximately 15 min

(5) Total quantity mix. 908 gallons

**c. Final Load for complete flush**

(1) Fill tanks with the amount of water necessary for a proper system flush

**d. Mixing Instructions:**

SHAKE WELL BEFORE USING. Altosid® may separate on standing and must be thoroughly agitated prior to dilution.

PRECAUTIONARY STATEMENT: Spray solution should be used within 48 hours; always agitate before spraying.

## 9. TRANSPORTATION: 2 – 7Pax Vans & 6 Pax truck provided by 319 CES

## 10. CONTACTS:

**a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**

(1) **Base Operations:** Gene Crouse Airfield Manager or 1 LT (b) (6) DSN (b) (6)

-- DSN 362-xxxx or (701) 747-xxxx

(2) **Environmental Officer:** (b) (6) (b) (6) DSN (b) (6) FAX 6155

(3) **Base Civil Engineer:** Lt Col (b) (6)

(4) **Pest Management:** TSGT (b) (6), DSN (b) (6), FAX 3432

(5) **Public Affairs:** Capt (b) (6), DSN (b) (6) (off duty CP ext 6711)

(6) **Weather:** DSN 362-4396

(6) **Billeting:** DSN 362-3070/6189 or (701) 594-8431, FAX 362-3069

-- Prime Knight DSN 362-3844 or (701) 747-3844

**b. 910 AW, Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

(1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243

(2) 910 AW Command Post: Ext 1315; FAX 1161

(3) 910 AW/PA: Ext 1236; FAX 1022

(4) 910 OG/CC: Ext 1257 / 1179

(5) 910 OSF/OSA: Airfield Manager: (b) (6) (b) (6) (b) (6)

- Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: LTC (b) (6) (b) (6) (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) 39; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Ext 1111; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: CMS (b) (6) (b) (6) (b) (6)
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL: CMS (b) (6) (b) (6)
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - PMP/Entomologist: (b) (6) , (b) (6) phone (b) (6) (6)
  - Mission Commander:
  - Spray Maintenance: (b) (6)





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 910<sup>TH</sup> AIRLIFT WING



21 August 2003

MEMORANDUM FOR HQ AFRC/DOOM (FAX: 497-0198)

FROM: 757 AS/DOS (b) (6) (b) (6); FAX 346-1616)

SUBJECT: Capability and Concept of Operations for Aerial Spray at Langley AFB

1. **Purpose/Objectives/Benefits:** Control nuisance and vector mosquitoes in order to improve working conditions for members operating at Langley AFB VA.
2. **Capability:** Spray Aircraft Available 24-29 August 2003.
3. **Concept of Operations:**
  - a. **24 Aug (Sunday):**
    - 1500 Show at KYNG
    - 1700 Take-Off KYNG
    - 1930 Land KLFI
    - 1945 Safety Brief
  - b. **25 Aug (Monday):**
    - 0900 In-Briefing with Langley AFB, CE Conference Room
    - 1400 Show Time/Weather Decision
    - 1430 Load Chemical
    - 1700 Take-Off KLFI, Spray Areas Designated by PMP
    - 2030 Land KLFI
  - c. **26 Aug (Tuesday):**
    - 1100 Daily meeting for PMP/MC in the hotel lobby
    - 1400 Show Time/Weather Decision
    - 1430 Load Dibrom
    - 1700 Take-Off KLFI, Spray Areas Designated by PMP
    - 2030 Land KLFI
  - d. **27 Aug (Wednesday):**
    - 1100 Daily meeting for PMP/MC in the hotel lobby
    - 1400 Show Time/Weather Decision
    - 1430 Load Dibrom
    - 1700 Depart KLFI, Spray Areas Designated by PMP
    - 2030 Land KLFI

**e. 28 Aug (Thursday):**

1100 Daily meeting for PMP/MC in the hotel lobby  
1400 Show Time/Weather Decision  
1430 Load Dibrom  
1700 Depart KLFI, Spray Areas Designated by PMP  
2030 Land KLFI

**f. 29 Aug (Friday):**

0900 Report  
1100: Depart KLFI  
1230: Land KYNG

**4. Spray Parameters:**

- a. Acreage: approximately 86,000 Acres
- b. Altitude: 150 Ft AGL
- c. Ground Speed: 200 Knots
- d. Pesticide: Dibrom® Concentrate
- e. Application Rate: 0.5 Ounce per Acre
- f. Flow Rate: 1.8 Gal per Minute at Craney Island; 3.6 Gallons per Minute for Langley AFB designated areas
- g. Swath Width: 1000' swaths at Craney Island; 2000' to 2500' swaths at Langley AFB
- h. System: SP2G – MASS ULV; Modules 1 and 2
- i. Nozzle Tips/Number/Orientation: 8008/8 oriented straight down for 2000' swaths; 8008/4 oriented straight down for 1000' swaths oriented straight down
- j. Aircraft Tail Number: 99106; Mission Identifier: QZNRKA
- k. Deploy/Re-Deploy Time: 3.2 hrs
- l. Spray Time: 3.50 hrs (or as called by PMP)

**5. Aircraft/Mission Commander: Lt Col (b) (6) (b) (6)**

**6. Support required at Langley AFB has been requested via FAX message.**

**7. If you have any questions concerning this mission please contact the Aerial Spray Office, DSN (b) (6)**

(b) (6) Lt Col, USAFR  
Mission Commander  
757 AS/DOS

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 24-29 AUGUST 2003

**Purpose/Objectives/Benefits:** control nuisance and vector mosquitoes in order to improve working conditions and lower the incidence of arthropod borne illness for members operating at Langley AFB and surrounding communities.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: LTC (b) (6) (b) (6)
- (2) Pilots: LTC (b) (6) (b) (6) Maj (b) (6) (b) (6)
- (3) Navigators: Maj (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: CMS (b) (6) , MSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: SMS (b) (6) , TSG (b) (6) , SSG (b) (6)  
TSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6) SSG (b) (6)
- (3) Avonics: MSG (b) (6)
- (4) Observer: Lt (b) (6)

##### c. Certified Pest Management Professionals: LTC (b) (6) (b) (6) Maj (b) (6) (b) (6) Capt (b) (6) (b) (6) , (b) (6)

Gov Vehicles: 2 ea 9 pax van, 1 staff, 1 pick-up truck

#### 2. SCHEDULE: (All time Local)

##### 24 AUG (Sunday):

**PPR # 0824CL01**

1500: Show at KYNG  
1700: Depart KYNG  
1830: Land KLF  
1845: Safety Briefing

##### 25 AUG (Monday):

0900: In-Briefing at CE Conference Room  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1645: Spray Sortie  
1944: Sunset

##### 26 AUG (Tuesday):

TBA: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1645: Spray Sortie (land by 1845)  
1900-2030 Airfield is closed  
1942: Sunset

##### 27 AUG (Wednesday):

TBA: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1645: Spray Sortie

1941: Sunset

**28 AUG (Thursday):**

TBA: Daily meeting for PMP/MC in the hotel lobby

1400: Show Time / Weather Decision

1430: Load Dibrom

1645: Spray Sortie

1940: Sunset

**29 AUG (Friday):**

0800: Report

TBA: Outbrief (b) (6) (b) (6)

1000: Depart KLFJ

1130: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Cellular Phones, Kestrel Weather Monitor, Compass, Pest Safety Binder, Signal Mirrors, UHF Radio, Satloc Ground Tracker and Laptop Computer
- b. **Navigator:** Maps/Map Bag, Validation Map, Laptop Computer
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Langley Tower:** DSN 574-5326
- b. **Langley Base Ops:** DSN 574-2504

**5. PARKING PLAN:** Langley Aero Club ramp or as directed.

**6. RADIO FREQUENCIES:**

- a. **Felker AAF Tower (Ft Eustis): 126.3, 248.2, 241.0**
  - (1) Ops phone 878-3588
  - (2) Tower phone 878-3530
  - (3) Flight Service 122.2
- b. **Newport News-Williamsburg Int:** (Operating Hours 1000Z-0200Z)
  - (1) Ground – **121.9 or 348.6** (phone 877-0221 ops)
  - (2) Tower – **124.9 or 280.1** (phone 877-2962)
  - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
  - (4) CTAF – **118.7**
- c. **Langley AFB:** Tower OIC MSG (b) (6) Lt (b) (6) 1st OSS SQ
  - (1) Tower - **125.0 or 253.5** (phone 4-5326)
  - (2) Ground - **121.7 or 275.8**
  - (3) Clearance – **118.85 or 271.3**
  - (4) Metro - **239.8**
- d. **Norfolk NAS (Chambers Fld):** Tower - **124.3, 126.375, 340.2, 318.7**
- e. **Spray Ground:** Primary **392.2; Secondary: 308.6**

**7. IN-BRIEFING:** Required; IAW the Schedule above.

**8. SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS ULV; Modules 1 and 2 (system #4)

- b. **Nozzle Tips/Orientation:** 8 8008's for 2000' swathes and 4 8008's for 1000' swathes oriented straight down.
- c. **Aircraft:** 99106

**9. SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 1.8 Gallons/Minute at Craney Island; 3.6 Gallons/Minute at Langley areas
- f. **Acreage:** Approximately 86,000 Acres
- g. **Swath Width:** 1,000 Feet at Craney Island; 2,000 Feet at Langley areas.

**10. PESTICIDE LOADING:**

- a. **How Much Pesticide:** 334 Gallons for 86,000 acres sprayed.
- b. **Where:** Aero Club Ramp
- c. **When:** 1430 hrs each day.
- d. **Furnished by Installation:**
  - (1) Pesticide
  - (2) Loading Equipment/Crew
  - (3) Hazardous Waste Disposal
  - (4) Two B-5 or B-1 Stands

**11. SPRAY MONITORING OR TESTING:**

The local mosquito control districts and Langley Pest Control will conduct mosquito surveillance using either trapping or biting count pre- and post-spray data to determine spray effectiveness. Oil sensitive cards will be used to confirm application within the spray blocks.

**12. CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**

**a. LANGLEY AFB VA:**

Wing Commander: Col (b) (6) DSN(b) (6)  
 Mission Support Group Commander: Col (b) (6) (b) (6) DSN (b) (6)  
 Civil Engineer: Lt Col (b) (6)  
 Deputy Chief/Civil Engineer: (b) (6)  
 Environmental Coordinator: (b) (6) (b) (6) DSN(b) (6) ; FAX 3503  
 Base Operations: DSN 574-2504  
 Langley Control Tower: Lt (b) (6) DSN (b) (6)  
 Weather: Langley AFB, DSN 574-5907  
 Ft Eustis: DSN 297-5300/3343  
 Command Post: DSN 574-5411  
 Pest Control Foreman: (b) (6) , DSN (b) (6) or Home (b) (6)  
 Pest Control/Environmental NCOIC: MSG (b) (6)  
 Public Affairs: Lt (b) (6) DSN (b) (6)  
 Fuels: DSN 574-4312/3623/4224  
 Motor Pool: 574-7505/5712 (3 vans and 1 staff vehicle supplied by (b) (6) )  
 ACC PMP: (b) (6) (b) (6) DSN (b) (6) cell phone(b) (6)

- b. **Billeting Office: COM: (757) 764-4667 EXT 2519 (ATTN: TSG (b) (6)**  
**DSN 574-4667, EXT 2519; FAX 574-3038**  
 - Group #299128, \$24 per night @ Langley Inns  
 - (JTR L/\$99 M/\$40 Max \$141)

- c. **FT EUSTIS VA: Environmental Coordinator:** (b) (6) DSN (b) (6) )
- d. **Hampton Mosquito Control:** (b) (6) , (b) (6) home  
Beeper (b) (6) (b) (6)
- e. **York County Control:** (b) (6) or (b) (6)
- f. **Poquoson:** (b) (6)
- g. **City of Portsmouth Biologist:** (b) (6)
- h. **Newport News Mosq. Control:** (b) (6)
- i. **Newport News/Williamsburg Int.:**  
 (1) Fixed Base Operator: Flight Int 877-6401  
 (2) Flight Service: 877-0209  
 (3) Tower: 877-2962  
 (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport
- j. **Norfolk NAS VA:** DSN 564-2442/7598 or COM (757)-444-2442/7598
- k. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
 Toll Free 1 - 800 - 278 - 7046, + Ext  
 (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243  
 (2) 910 AW Command Post: Ext 1315; FAX 1161  
 (3) 910 AW/PA: Lt (b) (6) (b) (6) ; FAX 1022  
 (4) 910 OG/CC: LtC (b) (6)  
 (5) 910 OS/OSA: Airfield Manager, (b) (6) (b) (6) (b) (6)  
 (6) 757 AS/DO: LtC (b) (6) (b) (6) Ext 1290  
 (7) 910 OSF Supervisor of Flight Desk (SOF): 1069; FAX 1371  
 (8) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) ; FAX 1657  
 (9) 757 AS/DOS: Aerial Spray Office, (b) (6) (b) (6) ; FAX 1616  
 (10) 910 LG/CC: Ext 1225  
 (11) 910 LG/LGM: CMS (b) (6) (b) (6) (b) (6)  
 (12) Maintenance Control: Ext 1327  
 (13) 910 LG/LGMS: Spray Maintenance, Ext 1132/1586  
 (14) 910 LG/LGL: CMS (b) (6) (b) (6)  
 (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342  
 (16) Cellular Spray Phones:  
 - Mission Commander: (b) (6)  
 - Entomologist: (b) (6)  
 - Spray Maintenance: (b) (6)

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT – LANGLEY AFB AUG 03'

### 1. MISSION BASICS:

- a. Installation Sprayed: Langley AFB
- b. Mission Duration: 24-29 August 2003
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date(s) and time(s) (Local): 26 Aug (1635-2056); 27 Aug (1645-1931); 28 Aug (1550-1711)
- e. Acres Treated: 26 Aug 76,800; 27 Aug 32,256; 28 Aug 8,258 (total = 117,314 acres)
- f. Project Coordinator/s (Name/Title, Phone #): (b) (6)
- g. Date Spray Map Last Approved: 25 Aug 2003
- h. Date of Waste Generation Letter: 4 April 1996
- i. Installation In-Briefing: 1CE Conference Room, Langley AFB; LTC (b) (6) & Maj (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: LTC (b) (6) (b) (6)
- b. Certified PMP/s (Category 11): Capt (b) (6) (b) (6) Maj (b) (6) (b) (6) LTC (b) (6) (b) (6) (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander/Pilot: LTC (b) (6) (b) (6)
  - (2) Co-Pilot(s): Maj (b) (6) (b) (6)
  - (3) Navigator: Maj (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
  - (5) Spray Operators: CMS (b) (6), MSG (b) (6)
- d. Safety Briefer: Capt (b) (6) (b) (6)
- e. Spray Maintenance/Pesticide Loaders: MSG (b) (6), TSG (b) (6), TSG (b) (6)  
TSG (b) (6)
- f. Crew Chief(s): MSG (b) (6), SSG (b) (6)
- g. Avonics: MSG (b) (6)
- h. Flying Data:
  - (1) Spray Sorties/Hours: 3 Sorties; 8.6 Hours
  - (2) Ferry Sorties/Hours: 2 Ferries; 3.0 Hours

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 300 (26 Aug); 210 (27 Aug); downloaded 44 (28 Aug)
- e. Gallons Pesticide Applied: 300 (26 Aug); 126 (27 Aug); 40 (28 Aug)
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 15 gallons HAN (26-28 Aug)
- h. Other Additives Used: n/a
- i. Application Rate: 0.62 oz/acre at Craney Island & 0.5 oz/acre elsewhere



**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): C-130 (99108)
- b. Spray System (Modules Used) and System ID #: System SP2G - MASS ULV; Modules 1 and 2
- c. Spray System Configuration: ULV Wing Booms; Modules 1 and 2/MASS ULV
- d. Nozzle Type/Size: 8008 TeeJet<sup>®</sup> Flat Fan
- e. Nozzle Orientation & Number Used: 8 8008's; oriented straight down
- f. Pressure: 29-37 psi
- g. Flow Rate: 3.6 gallons/minute on the peninsula; 3.7 gallons/minute at Craney Island

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1500 ft at Craney Island & 2000 ft on Langley Peninsula
- b. Spray Off Set: 2000-4000 depending on wind speed
- c. Spray Release Altitude: 150 feet AGL
- d. Ground Speed: 200 knots

**6. WEATHER OBSERVATIONS:**

- a. Winds (Speed/Direction): 6-8mph/230 (Aug 26); 5-8 mph/065 (Aug 27); 7.0 mph/265
- b. Temperature (Degrees Fahrenheit): 92°F (Aug 26-27); 84°F Aug 28
- c. Relative Humidity: 62% Aug 26; 40 % Aug 27; 70 %Aug 28
- d. Cloud Cover: Haze/Cloudy Aug 26; partly cloudy Aug 27; partly cloudy Aug 28
- e. Source: Ground observations/aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Normal projected off-sets based on MASS system characterization
  - (2) Results: DGPS shows spray block completed.
- b. Effectiveness:
  - (1) Technique/s Used: carbon dioxide-baited traps were used to monitor mosquito densities pre- and post-treatment
  - (2) Results: City of Hampton: 47-99% decrease in mosquito numbers; York County approximately 90 % reduction in biting activity; Ft. Eustis reported 94% reduction in mosquitoes; Langley AFB reported mixed results depending on species but at least a 90% overall.

**8. REMARKS:**

First spray of the season following one of the peninsula's wettest summers in years and the return of the 757 AS from a deployment. Several pest mosquito species were present (i.e., saltmarsh/container breeding). A new spray block including the DoD properties of the Navel Weapons Station and Cheatham Annex was added to this mission. The new area is approximately 14,000 acres. The area was surveyed on the ground and by air prior to the application. A total of 117,314 acres were sprayed during the week. The greatest control was seen in the saltmarsh species but reductions were seen for all mosquito species. Positive community feedback was near an all-time high after this mission. The results are tallied above but all communities reported at least 90% reductions in their mosquitoes.

**(b) (6)**

**(b) (6)                      (b) (6)                      ©Capt, USAFR  
CERTIFIED PEST MANAGEMENT PROFESSIONAL**



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



3 February 2004

MEMORANDUM FOR 757 AS/DO

FROM: 757 AS/DOS

SUBJECT: Swath Characterization Test and Training Mission

**1. Purpose:** The purpose of this series of tests was to determine swath characteristics (i.e. Volume Mean Diameter of dispensed droplets and drift distance) of a mimic insecticide (soybean oil) dispersed at altitudes of 150' and 300' AGL by the C-130 aerial spray platform. This test consisted of swath characterization using a C-130 equipped with a Modular Aerial Spray System (MASS) with fuselage booms equipped with 8005 TeeJet nozzles.

**2. Participants:** A list of test participants are included in Attachment 1.

**3. Spray Configuration:**

Mass-SP2G

Aircraft Number: 99106

Mission Identifier: QZNRKA347

**4. Spray Parameters:**

Booms—Fuselage only.

Nozzles—8005 TeeJet.

Number of Nozzles—4 per side, oriented straight down.

Airspeed—200 knots ground speed.

Altitude—150' and 300' AGL.

Wind—90 degree crosswind component.

**5. Itinerary:**

24 January: Personnel Arrive at Avon Park. Total ferry time was 4.8 hours.

25 January: One testing sortie was flown with 2 individual testing passes completed. Ten spinning impingers ("spinners") were placed on Frostproof road, running southeast to northwest. Spinners were located 1500' feet apart and were equipped with Teflon-coated microscope slides to document droplet size and distance from point of release. Spinners were also equipped with oil-sensitive cards located on the spinner mounting poles. The aircraft flew a spray pass on the southeast end of Frostproof road, perpendicular to the line of spinners. Spray on time for the oil was 40 seconds, half of which was dispensed prior to the aircrafts' point of intersection with Oliver road. Aircraft offset was 1500' to the southeast of the 1<sup>st</sup> spinner unit. Spray altitude was 300' AGL. Ground wind conditions were light and variable. Flow rates for both passes ranged from 4.4 to 4.6 gph at 25 psi. Total flight time was 0.5 hours.

26 January: One testing sortie was flown with 2 individual testing passes completed. Spinners were placed in north-south orientation on Oliver road. Spinners were located approximately 1500' apart. The aircraft flew a spray pass on the south end of Oliver Road, perpendicular to the line of spinners. Spray-on time for the oil was 40 seconds, half of which was dispensed prior to the aircraft's point of intersection with the spinner line as in the previous test. Aircraft offset was 1500' south of the 1<sup>st</sup> spinner location. Aircraft altitude was 150' AGL. Ground wind conditions were 7 to 8 kts from 190 to 200 degrees. Flow rates for both passes ranged from 4.4 to 4.6 gph at 25 psi. Total flight time was 0.6 hours.

27 January: No sorties were flown due to inclement weather.

28 January: No sorties were flown due to mechanical difficulties.

29 January: Mission complete. Personnel return to Youngstown ARS. Total ferry time 3.3 hours.

**6. Results:** Volume Mean Diameter (VMD) of the collected spray droplets from the 150' spray altitude ranged from 12.5 to 5.0 microns after a spread factor had been calculated with the raw data (Table 1). Average diameter of the droplets is also shown in Figure 1. VMD was largest at the first sampling station (1500 feet from flight path), with a value of 12.5 microns. At 3000', VMD decreased to 10 microns, followed by an additional decrease to 7.5 microns at 4500 feet from the flight path. At the remainder of the spinner locations droplet size were under 5 microns, with an exception at 7500 feet, where VMD was approximately 9.4. The range of the droplet sizes collected was greatest near the flight path of the aircraft, and dropped substantially as downwind distance from the flight path increased. No data was collected for the 300' spray test. Very few drops were observed on the Teflon slides following this test, and presumably most of the spray material was carried downwind. Shifting winds may have been to blame for lack of usable data.

**7. Conclusions:** Swath characteristics generated from the 150' spray pass appear to be quite typical of many published characterizations including our own C-130 ULV wing-boom configuration, with the majority of large droplets collected from spinners nearest the flight path. The 150' test was an attempt to replicate a previous test conducted under similar conditions with fuselage booms, and the data are in close agreement. VMD of droplets at 3000' and beyond indicate a droplet size suitable for effective control of biting flies when conducting space sprays, however, it should be noted that VMD is a descriptive statistic that which only indicates the median droplet diameter, and does not describe the distribution of droplet sizes at a particular collection point. In order to elucidate the effective swath width, in future tests using fuselage spray booms, insect bioassays at each collection point will also be necessary, using material with an active ingredient. Despite this current limitation, this replicate 150' test confirms that using fuselage booms to apply active ingredient in a space spray from a C-130 may be effective. Lack of data from the 300' test indicate the difficulty in characterizing swaths when material is applied at higher altitudes. Environmental conditions were probably to

blame although this cannot be proven. We plan to test more sprays at 300' and higher altitudes in the future to determine if these types of application are effective.

(b) (6) PhD, GS11  
Research Entomologist

Attachments:

1. List of Participants
2. Figure 1, Data Summary

## 910 AW PARTICIPANTS

a. **Aircrew:**

- (1) Aircraft Commander: Maj (b) (6) (b) (6)
- (2) Pilots: Maj (b) (6) (b) (6) Maj (b) (6) (b) (6)
- (3) Navigators: Lt Col (b) (6) (b) (6)
- (4) Flight Engineers: MSG (b) (6) MSG (b) (6)
- (5) Spray Operators: MSG (b) (6) , TSG (b) (6)

b. **Maintenance:**

- (1) Spray Maintenance: TSG (b) (6) , SSG (b) (6)
- (2) Crew Chiefs: TSG (b) (6) , SSG (b) (6)

c. **Entomologists:** Capt (b) (6) Dr. (b) (6) Lt Col (b) (6)

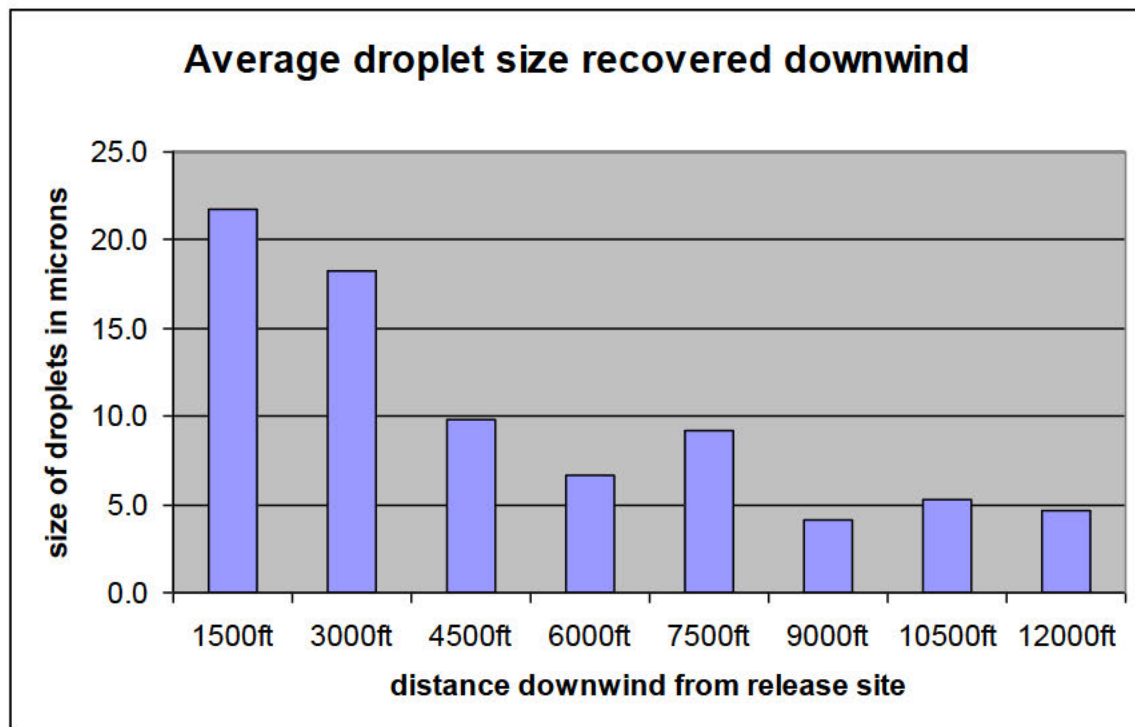


## Data Summary

Table 1. Summary statistics of droplet sizes collected from downwind spinners (150' test).

	1500 spinner 1	3000 spinner 2	4500 spinner 3	6000 spinner 4	7500 spinner 5	9000 spinner 6	10500 spinner 7	12000 spinner 8
Mean	21.7	18.3	9.8	6.6	9.2	4.1	5.2	4.7
Median	12.5	10.0	7.5	5.0	9.4	2.5	5.0	5.0
Standard Deviation	19.9	16.2	7.2	9.3	3.9	1.9	2.0	2.0
Sample Variance	397.6	263.4	52.4	85.8	15.3	3.6	3.8	4.0
Kurtosis	3.1	3.0	30.2	60.7	17.4	-0.2	1.7	-0.2
Skewness	1.9	1.8	4.7	7.3	3.3	0.9	1.1	0.6
Range	87.5	70.0	60.1	85.0	28.1	7.5	10.0	7.5
Minimum	5.0	5.0	2.5	2.5	6.3	2.5	2.5	2.5
Maximum	92.5	75.0	62.6	87.5	34.4	10.0	12.5	10.0
Count	50.0	50.0	100.0	100.0	100.0	100.0	100.0	100.0

Figure 1. Average droplet size (microns) collected from downwind spinners (150' test)



# AERIAL SPRAY OPERATIONAL SCHEDULE

## AVON PARK, FL

### 24-30 Jan 04

**PURPOSE/OBJECTIVE/BENEFIT:** Determine effective swath widths for various altitudes using fuselage ULV configuration

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Aircraft Commander: Maj (b) (6) (b) (6)
- (2) Pilots: Maj (b) (6) (b) (6) Maj (b) (6) (b) (6)
- (3) Navigators: \* Lt Col (b) (6) (b) (6)
- (4) Flight Engineers: \* MSG (b) (6) , MSG (b) (6)
- (5) Spray Operators: MSG (b) (6) TSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: \*\*TSG (b) (6) SSG (b) (6)
- (2) Crew Chiefs: \*\*TSG (b) (6) , SSG (b) (6)

##### c. Entomologists: \*\*\*\*Capt (b) (6) Dr. (b) (6) Lt Col (b) (6)

**Enterprise (Sebring) (b) (6) (863) 385-6969; FAX (863) 385-3416, Conformation No. 722892**  
**Vehicles: 2 \*Full size/\$45; 2 \*\*Mid Size; \*\*\* 0 Vans/\$75; \*\*\*\*\* 1 SUV/\$**

#### 2. SCHEDULE: (All time Local)

24 JAN (Saturday): PPR # - Not Req

0730: Show Time KYNG

0930: Depart KYNG

1230: Land KAGR

25 JAN (Sunday): Range Times 1000-1200, call AGR Tower & Fire Dept

0800: Show Time

0900: Fuel

1000: Depart

1200: Land

26 JAN (Monday): Range Times 1000-1200, call AGR Tower & Fire Dept

0800: Show Time

1000: Depart

1200: Land

27 JAN (Tuesday): Range Times 1000-1200, call AGR Tower & Fire Dept

0800: Show Time

1000: Depart

1200: Land

28 JAN (Wednesday): Range Times 1000-1200

0800: Show Time

1000: Depart

1200: Land

29 JAN (Thursday): Range Times 1000-1200

0800: Show Time

1000: Depart

1200: Land



30 JAN (Friday):  
0900: Depart KAGR  
1200: Land KYNG

### **3. ITEMS TO TAKE:**

- a. **Navigator:** Maps with “No-Spray” Areas Marked
- b. **Certified Pest Management Professionals:**
  - (1) Water-Sensitive Cards
  - (2) 1 Signal Mirror
  - (3) 1 Spot Light
  - (4) 1 Engineer Wheel
  - (5) Ground Maps
  - (6) Laptop Computer
  - (7) Digital Camera
  - (8) Oil-sensitive cards
  - (9) Spinners
  - (10) Wooden dowels

### **4. AIR TO GROUND FREQUENCIES:**

- a. Spray: Primary 392.2; Secondary 340.8
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. Avon Park: TWR-292.2 (p), 126.15, 276.6 (s)
- e. MacDill: TWR-123.7; GND-121.65; ATIS-133.825; CMD POST-311.0; PTD-372.2

### **5. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 99106
- c. Mission Identifier: QZNRKA347

### **6. MISSION PROTOCOLS:**

#### **Avon Park Spray Testing Itinerary 24-30 Jan 04**

- 1. Test 1: Determination of effective swath width with fuselage ULV configuration @ **300’** AGL
  - a. Spray soybean oil from fuselage booms using 8 (4 per side) 8005 nozzles at 200 knots
    - We are looking for a crosswind spray (see below)
  - b. Test 2: Other altitudes will be tested dependent on results from first altitude test. Protocols will be discussed at morning weather decision
    - Crosswind pattern
- 3. Spray Parameters (use for all tests):
  - a. Booms -- Fuselage only.
  - b. Nozzles - 8005 TeeJet
  - c. Number of Nozzles – 8 nozzles 4 per side
  - d. Airspeed -- 200 knots ground speed.
  - e. Altitude -- 300’ above ground level (other altitudes to be determined)
  - f. Wind – Crosswind component
  - g. Flow Rate – 4.5 gallons/minute

#### 4. Mission Protocols:

- a. Purpose: Swath Characterization as delivered for a simulated mosquito adulticide spray using the fuselage ULV configuration. Glass slides will be used to collect droplets. Ten sampling stations will be setup along a 3-mile stretch of road in the Avon Park Bombing Range. Depending on wind direction, the likely locations will be Smith Road (east-west) or Oliver Road (north-south). Other options are possible but will be determined on-site. Additionally, we need the average winds to be below 10 mph.
- b. Aircrew: We need the system to have stabilized prior to reaching the sampling points. Twenty seconds prior to the sampling point and 20 seconds after should be sufficient (40 seconds total) but this value could change as we increase the altitude. Spray Operators: Please record the spray-on time and pressure at 5 second intervals. Navigator: Please record winds at altitude every ten seconds. If conditions are stable (little variation in wind direction and speed) two spray-on passes will be used for each 300' test.
- c. Microscope slides will be retrieved 20 minutes after the plane has passed. Number and size of the droplets will be determined.
- d. If the of 300' altitude is completed, other altitudes will be examined.

#### 7. CONTACTS:

- a. Quarters: (JTR Lodging/\$64, Meals/\$32, Max/\$99)  
-- **Sebring/Avon Park: Quality Inn** (863) 385-4500 (\$64 w/Tax Exempt Form)  
(b) (6), 863) 385-4500 FAX (863) 385-8436  
--MacDill Lodging: DSN: 968-4259, FAX 2660 (Gp 968-2617/2594)
- b. Transportation:  
**Sebring: Enterprise (863) 385-6969; Fax (863) 385-3416**  
**Avon Park Enterprise (863) 452-5483; Fax (863) 452-5947**  
1 SUV \$; 1 Vans \$75; 2 Full size car \$45; 1 Mid Size \$41 + \$2 state surcharge; Unlimited mileage  
(All vehicles will be at Avon Park Flight Ramp)
- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350  
(1) Weather: MacDill AFB Forecaster (DSN 968-2854)  
(2) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)  
Sgt Lowe or Sgt (b) (6) FAX DSN 968-4098  
(3) MacDill AFB Ops Gp CC: COL (b) (6) 968-3014
- d. **Patrick AFB:** Rescue Squadron: DSN prefix 854  
LTC (b) (6) – CC – (b) (6)  
LTC (b) (6) – DO – (b) (6)  
LTC (b) (6) (b) (6) – Flight Ops – (b) (6)  
CPT (b) (6) – Tactics – (b) (6)  
Maintenance Ops Center - MOC –Ext 2261/2262/2264 (b) (6)
- e. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX  
DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN  
Avon Control Tower & Range Control Scheduling DSN 968-7176  
Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number  
(1) Range Operations Manager: (b) (6), Bldg 236, (b) (6)  
(2) Avon Range Control Tower: ext 176  
(3) Flight Chief of Civ Engineer: (b) (6), Bldg 29, (b) (6)  
(4) Chief, Environmental Flight: (b) (6), Bldg 29, (b) (6)

- (5) Fuels: ext 118 or Cel (b) (6)
- (6) Range Support Manager: Mr (b) (6) Bldg 29, (b) (6)
- (7) Range Control/Schedule: (b) (6) (b) (6) Bldg 41, (b) (6)  
**See Attached Avon Park Org directory for additional listings**

- (8) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)  
Range VHF: 126.15

f. **Sebring AP:**

Mgr: Mr (b) (6) (b) (6) (fuel needs)  
BEEPER: 1 (86(b) (6) NTER YOUR PHONE# ENTER #  
Asst Mgr: (b) (6) , ((b) (6)

g. **Other Quarters:**

Sebring FL: Chateau Elan Sebring Airport Inn (863) 655-6252  
Inn On The Lakes (863) 471-9400  
Avon Park: (JTR Lodging \$64/Meals \$28)  
Chateau Elan Airport Inn \$64, (863) 655-6252  
**Quality Inn (863) 385-4500, FAX: (863) 385-0250**  
Jacaronda (863) 453-2211; 19 East Main St, Avon Park, FL \$ 27.29  
Oak Tree Inn (863) 453-3165  
Days Inn (863) 382-1148, 800 329-7466

h. **Youngstown ARS: DSN: 346-XXXX; (330) 609-XXXX; 1 - 800 - 278 - 7046, + Ext**

- (1) 910 AW/CC: Ext 1243
- (2) 910 AW Command Post: Ext 1315, FAX 1161
- (3) 910 AW/PA: Ext 1236, FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 OG/OSA: Airfield Manager: (b) (6) (b) (6) ; (b) (6)
- (6) 757 AS/DO: LTC (b) (6) (b) (6)
- (7) 757 AS/DOO: Ops Admin, SMS (b) (6) (b) (6) , FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, (b) (6) (b) (6) FAX 1616
- (9) 910 LG/CC: LTC (b) (6)
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) 910 LG/LGMS: Spray Maintenance: Ext 1132 or 1586
- (13) 910 LG/LGL: CMS (b) (6) (b) (6)
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Cellular Spray Phones:  
Entomologist (b) (6)  
(b) (6) cell phone) (b) (6)  
Mission Cmdr: (b) (6)  
Spray MX: (b) (6)



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



14 January 2004

MEMORANDUM FOR HQ AFRC/DOOM (FAX: 497-0198)

FROM: 757 AS/DOS ((b) (6)) FAX 346-1616)

SUBJECT: Concept of Operations for Aerial Spray Test and Training at Avon Park AFR FL

1. Purpose/Objectives/Benefits: Determine effective swath widths for various altitudes of fuselage spray and to provide continuous training for aerial spray air and ground crews.
2. Capability: Spray Aircraft Available 24-30 January 2004.
3. Concept of Operations:
  - a. **24 Jan (Saturday):**
    - 0730 Show at KYNG
    - 1930 Take-Off KYNG
    - 1200 Land KAGR
    - 1215 Safety Brief
  - b. **25 Jan (Sunday):** 1000-1200 Range Times, call AGR Tower/Fire Department
    - 0800 Show Time
    - 1000 Depart
    - 1000-1200 Conduct test over designated area of the Avon Park Bombing Range
    - 1200 Land
  - c. **26 Jan (Monday):** 1000-1200 Range Times, call AGR Tower/Fire Department
    - 0800 Show Time
    - 1000 Depart
    - 1000-1200 Conduct test over designated area of the Avon Park Bombing Range
    - 1200 Land
  - d. **27 Jan (Tuesday):** 1000-1200 Range Times, call AGR Tower/Fire Department
    - 0800 Show Time
    - 1000 Depart
    - 1000-1200 Conduct test over designated area of the Avon Park Bombing Range
    - 1200 Land
  - e. **28 Jan (Wednesday):** 1000-1200 Range Times, call AGR Tower/Fire Department
    - 0800 Show Time
    - 1000 Depart
    - 1000-1200 Conduct test over designated area of the Avon Park Bombing Range
    - 1200 Land
  - f. **29 Jan (Thursday):** 1000-1200 Range Times, call AGR Tower/Fire

0800 Show Time  
1000 Depart  
1000-1200 Conduct test over designated area of the Avon Park Bombing Range  
1200 Land

**g. 30 Jan (Friday):**

0700: Report  
0900: Depart KAGR  
1200: Land KYNG

4. Spray Parameters:
  - a. Booms -- Fuselage only.
  - b. Nozzles -- 8005 TeeJet
  - c. Number of Nozzles -- 4 on left side and 5 on right side (8 total) oriented straight down
  - d. Airspeed -- 200 knots ground speed.
  - e. Altitude -- 150'/500' above ground level.
  - f. Wind --Crosswind component.
  - g. Flow Rate -- 4.5 gallons/minute
5. Aircraft Commander: Major (b) (6)
6. Support required at Avon Park Bombing Range AFB has been approved via telephone conversations with MacDill AFB Ops and the Range Manager at Avon Park AFRB.
7. If you have any questions concerning this mission please contact DSN (b) (6)

(b) (6) (b) (6) Major, USAFR  
Aerial Spray Scheduler/Coordinator  
757 AS/DOS ((b) (6) )

# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 25-28 August 2008

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks and Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) MC: LTC (b) (6)
- 2) Pilots: Col (b) (6) Capt (b) (6)
- 3) Navigators: LTC (b) (6)
- 4) Flight Engineers: SSgt (b) (6)
- 5) Spray Operators: MSG (b) (6) , TSgt (b) (6)

##### b. Maintenance:

- 1) Spray Maintenance: TSgt (b) (6) TSgt (b) (6) MSgt (b) (6) TSgt (b) (6)
- 2) Crew Chief(s): TSgt (b) (6) SRA (b) (6)
- 3) Avionics: SRA (b) (6)

##### c. Entomologists/Ground Support: Maj (b) (6)

#### 2. SCHEDULE: (All Local Times)

##### 25 AUG (Monday):

1200: Showtime  
1400: Depart KYNG  
1600: Land KRDR/Safety Briefing

##### 26 AUG (Tuesday):

1400: Spray In Brief (CPMP, MC, AC)  
1600: Show time/WX decision  
1630: Load Chemical  
1830: Takeoff KRDR (Adulticide Spray Sortie)  
Sunset: 2020

##### 27 AUG (Wednesday):

1600: Show time/WX decision  
1615 Load Chemical  
1815: Takeoff KRDR (Adulticide Spray Sortie)  
Sunset: 2018

##### 28 AUG (Thursday):

1130: Show time  
1330: Takeoff KRDR  
1730: Land KYNG

#### 3. ITEMS TO TAKE

a. **Mission Commander:** Cellular Phone, Mission Folder

b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder,  
1 VHF Radio, Water Sensitive Cards, Card Holders with  
Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors,  
Project Notebook, Entomologist's Tool Kit

c. **Navigator:** Maps/Map Bag, Validation Map

d. **Spray Operator:** Safety Gear, Calibration Tables

e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

#### 4. PPR: 08-25-01/ES

5. **RADIO FREQUENCIES:** Air To Ground Primary VHF 123.45 KRDR Tower 124.9 V; Grand Forks International 118.4 V

#### 6. CONFIGURATION: SP2G



- a. System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. Nozzle Tips/Orientation:** ULV (adulticide): 8005 Tee Jet oriented straight down
- c. Number:** ULV: 18 8005s total (9 each side)
- e. Aircraft:** 90-9108
- f. Mission Identifier:** QZNRKA173238

**7. SPRAY PARAMETERS:**

**a. Adulticide**

- (1) **Area to be treated:** 11518 acres (Grand Forks AFB), 18346 (Grand Forks) and 877 (Grand Forks Intl)
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 2000 feet
- (4) **Flow Rate.** 7.26 gallons/minute ULV
- (5) **Application Rate.** 1.0 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots
- (7) **Flush:** With water, triple rinse, then air purge

**8. SPRAY MIXING AND LOADING:** The amount of Trumpet to load will be determined on site

**9. TRANSPORTATION:** Transportation provided by base (DSN362-3976): One 15 pax van (OPS), three 6 pax trucks (MC, OPS, MX), one 1.5 ton truck (spray MX).

**10. LODGING:** Onbase, 15 rooms reserved. DSN 362-7200 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844

**11. CONTACTS:**

**a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**

- (1) **Base Operations:** Airfield Manager DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx20
- (2) **Pest Management:** TSgt (b) (6) or Ssgt (b) (6) DSN (b) (6) , FAX 3432)
- (3) **Base Civil Engineer:** Lt Col (b) (6)
- (4) **Environmental Officer:** (b) (6) , DSN (b) (6) , FAX 6155
- (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
- (6) **Weather:** DSN 362-4396
- (6) **Billeting:** DSN 362-3070/6189/7200 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844

**b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Col (b) (6) (b) (6) (b) (6)
- (5) 910 Base Ops: Airfield Manager: Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) Ext 1239; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, CAPT (b) (6) (b) (6) (b) (6) FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: SMG (b) (6)(b) (6) Cell: (b) (6)
- (13) 910 LG/LGL: Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:  
- Entomologist: (b) (6)  
- Mission Commander: (b) (6)  
- Spray Maintenance: (b) (6)





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



11 Aug 2008

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Grand Forks AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks and Grand Forks AFB ND.

**2. Capability:** Spray Aircraft available 25-29 August 2008

**3. Concept of Operations:**

**25 AUG (Monday):**

1200: Showtime  
1400: Depart KYNG  
1600: Land KRDR/Safety Briefing

**26 AUG (Tuesday):**

1400: Spray In Brief (CPMP, MC, AC).  
1600: Show time/WX decision  
1630: Load Chemical  
1830: Takeoff KRDR (Adulticide Spray Sortie)  
Sunset: 2020

**27 AUG (Wednesday):**

1600: Show time/WX decision  
1630 Load Chemical  
1830: Takeoff KRDR (Adulticide Spray Sortie)  
Sunset: 2018

**28 AUG (Thursday): WX Day**

1600: Show time/WX decision  
1630 Load Chemical  
1830: Takeoff KRDR (Adulticide Spray Sortie)  
Sunset: 2016

**29 AUG (Friday):**

1130: Show time  
1330: Takeoff KRDR  
1730: Land KYNG

**4. Spray Parameters:**

**a. Adulticide**

- (1) **Area to be treated:** 18,400 acres (Grand Forks) and 11,488 acres (Grand Forks AFB)
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 2000 feet
- (4) **Flow Rate.** 7.26 gallons/minute ULV
- (5) **Application Rate.** 1.0 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots
- (7) **Flush:** With water, triple rinse, then air purge

**5. Aircraft Commander:** Capt (b) (6) (b) (6)

**6.** Support at Grand Forks AFB ND has been coordinated with the organization's Environmental/Spray Coordinator.

**7.** HQ AFRC/DOOM approval via email.

// Signed //

(b) (6) (b) (6) CAPT, USAFR  
757 Aerial Spray

# 910 AW AERIAL SPRAY UNIT POST-MISSION REPORT

## GRAND FORKS AFB – ADULT MOSQUITO CONTROL 28-31 July, 2008

### 1. MISSION BASICS:

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 25-28 August 2008
- c. Purpose of Application: Control adult nuisance and vector mosquitoes
- d. Application Date: 27 August 2008
- e. Time/s of Application (Local): 1940-0270 hrs
- f. Acres Treated: 11520
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6) , DSN (b) (6) ; TSG (b) (6) NCOIC Pest Management Shop, DSN (b) (6)
- h. Date Spray Map Last Approved: 26 August 2008
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): 26 August 2008, CE Conference Room, COL (b) (6) LTC (b) (6) LTC (b) (6) CAPT (b) (6) MAJ (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: LTC (b) (6)
- b. Certified PMP/s (Category 11): MAJ (b) (6)
- c. Aircrew:
  - 1) Pilots: COL (b) (6) CAPT (b) (6)
  - 2) Navigators: LtCol (b) (6)
  - 3) Flight Engineers: SSGT (b) (6)
  - 4) Spray Operators: MSG (b) (6) TSGT (b) (6)
- d. Safety Briefer: MAJ (b) (6)
- e. Spray Maintenance: TSGT (b) (6) MSGT (b) (6) MSGT (b) (6) TSGT (b) (6)
- f. Spray Ground Monitors: LTC (b) (6)
- g. Crew Chief: TSgt (b) (6) TSGT (b) (6) SRA (b) (6)
- h. Avionics: SSGT (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 1/1.3
  - (2) Ferry Sorties/Hours: 2/5.9

### 3. PESTICIDES:

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 90 gal Trumpet® (27 August)
- d. Gallons Pesticide Applied: 90 gal Trumpet® (27 August)
- e. Gallons and Name of Flush Used: 50 gal/water
- f. Other Additives Used: none
- g. Application Rate: 1.0 oz/acre Trumpet®

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99108
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 18 straight down
- f. Pressure (PSI): 36
- g. Flow Rate: 7.26 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off Set: 1000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 250° @ 7 knots (ground observation)
- b. Temperature (Degrees Fahrenheit): 62 °F
- c. Relative Humidity: 75%
- d. Cloud Cover: 100% Overcast
- e. Source: Ground observations and National Weather Service

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. The 319 MDG/ADS conducts adult mosquito trapping to monitor mosquito densities on base and reported an average of 80 mosquitoes/trap on 26 August.
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito traps
  - (2) Results: Trap data pending from 319 MDG/ADS.

**8. REMARKS:** North and South Dakota are leading the United States in West Nile virus cases thus far in 2008. Mosquito counts were relatively low prior to this spray. However, the threat of West Nile Virus prompted public health to make the decision to spray the base with Trumpet EC. Application was postponed from the 26<sup>th</sup> to the 27<sup>th</sup> because of unacceptable wind speeds. The application was made during the last 1.5 hrs of daylight to maximize the correlation between the spray period and mosquito activity. Meteorological conditions were good during the AFB application, with a moderate (6 knot), unidirectional wind assuring good coverage. Preliminary post-spray observations indicate excellent control of mosquitos. Pending trap count data will undoubtedly confirm this. The City of Grand Forks declined to spray aerially as they continue with an effective ground-based adulticiding program. Many thanks as usual to the 319 CE Environmental and Pest Management sections.

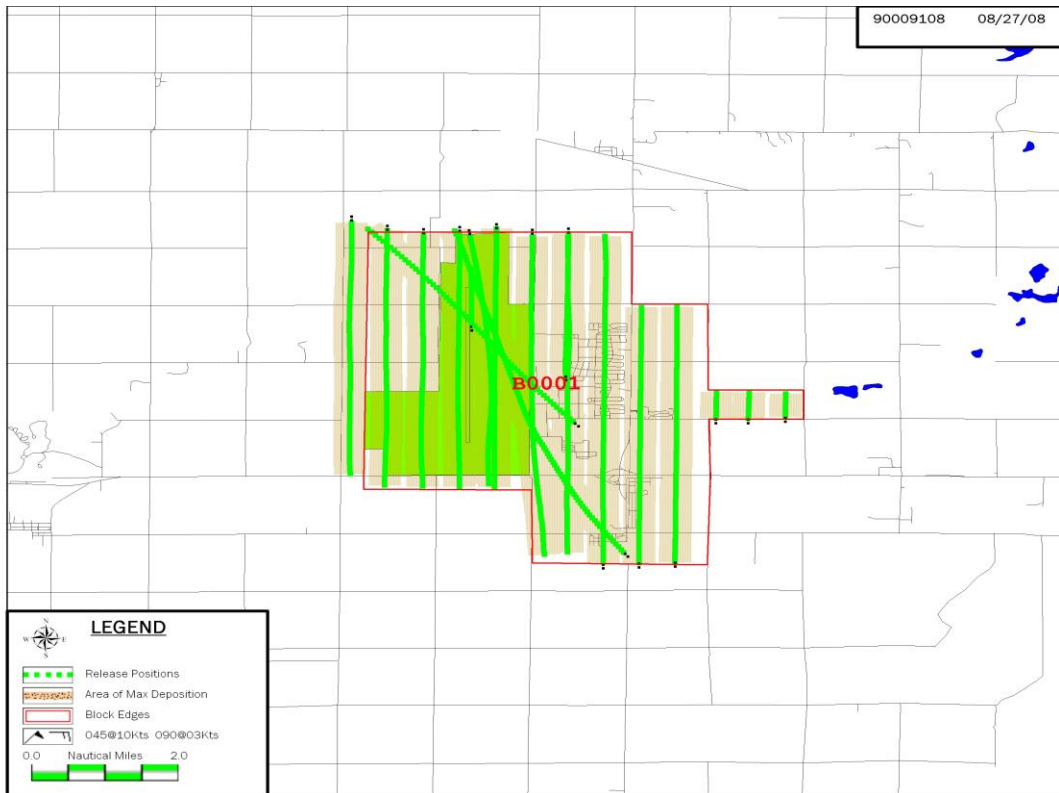
//signed//

(b) (6)

Maj, USAFR

DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

**Attachment 1. Image shows Grand Forks AFB spray block during the application on 26 August 2008. A 1000' westerly offset was used to compensate for winds. Diagonal application of spray within the spray block indicates flush activities.**





DEPARTMENT OF THE AIR FORCE

757 AIRLIFT SQUADRON

3976 King Graves Rd Unit 26

Vienna OH 44473-5926

13 Jul 05

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Parris Island MCRD SC for Control of Sand fly and Mosquitoes

1. Objective/Purpose/Benefits of the Spray Mission. Spray Parris Island MCRD SC for control of biting midges and mosquitoes. Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCDR SC at the request of the Parris Island MCRD/MCAS Environmental Coordinator.

2. Capability: Spray Aircraft 89-9106 available on 25-28 Jul 05

3. Concept of Operations:

**25 Jul (Monday):**

1200: Show Time  
1400: Take off KYNG  
1600: Land KNBC  
1615: Safety Briefing

**26 Jul (Tuesday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

1530: Show Time  
1600: Weather decision /Load Chemical  
1800: Take off KNBC  
2025: Sunset

**27 Jul (Wednesday):** Weather Backup/Training

1530: Show Time  
1600: Weather decision /Load Chemical  
1800: Take off KNBC  
2024: Sunset

**28 Jul (Thursday):**

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

4. Spray Parameters:

- a. Acreage: 7,500 Acres (Only areas determined by PMP)
- b. Altitude: 150 Ft AGL
- c. Pesticide: Dibrom® Concentrate
- d. Deploy: 2.0 Hrs
- e. Re-Deploy: 2.0 Hrs
- f. Spray Time: 16 Minutes per Sortie (or as called by PMP)

5. Aircraft Commander: Capt (b) (6) (b) (6)

6. Mission Commander: Maj (b) (6) (b) (6)

7. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator Mr. (b) (6) DSN (b) (6) .

// SIGNED //

(b) (6) (b) (6) Major, USAFR  
Chief of Aerial Spray



# AERIAL SPRAY OPERATIONAL SCHEDULE

## PARRIS ISLAND MCRD, SC

### 25-28 Jul 2005

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCRD, SC.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: MAJ (b) (6) (b) (6)
- (2) Pilots: MAJ (b) (6) , Maj (b) (6) (b) (6)
- (3) Navigators: LTC (b) (6) , MAJ (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: MSG (b) (6) , MSG (b) (6) SSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: MSG (b) (6) , TSG (b) (6) , MSG (b) (6) , TSG (b) (6)
- (2) Crew Chiefs: TSG (b) (6) , SRA (b) (6)
- (3) Avionics: MSG (b) (6)
- (4) MX Officer: 2LT (b) (6)

##### c. Pest Management Professionals/Entomologist: CPT (b) (6)

##### d. Wing Safety Observer: LTC (b) (6)

Gov Vehicles provided by Parris Island MCRD: 2 Crew Vans & 1 Staff Car keys and vehicles at Base Ops.

#### 2. PPR REQUIREMENTS: 20601

#### 3. PLANNED SEQUENCE OF EVENTS: (All times local)

##### 25 Jul (Monday):

1200: Show Time Rifle Range is clear  
1400: Take off KYNG  
1600: Land KNBC  
1615: Safety Briefing  
1700: Take off KNBC-Training Sortie for Wing Safety  
1800: Land KNBC

##### 26 Jul (Tuesday): see www.beaufort.usmc mil for weather, etc

Rifle Range Live Fire starting 2000L

1530: Show Time  
1600: Weather decision /Load Chemical  
1800: Take off KNBC  
2025: Sunset

##### 27 Jul (Wednesday): Weather Backup/Training

Rifle Range Live Fire starting 2000L

1530: Show Time  
1600: Weather decision /Load Chemical  
1800: Take off KNBC  
2024: Sunset

##### 28 Jul (Thursday):

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

#### 4. ITEMS TO TAKE:

##### a. Mission Commander:

- (1) 19 Rooms reserved at Hampton Inn, ensure no rooms charged on Current Ops Credit card.

##### b. Entomologist/CPMP:

- (1) Wind Gauge & Compass
- (2) UHF/VHF Radios and Cellular Phone

- (3) Pesticide Safety Binder
- (4) DGPS Computers & Maps

**c. Navigators:**

- (1) Maps
- (2) Templates

**d. Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** Open for ULV spray; 8 8005's oriented straight down (4 per side)
- c. **Differential GPS:** Installed
- d. **Aircraft:** 89-9106      **Mission Identifier:** QZNRKA652206

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 0.75 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 2.72 gallons/Minute

- 7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Load 60 gallons of Dibrom® Concentrate per mission. Depending on coverage we will likely have some material left over. Spray maintenance will download; save for next mission.

- 8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

- Air Traffic Control: 119.05 Beaufort MCAS TWR
- Hilton Head Arpt: 118.8 CTAF
- Beaufort Co Arpt: 122.7 UNI
- Spray Ground: Primary 392.2; Secondary 340.8**

- 10. TRANSPORTATION:** Parris Island will provide two vans and staff car for transportation to and from quarters and for messing.

- 11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP & Parris Island MCRD Project Coordinator.

**12. CONTACTS:**

- a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX
  - (1) Environmental Coordinator (Spray Coordinator):  
 (b) (6) DSN (b) (6) , Cel (b) (6) (b) (6) (b) (6) Cel (b) (6)

- FAX (843) 228-2616; (b) (6) (b) (6)
- (2) Assistant Chief of Staff I & L: Col (b) (6), DSN (b) (6)
- (3) Pest Control Foreman: DSN 335-3663
- (4) P.I. Motor Pool: (b) (6) DSN (b) (6)
- (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
- (6) Thrifty Car Rental: (843) 522-9996
- (7) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)
- (7) P.I. Rifle Range: DSN: 335-3183/3624
- b. Beaufort MCAS SC:** (Commercial (843) 228-XXXX)
- (1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6); (b) (6) DSN (b) (6)-(b) (6)
- (2) Fuels: DSN: 335-7049/7448/7168
- (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)
- DSN: (b) (6) Base Ops is ext 7301/2/3
- (After duty hours: (b) (6) DSN: (b) (6)-(b) (6)
- (4) Trans Alert/VAL: DSN: 335-7110
- (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)
- c. Beaufort County Mosquito Control:** (b) (6) (b) (6)
- d. Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) DSN: (b) (6)
- e. Quarters: JTR Seasonal Rate 1 Oct-14 Mar L/\$70, M/\$44**
- 19 Rooms at Hampton Inn (\$70/Night) POC (b) (6) Group Res: Air Force, Confirm #87855446**
- (843)986-0600 (FAX 0494)
- Ramada Inn (843) 524-2144/Fax 1704
- Hampton Inn (843) 986-0600 (FAX 0494)
- Sleep Inn (843) 522-3361 FAX (843) 522-9929
- Parris Island Billeting DSN: 335-2744 (FAX: 3815); (843) 228-3960
- Comfort Inn (843) 525-9366 (FAX 1529)
- Best Western (Sea Island Motel) (843) 524- 4121
- Port Royal Days Inn (843) 524-1551
- Best Western Pt South (I-95) (843) 726-8101
- f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX
- Toll Free 1 - 800 - 278 - 7046,+2 + Ext
- (1) 910 AW/CC: Col (b) (6) (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Capt (b) (6) (b) (6) FAX 1022
- (4) 910 OG/CC: Col (b) (6) (b) (6) (b) (6)
- (4) 910 OG: Airfield Manager, (b) (6) (b) (6) (b) (6)
- (5) 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
- (6) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: CMS (b) (6)
- (11) Maintenance Control: Ext 1327
- (12) 910 LG/LGMS: Spray Maintenance, SMS (b) (6) (b) (6)
- (13) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (14) Cellular Spray Phones:
- Mission Commander: (b) (6)
  - Entomologist: (b) (6)

**910 AW AERIAL SPRAY**  
**PMP'S POST-MISSION REPORT**  
**25-28 July, 2005**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 25-28 July 2005
- c. Purpose of Application: Biting Midge (*Culicoides* spp.) and Mosquito Control
- d. Application Date/s: 25 July 2005
- e. Time/s of Application (Local): 1720-1805
- f. Acres Treated: 7500
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6)  
Environmental/Spray Coordinator, DSN (b) (6) (6)
- h. Date Spray Map Last Approved: 26 July 2005
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 26 July; Assistant Chief of Staff,  
Installation and Logistics, Maj (b) (6) Maj (b) (6) Maj (b) (6) Capt (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Maj (b) (6) (b) (6)
- b. Certified PMP/s (Category 11): Capt (b) (6)
- c. Aircrew:
  - Pilots: Maj (b) (6) (b) (6) Maj (b) (6)
  - (2) Navigator: Maj (b) (6) LTC (b) (6)
  - (3) Flight Engineer(s): MSG (b) (6)
  - (4) Spray Operators: MSG (b) (6) , MSG (b) (6) SSG (b) (6)
- d. Safety Briefer: Capt (b) (6)
- e. Spray Maintenance: MSG (b) (6) , TSG (b) (6) , MSG (b) (6) , TSG (b) (6)  
Redarowicz
- f. Spray Ground Monitor: Capt (b) (6)
- g. Crew Chiefs: TSG (b) (6) , SRA (b) (6)
- h. Avionics: MSG (b) (6)
- i. MX Officer: 2LT (b) (6)
- j. Flying Data:
  - (1) Spray Sorties/Hours: 1 Sortie/2.1 Hrs
  - (2) Spray Training Sorties/Hours: 1 Sortie/1.0 Hrs
  - (3) Ferry Sorties/Hours: 2 Ferry(s)/4.4 Hrs

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate
- d. Gallons Pesticide Loaded: gal Dibrom<sup>®</sup> (26 July); 60 gallons
- e. Gallons Pesticide Applied: 54 gal (26 July)
- f. Gallons and Name Diluent Used: None
- g. Name of Flush Used: Marvel Mystery Oil
- h. Other Additives Used: None
- i. Application Rate: 0.75 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 89-9108
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 8 oriented straight down
- f. Pressure: 26-41 PSI
- g. Flow Rate: 2.5-3.1 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000
- b. Spray Off Set: 2000 feet
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 200°/4-5 knots
  - (2) Release Altitude: 210°/7 knots
- b. Temperature (Degrees Fahrenheit): 87° F
- c. Humidity: 78 %
- d. Cloud Cover: 50% and haze
- e. Source: Ground observations at the MCRD small arms range on 26 July.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

Trap counts of Culicoides and Mosquitos compiled by CE warranted aerial application. Pre-application exposure of the Pest Management Professional indicated heavy Culicoides populations, despite the extremely hot weather. Results are pending with regards to post-application trap counts.

- 8. REMARKS:** Both biting midges and mosquitoes were targets of this aerial spray. The mosquitoes were targets because of West Nile Virus positive mosquito pools. On July 26, conditions for aerial spray were acceptable, and the entire island was treated. There were no exclusionary areas present. Operationally, there were no major problems. Extremely hot, humid, and generally uncomfortable weather made uploading and downloading of chemical problematic. In addition, the weather factors undoubtedly reduced insect activity, reducing the populations effectively exposed to the chemical. Radio communication between the aircraft and the ground monitors continues to be problematic with the current UHF radios. Recommend that the radios be range tested and equipped with more effective antennas, or the purchase of more effective radios.

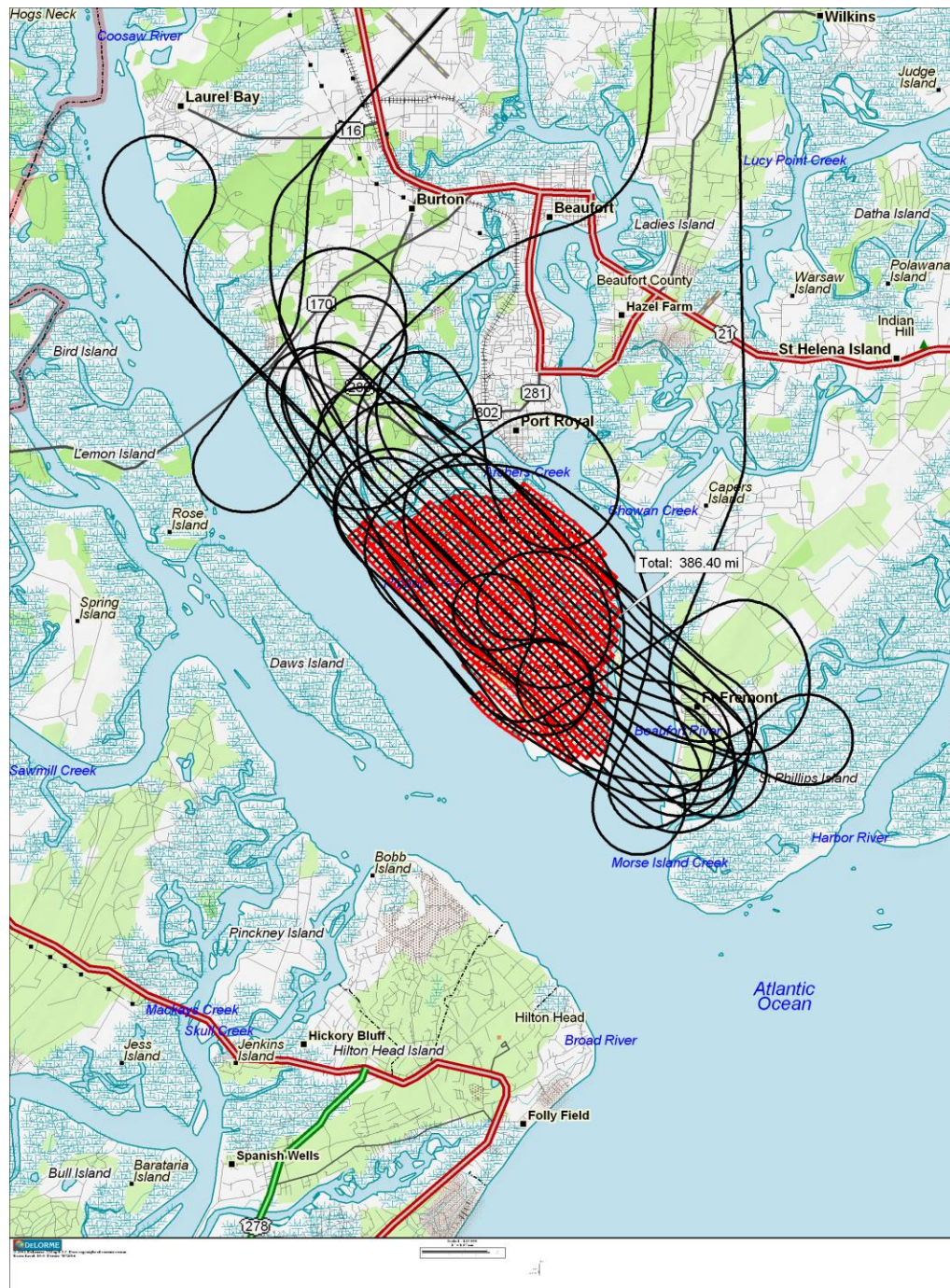
//signed//

(b) (6) CAPT, USAFR  
DoD Certified Pest Management Professional

Attachment



Attachment 1. Aircraft track and spray area, Parris Island MCRD, July 26, 2005.



# AERIAL SPRAY OPERATIONAL SCHEDULE

## NSB, KINGS BAY, GA

### 25-28 JUN 2009

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at NSB, Kings Bay, GA.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: LTC (b) (6)3 Maj (b) (6)
- (2) Navigators: Maj (b) (6)
- (3) Flight Engineers: MSgt (b) (6)
- (4) Spray Operators: MSgt (b) (6) MSgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSgt (b) (6), MSgt (b) (6), SSgt (b) (6)
- (2) Crew Chiefs: TSgt (b) (6), SrA (b) (6)
- (3) Avionics: TSgt (b) (6)

##### c. Entomologist: (MC) Maj (b) (6) Maj (b) (6) (b) (6)

##### d. Flight Surgeon: Maj (b) (6) (observer)

#### 2. PPR REQUIREMENTS: 062501 **\*\*Must squawk 5107 and call sign will be Spray07 regardless of tail number\*\***

#### 3. PLANNED SEQUENCE OF EVENTS: (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

25 JUN (Thursday)

1600: Show

1800: Depart KYNG

2030: Land KNIP/Safety brief

26 JUN (Friday)

1300: In-Brief with Kings Bay Personnel @ CO's conference room.

1545: Weather call/Crew show

1600: Load Chemical/Calibrate

1830: Depart KNIP

Sunset: 2032

27 JUN (Saturday) WX Backup/Training

TBD

Sunset: 2032

28 JUN (Sunday)

1000: Show time

1200: Depart KNIP

1430: Land KYNG

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

- (1) Mission Commander – inbrief materials

##### b. Entomologist:

- (1) Wind Gauge & Compass
- (2) VHF Radios
- (3) Pesticide Safety Binder

##### c. Navigators:



- (1) Maps
- (2) Templates

**d. Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** size = 8005; 20 open for 7.4 flow rate; 15 open for 5.5); oriented straight down.
- d. **Differential GPS:** Wingman Installed
- e. **Aircraft:** 90-9107
- f. **Mission Identifier:** QZNRKA471176

**6. Adult mosquito control spray Parameters: (Kings Bay)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 1.0 oz/acre or 0.75 oz/acre see entomologist
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 2,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 15,000 Acres
- g. **Spray-On Time:** 32 Minutes
- h. **Flow Rate:** 7.4 gallons/minute or 5.55 gal/min see entomologist

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading 3 or 4 drums of Dibrom for Kings Bay (see entomologist).

**8. PARKING PLAN:** Parking will be on the T-33 Line at NAS Jacksonville, FL.

**9. AIR TO GROUND RADIO FREQUENCIES:**

Navy Jax Ops-	310.2/134.775	Tower	120.0/340.2
Ground	128.6/336.4	Spray Ground:	123.45 VHF
ATIS	281.0	St Marys:	122.8 VHF

**10. TRANSPORTATION:** Enterprise Car Rental: 904-772-7007 Fax: 904-269-9758 \$40/day+\$5gov policy+tax  
5 Full Size Cars (b) (6) (b) (6) (b) (6) (b) (6) (b) (6) Keys will be at base ops.

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP and by NSB Kings Bay pest control.

**12. BILLETING:** Hampton Inn Jacksonville-Orange Park, 6135 Youngerman Circle, 904-777-5313 contact is (b) (6)  
(b) (6) 15 rooms blocked confirmation # 80591875 \$79/night

### 13. CONTACTS:

**a. Naval Submarine Base Kings Bay, GA (Com: (912) 573-xxxx; DSN 573-xxxx)**

- (1) Spray Coordinator: (b) (6) or (b) (6)
- (2) Strategic Weapons Facility Atlantic (SWFLANT) x0551

**b. Naval Air Station Jacksonville, FL (NAS JAX)**

- (1) For requesting PPR: DSN 942-2511
- (2) Transient line office: DSN 942-3843
- (3) Weather: DSN 942-2535
- (4) Tower: DSN 942-2516

**c. FAA JAX Center:** Mr. (b) (6) , Mission Specialist (b) (6)

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- 1. 910 AW/CC: Col (b) (6)
- 2. 910 AW Command Post: Ext 1315; FAX 1161
- 3. 910 AW/PA: Maj (b) (6) (b) (6) FAX 1022
- 4. 910 OG/CC: Lt Col (b) (6) (b) (6)
- 5. 910 OG: Airfield Manager, Ext 1186/1526
- 6. 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
- 7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- 8. 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) ; FAX 1657
- 9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) Capt (b) (6) (b) (6) (b) (6) FAX 1616
- 10. 910 LG/CC: Ext 1225
- 11. 910 LG/LGM: Ext 1352
- 12. Maintenance Control: Ext 1327
- 13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6) (b) (6)
- 14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
- 15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - (b) (6) (b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 25-28 JUNE 2007

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) Pilots: COL (b) (6) (b) (6) Capt (b) (6) (b) (6)
- 2) Navigators: LTC (b) (6) (b) (6) Maj (b) (6)
- 3) Flight Engineers: CMSG (b) (6) MSG (b) (6)
- 4) Spray Operators: MSG (b) (6) , MSG (b) (6)

##### b. Maintenance:

- 1) Spray Maintenance: Tsgt (b) (6) , Tsgt (b) (6) , Tsgt (b) (6) , (b) (6)
- 2) Crew Chief(s): SSG (b) (6) , Tsgt (b) (6)
- 3) Avionics: (b) (6)

##### c. Entomologists/Ground Support: MAJ (b) (6) MAJ (b) (6) (b) (6)

#### 2. SCHEDULE: (All Local Times) PPR: 06-25-01-ES

##### 25 JUN (Monday)

0900: Showtime  
1100: Depart KRDR  
1300: Land KGFK/Safety Briefing  
1400: Spray In Brief (CPMP, MC, AC).

##### 26 JUN (Tuesday):

1500: Show time for Calibration testing (See note in configuration)  
1830 Load Chemical  
2015: Take off KRDR (Adulticide Spray Sortie)  
Sunset: 2131

##### 27 JUN (Wednesday):

1730: Show time  
1800 Load Chemical  
2000: Take off KRDR (Adulticide Spray Sortie)  
Sunset: 2131

##### 28 JUN (Thursday):

1730: Show time  
1800 Load Chemical  
2000: Take off KRDR (Adulticide Spray Sortie)  
Sunset: 2131

##### 29 JUN (Friday):

1130: Show time  
1330: Take off KGFK  
1730: Land KYNG

#### 3. ITEMS TO TAKE

a. **Mission Commander:** Cellular Phone, Mission Folder

b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder,  
1 UHF Radio, Water Sensitive Cards, Card Holders with  
Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors,  
Project Notebook, Entomologist's Tool Kit, Trakstar Receiver and Antenna

c. **Navigator:** Maps/Map Bag, Validation Map

d. **Spray Operator:** Safety Gear, Calibration Tables

e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

**4. PPR: 062501ES**

**5. RADIO FREQUENCIES: Air To Ground Primary** UHF 392.2; VHF 123.45  
KRDR Tower 124.9 V; Grand Forks International 118.4 V

**6. CONFIGURATION: SP2G**

- a. System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. Nozzle Tips/Orientation:** ULV (adulicide): 8005 Tee Jet oriented straight down
- c. Number:** ULV: 18 8005s total (9 each side)
- e. Aircraft:** 89-9105
- f. Mission Identifier:** QZNRKA446176

**7. SPRAY PARAMETERS:**

**a. Adulicide**

- (1) **Area to be treated:** 11488 acres (Grand Forks AFB)
- (2) **Altitude:** 150' for Adulicide application
- (3) **Swath Width.** 2000 feet
- (4) **Flow Rate.** 7.26 gallons/minute ULV
- (5) **Application Rate.** 1.0 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots
- (7) **Flush:** With water, triple rinse, then air purge

**8. SPRAY MIXING AND LOADING:** The amount of Trumpet to load will be determined on site

**9. TRANSPORTATION: Transportation 2 rental vans and 3 cars at Enterprise. Please call upon arrival and have the cars delivered to the visitor center on base.**

**Commercial: 701-775-3977**

<b>Van/SUV</b>	<b>\$69.99/day</b>	<b>FS \$51.99/day</b>
Col (b) (6)	(FS), Maj (b) (6)	FS Msg (b) (6) (V), Tsgt (b) (6) (SUV), Tsgt (b) (6) (FS).

**10. LODGING: Off Base at the RAMADA INN 701 775 3951**

**Billeting :** DSN 362-7200 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844  
16 Rooms Reserved

**11. CONTACTS:**

**a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**

- (1) **Base Operations:** Airfield Manager DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx20
- (2) **Pest Management:** TSgt (b) (6) or Ssgt (b) (6) DSN (b) (6) , FAX 3432
- (3) **Base Civil Engineer:** Lt Col (b) (6)
- (4) **Environmental Officer:** (b) (6) , DSN (b) (6) FAX 6155
- (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
- (6) **Weather:** DSN 362-4396
- (6) **Billeting:** DSN 362-3070/6189/7200 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844

**b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC:, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Col (b) (6) (b) (6) (b) (6)
- (5) 910 Base Ops: Airfield Manager: Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, CAPT (b) (6) (b) (6) (b) (6) ; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: SMG (b) (6) (b) (6) Cell: (b) (6)
- (13) 910 LG/LGL: Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371

(16) Cellular Spray Phones:

- Entomologist:
- Mission Commander:
- Spray Maintenance

(b) (6)

**910 AW -- AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**NAVAL SUBMARINE BASE, KINGS BAY, GA 25-29 June 2009**

**1. MISSION BASICS:**

- a. Installation Sprayed: Naval Submarine Base, Kings Bay, Georgia
- b. Mission Duration: 25-29 June 2009
- c. Purpose of Application: To control pestiferous populations of mosquitoes (specifically *Aedes taeniorhynchus*) and biting midges (*Culicoides* spp.)
- d. Application Date: 27 June 2009
- e. Time/s of Application (Zulu): 2315-0055 hrs
- f. Acres Treated: 4236 acres
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6), Public Works, Aerial Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 26 June 2009
- i. Date of Waste Generation Letter: 30 October 2007
- j. Installation In-Briefing: (When/Where/Briefer/s): Sub Base commanders conference room, 26 June 2009. Briefed by Maj (b) (6)

**2. OPERATIONAL:**

- a. **Mission Commander:** Maj (b) (6)
- b. **Aircrew:**
  - (1) Pilots: LTC (b) (6) (A/C), MAJ (b) (6)
  - (2) Navigators: Maj (b) (6)
  - (3) Flight Engineers: MSG (b) (6)
  - (4) Spray Operators: SMSgt (b) (6), MSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6), SSgt (b) (6), MSGT (b) (6)
  - (2) Crew Chiefs: TSGT (b) (6), SRA (b) (6)
  - (3) Avionics: MSG (b) (6)
- d. **Entomologists:** Maj (b) (6) (b) (6) Maj (b) (6)
- e. **Flight Surgeon:** Maj (b) (6) (observer)
  - (1) Spray Sorties/Hours: 1/1.7
  - (2) Ferry Sorties/Hours: 2/5.3

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet® Concentrate
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Formulation Sprayed: Concentrate (78% AI naled)
- d. Gallons Pesticide Loaded: 30 Gallons Trumpet®
- e. Gallons Pesticide Applied: 30 Gallon Trumpet®
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 50 gallons water
- h. Other Additives Used: None
- i. Application Rate: 0.90 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 20 oriented straight down
- f. Pressure: 46 p.s.i.
- g. Flow Rate: 7.4 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: 4000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 220°/5 knots
  - (2) Release Altitude: 220°/10 knots
- b. Temperature (Degrees Fahrenheit): 90°F
- c. Relative Humidity: 75%
- d. Cloud Cover: 30%
- e. Source: Ground observations and aircraft SCNs

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations (Maj (b) (6) (b) (6) )
  - (2) Results: Excellent coverage through sprayed areas
- b. Effectiveness:
  - (1) Technique/s Used: New Jersey Light Trap collections and verbal reports before and after sprays
  - (2) Results: To be determined

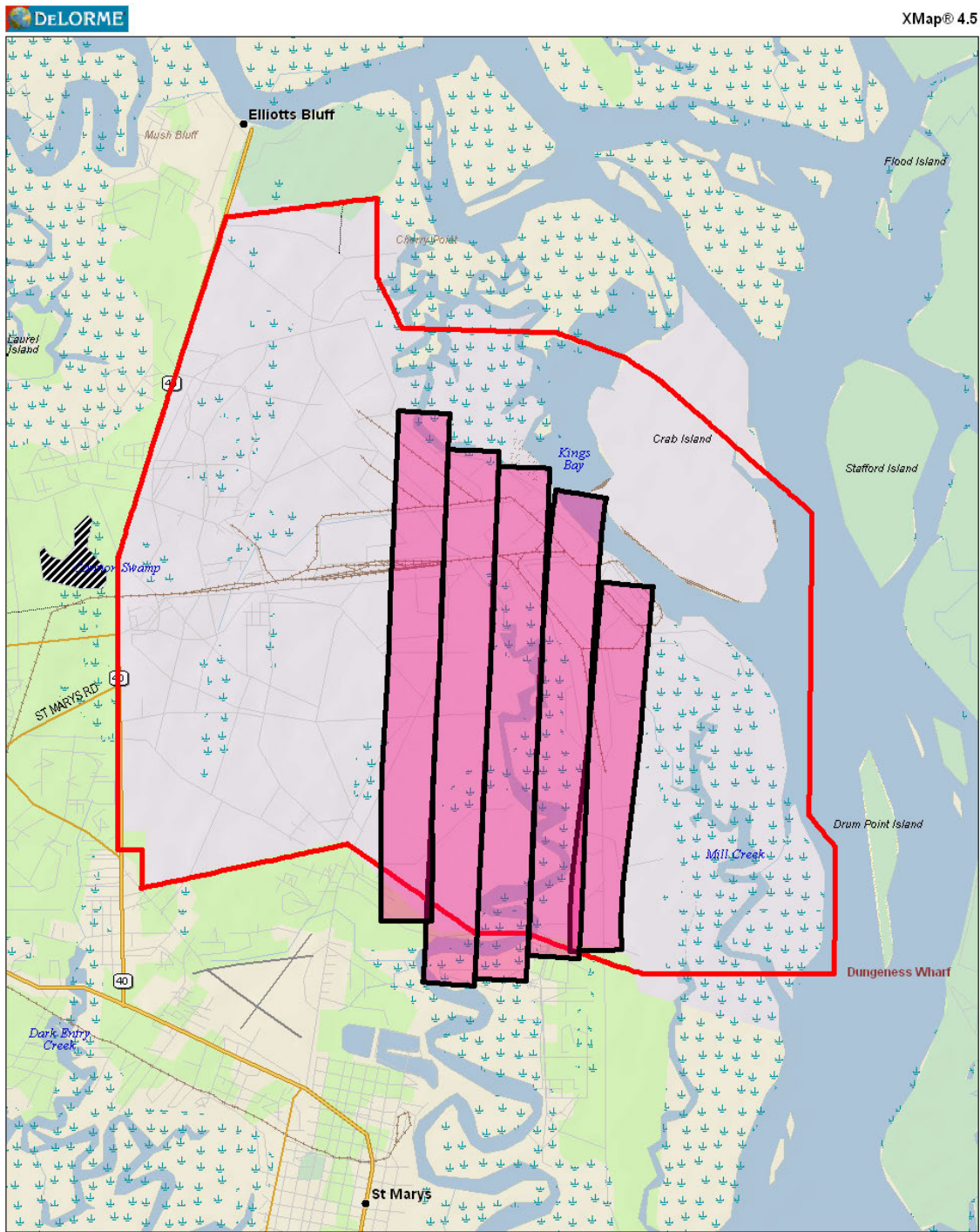
**8. REMARKS:** This mission was the second conducted at the request of NSB Kings Bay for 2009. This mission is still being conducted as a waived emergency spray. The installation is in the process of completing required documentation to become established as a pre-approved routine mission. Kings Bay had been experiencing significant mosquito activity, particularly adjacent to the dry docks and the waterfront. Unfortunately, the chemical order was misunderstood, and 3 Drums of Dibrom and 1 drum of Trumpet were delivered, when in fact 4 drums of Trumpet should have been delivered. Thus, only about one-third of the base was sprayed (see attachment), as the system on hand was only compatible with Trumpet. The project coordinator and the pest management professional targeted those areas hardest hit by mosquito populations in order to maximize effectiveness.

//signed//

(b) (6) MAJ, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL



Attachment 1. Areas sprayed (magenta blocks) at Kings Bay Naval Sub Base.



Data use subject to license.

© 2004 DeLorme. XMap® 4.5.

www.delorme.com

★  
MN (5.8° W)

0 1/4 1/2 3/4 1 1 1/4 1 1/2 1 3/4 mi  
Data Zoom 11-8

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 25-28 Sep 06

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes around LFI and the surrounding communities.

**1. 910 AW PARTICIPANTS:**

**a. Aircrew:**

- (1) Mission Commander: Maj (b) (6) (b) (6)
- (2) Pilots: Maj (b) (6) (b) (6) CPT (b) (6) , 1LT (b) (6)
- (3) Navigator: LTC (b) (6)
- (4) Flight Engineers: SMS (b) (6) , MSG (b) (6)
- (5) Spray Operators: MSG (b) (6) , MSG (b) (6) MSG (b) (6) (b) (6)

**b. Maintenance:**

- (1) Spray Maintenance: TSG (b) (6) , MSG (b) (6) , TSG (b) (6) , TSG (b) (6)
- (2) Crew Chiefs: TSG (b) (6) , TSG (b) (6)
- (2) Avionics: TSG (b) (6)

**c. Entomologists:** CPT (b) (6) MAJ (b) (6) (In place)

**d. Environmental:** (b) (6) (b) (6)

**d. Vehicles:**

- **Vehicle Dispatch:** Will supply us with 2x9pax vans and 2 cars
- **MC / Entomologist:** One Car
- **Ops:** One van (9 pax), one car
- **Mx:** One Van (9 Pax)

**e. Billeting Office:** COM: (757) 764-4667 POC TSG Cox

DSN 574-4667, EXT 2528; FAX 574-3038

**Holiday Inn - 1815 W Mercury Blvd**

- Non Available slips are in mission folder behind lodging info

**2. PPR: SPRAY01 0925TX01**

**3. SCHEDULE: (All times local)**

**25 SEP (Monday):**

- 1000: Show Time
- 1200 Take Off YNG
- 1330 Land KLF w/ Safety Briefing immediately following
- 1430: Installation Briefing
- 1500 Wx/Decision, load Dibrom
- 1650 Take off LFI
- 1854 Sunset

**26 SEP (Tuesday):**

- 1430 Show time
- 1500 Wx/Decision, load Dibrom
- 1650 Take off LFI
- 1853 Sunset

**27 SEP (Wednesday):**

- 1430 Show time
- 1500 Wx/Decision, load Dibrom
- 1650 Take off LFI
- 1852 Sunset

**28 SEP (Thursday):** Redeploy to YNG

- 1000: Show Time
- 1200: Take off KNBC
- 1400: Land KYNG

3. **ITEMS TO TAKE:**
  - a. **Entomologist:** Kestrel Weather Monitor, Compass, PCM Card, Pest Safety Binder, UHF Radios, Laptop Computer
  - b. **Navigator:** Maps/Map Bag, Validation Map
  - c. **Spray Operator:** Safety Gear, Calibration Tables
  - d. **Spray Maintenance:** Deployment Kit/Supply Kit
4. **NOTIFICATION NECESSARY FOR THIS MISSION:**
  - a. **Langley Tower:** DSN 574-5326
  - b. **Langley Base Ops:** DSN 574-2504
5. **PARKING PLAN:** Taxi Way Foxtrot or as directed by Transient Alert.
6. **RADIO FREQUENCIES:**
  - a. **Felker AAF Tower (Ft Eustis): 126.3, 269.25, 248.2, 241.0**
    - (1) Ops phone DSN878-3588
    - (2) Tower phone DSN 878-3530
    - (3) Flight Service 122.2
  - b. **Newport News-Williamsburg Int: CTAF – 118.7** (Operating Hours 1000Z-0200Z)
    - (1) Ground – **121.9** or 348.6 (phone 877-0221 ops)
    - (2) Tower – **118.7** (phone DSN 877-2862) voice mail 7-2962
    - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
  - c. **Langley AFB:** Tower DSN 574-7999
    - (1) Tower - **125.0** or 253.5
    - (2) Ground - **121.7** or 275.8
    - (3) Clearance – **118.85** or 271.3
    - (4) Metro - **239.8**
  - d. **Norfolk NAS (Chambers Fld): Tower –124.3, 379.15,** Tower Supervisor DSN 262-3443
  - e. **Norfolk Approach: 124.9**
  - f. **Spray Ground: Primary 392.2; Secondary: 308.6**
7. **IN-BRIEFING:** 1430 hrs; CE Conference Room
8. **SPRAY CONFIGURATION:**
  - a. **System:** SP2G - MASS ULV; Fuselage booms
  - b. **Nozzle Tips/Orientation:** ten 8005 nozzles -- straight down
  - c. **Aircraft:** 89-9106
  - d. **Mission Identifier:** QZNRKA199268
9. **SPRAY PARAMETERS:**
  - a. **Altitude:** 150' AGL
  - b. **Ground Speed:** 200 KNOTS
  - c. **Pesticide:** Dibrom<sup>®</sup> Concentrate
  - d. **Application Rate:** 0.5 oz/acre
  - e. **Flow Rate:** 3.6 Gallons/Minute
  - f. **Acreage:** Potentially 125,000 acres on the peninsula but final acreage TBD
  - g. **Swath Width:** 2000 foot
10. **PESTICIDE LOADING:**
  - a. **How Much Pesticide:** see entomologist
  - b. **Where:** Taxi Way F Aero Club Ramp
  - c. **When:** 1600 hrs each day pending weather and heat index.
  - d. **Furnished by Installation:**
    - (1) Pesticide
    - (2) Loading Equipment/Crew
    - (3) Hazardous Waste Disposal
    - (4) Two B-5 or B-1 Stands
11. **CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**
  - a. **LANGLEY AFB VA:**  
Wing Commander: DSN 574-5321  
Mission Support Group Commander: DSN 574-7995  
Civil Engineer: DSN 574-2025  
Deputy Chief/Civil Engineer: Ms. (b) (6)  
Environmental Coordinator: DSN 574-3987; FAX 3503

Base Operations: DSN 574-2504  
 Langley Control Tower: DSN 574-5326  
 Weather: Langley AFB, DSN 574-5907  
 Ft Eustis: DSN 297-5300/3343  
 Command Post: DSN 574-5411  
 Pest Control Foreman: (b) (6), DSN(b) (6), cell phone (b) (6)  
 Pest Control/Environmental NCOIC: MSgt (b) (6)  
 Public Affairs: DSN 574-2018/2010/2019  
 Fuels: DSN 574-4312/3623/4224  
 Motor Pool: 574-7514/5712 (2 vans and 1 staff vehicle were requested)  
 ACC PMP: (b) (6)(b) (6) DSN 574-2766, cell phone (b) (6)  
 Fire Department Comm: 757-764-2222

- b. FT EUSTIS VA:** Environmental Coordinator: DSN 927- 4152/2375
- c. Hampton Mosquito Control:** 757 850-3305
- d. York County Mosquito Control:** (757)-890-3780
- e. Poquoson:** (b) (6)
- f. City of Portsmouth Biologist:** (757) 393-8666
- g. Newport News Mosq. Control:** (757) 269-2750
- h. Camp Peary:** (757) 229-2121 Ext 2263, (b) (6)
- i. Ft Monroe:** ?
- j. Newport News/Williamsburg Int.:**
  - (1) Fixed Base Operator: Flight Int 877-6401
  - (2) Flight Service: 877-0209
  - (3) Tower: 877-2962
  - (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport
- k. Norfolk NAS VA:** DSN 564-2442/7598 or COM (757)-444-2442/7598
- l. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
 Toll Free 1 - 800 - 278 - 7046, + Ext
  - (1) 910 AW/CC: Col (b) (6) (b) (6)
  - (2) 910 AW Command Post: Ext 1315; FAX 1161
  - (3) 910 AW/PA: Capt (b) (6) (b) (6) FAX 1022
  - (4) 910 OG/CC: Col (b) (6) (b) (6) (b) (6)
  - (5) 910 OS/OSA: Airfield Manager, (b) (6)
  - (6) 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
  - (7) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
  - (8) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6); FAX 1657
  - (9) 757 AS/DOS: Aerial Spray Office, Maj (b) (6)(b) (6) (b) (6), Capt (b) (6) (b) (6) (b) (6)(b) (6); FAX 1616
  - (10) 910 LG/CC: Ext 1225
  - (11) 910 LG/LGM: Ext 1352
  - (12) Maintenance Control: Ext 1327
  - (13) 910 LG/LGMS: Spray Maintenance, Ext 1132
  - (14) 910 LG/LGL, Ext 1137
  - (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342
  - (16) Cellular Spray Phones:
    - Mission Commander: (b) (6)
    - Entomologist: (b) (6), (b) (6) cell (b) (6)
    - Spray Maintenance: (b) (6)





DEPARTMENT OF THE AIR FORCE

757 AIRLIFT SQUADRON

3976 King Graves Rd Unit 26

Vienna OH 44473-5926

13 SEP 06

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Langley AFB, VA replacing our mission to Parris Island MCRD, NC.

1. Objective/Purpose/Benefits of the Spray Mission: Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes around LFI and the surrounding communities.

2. Capability: Spray Aircraft 90-9107 available on 25-28 SEP 2006

3. Concept of Operations:

**25 SEP (Monday):**

1000: Show Time  
1200 Take Off YNG  
1330 Land KLF w/ Safety Briefing immediately following  
1430: Installation Briefing  
1500 Wx/Decision  
1650 Take off LFI  
1854 Sunset

**26 SEP (Tuesday):**

1430 Show time  
1500 Wx/Decision  
1650 Take off LFI  
1853 Sunset

**27 SEP (Wednesday):** Wx back up, training, or redeploy to YNG

1430 Show time  
1500 Wx/Decision  
1650 Take off LFI  
1852 Sunset

**28 SEP (Thursday):** Redeploy to YNG

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

4. Spray Parameters:

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.6 Gallons/Minute
- f. **Acreage:** Approximately 125,000 acres on the peninsula
- g. **Swath Width:** 2000 foot

5. Mission Commander: Maj (b) (6) (b) (6)

6. Any questions please contact me at DSN: (b) (6)

// SIGNED //

(b) (6) (b) (6) CAPTAIN, USAFR  
Assistant Chief of Aerial Spray



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926

5 SEP 06

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Parris Island MCRD SC

1. Objective/Purpose/Benefits of the Spray Mission. Spray Parris Island MCRD SC for control of biting midges and mosquitoes. Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCDR SC at the request of the Parris Island MCRD/MCAS Environmental Coordinator.

2. Capability: Spray Aircraft 90-9107 available on 25-28 SEP 2006

3. Concept of Operations:

**25 SEP (Monday):** see www.beaufort.usmc mil for weather, etc

1330: Show Time  
1530 Take Off YNG  
1700 Land KNBC  
1730: Safety Briefing

**26 SEP (Tuesday):**

1100: Installation Brief  
1430 Showtime  
1500: Load Chemical/Wx Decision  
1700: Take off KNBC  
1914: Sunset

**27 SEP (Wednesday):** Wx back up, training, or redeploy to YNG

1430: Showtime  
1500: Load Chemical/Wx Decision  
1700: Take off KNBC  
1913: Sunset

**28 SEP (Thursday):** Wx back up, training, or redeploy to YNG

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

4. Spray Parameters:

- a. Acreage: 7,500 Acres (Only areas determined by PMP)
- b. Altitude: 150 Ft AGL
- c. Pesticide: Anvil® 10+10
- d. Deploy: 2.0 Hrs
- e. Re-Deploy: 2.0 Hrs
- f. Spray Time: 16 Minutes per Sortie (or as called by PMP)

5. Mission Commander: Maj (b) (6) (b) (6)

6. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator Mr. (b) (6) DSN (b) (6)

// SIGNED //

(b) (6) (b) (6) Major, USAFR  
Chief of Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## PARRIS ISLAND MCRD, SC

### 25-28 SEP 2006

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: Col (b) (6) (b) (6) ??
- (2) Navigators: Maj (b) (6), LTC (b) (6)
- (3) Flight Engineers: MSG (b) (6)
- (4) Spray Operators: SMS (b) (6), Msg (b) (6), Msg (b) (6), Tsg (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSG (b) (6), MSG (b) (6), TSG (b) (6)
- (2) Crew Chiefs: MSG (b) (6), SSG (b) (6)
- (3) Avionics: MSG (b) (6)

##### c. Pest Management Professionals/Entomologist: CPT (b) (6) (b) (6) (In place)

Gov Vehicles provided by Parris Island MCRD: 2 Crew Vans & 1 Staff Car keys and vehicles at Base Ops.

#### 2. PPR REQUIREMENTS:

#### 3. PLANNED SEQUENCE OF EVENTS: (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

**25 SEP (Monday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

- 1330: Show Time
- 1530 Take Off YNG
- 1700 Land KNBC
- 1800: Safety Briefing

Rifle Range No night fire planned any evenings

**26 SEP (Tuesday):**

Rifle Range: None

- 1430: Showtime
- 1500: Load Chemical/Wx Decision
- 1700: Take off KNBC
- 2005: Sunset

**27 SEP (Wednesday):** Wx back up, training, or redeploy to YNG Rifle Range None

- 1430: Showtime
- 1500: Load Chemical/Wx Decision
- 1700: Take off KNBC
- 2006: Sunset

**28 SEP (Thursday):**

- 1000: Show Time
- 1200: Take off KNBC
- 1400: Land KYNG

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

- (1) 20 Rooms reserved at Hampton Inn, ensure no rooms charged on Current Ops Credit card.
- (2) Mission Commander Cell Phone

##### b. Entomologist/CPMP:



- (1) Wind Gauge & Compass
- (2) UHF/VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder

**c. Navigators:**

- (1) Maps
- (2) Templates

**d. Sprav Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** 6 open for ULV spray; 6 8003's oriented straight down (3 per side)
- d. **Differential GPS:** Installed
- e. **Aircraft:** 89-9108
- f. **Mission Identifier:** QZNRKA296121

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Anvil® 10+10
  - Sumithrin (synthetic pyrethrin) and Piperonyl Butoxide
  - Signal Word: Caution
  - Antidote: not applicable
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 0.62 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,400 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 2.25 gallons/Minute

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** : There are approx. 50 gallons of Anvil available for this mission. We will spray 35 gallons per application. See entomologist for amount to load, it is possible that we may have to retreat the area during the mission.

**8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
 Hilton Head Arpt: 118.8 CTAF  
 Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 392.2; Secondary 340.8**

**10. TRANSPORTATION:** Parris Island will provide two vans and staff car for transportation to and from quarters and for messing.

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP & Parris Island MCRD Project Coordinator.

**12. CONTACTS:**

- a. **Parris Island MCRD SC: (MCRD/MCAS Com: (843) 228-XXXX; Off Station Com: (843) 525-XXXX)**
  - (1) **Environmental Coordinator (Spray Coordinator):** (b) (6) DSN (b) (6) Cel (b) (6) ; (b) (6) (b) (6) , Cel (b) (6)

- FAX (843) 228-2616; (b) (6) (b) (6)
- (2) Assistant Chief of Staff I & L: Col (b) (6), DSN (b) (6)
- (3) Pest Control Foreman: DSN 335-3663
- (4) P.I. Motor Pool: (b) (6) DSN (b) (6)
- (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
- (6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)
- (7) P.I. Rifle Range: DSN: 335-3183/3624

**b. Beaufort MCAS SC:** (Commercial (843) 228-XXXX)

- (1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6) (b) (6) DSN (b) (6)
- (2) Fuels: DSN: 335-7049/7448/7168
- (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
DSN: (b) (6), Base Ops is ext 7301/2/3  
(After duty hours: (b) (6) DSN: (b) (6)
- (4) Trans Alert/VAL: DSN: 335-7110
- (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)

**c. Beaufort County Mosquito Control:** (b) (6) (b) (6)

**d. Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) DSN: (b) (6)

**e. Quarters:**

**17 Rooms at Hampton Inn (\$114/Night), Group Res: Youngstown,**  
(843)986-0600 (FAX 0494)

- Ramada Inn (843) 524-2144/Fax 1704
- Hampton Inn (843) 986-0600 (FAX 0494)
- Sleep Inn (843) 522-3361 FAX (843) 522-9929
- Parris Island Billeting DSN: 335-2744 (FAX: 3815); (843) 228-3960
- Comfort Inn (843) 525-9366 (FAX 1529)
- Best Western (Sea Island Motel) (843) 524- 4121
- Port Royal Days Inn (843) 524-1551
- Best Western Pt South (I-95) (843) 726-8101

**13. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046, 2, + Ext

- (1) 910 AW/CC: COL (b) (6) (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: CAPT Brent (b) (6) (b) (6); FAX 1022
- (1) 910 OG/CC: COL (b) (6) (b) (6) (b) (6)
- (2) 910 OSF/OSA, Airfield Manager: (b) (6)  
Assistant Air Field Manager (ACAM), (b) (6)
- (3) 910 OG/SOF (Supervisor of Flight Desk): Ext 1069; FAX 1371
- (4) 757 AS/DO: MAJ (b) (6) (b) (6) (b) (6)
- (5) 757 AS/DOO, Ops Admin: SMS (b) (6) (b) (6) FAX 1657
- (6) 757 AS/DOS: Aerial Spray Office, CAPT (b) (6) (b) (6) FAX 1616
- (7) 910 LG/CC: COL Anna Schulte, Ext 1225  
910 MA: Maintenance Officer, Maj (b) (6)
- (8) 910 LG/LGM:, Ext 1352
- (9) Maintenance Control: Ext 1348
- (10) 910 LG/LGMS: Spray Maintenance: SMS (b) (6) (b) (6)
- (11) 910 LG/LGL: CMS (b) (6) (b) (6)
- (12) Omega/SATO Travel: Ext 1772; 1 (800) 285 - 6342
- (13) Cellular Phones: Mission Commander: (b) (6)  
PMP/Entomologist/Ground Support: (b) (6)  
Spray Maintenance: (b) (6)

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT-Langley AFB 25-28 Sept 2006

### 1. MISSION BASICS:

- a. Installation Sprayed: Langley AFB, VA
- b. Mission Duration: 25—28 Sept 2006
- c. Purpose of Application: Control of adult mosquitoes transmitting arboviruses
- d. Application Dates: 25-27 Sept 2006
- e. Times of Application (Local): 1740-1915 (25 Sept); 1635-1910 (26 Sept); 1634-1835 (27 Sept)
- f. Acres Treated: 106383 total: 39,428 (25 Sept); 48,076 (26 Sept); 18,879 (27 Sept)
- g. Project Coordinator (Name, Phone #): (b) (6)
- h. Date Spray Map Last Approved: 25 September, 2006
- i. Date of Waste Generation Letter: 4 April 1996
- j. Installation In-Briefing: 1 CE Conference Room, Langley AFB; Maj (b) (6) Maj (b) (6)
- k. Mission identifier: QZNRKA199268

### 2. OPERATIONAL:

- a. Mission Commander: Maj (b) (6)
- b. Certified PMPs (Category 11): MAJ (b) (6)(b) (6) CPT (b) (6)
- c. Aircrew:
  - (1) Pilots: MAJ (b) ((b) (6) CPT (b) (6) , 1LT (b) (6)
  - (2) Navigator(s): LTC (b) (6)
  - (3) Flight Engineer(s): SMS (b) (6) , MSG (b) (6)
  - (4) Spray Operators: MSG (b) (6) MSG (b) (6) MSG (b) (6)(b) (6)
- d. Safety Briefer: CPT (b) (6)
- e. Spray Maintenance: MSG (b) (6) TSG (b) (6) , TSG(b) (6) , TSG (b) (6)(b) (6)
- f. Crew Chiefs: TSG (b) (6) , TSG(b) (6)
- g. Avionics: TSG (b) (6)
- h. Flying Data:
  - (1) Spray Sorties/Hours: 3/6.2
  - (2) Ferry Sorties/Hours: 2/3.1

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 368 (15 Aug); 180 (16 Aug); 90 (17 Aug)
- e. Gallons Pesticide Applied: 246 (15 Aug); 300 (16 Aug); 88 (17 Aug)
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 18 gallons marvel oil
- h. Other Additives Used: n/a
- i. Application Rate: 0.8 oz/acre (25-26 Sept); 0.6 oz/acre (27 Sept)

### 4. APPLICATION EQUIPMENT:

- a. Aircraft Type (Tail Number): 90-9106
- b. Spray System (Modules Used) and System ID #: SP2G



- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: TeeJet 8005 flat fan nozzles
- e. Nozzle Orientation & Number Used: 10 straight down (8 used 27 Sept)
- f. Pressure (PSI): 46-56 (25 Sept); 46-56 (26 Sept) & 40-60 (27 Sept)
- g. Flow Rate: 5.8 gpm (15-16 Aug); 4.4 gpm (17 Aug)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 feet
- b. Spray Off Set: 0 feet
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed in knots): 260°/3 (25 Sept); 090°/5 (26 Sept); 090°/5 (27 Sept)
- b. Temperature (°F): 72 °F (25 Sept); 74 °F (26 Sept); 74 °F (27 Sept)
- c. Cloud Cover: Mostly Cloudy (25 Sept); Mostly Cloudy (26 Sept); Scattered clouds (27 Sept)
- d.. Source: Ground observations/at altitude during spray

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Normal projected off-sets based on MASS system characterization
- b. Effectiveness:
  - (1) Technique/s Used: carbon dioxide-baited traps were used to monitor mosquito densities pre- and post-treatment
  - (2) Results: Community of Hampton reported an 87% reduction at 4 locations in mosquito counts following the application. Langley pest management and City of Portsmouth reported good control, with no significant numbers of daylight-flying species having been caught. Ft. Eustis reported excellent control. No report was available from York County. However, the pest management POC for that area was extremely pleased with the work done.

**8. REMARKS:** Evidence of mosquito vectored viruses (namely Eastern Equine Encephalitis and West Nile Virus) has shown up in the tidewater area for the summer season 2006. In contrast to high levels of virus, mosquito populations had been lower than in previous years. In fact, this was the first spray of 2006, where in normal years the Langley peninsula receives 3-4 sprays per year. While popular local opinion related these depressed mosquito populations to the predaceous work of dragonflies, seen in abundance this year, it is more likely correlated with a much lower than average rainfall. Mosquito populations finally justified aerial application of pesticides following a significant rainfall event from tropical storm Ernesto. Outstanding levels of mosquito control were achieved and the customers were pleased with the application. We received excellent support from Langley AFB, 1 CES to make this mission a success.

//Signed//

(b) (6) **CAPT, USAFR**  
**Certified Pest Management Professional**



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



7 JUN 2007

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Grand Forks AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks AFB ND.

**2. Capability:** Spray Aircraft available 25-29 JUN 2007

**3. Concept of Operations:**

**25 JUN (Monday)**

0900: Showtime

1100: Depart KYNG

1300: Land KGFK/Safety Briefing

1400: Spray In Brief (CPMP, MC, AC).

**26 JUN (Tuesday):**

1700: Show time

1730 Load Chemical

1930: Take off KRDR (Adulticide Spray Sortie)

Sunset: 2131

**27 JUN (Wednesday):**

1700: Show time

1730 Load Chemical

1930: Take off KRDR (Adulticide Spray Sortie)

Sunset: 2131

**28 JUN (Thursday):**

1700: Show time

1730 Load Chemical

1930: Take off KRDR (Adulticide Spray Sortie)

Sunset: 2131

**29 JUN (Friday):**

1130: Show time

1330: Take off KGFK

1730: Land KYNG

**4. Spray Parameters:**

**a. Adulticide**

- (1) Area to be treated:** 11488 acres (Grand Forks AFB)
- (2) Altitude:** 150' for Adulticide application
- (3) Swath Width.** 2000 feet
- (4) Flow Rate.** 7.26 gallons/minute ULV
- (5) Application Rate.** 1.0 oz/acre Trumpet, ULV
- (6) Ground Speed:** 200 Knots
- (7) Flush:** With water, triple rinse, then air purge

**5. Aircraft Commander:** COL (b) (6) (b) (6)

**6.** Support at Grand Forks AFB ND has been coordinated with the organization's Environmental/Spray Coordinator.

**7.** HQ AFRC/DOOM approval via email.

// Signed //

(b) (6) (b) (6) CAPT, USAFR  
Assistant Chief Aerial Spray

# **910 AW AERIAL SPRAY PMP'S POST-MISSION REPORT Grand Forks AFB, ND (25-29 June 2007)**

## **1. MISSION BASICS:**

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 25-29 June 2007
- c. Purpose of Application: Control nuisance and vector mosquitoes (adult stage)
- d. Application Date: 27-28 June 2007
- e. Time of Application (Local): 2015-2130 L (June 27); 1945-2100 L (June 28)
- f. Acres Treated: 29,888
- g. Project Coordinator (Name/Rank, Title, Phone #): Linda Fugelstad, Environmental Officer, DSN 362-4655
- h. Date Spray Map Last Approved: 25 June 2007
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): 27 June 2005; GF International Airport  
COL (b) (6) (b) (6) LTC (b) (6) (b) (6) MAJ (b) (6) Mr. (b) (6) , Mr. (b) (6)  
(b) (6) Mr.(b) (6) , TSGT (b) (6) SSGT (b) (6)

## **2. OPERATIONAL:**

- a. Mission Commander: LTC (b) (6) (b) (6)
- b. Certified PMP/s (Category 11): MAJ (b) (6) MAJ (b) (6) (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander: COL (b) (6) (b) (6)
  - (2) CoPilot: 1<sup>st</sup> LT (b) (6) (b) (6)
  - (3) Navigator: MAJ (b) (6)
  - (4) Flight Engineer(s): CMSGT (b) (6)
- d. Spray Operators: MSG (b) (6) , MSG (b) (6) (b) (6)
- e. Safety Briefer: MAJ (b) (6)
- f. Spray Maintenance: TSG (b) (6) , TSG (b) (6) , TSG (b) (6) , TSG (b) (6)
- g. Spray Ground Monitors: MAJ (b) (6) (b) (6) MAJ (b) (6)
- h. Crew Chiefs: SSG (b) (6) , TSGT (b) (6)
- i. Avionics: TSG (b) (6)
- j. Flying Data:
  - (1) Spray Sorties/Hours: 2/3.2
  - (2) Ferry Sorties/Hours: 2/6.1

## **3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-548127
- c. Gallons Pesticide Loaded: 210 (27 June)
- d. Pesticide Applied: 210 (28 June)
- e. Other Additives Used: none
- f. Gallons and Name of Flush Used: 100 gallons water
- g. Application Rate: 1.0 oz/acre



**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 909106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: TeeJet 8005
- e. Nozzle Orientation & Number Used: 14 straight down
- f. Pressure (PSI): 47
- g. Flow Rate: 7.2 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 feet
- b. Spray Off Set: 2000 feet
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 knots (338 feet/second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):  
Ground: 310°/7 knots (June 27); 090°/3 knots (June 28)
- b. Temperature: 59 °F (June 27); 72 °F (June 28)
- c. Cloud Cover: Overcast
- d. Source: Ground/altitude observations

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

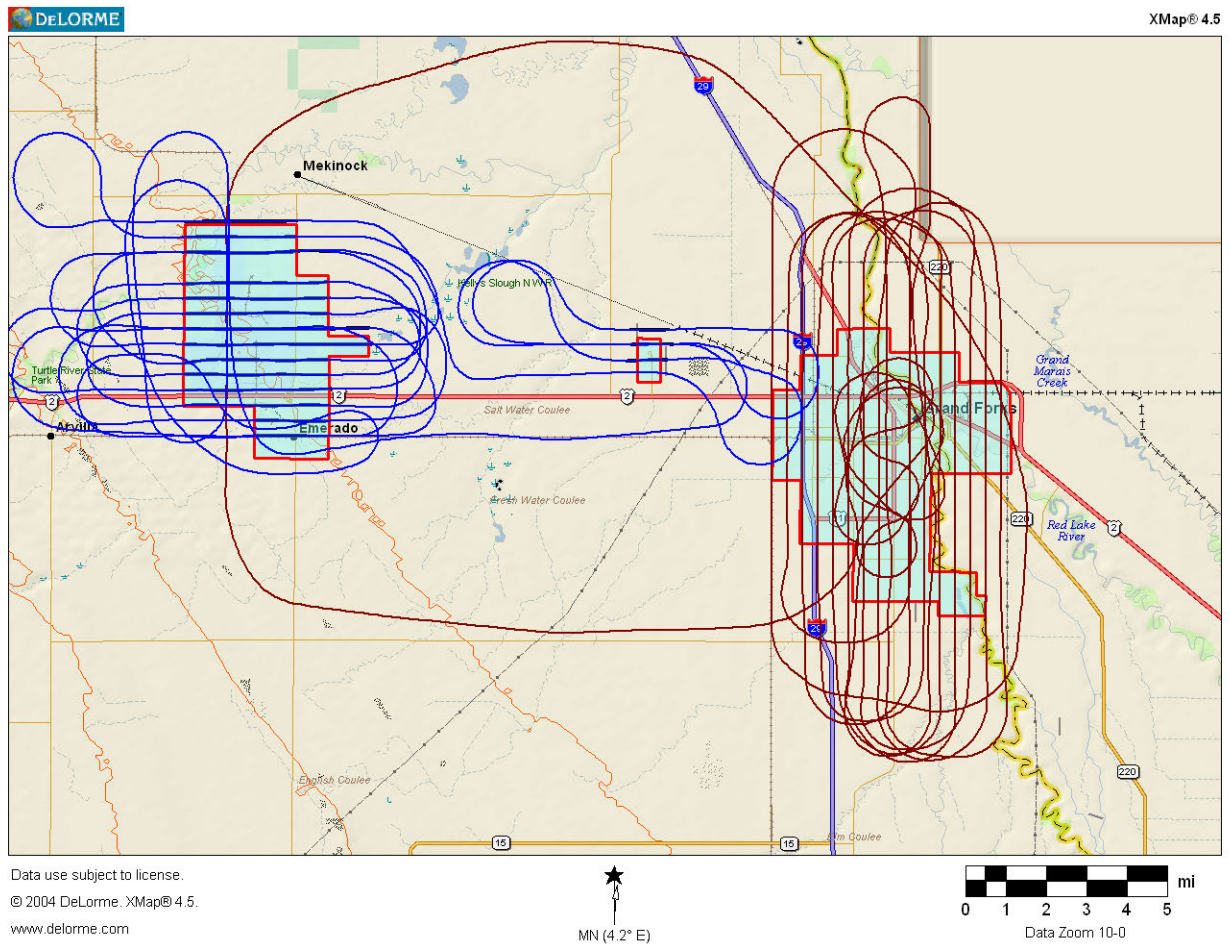
- a. Techniques and results:  
The City of Grand Forks (CGF) and the Air Force Base (GFAFB) conduct adult mosquito trapping. GFAFB public health reported trap counts of over 1000 mosquitoes prior to application in traps at locations on the base. Trap counts have submitted following the application at this time. The CGF reported the average mosquito counts exceeding 80 prior to application, with counts dropping to 17 immediately following application.

**8. REMARKS:** This spray is the first instance in some time that a calibration using actual chemical was conducted onsite prior to commencement of spray activities. Unfortunately, the first attempt at calibration revealed a faulty spray system, with no flow indication. The system was replaced on day 2 and a successful calibration was conducted. Special thanks to the members of spray maintenance for devising an ingenious method to conduct safe calibrations. Conditions on the first night of spray were sub-optimal, with colder temperatures(59 degrees F) and wind averaging 7 knots. Despite these conditions, there was still a significant amount of mosquito activity prior to the actual spray of the base. Conditions on the second night of spray (city of Grand Forks and East Grand Forks) were very optimal. Light wind (2-3 knots) from the east along with overcast conditions (little turbulence) undoubtedly resulted in good pesticide mixing in the atmosphere and uniform coverage. Ground sources reported good control of biting flies in the city of Grand Forks immediately following the application. Application rates were as planned, with 1.0 oz/acre chemical having been applied. It appears that this rate might be more effective than the lower rates used in years past.

//Signed//

(b) (6) Major, USAFR  
DoD Certified Pest Management Professional

**Attachment 1. Application of 1.0 oz/acre Trumpet® over spray blocks at Grand Forks AFB, City of Grand Forks, ND, and East Grand Forks, MN and environs on 27-28 June 2007. Spray blocks are in red and the C-130 flight path is shown in blue (June 27) and brown (June 28).**



**Attachment 2. Photo of C-130 spraying downtown Grand Forks. Photo courtesy of T. Hansen**





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



9 JUN 2006

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Grand Forks AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks AFB ND.

**2. Capability:** Spray Aircraft 89-9105 available 26-30 JUN 2006 MI: QZNRKA541177

**3. Concept of Operations:**

**26 JUN (Monday)**

0900: Showtime  
1100: Depart KYNG  
1300: Land KGFK/Safety Briefing  
1400: Spray In Brief (CPMP, MC, AC).

**27 JUN (Tuesday):**

1700: Show time  
1730 Load Chemical  
1930: Take off KRDR (Adulticide Spray Sortie)  
Sunset: 2131

**28 JUN (Wednesday):**

1700: Show time  
1730 Load Chemical  
1930: Take off KRDR (Adulticide Spray Sortie)  
Sunset: 2131

**29 JUN (Thursday):**

1700: Show time  
1730 Load Chemical  
1930: Take off KRDR (Adulticide Spray Sortie)  
Sunset: 2131

**30 JUN (Friday):**

1130: Show time  
1330: Take off KGFK  
1730: Land KYNG

**4. Spray Parameters:**

**a. Adulticide**

- (1) **Area to be treated:** 23,500 acres (Grand Forks AFB, City of GF, and possibly East Grand Forks)
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 2000 feet
- (4) **Flow Rate.** 4.36 gallons/minute ULV
- (5) **Application Rate.** 0.60 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots
- (7) **Flush:** With water, triple rinse, then air purge

**5. Mission Commander:** MAJ (b) (6);

**6. Aircraft Commander:** LTC (b) (6)

**7.** Support at Grand Forks AFB ND has been coordinated with the organization's Environmental/Spray Coordinator Ms (b) (6), DSN (b) (6).

**7.** HQ AFRC/DOOM approval via email.

// Signed //

(b) (6) (b) (6) Maj, USAFR  
AERIAL SPRAY CHIEF



# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 26-30 JUNE 2006 DRAFT

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) Pilots: LTC (b) (6), MAJ (b) (6), 1LT (b) (6)
- 2) Navigators: , IN??, LTC (b) (6)
- 3) Flight Engineers: MSG (b) (6), MSG (b) (6)
- 4) Spray Operators: MSG (b) (6), MSG (b) (6), MSG (b) (6)

##### b. Maintenance:

- 1) Spray Maintenance: MSG (b) (6), TSG (b) (6), TSG (b) (6)
- 2) Crew Chief(s): MSG (b) (6), TSG (b) (6)
- 3) Avionics: TSG (b) (6)

##### c. Entomologists/Ground Support: CPT (b) (6), MAJ (b) (6) (6)

#### 2. SCHEDULE: (All Local Times) PPR: 062601DC

##### 26 JUN (Monday)

0900: Showtime  
1100: Depart KYNG  
1300: Land KGFK/Safety Briefing  
1400: Spray In Brief (CPMP, MC, AC).

##### 27 JUN (Tuesday):

1700: Show time  
1730 Load Chemical  
1930: Take off KRDR (Adulticide Spray Sortie)  
Sunset: 2131

##### 28 JUN (Wednesday):

1700: Show time  
1730 Load Chemical  
1930: Take off KRDR (Adulticide Spray Sortie)  
Sunset: 2131

##### 29 JUN (Thursday):

1700: Show time  
1730 Load Chemical  
1930: Take off KRDR (Adulticide Spray Sortie)  
Sunset: 2131

##### 30 JUN (Friday):

1130: Show time  
1330: Take off KGFK  
1730: Land KYNG

#### 3. ITEMS TO TAKE

a. **Mission Commander:** Cellular Phone, Mission Folder

b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder,  
1 UHF Radio, Water Sensitive Cards, Card Holders with  
Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors,  
Project Notebook, Entomologist's Tool Kit, Trakstar Receiver and Antenna

c. **Navigator:** Maps/Map Bag, Validation Map

d. **Spray Operator:** Safety Gear, Calibration Tables

e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

#### 4. PPR: 062601DC

#### 5. RADIO FREQUENCIES: Air To Ground Primary UHF 392.2; VHF 123.45

**6. CONFIGURATION: SP2G**

- a. **System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. **Nozzle Tips/Orientation:** ULV (adulticide): 8005 Tee Jet oriented straight down
- c. **Number:** ULV: 18 8005s total (9 each side)
- e. **Aircraft:** 89-9105
- f. **Mission Identifier:** QZNRKA541177

**7. SPRAY PARAMETERS:**

- a. **Adulticide**
  - (1) **Area to be treated:** 11488 acres (Grand Forks AFB)
  - (2) **Altitude:** 150' for Adulticide application
  - (3) **Swath Width.** 2000 feet
  - (4) **Flow Rate.** 7.26 gallons/minute ULV
  - (5) **Application Rate.** 1.0 oz/acre Trumpet, ULV
  - (6) **Ground Speed:** 200 Knots
  - (7) **Flush:** With water, triple rinse, then air purge

**8. SPRAY MIXING AND LOADING:** The amount of Trumpet to load will be determined on site

**9. TRANSPORTATION:** 3 x 6 Paks and 1 van provided by 319 CES. Transportation (bus) will be provided to the In-Brief, vehicles will be picked up there.

1-Aircrew

1-Spray MX

1-Crew Chiefs & Specialists

**10. LODGING: On Base Billeting:** DSN 362-3070/6189 or (701) 594-8431, FAX 362-3069

-- Prime Knight DSN 362-3844 or (701) 747-3844

17 Rooms Reserved

**11. CONTACTS:**

a. **319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**

- (1) **Base Operations:** Airfield Manager DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx
- (2) **Environmental Officer:** (b) (6), DSN (b) (6) FAX 6155
- (3) **Base Civil Engineer:** Lt Col (b) (6)
- (4) **Pest Management:** DSN 362-4289, FAX 3432
- (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
- (6) **Weather:** DSN 362-4396
- (6) **Billeting:** DSN 362-3070/6189 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844

b. **910 AW, Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6) Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Col (b) (6) (b) (6) (b) (6)
- (5) 910 Base Ops: Airfield Manager: Ext 1182
  - Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, CAPT (b) (6) (b) (6) (b) (6) ; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: SMG (b) (6) (b) (6) Cell: (b) (6)
- (13) 910 LG/LGL: Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - Entomologist: (b) (6)
  - Mission Commander: (b) (6)
  - Spray Maintenance: (b) (6)



# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 26-31 JULY 04

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: Maj (b) (6) (S)
- (2) Pilots: LTC (b) (6) , Maj (b) (6) (S)
- (3) Navigators: LTC (b) (6) (b) (6)
- (4) Flight Engineers: CMS (b) (6)
- (5) Spray Operators: MSG (b) (6) , TSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: MSG (b) (6) TSG (b) (6) , SSG (b) (6) , TSG (b) (6)
- (2) Crew Chief(s): MSG (b) (6) , TSG (b) (6)
- (3) Avionics: TSG (b) (6) I
- (4) Com/Nav:

##### c. Entomologists/Ground Support: Capt (b) (6) MAJ (b) (6) (b) (6) LTC (b) (6)

#### 2. SCHEDULE: (All Local Times)

##### 26 JUL (Monday)

0800: Show at KYNG  
1000: Depart KYNG  
1200: Land KRDR/Safety Briefing  
1430: In-brief

##### 27 JUL (Tuesday)

1530: Show time  
1700: Take off KRDR (Adulticide Spray Sortie)  
2110: Sunset

##### 28 JUL (Wednesday)

1530: Show time  
1700: Take off KRDR (Adulticide Spray Sortie)  
2108: Sunset

##### 29 JUL (Thursday)

1530: Show time  
1700: Take Off KRDR (Adulticide Spray Sortie)  
2107: Sunset

##### 30 JUL (Friday)

1530: Show time  
1700: Take off KRDR (Adulticide Spray Sortie)  
2106: Sunset

##### 31 JUL (Saturday)

1300: Show time  
1430: Take off KRDR  
1830: Land KYNG

#### 3. REQUIRED ITEMS

a. **Mission Commander:** Hand Held GPS, 1 Cellular Phone

b. **Entomologist:** 1 Cellular Phones, Wind Gauge, 2 Compasses, Pest Safety Binder,  
1 UHF Radio, 10 Packs Water Sensitive Cards, 3 Boxes Card Holders with  
Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors,  
2 Toshiba Computers, 1 SATLOC Manual, Project Notebook,

2 Anemometers, Entomologist's Tool Kit, Trakstar Receiver and Antenna,  
Batteries, Kodak Camera

- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

**4. PPR:**

**5. RADIO FREQUENCIES:** Air To Ground Primary 392.2; VHF 123.45  
KRDR Tower 124.9 V; Grand Forks Int'l 118.4 V

**6. CONFIGURATION: SP2G**

- a. **System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. **Nozzle Tips/Orientation:** ULV (adulticide): 8008 TeeJet oriented straight down
- c. **Number:** ULV: 8 8008s total (4 each side)
- d. **Booms:** Fuselage
- e. **Aircraft:** #9105
- f. **Mission Identifier:** QZNRKA530208

**7. SPRAY PARAMETERS:**

**a. Adulticide**

- (1) **Area to be treated:** To be determined
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 2000 feet for ULV or as determined by the PMP
- (4) **Flow Rate.** 4.36 gallons/minute ULV
- (5) **Application Rate.** 0.60 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots
- (7) **Flush:** With water, triple rinse, then air purge

**8. SPRAY MIXING AND LOADING:**

The amount of Trumpet to load will be determined on site

**9. TRANSPORTATION: 2 Vans & 1 Staff provided by 319 CES**

**10. CONTACTS:**

**a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**

- (1) **Base Operations:** (b) (6) Airfield Manager or 1 LT (b) (6) DSN (b) (6)  
-- DSN 362-xxxx or (701) 747-xxxx
- (2) **Environmental Officer:** (b) (6), DSN (b) (6), FAX 6155
- (3) **Base Civil Engineer:** Lt Col (b) (6)
- (4) **Pest Management:** TSGT (b) (6), DSN (b) (6), FAX 3432
- (5) **Public Affairs:** Capt (b) (6) DSN (b) (6) (off duty CP ext 6711)
- (6) **Billeting:** DSN 362-3070/6189 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844

**b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, +2 + Ext

- (1) 910 AW/CC: Col (b) (6) (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: LTC (b) (6) (b) (6) (b) (6)
- (5) 910 OSF/OSA: Airfield Manager: (b) (6) (b) (6) (b) (6)  
- Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/CC: LTC (b) (6) (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6); FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Ext 1111; FAX 1616
- (9) 910 LG/CC: LTC (b) (6)
- (10) 910 LG/LGM: CMS (b) (6)
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: Ext 1132/1586
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flying (SOF): 1069, FAX: 1371
- (16) Cellular Spray Phones:

- PMP/Entomologist: (b) (6)
- Mission Commander: (b) (6)
- Spray Maintenance: (b) (6)



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



16 June 04

MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497-0198)

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Grand Forks AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks AFB ND.

**2. Capability:** Spray Aircraft Available 26-31 Jul 04

**3. Concept of Operations:**

**26 JUL (Monday)**

0800: Show at KYNG  
1000: Depart KYNG  
1200: Land KRDR/Safety Briefing  
1430: In-brief

**27 JUL (Tuesday)**

1530: Show time  
1700: Take off KRDR (Adulticide Spray Sortie)  
2110: Sunset

**28 JUL (Wednesday)**

1530: Show time  
1700: Take off KRDR (Adulticide Spray Sortie)  
2108: Sunset

**29 JUL (Thursday)**

1530: Show time  
1700: Take Off KRDR (Adulticide Spray Sortie)  
2107: Sunset

**30 JUL (Friday)**

1530: Show time  
1700: Take off KRDR (Adulticide Spray Sortie)  
2106: Sunset

**31 JUL (Saturday)**

1300: Show time  
1430: Take off KRDR  
1830: Land KYNG

**4. Spray Parameters:**

- a. **Altitude:** 150' AGL for Adulticide swath when no trees are present.
- b. **Swath Width.** 2000 feet for ULV or as determined by the PMP
- c. **Flow Rate.** 4.35 gallons/minute ULV
- d. **Application Rate.** 0.60 oz/acre Trumpet®), ULV
- e. **Ground Speed:** 200 Knots
- f. **Proposed spray area:** Approximately 40,000 acres

**5. Mission Commander/Aircraft Commander:** Major (b) (6)5)

6. Support required at Grand Forks AFB ND has been coordinated with the organization's Environmental/Spray Coordinator Ms(b) (6) (b) (6) DSN (b) (6)

7. HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616, ATTN: 757 AS/DOS.

// SIGNED //

(b) (6) (b) (6) Maj, USAFR  
AERIAL SPRAY CHIEF



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



14 Jul 05

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Grand Forks AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks AFB ND.

**2. Capability:** Spray Aircraft 89-9108 available 1-5 Aug 05

**3. Concept of Operations:**

**1 Aug (Monday)**

0900: Showtime

1100: Depart KYNG

1300: Land KGFK/Safety Briefing

1500: Spray In Brief (CPMP, MC, AC) Customs Bldg, where plane is parked.

**2 Aug (Tuesday):**

1630: Show time

1700 Load Chemical

1830: Take off KGFK (Adulticide Spray Sortie)

2102: Sunset

**3 Aug (Wednesday):**

1630: Show time

1700 Load Chemical

1830: Take off KGFK (Adulticide Spray Sortie)

2101: Sunset

**4 Aug (Thursday):**

1630: Show time

1700 Load Chemical

1830: Take off KGFK (Adulticide Spray Sortie)

2100: Sunset

**5 Aug (Friday):**

1000: Show time

1200: Take off KGFK

1500: Land KYNG

**1 Jul (Friday):**

0900: Show time

1100: Take off KGFK

1500: Land KYNG

**4. Spray Parameters:**

- a. **Altitude:** 150' AGL for Adulticide swaths when no trees are present.
- b. **Swath Width.** 2000 feet for ULV or as determined by the CPMP
- c. **Flow Rate.** 4.36 gallons/minute ULV
- d. **Application Rate.** 0.60 oz/acre Trumpet
- e. **Ground Speed:** 200 Knots
- f. **Proposed spray area:** Approximately 21,767 acres

**5. Mission Commander:**

**6. Aircraft Commander:**

7. Support including Security Forces for the aircraft parking at Grand Forks Intl Airport due to Grand Forks AFB runway closure required at Grand Forks AFB ND is coordinated with the organization's Environmental/Spray Coordinator Ms (b) (6) (b) (6) DSN (b) (6)

// Signed //

(b) (6) (b) (6) Maj, USAFR  
AERIAL SPRAY CHIEF



# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 27 Jun - 1 Jul 05

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: Maj (b) (6) (6)
- (2) Pilots: MAJ (b) (6) (6) MAJ (b) (6) (b) (6) MAJ (b) (6) (6)
- (3) Navigators: LTC (b) (6) (b) (6) Maj (b) (6) (6)
- (3) Flight Engineers: MSG (b) (6) (6), MSG (b) (6) (b) (6) (6)
- (4) Spray Operators: MSG (b) (6) (6), MSG (b) (6) (6) MSG (b) (6) (b) (6) (6) SSG (b) (6) (6)

##### b. Maintenance:

- (1) Spray Maintenance: MSG (b) (6) (6), TSG (b) (6) (6), TSG (b) (6) (6)
- (2) Crew Chief(s): MSG (b) (6) (b) (6) (6) SRA (b) (6) (6)
- (3) Avionics: MSG Ron Snell

##### c. Entomologists/Ground Support: LTC (b) (6) (b) (6) (6) MAJ (b) (6) (6), CPT (b) (6) (6) CPT (b) (6) (6)

#### 2. SCHEDULE: (All Local Times) PPR: N/A

##### 27 Jun (Monday)

0900: Show at KYNG  
1100: Depart KYNG  
1300: Land KGFK/Safety Briefing  
1500: Spray In Brief (CPMP, MC, AC, Spray Maintenance)

##### 28 Jun (Tuesday):

1630: Show time  
1700 Load Chemical  
1830: Take off KGFK (Adulticide Spray Sortie)  
2130: Sunset

##### 29 Jun (Wednesday):

1630: Show time  
1700 Load Chemical  
1830: Take off KGFK (Adulticide Spray Sortie)  
2130: Sunset

##### 30 Jun (Thursday):

1630: Show time  
1700 Load Chemical  
1830: Take off KGFK (Adulticide Spray Sortie)  
2130: Sunset

##### 1 Jul (Friday):

1000: Show time  
1200: Take off KGFK  
1500: Land KYNG

#### 3. ITEMS TO TAKE

- a. **Mission Commander:** Cellular Phone, Mission Folder
- b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder, 1 UHF Radio, 1 Measuring wheel, Project Notebook, Entomologist's Tool Kit
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment

**4. PPR: Not Required**

**5. RADIO FREQUENCIES: Air To Ground Primary** UHF 392.2; VHF 123.45  
KRDR Tower 124.9 V; Grand Forks International 118.4 V

**6. CONFIGURATION: SP2G**

- a. System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. Nozzle Tips/Orientation:** ULV (adulticide): 8008 Tee Jet oriented straight down
- c. Number:** ULV: 7 8008s total (4 left; 3 right)
- e. Aircraft:** 89-9107
- f. Mission Identifier:** QZNRKA463178

**7. SPRAY PARAMETERS:**

**a. Adulticide**

- (1) **Area to be treated:** 23,500 acres (Grand Forks AFB, City of GF, and possibly East Grand Forks)
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 2000 feet
- (4) **Flow Rate.** 4.36 gallons/minute ULV
- (5) **Application Rate.** 0.60 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots
- (7) **Flush:** With water, triple rinse, then air purge

**SPRAY TEST (Please note that this test will be done prior to the actual application):**

Test Protocols:

- a. Purpose: Swath Characterization for a 500 foot altitude release will be measured using Trumpet and the fuselage ULV configuration. Live mosquitoes will be deployed as bioassays to determine efficacy. Glass slides will be used to collect droplets to compare size and density of droplets with mosquito kill rate. Approximately 10 sampling stations will be setup on a road near to Grand Forks AFB. Direction of sampling line will depend on wind direction, we will adjust our fly over (spray) line to be perpendicular to the prevailing wind (this is a cross wind test). Offset will be 4000 ft. Additionally, we need the average winds to be below 10 mph.
- b. Aircrew: We need the system to have stabilized prior to reaching the sampling points. Thirty seconds prior to the sampling point and 30 seconds after should be sufficient (30 seconds total), please be advised that this value could change. Spray Operators: Please record the MASS pressure at 5 second intervals and total spray-on time for this test. Navigator: Please record winds at altitude every ten seconds during the spray-on period.
- c. Microscope slides will be retrieved 30 minutes after the plane has passed. Please allow 1 hour before initiating the actual spray application in the test area. Number and size of the droplets will be determined as well as mosquito mortality, the following day.

**8. SPRAY MIXING AND LOADING:** The amount of Trumpet to load will be determined on site

**9. TRANSPORTATION:** Some 5 vehicle combination of vans and 6 packs provided by 319 CES. Transportation provided to lodging, vehicles will be picked up there.

**10. LODGING:** Holiday Inn, 701-772-7131/Fax 701-780-9112

**Directions:** East on Hwy 2 for 5 miles, passing under I29 turn right on 43<sup>rd</sup> St, it's on the left, big white bldg.

**11. CONTACTS:**

**a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**

- (1) **Base Operations:** Airfield Manager DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx
- (2) **Environmental Officer:** (b) (6) , DSN (b) (6) , FAX 6155
- (3) **Base Civil Engineer:**
- (4) **Pest Management:** DSN 362-4289, FAX 3432
- (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
- (6) **Weather:** DSN 362-4396
- (6) **Billeting:** DSN 362-7200 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844

**b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6) (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161

- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 Base Ops: Airfield Manager: (b) (6) (b) (6) (b) (6)
  - Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) ; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Ext 1652; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL:Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - PMP/Entomologist: (b) (6)
  - Mission Commander: (b) (6)
  - Spray Maintenance: (b) (6)



DEPARTMENT OF THE AIR FORCE  
757 Airlift Squadron – Aerial Spray Operations  
3976 King Graves Rd Unit 24  
Vienna OH 44473-5924

**910 AW AERIAL SPRAY**  
**Army Corps of Engineers Williston, ND 27 May – 5 JUN 09**  
**PMP'S POST-MISSION REPORT**

**1. MISSION BASICS:**

- a. Installation Sprayed: Army Corps of Engineers property near Williston
- b. Mission Duration: 27 May – 5 Jun 2009
- c. Purpose of Application: Control nuisance and vector mosquitoes (larval stages)
- d. Application Dates: 28 May – 3 Jun 2009
- e. Times of Application: see attachment 1.
- f. Acres Treated: 6,733
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) (b) (6)
- h. Date Spray Map Last Approved: 26 May 2009 (electronically delivered)
- i. Date of Waste Generation Letter: 26 May 2009
- j. Installation In-Briefing: (When/Where/Briefer/s): 19 May, 2009; Williston ACE Conference Room, Maj (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: LtCol (b) (6)
- b. Certified PMP/Entomologists (Category 11): Maj (b) (6) Maj (b) (6)  
(b) (6) (safety briefer)
- c. Aircrew:
  - Pilots: Maj (b) (6) (b) (6) Maj (b) (6)
  - Navigators: LtCol (b) (6)
  - Flight Engineers: SrA (b) (6)
  - Spray Operators: MSgt (b) (6) MSgt (b) (6) SSgt (b) (6)
- d. Maintenance:
  - Spray Maintenance: TSgt (b) (6) TSgt (b) (6) SSgt (b) (6)  
(b) (6) SrA (b) (6)
  - Crew Chief(s): SSgt (b) (6) (b) (6) A1C (b) (6)
  - Avionics: TSgt (b) (6)
- e. Flying Data:
  - (1) Spray Sorties/Hours: 15 + 1 flush/25.1
  - (2) Ferry Sorties/Hours: 2/6.9

**3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Vectobac 12AS (1200 ITU/mg)
- b. EPA Registration Number: 73049-38
- c. Gallons Pesticide Loaded: 1,240
- d. Pesticide Applied: 1,240 gal
- e. Diluent: 25,676 gallons water and 1,000 gallons of water rinse and flush
- f. Other Additives Used: Poly Control® drift reduction agent (32oz/load; 5.8 gal total)
- g. Application Rate: 24 oz/acre Vectobac 12AS®

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 9107
- b. Spray System (Modules Used) and System ID #: 3
- c. Spray System Configuration: SP3-Module System/Fuselage Booms
- d. Nozzle Type/Size: Raindrop nozzles
- e. Nozzle Orientation & Number Used: 24- straight back
- f. Pressure (PSI): 59-60
- g. Flow Rate: 372 gpm

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 200'
- b. Spray Offset: none
- c. Spray Release Altitude: 100'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): variable conditions at speeds varying calm to 15 kts. Sprays were conducted into the wind.
- b. Temperature (Degrees Fahrenheit): 35-78° F
- c. Relative Humidity: 33-88%
- d. Cloud Cover: varied between cloudy to clear
- e. Source: Ground observations/aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Williston Vector Control & an Air Force entomologist flew over the Williston ACE property and marked flooded areas with GPS software. Areas were sampled using standard larval surveillance techniques to determine pest densities. Larval density ranged between 5-200 larvae per dip depending on location, all larval instars were represented and only a few pupae were observed. This indicated that Vectobac would be an appropriate larvicide to use.
- b. Effectiveness:
  - (1) Technique/s Used: Larval dip samples
  - (2) Results: Excellent results were encountered in treated areas. An example is given in Attachment 2.

8. **REMARKS:** This is the first application at the Williston Army Corps of Engineers (ACE) property near Williston ND. The Yellowstone/Missouri confluence has historically had mosquito problems with Lewis & Clark making comments about mosquitoes when they passed through. The target pest for this time of the year, *Aedes vexans*, lays eggs singly in moist soil that hatch the following season when flooding occurs; since river height fluctuates throughout the year, identification of breeding areas is challenging and requires significant surveillance. Identifying the breeding habitats and translating them into spray blocks that are functional for application with a C-130H is paramount to success in this particular program. The ACE received congressional funding for the project and Williston Vector Control District ((b) (6)) is the local technical advisor for the project. Attachment 3 shows the portion of the proposed spray blocks actually treated by the Air Force. Portions of the spray blocks were left for smaller aerial aircraft and priorities were determined daily by Williston VCD. Post-application sampling was very encouraging with greater than 95% reductions observed. We appreciate the support of all the agencies involved, including Minot AFB where the larvicide mixing took place. Special thanks go to the Minot AFB Pest Management Shop (Ms. (b) (6)) and 5CES who received and temporarily stored the larvicide. (b) (6) (Valent Biosciences) provided technical support. Adult mosquito control may occur at Williston during the 15-23 July mission to Minot AFB, if this can be coordinated.

//Signed//

**Major (b) (6) (b) (6) PhD, USAFR**  
**Certified Pest Management Professional**

//Signed//

**Major (b) (6) PhD, USAFR**  
**Certified Pest Management Professional**

3 attachments

Attachment 1: Summary Spray Chart

**28 May – 4 June 2009**

**SPRAY OPERATIONS SUMMARY FOR WILLISTON ACE**

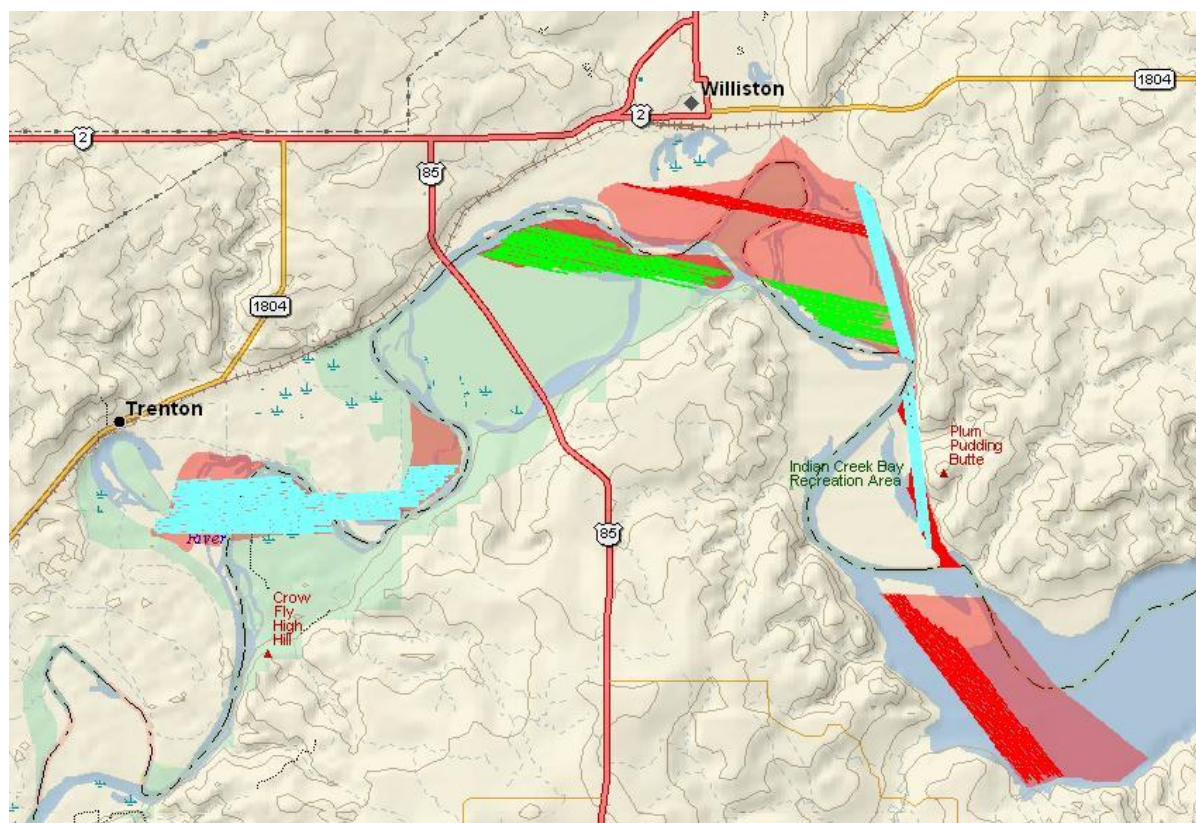
<b>DATE May</b>	<b>SORTIE #</b>	<b>TIME OF APPLICATION</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>FLYING HOURS</b>
28	1	0615-0815	493	1971	2.0
28	2	0920-1045	443	1771	1.4
29	3	0550-0725	458	1832	1.6
30	4	0800-0935	424	1697	1.6
30	5	1035-1215	461	1844	1.7
31	6	0800-0950	451	1802	1.8
1 June	7	0600-0735	472	1888	1.6
1	8	0825-0945	451	1804	1.3
1	9	1050-1245	449	1796	1.9
2	10	0555-0710	435	1738	1.3
2	11	0800-0925	448	1790	1.4
2	12	1005-1150	427	1708	1.7
3	13	0555-0715	424	1688	1.3
3	14	0810-0925	448	1791	1.3
3	15	1010-1135	449	1796	1.6
4	Flush		n/a	n/a	1.6



Attachment 2. Pre and Post treatment samples of mosquito larvae in single standard dip samples at Skunk Hollow (N48°6.486,W103°40.746) pre-spray 31 May and post-spray was 1 June 2009.

Skunk Hollow								% difference
Location 1	pre	12	60	56	240	160	105.6	
	post	4	1	1	0	0	1.2	
								- 99%
Location 2	pre	160	12	36	140	75	84.6	
	post	6	0	8	8	2	4.8	
								- 94%
no spray area		72	88	68	12	84	64.8	
		72	80	32	40	130	70.8	
								+ 9%

Attachment 3. Map of larvicide spray locations on Army Corps of Engineers property near Williston ND. Colored lines indicate sprays on various days. Priority of spray blocks was dictated by the technical advisor and weather conditions.



# AERIAL SPRAY OPERATIONAL SCHEDULE

## WILLISTON ARMY CORPS OF ENGINEERS, WILLISTON, ND

### 27 May – 5 JUN 09

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes, with larvicide, in order to improve working conditions and lower risk of vector-borne illness to individuals working and living in and around the City of Williston.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: LtCol (b) (6) (MC) Maj (b) (6) (b) (6) Maj (b) (6)
- (2) Navigators: Lt Col (b) (6)
- (3) Flight Engineers: SrA (b) (6)
- (4) Spray Operators: MSgt (b) (6), MSgt (b) (6), SSgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSgt (b) (6), TSgt (b) (6), SSgt (b) (6), SrA (b) (6)
- (2) Crew Chief(s): SSgt (b) (6), A1C (b) (6)
- (3) Avionics: TSgt (b) (6)

##### c. Entomologist: Maj (b) (6) (b) (6) (will be at Williston) & Maj (b) (6)

#### 2. SCHEDULE: (All Local Times)

##### 27 MAY (Wed):

0800 Show time  
1000 Depart KYNG  
1245 Land KMIB  
1330 Installation in-Brief, safety brief, and mission plan coordination briefings. No one leaves the aircraft area until cleared out.

##### 28 MAY (Thurs): \*As many sorties as wx permits each day

0400 Show time/WX Decision  
0430 Load water & Vectobac  
0545 Takeoff KMIB (larvicide Spray Sortie) at Williston ACE property (near KISN).  
0601 Sunrise

##### 29 MAY (Fri):

0430 Show time/WX Decision  
0430 Load Chemical  
0545 Takeoff KMIB  
0601 Sunrise

##### 30-31 May (Sat-Sun): Weekend ops hrs (0700-1700 hrs Local)

0530 Show time/WX Decision  
0530 Load Chemical  
0715 Takeoff KMIB  
0600 Sunrise

##### 1 Jun (Mon)

0430 Show time/WX Decision  
0430 Load Chemical  
0615 Takeoff KMIB (airfield opens at 0600)  
0559 Sunrise

##### 2-4 Jun (Tues-Thurs)

0400 Show time/WX Decision  
0430 Load water & Vectobac  
0545 Takeoff KMIB (larvicide Spray Sortie) at Williston ACE property (near KISN). Thurs will include flush sortie.  
0558 Sunrise

##### 5 June (Fri)

0700 Showtime  
0900 Depart KMIB  
1335 Land KYNG

#### 3. ITEMS TO TAKE

- a. **Mission Commander:** Cellular Phone, Mission Folder
- b. **Entomologist:** Cell Phone, Wind Gauge, Compass, Pest Safety Binder,  
1 VHF radio Project Notebook
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment

**4. KMIB PPR: 2701WX**

- 5. RADIO FREQUENCIES: Air To Ground Primary** UHF 392.2; VHF 123.45  
Minot AFB Tower 120.65 V, 236.6, 253.5; Minot International 118.2 V, 393.1 or Unicom 122.95

**6. CONFIGURATION: SP3G**

- a. **System:** 3-Module System/Fuselage Booms
- b. **Nozzle Tips/Orientation:**  
Larvicide: Raindrop nozzles straight back
- c. **Number:**  
Larvicide: fuselage only, 24 total (12 each side) straight back
- d. **Booms:** Fuselage
- e. **Aircraft:** 909107
- f. **Mission Identifier:** QZNRKA282147

**7. SPRAY PARAMETERS:**

- a. **Larvicide**
  - (1) **Area to be treated:** approx. 8,000 acres (plan on 16-17 sorties)
  - (2) **Altitude:** 100' for Larvicide application
  - (3) **Swath Width.** 200 feet
  - (4) **Flow Rate.** 372 gallons/minute \*\*Please spray out entire volume on each sortie!
- b. **Application Rate.** 4 gallons/acre (water with 1.5 pints of Vectobac®)
- c. **Ground Speed:** 200 Knots

- 8. SPRAY MIXING AND LOADING:** Plan to load 1800 gallons of water per lift.  
Full load will consist of 1800 gallons of water + 85 gallons of Vectobac AS + 4 gallons of Staput

Subsequent loads can be calculated by the following formulas:

Determine the volume remaining in MASS. Add water to give 1800 gallons total. Then add Vectobac at 0.05 gallons per gallon of water added; Staput is added at 0.00023 gallons per gallon of water added.

**9. TRANSPORTATION:**

Enterprise Rent a Car  
1825 S Broadway  
Minot ND 58701  
(701)838-3800 Office  
(701)838-4255 Fax

(b) (6) (b) (6) (b) (6) – Minivan  
(b) (6) (b) (6) – FS Car

**10. LODGING:**

Best Western Kelly Inn  
1510 26th Ave  
(701) 852-4300

**11. CONTACTS:**

- a. **Minot AFB ND: DSN prefix: 453- Commercial area code and prefix (701) 723 -**

- 1. **Base Operations:** (b) (6) (SSgt (b) (6) Airfield Manager: TSgt (b) (6) /TSgt (b) (6) FAX: 3637
- 2. **Environmental Officer:** (b) (6)
- 3. **Base Civil Engineer:** Lt Col (b) (6)
- 4. **Pest Management:** (b) (6) (cell: ((b) (6) )
- 5. **Public Affairs:** Capt (b) (6)
- 6. **Weather:** TSgt (b) (6) /Capt (b) (6)
- 7. **Billeting:** SSgt (b) (6) , TSgt (b) (6) (if you have problems w/this number use (b) (6)

- 8. Fire Dept: x2461
- 9. Transient Alert: x3153, closes at 1730L
- 10. Minot AFB Twr – x3330
- 11. Minot Int'l Twr (Magic City Twr) (701) 852-2346 Jan Hartle

**b. Williston**

- 1. Vector control district: (b) (6)
- 2. Army Corps of Engineers: (b) (6) (b) (6) (b) (6), office; (b) (6), cell
- 3. Williston ADS 125.925

**b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- 1. 910 AW/CC: Col (b) (6)
- 2. 910 AW Command Post: Ext 1315; FAX 1161
- 3. 910 AW/PA: Ext 1236; FAX 1022
- 4. 910 OG/CC: LtCol (b) (6)
- 5. 910 Base Ops: Airfield Manager: Ext 1182
  - Assistant Air Field Manager (ACAM), Ext 1181
- 6. 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
- 7. 757 AS/DOO: Ops Admin: SMSgt (b) (6) (b) (6) FAX 1657
- 8. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6); FAX 1616
- 9. 910 LG/CC: Ext 1225
- 10. 910 LG/LGM: Ext 1352
- 11. Maintenance Control: Ext 1348
- 12. LG/LGMS: Spray Maintenance: SMSgt (b) (6) (b) (6) Cell: (b) (6)
- 13. 910 LG/LGL: Ext 1137
- 14. Omega/SATO Travel: Ext 1772; (800) 285-6342
- 15. Supervisor of Flight Desk: 1069, FAX: 1371
- 16. Cellular Spray Phones:
  - (b) (6) cell:
  - Mission Commander:
  - Spray Maintenance
  - Ento phone (b) (6)

(b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## AVON PARK, FL

### 27 NOV – 1 DEC 06

**PURPOSE/OBJECTIVE/BENEFIT:** Aircrew and Spray Maintenance will be conducting flight and ground training. Plan on both ULV and UHV configurations for Loadmaster training. Hot turn engine running re-supply training with spray maintenance will also be conducted during this mission. Copilot initial qualification training sorties will be conducted. Mission commander/AC will determine the priority and plan of training.

\*\*Airspace immediately around the airfield will be limited due to training with a UAV, but we can coordinate airspace issues with the tower/other unit using the range at that time to make the most of the range area.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

1. Pilots: LTC (b) (6) Cpt (b) (6) 1Lt (b) (6) (b) (6) 1LT (b) (6) (b) (6)
2. Navigators: LTC (b) (6) ,
3. Flight Engineers: Msgt (b) (6) (b) (6)
4. Spray Operators: Msgt (b) (6) , Msgt (b) (6) Msgt (b) (6) ,

##### b. Maintenance:

1. Spray Maintenance: Tsgt (b) (6) , Tsgt (b) (6) , Msgt (b) (6) ,  
Tsgt (b) (6)
2. Avionics: None
3. Crew Chiefs: Msgt (b) (6) (b) (6) Ssgt (b) (6) Sra (b) (6)

##### c. Entomologists: None

##### d. Admin Support: None

#### 2. SCHEDULE: (All time Local) All times and sequence of events are subject to change depending upon the needs of the testing and training.

27 NOV(MONDAY):

PPR # - Not Req since scheduled for range

0900: Show Time KYNG

1100: Depart KYNG

1400: Land KAGR

1500 FUEL (20K requested each day)

28 NOV (TUESDAY): Range Times 0730-1130

0600: Show Time

0730: T/O KARG

1130: Land KAGR

1200 Fuel

29 NOV (WEDNESDAY): Range Times 0730-1130

0600: Show Time

0730: T/O KARG

1130: Land KAGR

1200 Fuel

30 NOV (THURSDAY): Range Times 0730-1130

0600: Show Time

0730: T/O KARG

1130: Land KAGR

1200 FUEL

1 DEC (FRIDAY): Range Times 0730-1130

0600: Show Time

0730: Depart

1130: Land

1200 Fuel

1300 Depart for YNG

1600 Land YNG

### 3. ITEMS TO TAKE:

- a. **Navigator:** Maps with “No-Spray” Areas Marked

### 4. AIR TO GROUND FREQUENCIES:

- a. **Spray: Primary 392.2;** Secondary 340.8
- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. Avon Park: TWR-292.2 (p), 126.15, 276.6 (s) Hrs 0700-2300 M-F, S-S per flying

schedule

#### **DSN 968-7138**

- e. MacDill: TWR-123.7; GND-118.575; ATIS-133.825; CMD POST-311.0; PTD-372.2

### 5. SPRAY CONFIGURATION:

- a. MASS – SP2G
- b. Aircraft Number: 99107
- c. Mission Identifier: QZNRKA273331

### 6. MISSION PROTOCOLS:

- 1. Loadmaster Training: UHV- ULV water spray training, Maint Hot load practice, Copilot initial and pilot proficiency training

### 7. CONTACTS:

- a. Quarters: (JTR Lodging/\$92)
  - **Quality Inn (863) 385-4500 (\$71 w/Tax Exempt Form) FAX (863) 382-4793**
  - Sebring/Avon Park: Inn on the Lakes, (863) 471-9400, Group Reservation:  
<http://www.innonthelakessebring.com> POC is (b) (6)
  - Jacaronda (863) 453-2211; 19 East Main St, Avon Park, FL \$ 27.29
  - Oak Tree Inn (863) 453-3165
  - Days Inn (863) 382-1148, 800 329-7466
- b. Transportation:
  - Avon Park Enterprise POC Bianca (863) 452-5483; Fax (863) 452-5947**
  - Sebring Enterprise POC (b) (6) (863) 385-6969; Fax (863) 385-3416
  - 3 Van \$61.99; 2 Full size car \$40.99 (+ TAXES); Unlimited mileage
  - (All vehicles will be at Avon Park Flight Ramp, keys will be with tower)
  - (b) (6) (b) (6) (b) (6) Van
  - (b) (6) Full Size
- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350
  - (1) Weather: MacDill AFB Forecaster (DSN 968-2854)
  - (2) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)
  - (3) MacDill AFB Ops Gp CC 968-3014
- d. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX
  - DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN
  - Avon Control Tower & Range Control Scheduling DSN 968-7176
  - Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number
  - (1) Range Operations Manager: (b) (6) , Bldg 236,(b) (6)
  - (2) Avon Range Control Tower: ext 176
  - (1) Flight Chief of Civ Engineer:(b) (6) , Bldg 29, (b) (6)
  - (2) Chief, Environmental Flight: (b) (6) , Bldg 29,(b) (6) also
  - Wildlife Biologist (b) (6)



- (3) Fuels: ext 118 or Cel (b) (6)
- (4) Range Support Manager: Mr (b) (6) , Bldg 29, (b) (6)
- (5) Range Control/Schedule: (b) (6) (b) (6) Bldg 41,(b) (6)  
**See Attached Avon Park Org directory for additional listings**
- (9) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)  
 Range VHF: 126.15

f. **Sebring AP:** Mgr: Mr (b) (6) (fuel needs)  
 BEEPER: 1 (863) 999-8622 ENTER YOUR PHONE# ENTER #  
 Asst Mgr: (b) (6) x-  
**Fuel is coordinated for 20k at 1200L every day except 1<sup>st</sup> day which is 1500**

g. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
 Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- 1. 910 AW/CC: Col (b) (6) (b) (6)
- 2. 910 AW Command Post: Ext 1315; FAX 1161
- 3. 910 AW/PA: Capt (b) (6) (b) (6) FAX 1022
- 4. 910 OG/CC: Col (b) (6) (b) (6) (b) (6)
- 5. 910 OG: Airfield Manager, Ext 1186/1526
- 6. 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
- 7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- 8. 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) ; FAX 1657
- 9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) (b) (6) (b) (6) FAX 1616
- 10. 910 LG/CC: Ext 1225
- 11. 910 LG/LGM: Ext 1352
- 12. Maintenance Control: Ext 1327
- 13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6) (b) (6)
- 14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
- 15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) cell, (b) (6)





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



3 NOV 2006

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray Test and Training at Avon Park, FL

1. Purpose/Objectives/Benefits: Perform training and proficiency sorties for aircrew members as well as ground training for the aerial spray maintenance personnel. Water will be the only substance sprayed out of the system during training.
2. Capability: Spray Aircraft 90-9107 Available, 27 NOV – 1 DEC 2006.
3. **Concept of Operations:**  
27 NOV(MONDAY):
  - PPR # - Not Req since scheduled for range
  - 0900: Show Time KYNG
  - 1100: Depart KYNG
  - 1400: Land KAGR
  - 1500 FUEL (20K requested each day)  
28 NOV (TUESDAY): Range Times 0730-1130
  - 0600: Show Time
  - 0730: T/O KARG
  - 1130: Land KAGR
  - 1200 Fuel  
29 NOV (WEDNESDAY): Range Times 0730-1130
  - 0600: Show Time
  - 0730: T/O KARG
  - 1130: Land KAGR
  - 1200 Fuel  
30 NOV (THURSDAY): Range Times 0730-1130
  - 0600: Show Time
  - 0730: T/O KARG
  - 1130: Land KAGR
  - 1200 FUEL  
1 DEC (FRIDAY): Range Times 0730-1130
  - 0600: Show Time
  - 0730: Depart
  - 1130: Land
  - 1200 Fuel
  - 1300 Depart for YNG
  - 1600 Land YNG
4. Spray Configuration:
  - a. MASS – SP2G

- b. Aircraft Number: 90-9107
  - c. Mission Identifier: QZNRKA273331
- 5. Mission Protocols: Avon Park Spray Flight Training
  - 6. Support required at Avon Park Bombing Range is thru the Range Manager.
  - 7. If you have any questions concerning this mission please contact me at DSN (b) (6) .

//SIGNED//

(b) (6) (b) (6) CPT, USAFR  
Assistant Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

21 Apr 09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Parris Island MCRD, SC

1. Aerial spray mission controlling biting midges and mosquitoes with insecticide to reduce the negative impact on outdoor training at Parris Island MCRD, SC.

2. Concept of Operations:

- a. 27 April (Monday)  
1700 Depart KYNG  
1900 Land KNBC
- b. 28 April (Tuesday)  
1400 Installation Brief  
1830 Depart KNBC  
2000 Land KNBC
- c. 29 April (Wednesday)  
1830 Depart KNBC  
2000 Land KNBC
- d. 30 April (Thursday)  
1200 Depart KNBC  
1400 Land KYNG

3. Maj (b) (6) (b) (6) will act as Mission Commander and Maj (b) (6) (b) (6) will act as Aircraft Commander. Support at Parris Island has been completed.

(b) (6) (b) (6) Maj, USAFR  
Assistant Chief of Aerial Spray

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **MCRD, PARRIS ISLAND, SC**

### **27-30 April 2009**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Pilots: MC: Maj (b) (6) (b) (6) LTC (b) (6) , Maj (b) (6) (b) (6)
- (2) Navigators: Maj (b) (6) (6)
- (3) Flight Engineers: CMSgt (b) (6)
- (4) Spray Operators: MSgt (b) (6) MSgt (b) (6) (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: TSgt (b) (6) , SSgt (b) (6) , TSgt (b) (6)
- (2) Crew Chiefs: TSgt (b) (6) MSG (b) (6)
- (3) Avionics: (b) (6)

##### **c. Entomologist:** Maj (b) (6)

#### **2. PPR REQUIREMENTS: 117-01 SPRAY07**

**3. PLANNED SEQUENCE OF EVENTS:** (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

##### **27 APR (Monday)**

1500 Show  
1700 Depart YNG  
1900 Land KNBC  
1915 Safety Brief

##### **28 APR (Tuesday)**

TBD Brief  
1630: Showtime  
1700: Wx Decision and Load Chemical  
Take off TBD (approx. 1850) or mission (Start Spray 1.0 hrs prior to Sunset)  
Sunset: 2002

##### **29 APR (Wednesday) Wx Backup or Training**

TBD Brief  
1630: Showtime  
1700: Wx Decision and Load Chemical  
Take off TBD (approx. 1850) or mission (Start Spray 1.0 hrs prior to Sunset)  
Sunset: 2003

##### **30 APR (Thursday) \*\*Departure time will slip depending upon Wednesday evening completion time.**

1000 Show  
1200 Depart KNBC  
1400 Land KYNG

#### **4. ITEMS TO TAKE/NOTES:**

##### **a. Mission Commander:**

- (1) Mission Commander Cell Phone

- b. **Entomologist:**
  - (1) Wind Gauge & Compass
  - (2) VHF Radios and Cellular Phone
  - (3) Pesticide Safety Binder
- c. **Navigators:**
  - (1) Maps
  - (2) Templates
- d. **Spray Maintenance:**
  - (1) Spill Kit
  - (2) Safety Equipment
  - (3) Loading and Clean-up Equipment and Supplies

## 5. **SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** size = 8005; 7 open
- d. **Differential GPS:** Wingman Installed
- e. **Aircraft:** 90-9107
- f. **Mission Identifier:** QZNRKA121117

## 6. **SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Marvel Mystery Oil
- b. **Application:** 0.75 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 8 Minutes
- h. **Flow Rate:** 2.7 gallons/Minute

7. **AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading 1.5 drums of Dibrom

8. **PARKING PLAN:** NAS Beaufort, SC. Please limit number of vehicles and trips on the flight line

## 9. **AIR TO GROUND RADIO FREQUENCIES:**

Beaufort Tower: 119.05 MCAS TWR  
 Beaufort Approach 123.7  
 Hilton Head Arpt: 118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)  
 Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 123.4 V**

10. **TRANSPORTATION:** Parris Island will provide 3 vehicles for transportation to and from quarters and for messing. Vehicles will be at Base Operations.

11. **SPRAY MONITORING/TESTING:** Ground monitoring by CPMP & Parris Island MCRD Project Coordinator.

## 12. **CONTACTS:**

- a. **Parris Island MCRD SC: (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX)**
  - (1) **Environmental Coordinator (Spray Coordinator):**  
 (b) (6) DSN (b) (6), Cel (b) (6); (b) (6) Cel (b) (6)  
 FAX (843) 228-2616; (b) (6) (b) (6)
  - (2) **Assistant Chief of Staff I & L:** COL (b) (6), DSN (b) (6)
  - (3) **Pest Control:** DSN 335-2364

(4)	<u>P.I. Motor Pool:</u>	(b) (6)	DSN (b) (6)
(5)	<u>Billeting:</u>	DSN: 335-2744, (843) 228-3960 (FAX: 3815)	
(6)	Enterprise Rental Agency:	(843) 524-0194; FAX 9627; (b) (6)	
(7)	<u>P.I. Rifle Range:</u>	DSN: 335-3183/3624	

**b. Beaufort MCAS SC:** (Commercial (843) 228-XXXX)

(1)	<u>Beaufort MCAS Environmental:</u>	(b) (6)	DSN (b) (6)	; (b) (6)	DSN (b) (6)
(2)	<u>Fuels:</u>	DSN: 335-7049/7448/7168			
(3)	<u>MCAS Beaufort Airfield MGR:</u>	Lt Col (b) (6)	DSN: (b) (6)		
		(After duty hours: (b) (6)	DSN: (b) (6)		
(4)	<u>Trans Alert/VAL:</u>	DSN: 335-7110			
(5)	<u>Weather:</u>	DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)			

. Base Ops is ext 7301/2/3

**c. Beaufort County Mosquito Control:** (b) (6) (b) (6)

**d. Naval Occupational Health/Preventive Medicine:** LtJG (b) (6) DSN: (b) (6)

**e. Quarters:**

**14 Rooms Holiday Inn and Suites \$136/night (843) 379-3100**

Comfort Inn and Suites	night	(843) 379-9400
Ramada Inn		(843) 524-2144/Fax 1704
Hampton Inn		(843) 986-0600 (FAX 0494)
Sleep Inn		(843) 522-3361 FAX (843) 522-9929
Parris Island Billeting		DSN: 335-2744 (FAX: 3815); (843) 228-3960
Comfort Inn		(843) 525-9366 (FAX 1529)
Best Western (Sea Island Motel)		(843) 524- 4121
Port Royal Days Inn		(843) 524-1551

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Maj (b) (6) (b) (6) FAX 1022
4. 910 OG/CC: LtCol (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6) (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist - (b) (6)

**910 AW AERIAL SPRAY**  
**PMP'S POST-MISSION REPORT-PARRIS ISLAND MCRD**  
**27-30 April, 2009**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island MCRD, South Carolina
- b. Mission Duration: 27-30 April 2009
- c. Purpose of Application: Control of biting midges and adult mosquitoes
- d. Application Dates: 28 April 2009
- e. Times of Application (Local): 1915-2020
- f. Acres Treated: 5903
- g. Project Coordinator (Name, Phone #): (b) (6) (b) (6)
- h. Date Spray Map Last Approved: 06 May 2008
- i. Date of Waste Generation Letter: 10 April 2000.
- j. Installation In-Briefing: None: Conducted previously by Maj. (b) (6) (b) (6)
- k. Mission identifier: QZNRKA121117

**2. OPERATIONAL:**

- a. Mission Commander: MAJ (b) (6) (b) (6)
- b. Certified PMPs (Category 11): MAJ (b) (6)
- c. Aircrew:
  - (1) Pilots: MAJ (b) (6) (b) (6) LTC (b) (6)
  - (2) Navigator(s): LTC (b) (6) (6)
  - (3) Flight Engineer: CMSGT (b) (6)
  - (4) Spray Operators: MSG (b) (6) MSG (b) (6) (b) (6) MSG (b) (6)
- d. Safety Briefer: MAJ (b) (6)
- e. Spray Maintenance: TSG (b) (6) TSG (b) (6) , SSG (b) (6)
- f. Crew Chiefs: TSG (b) (6) SSG (b) (6)
- g. Avionics: TSG (b) (6)
  - (1) Spray Sorties/Hours: 1/1.7 (28 April )
  - (2) Ferry Sorties/Hours: 2/2.2 (27 April), 2.0 (30 April)
  - (3) Training Sorties/Hours: 1/1.5 (29 April)

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 45
- e. Gallons Pesticide Applied: 39
- f. Gallons and Name Diluent Used: None
- g. Gallons and Name of Flush Used: None. Air Purge only
- h. Other Additives Used: n/a
- i. Application Rate: 0.84 oz/acre



**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 90-9107
- b. Spray System (Modules Used) and System ID #: SP2G MASS ULV #4
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: TeeJet 8005 flat fan nozzles
- e. Nozzle Orientation & Number Used: 9 straight down; 4 left, 5 right
- f. Pressure (PSI): 67
- g. Flow Rate: approx 3.0 gpm

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000 feet
- b. Spray Off Set: 2000 feet
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed in knots): Ground; 140@4.5 knots average; airplane 140 @ 8 knots average.
- b. Temperature (°F): Ground; 81° at 1700
- c. Humidity: Ground; 62% at 1700
- d. Cloud Cover: 10%
- e. Source: Ground observations/at altitude during spray

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Normal projected off-sets based on weather conditions.
- b. Effectiveness:
  - (1) Technique/s Used: CO2 traps were used to monitor biting midge and mosquito densities pre- and post-treatment. In addition, ground monitors confirmed midge and mosquito activity at time of spraying
  - (2) Results: Post mission trap counts are pending. Landing and biting counts were minimal the day following application.

- 8. REMARKS:** This second spray of the 2009 season was quite successful from an operational standpoint. There were no equipment failures of any kind. Weather conditions proved to be ideal for aerial spray on the planned application date. The acreage covered was less than originally planned because there was insufficient chemical to cover the final swaths. This is because the spray system was dispensing slightly more than anticipated. In future, ground calibration should be accomplished prior to aerial spray activities. Once again, thanks to (b) (6) of Parris Island MRD for excellent coordination.

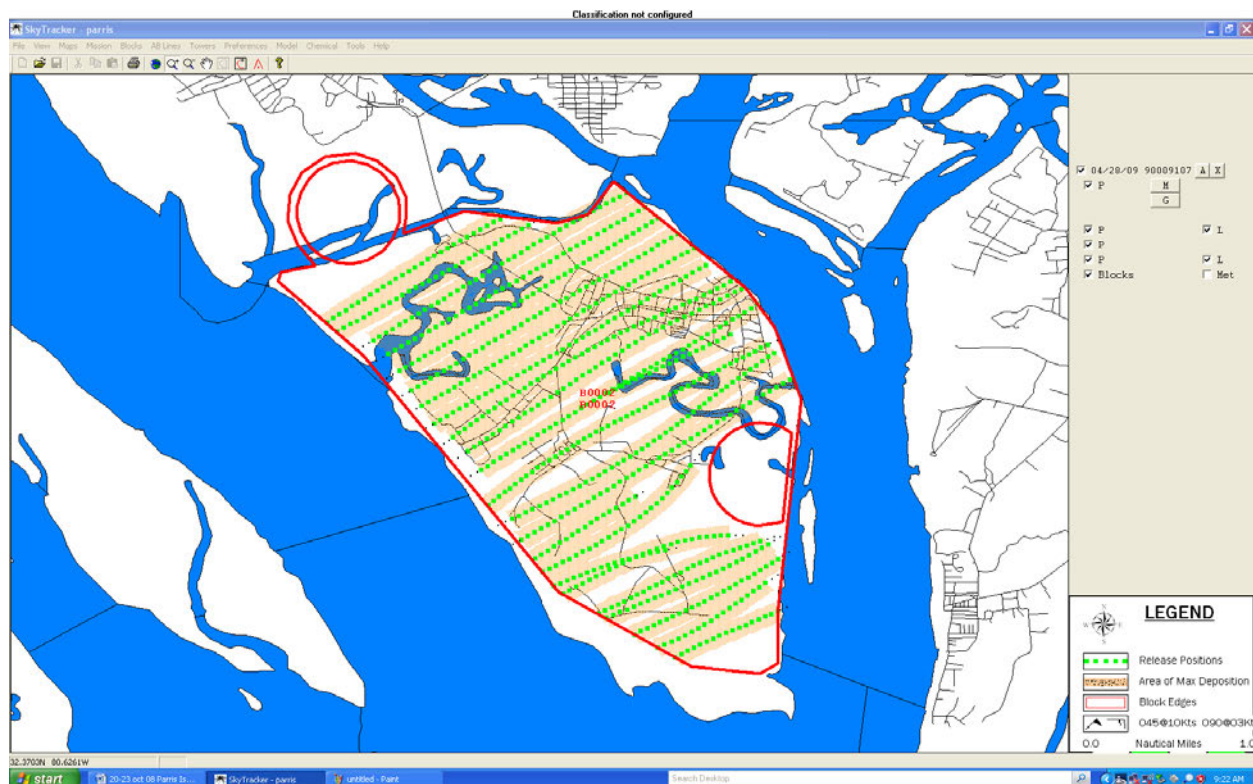
//signed//

(b) (6)

**MAJ USAFR**

**Certified Pest Management Professional**

**Figure 1. Map representation of area sprayed 28 April, 2009. Shaded blocks represent application areas. Circles represent exclusionary areas (eagle nests).**



# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 27-31 AUG 07

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes at LFI and the surrounding communities.

**1. 910 AW PARTICIPANTS:**

**a. Aircrew:**

- (1) Mission Commander: LTC (b) (6)
- (2) Pilots: Capt (b) (6) (b) (6) Maj (b) (6)
- (3) Navigator: Maj (b) (6)
- (4) Flight Engineers: MSG (b) (6), Ssgt (b) (6)
- (5) Spray Operators: Msg (b) (6), MSG (b) (6)

**b. Maintenance:**

- 1. Spray Maintenance: TSG (b) (6), Tsgt (b) (6) Tsgt (b) (6)
- 2. Crew Chiefs: SRA (b) (6), Tsgt (b) (6)
- 3. Avionics: (b) (6)

**c. Entomologists:** MAJ (b) (6) LTC (b) (6)

**d. Vehicles:**

- **Vehicle Dispatch:** Will supply us with 2x9pax vans and 2 cars
- **MC / Entomologist:** One Car
- **Ops:** One van (9 pax), one car
- **Mx:** One Van (9 Pax)

**e. Billeting Office:** COM: (757) 764-4667 POC TSG Cox  
DSN 574-4667, EXT 2528; FAX 574-3038  
**Clarion Hotel (757)838-5011**  
1809 W. Mercury Blvd

**2. PPR: 0827SF02**

**3. SCHEDULE: (All times local)**

**27 AUG (Monday):**

- 0900: Show Time
- 1100 Take Off YNG
- 1230 Land KLF w/ Safety Briefing immediately following
- 1400: Installation Briefing
- 1500 Calibrate system with Dibrom
- 1600 Chemical loaded/Wx Call
- 1745 Take off LFI
- 1942 Sunset

**28 AUG (Tuesday):**

- 1530 Show time
- 1600 Wx/Decision, load Dibrom
- 1745 Take off LFI
- 1940 Sunset

**29 AUG (Wednesday):** System clean up/wx backup/Training

- 1530 Show time
- 1600 Wx/Decision, load Dibrom
- 1745 Take off LFI
- 1939 Sunset

**30 AUG (Thursday):** System clean up/wx backup/return to YNG

- 1530 Show time
- 1600 Wx/Decision, load Dibrom
- 1745 Take off LFI
- 1937 Sunset

**31 AUG (Friday) Deploy to YNG**

- 1000: Show Time

1200: Take off KNBC

1400: Land KYNG

\*\*\*If mission is complete early, the mission will return early.

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Kestrel Weather Monitor, Compass, PCM Card, Pest Safety Binder, UHF Radios, Laptop Computer
- b. **Navigator:** Maps/Map Bag, Validation Map
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit/Supply Kit

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Langley Tower:** DSN 574-5326
- b. **Langley Base Ops:** DSN 574-2504

**5. PARKING PLAN:** Taxi Way Foxtrot or as directed by Transient Alert.

**6. RADIO FREQUENCIES:**

- a. **Felker AAF Tower (Ft Eustis): 126.3, 269.25, 248.2, 241.0**
  - (1) Ops phone DSN878-3588
  - (2) Tower phone DSN 878-3530
  - (3) Flight Service 122.2
- b. **Newport News-Williamsburg Int: CTAF – 118.7 or 257.9(Operating Hours 1000Z-0200Z)**
  - (1) Ground – **121.9** or 348.6 (phone 877-0221 ops)
  - (2) Tower – **118.7** (phone DSN 877-2862) voice mail 7-2962
  - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
- c. **Langley AFB: Tower DSN 574-7999**
  - (1) Tower - **125.0** or 253.5
  - (2) Ground - **121.7** or 275.8
  - (3) Clearance – **118.85** or 257.625
  - (4) Metro - **239.8**
  - (5) ATIS – 270.1
- d. **Norfolk NAS (Chambers Fld): Tower –124.3, 379.15, Tower Supervisor DSN 262-3443**
- e. **Norfolk Approach: 125.7 or 335.625**
- f. **Spray Ground: Primary 392.2; Secondary: 308.6**

**7. IN-BRIEFING:** 1400 hrs; CE Conference Room

**8. SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS ULV; Fuselage booms
- b. **Nozzle Tips/Orientation:** 9 8005 nozzles -- straight down (4 left - 5 right)
- c. **Aircraft:** 90-9107
- d. **Mission Identifier:** QZNRKA810239

**9. SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.6 Gallons/Minute
- f. **Acreage:** Potentially 125,000 acres on the peninsula but final acreage TBD
- g. **Swath Width:** 2000 foot

**10. PESTICIDE LOADING:**

- a. **How Much Pesticide:** see entomologist
- b. **Where:** Taxi Way F Aero Club Ramp
- c. **When:** 1600 hrs each day pending weather and heat index.\*\*Calibration performed unless otherwise

directed by the Entomologist or Mission Commander

**d. Furnished by Installation:**

- (1) Pesticide
- (2) Loading Equipment/Crew
- (3) Hazardous Waste Disposal
- (4) Two B-5 or B-1 Stands

**11. CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**

**a. LANGLEY AFB VA:**

Wing Commander: DSN 574-5321  
Mission Support Group Commander: DSN 574-7995  
Civil Engineer: DSN 574-2025  
Deputy Chief/Civil Engineer: Ms (b) (6)  
Environmental Coordinator: DSN 574-3987; FAX 3503  
Base Operations: DSN 574-2504  
Langley Control Tower: DSN 574-5326  
Weather: Langley AFB, DSN 574-5907  
Ft Eustis: DSN 297-5300/3343  
Command Post: DSN 574-5411  
Pest Control Foreman: (b) (6), DSN (b) (6), cell phone (b) (6)  
Pest Control/Environmental NCOIC: MSgt (b) (6)  
Public Affairs: DSN 574-2018/2010/2019  
Fuels: DSN 574-4312/3623/4224  
Motor Pool: 574-7514/5712 (2 vans and 1 staff vehicle were requested)  
ACC PMP: (b) (6) (b) (6) DSN (b) (6), cell phone (b) (6)  
Fire Department Comm: 757-764-2222

**b. FT EUSTIS VA:** Environmental Coordinator: DSN 927- 4152/2375

**c. Hampton Mosquito Control:** 757 850-3305

**d. York County Mosquito Control:** (757)-890-3780

**e. Poquoson:** (b) (6)

**f. City of Portsmouth Biologist:** (757) 393-8666

**g. Newport News Mosq. Control:** (757) 269-2750

**h. Camp Peary:** (757) 229-2121 Ext 2263, (b) (6)

**i. Ft Monroe:** ?

**j. Newport News/Williamsburg Int.:**

- (1) Fixed Base Operator: Flight Int 877-6401
- (2) Flight Service: 877-0209
- (3) Tower: 877-2962
- (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

**k. Norfolk NAS VA:** DSN 564-2442/7598 or COM (757)-444-2442/7598

**l. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Col (b) (6) (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Capt (b) (6) (b) (6) FAX 1022
- (4) 910 OG/CC: Col (b) (6) (b) (6) (b) (6)
- (5) 910 OS/OSA: Airfield Manager, Brian Cortese, Ext 1186/1526
- (6) 757 AS/DO: Maj (b) (6) (b) (6)
- (7) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (8) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6); FAX 1657
- (9) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6), Capt (b) (6) (b) (6) (b) (6)  
FAX 1616
- (10) 910 LG/CC: Ext 1225
- (11) 910 LG/LGM: Ext 1352
- (12) Maintenance Control: Ext 1327
- (13) 910 LG/LGMS: Spray Maintenance, Ext 1132
- (14) 910 LG/LGL, Ext 1137
- (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: 330 233-2346, (b) (6) cell (b) (6)

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT-Langley AFB 27-31 AUG 2007

### 1. MISSION BASICS:

- a. Installation Sprayed: Langley AFB and Craney Island, VA
- b. Mission Duration: 27-31 AUG 2007
- c. Purpose of Application: Control of adult mosquitoes transmitting arboviruses
- d. Application Dates: 28-30 AUG 07
- e. Times of Application (Local): 1700-1930 (28 AUG); 1645-1939 (29 AUG)
- f. Acres Treated: 99874 total: 52,824 (28 AUG); 47,290 (29 AUG)
- g. Project Coordinator (Name, Phone #): (b) (6)
- h. Date Spray Map Last Approved: 27 AUG, 2007
- i. Date of Waste Generation Letter: 4 April 1996
- j. Installation In-Briefing: 1 CE Conference Room, Langley AFB; 27 AUG 07; MAJ (b) (6)  
LTCOL (b) (6)
- k. Mission identifier: QZNRKA810239

### 2. OPERATIONAL:

- a. Mission Commander: LTCOL (b) (6)
- b. Certified PMPs (Category 11): MAJ (b) (6) (b) (6) LTCOL (b) (6)
- c. Aircrew:
  - (1) Pilots: CPT (b) (6) (b) (6) MAJ (b) (6)
  - (2) Navigator(s): MAJ (b) (6)
  - (3) Flight Engineer: MSG (b) (6)
  - (4) Spray Operators: MSG (b) (6) , MSG (b) (6) , MSG (b) (6)  
(b) (6)
- d. Safety Briefer: LTCOL (b) (6)
- e. Spray Maintenance: TSG (b) (6) , TSG (b) (6) TSG (b) (6)
- f. Crew Chiefs: SRA (b) (6) , TSG (b) (6)
- g. Avionics: (b) (6)
- h. Flying Data:
  - (1) Spray Sorties/Hours: 2/2.5 (28 AUG), 3.2 (29 AUG)
  - (2) Ferry Sorties/Hours: 2/1.6 (27 AUG), 1.6 (31 AUG)
  - (3) Training Sorties/Hours: 1/1.5 (27 AUG)

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom® Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom® Concentrate (neat)
- d. Gallons Pesticide Loaded: 270 (28 AUG); 120 (29 AUG)
- e. Gallons Pesticide Applied: 208 (28 AUG); 191 (29 AUG)
- f. Gallons and Name Diluent Used: 10 gallons marvel oil
- g. Gallons and Name of Flush Used:
- h. Other Additives Used: n/a
- i. Application Rate: 0.5 oz/acre

### 4. APPLICATION EQUIPMENT:

- a. Aircraft Type (Tail Number): 90-9107
- b. Spray System (Modules Used) and System ID #: SP2G MASS ULV
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: TeeJet 8005 flat fan nozzles

- e. Nozzle Orientation & Number Used: 9 straight down; 4 left, 5 right
- f. Pressure (PSI): 46
- g. Flow Rate: 3.63 gpm

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 feet
- b. Spray Off Set: 2000 feet
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed in knots): 70°/4 beginning dropping to 2 at 1900 on ground, 50° to 70°/7 at airplane (28 AUG); 70°/7 at airplane on Langley Peninsula, 110°/8 at Craney Island (29 AUG)
- b. Temperature (°F): 84° at 1735, dropping to 80° at 1900 (28 AUG)
- c. Cloud Cover: Clear (28 and 29 AUG)
- d.. Source: Ground observations/at altitude during spray

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Normal projected off-sets based on MASS system characterization
- b. Effectiveness:
  - (1) Technique/s Used: carbon dioxide-baited traps were used to monitor mosquito densities pre- and post-treatment
  - (2) Results: Community of Hampton reported an 87% reduction at 4 locations in mosquito counts following the application. Langley pest management and City of Portsmouth reported good control, with no significant numbers of daylight-flying species having been caught. Ft. Eustis reported excellent control. No report was available from York County. However, the pest management POC for that area was extremely pleased with the work done.

- 8. REMARKS:** Evidence of mosquito vectored viruses (namely Eastern Equine Encephalitis and West Nile Virus) has shown up in the tidewater area for the summer season 2007. This was the first spray of 2007, where in normal years the Langley peninsula receives 3-4 sprays per year. While popular local opinion related these depressed mosquito populations to the predaceous work of dragonflies, seen in abundance this year, it is more likely correlated with a much lower than average rainfall. Mosquito populations finally justified aerial application of pesticides following a significant rainfall event. Outstanding levels of mosquito control were achieved and the customers were pleased with the application. We received excellent support from Langley AFB, 1 CES to make this mission a success.

//Signed//

(b) (6) LTCOL, USAFR; (b) (6) (b) (6) MAJ, USAFR  
Certified Pest Management Professional



# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT-Langley AFB 25-28 AUG 2006

### 1. MISSION BASICS:

- a. Installation Sprayed: Langley AFB and Craney Island, VA
- b. Mission Duration: 27-31 AUG 2007
- c. Purpose of Application: Control of adult mosquitoes transmitting arboviruses
- d. Application Dates: 28-30 AUG 07
- e. Times of Application (Local): 1700-1930 (28 AUG); 1645-1939 (29 AUG)
- f. Acres Treated: 99874 total: 52,824 (28 AUG); 47,290 (29 AUG)
- g. Project Coordinator (Name, Phone #): (b) (6)
- h. Date Spray Map Last Approved: 27 AUG, 2007
- i. Date of Waste Generation Letter: 4 April 1996
- j. Installation In-Briefing: 1 CE Conference Room, Langley AFB; 27 AUG 07; MAJ (b) (6)  
LTCOL (b) (6)
- k. Mission identifier: QZNRKA810239

### 2. OPERATIONAL:

- a. Mission Commander: LTCOL (b) (6)
- b. Certified PMPs (Category 11): MAJ (b) (6) (b) (6) LTCOL (b) (6)
- c. Aircrew:
  - (1) Pilots: CPT (b) (6) (b) (6) MAJ (b) (6)
  - (2) Navigator(s): MAJ (b) (6)
  - (3) Flight Engineer: MSG (b) (6)
  - (4) Spray Operators: MSG (b) (6) (b) (6) MSG (b) (6) , MSG (b) (6)  
(b) (6)
- d. Safety Briefer: LTCOL (b) (6)
- e. Spray Maintenance: TSG (b) (6) , TSG (b) (6) TSG (b) (6)
- f. Crew Chiefs: SRA (b) (6) , TSG (b) (6)
- g. Avionics: (b) (6)
- h. Flying Data:
  - (1) Spray Sorties/Hours: 2/2.5 (28 AUG), 3.2 (29 AUG)
  - (2) Ferry Sorties/Hours: 2/1.6 (27 AUG), 1.6 (31 AUG)
  - (3) Training Sorties/Hours: 1/1.5 (27 AUG)

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 270 (28 AUG); 120 (29 AUG)
- e. Gallons Pesticide Applied: 208 (28 AUG); 191 (29 AUG)
- f. Gallons and Name Diluent Used: 10 gallons marvel oil
- g. Gallons and Name of Flush Used:
- h. Other Additives Used: n/a
- i. Application Rate: 0.5 oz/acre

### 4. APPLICATION EQUIPMENT:

- a. Aircraft Type (Tail Number): 90-9107
- b. Spray System (Modules Used) and System ID #: SP2G MASS ULV

- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: TeeJet 8005 flat fan nozzles
- e. Nozzle Orientation & Number Used: 9 straight down; 4 left, 5 right
- f. Pressure (PSI): 46
- g. Flow Rate: 3.63 gpm

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 feet
- b. Spray Off Set: 2000 feet
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed in knots): 70°/4 beginning dropping to 2 at 1900 on ground, 50° to 70°/7 at airplane (28 AUG); 70°/7 at airplane on Langley Peninsula, 110°/8 at Craney Island (29 AUG)
- b. Temperature (°F): 84° at 1735, dropping to 80° at 1900 (28 AUG)
- c. Cloud Cover: Clear (28 and 29 AUG)
- d.. Source: Ground observations/at altitude during spray

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Normal projected off-sets based on MASS system characterization
- b. Effectiveness:
  - (1) Technique/s Used: carbon dioxide-baited traps were used to monitor mosquito densities pre- and post-treatment
  - (2) Results: Community of Hampton reported an 87% reduction at 4 locations in mosquito counts following the application. Langley pest management and City of Portsmouth reported good control, with no significant numbers of daylight-flying species having been caught. Ft. Eustis reported excellent control. No report was available from York County. However, the pest management POC for that area was extremely pleased with the work done.

- 8. REMARKS:** Evidence of mosquito vectored viruses (namely Eastern Equine Encephalitis and West Nile Virus) has shown up in the tidewater area for the summer season 2006. In contrast to high levels of virus, mosquito populations had been lower than in previous years. In fact, this was the first spray of 2006, where in normal years the Langley peninsula receives 3-4 sprays per year. While popular local opinion related these depressed mosquito populations to the predaceous work of dragonflies, seen in abundance this year, it is more likely correlated with a much lower than average rainfall. Mosquito populations finally justified aerial application of pesticides following a significant rainfall event from tropical storm Ernesto. Outstanding levels of mosquito control were achieved and the customers were pleased with the application. We received excellent support from Langley AFB, 1 CES to make this mission a success.

//Signed//

(b) (6) LTCOL, USAFR; (b) (6) (b) (6) MAJ, USAFR  
 Certified Pest Management Professional



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926

17 AUG 07

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Langley AFB, VA.

1. Objective/Purpose/Benefits of the Spray Mission: Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes around LFI and the surrounding communities.

2. Capability: Aerial Spray C-130 Aircraft available 27-31 AUG 07

3. Concept of Operations:

**27 AUG (Monday):**

1000: Show Time  
1200 Take Off YNG  
1330 Land KLF w/ Safety Briefing immediately following  
1430: Installation Briefing  
1500 Calibrate system with Dibrom  
1600 Chemical loaded/Wx Call  
1745 Take off LFI  
1942 Sunset

**28 AUG (Tuesday):**

1530 Show time  
1600 Wx/Decision, load Dibrom  
1745 Take off LFI  
1940 Sunset

**29 AUG (Wednesday):** System clean up/wx backup/Training

1530 Show time  
1600 Wx/Decision, load Dibrom  
1745 Take off LFI  
1939 Sunset

**30 AUG (Thursday):** System clean up/wx backup/return to YNG

1530 Show time  
1600 Wx/Decision, load Dibrom  
1745 Take off LFI  
1937 Sunset

**31 AUG (Friday) Deploy to YNG**

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

4. Spray Parameters:

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom<sup>®</sup> Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.6 Gallons/Minute
- f. **Acreage:** Approximately 125,000 acres on the peninsula
- g. **Swath Width:** 2000 foot

5. Aircraft Commander: CAPT (b) (6) (b) (6)

If there are any questions, please contact me at DSN:(b) (6)

// SIGNED //

(b) (6) (b) (6) CAPTAIN, USAFR  
Assistant Chief of Aerial Spray

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **PARRIS ISLAND MCRD, SC**

### **27-31 OCT 2002**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCRD, SC.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Mission Commander: Maj (b) (6) (b) (6)
- (2) Pilots: Maj (b) (6) (b) (6) Lt (b) (6) , Lt Col (b) (6) (b) (6)
- (3) Navigators: Maj (b) (6) (b) (6) Lt Col (b) (6) (b) (6)
  - (a) Flight Engineers: SMS (b) (6) , MSG (b) (6)
  - (a) Spray Operators: MSG (b) (6) , TSG (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: SMS (b) (6) , TSG (b) (6) , SSG (b) (6)
- (2) Crew Chiefs: TSG (b) (6) , SSG (b) (6)
- (3) Avionics: TSG (b) (6)

##### **c. Pest Management Professionals/Entomologist:** Capt (b) (6) (b) (6)

##### **d. Public Affairs:** Lt (b) (6) (b) (6)

#### **2. PLANNED SEQUENCE OF EVENTS:** (All times local)

##### **27 OCT (Sunday):**

1300: Show Time  
1500: Take off KYNG  
1830: Land KNBC **PPR # 300-01**  
1900: Safety Briefing

##### **28 OCT (Monday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

1300: Show Time  
1400: Load Chemical  
1545: Take off KNBC  
1737: Sunset  
1730: Land KNBC

##### **29 OCT (Tuesday):**

1300: Show Time  
1400: Load Chemical  
1545: Take off KNBC  
1737: Sunset  
1730: Land KNBC

##### **30 OCT (Wednesday):**

1300: Show Time  
1400: Load Chemical  
1545: Take off KNBC  
1736: Sunset  
1730: Land KNBC

##### **31 OCT (Thursday):**

0800: Show Time  
1000: Take off KNBC  
1200: Land KYNG

**3. ITEMS TO TAKE:**

**a. Entomologist/CPMP:**

- (1) Wind Gauge, Compass, and Signal Mirrors
- (2) UHF/VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder
- (4) Calibration Tables
- (5) DGPS Computers & Maps
- (6) Oil Sensitive Papers
- (7) Trackstar Equipment

**b. Navigators:**

- (1) Maps
- (2) Templates
- (3) Laptop Computer

**c. Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

**4. SPRAY CONFIGURATION: SP-2G**

- a. Mass:** 2-Module System (PI)
- b. Booms:** Stainless Steel ULV Wing Booms
- c. Nozzles:** Open for ULV spray; 6, 8008's oriented straight down
- e. Differential GPS:** Installed
- f. Aircraft:** 108; **Mission Identifier:** QZNRKA 019 293

**5. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

**a. Pesticide:**

Dibrom® Concentrate (naled)  
Organophosphate Insecticide  
Signal Word: Danger  
Antidote: Atropine, 2-PAM  
Flushing Agent: HAN

- b. Application:** 1 Ounce Dibrom®/Acre
- c. Spray Altitude:** 150 Feet
- d. Swath Width:** 1,000 Feet
- e. Ground Speed:** 200 Knots (338 Feet/Second)
- f. Acreage:** 7,500 Acres
- g. Spray-On Time:** 16 Minutes
- h. Flow Rate:** 3.634 Gallons/Minute

- 6. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Load 60 gallons of Dibrom® Concentrate per mission and 25 gallons HAN in flush tank.

- 7. PPR REQUIREMENTS:** Required:

- 8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
Hilton Head Arpt: 123.0 UNI  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 392.2; Secondary 340.8**

- 10. TRANSPORTATION:** Parris Island will provide two vans for transportation to and from quarters and for messing. There will be an additional vehicle for the CPMP/Entomologists.

- 11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP & Parris Island MCRD Project Coordinator.

## 12. CONTACTS :

- a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX
- (1) Environmental Coordinator (Spray Coordinator):  
(b) (6) DSN (b) (6) (cellular) (b) (6) ; (b) (6) DSN (b) (6) ;  
FAX (843) 228-2616; (b) (6) (b) (6) ; (b) (6) (b) (6)
- (2) Assistant Chief of Staff I & L: Col (b) (6) DSN (b) (6)
- (3) Pest Control Foreman: DSN 335-3663
- (4) P.I. Motor Pool: (b) (6) DSN (b) (6)
- (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
- (6) Thrifty Car Rental: (843) 522-9996
- (7) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)
- (7) P.I. Rifle Range: DSN: 335-3183/3624
- b. **Beaufort MCAS SC:** (Commercial (843) 228-XXXX)
- (1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6) ; (b) (6) DSN (b) (6)
- (2) Fuels: DSN: 335-7049/7448/7168
- (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
DSN: (b) (6) Base Ops is ext 7301/2/3  
(After duty hours: (b) (6) DSN: (b) (6) )
- (4) Trans Alert/VAL: DSN: 335-7110
- (5) Weather: DSN 335-7001/7926/7/9 (www:beaufort.usmc.mil)
- c. **Beaufort County Mosquito Control:** (b) (6) (b) (6)
- d. **Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) DSN (b) (6)
- e. **Quarters: JTR Seasonal Rate 1 Oct-14 Mar L/\$75, M/\$44, MAX/\$121**
- Sleep Inn, \$69+Tax (Yolanda/Joy)** (843) 522-3361 FAX (843) 522-9929
- Hampton Inn** (843) 986-0600 (FAX 0494)
- Parris Island Billeting (Linda Davidson)** DSN: 335-2744 (FAX: 3815); (843) 228-3960
- Comfort Inn** (843) 525-9366 (FAX 1529)(Gigi)
- Best Western (Sea Island Motel)** (843) 524- 4121
- Port Royal Days Inn** (843) 524-1551
- Beaufort Ramada** (800) 272-6232
- Holiday Inn** (843) 524-2144 (\$60.23)
- Best Western Pt South (I-95)** (843) 726-8101
- f. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext
- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 OSF/OSA: Airfield Manager: (b) (6) (b) (6) (b) (6)  
- Assistant Air Field Manager (ACAM), (b) (6)
- (6) 757 AS/DO: Lt Col (b) (6) (b) (6)
- (7) 757 AS/DOO: Ops Admin, SMS (b) (6) (b) (6)
- (8) 757 AS/DOS: Aerial Spray Office, (b) (6) (b) (6) ; FAX 1616
- (9) Supervisor of Flight Desk: 1069, FAX: 1371
- (10) 910 LG/LGM: Ext 1352
- (11) 910 LG/CC: Ext 1225
- (12) 910 LG: Maintenance Control, Ext 1348
- (13) 910 LG/LGL: CMS (b) (6) (b) (6)
- (14) 910 LG/LGMS: Spray Maintenance, Ext 11321586
- (15) Omega/SATO Travel: Ext 1772; (800) 285 – 6342
- (16) Cellular Spray Phones:  
Mission Commander: (b) (6)  
Entomologist: (b) (6)  
Spray Maintenance: (b) (6)



# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT

### 1. MISSION BASICS:

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 27-31 Oct 2002
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 28 Oct & 30 Oct
- e. Time/s of Application (Local): 1540-1755 (28 Oct) & 1520-1745 (30 Oct)
- f. Acres Treated: 7680 (28 Oct & 30 Oct)
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6) Environmental/Spray Coordinator, DSN(b) (6)
- h. Date Spray Map Last Approved: 7 April 2002
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 28 Oct, Office of the Assistant Chief of Staff I & L, LTC (b) (6) & CAPT (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: MAJ (b) (6) (b) (6)
- b. Certified PMP/s (Category 11): CAPT (b) (6) (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander: MAJ (b) (6) (b) (6)
  - (2) Co-pilot: Lt (b) (6)
  - (3) Navigator(s): LTC (b) (6) (b) (6) MAJ (b) (6) (6)
  - (4) Flight Engineer(s): SMS (b) (6)
  - (5) Spray Operators: MSG (b) (6), TSG (b) (6)
- d. Safety Briefer: CAPT (b) (6) (b) (6)
- e. Spray Maintenance: SMS (b) (6), TSG (b) (6), SSG (b) (6)
- f. Spray Ground Monitors: CAPT (b) (6) (b) (6)
- g. Crew Chiefs: TSG (b) (6), SSG (b) (6)
- h. Avionics: TSG (b) (6)
- i. Public Affairs: Lt (b) (6) (b) (6)
- j. Flying Data:
  - (1) Spray Sorties: 2 sorties; 4.7 hours
  - (2) Ferry Sorties: 2 sorties; 5 hours

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate
- d. Gallons Pesticide Loaded: 60 Gal Dibrom<sup>®</sup> (28 & 30 Oct)
- e. Gallons Pesticide Applied: 60 Gal Dibrom<sup>®</sup> (28 & 30 Oct)
- f. Gallons and Name of Flush Used: 15 gal VM & P NAPHTHA (28 & 30 Oct)
- g. Other Additives Used: None
- h. Application Rate: 1 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99108
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8008 Flat Fan
- e. Nozzle Orientation & Number Used: 6 oriented straight down
- f. Pressure: 40-70 psi
- g. Flow Rate: 3.6 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off Set: 1000' - 3000' depending on wind speed
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 3.7-7.0 Knots (28 Oct & 30 Oct)
  - (2) Release Altitude: 6.0-7.0 Knots (28 Oct & 30 Oct)
- b. Temperature (Degrees Fahrenheit): 78-75°F (28 Oct); 82-78 °F (30 Oct)
- c. Relative humidity: 83-94% (28 Oct); 52-60% (30 Oct)
- d. Cloud Cover: mostly cloudy (28 Oct & 30 Oct)
- e. Source: Ground observations at the MCRD Marina and Rifle Range

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Oil Sensitive Cards (OSC) wrapped on 1 meter dowels
  - (2) Results: The majority of cards showed coverage within the spray area.
- b. Effectiveness:
  - (1) Technique/s Used: Trapping midges and mosquitoes using carbon-dioxide baited traps.
  - (2) Results: Significant drop in nuisance flies on Parris Island (see remarks).

**8. REMARKS:**

This autumn marked one of the worst years on record for nuisance mosquitoes, so much so that the presence of mosquitoes overshadowed the biting midge problem, which is normally quite noticeable in the fall at Parris Island. A combination of drought-like conditions during the summer and storms later in the fall were to blame for these outbreaks. Thus, climatic factors were just right for the proliferation of mosquitoes rather than any point source increase in their production. The application on 28 Oct was extremely successful. The primary target pest for this spray was the salt marsh mosquito *Ochrotatus taeniorhynchus*, which hosts seeks at the target time of our sprays. The overall numbers of this mosquito were lowered significantly by the aerial spray application, bringing much needed relief to members operating at PIMCRD. For example, a trap near the rifle range collected 2144 mosquitoes the week prior to the spray and only 24 mosquitoes during the same trapping period following the spray. This represents a reduction of 98.9% of mosquitoes; subsequently, the midges at this site were reduced by 98% as well. Finally, the Assistant Chief of Staff I & L, COL (b) (6) expressed an interest in additional spray dates for the coming year, so we will try and accommodate his request.

(b) (6)

(b) (6) (b) (6) Capt, USAFR  
Certified Pest Management Professional

# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 28 Jul – 1 Aug 2008

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks and Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) Pilots: LTC (b) (6) , Maj (b) (6) Capt (b) (6) (MC)
- 2) Navigators: LTC (b) (6)
- 3) Flight Engineers: MSgt (b) (6) SSgt (b) (6)
- 4) Spray Operators: MSgt (b) (6) TSgt (b) (6)

##### b. Maintenance:

- 1) Spray Maintenance: TSgt (b) (6) MSgt (b) (6) TSgt (b) (6) TSgt (b) (6)
- 2) Crew Chief(s): TSgt (b) (6) SSgt (b) (6)
- 3) Avionics: SSgt (b) (6)

##### c. Entomologists/Ground Support: Maj (b) (6)

#### 2. SCHEDULE: (All Local Times)

##### 28 JUL (Monday)

- 0930: Show time
- 1130: Depart KYNG
- 1330: Land KRDR/Safety Briefing
- 1430: Spray In Brief (CPMP, MC, AC)

##### 29 JUL (Tuesday):

- 1700: Show time/WX decision
- 1730: Load Chemical
- 1915: Takeoff KRDR (Adulticide Spray Sortie)
- Sunset: 2107

##### 30 JUL (Wednesday):

- 1630: Show time
- 1700: Load Chemical
- 1845: Takeoff KRDR (Adulticide Spray Sortie)
- Sunset: 2106

##### 31 JUL (Thursday):

- 1630: Show time
- 1700: Load Chemical
- 1845: Takeoff KRDR (Adulticide Spray Sortie)
- Sunset: 2104

##### 1 AUG (Friday):

- 1000: Show time
- 1200: Takeoff KRDR
- 1600: Land KYNG

\*\*If the application is completed, we will return early.

#### 3. ITEMS TO TAKE

- a. **Mission Commander:** Cellular Phone, Mission Folder
- b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder, 1 VHF Radio, Water Sensitive Cards, Card Holders with Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors, Project Notebook, Entomologist's Tool Kit
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

#### 4. PPR: 082801JM

#### 5. RADIO FREQUENCIES: Air To Ground Primary VHF 123.45 KRDR Tower 124.9 V; Grand Forks International 118.4 V

## 6. CONFIGURATION: SP2G

- a. **System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. **Nozzle Tips/Orientation:** ULV (adulicide): 8005 Tee Jet oriented straight down
- c. **Number:** ULV: 18 - 8005 total (9 each side)
- e. **Aircraft:** 90-9108
- f. **Mission Identifier:** QZNRKA974210

## 7. SPRAY PARAMETERS:

### a. Adulicide

- (1) **Area to be treated:** 11518 acres (Grand Forks AFB), 18346 (Grand Forks) and 877 (Grand Forks Intl)
- (2) **Altitude:** 150' for Adulicide application
- (3) **Swath Width.** 2000 feet
- (4) **Flow Rate.** 7.26 gallons/minute ULV
- (5) **Application Rate.** 1.0 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots
- (7) **Flush:** With water, triple rinse, then air purge

## 8. SPRAY MIXING AND LOADING: The amount of Trumpet to load will be determined on site

## 9. TRANSPORTATION: Trans provided by CE, POC MSgt (b) (6) (DSN (b) (6) ): 4 six pax trucks (2 OPS, 2 MX), one 1.5 ton truck (spray MX). Vehicles at base ops with the exception of Trumpet loaded truck

## 10. LODGING: 16 rooms reserved at the Ramada: 1205 N. 43<sup>rd</sup> St, (701) 775-3951. Directions in mission folder Grand Forks AFB Lodging: (701) 747-3844 DSN 362-7200 or (701) 594-8431, FAX 362-3069

## 11. CONTACTS:

### a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205

- (1) **Base Operations:** Airfield Manager DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx20
- (2) **Pest Management:** TSgt (b) (6) or Ssgt (b) (6) DSN 362-4289, FAX 3432)
- (3) **Base Civil Engineer:** Lt Col (b) (6)
- (4) **Environmental Officer:** (b) (6), DSN 362-4655, FAX 6155
- (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
- (6) **Weather:** DSN 362-4396
- (6) **Billeting:** DSN 362-3070/6189/7200 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844

### b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Col (b) (6) (b) (6) (b) (6)
- (5) 910 Base Ops: Airfield Manager: Ext 1182 -Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) ; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Capt (b) (6) (b) (6) (b) (6) ; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: SMG (b) (6) (b) (6) Cell: (b) (6)
- (13) 910 LG/LGL: Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - Entomologist: (b) (6)
  - Mission Commander: (b) (6)
  - Spray Maintenance: (b) (6)





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



15 JUL 2008

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Grand Forks AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks and Grand Forks AFB ND.

**2. Capability:** Spray Aircraft available 28 July – 1 August 2008

**3. Concept of Operations:**

**28 JUL (Monday)**

0930: Showtime

1130: Depart KYNG

1330: Land KRDR/Safety Briefing

1430: Spray In Brief (CPMP, MC, AC)

**29 JUL (Tuesday):**

1630: Show time/WX decision

1700: Load Chemical

1900: Take off KRDR (Adulticide Spray Sortie)

Sunset: 2107

**30 JUL (Wednesday):**

1630: Show time

1700: Load Chemical

1900: Take off KRDR (Adulticide Spray Sortie)

Sunset: 2106

**31 JUL (Thursday):**

1630: Show time

1700: Load Chemical

1900: Take off KRDR (Adulticide Spray Sortie)

Sunset: 2104

**1 AUG (Friday):**

1300: Show time

1500: Take off KRDR

1900: Land KYNG

**4. Spray Parameters:**

**a. Adulticide**

- (1) **Area to be treated:** 18,400 acres (Grand Forks) and 11,488 acres (Grand Forks AFB)
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 2000 feet
- (4) **Flow Rate.** 7.26 gallons/minute ULV
- (5) **Application Rate.** 1.0 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots
- (7) **Flush:** With water, triple rinse, then air purge

**5. Aircraft Commander:** LTC (b) (6)(5)

**6.** Support at Grand Forks AFB ND has been coordinated with the organization's Environmental/Spray Coordinator.

**7.** HQ AFRC/DOOM approval via email.

// Signed //

(b) (6) (b) (6) CAPT, USAFR  
757 Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 28 Aug – 1 Sep 06

**Purpose/Objectives/Benefits:** 500' spray characterization and aircrew training. Currently LFI and the surrounding areas are not needing aerial spray application, but be prepared to spray if the need develops prior to arrival. All changes to itineraries will be coordinated through the MC.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: LTC (b) (6)
- (2) Pilots: Maj (b) (6) (b) (6) Capt (b) (6) , 1LT (b) (6) (b) (6)
- (3) Navigator: LTC (b) (6)
- (4) Flight Engineers: Msgt (b) (6) , Msgt (b) (6)
- (5) Spray Operators: CMsgt (b) (6) , Msgt (b) (6) , Msgt (b) (6) , Msgt (b) (6)  
McNeilly

##### b. Maintenance:

- (1) Spray Maintenance: TSG (b) (6) , TSG (b) (6) , TSG (b) (6)
- (2) Crew Chiefs: Msg (b) (6) rgroff, SRA (b) (6)
- (3) Avionics: MSGT (b) (6)

##### c. Entomologists: CPT (b) (6) LTC (b) (6) (in place) and MAJ (b) (6) (b) (6) (in place)

##### d. Vehicles:

- **Vehicle Dispatch:** Will supply us with 2 VANS and 2 Pick up trucks
- **Ops:** One van (7 pax) and One Pick up
- **Mx:** One Van (15 Pax)
- **Entomologist:** One Pick Up

##### f. Billeting Office: COM: (757) 764-4667 POC Tsgt (b) (6) DSN 574-4667, EXT 2528; FAX 574-3038 **Holiday Inn 1815 W Mercury Blvd** - Mission Commander has Non Available slips

#### 2. PPR: 0828TP01

#### 3. SCHEDULE: (All times local)

##### 28 AUG (Monday):

- 1000: Show at KYNG
- 1200: Depart KYNG
- 1330: Land KLFI
- 1330: Mission Safety Briefing
- 1430: Spray In-Briefing
- 1600: Showtime, Weather Decision, Load Dibrom
- 1730: Take off KLFI (Adulticide Spray Sortie)
- 1940: Sunset

##### 29 AUG (Tuesday):

- 1530: Showtime, Weather Decision, Load Dibrom
- 1730: Take off KLFI (Adulticide Spray Sortie)
- 1800-2000: Quiet hours at Langley
- 1939: Sunset

##### 30 AUG (Wednesday):

- 1530: Showtime, Weather Decision, Load Dibrom
- 1730: Take off KLFI (Adulticide or Spray Training Sortie)
- 1937: Sunset

##### 31 Aug (Thursday):

- 1530: Showtime, Weather Decision, Load Dibrom
- 1730: Take off KLFI (Adulticide or Spray Training Sortie)
- 1936: Sunset



**1 SEP (Friday):**

1000: Show time Hotel Lobby  
1200: Take off for KYNG  
1315: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Kestrel Weather Monitor, Compass, PCM Card, Pest Safety Binder, UHF Radios, Laptop Computer
- b. **Navigator:** Maps/Map Bag, Validation Map
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit/Supply Kit

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Langley Tower:** DSN 574-5326
- b. **Langley Base Ops:** DSN 574-2504

**5. PARKING PLAN:** Taxi Way Foxtrot or as directed by Transient Alert.

**6. RADIO FREQUENCIES:**

- a. **Felker AAF Tower (Ft Eustis): 126.3, 269.25, 248.2, 241.0**
  - (1) Ops phone DSN878-3588
  - (2) Tower phone DSN 878-3530
  - (3) Flight Service 122.2
- b. **Newport News-Williamsburg Int: CTAF – 118.7** (Operating Hours 1000Z-0200Z)
  - (1) Ground – **121.9** or 348.6 (phone 877-0221 ops)
  - (2) Tower – **118.7** (phone DSN 877-2862) voice mail 7-2962
  - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
- c. **Langley AFB:** Tower DSN 574-7999
  - (1) Tower - **125.0** or 253.5
  - (2) Ground - **121.7** or 275.8
  - (3) Clearance – **118.85** or 271.3
  - (4) Metro - **239.8**
- d. **Norfolk NAS (Chambers Fld): Tower –124.3, 379.15,** Tower Supervisor DSN 262-3443
- e. **Norfolk Approach: 124.9**
- f. **Spray Ground: Primary 392.2; Secondary: 308.6**

**7. IN-BRIEFING:** 1430 hrs; CE Conference Room

**8. SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS ULV; Fuselage booms
- b. **Nozzle Tips/Orientation:** Twenty 8005 nozzles -- straight down
- c. **Aircraft:** 89-9105
- d. **Mission Identifier:** QZNRKA072240

**9. SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 1.0 oz/acre
- e. **Flow Rate:** 7.2 Gallons/Minute
- f. **Acreage:** Configuration for testing only. In event of actual peninsula spray, see ento. for configuration.
- g. **Swath Width:** 2000 foot

**10. PESTICIDE LOADING:**

- a. **How Much Pesticide:** see entomologist
- b. **Where:** Taxi Way F Aero Club Ramp
- c. **When:** 1600 hrs each day pending weather and heat index.
- d. **Furnished by Installation:**
  - (1) Pesticide
  - (2) Loading Equipment/Crew
  - (3) Hazardous Waste Disposal
  - (4) Two B-5 or B-1 Stands

**11. CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**

**a. LANGLEY AFB VA:**

Wing Commander: DSN 574-5321  
Mission Support Group Commander: DSN 574-7995  
Civil Engineer: DSN 574-2025  
Deputy Chief/Civil Engineer: Ms. (b) (6)  
Environmental Coordinator: DSN 574-3987; FAX 3503  
Base Operations: DSN 574-2504  
Langley Control Tower: DSN 574-5326  
Weather: Langley AFB, DSN 574-5907  
Ft Eustis: DSN 297-5300/3343  
Command Post: DSN 574-5411  
Pest Control Foreman: (b) (6), DSN (b) (6) cell phone (b) (6)  
Pest Control/Environmental NCOIC: MSgt (b) (6)  
Public Affairs: DSN 574-2018/2010/2019  
Fuels: DSN 574-4312/3623/4224  
Motor Pool: 574-7514/5712 (2 vans and 1 staff vehicle were requested)  
ACC PMP: (b) (6) DSN (b) (6) cell phone (b) (6)

**b. FT EUSTIS VA:** Environmental Coordinator: DSN 927- 4152/2375

**c. Hampton Mosquito Control:** 757 850-3305

**d. York County Mosquito Control:** (757)-890-3780

**e. Poquoson:** Jerry Cagle (757) 868-3590

**f. City of Portsmouth Biologist:** (757) 393-8666

**g. Newport News Mosq. Control:** (757) 269-2750

**h. Camp Peary:** (757) 229-2121 Ext 2263, (b) (6)

**i. Ft Monroe:** ?

**j. Newport News/Williamsburg Int.:**

- (1) Fixed Base Operator: Flight Int 877-6401
- (2) Flight Service: 877-0209
- (3) Tower: 877-2962
- (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

**k. Norfolk NAS VA:** DSN 564-2442/7598 or COM (757)-444-2442/7598

**l. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Col (b) (6) (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Capt (b) (6) (b) (6); FAX 1022
- (4) 910 OG/CC: Col (b) (6) (b) (6) (b) (6)
- (5) 910 OS/OSA: Airfield Manager, (b) (6) (b) (6) (b) (6)
- (6) 757 AS/DO: Maj (b) (6) (b) (6)
- (7) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (8) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6); FAX 1657
- (9) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) Capt (b) (6) (b) (6) (b) (6)  
FAX 1616
- (10) 910 LG/CC: Ext 1225
- (11) 910 LG/LGM: CMS (b) (6)
- (12) Maintenance Control: Ext 1327
- (13) 910 LG/LGMS: Spray Maintenance, Ext 1132
- (14) 910 LG/LGL: CMS (b) (6) (b) (6)
- (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6), (b) (6) cell (b) (6)
  - Spray Maintenance: (b) (6)

## August 2006 Langley Testing Mission Protocols

**Purpose:** To determine the effectiveness and swath characterization of a 500' release of adulticide (Dibrom) using a bioassay and spinning droplet impingers. These tests will be a continuation of tests conducted in early 2006 at Avon Park, FL in an effort to determine the feasibility of night spray operations at 500 feet.

### Proposed methods:

10 Sampling stations will be placed along a 5 mile transect. Sampling stations will be located approximately ½ mile apart. Each sampling station will be composed of a slide spinner mounted on a wood dowel pole, equipped with 2 teflon slides. In addition, each sampling station will be equipped with a mosquito cage containing 20 field collected adult mosquitoes.

Two trials will be conducted. Both trials will be conducted at the high rate of application. Dibrom will be dispensed at a flow rate resulting in an application rate of 1.0 ounce per acre (based on a 2000 foot swath). This translates into flow rate of 7.2 gallons per minute. The sampling transect will be positioned parallel to the prevailing wind and the flight path of the aircraft will be perpendicular to the transect. Depending on prevailing wind velocity, the flight path (offset) of the aircraft will be from 1000 to 2000 feet upwind of the first sampling station.

TeeJet nozzles (8005) will be used for both trials. In both tests, fluorescent dye will be added to the spray tanks (0.25% Uvitex OB) to facilitate droplet counting and sizing using UV microscopy. Spray will be turned on 30 seconds prior to coming abeam of the sampling line and will be turned off 30 seconds after coming abeam of the sampling line. Bioassay controls will be placed in a nontreated area for the duration of the test. 30 minutes after each application, cages and slides will be collected and returned to the laboratory. Caged mosquitoes will be transferred to clean holding containers furnished with sugar water. Mortality counts will be conducted at 2, 12, and 24 hour intervals. Spray droplets will be counted and sized with a UV microscope equipped with a reticle. 100 drops (if available) will be counted on each slide and the total area counted will be calculated.

### Materials/Resources required:

240 adult mosquitoes/trial. Total=480 mosquitoes  
10.8 gallons Dibrom plus provisions for boom charging  
Readily accessible, fairly open 5 mile long transects (N-S and E-W)  
24 insect cages with hairclips  
25 insect cups  
10 spinners/20 teflon slides/10 wooden dowels  
UV microscope  
Mosquito aspirators (2)  
5-10 collaborators  
2-3 large coolers

# Aerial Spray Test

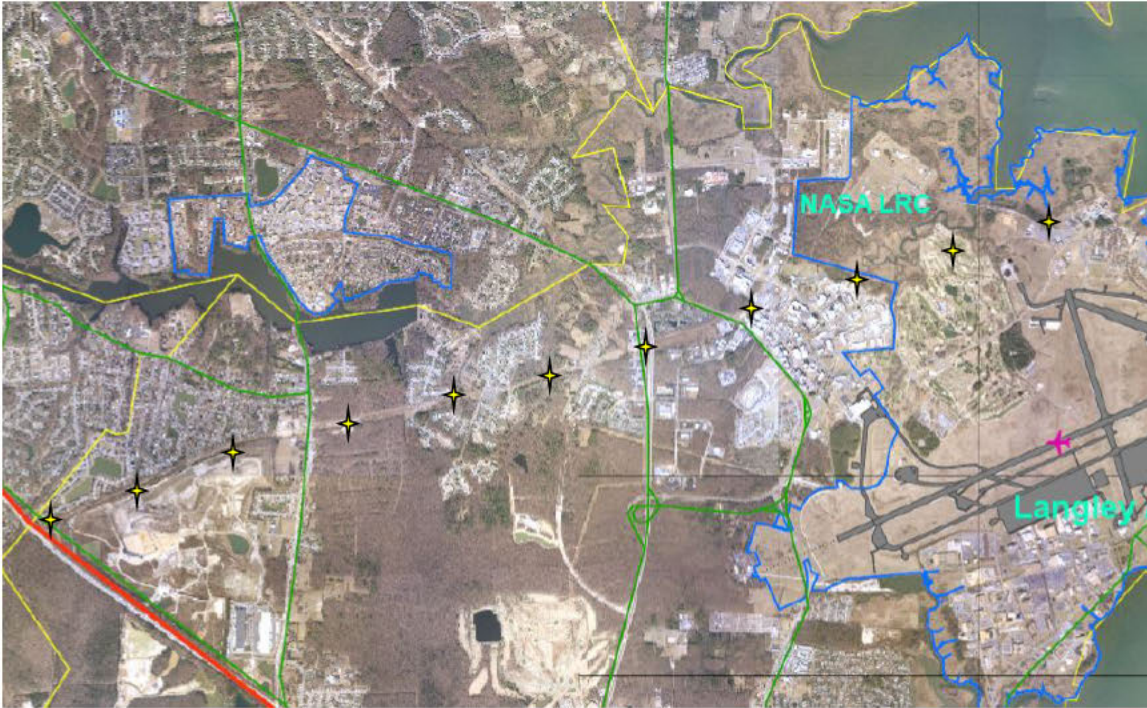


Fig. 1. Diagram of sampling stations (depicted by stars) at Langley AFB.



**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
**3976 KING GRAVES RD UNIT 26**  
**VIENNA OH 44473-5926**

18 AUG 2006

**MEMORANDAM FOR HQ AFRC/DOOM**

**FROM:** 757 AS/DOS

**SUBJECT:** Concept of Operations for Aerial Spray at Langley AFB, Hampton, Ft Eustis, VA

1. **Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites and mosquito borne diseases. Secondary mission is to determine the effectiveness and swath characterization of a 500' release of adulticide (Dibrom) using a bioassay and spinning droplet impingers.
2. **Capability:** Spray Aircraft 89-9106 Available 28 Aug- 1 SEP 06.
3. **Concept of Operations:**
  - SCHEDULE: (All times local)**
  - 28 AUG (Monday):**
    - 1000: Show at KYNG
    - 1200: Depart KYNG
    - 1330: Land KLFI
    - 1330: Mission Safety Briefing
    - 1430: Spray In-Briefing
    - 1600: Showtime, Weather Decision, Load Dibrom
    - 1730: Take off KLFI (Adulticide Spray Sortie)
    - 1940: Sunset
  - 29 AUG (Tuesday):**
    - 1530: Showtime, Weather Decision, Load Dibrom
    - 1730: Take off KLFI (Adulticide Spray Sortie)
    - 1800-2000: Quiet hours at Langley
    - 1939: Sunset
  - 30 AUG (Wednesday):**
    - 1530: Showtime, Weather Decision, Load Dibrom
    - 1730: Take off KLFI (Adulticide or Spray Training Sortie)
    - 1937: Sunset
  - 31 Aug (Thursday):**
    - 1530: Showtime, Weather Decision, Load Dibrom
    - 1730: Take off KLFI (Adulticide or Spray Training Sortie)
    - 1936: Sunset
  - 1 SEP (Friday):**
    - 1000: Show time Hotel Lobby
    - 1200: Take off for KYNG
    - 1315: Land KYNG
4. **Spray Parameters:**
  - Spray Application:**
    - a. **Altitude:** 150' AGL for Adulticide swaths.

- b. **Swath Width:** 2000 feet for ULV or as determined by the CPMP
- c. **Flow Rate:** 3.6 gallons/minute ULV
- d. **Application Rate:** 0.50 oz/acre Dibrom® Concentrate
- e. **Ground Speed:** 200 Knots
- f. **Proposed spray area:** Approximately 125,000 acres

**500' Test:**

- a. Testing will use same parameters as above with exception of 500' AGL.
5. **Mission Commander:** LTC (b) (6)
6. **Aircraft Commander:** Maj (b) ((b) (6)
7. Any questions concerning this mission please contact the Aerial Spray Office, DSN (b) (6) .

// SIGNED //

(b) (6) (b) (6) Maj, USAFR  
AERIAL SPRAY CHIEF

21 June 2002

MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497 -0198)

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Grand Forks AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks AFB ND.

**2. Capability:** Spray Aircraft Available 28 Jun 2002 (A/C #107, MSN ID: QZNRKA983179)

**3. Concept of Operations:**

**28 JUNE (Friday)**

0800: Show at KYNG  
1100: Depart KYNG  
1330: Land KRDR/Safety Briefing  
1430: In-brief

**29 JUNE (Saturday):**

0500: Show time/weather decision/load chemical  
0532: Sunrise  
0640: Take off KRDR  
2131: Sunset

**30 JUNE (Sunday):**

0500: Show time/weather decision/load chemical  
0532: Sunrise  
0640: Take off KRDR  
2131: Sunset

**1 JUL (Monday):**

0533: Sunrise  
1700: Showtime/weather decision/load chemical  
1830: Take off KRDR  
2131: Sunset

**2 JUL (Tuesday):**

TBA: Out-brief  
1100: Take Off KRDR  
1500: Land KYNG

**4. Spray Parameters:**

**a. Altitude:** 150' AGL for Adulticide swath when no trees are present.



- b. Swath Width.** 1500 feet for ULV or as determined by the PMP
- c. Flow Rate.** 3.3 gallons/minute ULV
- d. Application Rate.** 0.60 oz/acre Trumpet<sup>®</sup>), ULV
- e. Ground Speed:** 200 Knots
- f. Proposed spray area:** Approximately 1790 acres

**5. Mission Commander:** Lt Col (b) (6) (b) (6)

**6. Aircraft Commander:** Maj (b) (6) (b) (6)

**7.** Support required at Grand Forks AFB ND has been coordinated with the organization's Environmental/Spray Coordinator Ms (b) (6) (b) (6) DSN (b) (6)

**8.** HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616, ATTN: 757 AS/DOS.

(b) (6) (b) (6) Major, USAFR  
Chief, Aerial Spray Operations

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **GRAND FORKS AFB, ND**

### **28 JUNE - 2 JULY 2002**

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks AFB, North Dakota.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Mission Commander: LTC (b) (6) (b) (6)
- (2) Pilots: MAJ (b) (6) MAJ (b) (6) (b) (6)
- (3) Navigators: LTC (b) (6) (b) (6)
- (4) Flight Engineers: SMS (b) (6) , MSG (b) (6)
- (5) Spray Operators: CMS (b) (6) , MSG (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: TSG (b) (6) , TSG (b) (6) ,  
SSG (b) (6) , SSG (b) (6)
- (2) Crew Chief(s): TSG (b) (6) , SSG (b) (6)
- (3) Avionics: TSG (b) (6) , TSG (b) (6)

##### **c. Entomologists/Ground Support: LTC (b) (6) (b) (6) CPT (b) (6) (b) (6)**

#### **2. SCHEDULE: (All Local Times)**

##### **28 JUNE (Friday)**

0800: Show at KYNG  
1030: Depart KYNG  
1300: Land KRDR/Safety Briefing  
1430: In-brief

##### **29 JUNE (Saturday):**

0533: Sunrise  
1600: Showtime/weather decision/load chemical  
1800: Take off KRDR  
2131: Sunset

##### **30 JUNE (Sunday):**

0532: Sunrise  
Larvicide application planned: exact timeframe for evening application TBA.  
2131: Sunset

##### **1 JUL (Monday):**

0532: Sunrise  
Larvicide application planned: exact timeframe TBA.  
2131: Sunset

##### **2 JUL (Tuesday):**

TBA: Out-brief  
1100: Take Off KRDR  
1500: Land KYNG

### 3. ITEMS TO TAKE:

- a. **Mission Commander:** Hand Held GPS, 1 Cellular Phone
  - b. **Entomologist:** 1 Cellular Phones, Wind Gauge, 2 Compasses, Pest Safety Binder, 2 Signal Mirrors, 1 UHF Radio, 10 Packs Water Sensitive Cards, 3 Boxes Card Holders with Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Toshiba Computers, 1 SATLOC Manual, Project Notebook, 2 Anemometers, Entomologist's Tool Kit, Trakstar Receiver and Antenna, Batteries, Kodak Camera
  - c. **Navigator:** Maps/Map Bag, Validation Map
  - d. **Spray Operator:** Safety Gear, Calibration Tables
  - e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®
4. **PPR:** Not required weekdays
5. **RADIO FREQUENCIES:** Air To Ground Primary 392.2; VHF 123.45

### 6. CONFIGURATION:

- a. **System:** 2-Module System/Stainless Steel ULV Wing Booms and Fuselage Booms
- b. **Nozzle Tips/Orientation:**  
ULV (adulticide): 8008 TeeJet oriented straight down  
Larvicide: Raindrop nozzles straight back
- c. **Number:**  
ULV: wing only, 8 8008s total (4 each side)  
Larvicide: fuselage only, 10 total (5 each side) straight back
- d. **Booms:** Full Wing and fuselage
- e. **Aircraft:** #107
- f. **Mission Identifier:** QZNRKA983179

### 7. SPRAY PARAMETERS:

- a. **Adulticide**
  - (1) **Area to be treated:** 40,000 acres
  - (2) **Altitude:** 150' for Adulticide application
  - (3) **Swath Width.** 2000 feet for ULV or as determined by the PMP
  - (4) **Flow Rate.** 4.35 gallons/minute ULV
  - (5) **Application Rate.** 0.60 oz/acre Trumpet, ULV
  - (6) **Ground Speed:** 200 Knots
- b. **Larvicide**
  - (1) **Area to be treated:**
  - (2) **Altitude:** 100' for Larvicide application
  - (3) **Swath Width.** 200 feet
  - (4) **Flow Rate.** 186 gallons/minute
- c. **Application Rate.** 2 gallons/acre (water with 0.75 oz of Altosid®)
- d. **Ground Speed:** 200 Knots

## 8. SPRAY MIXING AND LOADING:

a. **Adulticide:** The amount of Trumpet® to load will be determined on site

b. **Larvicide:**

-- **Composition of each Gallon:**

- (1) 0.375 ounces of Altosid® 20
- (2) 0.08 ounces of Control® drift retardant
- (3) Water

-- **Typical load:** (2 tanks of 450 gallons each)

Fill with 450 gallons of water/tank. Total water in tanks = 900 gal.

Total water added = 900 gallons

Add 1.32 gallons of Altosid® per tank (2.64 gallons total).

Add 1 bottle of Control®/tank while agitating approximately 15 min

Total quantity mix. 903 gallons

-- **Final Load for complete flush**

Fill tanks with the amount of water necessary for a proper system flush

-- **Mixing Instructions:**

SHAKE WELL BEFORE USING. Altosid® may separate on standing and must be thoroughly agitated prior to dilution.

PRECAUTIONARY STATEMENT: Spray solution should be used within 48 hours; always agitate before spraying.

## 9. TRANSPORTATION: 2 Vans & 1 Staff provided by 319 CES

## 10. CONTACTS:

a. **319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**

(1) **Base Operations:** Gene Crouse Airfield Manager or 1 LT Fielder, DSN 362-4409

-- DSN 362-xxxx or (701) 747-xxxx

(2) **Environmental Officer:** (b) (6) (b) (6) DSN(b) (6) , FAX 6155

(3) **Base Civil Engineer:** LTC (b) (6)

(4) **Pest Management:** TSG (b) (6) , DSN(b) (6) , FAX 3432

(5) **Public Affairs:** Capt (b) (6) DSN<sup>(b)</sup> (b) (6) (off duty CP ext (b) (6))

(6) **Billeting:** DSN 362-3070/6189 or (701) 594-8431, FAX 362-3069

-- Prime Knight DSN 362-3844 or (701) 747-3844

b. **910 AW, Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

(1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243

(2) 910 AW Command Post: Ext 1315; FAX 1161

(3) 910 AW/PA: Ext 1236; FAX 1022

(4) 910 OG/CC: Ext 1257 / 1179

(5) 910 OSF/OSA: Airfield Manager: (b) (6) (b) (6) (b) (6)

(6) Supervisor of Flight Desk: 1069, FAX: 1371

(7) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) FAX 1657

(8) 757 AS/DOS: Aerial Spray Office, Ext 1111; FAX 1616

(9) 910 LG/LGM: CMS (b) (6) (b) (6) (b) (6)

(10) Maintenance Control: Ext 1348; CMS (b) (6) (b) (6)

(11) LG/LGMS: Spray Maintenance: Ext 1132/1586

(12) Omega/SATO Travel: Ext 1772; (800) 285-6342

(13) Cellular Spray Phones:

- PMP/Entomologist: (b) (6)
- Mission Commander: (b) (6)
- Spray Maintenance: (b) (6)

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT

### 1. MISSION BASICS:

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 28 Jun – 2 Jul 2002
- c. Purpose of Application: Control nuisance and vector mosquitoes
- d. Application Date: 1 Jul 2002
- e. Time/s of Application (Local): 0525-0906 & 1105-1235 L
- f. Acres Treated: 39,893 (Trumpet) & 446 (Altosid)
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6) (b) (6) Environmental Officer, DSN (b) (6) and SSG (b) (6), NCOIC Pest Management Shop, DSN (b) (6)
- h. Date Spray Map Last Approved: 28 Jun 02
- i. Installation In-Briefing: (When/Where/Briefer/s): 28 Jun 2002; CE Conference Room, LTC (b) (6) & LTC (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: LTC (b) (6) (b) (6)
- b. Certified PMP/s (Category 11): LTC (b) (6) (b) (6) Capt (b) (6) (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander: Maj (b) (6) (b) (6)
  - (2) Pilot(s): Maj (b) (6) (b) (6) Maj (b) (6) (b) (6)
  - (3) Navigator(s): LTC (b) (6) (b) (6)
  - (4) Flight Engineer(s): SMS (b) (6), MSG (b) (6)
  - (5) Spray Operators: CMS (b) (6), MSG (b) (6)
- d. Safety Briefer:
- e. Spray Maintenance: TSG (b) (6), TSG (b) (6), SSG (b) (6), SSG (b) (6) (b) (6)
- f. Spray Ground Monitors: LTC (b) (6) (b) (6) Capt (b) (6) (b) (6)
- g. Crew Chiefs: TSG (b) (6) (b) (6) SSG (b) (6)
- h. Avionics: TSG (b) (6) lonen
- i. Flying Data:
  - (1) Spray Sorties/Hours: 4 sorties/5.9 hours
  - (2) Ferry Sorties/Hours: 2 sorties/6.4 hours

### 3. PESTICIDES:

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled); Altosid® Liquid Larvicide Concentrate (20% methoprene)
- b. EPA Registration Number: Trumpet® EC 59639-90-548127; Altosid® 2724446
- c. Gallons Pesticide Loaded: 187 (Trumpet® EC); 2.5 (Altosid®) in 854 gallons water
- d. Gallons Pesticide Applied: 187 (Trumpet® EC); 2.5 (Altosid®)
- e. Gallons and Name of Flush Used: 50 gallons water for Trumpet® EC & 400 gallons water with Altosid®
- f. Other Additives Used: 0.08 oz of Control-brand drift reduction agent per gallon of water
- g. Application Rate: 0.6 oz/acre (Trumpet® EC); 2 gallons/acre (0.375 oz/acre A.I.) Altosid®

### 4. APPLICATION EQUIPMENT:

- a. Aircraft Type (Tail Number): 909107 (Mission Identification # QZNRKA983179)
- b. Spray System (Modules Used) and System ID #: Modules 1 and 2 of SP2G ULV
- c. Spray System Configuration: 2-Module System/Stainless Steel Wing & Fuselage Booms
- d. Nozzle Number & Orientation Used: 8 8008s 4 each side Trumpet; straight down; Raindrop 10, 5 each side Altosid®; straight back
- e. Pressure (PSI): 37-65
- h. Flow Rate: 0.60 oz/acre Trumpet; 186 gal/min Altosid®

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000' (Trumpet); 200' (Altosid®)
- b. Spray Off Set: 2000' (Trumpet); 50' (Altosid®)
- c. Spray Release Altitude: 150' (Trumpet); 100' (Altosid®)
- d. Ground Speed: 200 Knots

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - 1) Ground: 4-6 knots @ 110-160°
  - 2) Release Altitude: 8-12 knots @ 110-160°
- b. Temperature (Degrees Fahrenheit): 61-83°
- c. Cloud Cover: Partly cloudy
- d. Relative humidity: 77% at start 55% at finish
- e. Source: Direct observation

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

The Grand Forks AFB Public Health Unit and Pest Management conduct adult mosquito trapping and larval sampling to monitor mosquito densities on base.

- b. Effectiveness:
  - (1) Technique/s Used: Mosquito traps
  - (2) Results: Significant decrease in mosquito activity following application

**8. REMARKS:**

The decision to spray for adult mosquitoes at the first opportunity was made during the in-briefing. Our first opportunity to spray was on the morning of 29 Jun. Unfortunately, the DGPS navigation system had a processor problem and the sortie was scratched. The unit was field repaired with some excellent work by avionics technician TSG (b) (6) to prevent a long delay and the plane was available again 12 hours later. Adverse weather conditions prevailed until the morning of 1 Jul when an application of Trumpet EC was made. A second sortie was flown later that morning once the plane was reconfigured to apply larvicide in order to control developing mosquito larvae. The number of mosquitoes collected in surveillance traps dropped significantly following the spray. A reduction of approximately 80% was observed comparing the overall number of adult mosquitoes collected on 27 Jun to those collected on 2 Jul. Trapping mosquitoes or measuring biting rates to ascertain efficacy is an important part of the mosquito control program and we appreciate the pest surveillance efforts of the public health personnel on base. While the evening following the spray was effectively mosquito-free, a noticeable number of mosquitoes were present the next morning. Collection reports for the week following the spray are not available yet. Recommendations for a more successful mosquito control using aerial spray include: raising the application rate above the minimum label rate, making an additional treatment a few days after the first, and/or applying a different chemical. The next application is scheduled for 5-11 August 2002.

(b) (6)

(b) (6)

Capt, USAFR

Certified Pest Management Professional



# **910 AW AERIAL SPRAY**

## **PMP'S POST-MISSION REPORT – LANGLEY AFB 28 Sep – 3 Oct 03**

### **1. MISSION BASICS:**

- a. Installation Sprayed: Langley AFB
- b. Mission Duration: 28 Sep – 3 Oct 2003
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date(s) and time(s) (Local): 29 Sep (1700-1905); 30 Sep (1655-1836); 1 Oct (1550-1836)
- e. Acres Treated: 29 Sep, 49,383; 30 Sep, 58,800; 1 Oct, 24,887 (Total = 133,070 acres)
- f. Project Coordinator/s (Name/Title, Phone #): (b) (6)
- g. Date Spray Map Last Approved: 25 Aug 2003
- h. Date of Waste Generation Letter: 4 April 1996
- i. Installation In-Briefing: 1 CE Conference Room, Langley AFB; Lt Col (b) (6) Maj (b) (6)  
Maj (b) (6) Maj (b) (6) Maj (b) (6) & Capt (b) (6)

### **2. OPERATIONAL:**

- a. Mission Commander: MAJ (b) (6) (b) (6)
- b. Certified PMP/s (Category 11): LTC (b) (6) (b) (6) MAJ (b) (6) (b) (6) (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander/Pilot: MAJ (b) (6) (b) (6)
  - (2) Co-Pilot(s): LT (b) (6) (b) (6)
  - (3) Navigator: MAJ (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
  - (5) Spray Operators: CMS (b) (6) , MSG (b) (6)
- d. Safety Briefer: Maj (b) (6) (b) (6)
- e. Spray Maintenance/Pesticide Loaders: MSG (b) (6) , TSG (b) (6) , TSG (b) (6)
- f. Crew Chief(s): SGT (b) (6) , SSG (b) (6)
- g. Avonics: MSG (b) (6)
- h. Flying Data:
  - (1) Spray Sorties/Hours: 2 Sorties in FY 03 (29-30 Sep), 4.8 Hours; 1 Sortie in FY 04 (1 Oct), 2.8 Hours
  - (2) Ferry Sorties/Hours: 1 Ferry in FY 03 (28 Sep), 1.6 Hours; 1 Ferry in FY 04 (2 Oct) 1.7 Hours

### **3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 189 (29 Sep); 230 (30 Sep); 108 (1 Oct)
- e. Gallons Pesticide Applied: 189 (29 Sep); 230 (30 Sep); 108 (1 Oct)
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 15 Gallons HAN (29 Sep-1 Oct)
- h. Other Additives Used: n/a
- i. Application Rate: 0.667 oz/acre at Craney Island & 0.5 oz/acre elsewhere



**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): C-130 (99108)
- b. Spray System (Modules Used) and System ID #: System SP2G - MASS ULV; Modules 1 and 2
- c. Spray System Configuration: ULV Wing Booms; Modules 1 and 2/MASS ULV
- d. Nozzle Type/Size: 8008 TeeJet<sup>®</sup> Flat Fan
- e. Nozzle Orientation & Number Used: 8 8008's oriented straight down
- f. Pressure: 29-37 psi
- g. Flow Rate: 3.6 gallons/minute on the peninsula; 3.7 gallons/minute at Craney Island

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1500 ft at Craney Island & 2000 ft on Langley Peninsula
- b. Spray Off Set: 2000-4000 depending on wind speed
- c. Spray Release Altitude: 150 feet AGL
- d. Ground Speed: 200 knots

**6. WEATHER OBSERVATIONS:**

- a. Winds (Speed/Direction): 6 mph/310 929 Sep); 5 mph/320 (30 Sep); 0-2/Var (1 Oct)
- b. Temperature (Degrees Fahrenheit): 72°F (29-30 Sep); 65°F (1 Oct)
- c. Relative Humidity: 62%, 29 Sep; 40%, 30 Sep; 670%, 1 Oct
- d. Cloud Cover: sunny/Haze 29 Sep; partly cloudy 30 Sep; overcast 1 Oct
- e. Source: Ground observations/aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Normal projected off-sets based on MASS system characterization
  - (2) Results: DGPS shows spray block completed.
- b. Effectiveness:
  - (1) Technique/s Used: carbon dioxide-baited traps were used to monitor mosquito densities pre- and post-treatment
  - (2) Results: Final reports have not been received from Langley AFB and cooperating cities at this time, however, preliminary feedback from Langley AFB on 3 Oct indicated that the spray mission was possibly one of the most effective ever.

**8. REMARKS:**

This was the second spray of the season following one of the peninsula's wettest summers in years and approximately ten days after Hurricane Isabel (Category 1) hit the peninsula. Several pest mosquito species were present (i.e., salt marsh/container breeding). The area was surveyed on the ground and by air prior to the application. A total of 133,070 acres were sprayed during the week including Naval Weapons Station Yorktown and Cheatham Annex Naval Supply Depot. The greatest control was seen in the freshwater species, but reductions were seen for all mosquito species. Positive community feedback was near an all-time high after this mission due to the continuing impacts of Hurricane Isabel on military and local civilian populations.

//Signed//

(b) (6) Lt Col, USAFR  
CERTIFIED PEST MANAGEMENT PROFESSIONAL

//Signed//

(b) (6) Maj, USAFR  
CERTIFIED PEST MANAGEMENT PROFESSIONAL

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 28 SEP- 3 OCT 2003

**Purpose/Objectives/Benefits:** control nuisance and vector mosquitoes in order to improve working conditions and lower the incidence of arthropod borne illness for members operating at Langley AFB and surrounding communities.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: MAJ (b) (6) (5)
- (2) Pilots: MAJ (b) (6) (b) (6) LT (b) (6) (b) (6)
- (3) Navigators: MAJ (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: CMS (b) (6) , TSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: SMS (b) (6) , TSG (b) (6) , TSG (b) (6)
- (2) Crew Chiefs: SGT (b) (6) SSG (b) (6)
- (3) Avonics: MSG (b) (6)

##### c. Certified Pest Management Professionals: LTC (b) (6) MAJ (b) (6) (b) (6)

##### d. Observer: 2LT (b) (6)

**Gov Vehicles: 2 ea 9 pax van, 1 staff, 1 pick-up truck provided by Langley AFB**

#### 2. SCHEDULE: (All time Local)

##### 28 SEP (Sunday):

**PPR # 0928MV01**

1500: Show at KYNG  
1700: Depart KYNG  
1830: Land KLFJ  
1845: Safety Briefing

##### 29 SEP (Monday):

1000: In-Briefing at CE Conference Room  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1600: Spray Sortie  
1852: Sunset

##### 30 SEP (Tuesday):

TBA: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1600: Spray Sortie  
1850: Sunset

##### 1 OCT (Wednesday):

TBA: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1600: Spray Sortie  
1849: Sunset

**2 OCT (Thursday):**

TBA: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1600: Spray Sortie  
1847: Sunset

**3 OCT (Friday):**

0800: Report  
TBA: Outbrief  
1000: Depart KLFI  
1130: Land KYNG

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Kestrel Weather Monitor, Compass,  
Pest Safety Binder, UHF Radio,  
Satloc Ground Tracker and Laptop Computer
- b. **Navigator:** Maps/Map Bag, Validation Map, Laptop Computer
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Langley Tower:** DSN 574-5326
- b. **Langley Base Ops:** DSN 574-2504

**5. PARKING PLAN:** Langley Aero Club ramp or as directed.

**6. RADIO FREQUENCIES:**

- a. **Felker AAF Tower (Ft Eustis): 126.3, 248.2, 241.0**
  - (1) Ops phone 878-3588
  - (2) Tower phone 878-3530
  - (3) Flight Service 122.2
- b. **Newport News-Williamsburg Int:** (Operating Hours 1000Z-0200Z)
  - (1) Ground – **121.9 or 348.6** (phone 877-0221 ops)
  - (2) Tower – **124.9 or 280.1** (phone 877-2962)
  - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
  - (4) CTAF – **118.7**
- c. **Langley AFB:** Tower OIC MSG (b) (6) Lt (b) (6) 1st OSS SQ
  - (1) Tower - **125.0 or 253.5** (phone 4-5326)
  - (2) Ground - **121.7 or 275.8**
  - (3) Clearance – **118.85 or 271.3**
  - (4) Metro - **239.8**
- d. **Norfolk NAS (Chambers Fld):** Tower - **124.3, 126.375, 340.2, 318.7**
- e. **Spray Ground:** Primary 392.2; Secondary: 308.6

**7. IN-BRIEFING:** Required; IAW the Schedule above.

**8. SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS ULV; Modules 1 and 2 (system #4)
- b. **Nozzle Tips/Orientation:** 8 8008's for 2000' swathes and 6 8008's for 1500' swathes oriented straight down.

c. **Aircraft:**

9. **SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 2.7 Gallons/Minute at Craney Island; 3.6 Gallons/Minute at Langley areas
- f. **Acreage:** Approximately 110,000 Acres
- g. **Swath Width:** 1,500 Feet at Craney Island; 2,000 Feet at Langley areas.

10. **PESTICIDE LOADING:**

- a. **How Much Pesticide:** 430 Gallons for 110,000 acres sprayed.
- b. **Where:** Aero Club Ramp
- c. **When:** 1430 hrs each day.
- d. **Furnished by Installation:**
  - (1) Pesticide
  - (2) Loading Equipment/Crew
  - (3) Hazardous Waste Disposal
  - (4) Two B-5 or B-1 Stands

11. **SPRAY MONITORING OR TESTING:**

The local mosquito control districts and Langley Pest Control will conduct mosquito surveillance using either trapping or biting count pre- and post-spray data to determine spray effectiveness. Oil sensitive cards will be used to confirm application within the spray blocks.

12. **CONTACTS:** LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX

- a. **LANGLEY AFB VA:**
  - Wing Commander: Col (b) (6) , DSN (b) (6)
  - Mission Support Group Commander: Col (b) (6) (b) (6) DSN (b) (6)
  - Civil Engineer: Lt Col (b) (6)
  - Deputy Chief/Civil Engineer: (b) (6)
  - Environmental Coordinator: (b) (6) (b) (6) DSN (b) (6) ; FAX 3503
  - Base Operations: DSN 574-2504
  - Langley Control Tower: Lt (b) (6) DSN (b) (6)
  - Weather: Langley AFB, DSN 574-5907
  - Ft Eustis: DSN 297-5300/3343
  - Command Post: DSN 574-5411
  - Pest Control Foreman: (b) (6) , DSN (b) (6) or Home (b) (6)
  - Pest Control/Environmental NCOIC: MSG (b) (6)
  - Public Affairs: Lt (b) (6) DSN (b) (6)
  - Fuels: DSN 574-4312/3623/4224
  - Motor Pool: 574-7505/5712 (3 vans and 1 staff vehicle supplied by (b) (6) )
  - ACC PMP: (b) (6) (b) (6) DSN (b) (6) , cell phone (b) (6)
- b. **Billeting Office: COM: (757) 764-4667 EXT 2519 (ATTN: TSG (b) (6))**  
**DSN 574-4667, EXT 2519; FAX 574-3038**
  - Contract Quarters quality Inn Mercury BLVD 757 838-5011 FAX 757 838-7349
  - (JTR L/\$99 M/\$40 Max \$141)
- c. **FT EUSTIS VA:** Environmental Coordinator: (b) (6) , DSN (b) (6) )

- d. **Hampton Mosquito Control:** (b) (6), ((b) (6)) home  
Beeper (b) (6)
- e. **York County Control:** (b) (6) or (b) (6)
- f. **Poquoson:** (b) (6)
- g. **City of Portsmouth Biologist:** (b) (6)
- h. **Newport News Mosq. Control:** (b) (6)
- i. **Newport News/Williamsburg Int.:**  
(1) Fixed Base Operator: Flight Int 877-6401  
(2) Flight Service: 877-0209  
(3) Tower: 877-2962  
(4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport
- j. **Norfolk NAS VA:** DSN 564-2442/7598 or COM (757)-444-2442/7598
- k. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046, + Ext  
(1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243  
(2) 910 AW Command Post: Ext 1315; FAX 1161  
(3) 910 AW/PA: Lt (b) (6) (b) (6); FAX 1022  
(4) 910 OG/CC: LtC Steven Chapman, Ext 1257 / 1179  
(5) 910 OS/OSA: Airfield Manager, (b) (6) (b) (6) (b) (6)  
(6) 757 AS/DO: LtC (b) (6) (b) (6) (b) (6)  
(7) 910 OSF Supervisor of Flight Desk (SOF): 1069; FAX 1371  
(8) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6); FAX 1657  
(9) 757 AS/DOS: Aerial Spray Office, (b) (6) (b) (6); FAX 1616  
(10) 910 LG/CC: Ext 1225  
(11) 910 LG/LGM: CMS (b) (6) (b) (6) (b) (6)  
(12) Maintenance Control: Ext 1327  
(13) 910 LG/LGMS: Spray Maintenance, Ext 1132/1586  
(14) 910 LG/LGL: CMS (b) (6) (b) (6)  
(15) Omega/SATO Travel: Ext 1772; 1-800-285-6342  
(16) Cellular Spray Phones:  
- Mission Commander: (b) (6)  
- Entomologist: (b) (6)  
- Spray Maintenance: (b) (6) or ((b) (6) (b) (6))



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 910<sup>TH</sup> AIRLIFT WING



24 September 2003

MEMORANDUM FOR HQ AFRC/DOOM (FAX: 497-0198)

FROM: 757 AS/DOS ~~(b) (6)~~ (b) (6) FAX 346-1616)

SUBJECT: Capability and Concept of Operations for Aerial Spray at Langley AFB

1. **Purpose/Objectives/Benefits:** Control nuisance and vector mosquitoes in order to improve working conditions for members operating at Langley AFB VA.
2. **Capability:** Spray Aircraft Available 28 Sep-3 Oct 2003.
3. **Concept of Operations:**
  - a. **28 Sep (Sunday):**
    - 1500 Show at KYNG
    - 1700 Take-Off KYNG
    - 1930 Land KLFI
    - 1845 Safety Brief
  - b. **29 Sep (Monday):**
    - 0900 In-Briefing with Langley AFB, CE Conference Room
    - 1400 Show Time/Weather Decision
    - 1430 Load Chemical
    - 1645 Spray Sortie, Spray Areas Designated by PMP (land by 1845)
    - 1852 Sunset
  - c. **30 Sep (Tuesday):**
    - TBA Daily meeting for PMP/MC in the hotel lobby
    - 1400 Show Time/Weather Decision
    - 1430 Load Dibrom
    - 1645 Take-Off KLFI, Spray Areas Designated by PMP (land by 1845)
    - 1850 Sunset
  - d. **1 Oct (Wednesday):**
    - TBA Daily meeting for PMP/MC in the hotel lobby
    - 1400 Show Time/Weather Decision
    - 1430 Load Dibrom
    - 1645 Depart KLFI, Spray Areas Designated by PMP (Land by 1845)
    - 1850 Sunset

**e. 2 Oct (Thursday):**

TBA Daily meeting for PMP/MC in the hotel lobby  
1400 Show Time/Weather Decision  
1430 Load Dibrom  
1645 Depart KLFI, Spray Areas Designated by PMP (Land by 1845)  
1847 Sunset

**f. 3 Oct (Friday):**

0800 Report  
TBA Outbrief  
1000: Depart KLFI  
1130: Land KYNG

**4. Spray Parameters:**

- a. Acreage: approximately 86,000 Acres
- b. Altitude: 150 Ft AGL
- c. Ground Speed: 200 Knots
- d. Pesticide: Dibrom® Concentrate
- e. Application Rate: 0.5 Ounce per Acre
- f. Flow Rate: 1.8 Gal per Minute at Craney Island; 3.6 Gallons per Minute for Langley AFB designated areas
- g. Swath Width: 1000' swaths at Craney Island; 2000' to 2500' swaths at Langley AFB
- h. System: SP2G – MASS ULV; Modules 1 and 2
- i. Nozzle Tips/Number/Orientation: 8008/8 oriented straight down for 2000' swaths; 8008/4 oriented straight down for 1000' swaths oriented straight down
- j. Aircraft Tail Number: 99106; Mission Identifier: QZNRKA
- k. Deploy/Re-Deploy Time: 3.2 hrs
- l. Spray Time: 3.50 hrs (or as called by PMP)

**5. Aircraft/Mission Commander: Major (b) (6) (b) (6)**

**6. Support required at Langley AFB has been requested via FAX message.**

**7. If you have any questions concerning this mission please contact the Aerial Spray Office, DSN (b) (6)**

(b) (6) (b) (6) Maj, USAFR  
Aerial Spray Mission Scheduler/Coordinator  
757 AS/DOS



# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 29 Jun – 2 Jul 2009

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks and Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) Pilots: LTC (b) (6) Maj (b) (6)
- 2) Navigators: LTC (b) (6) (b) (6)
- 3) Flight Engineers: CMSG (b) (6)
- 4) Spray Operators: MSgt (b) (6) (b) (6) SSgt (b) (6) , MSG (b) (6)

##### b. Maintenance:

- 1) Spray Maintenance: TSgt (b) (6) MSgt (b) (6) , TSgt (b) (6)
- 2) Crew Chief(s): MSG (b) (6) , SRA (b) (6)
- 3) Avionics: TSgt (b) (6)

##### c. Entomologists/Ground Support: Maj (b) (6)

#### 2. SCHEDULE: (All Local Times)

##### 29 JUN (Monday):

0900: Showtime  
1100: Depart KYNG  
1300: Land KGRDR/Safety Briefing  
1430: Spray In-brief (CPMP, MC, AC)

##### 30 JUN (Tuesday):

1700: Show time  
1730: Load Chemical  
1930: Takeoff KRDR (Adulticide Spray Sortie)  
Sunset: 2131

##### 1 JUL (Wednesday):

1700: Show time  
1730 Load Chemical  
1930: Takeoff KRDR (Adulticide Spray Sortie)  
Sunset: 2131

##### 2 JUL (Thursday):

0900: Show time  
1100: Depart KRDR  
1500: Land KYNG

#### 3. ITEMS TO TAKE

a. **Mission Commander:** Cellular Phone, Mission Folder

b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder,  
1 VHF Radio, Water Sensitive Cards, Card Holders with  
Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors,  
Project Notebook, Entomologist's Tool Kit

c. **Navigator:** Maps/Map Bag, Validation Map

d. **Spray Operator:** Safety Gear, Calibration Tables

e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

#### 4. PPR: 06-29-01/RH

#### 5. RADIO FREQUENCIES: Air To Ground Primary VHF 123.45 KRDR Tower 124.9 V; Grand Forks International 118.4 V

**6. CONFIGURATION: SP2G**

- a. System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. Nozzle Tips/Orientation:** ULV (adulticide): 8005 Tee Jet oriented straight down
- c. Number:** ULV: 18 8005s total (9 each side)
- e. Aircraft:** 90-9108
- f. Mission Identifier:** QZNRKA485180

**7. SPRAY PARAMETERS:**

**a. Adulticide**

- (1) **Area to be treated:** 11,518 acres (Grand Forks AFB), 18,346 (Grand Forks) and 877 (Grand Forks Intl)
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 2000 feet
- (4) **Flow Rate.** 7.26 gallons/minute ULV
- (5) **Application Rate.** 1.0 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots
- (7) **Flush:** With water, triple rinse, then air purge

**8. SPRAY MIXING AND LOADING:** The amount of Trumpet to load will be determined on site

**9. TRANSPORTATION:** Transportation provided by base (DSN362-3976): One 16 pax van (OPS), three 6 pax trucks (MC, OPS, MX), one 1.5 ton truck (spray MX). Vehicles at base ops with the exception of Trumpet loaded truck

**10. LODGING: Onbase Billeting :** DSN 362-7200 or (701) 594-8431, FAX 362-3069 15 Rooms Reserved  
-- Prime Knight DSN 362-3844 or (701) 747-3844

**11. CONTACTS:**

**a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**

- (1) **Base Operations:** Airfield Manager DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx20
- (2) **Pest Management:** TSgt (b) (6) or Ssgt (b) (6) DSN 362-4289, FAX 3432)
- (3) **Base Civil Engineer:** Lt Col (b) (6)
- (4) **Environmental Officer:** (b) (6), DSN (b) (6), FAX 6155
- (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
- (6) **Weather:** DSN 362-4396
- (6) **Billeting:** DSN 362-3070/6189/7200 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844

**b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Lt Col (b) (6)
- (5) 910 Base Ops: Airfield Manager: Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6); FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Capt (b) (6) (b) (6) (b) (6) or 1652; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: SMSgt (b) (6) (b) (6) Cell: (b) (6)
- (13) 910 LG/LGL: Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - Entomologist:
  - Mission Commander:
  - Spray Maintenance

(b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 29 Jun – 3 Jul 2008

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks and Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) MC: Capt (b) (6)
- 2) Pilots: LTC (b) (6) Maj (b) (6)
- 3) Navigators: LTC (b) (6)
- 4) Flight Engineers: CMSG (b) (6)
- 5) Spray Operators: MSG (b) (6) MSG (b) (6)

##### b. Maintenance:

- 1) Spray Maintenance: TSG (b) (6) MSG (b) (6) TSG (b) (6) SRA (b) (6)
- 2) Crew Chief(s): TSG (b) (6) SRA (b) (6)
- 3) Avionics: SSG (b) (6)

##### c. Entomologists/Ground Support: MAJ (b) (6)

#### 2. SCHEDULE: (All Local (b) (6))

##### 29 JUN (Sunday)

1200: Showtime  
1400: Depart KYNG  
1600: Land KGRDR/Safety Briefing

##### 30 JUN (Monday):

1430: Spray In Brief (CPMP, MC, AC).  
1700: Show time  
1730: Load Chemical  
1930: Take off KRDR (Adulticide Spray Sortie)  
Sunset: 2131

##### 1 JUL (Tuesday):

1700: Show time  
1730 Load Chemical  
1930: Take off KRDR (Adulticide Spray Sortie)  
Sunset: 2131

##### 2 JUL (Wednesday):

1700: Show time  
1730 Load Chemical  
1930: Take off KRDR (Adulticide Spray Sortie)  
Sunset: 2130

##### 3 JUL (Thursday):

1130: Show time  
1330: Take off KRDR  
1730: Land KYNG

#### 3. ITEMS TO TAKE

a. **Mission Commander:** Cellular Phone, Mission Folder

b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder,  
1 VHF Radio, Water Sensitive Cards, Card Holders with  
Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors,  
Project Notebook, Entomologist's Tool Kit

c. **Navigator:** Maps/Map Bag, Validation Map

d. **Spray Operator:** Safety Gear, Calibration Tables

e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

#### 4. PPR: 062901/CB

**5. RADIO FREQUENCIES: Air To Ground Primary VHF 123.45 KRDR Tower 124.9 V; Grand Forks International 118.4 V**

**6. CONFIGURATION: SP2G**

- a. System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. Nozzle Tips/Orientation:** ULV (adulthoodicide): 8005 Tee Jet oriented straight down
- c. Number:** ULV: 18 8005s total (9 each side)
- e. Aircraft:** 90-9108
- f. Mission Identifier:** QZNRKA708181

**7. SPRAY PARAMETERS:**

**a. Adulthoodicide**

- (1) **Area to be treated:** 11518 acres (Grand Forks AFB), 18346 (Grand Forks) and 877 (Grand Forks Intl)
- (2) **Altitude:** 150' for Adulthoodicide application
- (3) **Swath Width.** 2000 feet
- (4) **Flow Rate.** 7.26 gallons/minute ULV
- (5) **Application Rate.** 1.0 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots
- (7) **Flush:** With water, triple rinse, then air purge

**8. SPRAY MIXING AND LOADING:** The amount of Trumpet to load will be determined on site

**9. TRANSPORTATION: Transportation provided by base (DSN362-3976): One 16 pax van (OPS), three 6 pax trucks (MC, OPS, MX), one 1.5 ton truck (spray MX). Vehicles at base ops with the exception of Trumpet loaded truck**

**10. LODGING: Onbase Billeting :** DSN 362-7200 or (701) 594-8431, FAX 362-3069 15 Rooms Reserved  
-- Prime Knight DSN 362-3844 or (701) 747-3844

**11. CONTACTS:**

**a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**

- (1) **Base Operations:** Airfield Manager DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx20
- (2) **Pest Management:** TSgt (b) (6) or Ssgt (b) (6) DSN (b) (6) , FAX 3432
- (3) **Base Civil Engineer:** Lt Col (b) (6)
- (4) **Environmental Officer:** (b) (6) , DSN (b) (6) FAX 6155
- (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
- (6) **Weather:** DSN 362-4396
- (6) **Billeting:** DSN 362-3070/6189/7200 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844

**b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Col (b) (6) (b) (6) (b) (6)
- (5) 910 Base Ops: Airfield Manager: Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6) (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, CAPT (b) (6) (b) (6) (b) (6) ; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: SMG (b) (6) (b) (6) Cell: (b) (6)
- (13) 910 LG/LGL: Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - Entomologist: (b) (6)
  - Mission Commander: (b) (6)
  - Spray Maintenance: (b) (6)



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



13 JUN 2008

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Grand Forks AFB ND

**1. Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks and Grand Forks AFB ND.

**2. Capability:** Spray Aircraft available 29 June – 3 July 2008

**3. Concept of Operations:**

**29 JUN (Sunday)**

0900: Showtime  
1100: Depart KYNG  
1300: Land KRDR/Safety Briefing  
1400: Spray In Brief (CPMP, MC, AC).

**30 JUN (Monday):**

1700: Show time  
1730: Load Chemical  
1930: Take off KRDR (Adulticide Spray Sortie)  
Sunset: 2131

**1 JUL (Tuesday):**

1700: Show time  
1730 Load Chemical  
1930: Take off KRDR (Adulticide Spray Sortie)  
Sunset: 2131

**2 JUL (Wednesday):**

1700: Show time  
1730 Load Chemical  
1930: Take off KRDR (Adulticide Spray Sortie)  
Sunset: 2130

**3 JUL (Thursday):**

1130: Show time  
1330: Take off KRDR  
1730: Land KYNG

**4. Spray Parameters:**

**a. Adulticide**

- (1) **Area to be treated:** 18,400 acres (Grand Forks) and 11,488 acres (Grand Forks AFB)
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 2000 feet
- (4) **Flow Rate.** 7.26 gallons/minute ULV
- (5) **Application Rate.** 1.0 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots
- (7) **Flush:** With water, triple rinse, then air purge

**5. Aircraft Commander:** Capt (b) (6) (b) (6)

**6.** Support at Grand Forks AFB ND has been coordinated with the organization's Environmental/Spray Coordinator.

**7.** HQ AFRC/DOOM approval via email.

// Signed //

(b) (6) (b) (6) CAPT, USAFR  
757 Aerial Spray

# 910 AW AERIAL SPRAY - PMP'S POST-MISSION REPORT

## Parris Island MCRD, SC 29 April- 3 May 2001

### 1. MISSION BASICS:

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 29 April – 3 May 2001
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 30 April & 2 May 2001
- e. Time/s of Application (Local): 1750-2015L (30 April) & 1800-2015L (2 May)
- f. Acres Treated: 7680 (30 April & 2 May); 15,360 total
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) Environmental/Spray Coordinator, DSN(b) (6)
- h. Date Spray Map Last Approved: 2 April 2001
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 29 April/NREAEO office/1LT (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: LTC (b) (6)
- b. Certified PMP/s (Category 11): 1LT (b) (6) (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander: LTC (b) (6)
  - (2) Pilots: MAJ (b) (6) (b) (6) & CAPT (b) (6) (b) (6)
  - (3) Navigator(s): LTC (b) (6) , MAJ (b) (6) (b) (6) & MAJ (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6) , MSG (b) (6)
  - (5) Spray Operators: SMS (b) (6) , MSG (b) (6) , TSG (b) (6) , and MSG (b) (6)
- d. Safety Briefer: 1LT (b) (6) (b) (6)
- e. Spray Maintenance: SMS (b) (6) , TSG (b) (6) , TSG (b) (6) (b) (6) & SSG (b) (6)
- f. Spray Ground Monitors: LT (b) (6) (b) (6) & 2LT (b) (6)
- g. Crew Chiefs: SSG (b) (6) , SRA (b) (6)
- h. Avionics: TSG (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 2 Spray Sorties/4.7 Hrs
  - (2) Ferry Sorties/Hours: 2 Ferry Sorties/4.4 Hrs

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate
- d. Gallons Pesticide Loaded: 60 Gal Dibrom<sup>®</sup> (30 Apr & 2 May); 120 gallons total
- e. Gallons Pesticide Applied: 60 Gal Dibrom<sup>®</sup> (30 Apr & 2 May); 120 gallons total
- f. Gallons and Name of Flush Used: VM & P NAPHTHA
- g. Other Additives Used: None
- h. Application Rate: 1 Oz/acre



**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99108
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8008 Flat Fan
- e. Nozzle Orientation & Number Used: 6 oriented straight down
- f. Pressure: 90 (30 Apr) & 75 (2 May) PSI
- g. Flow Rate: 3.6 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off Set: 2000' (30 Apr); 3000' (2 May)
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 90-110° (30 Apr) & 80-110° (2 May)
  - (1) Ground: 4-7 Knots
  - (2) Release Altitude: 8-15 Knots
- b. Temperature (Degrees Fahrenheit): 70° (10 Apr) & 70° (2 May)
- c. Dew Point: 59°F (30 Apr) & 57°F (2 May)
- d. Cloud Cover: Partly Cloudy (30 April & 2 May)
- e. Source: Ground observations at the MCRD Marina and Rifle Range.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Oil Sensitive Cards (OSC) wrapped on 1 meter dowels, spinners (rotating microscope slides)
  - (2) Results: Good coverage throughout spray area, as determined by OSC cards and spinners. Our spinners also showed good coverage and proper droplet size was obtained even inside the tree canopy.
- b. Effectiveness:
  - (1) Technique/s Used: Landing counts taken at 7 localities between 26 April & 2 May. Trapping midges on a nightly basis using carbon dioxide.
  - (2) Results: Following the first spray sortie, no biting midges were found at 6 of the seven survey locations. The seventh site showed a 65% reduction in midge landing frequency. A minimum reduction of 85% in midge densities was determined from trapping data. The efficacy of the final spray will be reported by the MCRD's Environmental Coordinator and trap contents. This spray is expected to be favorable based on the coverage observed on the indicator cards.

**8. REMARKS:** The next actual spray mission is scheduled 21-26 October 2001.

(b) (6)

(b) (6) (b) (6) **1LT, USAFR**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL**

# AERIAL SPRAY OPERATIONAL SCHEDULE

## PARRIS ISLAND MCRD, SC

### 29 APR - 4 MAY 2001

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCRD, SC.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: LtC (b) (6)
- (2) Pilots: LtC (b) (6), Maj (b) (6) (b) (6) (29-2), Cpt (b) (6) (b) (6) & Cpt (b) (6) (b) (6) (1-4)
- (3) Navigators: Maj (b) (6) (b) (6), Maj (b) (6), LtC (b) (6) (1-4 May)
- (4) Flight Engineers: MSG (b) (6), MSG (b) (6)
- (5) Spray Operators: MSG (b) (6), MSG (b) (6) (29 Apr-1 May), TSG (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: SMS (b) (6), TSG (b) (6), TSG (b) (6), SSG (b) (6)
- (2) Crew Chiefs: SSG (b) (6), SRA (b) (6)
- (3) Avionics: TSG (b) (6)

##### c. Ground Support: 1Lt (b) (6) (b) (6) (25 Apr – 4 May), 2Lt (b) (6)

#### 2. PLANNED SEQUENCE OF EVENTS: (All times local)

##### 29 APR (Sunday):

- 1500: Take off KYNG
- 1700: Land KNBC
- 1730: Safety Briefing

**PPR # 119-01**

##### 30 APR (Monday):

- 1400: Load Chemical
- 1630: Take off KNBC HAN pre-spray boom flush.
- 1900: Land KNBC
- 2002: Sunset

##### 01 MAY (Tuesday):

- 1400: Load Chemical
- 1630: Take off KNBC
- 1900: Land KNBC
- 2003: Sunset

##### 02 MAY (Wednesday):

- 1400: Load Chemical
- 1630: Take off KNBC
- 1900: Land KNBC
- 2004: Sunset

##### 03 MAY (Thursday):

- 1400: Load Chemical
- 1630: Take off KNBC
- 1900: Land KNBC
- 2005: Sunset

##### 04 MAY (Friday):

- 1200: Take off KNBC
- 1400: Land KYNG

#### 3. ITEMS TO TAKE:

##### a. Entomologist/CPMP:

- (1) Wind Gauge, Compass, and Signal Mirrors
- (2) UHF/VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder
- (4) Calibration Tables
- (5) DGPS Computers, Trackstar Equipment & Maps
- (6) Oil Sensitive Papers

##### b. Navigators:

- (1) Maps
- (2) Templates
- (3) Laptop Computer
- c. **Spray Maintenance:**
  - (1) Spill Kit
  - (2) Safety Equipment
  - (3) Loading and Clean-up Equipment and Supplies

**4. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Wing Booms
- c. **Nozzles:** Open for ULV spray; 6, 8008's oriented straight down
- d. **Differential GPS:** Installed
- e. **Aircraft Tail #:** 108
- f. **Mission Identifier:** QZNRKA784129

**5. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: HAN
- b. **Application:** 1 Ounce Dibrom®/Acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 3.634 Gallons/Minute

**6. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Load 60 gallons of Dibrom® Concentrate per sortie and 25 gallons HAN in flush tank.

**7. PPR REQUIREMENTS:** Required: PPR # 119-01

**8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
 Hilton Head Arpt: 123.0 UNI  
 Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 392.2; Secondary 340.8 UHF, 123.4 VHF**

**10. TRANSPORTATION:** Parris Island will provide two vans for transportation to/from quarters and dining. An additional vehicle will be available for the CPMP/Entomologists/Ground Support personnel.

**11. SPRAY MONITORING OR TESTING:** CPMP and Parris Island MCRD Project Coordinator.

## 12. CONTACTS:

**a. Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX

- (1) Environmental Coordinator (Spray Coordinator):  
(b) (6) DSN (b) (6) ; (cellular) (b) (6) (b) (6) DSN 335-2663;  
FAX (843) 228-2616; (b) (6) (b) (6) cell; (b) (6) (b) (6)
- (2) Assistant Chief of Staff I & L: Col (b) (6) & Cpt (b) (6) , DSN (b) (6)
- (3) Pest Control Foreman: (b) (6) DSN (b) (6)
- (4) P.I. Motor Pool: (b) (6) DSN (b) (6)
- (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
- (5) Thrifty Car Rental: (b) (6)
- (6) P.I. Rifle Range: DSN: 335-3183/3624

**b. Beaufort MCAS SC:**

- (1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6) ; (b) (6) DSN (b) (6)
- (2) Fuels: DSN: 335-7049/7448/7168
- (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
DSN: (b) (6) Base Ops is ext 7301/2/3  
(After duty hours: (b) (6) DSN: (b) (6)
- (4) Trans Alert/VAL: DSN: 335-7110
- (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)

**c. Beaufort County Mosquito Control:** (b) (6) (b) (6) (cell (b) (6))

**d. Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) DSN: (b) (6) , (b) (6)

**e. Quarters:**

**Sleep Inn, \$60.00, (Joy), 843-522-3361, FAX: 843-522-9929**

Hampton Inn, 2342 Boundary St, Beaufort SC, (843) 986-0600 (FAX 0494)  
Parris Island Billeting (Linda Davidson) DSN: 335-2744 (FAX: 3815); (843) 228-3960  
Comfort Inn (843) 525-9366 (FAX 1529)(b) (6)  
Best Western (Sea Island Motel) (843) 524- 4121  
Port Royal Days Inn (843) 524-1551  
Beaufort Ramada 1-800-272-6232  
Holiday Inn (843) 524-2144 (\$60.23)  
Best Western Pt South (1-95) 1-843-726-8101

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257
- (5) 910 OSF/OSA: Airfield Manager: (b) (6) (b) (6) (b) (6)  
- Assistant Air Field Manager (ACAM), Brian Cortese, Ext 1181
- (6) 757 AS/DO: LtC (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMSgt (b) (6) (b) (6) ; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, (b) (6) (b) (6) FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: CMSgt (b) (6) (b) (6) (b) (6)
- (11) Maintenance Control: Ext 1348
- (12) 910 LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL: CMSgt (b) (6) (b) (6)
- (14) Omega/SATO Travel: Ext 1772; (800) 285 – 6342
- (15) LG: Taxi Service to/from Airport: (b) (6) (b) (6) , FAX 1768
- (16) Supervisor of Flight Desk: 1069, FAX: 1371
- (17) Cellular Phones:
  - PMP/Entomologist Cellular Spray Phone: (b) (6)
  - Mission Commander: (b) (6)
  - Spray Maintenance: (b) (6) , Pager (b) (6)

25 June 2001

MEMORANDUM FOR HQ AFRC/DOOM (FAX DSN 497 -0198)

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Grand Forks AFB  
ND Control of Mosquitoes

1. **Objective/Purpose/Benefit:** Control nuisance and vector species of mosquitoes with aerial spray application to reduce negative impact of insect bites during outdoor activities at Grand Forks AFB ND.
2. **Capability:** Spray Aircraft Available 29 Jun-3 Jul 2001
3. **Concept of Operations:**
  - 29 JUNE (Friday):
    - 0800: Show time
    - 1100: Depart KYNG
    - 1330: Land KRDR/Safety Briefing
    - 1400: In-Brief
  - 30 JUNE (Saturday):
    - 1730: Show time
    - 1930: Take Off KRDR
    - 2131: Sunset
    - 2245: Land KRDR
  - 1 JULY (Sunday):
    - 1730: Show time
    - 1930: Take Off KRDR
    - 2131: Sunset
    - 2245: Land KRDR
  - 2 JULY (Monday):
    - 1730: Aircrew Report
    - 1930: Take Off KRDR for Flush
    - 2130: Sunset
    - 2245: Land KRDR
  - 3 JULY (Tuesday):
    - 1000: Take Off KRDR
    - 1400: Land KYNG
4. **Spray Parameters:**
  - a. **Acreage:** 20,000 Acres with Adulticide (Only areas determined by PMP)
  - b. **Altitude:** 150 Ft ULV
  - c. **Pesticide:** Trumpet (Adulticide)
  - d. **Deploy:** 3.3 Hrs
  - e. **Re-Deploy:** 3.0 Hrs

- f.      **Spray Time:** Will be determined by PMP
5.      **Mission Commander:** LtC (b) (6)      (b) (6)
6.      **Aircraft Commander:** LtC (b) (6) (b) (6)
7.      Support required at Grand Forks AFB ND has been coordinated with the organization's Environmental/Spray Coordinator Ms (b) (6) (b) (6) DSN (b) (6) .
8.      HQ AFRC/DOOM approval may be FAX'd to DSN 346-1616, ATTN: 757 AS/DOS.

(b) (6)      (b) (6) Lt Col, USAFR  
Chief, Aerial Spray Operations

# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 29 JUNE- 3 JULY 2001

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: LTC (b) (6) (b) (6)
- (2) Pilots: LTC (b) (6) (b) (6) MAJ (b) (6) (b) (6)
- (3) Navigators: LTC (b) (6) (b) (6) MAJ (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: MSG (b) (6) , MSG (b) (6) , TSG (b) (6) (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSG (b) (6) , TSG (b) (6) , SSG (b) (6)
- (2) Crew Chief(s): TSG (b) (6) SSG (b) (6)
- (3) Avionics: MSG (b) (6)

##### c. Entomologists/Ground Support: LTC (b) (6) LTC (b) (6) (b) (6) MAJ (b) (6) (b) (6)

#### 2. SCHEDULE: (All Local Times)

##### 29 JUNE (Friday)

0800: Show at KYNG  
1100: Depart KYNG  
1330: Land KRDR/Safety Briefing  
1400: In-brief

##### 30 JUNE (Saturday):

1730: Show time  
1930: Take Off KRDR  
2131: Sunset  
2245: Land KRDR

##### 1 JULY (Sunday):

1730: Show time  
1930: Take Off KRDR  
2131: Sunset  
2245: Land KRDR

##### 2 JULY (Monday):

1730: Aircrew Report  
1930: Take Off KRDR for Flush  
2130: Sunset  
2245: Land KRDR

##### 3 JULY (Tuesday):

1000: Take Off KRDR  
1400: Land KYNG

#### 3. ITEMS TO TAKE:



- a. **Mission Commander:** Hand Held GPS, 1 Cellular Phone
- b. **Entomologist:** 1 Cellular Phone, Wind Gauge, 2 Compasses,  
Pest Safety Binder, 2 Signal Mirrors, 1 UHF Radio,  
2 Spotlights, 1 Measuring wheel,  
1 SATLOC Manual, Project Notebook,  
Entomologist's Tool Kit, Trakstar Receiver and Antenna,  
Batteries, Kodak Camera
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

4. **PPR:** Not required weekdays

5. **RADIO FREQUENCIES:** Air To Ground Primary UHF 392.2; VHF 123.45

#### 6. **SPRAY CONFIGURATION:**

- a. **System:** 2-Module System/Stainless Steel ULV Wing Booms  
**Nozzle Tips/Orientation:** 8008 TeeJet oriented straight down  
(1) **Number:** Wing only, 6 8008s total (3 each side)
- d. **Booms:** Wing Booms as required (see above)
- e. **Aircraft:** 106; **Mission Identifier:** QZNRKA561180

#### 7. **SPRAY PARAMETERS:**

- a. **Altitude:** 150' for ULV application
- b. **Swath Width.** 1500 feet for ULV or as determined by the PMP
- c. **Flow Rate.** 3.3 gallons/minute ULV
- d. **Application Rate.** 0.60 oz/acre Trumpet, ULV
- e. **Ground Speed:** 200 Knots

#### 8. **SPRAY MIXING AND LOADING:**

The amount of Trumpet to load will be determined on site

#### 9. **CONTACTS:**

- a. **319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks ND 58205**  
**DSN 362-xxxx; Commercial (701) 747-xxxx**
  - (1) **Base Operations:** Gene Crouse Airfield Manager or 1LT (b) (6) DSN (b) (6)
  - (2) **Environmental Officer:** (b) (6) (b) (6) DSN (b) (6) , FAX 6155
  - (3) **Base Civil Engineer:** LTC (b) (6)
  - (4) **Pest Management:** SSG (b) (6) , DSN (b) (6) , FAX 3432
  - (5) **Public Affairs:** Capt. (b) (6) (b) (6) or (b) (6) off duty CP (b) (6)
  - (6) **Billeting:** DSN 362-3070/6189, (701) 594-8431; FAX 362-3069  
Prime Knight: DSN 362-3844; (701) 747-3844
- CONTRACT QUARTERS: Best Western (701) 746-5411**
- (7) **Utilities shop:** MSG (b) (6) , Superintendent DSN (b) (6)
- b. **910 AW, Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046+2 + Ext
  - (1) 910 AW/CC: Brig Gen Michael Gjede, Ext 1243
  - (2) 910 AW Command Post: Ext 1315; FAX 1161

- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 OSF/OSA: Airfield Manager: (b) (6) (b) (6) (b) (6)
  - Assistant Air Field Manager (ACAM), (b) (6)
- (6) 757 AS/DO: LtC (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMSgt (b) (6) (b) (6)
- (8) 757 AS/DOS: Aerial Spray Office, (b) (6) (b) (6) ; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: CMSgt (b) (6) (b) (6)
- (11) Maintenance Control: Ext 1348910
- (12) LG/LGMS: Spray Maintenance (b) (6) (b) (6)
- (13) 910 LG/LGL: CMSgt (b) (6) (b) (6)
- (14) Omega/SATO Travel: Ext 1772; (800) 285 – 6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - PMP/Entomologist: (b) (6)
  - Mission Commander: (b) (6)
  - Spray Maintenance: (b) (6) ; Pager (b) (6)

# 910 AW AERIAL SPRAY PMP'S POST-MISSION REPORT

## 1. MISSION BASICS:

- a. Installation Sprayed: Grand Forks AFB ND
- b. Mission Duration: 29 Jun 01 – 3 Jul 01
- c. Purpose of Application: Mosquito Control
- d. Application Date(s) and time(s) (Local): 1 Jul 01; 1930-2130 L
- e. Acres Treated: 28,800
- f. Project Coordinator/s (Name/Rank, Title, Phone #):
  - (b) (6) (b) (6) Environmental Officer, DSN (b) (6)
  - (b) (6) (b) (6) Ssg, Pest Management, DSN (b) (6)
- g. Date Spray Map Last Approved: 29 Jul 01
- h. Date of Waste Generation Letter: 22 Jun 01
- i. Installation In-Briefing: (When/Where/Briefer/s): 29 Jul/CE Conference Room, 1400 L/Grand Forks AFB, LTC (b) (6) (b) (6) LTC (b) (6)

## 2. OPERATIONAL:

- a. Mission Commander: LTC (b) (6) (b) (6)
- b. Certified PMP/s (Category 11): LTC (b) (6) LTC (b) (6) (b) (6) CAPT (b) (6) (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander: LTC (b) (6) (b) (6)
  - (2) Co-Pilot(s): MAJ (b) (6) (b) (6)
  - (3) Navigator(s): LTC (b) (6) (b) (6) MAJ (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6)
  - (5) Spray Operators: MSG (b) (6) , MSG (b) (6) , TSG (b) (6)
- d. Safety Briefer: LTC (b) (6)
- e. Spray Maintenance/Pesticide Loaders: TSG (b) (6) , TSG (b) (6) , SSG (b) (6)
- f. Crew Chief(s): TSG (b) (6) mez, SSG (b) (6)
- g. Avonics: MSG (b) (6)
- h. Flying Data:
  - (1) Spray Sorties/Hours: 1 Sortie; 2.9 Hours
  - (2) Ferry Sorties/Hours: 2 Ferries; 6.0 Hours
  - (3) Flush Sorties/Hours: 1 Sortie; 1.9 Hours

## 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Trumpet<sup>®</sup> EC (78% AI naled)
- b. EPA Registration Number: Trumpet<sup>®</sup> EC 59639-90-5481
- c. Formulation Sprayed: EC 78% AI naled
- d. Gallons Pesticide Loaded: 135
- e. Gallons Pesticide Applied: 135
- f. Gallons and Name Diluent Used: N/A
- g. Gallons and Name of Flush Used: 80 gallons water with 0.8 gallons Remove<sup>®</sup>
- h. Other Additives Used: None
- i. Application Rate: 0.6 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): C-130 (909106)
- b. Spray System (Modules Used) and System ID #: Modules 1 and 2 of SP2G - MASS ULV
- c. Spray System Configuration: ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® Flat Fan 8008
- e. Nozzle Orientation & Number Used: Straight down; 8 nozzles
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 4.35 gallons/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 feet
- b. Spray Off Set: 3000 feet
- c. Spray Release Altitude: 150 feet AGL
- d. Ground Speed: 200 knots ground speed

**6. WEATHER OBSERVATIONS:**

- a. Wind speed: 5 knots on the ground and 8 knots at release altitude.
- b. Wind direction: 160
- c. Temperature 68 degrees F.
- d. Humidity 65 %
- e. Cloud cover 75%

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- (1) Technique/s Used: Relied upon Grand Forks AFB Pest Management Shop and the Public Health Unit for monitoring of efficacy on base.
- (2) Results: The Grand Forks AFB Pest Management Shop is coordinating with the Public Health Unit to ensure that surveillance is conducted following the application. The results will be available after surveillance is completed.

- 8. REMARKS:** Adequate cleaning of Trumpet® EC from the spray tanks and booms takes longer than for Dibrom® Concentrate, thus, we flew a sortie the day following application to flush the system. Remove® was mixed at a rate of 1 gallon per 100 gallons of water to flush and clean the system.

(b) (6) **LT COL, USAFR**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL**

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**PARRIS ISLAND MCRD, SC 30 APR – 3 MAY 2007**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 30 APR – MAY 3 2007
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 1 MAY 2007
- e. Time/s of Application (Local): 1820 – 1952
- f. Acres Treated: 7,465 acres
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) DSN (b) (6)
- h. Environmental/Spray Coordinator, DSN (b) (6)
- i. Date Spray Map Last Approved: 24 APR 07
- j. Date of Waste Generation Letter: 10 APR 2000
- k. Installation In-Briefing: (When/Where/Briefer/s): 24 APR; Assistant Chief of Staff, Installations and Logistics Conference Room, (b) (6) (b) (6) briefed by COL (b) (6) MAJ (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: LTC J.D. Williams
- b. Aircrew:
  - (1) Pilots: CAPT (b) (6) (b) (6) MAJ (b) (6) CAPT (b) (6)
  - (2) Navigators: LTC (b) (6)
  - (3) Flight Engineers: CMSGT (b) (6)
  - (4) Spray Operators: MSGT (b) (6) MSGT (b) (6)
- b. Maintenance:
  - (1) Spray Maintenance: TSG (b) (6) TSG (b) (6) TSG (b) (6) CMSGT (b) (6) (b) (6)
  - (2) Crew Chiefs: TSG (b) (6) SRA (b) (6)
  - (3) Avionics: (b) (6)
- c. Entomologist: LTC (b) (6)
- d. Flying Data:
  - (1) Spray Sortie on 1 MAY/Hours: 3 (1.3 training, 1.7 spray – spray on time was 16.1 minutes)
  - (2) Training Sortie on 2 MAY/2 hours
  - (3) Ferry Sorties/Hours: 2/4.0 on 30 APR and 3 MAY

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom® Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 60 Gal Dibrom® (1 MAY)
- e. Gallons Pesticide Applied: 43
- f. Gallons and Name Diluent Used: N/A
- g. Gallons and Name of Flush Used: None
- h. Other Additives Used: None
- i. Application Rate: 0.75 oz/acre

4. APPLICATION EQUIPMENT:

- a. Aircraft Tail Number: 99107
- b. Spray System (Modules Used) and System ID #: [REDACTED]
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 8 oriented straight down
- f. Pressure: 33 p.s.i. (probably could have reached 40 p.s.i. if used 7 nozzles instead of 8)
- g. Flow Rate: 2.7 gallons per minute

(b) (5)

(b) (5)

5. APPLICATION PARAMETERS:

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

6. WEATHER OBSERVATIONS:

- a. Winds (Direction/Speed):
  - (1) Ground: 175 /6 knots at 1820; 175 /5 knots at 1832; 180 /6.6 knots at 1910
  - (2) Release Altitude: 180 /12 knots gusting to 15 knots
- b. Temperature (Degrees Fahrenheit): 76 F at 1820; 74 F at 1910
- c. Relative Humidity: 64% at 1820; 70% at 1910
- d. Cloud Cover: None
- e. Source: Ground observations at the MCRD Rifle Range at 1810 and 1832; Marina at 1910; air observations taken at aircraft

7. SPRAY MONITORING (Pre- and Post-Treatment):

- a. Deposition Pattern:
  - (1) Technique/s Used: visual observation of aircraft course (GPS); 2 Bald eagle's nests were given a 0.5 mile radius for no-fly
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: Weekly collections of midges and mosquitoes with light traps and landing rates in regions frequented by recruits involved in training
  - (2) Results: Control efficacy will be determined by Parris Island MCRD staff.

8. REMARKS: Biting midge (sandflea) activity levels were moderate based on personal observations; deer flies (*Chrysops* sp.) and mosquitoes were also present. Landing counts for biting midges at the rifle range were 7 per minute at 1800. The application was confined to 1.7 hours prior to sunset to correspond with peak flight period of the pests. The path of the aircraft was east – west. Two bald eagle nest sites were purposefully avoided by a 0.5 radius. The relative efficacy will be determined by trap collections but highly conducive metrological conditions suggest that the result should be excellent. Post flight data was called into the AFRC Command Post after the mission. Sixty gallons of Dibrom® were loaded and 43 sprayed. The remainder was downloaded and will be used on the next Parris Island spray mission.

//signed//

(b) (6) LTC, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



18 APR 07

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Parris Island MCRD SC for Control of Sand fly and Mosquitoes

1. Objective/Purpose/Benefits of the Spray Mission. Spray Parris Island MCRD SC for control of biting midges and mosquitoes. Control nuisance biting midges with aerial spray application to reduce negative impact of insect bites on outdoor training at Parris Island MCDR SC at the request of the Parris Island MCRD/MCAS Environmental Coordinator.

2. Capability: Spray Aircraft available on 30 Apr – 3 May 07

3. Concept of Operations:

**30 APR (Monday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

Check Rifle Range: None

1500: Show Time  
1700: Take Off YNG  
1900: Land KNBC

**1 MAY (Tuesday):** Wx back up, training,

1300: Safety Briefing  
1430: Installation in-brief  
1500: Showtime  
1530: Load Chemical/Wx Decision  
1745: Take off KNBC (Training, Then Spray)  
1959: Sunset

**2 MAY (Wednesday):** Wx back up, training, or redeploy to YNG

1500: Showtime  
1530: Load Chemical/Wx Decision  
1745: Take off KNBC (Training, then Spray)  
1959: Sunset

**3 MAY (Thursday):**

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

4. Spray Parameters:

- a. Acreage: 7,500 Acres (Only areas determined by PMP)
- b. Altitude: 150 Ft AGL
- c. Pesticide: Dibrom® Concentrate
- d. Deploy: 2.0 Hrs
- e. Re-Deploy: 2.0 Hrs
- f. Spray Time: 16 Minutes per Sortie (or as called by PMP)

5. Aircraft Commander: Capt (b)(6)(b)(6)



6. Mission Commander: LCT(b) (6)

7. Support required at Parris Island MCRD SC has been coordinated with Parris Island MCRD Environmental/Spray Coordinator Mr. (b) (6) DSN (b) (6)

// SIGNED //

(b) (6) (b) (6) CAPTAIN, USAFR  
Assistant Chief Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## PARRIS ISLAND MCRD, SC

### 30 Apr – 3 May 2007 Change 2

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: LTC (b) (6) (b) (6)
- (2) Pilots: Capt (b) (6) (b) (6) Maj (b) (6) , Capt (b) (6)
- (3) Navigators: LTC (b) (6) omis
- (4) Flight Engineers: Cmsgt (b) (6)
- (5) Spray Operators: Msgt (b) (6) Msgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: Tsgt (b) (6) Tsgt (b) (6) , Tsgt (b) (6) , Cmsgt (b) (6)
- (2) Crew Chiefs: Tsgt (b) (6) SRA (b) (6)
- (3) Avionics: (b) (6)

##### c. Pest Management Professionals/Entomologist: LTC (b) (6) (in place 30 Apr)

Gov Vehicles provided by Parris Island MCRD

#### 2. PPR REQUIREMENTS: 120-01

#### 3. PLANNED SEQUENCE OF EVENTS: (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

**30 APR (Monday):** see [www.beaufort.usmc.mil](http://www.beaufort.usmc.mil) for weather, etc

1500: Show Time  
1700: Take Off YNG  
1900: Land KNBC; Safety Briefing

**1 MAY (Tuesday):** Check Rifle Range schedule

1430: Weather decision (b) (6) will be off station Mr. (b) (6) is POC for this mission contact info is below)  
1500: Showtime (Note that no in-brief is necessary as all msn condition remain the same; e.g, spray area, etc)  
1530: Load Chemical/Wx Decision (plan on loading 2 drums; wait for approval by PMP/MC)  
1715: Take off KNBC (Training, then spray: Begin spray no sooner than 1850 hrs!!)  
1959: Sunset

**2 MAY (Wednesday):** Wx back up, training, or redeploy to YNG

1500: Showtime  
1530: Load Chemical/Wx Decision  
1715: Take off KNBC (Training, then spray: Begin spray no sooner than 1850 hrs!!)  
1959: Sunset

**3 MAY (Thursday):**

1000: Show Time  
1200: Take off KNBC  
1400: Land KYNG

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

- (1) Mission Commander Cell Phone

##### b. Entomologist/CPMP:

- (1) Wind Gauge & Compass
- (2) VHF Radio and Cellular Phone

(3) Pesticide Safety Binder

c. **Navigators:**

- (1) Maps
- (2) Templates

d. **Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

5. **SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** 14 flat fan 8005 nozzles (7 per side) oriented straight down
- d. **Differential GPS:** Installed
- e. **Aircraft:** 90-9108
- f. **Mission Identifier:** QZNRKA030113

6. **SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

a. **Pesticide:**

Dibrom® Concentrate (naled)  
Organophosphate Insecticide  
Signal Word: Danger  
Antidote: Atropine, 2-PAM  
Flushing Agent: Marvel Mystery Oil

- b. **Application:** 1.0 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,500 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** approx. 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 5.4 gallons/Minute

7. **AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading two drums of Dibrom

8. **PARKING PLAN:** Beaufort MCAS Ramp

9. **AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
**Hilton Head Arpt:** Get Tower Freq from App Plate.  
Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary V 123.45; Secondary:** use cell phone

10. **TRANSPORTATION:** Parris Island will provide two vans and staff car for transportation to and from quarters and for messing.

11. **SPRAY MONITORING/TESTING:** Ground monitoring by CPMP & Parris Island MCRD Project Coordinator.

12. **CONTACTS:**

a. **Parris Island MCRD SC: (MCRD/MCAS Com: (843) 228-XXXX; Off Station Com: (843) 525-XXXX)**

- (1) Environmental Coordinator (Spray Coordinator):  
(b) (6) DSN (b) (6), Cel (b) (6) (b) (6) (b) (6), Cel (b) (6)  
FAX (843) 228-2616; (b) (6) (b) (6)
- (2) Assistant Chief of Staff I & L: Col (b) (6), DSN (b) (6)
- (3) Pest Control Foreman: DSN 335-3663
- (4) P.I. Motor Pool: (b) (6) DSN (b) (6)
- (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
- (6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)
- (7) P.I. Rifle Range: DSN: 335-3183/3624

- b. Beaufort MCAS SC:** (Commercial (843) 228-XXXX)
- (1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6) ; (b) (6) DSN (b) (6)
  - (2) Fuels: DSN: 335-7049/7448/7168
  - (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
 DSN: (b) (6) Base Ops is ext 7301/2/3  
 (After duty hours: (b) (6) DSN: (b) (6)
  - (4) Trans Alert/VAL: DSN: 335-7110
  - (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)

**c. Beaufort County Mosquito Control:** (b) (6) (b) (6)

**d. Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) DSN: (b) (6)

**e. Quarters:**

**Comfort Inn \$57.50 (M,T) \$70.00 (W)**

Comfort Suites	(843) 379-9400/Fax 9401
Country Inn & Suites	(843) 379-4000/Fax 4020
Ramada Inn	(843) 524-2144/Fax 1704
Hampton Inn	(843) 986-0600 (FAX 0494)
Sleep Inn	(843) 522-3361 FAX (843) 522-9929
Parris Island Billeting	DSN: 335-2744 (FAX: 3815); (843) 228-3960
Comfort Inn	(843) 525-9366 (FAX 1529)
Best Western (Sea Island Motel)	(843) 524- 4121
Port Royal Days Inn	(843) 524-1551

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6) (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Capt (b) (6) (b) (6)(b) (6); FAX 1022
4. 910 OG/CC: Col (b) (6) (b) (6) (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) (b) (6) (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6) (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6)



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 910<sup>TH</sup> AIRLIFT WING



19 Aug 2004

**MEMORANDUM FOR HQ AFRC/DOOM (FAX: 497-0198)**

**FROM:** 757 AS/DOS (346-1965/1412; FAX 346-1616)

**SUBJECT:** Ch1, Capability and Concept of Operations for Aerial Spray Characterization at Langley AFB

1. **Purpose/Objectives/Benefits:** Characterize Ultra Low Volume (ULV) spray with fuselage configuration for control of mosquitoes operating at Langley AFB VA.

2. **Capability:** Spray Aircraft Available 30 Aug-3 Sep 2004.

3. **Concept of Operations:**

**30 Aug (Monday):**

0800: Show at KYNG  
1000: Depart KYNG  
1130: Land KLFI  
TBA: In-brief with Langley Staff  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1630: Spray Sortie  
1936: Sunset  
2000: Land

**31 Aug (Tuesday):**

No flying per Wing CC, Langley AFB due to base concert.

**1 Sep (Wednesday):**

TBA: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1630: Spray Sortie  
1936: Sunset  
2000: Land

**2 Sep (Thursday):**

TBA: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1630: Spray Sortie  
1936: Sunset  
2000: Land

**3 Sep (Friday):**

0930: Show Time  
1130: Depart Langley  
1245: Land YNG

**4. Spray Parameters:**

- a. Booms -- Fuselage only.
- b. Nozzles -- 8008 TeeJet
- c. Number of Nozzles -- 4 on left side and 3 on right side ( 7 total) oriented straight down
- d. Airspeed -- 200 knots ground speed.
- e. Altitude -- 150' above ground level.
- f. Wind --Crosswind component.
- g. Flow Rate -- 3.6 gallons/minute
- j. Aircraft Tail Number: 99106; Mission Identifier: QZNRKA908242
- k. Deploy/Re-Deploy Time: 3.2 hrs
- l. Spray Time: 3.50 hrs (or as called by PMP)

**5. Aircraft/Mission Commander: MAJ (b) (6)(5)**

**6.** Support required at Langley AFB has been requested via FAX message.

**7.** If you have any questions concerning this mission please contact the Aerial Spray Office, DSN (b) (6) .

// SIGNED //

(b) (6) (b) (6) Maj, USAFR  
AERIAL SPRAY CHIEF

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 30 Aug-3 Sept 2004

**Purpose/Objectives/Benefits:** Characterize Ultra Low Volume (ULV) spray with fuselage configuration for control of mosquitoes operating at Langley AFB VA

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: MAJ (b) (6) (5)
- (2) Pilots: LTC (b) (6) (b) (6) MAJ (b) (6) (b) (6) CPT (b) (6) (b) (6)
- (3) Navigators: LTC (b) (6)
- (4) Flight Engineers: MSG (b) (6) , MSG (b) (6)
- (5) Spray Operators: TSG (b) (6) TSG (b) (6) (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: MSG (b) (6) , TSG (b) (6) , TSG (b) (6)
- (2) Crew Chiefs: TSG (b) (6) , TSG (b) (6)
- (3) Com Nav: MSG (b) (6)

##### c. Certified Pest Management Professionals: LTC (b) (6) (b) (6) Maj (b) (6) (b) (6) Capt (b) (6) SSGT (b) (6) (YARS -- pest management – observer)

**Gov Vehicles: 2 ea 9 pax van, 1 staff, 1 pick-up truck provided by Langley AFB**

#### 2. SCHEDULE: (All times local)

##### 30 Aug (Monday):

1000: Show at KYNG  
1200: Depart KYNG  
1315: Land KLF  
1400: In-brief with Langley Staff  
1500: Show Time / Weather Decision  
1530: Load Dibrom  
1700: Spray Sortie  
1936: Sunset  
2000: Land

##### 31 Aug (Tuesday):

TBA: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
1936: Sunset  
2000: Land

##### 1 Sep (Wednesday):

TBA: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
1936: Sunset



2000: Land

**2 Sep (Thursday):**

TBA: Daily meeting for PMP/MC in the hotel lobby  
1400: Show Time / Weather Decision  
1430: Load Dibrom  
1700: Spray Sortie  
1936: Sunset  
2000: Land

**3 Sep (Friday):**

0930: Show Time  
1130: Depart Langley  
1245: Land YNG

**3. ITEMS TO TAKE:**

- a. **Entomologist:** Kestrel Weather Monitor, Compass,  
Pest Safety Binder, UHF Radio,  
Satloc Ground Tracker and Laptop Computer
- b. **Navigator:** Maps/Map Bag, Validation Map, Laptop Computer
- c. **Spray Operator:** Safety Gear, Calibration Tables
- d. **Spray Maintenance:** Deployment Kit

**4. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Langley Tower:** DSN 574-5326
- b. **Langley Base Ops:** DSN 574-2504

**5. PARKING PLAN:** Langley Aero Club ramp or as directed.

**6. RADIO FREQUENCIES:**

- a. **Felker AAF Tower (Ft Eustis): 126.3, 248.2, 241.0**
  - (1) Ops phone 878-3588
  - (2) Tower phone 878-3530
  - (3) Flight Service 122.2
- b. **Newport News-Williamsburg Int:** (Operating Hours 1000Z-0200Z)
  - (1) Ground – **121.9 or 348.6** (phone 877-0221 ops)
  - (2) Tower – **124.9 or 280.1** (phone 877-2962)
  - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
  - (4) CTAF – **118.7**
- c. **Langley AFB:** Tower SMSgt. (b) (6) 4-2591
  - (1) Tower - **125.0 or 253.5** (phone 4-5326)
  - (2) Ground - **121.7 or 275.8**
  - (3) Clearance – **118.85 or 271.3**
  - (4) Metro - **239.8**
- d. **Norfolk NAS (Chambers Fld):** Tower - **124.3, 126.375, 340.2, 318.7**
- e. **Spray Ground:** Primary **392.2**; Secondary: **308.6**

**7. IN-BRIEFING:** TBA

**8. SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS ULV; Fuselage booms

- b. **Nozzle Tips/Orientation:** Eight (8) 8008's oriented straight down
- c. **Aircraft:** 89-9106
- d. **Mission Identifier:** QZNRKA908242

**9. SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.6 Gallons/Minute at Langley and Craney island areas
- f. **Acreage:** 125008 Ac peninsulas; 4904 Ac Craney Island
- g. **Swath Width:** 2,000 Feet

**10. PESTICIDE LOADING:**

- a. **How Much Pesticide:** see entomologist
- b. **Where:** Aero Club Ramp
- c. **When:** 1430 hrs each day.
- d. **Furnished by Installation:**
  - (1) Pesticide
  - (2) Loading Equipment/Crew
  - (3) Hazardous Waste Disposal
  - (4) Two B-5 or B-1 Stands

**11. CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**

- a. **LANGLEY AFB VA:**
  - Wing Commander: Col. (b) (6) , DSN (b) (6)
  - Mission Support Group Commander: Col. (b) (6) DSN (b) (6)
  - Civil Engineer: Col. (b) (6) DSN (b) (6)
  - Deputy Chief/Civil Engineer: Ms. (b) (6)
  - Environmental Coordinator: (b) (6) (b) (6) DSN (b) (6) ; FAX 3503
  - Base Operations: SMSgt. (b) (6) DSN (b) (6) Cel. (b) (6)
  - Langley Control Tower: DSN 574-5326
  - Weather: Langley AFB, DSN 574-5907
  - Ft Eustis: DSN 297-5300/3343
  - Command Post: DSN 574-5411
  - Pest Control Foreman: (b) (6) (b) (6) DSN (b) (6)
  - Pest Control/Environmental NCOIC: SSgt (b) (6)
  - Public Affairs: Lt (b) (6) DSN (b) (6)
  - Fuels: DSN 574-4312/3623/4224
  - Motor Pool: 574-7505/5712 (2 vans and 2 staff vehicle were requested)
  - ACC PMP: (b) (6) (b) (6) DSN (b) (6) , cell phone (b) (6)
- b. **Billeting Office: COM: (757) 764-4667 EXT 2519**  
**DSN 574-4667, EXT 2519; FAX 574-3038**
  - Contract Quarters TBA
  - (JTR L/\$99 M/\$40 Max \$141)
- c. **FT EUSTIS VA:** Environmental Coordinator: (b) (6) , DSN (b) (6) )
- d. **Hampton Mosquito Control:** (b) (6) home  
Beeper (b) (6)

- e. **York County Control:** (b) (6) (b) (6)
- f. **Poquoson:** (b) (6)
- g. **City of Portsmouth Biologist:** (b) (6)
- h. **Newport News Mosq. Control** (b) (6)
- i. **Newport News/Williamsburg Int.:**
- (1) Fixed Base Operator: Flight Int 877-6401
  - (2) Flight Service: 877-0209
  - (3) Tower: 877-2962
  - (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport
- j. **Norfolk NAS VA:** DSN 564-2442/7598 or COM (757)-444-2442/7598
- k. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046, + Ext
- (1) 910 AW/CC: Col (b) (6) (b) (6)
  - (2) 910 AW Command Post: Ext 1315; FAX 1161
  - (3) 910 AW/PA: Capt (b) (6) (b) (6) ; FAX 1022
  - (4) 910 OG/CC: LtC (b) (6) (b) (6) (b) (6) / 1179
  - (5) 910 OS/OSA: Airfield Manager, (b) (6) (b) (6) (b) (6)
  - (6) 757 AS/DO: LtC (b) (6)
  - (7) 910 OSF Supervisor of Flight Desk (SOF): 1069; FAX 1371
  - (8) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) FAX 1657
  - (9) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) ; FAX 1616
  - (10) 910 LG/CC: Ext 1225
  - (11) 910 LG/LGM: CMS (b) (6) (b) (6) (b) (6)
  - (12) Maintenance Control: Ext 1327
  - (13) 910 LG/LGMS: Spray Maintenance, Ext 1132/1586
  - (14) 910 LG/LGL: CMS (b) (6) (b) (6)
  - (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342
  - (16) Cellular Spray Phones:
    - Mission Commander: (b) (6)
    - Entomologist: (b) (6) , (b) (6) cell (b) (6)
    - Spray Maintenance: (b) (6)

# 910 AW AERIAL SPRAY

## PMP'S POST-MISSION REPORT – LANGLEY AFB

### 1. MISSION BASICS:

- a. Installation Sprayed: Langley AFB
- b. Mission Duration: 30 Aug-3 Sept, 2004
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date(s) and time(s) (Local): 31 Aug (1700-1930); 01 Sept (1655-1936); 02 Sept (1700-1830)
- e. Acres Treated: 31 Aug, 33409; 01 Sep, 56532; 02 Oct, 33280 (Total = 123221 acres)
- f. Project Coordinator/s (Name/Title, Phone #): (b) (6) (b) (6)
- g. Date Spray Map Last Approved: 31 Aug 2004
- h. Date of Waste Generation Letter: 4 April 1996
- i. Installation In-Briefing: 1 CE Conference Room, Langley AFB; Lt Col (b) (6) Maj (b) (6)  
LTC (b) (6) LTC (b) (6) Maj (b) (6) & Capt (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: Maj (b) (6) (b) (6)
- b. Certified PMP/s (Category 11): Lt Col (b) (6) (b) (6) Maj (b) (6) (b) (6) Capt (b) (6)
- c. Aircrew:
  - (1) Aircraft Commander/Pilot: LTC (b) (6) (b) (6)
  - (2) Co-Pilot(s): Capt (b) (6) (b) (6)
  - (3) Navigator: LTC (b) (6)
  - (4) Flight Engineer(s): MSG (b) (6) ,, MSG (b) (6) , MSG (b) (6)
  - (5) Spray Operators: TSG (b) (6) TSG (b) (6) (b) (6)
- d. Safety Briefer: Maj (b) (6) (b) (6)
- e. Spray Maintenance/Pesticide Loaders: TSG (b) (6) TSG (b) (6) , MSG (b) (6)
- f. Crew Chief(s): TSG (b) (6) , TSG (b) (6) (b) (6)
- g. Avionics: MSG (b) (6)
- h. Flying Data:
  - (1) Spray Sorties/Hours: 3 Sorties: 31 Aug – 2 Sep.
  - (2) Ferry Sorties/Hours: 2 Sorties (3.3 Hours)

### 3. PESTICIDE:

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 210 (31 Aug); 130 (01 Sep); 130 (02 Sep)
- e. Gallons Pesticide Applied: 130.5 (31 Aug); 220 (01 Sep); 130 (02 Sep)
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: Marvel mystery oil (25 gallons) (02 Sep)
- h. Other Additives Used: n/a
- i. Application Rate: 0.5 oz/acre on the peninsula and Craney Island

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): C-130 (99106)
- b. Spray System (Modules Used) and System ID #: System SP2G - MASS ULV; Modules 1 and 2
- c. Spray System Configuration: ULV Fuselage Booms; Modules 1 and 2/MASS ULV
- d. Nozzle Type/Size: 8008 TeeJet<sup>®</sup> Flat Fan
- e. Nozzle Orientation & Number Used: 8 8008's oriented straight down
- f. Pressure: 29-37 psi
- g. Flow Rate: 3.6 gallons/minute on the peninsula and Craney Island

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 ft on Langley Peninsula
- b. Spray Off Set: 2000'
- c. Spray Release Altitude: 150 feet AGL
- d. Ground Speed: 200 knots

**6. WEATHER OBSERVATIONS:**

- a. Winds (Speed/Direction): 3 mph/250 (31 Aug); 5 mph/240 (01 Sep); 11 mph/260 (02 Oct)
- b. Temperature (Degrees Fahrenheit): 78°F (31 Aug-01 Sep); 82°F (02 Aug)
- c. Source: Ground observations/aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Normal projected off-sets based on MASS system characterization
  - (2) Results: DGPS shows spray block completed.
- b. Effectiveness:
  - (1) Technique/s Used: carbon dioxide-baited traps were used to monitor mosquito densities pre- and post-treatment
  - (2) Results: Final reports have not been received from Langley AFB and cooperating cities at this time, however, preliminary feedback from Langley AFB on 02 Sept indicated that the spray mission was very successful.

**8. REMARKS:**

This spray was one of the first conducted at Langley this year and followed a period of excessive moisture following several significant storm events. Several pest mosquito species were present (i.e., salt marsh/container breeding). The area was surveyed on the ground and by air prior to the application. A total of 123221 acres were sprayed during the week including Naval Weapons Station Yorktown and Cheatham Annex Naval Supply Depot. Positive community feedback was near an all-time high after this mission due to the continuing impacts of nuisance and disease-causing mosquitoes on military and local civilian populations.

//signed//

(b) (6) Capt USAFR



**DEPARTMENT OF THE AIR FORCE**  
**757 Airlift Squadron – Aerial Spray Operations**  
**3976 King Graves Rd Unit 24**  
**Vienna OH 44473-5924**

**PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**HOMESTEAD ARB, FL ADULT MOSQUITO CONTROL 31 AUG – 5 SEPT 2009**

**1. MISSION BASICS:**

- a. Installation Sprayed: Homestead ARB, FL.
- b. Mission Duration: 31 Aug – 5 Sept 2009
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date/s: 2-4 Sept 2009
- e. Flying Data:
  - i. Spray Sorties/hours: 3 sorties (1.4 + 0.7 + 1.7) = 3.8
  - ii. Ferry Sorties/hours: 2 sorties (3.8 + 3.6) = 7.4
- f. Time/s of Application (Local): 1840-2001 (2 Sept), 1805-1840 (3 Sept), & 1825-2010 (4 Sept)
- g. Acres Treated: 23,808 (2 Sept), 3,072 (3 Sept), 28,672 (4 Sept) = 55,552 acres
- h. Project Coordinator/s (Name/Rank, Title, Phone #): Lt Col (b) (6), Wing Safety Officer/spray coordinator, DSN (b) (6)
- i. Date Spray Map Last Approved: 1 Sept 2009
- j. Date of Waste Generation Letter: 5 Sept 2009
- k. Installation In-Briefing: (When/Where/Briefer/s): 1 Sept; 482 FW/CC Conference Room; Maj (b) (6) (Mission Commander), Maj (b) (6)
- l. Mission identifier: QZNRKA811243

**2. OPERATIONAL:**

- a. Mission Commander: Maj (b) (6)
- b. Certified PMP/Entomologists (Category 11): Lt Col (b) (6), Maj (b) (6) (safety briefer), Maj (b) (6)
- c. Aircrew:
  - (1) Pilots: Maj (b) (6), Maj (b) (6), Capt (b) (6)
  - (2) Navigators: Maj (b) (6), tyas
  - (3) Flight Engineers: MSgt (b) (6)
  - (4) Spray Operators: MSgt (b) (6), MSgt (b) (6)
- d. Maintenance:
  - (1) Spray Maintenance: TSgt (b) (6), TSgt (b) (6), TSgt (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6), SRA (b) (6)
  - (3) Avionics: TSgt (b) (6)

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 130 gal (2 Sept); 120 gal (3 Sept); 250 total
- e. Gallons Pesticide Applied: 93 gal (2 Sept), 12 gal (3 Sept), & 112 gal (4 Sept); 217 total
- f. Gallons and Name Diluent Used: none
- g. Gallons of Flush Used: 15 gal marvel oil, collected as waste
- h. Other Additives Used: None
- i. Application Rate: 0.5 oz/acre



#### **4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 9-8005s (2&3 Sept) 11 (4 Sept) oriented straight down
- f. Pressure: 45-90 psi
- g. Flow Rate: 3.6 gallons per minute

#### **5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray offset: 2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

#### **6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 2 knots @ 250° (2 Sept), 2 knots @ 050° (3 Sept), & 2 knots @ 040° (4 Sept)
  - (2) Release Altitude: 5 knots @ 250° (2 Sept), 4 knots @ 050° (3 Sept), & 8 knots @ 040° (4 Sept)
- b. Temperature (Degrees Fahrenheit): 82-80° (2 Sept), 78° (3 Sept), & 75° (4 Sept)
- c. Relative humidity: 81-88% (2 Sept), 86% (3 Sept), & 89-91% (4 Sept)
- d. Cloud Cover: Scattered clouds, mostly cloudy, thunderstorms
- e. Source: Ground observations and aircraft

#### **7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Monitoring was done by Miami Dade Mosquito Control using landing counts and carbon dioxide-baited traps at 8 treatment areas and 2 control sites outside the spray areas.
- b. Monitoring data showed that mosquito landing counts dropped measurably in areas treated with decreases between 90-100% (Attachment 1). In addition, the primary target pest (*Aedes taeniorhynchus*) populations were decreased by 85-95%, while populations in areas not sprayed remained at largely at pre-spray levels.

#### **8. REMARKS:**

a. Homestead AFB received aerial applications for mosquito control for years until Hurricane Andrew devastated the area in 1992. This application marked the return of the Air Force Aerial Spray Flight to this base. Lt Col (b) (6) initiated the process and Dr. (b) (6) wrote the environmental assessment. Miami Dade Co. Mosquito Control Division of Public Works, offered technical expertise and pesticide for areas of Miami Dade County which were treated. This follows a model of training and function that has been a mutually beneficial for the Spray Unit and various host installations around the country.

b. A wet summer season left south Florida with several hatches of salt marsh mosquitoes and trap numbers easily met the prescribed minimum to trigger the potential for adult mosquito control. Since this was the first application in recent memory, a thorough discussion was performed at the in-brief for all partners/collaborators prior to flying. We received excellent support from all sections including 482<sup>nd</sup> PA, CES, and the TA folks. Thunderstorms prompted a weather cancellation on 2 Sept and delayed take-off times on other days. A small amount of pesticide dripped from an internal section of the MASS onto absorbent but was sufficient to force a shortened sortie for safety reasons on 3 Sept. The problem was quickly fixed by Spray Maintenance. The Mission Commander coordinated with all parties for an extended spray period and the entire crew agreed to stay over on Friday evening to complete the spray area. The Spray Unit has done well controlling this species of salt marsh mosquito and this application was no exception. The County Mosquito Control personnel reported mosquito numbers dropped by 85-95% in all treated areas while counts remained stable in un-sprayed areas. Areas sprayed are shown in Attachment 2.



c. Special thanks are given to Miami Dade County for providing outstanding support in the form of mosquito surveillance data both pre- and post-spray. This was the last application for the year in which we had an aircraft scheduled at Homestead ARB. However, depending on mosquito levels and aircraft/personnel availability, an additional application may be possible. We hope that Homestead finds the application effective and will request dates for next year's program.

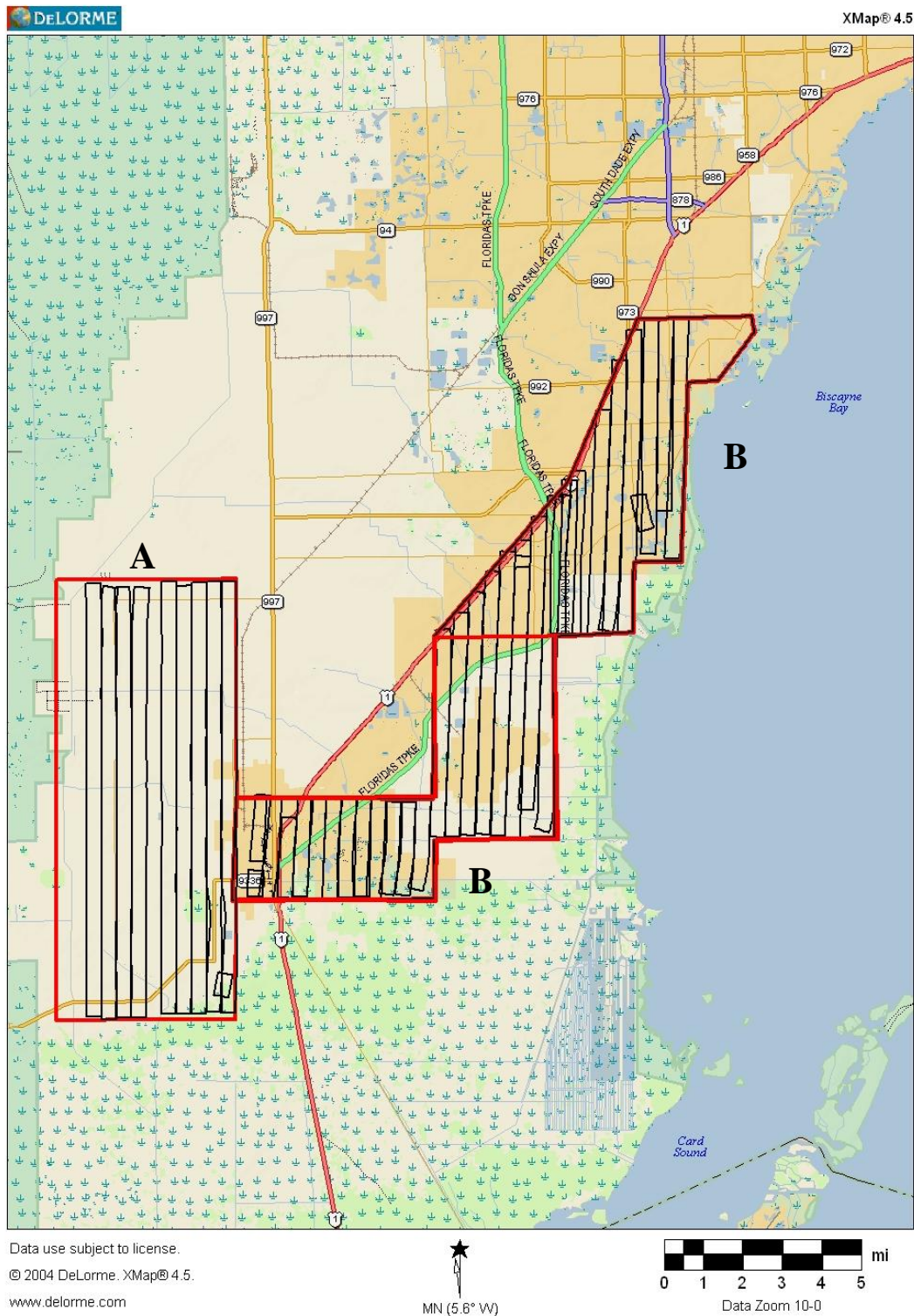
//signed//

(b) (6) (b) (6) MAJ, USAFR  
Entomologist and DoD Certified Applicator

Attachment 1. Mosquito numbers measured by landing rate and collected in traps within Miami Dade County, FL 31 Aug – 4 Sept 2009 before and after adult mosquito control operations by the Air Force Aerial Spray Unit.

TRAP/LANDING COUNT LOCATIONS		Landing	%	Aedes	%
		Rate	Control	taeniorhynchus	Control
SW 192 AVE & SW 408 ST CONTROL	8/31/2009 PRE			720	
SW 192 AVE & SW 408 ST CONTROL	9/2/2009 POST			462	
SW 236 ST & SW 214 PL	8/31/2009 PRE	4		86	
SW 236 ST & SW 214 PL	9/2/2009 POST	0	-100%	13	
SW 384 ST & SW 217 AVE	8/31/2009 PRE	15		408	
SW 384 ST & SW 217 AVE	9/2/2009 POST	0	-100%	15	
SW 209 AVE & SW 296 ST	8/31/2009 PRE	6		80	
SW 209 AVE & SW 296 ST	9/2/2009 POST	0	-100%		
SW 264 ST & SW 222 AVE	8/31/2009 PRE	6			
SW 264 ST & SW 222 AVE	9/2/2009 POST	0	-100%		
Total Pre-spray		25		574	
Total Post-spray		0	-100%	28	-95%
SW 344 ST & SW 142 AVE CONTROL	9/3/09 PRE	8		364	
SW 344 ST & SW 142 AVE CONTROL	9/4/09 POST	6	-25%	334	
SW 296 ST & HAFB Fence	9/3/09 PRE	6		436	
SW 296 ST & HAFB Fence	9/4/09 POST	0	-100%	46	
345 East Palm Drive	9/3/09 PRE	2		64	
345 East Palm Drive	9/4/09 POST	0	-100%	38	
SW 344 ST & SW 132 AVE	9/3/09 PRE	10		318	
SW 344 ST & SW 132 AVE	9/4/09 POST	2	-80%	28	
SW 127 AVE & Community DR	9/3/09 PRE	3		56	
SW 127 AVE & Community DR	9/4/09 POST	0	-100%	16	
Total Pre-spray		21		841	
Total Post-spray		2	-90%	128	-85%

Attachment 2. Homestead ARB area spray blocks. The red outline represents the proposed treatment area. The black lines are the track of the aircraft while spraying. Area A was treated on 2 Sept and area B was treated on 3 & 4 Sept.





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



MEMORANDUM FOR HQ AFRC/DOOM

2 Mar 06

FROM: 757 AS/DOS

SUBJECT: Capability and Concept of Operations for Aerial Spray at Hill AFB/UTTR UT  
Annual Weed Control Spray Mission on the Utah Test and Training Range (UTTR)  
Enroute mission for Spray Static Display at Texas Mosquito Control Association

1. **Capability:** Two aircraft will be available: 99105 from 29 Mar – 9 Apr, 99107 from 31 Mar- 9 Apr for the requested spray missions.

2. **Concept of Operations:**

a. **Aircraft 99105:**

**29 Mar (Wednesday): Preposition for Static Display enroute to KHIF**

1700Z Spray Aircraft 99105 Depart KYNG

2100Z Land KLBX

**30 Mar (Thursday)**

Static Display at Texas Mosquito Control Association meeting

**31 Mar (Friday) Continue to KHIF**

1630Z Depart KLBX

2030Z Arrive KHIF

**Aircraft 99107 and support aircraft**

**31 Mar (Friday) Spray plane and support plane to KHIF**

1500Z 99107 Depart YNG

1505Z Support aircraft depart YNG

2130Z 99107 Arrive KHIF

2135 Support arrive at KHIF

b. **1 Apr (Saturday) – 7 Apr (Friday):** Schedule of daily events will be determined by the Mission Commander as required.

**(Range times 0700-1500 local times at KHIF)**

0430 Ground Support Team departs for UTTR

0515 FEs, Crew Chiefs, & Spray MX report and Mix/Load Chemical

0630-1200 Target areas sprayed as designated by PMP

c. **7 (Friday) or 8 Apr (Saturday):**

Flush and clean up day.

Schedule of daily events will be determined by the Mission Commander as required. Support

Aircraft returns to Hill AFB.

**d. 8(Saturday) or 9 Apr (Sunday):**

0700 Aircrew report for duty

0730 All personnel report

0900-0915 Spray Aircrafts & Support aircraft take-off

1600-1700 Mission completed, all personnel and aircraft arrive at KYNG

**3. Spray Parameters and Sequencing:**

**a. SEQUENCING:**

1. Target 21

2. Target 24

3. NORDLZ

Target sequencing is determined by UTTR personnel based upon EOD clearance schedule and airspace scheduling.

**b. SPRAY PARAMETERS:**

1. **Herbicide:** Krovar 1DF®

2. **Application Rate:** 22.5 gal/acre (10 lbs of Krovar in 22.4 gal of water)

3. **Acreage:** 1,283 Acres (Targets 21, 24 and a couple passes on Nord LZ)

4. **Ground Speed:** 200 Knots (337.55 ft/sec)

5. **Spray Altitude:** 100 Feet AGL

6. **Swath Width:** 35 Feet

7. **Flow Rate:** 366.1 Gallons/Minute

4. **Mission Commander:** LTC (b) (6) (b) (6)

5. **Aircraft Commanders:** Maj's (b) (6) (b) (6) (b) (6) (b) (6) Capt (b) (6) (b) (6)

6. **Support required at Hill AFB and the UTTR has been completed.**

(b) (6) (b) (6) Maj, USAFR  
Chief Aerial Spray  
757 AS/DOS



# SPRAY OPERATIONAL SCHEDULE

## UTAH TEST AND TRAINING RANGE MISSION

### 31 MAR – 9 APR 2006

29 Mar A/C #105,	Report Time: 1000 Take Off: <u>1200</u> Arrive: <u>1500L</u>
31 Mar A/C #108	Report Time: <u>0800</u> Take Off: <u>1000</u> Arrive: <u>1330L</u>
31 Mar Support A/C #041,	Report Time: <u>0805</u> Take Off: <u>1000</u> Arrive: <u>1340L</u>

**PURPOSE/BENEFIT/OBJECTIVE:** To control vegetation on Targets 21, 24 and Nord LZ at the Utah Test and Training Range (UTTR)

#### 1. AIRCREW 1: AC 105-In place CALLSIGN: SPRAY 05

- a. **Pilots:** MAJ (b) (6) CPT (b) (6) (b) (6)
- b. **Navigators:** LTC (b) (6) (b) (6)
- c. **Flight Engineers:** MSG (b) (6)
- d. **Spray Operators:** MSG (b) (6) , MSG (b) (6) (b) (6)
- e. **Crew Chiefs:** TSG (b) (6) , TSG (b) (6)
- f. **Spray Maintenance:** TSG (b) (6) , TSG (b) (6)

#### AIRCREW 2: AC 108-In place CALL SIGN: SPRAY 08

- a. **Pilots:** MAJ (b) (6) (b) (6) CPT (b) (6)
- b. **Navigator:** LTC (b) (6)
- c. **Flight Engineer:** MSG (b) (6) , (b) (6) (b) (6)
- d. **Spray Operators:** MSG (b) (6) , SMSG (b) (6)
- e. **Crew Chiefs:** SMS (b) (6) , TSG (b) (6)

**Extra Crew members:** MSG (b) (6) , MSG (b) (6) (b) (6) LTC (b) (6) , Maj (b) (6) (b) (6)

#### 31 Mar SUPPORT CREW

- a. **Pilots:** TBD, , Maj (b) (6) (b) (6) LTC (b) (6) Maj (b) (6)
- b. **Navigator:** MAJ (b) (6) (b) (6)
- c. **Flight Engineer:** MSG (b) (6) , (b) (6) (b) (6)
- d. **Loadmasters:** MSG (b) (6)
- e. **Crew Chiefs:** TSG (b) (6) ,

Swap Crew:

Arriving 3 Apr:	Maj (b) (6) (b) (6)	Maj (b) (6) (b) (6)	LTC (b) (6) (b) (6)
Departing 4 Apr:	LTC (b) (6)	, CPT (b) (6)	

#### 2. MISSION SUPPORT:

- a. **Mission Commander:** LTC (b) (6)
- b. **Entomologist:** CPT (b) (6) Maj (b) (6) (b) (6) (3 Apr)
- c. **Spray Maintenance:** MSG (b) (6) , TSG (b) (6) ,  
TSG (b) (6) , \*TSG (b) (6) , TSG (b) (6)
- d. **ARMS:** Tsgt (b) (6)

#### 3. UTTR GROUND PARTY:

- a. **Entomologist/Pest Management Professional(s):** \*In place  
\*LTC (b) (6) (b) (6) \*LTC (b) (6) \*MAJ (b) (6) (b) (6) 1LT (b) (6)

#### 4. MAINTENANCE: \*In place

- a. **910 MA Supervisor:** SMS (b) (6)

- b. **910 SPRAY Supervisor:** \*SMS (b) (6)
- c. **Avionics/Hydraulics:** TSG (b) (6) , TSG (b) (6)
- d. **Engine/Propulsion:** TSG (b) (6) , TSG (b) (6) , Msg (b) (6)

**5. COMM:**

Msgt (b) (6) (b) (6) Msgt (b) (6) , Tsgt (b) (6) (b) (6) Tsgt (b) (6)

**6. IN-BRIEFING: (UTTR Staff)**

- a. **When/Time:** 31 Mar 2006 , 1400
- b. **Where:** Air Freight Terminal
- c. **Who:** EVERYONE!!
- d. **Briefing Plan**
  - a. Billeting- See item g below
  - b. Vehicles- See item h below
  - c. Schedule of events
  - d. Weather call
  - e. Cellular Phone numbers for all personnel

**7. PLANNED SEQUENCE OF EVENTS:** Hill AFB Tower Control and Runway Hours 24/7

**NOTE:** Scheduling reflects no weather or maintenance delays. In the event of weather or maintenance delays, the missions will be adjusted as required.

**ALL TIMES MAY BE ADJUSTED BY MISSION COMMANDER.  
DUTY DAY FOR CIVILIANS WILL BE STD DAY (8 HOURS).  
MILITARY STATUS PERSONNEL WILL WORK AS  
REQUIRED WITHIN CREW REST CONSTRAINTS.**

**Tower Control, Runway & Airfield hours 24/7**

**UTTR RANGE TIMES: 0600-1500L**

**END OF EACH DAY LOAD GROUND TANKS WITH THE APPROPRIATE MIX.**

**ALL MX & A/C PERSONNEL WILL REMAIN ON DUTY UNTIL AIRCRAFT IS PRE-  
FLIGHTED FOR THE NEXT DAY OR RELEASED BY THE AIRCRAFT  
COMMANDER.**

**\*\*If mission is completed early, expect an early return to YNG. 1 Airplane  
may return on 7 April if mission is complete.**

**1<sup>st</sup> Spray aircraft: Tail#: 899105 MI: QZNRKA007088**

**29 Mar (Wed)**

**1000 Show at YNG**

**1200 Depart YNG**

**1500 Arrive LBX (Brazoria County Airport)**

**30 Mar (Thur) Static Display Spray Convention**

**31 Mar (Fri)**

**0900 Show at LBX**

**1030 Depart LBX (Time to arrive at Hill by 1330)**

**1330 Arrive HIF**

**2<sup>nd</sup> Spray Plane 899108 (MI: QZNRKA008090) and Support aircraft:**

**31 Mar (Fri):**

**0800 Show at KYNG**

**0810 Mission Brief**

1000 Aircraft 08 Take off  
1005 Support aircraft Take off – AFRC Support plane  
1330 Arrive Hill AFB  
1400 Mission Commander/Safety Briefing

**1 – 7 APR (Sat-Fri):** (First Spray Sortie, Range Times 0700-1500 (1200Z-2100Z 1-9 Apr)

0500: Spray Maintenance starts on first full day of mission and adjust as directed  
0500: Show time, aircrew Spray 05  
0530: Show time, aircrew Spray 08  
0611: Sunrise (see attach Sunrise/Sunset Chart in mission folders)  
0700: Spray 05 Take off  
0730: Spray 08 Take off  
0700-1700: Spray 05 & 08 spray UTTR Targets as directed by the MC  
**\*NOTE: Spray 05 & 08 will alternate show/take off each day**  
**\*\* NOTE: First crew to base ops files flight plans and gets weather brief for second crew**

**7+8 APR (Fri+Sat):** Weather Back-up/Flush, Clean Up; Support Aircraft arrives at Hill

0530: Show time aircrew Spray 05  
0600: Show time aircrew Spray 08  
0715-1200 Spray 07 & Spray 08 Flush sorties, plan 2 sorties each pending spray mx

**8 or 9 Apr (Sat or Sun):** All personnel and aircraft return to YNG

0700: All Aircrew report  
0730: All Personnel report  
0900: Aircraft 05 Takes off  
0905: Aircraft 08 Takes off  
0910: Support airplane Takes off  
1600: Lands YNG

**8. ITEMS TO TAKE:**

- a. PMP:**
  - (1) Project Notebook with Recording Sheets and Maps
  - (2) Laptop Computer and Batteries
  - (3) 2 Compasses and Stop Watch
  - (4) 2 Signal Mirrors and 2 Spot Lights
  - (5) Measuring Wheels and Tape
  - (6) Entomologists' Tool Kit
  - (7) UHF/VHF Radios and VHF Radios
  - (8) Cellular Phone
- b. Mission Commander:** Cellular Phone, Mission Info
- c. Navigator:** Maps
- d. Spray Maintenance:**
  - (1) MASS Spares and Spill Kit
  - (2) Tools and Other Equipment
  - (3) Herbicide Safety Binder
  - (4) Safety Equipment
- e. Maintenance:** Applicable Equipment

**9. SPRAY CONFIGURATION: SP3G**

- a.** Two Aircraft, Systems 3 and 5
- b.** MASS Modules 1, 2 and 3
- c.** UHV Fuselage booms oriented straight back



**10. PPR REQUIREMENTS:** All required, see Form 33 setup sheets for aircraft

**11. PARKING PLAN:** Air Freight Ramp – on West side of the airfield, Spots 11/12  
Alternate Spot 10 for support aircraft

**12. RADIO FREQUENCIES:**

- **Clover Range Control:** UHF 285.65, 275.9, 361.4
- **Eagle Tower:** UHF 351.0; Mawk 4 ((b) (6) )
- **Diddle Knoll & Spray Ops Freq:** UHF 398.1 (Primary), 383.2 (Back-up); VHF 134.1, 118.45
- **Spray Inter plane:** UHF 237.05 / VHF 138.375
- **Spray Ground to Spray Maintenance:** See Iridium Phones
- **Base OPS:** 139.3
- **HF Operations:** 04912.35 (p), 10923.35, 12208.35, 14827.35
- **Communications Ground Freq:** LMR nets are trunked at Hill.

**- IRIDIUM PHONES**

- Mission Commander ((b) (6))
- Maintenance Supervisor ((b) (6))
- Entomologist/Pest Management ((b) (6))

**13. SPRAY PARAMETERS:**

- a. **Herbicide:** Krovar 1DF®
- b. **Application Rate:** 22.5 gal/acre (10 lbs of Krovar in 22.4 gal of water)
- c. **Acreage:** 1,283 Acres (Targets 21, 24 and a couple passes on Nord LZ)
- d. **Ground Speed:** 200 Knots (337.55 ft/sec)
- e. **Spray Altitude:** 100 Feet AGL
- f. **Swath Width:** 35 Feet
- g. **Flow Rate:** 366.1 Gallons/Minute

**14. HERBICIDE LOADING: (For Partial Loads Use Table on Last Page)**

**a. Sequence for Loading 1,000 Gallon Mixing Tank:**

- (1) Fill with water up to 750 Gallon Mark, then add:
  - (a) 450 Pounds of Krovar 1DF® (9 bags, 50 # each)
  - (b) 4.0 Gallons (15,140 ml) of StaPut®
  - (c) 64 Ounces (1,892 ml) of Foam Fighter F®
  - (d) 200 Ounces (5,913 ml) Hi-Light® Dye
  - (e) Add Water to 1,000 Gallon Mark and Agitate for 30 Minutes

**b. When:** Start at 0515 Hours on first full day of spraying and adjust as necessary through end of the daily mission as called by Mission Commander.

**c. Items to be furnished by installation:**

- (1) Krovar 1 DF® (12,660 pounds)
- (2) Foam Fighter F® (15 gallons)
- (3) StaPut® Additive (114 gallons)
- (4) Hi-Light® Dye (45 gallons)
- (5) Remove Nutra-Sol Tank Cleaner
- (6) Loading Personnel and All Loading Equipment
- (7) All Necessary Cleanup and Hazardous Waste Disposal
- (8) Aircraft Support Equipment and TA Support
- (9) Wash Rack and Fuel Priority

**15. SPRAY MONITORING AND TESTING.** By CPMP & ground support personnel

**16. CONTACTS:** (Commercial prefix (801) 777-XXXX; DSN 777-xxxx

**a. 388<sup>th</sup> RANS/RSO, Range Control Officer/Installation Spray Coordinator:**

- (b) (6) 6066 Cedar Lane, Bldg 1274S; (b) (6) ; FAX: 9205  
Cell Phone # (b) (6) , (b) (6) (b) (6) (b) (6) Cell Phone (b) (6)  
- **Hill Range Control:** 7-9386, Current OPS; 7-9385  
- **Range Scheduler:** 7-9386  
- **Eagle Tower:** 7-1515/6  
- **Clover Operations:** 7-7575  
- **Clover Commander:**, 7-1550  
- **388<sup>th</sup> RANS/RSL Radio Freq Monitor:** 7-6715  
- **388<sup>th</sup> RANS/RSR Resource Monitor:** 5-4257

**b. Environmental Coordinator:** (b) (6)

**c. OASIS RANGE SUPPORT DIRECTORATE:**

Oasis Chief: 75 CEG/CEU (b) (6)  
Oasis Civil Engineering: (b) (6)  
North Range Security: 7-1521/2/4

**d. Hill AFB Base OPS: 7-1861; WX 7-2018**

- **Aerial Spray OPS Bldg 904 Deployment Center,** (b) (6)

**e. Entomology:** (b) (6) (b) (6)

**f. Weather:** Hill AFB: 7-2018; **UTTR:** 7-1516/63 ASOS at Eagle Range 6-1765  
Need Dash1 daily at 0530

**g. Billeting:** **Holiday Inn Express for all Spray related personnel (Except range monitors)**

- **Billeting Office Mountain View Inn, DSN 777-0802/1844, FAX 775-2014 COM (801) 777-0802; FAX 775-2014**
  - **Holiday Inn Express, Layton UT 1695 Woodland Park Dr \$60/night**
  - **Quarters for UTTR Support Personnel**
    - **Nugget (Wendover): 1-(800)-848-7300**
- Comfort Inn (\$48+Tax) 877 North 499 West, 801 544-5577  
Holiday Inn (Odgen): 1-800-999-6841 or 801 399-5671  
Airport Hilton Inn: 1-800-648-9668 or 801 539-1515  
Ogden Park: 247 24<sup>th</sup>, 801 627-1190/800 421-7599  
La Quinta Inns: 1965 N 1200 W Layton, 801 776-6700  
Alana Motel: 116 N Main Street, Clearfield, 801 825-2221 or 2321

**h. Car Contact:**

- (1) **Enterprise Rental Car** (b) (6) **at BX 801 593-6007**

**5 ea Full Size @ \$41/day 31 Mar – 9 Apr**

LTC (b) (6) (162763), MAJ (b) (6) 162737), CPT (b) (6) 162778),  
SMS (b) (6) (162774), SMS (b) (6) (162785)

**6 ea Mini Van @ \$60/day 31 Mar – 9 Apr**

MAJ (b) (6) 162684), MSG (b) (6) (162692), MSG (b) (6) (162721),  
MSG (b) (6) (162710), TSG (b) (6) (162699), MSG (b) (6) (162734)

(2) **Hill Motor Pool: All Reserved: 1 total**

1x Supt Crew 31 Mar-9 Apr-

**i. Hill AFB:**

Base Commander: Col (b) (6)  
Airfield Manager: (b) (6)  
Base Operations: 7-1861; FAX: 7-2221  
Weather: 7-2018  
Transit Alert: 7-3886  
C-130 Maintenance Contact: 7-2478  
Fuels: 7-7423/7-7311 available 0900-1800 daily after hours contact CP  
Billeting: 7-1844  
Chow Hall: 7-3428      Breakfast M-F 0530-0730, S-S 0700-1900  
Golf Course: 7-1108

**j. Hill Public Affairs: 7-5201**

**k. Supply Contact: 7-5391 (922 OE)**

**l. Youngstown ARS, OH:** Commercial (330) 609-XXXX or DSN 346-XXXX  
910 AW Direct Dial-In/Voice Mail: 1-800-278-7046+2+Ext  
Command Post: 1315; FAX 1161  
910 AW/CC: 1243  
910 AW/PA: 1236; FAX 1022  
910 AW/FM: Comptroller: 1216  
910 OG/OSS: Supervisor of Flight Desk: 1069; FAX 1371  
910 OG/CC: 1257/1179  
757 AS/DO Admin: SMS (b) (6) (b) (6) (b) (6)      FAX 1657  
757 AS/DOS: Aerial Spray Operations 1503, 1111; FAX 1616  
910 MX/LG/CC: 1225  
Maintenance Control: 1344  
Spray Maintenance: 1132/1586  
Omega/SATO Travel: 1772; 1-800-285-6342

**17. SEQUENCING:**

- a.** Target sequencing is determined by UTTR personnel based upon EOD clearance schedule and airspace scheduling.
- b.** Spray ops aircraft must stay south of Base Leg Knoll during turns on north run on Target 21. Coordination with range control is essential to assure that this portion of the range is released for air operations.
- c.** When winds blow directly from one side of the target to the middle of the target or during early morning when wind speed is low, ground monitors will direct the “dress up” of the target edges.
- d. Spraying Priorities:**
  - (1) Target 21
  - (2) Target 24
  - (3) NORDLZ
- g. Multiple-Target Alignments for Possible Future Operations.**

Whenever possible, multiple in line targets will be treated on the same pass to facilitate aircraft line-up and turning efficiency (in which case two separate ground-monitoring and marking parties will be required).

  - (1) The west edges of Targets 21 & 24 are contiguous and can be treated on the same pass with a spray-off gap between targets.

**18. GENERAL TARGET INFORMATION:**

- a. Target 21:**
  - (1) Dimensions: 4,980' X 7,770'

- (2) Acreage: 888
- (3) Acres Sprayed in 2004: 888
- (4) Aircraft Loads: 18,869 Gal
- (5) Sorties: 17
- (6) Passes (35' Swath): 157
- (7) Spray-On Time/Pass: 23 Seconds
- (8) Spray Heading: 00/180

**b. Target 24:**

- (1) Dimensions: 1,600' X 6,080'
- (2) Acreage: 223
- (3) Acres Sprayed in 2004: 223
- (4) Aircraft Loads: 5,263 Gal
- (5) Sorties: 7
- (6) Passes (35' Swath): 47
- (7) Spray-On Time/Pass: 18 Seconds
- (8) Spray Heading: 00/180

### **UTTR GEOGRAPHIC LOCATION**

Target areas on UTTR are geographically located in northwestern Utah, directly west of the Great Salt Lake and Hill Air Force Base. The complex is positioned between 40 and 41 degrees north latitude and close to 113 degrees ten minutes west longitude. The targets are within range 12 west and Township two and three north, Salt Lake Baseline Meridian.



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

19 Mar 09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Hill AFB/UTTR UT

1. Aerial Spray flight proficiency training will be accomplished on targets 21, 24, and Wildcat at the Utah Test and Training Range(UTTR) applying Krovar controlling vegetation (i.e Halogenton) growth aiding bombing mission test evaluations and unexploded ordinance recovery. One C-130 will be available 31 March – 11 April 09 for the requested spray mission. This mission normally uses two C-130's, but due to the current C-130 wing limitations only 1 airframe is available for the mission. A second crew will attend this mission flying the additional sorties each day with a single airframe to complete the desired area.

2. Concept of Operations:

- a. 31 March (Tuesday)
  - 0500 Show KYNG
  - 0800 Depart KYNG with extra crew, maintenance, and support equipment
  - 1130 Land KHIF drop off extra crew, maintenance, and support equipment
  - 1330 Depart KHIF
  - 2000 Land KYNG
- b. 1 April (Wednesday)
  - 0800 Show KYNG load spray module
  - 1000 Depart KYNG
  - 1330 Land KHIF
- c. 2-9 April (Thursday-Friday)
  - 0500 Show KHIF
  - 0745 Depart KHIF
  - 1300 Land KHIF
- d. 10 April (Friday)
  - 0700 Show KHIF

0900 Depart KHIF with spray module  
1600 Land KYNG download spray module  
1730 Depart KYNG  
2030 Land KHIF

- e. 11 April (Saturday)  
0800 Show KHIF  
1000 Depart KHIF with extra crew, maintenance, and support equipment  
1600 Land KHIF mission complete

3. Capt (b) (6) (b) (6) will act as Mission Commander.
4. Maj (b) (6) (b) (6) will act as Aircraft Commander
5. Support required at Hill AFB and the UTTR has been completed.

(b) (6) (b) (6) Capt, USAFR  
Assistant Chief of Aerial Spray

# SPRAY OPERATIONAL SCHEDULE

## UTAH TEST AND TRAINING RANGE MISSION

### 31 MARCH 11 APRIL 2009

**PURPOSE/BENEFIT/OBJECTIVE:** Aerial spray herbicide mission controlling Halogeton on Targets 21, 24, and Wildcat at the Utah Test and Training Range(UTTR) aiding vegetation control for bombing mission test evaluations and unexploded ordnance recovery.

#### **1. AIRCREW1: AC 108-CALL SIGN: SPRAY 06**

- a. **Pilots:** MAJ (b) (6) (b) (6) MAJ (b) (6)
- b. **Navigators:** MAJ (b) (6) (b) (6)
- c. **Flight Engineers:** MSgt (b) (6)
- d. **Spray Operators:** SMS (b) (6) , MSgt (b) (6) , Ssgt (b) (6)
- e. **Crew Chiefs:** Msgt (b) (6) , Sra (b) (6)

#### **AIRCREW 2: AC 108- CALL SIGN: SPRAY 08**

- f. **Pilots:** MAJ (b) (6) , MAJ (b) (6) , Maj (b) (6)
- g. **Navigators:** LTC (b) (6) (b) (6)
- h. **Flight Engineers:** MSgt (b) (6)
- i. **Spray Operators:** MSgt (b) (6) MSgt (b) (6) (b) (6)
- j. **Crew Chiefs:** Msgt (b) (6) , Sra (b) (6)

#### **2. MISSION SUPPORT:**

- a. **Mission Commander:** Capt (b) (6) (b) (6)
  - 1. Makes final decision on all changes to the schedule
  - 2. Confirm all hotel information is correct upon check in
  - 3. Report flight data to AFRC daily (See contact info on reporting sheet)
- b. **Entomologists:** Maj (b) (6) (b) (6)
- c. **ARMS:** SMS (b) (6)

#### **3. UTTR GROUND PARTY:**

- a. **Entomologist/Pest Management Professional(s):** \*LTC (b) (6) (b) (6) (Commercial air out), LTC (b) (6) (b) (6) , Smsgt (b) (6) (b) (6)

#### **4. MAINTENANCE:**

- a. **910 MX Supervisor:** \*SMSgt (b) (6) (27 Mar 09);
- b. **910 Spray MX:** Tsgt (b) (6) (27 Mar 09), Tsgt (b) (6) (27 Mar 09), Tsgt (b) (6) (b) (6) (27Mar09), Ssgt (b) (6) ,SRA (b) (6) , Tsgt (b) (6) (1 Apr), Tsgt (b) (6) (1 Apr)
- c. **Instruments/Avionics:** Tsgt (b) (6) (b) (6) Tsgt (b) (6)
- d. **Hydraulics/Electrician:** Tsgt (b) (6) , Ssgt (b) (6)
- e. **Engine:** Tsgt (b) (6) ,

#### **5. COMM: None**

#### **6. IN-BRIEFING: (UTTR Staff)**

- a. **When/Time:** 31 Mar 2009 , 1230
- b. **Where:** Air Freight Ramp/Base Operations
- c. **Who:** EVERYONE!! Do Not leave area until cleared out by the MC.
- d. **Briefing Plan**
  - a. Vehicles- See item 16.h below
  - b. FLT Line Driving
  - c. Schedule of events
  - d. Billeting- See item 16.g below
  - e. Weather call



- f. Cellular Phone numbers for all personnel

**7. PLANNED SEQUENCE OF EVENTS: Hill AFB Tower Control and Runway Hours 24/7**

**NOTES:**

1. Scheduling reflects no weather or maintenance delays. In the event of weather or maintenance delays, the missions will be adjusted as required. **ALL TIMES SUBJECT TO ADJUSTMENT BY MISSION COMMANDER**
2. **DUTY DAY FOR CIVILIANS WILL BE AS REQUIRED WITHIN CREW REST CONSTRAINTS.**
3. Tower Control, Runway & Airfield hours 24/7
4. **UTTR RANGE TIMES: 1500-2000Z**
5. **ALL MX & A/C PERSONNEL WILL REMAIN ON DUTY UNTIL AIRCRAFT IS PRE-FLIGHT COMPLETE AND RELEASED BY THE MISSION COMMANDER.**

**a. 31 March (Tuesday)**

**Spray 06 MI: QZNRKA906090 PPR: AS3101**

0600 Show KYNG

0900 Depart KYNG with extra crew, maintenance, and support equipment

1200 Land KHIF drop off extra crew, maintenance, and support equipment

1330 Depart KHIF

2000 Land KYNG

**Spray 08 MI: QZNRKA963090 PPR: TM3102**

0600 Show KYNG

0905 Depart KYNG

1205 Land KHIF

**\*\*All personnel driving on the flight line will need to attend the flight line drivers briefing @ 1230 or ASAP after landing from base operations personnel.**

**b. 1 April (Wednesday) PPR: AS0101**

1000 Show KYNG load spray module

1200 Depart KYNG

1530 Land KHIF

**\*\*Time will be adjusted based on crew rest requirements.**

**c. 2-3 April (Thursday-Friday) As many sorties as wx permits each day.**

0500 Show KHIF crew 2; 0545 Crew 1 (Alternating daily)

0700 Depart KHIF

1300 Land KHIF

**\*\*Weekend is unavailable due to range funding. If wx delayed, then weekend operations will be considered as a last resort per Hill AFB.**

**d. 6-9 April (Monday-Thursday) As many sorties as wx permits each day.**

0500 Show KHIF

0745 Depart KHIF

1300 Land KHIF

**e. 10 April (Friday) Both aircrews**

0700 Show KHIF

1000/1005 Depart KHIF with spray module

1600/1605 Land KYNG download spray modules  
1730 Crew 2 Depart KYNG  
2030 Crew 2 Land KHIF

**f. 11April (Saturday)**

0800 Show KHIF

1000 Depart KHIF with extra crew, maintenance, and support equipment

1600 Land KHIF mission complete

\*\*If completed early, the aircrews and airframes may return early. TBD by the mission commander.

**8. ITEMS TO TAKE:**

**a. PMP:**

- (1) Project Notebook with Recording Sheets and Maps
- (2) Laptop Computer and Batteries
- (3) 2 Compasses and Stop Watch
- (4) 2 Signal Mirrors and 2 Spot Lights
- (5) Measuring Wheels and Tape
- (6) Entomologists' Tool Kit
- (7) UHF/VHF Radios and VHF Radios
- (8) Cellular Phone

**b. Mission Commander:** Mission Folder, Cellular Phone

**c. Navigator:** Maps

**d. Spray Maintenance:**

- (1) MASS Spares and Spill Kit
- (2) Tools and Other Equipment
- (3) Herbicide Safety Binder
- (4) Safety Equipment

**e. Maintenance:** Applicable Equipment

**9. SPRAY CONFIGURATION: SP3G**

- a.** Two Aircraft and Systems
- b.** MASS Modules 1, 2 and 3
- c.** UHV Fuselage booms oriented straight back

**10. PPR REQUIREMENTS:** All required, see Form 33 setup sheets for aircraft

**11. PARKING PLAN:** Air Freight Ramp

**12. RADIO FREQUENCIES:**

- **Clover Range Control:** UHF 285.65, 275.9, 361.4 (p)
- **Eagle Tower:** UHF 351.0; Mawk 4 ((b) (6) )
- **Diddle Knoll & Spray Ops Freq:** UHF 398.1 (Primary), 383.2 (Back-up); VHF 134.1, 118.45
- **Spray Inter plane:** UHF 237.05 / VHF 138.375
- **Spray Ground to Spray Maintenance:** See Iridium Phones
- **Base OPS:** 139.3
- **HF Operations:** Designated by Comm. See attached list.
- **Communications Ground Freq:** LMR nets are trunked at Hill.

**- IRIDIUM PHONES**

- Mission Commander 8816763366637
- Entomologist/Pest Management at UTTR 8816763366636

**13. SPRAY PARAMETERS:**

- a. Herbicide:** Krovar 1DF®
- b. Application Rate:** 22.5 gal/acre (10 lbs of Krovar in 22.4 gal of water)
- c. Acreage:** 1,283 Acres (Targets 21, 24 and a couple passes on Nord LZ)
- d. Ground Speed:** 200 Knots (337.55 ft/sec)

- e. **Spray Altitude:** 100 Feet AGL
- f. **Swath Width:** 35 Feet
- g. **Flow Rate:** 366.1 Gallons/Minute

**14. HERBICIDE LOADING: (For Partial Loads Use Table on Last Page)**

**a. Sequence for Loading 1,000 Gallon Mixing Tank:**

- (1) Fill with water up to 750 Gallon Mark, then add:
  - (a) 450 Pounds of Krovar 1DF® (9 bags, 50 # each)
  - (b) 4.0 Gallons (15,140 ml) of StaPut®
  - (c) 64 Ounces (1,892 ml) of Foam Fighter F®
  - (d) 200 Ounces (5,913 ml) Hi-Light® Dye
  - (e) Add Water to 1,000 Gallon Mark and Agitate for 30 Minutes

- b. When:** Start at 0530 Hours on first full day of spraying and adjust as necessary through end of the daily mission as called by Mission Commander.

**c. Items to be furnished by installation:**

- (1) Krovar 1 DF® (12,660 pounds)
- (2) Foam Fighter F® (15 gallons)
- (3) StaPut® Additive (114 gallons)
- (4) Hi-Light® Dye (45 gallons)
- (5) Remove Nutra-Sol Tank Cleaner
- (6) Loading Personnel and All Loading Equipment
- (7) All Necessary Cleanup and Hazardous Waste Disposal
- (8) Aircraft Support Equipment and TA Support
- (9) Wash Rack and Fuel Priority

**15. SPRAY MONITORING AND TESTING.** By CPMP & ground support personnel

**16. CONTACTS:** Commercial prefix (801) 777-XXXX; DSN 777-xxxx

**a. 388<sup>th</sup> RANS/RSO, Range Control Officer/Installation Spray Coordinator:**

(b) (6) : 6066 Cedar Lane, Bldg 1274S; (b) (6)-(b) (6) FAX: 9205  
Cell Phone # (b) (6)

(b) (6)

- **Hill Range Control:** 7-9386, Current OPS; 7-9385
- **Range Scheduler:** 7-9386
- **Eagle Tower:** 7-1515/6
- **Clover Operations:** 7-7575
- **Clover DO:** 586-3103
- **388<sup>th</sup> RANS/RSL Radio Freq Monitor:** 7-6715
- **388<sup>th</sup> RANS/RSR Resource Monitor:** 5-4257

**b. Environmental Coordinator:** Charles Sanford 775-6904

**c. OASIS RANGE SUPPORT DIRECTORATE:**

Oasis Chief: 75 CEG/CEU (b) (6)

Oasis Civil Engineering: (b) (6)

North Range Security: 7-1521/2/4

**d. Hill AFB Base OPS:** 7-1861

**e. Entomology:** (b) (6) (b) (6)

**f. Weather:** Hill AFB: 7-2018; UTTR: 7-1516/63  
ASOS at Eagle Range 6-1765/1795  
Need Dash1 daily at 0600

**g. Billeting: Billeting Office Mountain View Inn, DSN 777-0802/1844, FAX 775-2014**

**Off base lodging: Hilton Garden Layton, UT  
801-416-8899 762 West Heritage Park Blvd Layton, UT 84041**

**Nugget (Wendover): 1-(800)-848-7300 (UTTR Personnel)**

**h. Car Contact:**

**1. Enterprise Rental Car (b) (6) at BX 801-825-0080**

**10 Mini Vans**

MC/Entomologists/ARMS- 1 Van (b) (6)  
Spray Crew1 – 2 Vans – MAJ (b) (6) SMS (b) (6)  
Spray Crew2 – 2 Vans – Maj (b) (6) Msgt (b) (6)  
Spray MX – 2 Van – Tsgt (b) (6) Tsgt (b) (6)  
Crew Chiefs – 1 Van – Msgt (b) (6) (b) (6)  
MX Specialists – 2 Vans – (b) (6) (b) (6)

**Range 4x4 –LTC (b) (6)**

**2. Hill Motor Pool: 75 LRS/Dispatch DSN 777-1843, All Reserved: 1 total  
Still no vehicles available at this time! If they come available, some rentals may be cancelled.**

**i. Hill AFB: Base Commander: Col (b) (6)**

Airfield Manager: (b) (6)  
Base Operations: (b) (6) ; 7-1861; FAX: 7-2221  
Sponsor: LtCol (b) (6) 514FLT (b) (6)  
Weather: 7-2018  
Transit Alert: 7-3886  
C-130 Maintenance Contact: 7-2478  
Fuels: 7-7423/7-7311 available 0900-1800 daily after hours contact CP  
Billeting: 7-1844  
Chow Hall: 7-3428 Breakfast M-F 0530-0730, S-S 0700-1900  
Golf Course: 7-1108  
Public Affairs: 7-5201  
Supply: 7-5391 (922 OE)

**j. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

**Toll Free 1 - 800 - 278 - 7046, + Ext**

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Capt (b) (6) (b) (6) ; FAX 1022
- (4) 910 OG/CC: Col (b) (6) (b) (6) (b) (6)
- (4) 910 OS/OSA: Airfield Manager, Ext 1186/1526
- (5) 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
- (6) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (7) 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) ; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, LTC (b) (6) (b) (6) , Capt (b) (6)  
(b) (6) Ext (b) (6); FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1327
- (12) 910 LG/LGMS: Spray Maintenance, Ext 1132

- (13) 910 LG/LGL, Ext 1137
- (14) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (15) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) cell (b) (6)
  - Spray Maintenance: (b) (6) (Sms (b) (6))

**17. SEQUENCING:**

- a. Target sequencing is determined by UTTR personnel based upon EOD clearance schedule and airspace scheduling.
- b. Spray ops aircraft must stay south of Base Leg Knoll during turns on north run on Target 21. Coordination with range control is essential to assure that this portion of the range is released for air operations.
- c. When winds blow directly from one side of the target to the middle of the target or during early morning when wind speed is low, ground monitors will direct the “dress up” of the target edges.
- d. **Spraying Priorities:**
  - (1) Target 21
  - (2) Target 24
  - (3) Wildcat (Rinse/excess material)
- k. **Multiple-Target Alignments for Possible Future Operations.**  
Whenever possible, multiple in line targets will be treated on the same pass to facilitate aircraft line-up and turning efficiency (in which case two separate ground-monitoring and marking parties will be required).
  - (1) The west edges of Targets 21 & 24 are contiguous and can be treated on the same pass with a spray-off gap between targets.

**18. GENERAL TARGET INFORMATION:**

- a. **Target 21:**
  - (1) Dimensions: 4,980' X 7,770'
  - (2) Acreage: 888
  - (3) Acres Sprayed in 2004: 888
  - (4) Aircraft Loads: 18,869 Gal
  - (5) Sorties: 17
  - (6) Passes (35' Swath): 157
  - (7) Spray-On Time/Pass: 23 Seconds
  - (8) Spray Heading: 00/180
- b. **Target 24:**
  - (1) Dimensions: 1,600' X 6,080'
  - (2) Acreage: 223
  - (3) Acres Sprayed in 2004: 223
  - (4) Aircraft Loads: 5,263 Gal
  - (5) Sorties: 7
  - (6) Passes (35' Swath): 47
  - (7) Spray-On Time/Pass: 18 Seconds
  - (8) Spray Heading: 00/180
- c. **WildCat**  
Box coordinates:
 

NW Corner:	N402650.85	W1131629.59
NE Corner:	N402647.49	W1131621.76
SE Corner:	N402539.63	W1131711.16
SW Corner:	N402543.14	W1131719.00

**UTTR GEOGRAPHIC LOCATION**

Target areas on UTTR are geographically located in northwestern Utah, directly west of the Great Salt Lake and Hill Air Force Base. The complex is positioned between 40 and 41 degrees north latitude and close to 113 degrees ten minutes west longitude. The targets are within range 12 west and Township two and three north, Salt Lake Baseline Meridian.



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 KING GRAVES RD UNIT 26  
VIENNA OH 44473-5926

5 Mar 06

(b) (5)

(b) (5)

(b) (5)

(b) (6) LTC, USAFR  
Commander





DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 KING GRAVES RD UNIT 26  
VIENNA OH 44473-5926

5 Mar 06

(b) (5)

(b) (6) (b) (6) COL, USAFR  
Commander

(b) (5)

## Aerial Spray Mission Set up Check list

### Pre Planning:

2 Months out:

1. Confirm Dates with Entos
2. Request Range Times

1-2 Months out:

3. Arrange Cars/Hotels

Hampton Inn – 14 Rooms 17-20 April

Hampton Inn- 20 Rooms 1-4 May

1. Concept Message sent to AFRC DOOM.
2. Set up flights
  - a. Flying Planner
  - b. Aircraft Scheduled – Ext 1672
  - c. Input Flights into SMS
  - d. Add Mission ID's to Local Flying Schedule- Send to Current Ops
  - e. Email to : (b) (6) (757 orderly room), (b) (6) (TMO), (b) (6), (b) (6), (b) (6) Plans Contact list.: MSN ID, Rental Car Info
3. Build Mission Plan:
  - a. Contact Spray/Maintenance: (b) (6) (spray), (b) (6) (Maint/crew chiefs), (b) (6) (b) (6) (avionics)
  - b. Arrange Billeting
  - c. Arrange Vehicles/transportation
  - d. Arrange for Ravens when needed ((b) (6) ) N/A for NBC
4. Contact Plans and set up a concept briefing:
  - a. Send copy of Mission Plan to the Plans office
  - b. Plans will coordinate with Maint, SF, etc. to be at meeting
5. Build Folders:
  - a. Setup sheet/Form 33
  - b. Suitability reports
  - c. Billeting Letters
  - d. mission notes
  - e. Sunrise/Sunset tables

## Aerial Spray Mission Set up Check list

### Pre Planning:

#### 2 Months out:

1. Confirm Dates with Entos
2. Request Range Times

#### 1-2 Months out:

3. Arrange Cars/Hotels

1. Concept Message sent to AFRC DOOM, Aerial Spray SITREP and 22AF CP

### 2. Set up flights

#### a. Flying Planner

- i. Primary aircraft
  - ii. Support aircraft 15 Sep
  - iii. Swap Aircraft 19 Sep
  - iv. Support aircraft 26 Sep
- b. Aircraft Scheduled – Ext 1672
- c. Input Flights into SMS
- i. Primary aircraft
  - ii. Support aircraft 15 Sep
  - iii. Swap Aircraft 19 Sep
  - iv. Support aircraft 26 Sep
- d. Add Mission ID's to Local Flying Schedule- Send to Current Ops
- e. Email to : Susie (757 orderly room), (b) (6) (TMO), (b) (6) ,  
(b) (6) , (b) (6) (b) (6) , Plans Contact list.: MSN ID,  
Rental Car Info

### 3. Build Mission Plan:

- a. Contact Spray/Maintenance: (b) (6) (spray), (b) (6)  
(Maint/crew chiefs), (b) (6) (avionics)
  - b. Arrange PPR
  - c. Arrange Billeting
  - d. Arrange Vehicles/transportation
  - e. Arrange for Ravens when needed ((b) (6) )
4. Contact Plans and set up a concept briefing:
- a. Send copy of Mission Plan to the Plans office
  - b. Plans will coordinate with Maint, SF, etc. to be at meeting
5. Build Folders:
- a. Setup sheet/Form 33
  - b. Suitability reports
  - c. Billeting Letters
  - d. mission notes
  - e. Sunrise/Sunset tables

## August 2006 Langley Testing Mission Protocols

**Purpose:** To determine the effectiveness and swath characterization of a 500' release of adulticide (Dibrom) using a bioassay and spinning droplet impingers. These tests will be a continuation of tests conducted in early 2006 at Avon Park, FL in an effort to determine the feasibility of night spray operations at 500 feet.

### Proposed methods:

10 Sampling stations will be placed along a 5 mile transect. Sampling stations will be located approximately ½ mile apart. Each sampling station will be composed of a slide spinner mounted on a wood dowel pole, equipped with 2 teflon slides. In addition, each sampling station will be equipped with a mosquito cage containing 20 field collected adult mosquitos.

Two trials will be conducted. The first trial will be a low rate single pass application. Dibrom will be dispensed at a flow rate resulting in an application rate of ½ ounce per acre (based on a 2000 foot swath). This translates into flow rate of 3.6 gallons per minute. The second trial will be a high rate single pass application dispensed at a rate of 1.0 ounces per acre (based on a 2000 foot swath). This translates into a flow rate of 7.2 gallons per minute. The sampling transect will be positioned parallel to the prevailing wind and the flight path of the aircraft will be perpendicular to the transect. Depending on prevailing wind velocity, the flight path (offset) of the aircraft will be from 1000 to 2000 feet upwind of the first sampling station.

TeeJet nozzles (8005) will be used for both trials. In both tests, fluorescent dye will be added to the spray tanks (0.25% Uvitex OB) to facilitate droplet counting and sizing using UV microscopy. Spray will be turned on 30 seconds prior to coming abeam of the sampling line and will be turned off 30 seconds after coming abeam of the sampling line. Bioassay controls will be placed in a nontreated area for the duration of the test. 30 minutes after each application, cages and slides will be collected and returned to the laboratory. Caged mosquitoes will be transferred to clean holding containers furnished with sugar water. Mortality counts will be conducted at 2, 12, and 24 hour intervals. Spray droplets will be counted and sized with a UV microscope equipped with a reticle. 100 drops (if available) will be counted on each slide and the total area counted will be calculated.

### Materials/Resources required:

240 adult mosquitoes/trial. Total=480 mosquitoes  
10.8 gallons Dibrom plus provisions for boom charging  
Readily accessible, fairly open 5 mile long transects (N-S and E-W)  
24 insect cages with hairclips  
25 insect cups  
10 spinners/20 teflon slides/10 wooden dowels  
UV microscope  
Mosquito aspirators (2)  
5-10 collaborators  
2-3 large ice chests



## **Safe Seas 2006**

### **HAZMAT Schedule for the Week of August 7, 2006**

#### **August 7 - Monday**

##### *Event: Safe Seas Workshops and Short Courses*

8:00 a.m. – 5:00 p.m. at Lower Fort Mason

Short Courses are open to all Safe Seas participants on a first come-first serve basis. Course descriptions and registration information can be found at:

[www.safeseas.noaa.gov](http://www.safeseas.noaa.gov)

##### *Event: Evaluation Team Training*

9:00 a.m. – 11:00 a.m. For designated members of the evaluation team at the Gulf of the Farallones National Marine Sanctuary Office

Contact: (b) (6)

Email: (b) (6)

Cell: (b) (6)

##### *Event: Safe Seas Technology Demonstration*

12:30 p.m. - 2:00 p.m. Pier 30-32, The Embarcadero

The Technology Demonstration is open to all Safe Seas participants without prior registration. Demonstrations are scheduled to include vessels and equipment from the U.S. Coast Guard, NOAA, the Marine Spill Response Corporation and others.

Coordination Contact: (b) (6) (b) (6) Email: (b) (6)

Cell: (b) (6)

Media contact: (b) (6) (b) (6) Email: (b) (6)

Cell: (b) (6)

#### **August 8 - Tuesday**

##### *Event: Safe Seas Workshops and Short Courses*

8:00 a.m. – 5:00 p.m. at Lower Fort Mason

Short Courses are open to all Safe Seas participants on a first come-first serve basis. Course descriptions and registration information can be found at:

[www.safeseas.noaa.gov](http://www.safeseas.noaa.gov)

##### *Event: Evaluation Team Training*

1:00 p.m. – 3:00 p.m. at the Gulf of the Farallones National Marine Sanctuary Office

Contact: (b) (6)

Email: (b) (6)

Cell: (b) (6)

##### *Event: Air Operations Meeting*

2:00 p.m. – 4:00 p.m. at Coast Guard Air Station San Francisco

This is an operational and safety meeting for all aircraft commanders participating in Safe Seas.



**THIS IS A DRILL**

26 July 2006

*Event: Surface Operations Meeting*

5:00 p.m. – 7:00 p.m. at Lower Fort Mason

This is an operational and safety meeting for representatives for all surface vessels participating in Safe Seas.

Coordination Contact: (b) (6) . Email: (b) (6) Cell: (b) (6)

*Event: Media & VIP Pre-Brief*

6:00 p.m. – 7:30 p.m. at Mission Bay Conference Center at UCSF - Robertson Auditorium

This is for Emcees and VIP/Media Handlers only.

Contact: (b) (6) Email: (b) (6) Cell: (b) (6)

*Event : HAZMAT OR&R Dinner*

7 :30 p.m.— ?? at the Blue Mermaid Restaurant next to the Argonaut Hotel in Fisherman's Warf.

Contact : (b) (6) Email (b) (6) Cell (b) (6)

**August 9 - Wednesday**

*Event: Shore-based Operations Meeting*

7:40 a.m. – 8:15 a.m. at Mission Bay Conference Center Command Post

This is an operational safety briefing for all participants in shore-based field surveys including NRDA, Marine Mammals, and Shoreline Cleanup Assessment. Coordination Contact: (b) (6)

(b) (6) Email: (b) (6)

*Event: Full Scale Exercise*

7:30 a.m. – 5:00 p.m. at Mission Bay Conference Center at UCSF - Robertson Auditorium

Start Time: Doors open at 7:30 a.m. for check in; Exercise begins at 8:30 a.m.

Lunch: rolling time, food provided

*Event: Safe Seas Reception*

6:30 p.m. -- 8:00 p.m. at the Golden Gate Club, Presidio of San Francisco, 135 Fisher Loop

**August 10 - Thursday**

*Event: Full Scale Exercise*

7:30 a.m. – 12:00 p.m. at Mission Bay Conference Center at UCSF - Robertson Auditorium

Doors open at 7:30 a.m. for check in; Exercise begins at 8:30 a.m.

Lunch: On your own

*Event: Exercise Player Hotwash*

1:30 p.m. – 4:00 p.m. at Mission Bay Conference Center at UCSF - Robertson Auditorium

Contact: (b) (6) . Email: (b) (6) Cell: (b) (6)



**August 11 - Friday**

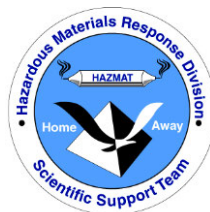
*Event: Evaluation Team Meeting*

8:00 a.m. – 12:00 p.m. location TBD

Contact: (b) (6) . Email: (b) (6)

Cell: (b) (6)

*THIS IS A DRILL*



26 July 2006



**Mission Bay Conference Center at UCSF**

1675 Owens Street  
San Francisco, CA 94107  
415.476.1991

**From the South Bay/San Francisco Airport**From 101 North:

Exit onto Vermont Street.

Turn right onto 16th Street and continue for 0.6 miles (crossing the railroad tracks that are under the I-280 overpass).

Turn left onto Owens Street.

Turn right into Parking Garage. Parking is \$22 a day.

From 280 North:

Exit at Mariposa Street and turn left.

Turn right on Mississippi Street and go two blocks.

Turn right onto 16th Street.

Turn left onto Owens Street.

Turn right into Parking Garage. Parking is \$22 a day.

**From the East Bay/Bay Bridge**

After crossing the Bay Bridge, exit at Fifth Street (first San Francisco Exit) and turn right onto Harrison.

Turn right on 3rd Street right before the SBC Baseball Park. Cross the 3rd street (Lefty O'Doul Bridge) and continue south on 3rd Street.

Turn right on 16th Street.

Turn right onto Owens Street.

Turn right into Parking Garage. Parking is \$22 a day.



## **Directions to the Gulf of the Farallones National Marine Sanctuary Office**

Phone: (415) 561-6625

**Building 991 (Old U. S. Coast Guard Building) The Presidio of San Francisco, San Francisco CA 94129**

### **Entering the Presidio from Downtown or East Bay from Hwy 101-North, or Marina Boulevard going west (towards the Golden Gate Bridge):**

- Take 101-North (LOMBARD Street) through the Marina/Cow Hollow District. Turn right on DIVISADERO St.
- Go towards SF Bay, about 5 blocks, and take a left on MARINA Blvd.
- Drive west on MARINA Blvd. staying in the right lane, to its end at the BAKER St. stop signal, at the Palace of Fine Arts.
- Keep to the RIGHT, going straight into the Presidio along MASON St. (If you accidentally get onto the freeway approach Doyle Dr., just keep going toward the Golden Gate Bridge and take the last SF exit before the toll plaza, and refer to the directions for "Entering the Presidio from Doyle Drive.")
- Proceed west on MASON about 1.5 miles, past a stop sign.
- Continue straight, all the way to the end of the greenbelt.
- Turn right at the green-sided warehouse, and drive toward the Bay for about 500 yards.
- Turn right at the concrete tire stop, drive across the walking path (WATCH FOR PEDESTRIANS) and on the paved road marked "Authorized Vehicles Only."
- Continue into parking lot.
- There are two white buildings on the waterfront. Building 991 is the larger and has a square cupola on top.
- Enter on Bay side of building

*THIS IS A DRILL*



26 July 2006

## **Directions to the Fort Mason Center**

Fort Mason Foundation  
Fort Mason Center  
San Francisco, CA 94123-1382  
Phone: (415) 441-3400  
Fax: (415) 441-3405  
E-mail: [contact@fortmason.org](mailto:contact@fortmason.org)

Located between Fisherman's Wharf and the Golden Gate Bridge on San Francisco Bay, Fort Mason Center offers easy access by MUNI and BART.

### **Muni Lines To or Near Fort Mason Center**

10 Townsend, 22 Fillmore, 28 - 19th Avenue, 30 Stockton, 47 Van Ness, 49 Van Ness/Mission, 82x Presidio/Wharves Express. Call MUNI for details (see below).

### **By Car**

#### East Bay

Bay Bridge to Fremont Street Exit; on Fremont (100 yards north) take first right on Howard; left on Embarcadero and go 2 miles; left on Bay and go 2 miles; right on Buchanan. Cross Marina Boulevard and turn sharp right into Fort Mason Center.

#### North Bay

Golden Gate Bridge (US 101) to Marina Exit; Marina Boulevard (1.5 miles) to Buchanan and turn left into Fort Mason Center.

#### Peninsula/South Bay

US 101 North to 9th Street Exit; 9th across Market and left on Hayes; right on Franklin; left on Bay; right on Buchanan. Cross Marina Boulevard and sharp right into Fort Mason Center.

### **Fort Mason Center Parking**

Enter at the intersection of Buchanan Street and Marina Boulevard. Make a sharp right into the Center, or a left to park along the Marina Green. Parking is a maximum of \$8 per day.





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

22 Dec 09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray Training Avon Park, FL

1. One C-130 aerial spray equipped aircraft will be available 4-8 Jan 10 to proceed from Youngstown ARS, OH and stage at MacDill AFB, FL. The mission purpose is to conduct winter aerial spray semi-annual currency and proficiency training over Avon Park Bombing Range, FL and coastal waters.

2. Concept of Operations:

- a. 4 January (Monday)  
1100 Show KYNG  
1300 Depart KYNG  
1600 Land KMCF
- b. 5-7 January (Tuesday-Thursday) Range: 1130-1330  
0900 Show KMCF  
1100 Depart KMCF  
1400 Land KMCF
- c. 8 January (Friday) Range: 1130-1330  
0900 Show KMCF  
1100 Depart KMCF  
1300 Land KMCF  
1400 Depart KMCF  
1700 Land KYNG

3. Spray Configuration:

- a. MASS – SP2G
- b. MI: QZNRKA468004
- c. Parameters – 150' and 100' AGL
- d. Chemical – Water for training only

4. Maj(b) (6) will serve as Mission Commander and Aircraft Commander.
5. Support required at MacDill AFB has been arranged.

(b) (6) (b) (6) Maj, USAFR  
Assistant Chief of Aerial Spray

(b) (5)

(b) (5)





**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
**3976 King Graves Rd Unit 26**  
**Vienna OH 44473-5926**



14 November 2003

MEMORANDUM FOR HQ AFRC/DOOM (FAX: 497-0198)

FROM: 757 AS/DOS ((b) (6)) FAX 346-1616)

SUBJECT: Concept of Operations for Aerial Spray Training at Avon Park AFR FL

1. Purpose/Objectives/Benefits: Test fuselage spray configuration and droplet characteristic for future high-pressure spray system and spray training for air and ground support crew..
2. Capability: Spray Aircraft Available 17-21 November 2003.
3. Concept of Operations:
  - a. **17 Nov (Monday):**
    - 1000 Show at KYNG
    - 1200 Take-Off KYNG
    - 1500 Land KAGR
    - 1515 Safety Brief
  - b. **18 Nov (Tuesday):** 1000-1200 Range Times, call AGR Tower/Fire Department
    - 0730 Show Time
    - 0930 Depart
    - 0930-1200 Spray water over designated area of the Avon Park Bombing Range
    - 1200 Land
  - c. **19 Nov (Wednesday):** 1000-1200 Range Times, call AGR Tower/Fire Department
    - 0730 Show Time
    - 0930 Depart
    - 0930-1200 Spray water over designated area of the Avon Park Bombing Range
    - 1215 Land
  - d. **20 Nov (Thursday):** 1000-1200 Range Times, call AGR Tower/Fire Department
    - 0730 Show Time
    - 0930 Depart
    - 0930-1200 Spray water over designated area of the Avon Park Bombing Range
    - 1215 Land
  - e. **21 Nov (Friday):**
    - 0700: Report
    - 0900: Depart KAGR
    - 1200: Land KYNG

4. Spray Parameters:
  - a. Booms -- Fuselage only.
  - b. Nozzles -- 8008 TeeJet
  - c. Number of Nozzles -- 4 per side (8 total) oriented straight down
  - d. Airspeed -- 200 knots ground speed.
  - e. Altitude -- 150' above ground level.
  - f. Wind -- Headwind/tailwind.
  - g. Flow Rate -- 3.6 gallons/minute
5. Aircraft Commander: Lt Col (b) (6) (b) (6)
6. Support required at Avon Park Bombing Range AFB have been approved via telephone conversations with MacDill AFB Ops and the Range Manager at Avon Park AFRB.
7. If you have any questions concerning this mission please contact DSN (b) (6)

(b) (6) (b) (6) Major, USAFR  
Aerial Spray Scheduler/Coordinator  
757 AS/DOS (346-1652)

26 MAY 2000

**MEMORANDUM FOR 757 AS/DO**

**FROM: 757 AS/DOS**

**SUBJECT: Decontamination Conference, Salt Lake City, UT**

- 1. Purpose:** Inform participants of the capabilities of the 757<sup>th</sup> Airlift Squadron Aerial Spray as it may be applied for decontamination of biological and chemical agents, and provide a demonstration of that capability at Dugway Proving Grounds. Personnel from the 757<sup>th</sup> AS attended to gain knowledge of new techniques and equipment being researched for decontamination.
- 2. Traveler(s):** The travelers are listed in attachment 1. Captain (b) (6) and Major (b) (6) attended the conference. The other travelers were aircrew and maintenance.
- 3. Itinerary:** Personnel traveled from Youngstown Air Reserve Base to Hill Air Force Base on 22 May 2000. Captain (b) (6) and Major (b) (6) continued to Salt Lake City. Four ferry sorties were flown totaling 11.8 hours and two training sorties were flown, one on 23 May 2000 and one on 25 May 2000 totaling 3.6 hours. The 0.4 hour demonstration sortie was flown on 24 May 2000.
- 4. Discussion:** Attendance at the decontamination conference proved to be valuable for the squadron. New decontamination agents are being developed that we may be able to disperse efficiently with our aircraft. Two of the most promising ones are a foam formulation developed by Sandia National Laboratories, and a microencapsulated dry formulation developed by Battelle Laboratories. The particles in the dry formulation are small enough that it acts like a liquid, and could possibly be applied with an aircraft spray system. There are several possibilities of grants for research with these agents.
- 5. Conclusions/Recommendations:** We should write and submit proposals in cooperation with CETAAR at Kent State University to obtain funding to research methods of applying new decontamination agents from aircraft. Attend the annual Decontamination Conference annually to keep informed of new techniques and materials, and inform others of our progress in applying decontamination agents from aircraft.

(b) (6) PhD, Maj, AFRC  
Research Entomologist

Attachment  
Participants

(DATE)

(b) (5)

(b) (6)

(b) (6)

(b) (5)

(b) (6)  
Col, USAF  
Director, Manpower and Personnel

(b) (5)

# 910 AW AERIAL SPRAY UNIT POST-MISSION REPORT

## GRAND FORKS AFB – ADULT MOSQUITO CONTROL 23-25 JULY 2007

### 1. MISSION BASICS:

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 23-25 July 2007
- c. Purpose of Application: Control adult nuisance and vector mosquitoes
- d. Application Date: 23 July 2007
- e. Time/s of Application (Local): 2000-2110 hrs
- f. Acres Treated: 12,160
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6) (b) (6) DSN(b) (6) TSG  
(b) (6) NCOIC Pest Management Shop, DSN (b) (6)
- h. Date Spray Map Last Approved: 23 July 2007
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): 23 July, CE Conference Room, LTC  
(b) (6) & MAJ (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: Lt Col (b) (6) (b) (6)
- b. Certified PMP/s (Category 11): Maj (b) (6) (b) (6)
- c. Aircrew:
  - 1) Pilots: LtCol (b) (6) (b) (6) Capt (b) (6)
  - 2) Navigators: LtCol (b) (6) (b) (6) Maj (b) (6)
  - 3) Flight Engineers: MSgt (b) (6) (b) (6), TSgt (b) (6)
  - 4) Spray Operators: SMSgt (b) (6) (b) (6), MSgt (b) (6)
- d. Safety Briefer: Maj (b) (6) (b) (6)
- e. Spray Maintenance: TSgt (b) (6) (b) (6), TSgt (b) (6) (b) (6), SSgt (b) (6) (b) (6), Sra  
(b) (6)
- f. Spray Ground Monitors: Maj (b) (6) (b) (6)
- g. Crew Chief: SSgt (b) (6)
- h. Avionics: SSgt (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 1/1.2
  - (2) Ferry Sorties/Hours: 2/6.2

### 3. PESTICIDES:

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 120 gal Trumpet® (23 July)
- d. Gallons Pesticide Applied: 95 gal Trumpet® (23 July)
- e. Gallons and Name of Flush Used: 50 gal/water
- f. Other Additives Used: none
- g. Application Rate: 1.0 oz/acre Trumpet®

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 14 straight down
- f. Pressure (PSI): 40
- g. Flow Rate: 7.26 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off Set: 2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 150° @ 9 knots
- b. Temperature (Degrees Fahrenheit): 92-88 °F
- c. Relative Humidity: 54%
- d. Cloud Cover: Partly Cloudy
- e. Source: Ground observations and National Weather Service

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. The 319 MDG/ADS conducts adult mosquito trapping to monitor mosquito densities on base and reported an average 166 mosquitoes on 4 July, 35 on 18 July. In addition, the City of Grand Fork Public Health Department also collects mosquitoes and identifies them to species.
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito traps
  - (2) Results: The 319 MDG/ADS reported post spray trap counts as 71 on 25 July.

**8. REMARKS:** North and South Dakota are leading the United States in West Nile virus cases thus far in 2007. Mosquito counts were relatively low prior to this spray but with West Nile virus circulating in the region the decision was made to control West Nile virus vectors (namely *Culex tarsalis*) with Trumpet® EC. The application was made during the last 1.5 hrs of daylight to maximize the correlation between the spray period and mosquito activity. Meteorological conditions were excellent during the AFB application, with a moderate, unidirectional wind assuring good coverage. However, after landing checks showed that the fire detection loop failed on the aircraft APU. The repair part was sent via a technician on commercial air from Youngstown. Unfortunately, the repair failed to solve the problem and the rest of the mission had to be cancelled. Initial spray training was accomplished for a flight engineer and two spray maintenance troops. Re-currency was established for several crew positions. Spray maintenance did an excellent job dealing with the tight schedule for installation of booms, chemical loading, downloading, and cleanup. Special mention goes to TSgt (b) (6) as lead for the spray maintenance crew. There is an opportunity for an additional spray at Grand Forks AFB beginning 6 Aug 2007 but there are no further scheduled spray missions to Grand Forks AFB in 2007. Many thanks to the 319 CE Environmental and Pest Management sections for outstanding support!

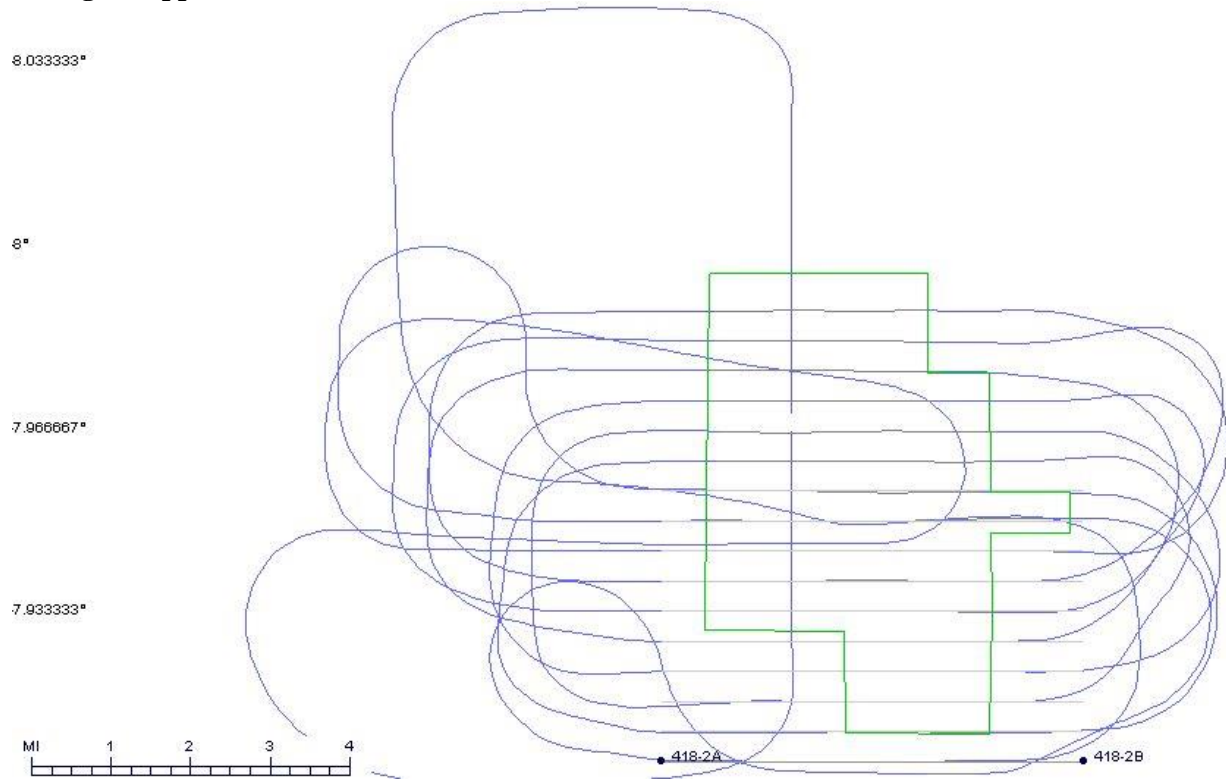
//signed//

(b) (6) (b) (6)

Maj, USAFR

**DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

**Attachment 1. Image shows Grand Forks AFB spray block (green) and the track of the aircraft during the application on 23 Jul 07.**





# **910 AW AERIAL SPRAY UNIT POST-MISSION REPORT**

## **GRAND FORKS AFB – ADULT MOSQUITO CONTROL 28-31 July, 2008**

### **1. MISSION BASICS:**

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 28-31 July 2008
- c. Purpose of Application: Control adult nuisance and vector mosquitoes
- d. Application Date: 30 July 2008
- e. Time/s of Application (Zulu): 0025-0220 hrs
- f. Acres Treated: 11520
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6), DSN (b) (6) TSG  
(b) (6) NCOIC Pest Management Shop, DSN (b) (6)
- h. Date Spray Map Last Approved: 28 July 2008
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): 28 July, CE Conference Room, CAPT  
(b) (6) MAJ (b) (6)

### **2. OPERATIONAL:**

- a. Mission Commander: CAPT (b) (6)
- b. Certified PMP/s (Category 11): Maj (b) (6)
- c. Aircrew:
  - 1) Pilots: LtCol (b) (6) Maj (b) (6)
  - 2) Navigators: LtCol (b) (6)
  - 3) Flight Engineers: Msgt (b) (6) Ssgt (b) (6)
  - 4) Spray Operators: Msgt (b) (6) Tsgt (b) (6)
- d. Safety Briefer: Maj (b) (6)
- e. Spray Maintenance: TSgt (b) (6) MSgt (b) (6) TSgt (b) (6) TSgt (b) (6)
- f. Spray Ground Monitors: Maj (b) (6)
- g. Crew Chief: TSgt (b) (6) SSgt (b) (6)
- h. Avionics: SSgt (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 1/1.9
  - (2) Ferry Sorties/Hours: 2/6.2

### **3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 90 gal Trumpet® (30 July)
- d. Gallons Pesticide Applied: 90 gal Trumpet® (30 July)
- e. Gallons and Name of Flush Used: 50 gal/water
- f. Other Additives Used: none
- g. Application Rate: 1.0 oz/acre Trumpet®

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 18 straight down
- f. Pressure (PSI): 36
- g. Flow Rate: 7.26 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off Set: 1000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 078° @ 4 knots (ground observation)
- b. Temperature (Degrees Fahrenheit): 85 °F
- c. Relative Humidity: 61%
- d. Cloud Cover: Clear
- e. Source: Ground observations and National Weather Service

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

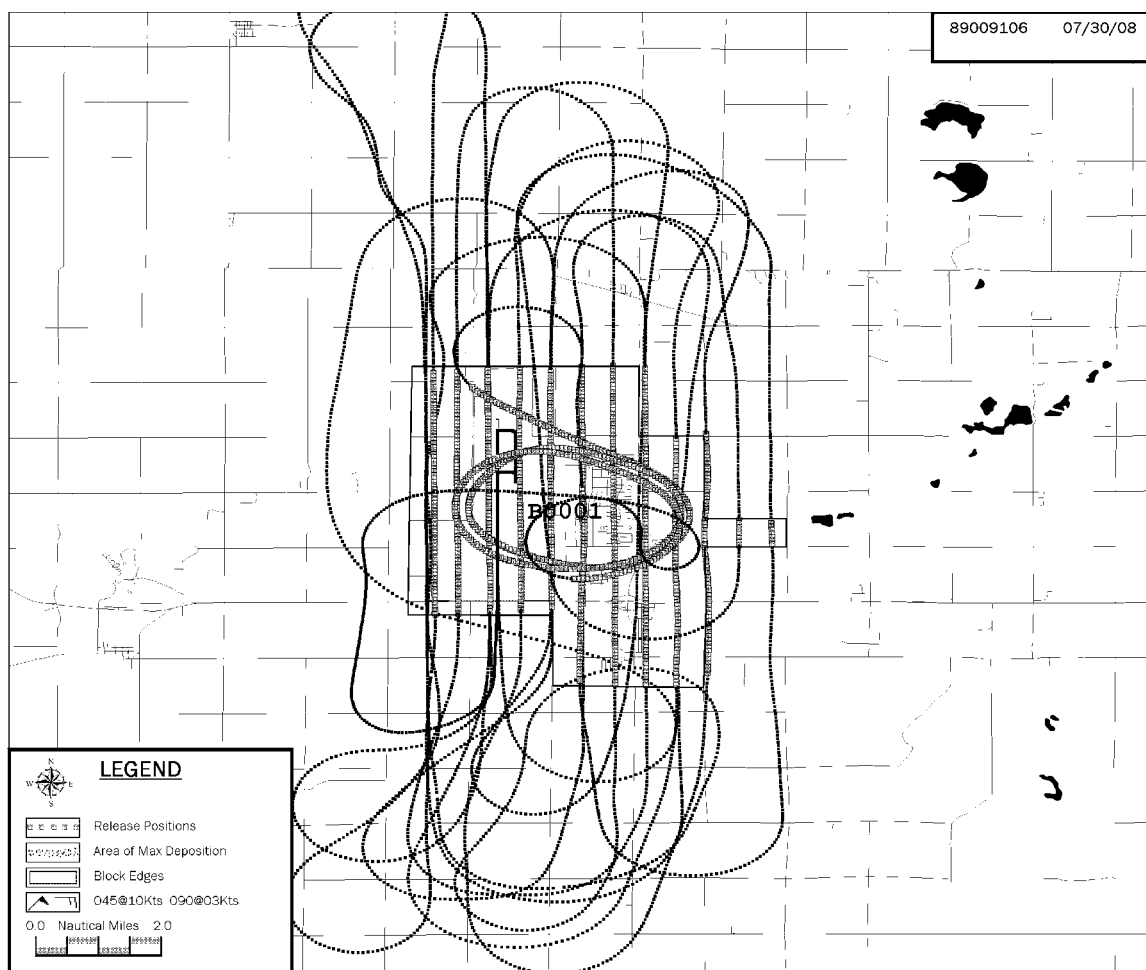
- a. The 319 MDG/ADS conducts adult mosquito trapping to monitor mosquito densities on base and reported an average of 30 mosquitoes/trap on 28 July.
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito traps
  - (2) Results: Trap data pending from 319 MDG/ADS. Landing counts of 1 and 0, respectively, at the golf course and flightline the following day.

**8. REMARKS:** North and South Dakota are leading the United States in West Nile virus cases thus far in 2008. Mosquito counts were relatively low prior to this spray. However, the threat of West Nile Virus prompted public health to make the decision to spray the base with Trumpet EC. Application was postponed from the 29<sup>th</sup> to the 30<sup>th</sup> because of unacceptable wind speeds and a non-functioning pitot tube heater on the aircraft. The application was made during the last 1.5 hrs of daylight to maximize the correlation between the spray period and mosquito activity. Meteorological conditions were excellent during the AFB application, with a moderate (3-4 knot), unidirectional wind assuring good coverage. Preliminary post-spray observations indicate excellent control of mosquitos. Pending trap count data will undoubtedly confirm this. The City of Grand Forks declined to spray aerially as they continue with an effective ground-based adulticiding program. Many thanks to the 319 CE Environmental and Pest Management sections, in particular (b) (6) (b) (6) TSGT (b) (6) and SSGT (b) (6) for outstanding support. Also, thanks to Tsgt (b) (6) and Ssgt (b) (6) for quickly resolving the aircraft problems.

//signed//

(b) (6) Maj, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

**Attachment 1. Image shows Grand Forks AFB spray block and the track of the aircraft during the application on 30 July 2008. Larger grey square overlaying North-South aircraft tracks within the block indicate spray release. Circular application of spray within the spray block indicates flush activities.**



**910 AW AERIAL SPRAY UNIT POST-MISSION REPORT**  
**GRAND FORKS AFB – ADULT MOSQUITO CONTROL 29 June-2 July**  
**2008**

**1. MISSION BASICS:**

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 29 June – 2 July 2008
- c. Purpose of Application: Control adult nuisance and vector mosquitoes
- d. Application Date: 30 June 2008
- e. (b) (6) s of Application (Local): 1950-2140 hrs
- f. Acres Treated: 11518
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6) (b) (6) DSN (b) (6) ; TSG (b) (6) NCOIC Pest Management Shop, DSN (b) (6)
- h. Date Spray Map Last Approved: 30 June 2008
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): 30 June, CE Conference Room, CAPT (b) (6) LTC (b) (6) LTC (b) (6) MAJ (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: CAPT (b) (6)
- b. Certified PMP/s (Category 11): Maj (b) (6)
- c. Aircrew:
  - 1) Pilots: LtCol (b) (6) Maj (b) (6)
  - 2) Navigators: LtCol (b) (6)
  - 3) Flight Engineers: CMSgt (b) (6)
  - 4) Spray Operators: MSG (b) (6) MSGT (b) (6)
- d. Safety Briefer: MAJ (b) (6)
- e. Spray Maintenance: TSG (b) (6) MSG (b) (6) Tsgt (b) (6) SRA (b) (6)
- f. Spray Ground Monitors: MAJ (b) (6)
- g. Crew Chief: TSG (b) (6) SRA (b) (6)
- h. Avionics: SSG (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 1/1.8
  - (2) Ferry Sorties/Hours: 2/6.5

**3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 90 gal Trumpet® (30 June)
- d. Gallons Pesticide Applied: 90 gal Trumpet® (30 June)
- e. Gallons and Name of Flush Used: 250 gal/water
- f. Other Additives Used: none
- g. Application Rate: 1.0 oz/acre Trumpet®

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 18 straight down
- f. Pressure (PSI): 40
- g. Flow Rate: 7.26 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off Set: 2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 235° @ 4 knots (ground observation)
- b. Temperature (Degrees Fahrenheit): 85 °F
- c. Relative Humidity: 54%
- d. Cloud Cover: Clear
- e. Source: Ground observations and National Weather Service

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

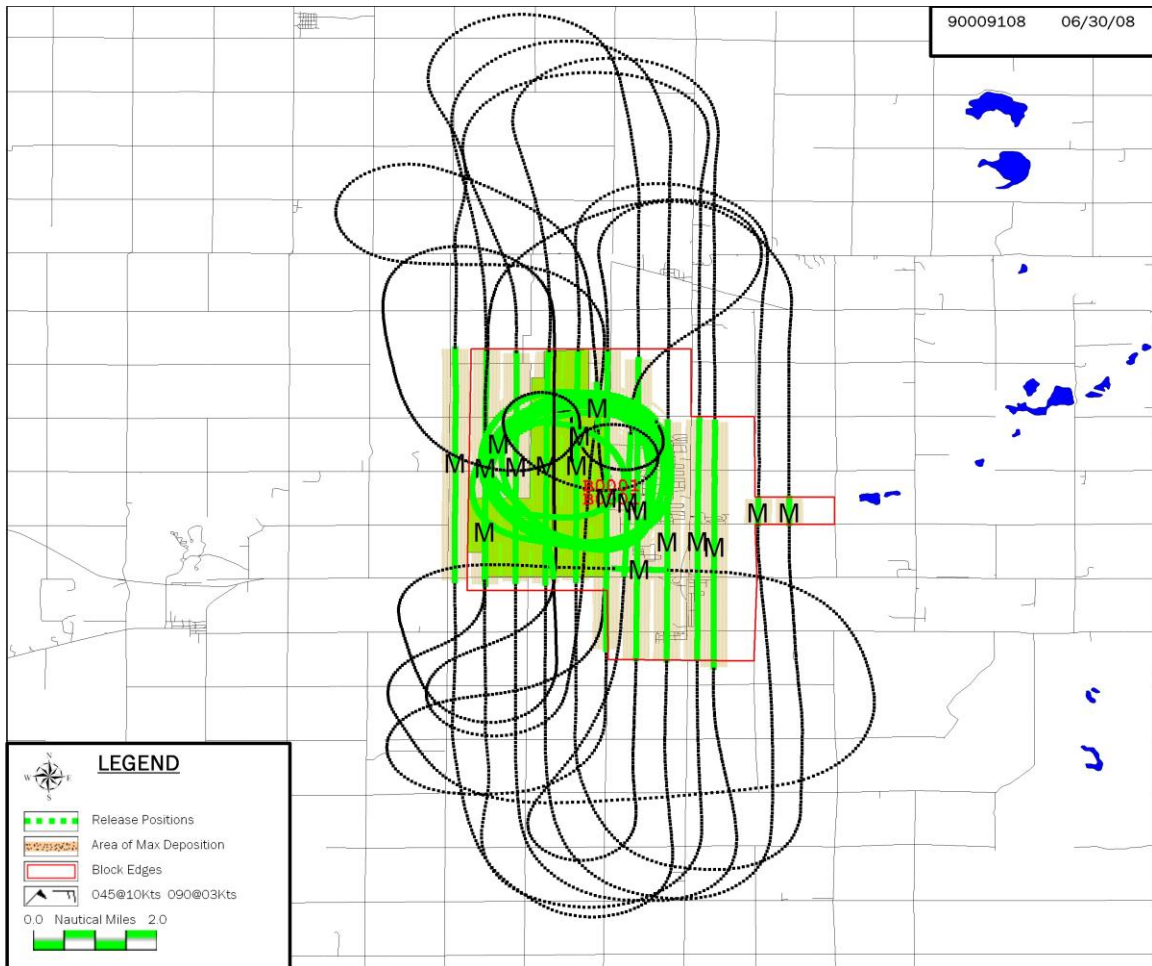
- a. The 319 MDG/ADS conducts adult mosquito trapping to monitor mosquito densities on base and reported an average 1200 mosquitoes on 29 June. 30 second pre-spray landing counts at the golf course and the horse stable resulted in counts of 17 and 5 respectively.
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito traps
  - (2) Results: Trap data pending from 319 MDG/ADS. Landing counts of 1 and 0, respectively, at the golf course and horse stable the following day.

**8. REMARKS:** North and South Dakota are leading the United States in West Nile virus cases thus far in 2008. Mosquito counts were relatively low 2 weeks prior to this spray. However, mosquito populations increased dramatically approximately 1 week before the spray and the decision was made to spray the base with Trumpet EC. The application was made during the last 1.5 hrs of daylight to maximize the correlation between the spray period and mosquito activity. Meteorological conditions were excellent during the AFB application, with a moderate (3-4 knot), unidirectional wind assuring good coverage. Preliminary post-spray observations indicate excellent control of mosquitos. Pending trap count data will undoubtedly confirm this. The City of Grand Forks declined to spray aerially as they had begun a ground-based adulticiding program several days before our arrival. Many thanks to the 319 CE Environmental and Pest Management sections, in particular (b) (6), TSGT (b) (6) and SSGT (b) (6) for outstanding support!

//signed//

(b) (6) Maj, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

**Attachment 1. Image shows Grand Forks AFB spray block (red) and the track of the aircraft during the application on 29 June 2008. Circular application of spray over the spray block indicates flush activities.**



**910 AW AERIAL SPRAY UNIT POST-MISSION REPORT**  
**GRAND FORKS AFB – ADULT MOSQUITO CONTROL 29 June-2 July**  
**2008**

**1. MISSION BASICS:**

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 29 June – 2 July 2008
- c. Purpose of Application: Control adult nuisance and vector mosquitoes
- d. Application Date: 30 June 2008
- e. Time/s of Application (Local): 1950-2140 hrs
- f. Acres Treated: 11518
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6) (b) (6) DSN (b) (6) ; TSG (b) (6) NCOIC Pest Management Shop, DSN (b) (6)
- h. Date Spray Map Last Approved: 30 June 2008
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): 30 June, CE Conference Room, CAPT (b) (6) LTC (b) (6) LTC (b) (6) MAJ (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: CAPT (b) (6)
- b. Certified PMP/s (Category 11): Maj (b) (6)
- c. Aircrew:
  - 1) Pilots: LtCol (b) (6) Maj (b) (6)
  - 2) Navigators: LtCol (b) (6)
  - 3) Flight Engineers: CMSgt (b) (6)
  - 4) Spray Operators: MSG (b) (6) MSGT (b) (6)
- d. Safety Briefer: MAJ (b) (6)
- e. Spray Maintenance: TSG (b) (6) MSG (b) (6) Tsgt (b) (6) SRA (b) (6)
- f. Spray Ground Monitors: MAJ (b) (6)
- g. Crew Chief: TSG Parkey, SRA (b) (6)
- h. Avionics: SSG Repko
- i. Flying Data:
  - (1) Spray Sorties/Hours: 1/1.8
  - (2) Ferry Sorties/Hours: 2/6.5

**3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 90 gal Trumpet® (30 June)
- d. Gallons Pesticide Applied: 90 gal Trumpet® (30 June)
- e. Gallons and Name of Flush Used: 250 gal/water
- f. Other Additives Used: none
- g. Application Rate: 1.0 oz/acre Trumpet®



**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 18 straight down
- f. Pressure (PSI): 40
- g. Flow Rate: 7.26 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off Set: 2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 235° @ 4 knots (ground observation)
- b. Temperature (Degrees Fahrenheit): 85 °F
- c. Relative Humidity: 54%
- d. Cloud Cover: Clear
- e. Source: Ground observations and National Weather Service

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

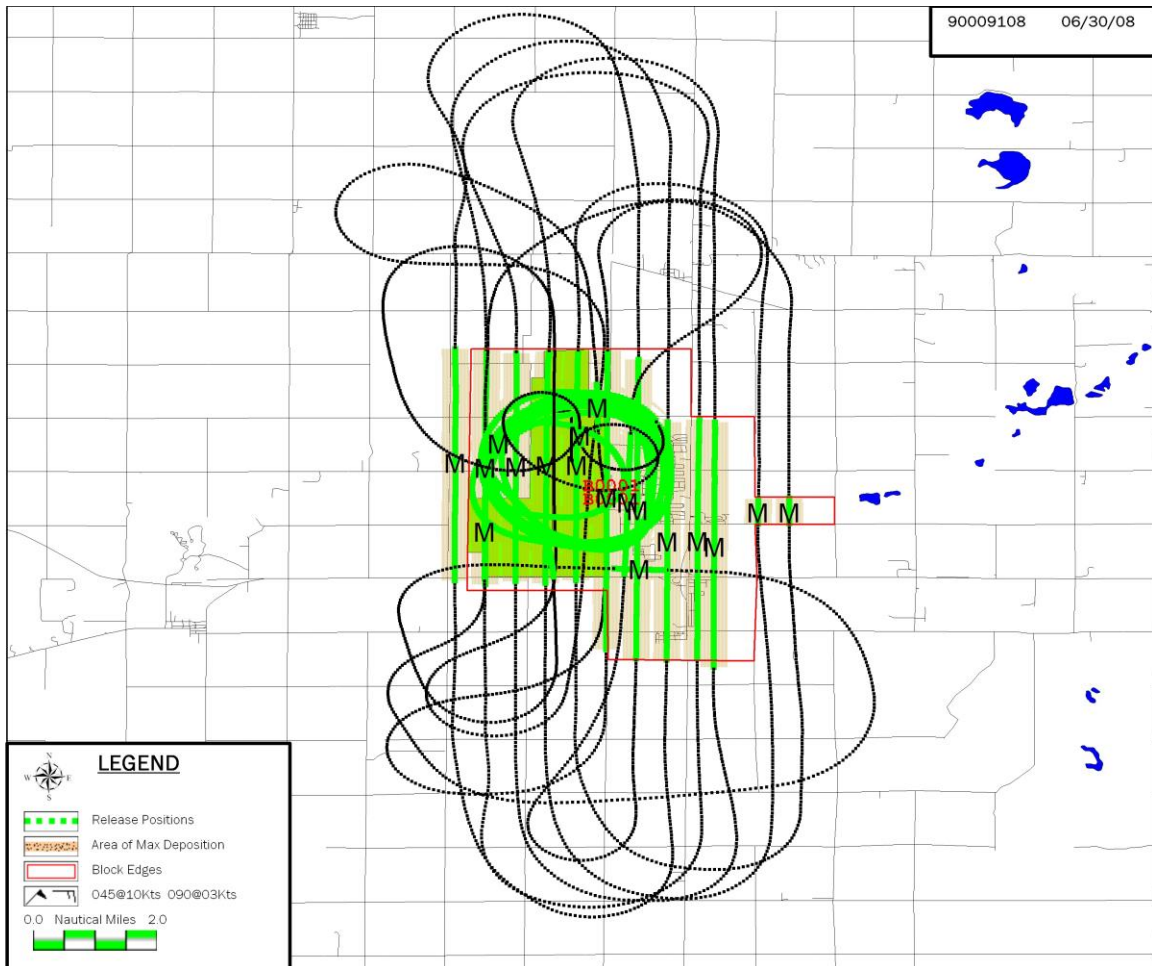
- a. The 319 MDG/ADS conducts adult mosquito trapping to monitor mosquito densities on base and reported an average 1200 mosquitoes on 29 June. 30 second pre-spray landing counts at the golf course and the horse stable resulted in counts of 17 and 5 respectively.
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito traps
  - (2) Results: Trap data pending from 319 MDG/ADS. Landing counts of 1 and 0, respectively, at the golf course and horse stable the following day.

**8. REMARKS:** North and South Dakota are leading the United States in West Nile virus cases thus far in 2008. Mosquito counts were relatively low 2 weeks prior to this spray. However, mosquito populations increased dramatically approximately 1 week before the spray and the decision was made to spray the base with Trumpet EC. The application was made during the last 1.5 hrs of daylight to maximize the correlation between the spray period and mosquito activity. Meteorological conditions were excellent during the AFB application, with a moderate (3-4 knot), unidirectional wind assuring good coverage. Preliminary post-spray observations indicate excellent control of mosquitos. Pending trap count data will undoubtedly confirm this. The City of Grand Forks declined to spray aerially as they had begun a ground-based adulticiding program several days before our arrival. Many thanks to the 319 CE Environmental and Pest Management sections, in particular (b) (6) (b) (6) TSGT (b) (6) and SSGT (b) (6) for outstanding support!

//signed//

(b) (6) Maj, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

**Attachment 1. Image shows Grand Forks AFB spray block (red) and the track of the aircraft during the application on 29 June 2008. Circular application of spray over the spray block indicates flush activities.**





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

28 July 09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Grand Forks and Grand Forks AFB, ND.

1. One C-130 will be available 11-14 August 09 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel stationed at Grand Forks AFB, ND.

2. Concept of Operations:

- a. 11 Aug (Tuesday)  
0900L Show KYNG  
1100L Depart KYNG  
1300L Land KRDR
- b. 12 Aug (Wednesday)  
1630L Show KRDR  
1830L Depart KRDR  
2100L Land KRDR
- c. 13 Aug (Thursday)  
1630L Show KRDR  
1830L Depart KRDR  
2100L Land KRDR
- d. 14 Aug (Friday)  
1130L Show KRDR  
1330L Depart KRDR  
1730L Land KYNG

3. Aerial Spray Operation:
  - a. Chemical: Trumpet
  - b. Altitude: 150 AGL
  - c. Application rates: 7.26 gal/min (1.0 oz/acre)
  - d. Area: Approximately 29,900 acres
4. Maj (b) (6) will act as Mission Commander.
5. Lt Col (b) (6) will act as Aircraft Commander.
6. Support required at Grand Forks AFB, ND has been completed.

(b) (6) (b) (6) Maj, USAFR  
Assistant Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

18 JUN 09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Grand Forks and Grand Forks AFB, ND.

1. One C-130 will be available 29-2 July 09 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel stationed at Grand Forks AFB, ND.

2. Concept of Operations:

- a. 29 Jun (Monday)  
0900L Show KYNG  
1100L Depart KYNG  
1300L Land KRDR
- b. 30 Jun (Tuesday)  
1700L Show KRDR  
1930L Depart KRDR  
2130L Land KRDR
- c. 1 Jul (Wednesday)  
1700L Show KRDR  
1930L Depart KRDR  
2130L Land KRDR
- d. 2 Jul (Thursday)  
1130L Show KRDR  
1330L Depart KRDR  
1730L Land KYNG

3. Aerial Spray Operation:

- a. Chemical: Trumpet

- b. Altitude: 150 AGL
- c. Application rates: 7.26 gal/min (1.0 oz/acre)
- d. Area: Approximately 29,900 acres

- 4. Maj (b) (6) will act as Mission Commander.
- 5. Lt Col (b) (6) will act as Aircraft Commander.
- 6. Support required at Grand Forks AFB, ND has been completed.

(b) (6) (b) (6) Capt, USAFR  
Aerial Spray Coordinator



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



17 SEP 2008

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Hurricane Gustav Relief Aerial Spray in Louisiana

**1. Objective/Purpose/Benefit:** Control of mosquitoes and other disease carrying vectors present in elevated populations caused by standing water and flooding via aerial spray applications. Reduce negative impact of insect bites on relief workers and residents located in the regions disrupted by Hurricane Gustav.

**2. Capability:** 3 Spray Aircraft available 18 SEP 2008 - TBD

**3. Concept of Operations:**

**17 SEP (Wednesday) ADVON with 1<sup>st</sup> Spray Crew**

0800: Showtime

1000: Depart KYNG

1300: Land KBAD

**18 SEP (Thursday):**

0800: Show time

1000 Depart YNG 2<sup>nd</sup> Spray Aircraft

1005 Depart YNG 3<sup>rd</sup> Spray Aircraft

1010 Depart YNG Support Aircraft

1300 Land BAD 2<sup>nd</sup> Spray Aircraft

1305 Land BAD 3<sup>rd</sup> Spray Aircraft

1310 Land BAD Support Aircraft

**19 SEP - TBD**

All flights will be coordinated through the Mission Commander as assigned by HHQ.

**4. Spray Parameters:**

a. **Altitude:** 150' AGL

b. **Swath Width.** 2000 feet or as determined by the CPMP

c. **Flow Rate.** TBD based on target pest assigned

d. **Application Rate.** 0.60 oz/acre unless otherwise specified

e. **Ground Speed:** 200 Knots

f. **Proposed spray area:** 750,000 acres

**5. Aircraft Commander:** CAPT (b) (6) (b) (6) Maj (b) (6) (b) (6) Maj (b) (6) }

Replacements TBD depending upon duration of mission.

6. Support at Barksdale AFB has been coordinate..

// Signed //

(b) (6) (b) (6) CAPT, USAFR  
Assistant Chief Aerial Spray





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

4 Mar 09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Hill AFB/UTTR UT

1. One C-130 will be available 9-14 March 09 for the requested spray training mission. Aerial Spray flight proficiency training will be accomplished on targets 21 and 24 at the Utah Test and Training Range(UTTR). Initial copilot spray certification training will also be accomplished.

2. Concept of Operations:

- a. 9 March (Monday)  
0800 Show KYNG  
1000 Depart KYNG  
1300 Land KHIF
- b. 10-13 March (Tuesday-Friday)  
0600 Show KHIF  
0745 Depart KHIF  
1015 Land KHIF
- c. 14 March (Saturday)  
0700 Show KHIF  
0900 Depart KHIF  
1600 Land KYNG

3. Aerial Spray Training for pilots and maintenance support training for ground personnel will be accomplished. Mixing/loading stations (sphere mixing balls) will be refurbished by spray maintenance. No Modular Aerial Spray System (MASS) will be taken on this mission.

4. Capt (b) (6) (b) (6) will act as Mission Commander.

5. Maj (b) (6) (b) (6) will act as Aircraft Commander

6. Support required at Hill AFB and the UTTR has been completed.

(b) (6) (b) (6) Capt, USAFR  
Assistant Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

25 Aug 09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Homestead ARB, FL and surrounding communities.

1. One C-130 will be available 31 Aug – 4 Sep 09 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel stationed at Homestead ARB, FL.

2. Concept of Operations:

- a. 31 Aug (Monday)  
1500L Show KYNG  
1700L Depart KYNG  
2030L Land KHST
- b. 1 Sep (Tuesday)  
1530L Show KHST  
1730L Depart KHST  
1930L Land KHST
- c. 2 Sep (Wednesday)  
1530L Show KHST  
1730L Depart KHST  
1930L Land KHST
- d. 3 Sep (Thursday)  
1530L Show KHST  
1730L Depart KHST  
1930L Land KHST

- e. 4 Sep (Friday)  
1000L Show KHST  
1200L Depart KHST  
1530L Land KYNG

3. Aerial Spray Operation:

- a. Chemical: Dibrom
- b. Altitude: 150 AGL
- c. Application rates: 3.6 gal/min (0.5 oz/acre)
- d. Area: Approximately 30,000 acres but final acreage TBD.

4. Maj (b) (6) (b) (6) will act as Mission Commander.

5. Maj (b) (6) will act as Aircraft Commander.

6. Support required at Homestead ARB, FL has been completed.

(b) (6) (b) (6) CAPT, USAFR  
Aerial Spray Coordinator

# AERIAL SPRAY OPERATIONAL SCHEDULE

## HOMESTEAD ARB, FL

### 6-10 JULY 09

**OBJECTIVE/PURPOSE AND BENEFIT:** Mission is in support of visit with 1<sup>st</sup> AF to include brief, static display and spray sortie.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: Col (b) (6) LTC (b) (6)
- (2) Navigators: Maj (b) (6)
- (3) Flight Engineers: MSgt (b) (6) TSgt (b) (6)
- (4) Spray Operators: MSgt (b) (6), MSgt (b) (6) SSgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSgt (b) (6) MSgt (b) (6)
- (2) Crew Chiefs: TSgt (b) (6) TSgt (b) (6)
- (3) Avionics: SSgt (b) (6)

##### c. Entomologist: Maj (b) (6) (b) (6) Maj (b) (6)

#### 2. PPR REQUIREMENTS: PAM 082002

#### 3. PLANNED SEQUENCE OF EVENTS: All times are local

##### 6 July (Monday):

1500: Show time  
1700: Depart KYNG  
2000: Land KHST

##### 7 July (Tuesday):

1700: Show time  
1730: Load Chemical  
1930: Takeoff KRDR (Adulticide Spray Sortie)  
Sunset: 2131

##### 8 July (Wednesday):

1700: Show time  
1730 Load Chemical  
1930: Takeoff KRDR (Adulticide Spray Sortie)  
Sunset: 2131

##### 9 July (Thursday):

0900: Show time  
1100: Depart KRDR  
1500: Land KYNG

##### 10 July (Friday):

1100: Show time  
1300: Depart KHST  
1700: Land KYNG

**Special Notes:** Attendees will be Maj Gen (b) (6) 1<sup>st</sup> AFNORTH/CC, COL (b) (6) 22<sup>nd</sup> AF, Mr (b) (6) AFRC; LTC (b) (6) 601 AOC/1<sup>st</sup> AF, MAJ (b) (6) 601 AOC/1<sup>st</sup> AF. Possible attendees not confirmed at this time: Mr. (b) (6) -Chief of Staff/1<sup>st</sup> AF, Col (b) (6) -601 AOC/CC, CAPT (b) (6) (USN)

- All Briefings will be conducted at the 601<sup>st</sup>.
- PA/Media may be present for Static Display and Flight

#### 4. SPRAY CONFIGURATION: SP-2G, Fire Dept (ext 4777) supplying water POC Chief (b) (6)

- a. **Mass:** 2-Module System with 10-8070's installed
- b. **Differential GPS:** Wingman Installed
- c. **Aircraft:** 89-9106
- d. **Mission Identifier:** QZNRKA204233

## 5. **SPRAY PARAMETERS: AS NEEDED**

## 6. **AIR TO GROUND RADIO FREQUENCIES:**

Tyndall TWR: 133.95/384.4      Tyndall APP: N119.1/379.3  
 Tyndall GND: 121.9/259.3      S136.4/338.35  
 Tyndall CLNC: 118.05/289.4  
 Tyndall ATIS: 254.4      Monitor 259.375 while in the MOA (Departure will hand off)

## 7. **BILLETING: On Base at Sand Dollar Inn: DSN: 523-4210**

## 8. **TRANSPORTATION:** Provided by Tyndall AFB, One staff car, two 7 pax vans, one 15 pax van. All at Base Ops.

## 9. **CONTACTS:**

### a. **Tyndall AFB, FL:** Com: (850) 283-XXXX; DSN: 523-XXXX

- (1) Chief Environmental Compliance (Spray Coordinator): (b) (6), x (b) (6), Cell? FAX 3854
- (2) Pest Control: (b) (6)
- (3) PAM TWR: x8596
- (4) Airfield Manager: x2291
- (5) Base Ops: x4244
- (6) Transportation: x4872
- (7) Billeting: x4210 Fax 4800
- (8) Bay County Mosquito Control: (b) (6), Director, (b) (6)
- (9) Gulf County Mosquito Control: (b) (6), Assistant Director, (b) (6)
- (10) RAPCON: Chief (b) (6) /Supervisor (b) (6)
- (11) Airspace Manager: Mr. (b) (6)

### b. **Homestead ARB, FL:** Commercial (305) 224-XXXX; DSN 791-xxxx

- (1) Spray Coordinator (Base Safety Officer): Lt Col (b) (6); cell, (b) (6)
- (2) Natural Resources Program Manager: Dr. (b) (6)
- (3) HST TWR: (305) 224-6524
- (4) Airfield Manager: x7072
- (5) Base Ops: x7516/7071 Fax 7512
- (6) Billeting: x7198 Fax 7290
- (7) Transportation: x7766/7767
- (8) Weather:

### c. **Miami-Dade County Mosquito Control:** (b) (6), office; cell (b) (6)

### d. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- 1. 910 AW/CC: Col (b) (6)
- 2. 910 AW Command Post: Ext 1315; FAX 1161
- 3. 910 AW/PA: Capt (b) (6) (b) (6) FAX 1022
- 4. 910 OG/CC: Lt Col (b) (6)
- 5. 910 OG: Airfield Manager, Ext 1186/1526
- 6. 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
- 7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- 8. 757 AS/DOO: Ops Admin: SMSgt (b) (6) (b) (6); FAX 1657
- 9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) (b) (6) (b) (6) FAX 1616
- 10. 910 LG/CC: Ext 1225
- 11. 910 LG/LGM: Ext 1352
- 12. Maintenance Control: Ext 1327
- 13. 910 LG/LGMS: Spray Maintenance, SMSgt (b) (6) (b) (6)
- 14. Omega/SATO Travel: Ext 1772; 1-800-285-6342

15. Cellular Spray Phones:

- Mission Commander: (b) (6)



# AERIAL SPRAY OPERATIONAL SCHEDULE

## HOMESTEAD ARB, FL

### 31 AUG – 4 SEP 09

**OBJECTIVE/PURPOSE AND BENEFIT:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Homestead ARB, FL and surrounding communities.

**1. 910 AW PARTICIPANTS:**

**a. Aircrew:**

- (1) Pilots: Maj (b) (6), Maj (b) (6) Maj (b) (6) Capt (b) (6) (b) (6)
- (2) Navigators: Maj (b) (6)
- (3) Flight Engineers: MSgt (b) (6)
- (4) Spray Operators: MSgt (b) (6) MSgt (b) (6)

**b. Maintenance:**

- (1) Spray Maintenance: TSgt (b) (6), TSgt (b) (6), TSgt (b) (6)
- (2) Crew Chiefs: TSgt (b) (6), SRA (b) (6)
- (3) Avionics: TSgt (b) (6)

**c. Entomologist:** Maj (b) (6) (b) (6) Maj (b) (6) LTC (b) (6) (b) (6)

**2. PPR REQUIREMENTS: 24303VA**

**3. PLANNED SEQUENCE OF EVENTS:** All times are local

**31 Aug (Monday):**

1500: Show time  
1700: Depart KYNG  
2030: Land KHST

**1 Sep (Tuesday):**

1200: Installation in-brief  
1530: Show time  
1600: WX Decision/Load Chemical  
1730: Takeoff KHST (Adulticide Spray Sortie)  
Sunset: 1940

**2 Sep (Wednesday):**

1530: Show time  
1600: WX Decision/Load Chemical  
1730: Takeoff KHST (Adulticide Spray Sortie)  
Sunset: 1939

**3 Sep (Thursday):**

1530: Show time  
1600: WX Decision/Load Chemical  
1730: Takeoff KHST (Adulticide Spray Sortie)  
Sunset: 1938

**4 Sep (Friday):**

1000: Show time  
1200: Depart KHST  
1530: Land KYNG

4. **SPRAY CONFIGURATION: SP-2G**
  - a. **Mass:** 2-Module System
  - b. **Nozzle Tips/Orientation:** 9 8005 nozzles -- straight down (4 left - 5 right)
  - c. **Differential GPS:** Wingman Installed
  - d. **Aircraft:** 89-9105
  - e. **Mission Identifier:** QZNRKA811243
  
5. **SPRAY PARAMETERS:**
  - a. **Altitude:** 150' AGL
  - b. **Ground Speed:** 200 KNOTS
  - c. **Pesticide:** Dibrom® Concentrate
  - d. **Application Rate:** 0.5 oz/acre or as determined by entomologist
  - e. **Flow Rate:** 3.6 Gallons/Minute
  - f. **Acreage:** Potentially 85,000 acres but final acreage TBD
  - g. **Swath Width:** 2000 foot
  
6. **RADIO FREQUENCIES AND AIRFIELD PHONE NUMBERS**
  - a. Homestead ARB (KHST): GND 121.75/275.8 TWR 133.45/279.55 APP&DEP 125.5/354.1  
Command Post (Reef Control) 252.1
  - b. Kendall Tamiami Executive (KTMB): Class D TWR 118.9 CTAF 125.5/354.1 APP&DEP 125.5/354.1  
Airfield Manager (305) 869-1700 TWR 305-256-7628
  - c. Opa Locka Executive (KOPF): Class D TWR 118.6/360.8 CTAF 120.7 APP&DEP 128.6/306.975  
Coast Guard Base Ops 800-253-3851
  - d. Homestead General (KX51): Class E CTAF 122.8 Airfield Manager (305) 869-1701/(305) 247-4883
  - e. Miami International (KMIA): Class B TWR 118.3/256.9 APP&DEP 124.85/322.3  
Russ Moreno or Juan Fuentes (sp?) – POC's 305-869-5400; Fax a chart with the spray area and a description of the spray operation the day prior to 305-869-5499; Morning of spray call around 1130 to clarify any special procedures needed for operating in class B airspace near runway ends.
  
7. **BILLETING:** 17 Rooms; Homestead Billeting, POC (b) (6)
  
8. **TRANSPORTATION:** MX will have two GOV's. (b) (6) (b) (6) (b) (6) with rental cars, they will be at Base Ops  
**Enterprise POC:** (b) (6) (b) (6) (b) (6)
  
9. **CONTACTS:**
  - a. **Homestead ARB, FL:** Commercial (305) 224-XXXX; DSN 791-xxxx
    1. Spray Coordinator (Base Safety Officer): Lt Col (b) (6) cell, (b) (6)
    2. Natural Resources Program Manager: Dr. (b) (6)
    3. HST TWR: (305) 224-6524
    4. Airfield Manager: x7072
    5. Base Ops: x7516/7071 Fax 7512
    6. Weather: x7511
    7. Billeting: x7198 Fax 7290
    8. Transportation: x7456
    9. Command Post: x7068
    10. Base Operator: x7000
  - b. **Miami-Dade County Mosquito Control:** (b) (6) , office; cell (b) (6)
  - c. **South Florida FAA** (b) (6)  
(b) (6)

**c. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
  2. 910 AW Command Post: Ext 1315; FAX 1161
  3. 910 AW/PA: Maj (b) (6) (b) (6) FAX 1022
  4. 910 OG/CC: Lt Col (b) (6)
  5. 910 OG: Airfield Manager, Ext 1186/1526
  6. 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
  7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
  8. 757 AS/DOO: Ops Admin: SMSgt (b) (6) (b) (6) FAX 1657
  9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) (b) (6) (b) (6) FAX 1616
  10. 910 LG/CC: Ext 1225
  11. 910 LG/LGM: Ext 1352
  12. Maintenance Control: Ext 1327
  13. 910 LG/LGMS: Spray Maintenance, SMSgt (b) (6) (b) (6)
  14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
  15. Cellular Spray Phones:
- Mission Commander: (b) (6) (b) (6) cell (b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## HOMESTEAD ARB, FL

**TBD**

**OBJECTIVE/PURPOSE AND BENEFIT:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Homestead ARB, FL and surrounding communities.

### 1. 910 AW PARTICIPANTS:

#### a. Aircrew:

- (1) Pilots: Maj (b) (6), Maj (b) (6) (MC), Maj (b) (6), Capt (b) (6) (b) (6)
- (2) Navigators: Maj (b) (6)
- (3) Flight Engineers: MSgt (b) (6)
- (4) Spray Operators: MSgt (b) (6) MSgt (b) (6)

#### b. Maintenance:

- (1) Spray Maintenance: TSgt (b) (6), TSgt (b) (6), TSgt (b) (6)
- (2) Crew Chiefs: TSgt (b) (6), SRA (b) (6)
- (3) Avionics: TSgt (b) (6)

#### c. Entomologist: Maj (b) (6) (b) (6) Maj (b) (6) LTC (b) (6) (b) (6)

### 2. PPR REQUIREMENTS: **TBD**

### 2. PLANNED SEQUENCE OF EVENTS: All times are local. Plan to load chemical in the morning on Tuesday time TBD between the Spray Mx and safety observer.

\*\*Ensure all personnel needing access to the aircraft are written on the back of the orders prior to providing the copy to security forces. (MEP's, Crew chiefs, Spray Mx, etc) They will not be permitted on the flight line by SF until they are added to the list by either the AC or MC.

#### **TBD (Monday):**

0800: Show time  
1000: Depart KYNG  
1330: Land KHST  
1430 Installation Brief

#### **TBD (Tuesday):**

1600: Show time  
1630-1800: WX Decision  
1800: Takeoff KHST (Adulticide Spray Sortie)  
Sunset: 1940

#### **TBD (Wednesday):**

1600: Show time  
1630 - 1800: WX Decision  
1800: Takeoff KHST (Adulticide Spray Sortie)  
Sunset: 1939

#### **TBD (Thursday):**

1600: Show time  
1630 -01800: WX Decision  
1800: Takeoff KHST (Adulticide Spray Sortie)  
Sunset: 1938

#### **TBD (Friday):**

1000: Show time  
1200: Depart KHST  
1530: Land KYNG

### 4. SPRAY CONFIGURATION: SP-2G

#### a. Mass: 2-Module System

- b. **Nozzle Tips/Orientation:** 9 8005 nozzles -- straight down (4 left - 5 right)
- c. **Differential GPS:** Wingman Installed
- d. **Aircraft:** TBD
- e. **Mission Identifier:** TBD

**5. SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 0.5 oz/acre or as determined by entomologist
- e. **Flow Rate:** 3.6 Gallons/Minute
- f. **Acreage:** Potentially 85,000 acres but final acreage TBD
- g. **Swath Width:** 2000 foot

**6. RADIO FREQUENCIES AND AIRFIELD PHONE NUMBERS**

- a. Homestead ARB (KHST): GND 121.75/275.8 TWR 133.45/279.55 APP&DEP 125.5/354.1  
Command Post (Reef Control) 252.1
- b. Kendall Tamiami Executive (KTMB): Class D TWR 118.9 CTAF 125.5/354.1 APP&DEP 125.5/354.1  
Airfield Manager (305) 869-1700 TWR 305-256-0632
- c. Opa Locka Executive (KOPF): Class D TWR 118.6/360.8 CTAF 120.7 APP&DEP 128.6/306.975  
Coast Guard Base Ops 800-253-3851
- d. Homestead General (KX51): Class E CTAF 122.8 Airfield Manager (305) 247-4883  
\*\*Parachute club: 1-800-759-3493
- e. Miami International (KMIA): Class B TWR 118.3/256.9 APP&DEP 124.85/322.3  
Russ Moreno or Juan Fuentes (sp?) – POC's 305-869-5400; Call the day prior if going to be in MIA airspace; Be prepared to fax a chart with the spray area and a description of the spray operation the day prior to 305-869-5499; Morning of spray plan to call around 1130 to clarify any special procedures needed for operating in class B airspace near runway ends.

**7. BILLETING:** 17 Rooms; Homestead Billeting, POC Waikiki Reddick

**8. TRANSPORTATION:** MX will have two GOV's. (b) (6) (b) (6) (b) (6) with rental cars, they will be at Base Ops  
**Enterprise POC:** (b) (6) (b) (6) (b) (6)

**9. CONTACTS:**

- a. **Homestead ARB, FL:** Commercial (305) 224-XXXX; DSN 791-xxxx
  - 1. Spray Coordinator (Base Safety Officer): Lt Col (b) (6) ; cell (b) (6)
  - 2. Natural Resources Program Manager: Dr. (b) (6)
  - 3. HST TWR: (305) 224-6524/6601
  - 4. Airfield Manager: x7072
  - 5. Base Ops: x7516/7071 Fax 7512
  - 6. Weather: x7511
  - 7. Billeting: x7198 Fax 7290
  - 8. Transportation: x7456
  - 9. Command Post: x7068
  - 10. Base Operator: x7000
  - 11. HAZMAT - Tony Cedanio x7345
  - 12. PA: Lt Col (b) (6) (b) (6) (b) (6) (b) (6) (b) (6) Cell: (b) (6) )
  - 13. Fire Department (Non-Emergency) 7274
- b. **Miami-Dade County Mosquito Control:** (b) (6) , office; cell (b) (6)
- c. **South Florida FAA** (b) (6)  
(b) (6)

- c. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext
1. 910 AW/CC: Col (b) (6)
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  8. 757 AS/DOO: Ops Admin: SMSgt (b) (6) (b) (6) ; FAX 1657
  9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) (b) (6) (b) (6) FAX 1616
  10. 910 LG/CC: Ext 1225
  11. 910 LG/LGM: Ext 1352
  12. Maintenance Control: Ext 1327
  13. 910 LG/LGMS: Spray Maintenance, SMSgt (b) (6) (b) (6)
  14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
  15. Cellular Spray Phones:
- Mission Commander: (b) (6) (b) (6) cell (b) (6)





**DEPARTMENT OF THE AIR FORCE**  
**757AS/AERIAL SPRAY FLIGHT**  
**YOUNGSTOWN AIR RESERVE BASE**  
**VIENNA OH 44473-5924**

14 October 2008

MEMORANDUM FOR 757AS/DO

FROM: 757AS/DOS

SUBJECT: Pest Management Professional's Post Mission Report for Louisiana Spray Applications following Hurricanes Gustav/Ike

**1. SUMMARY:**

On 17 September 2008, the 910 AW, Aerial Spray Flight deployed to conduct aerial spray operations for mosquito control at the request of the State of Louisiana and the Federal Emergency Management Agency (FEMA). Two spray aircraft, one spare aircraft, and three crews were placed at Barksdale AFB in Northern Louisiana. A total of 54 people were involved with the flying, entomology, maintenance, administrative, communication and life support issues relating to the mission. The mission was complete on 1 October 2008, and redeployment to Youngstown ARS, Ohio occurred on 4 October 2008 after spraying a total of 771,406 acres in Southern Louisiana.

**2. BACKGROUND:**

Hurricane Gustav made landfall on 1 September near Cocodrie, LA. Prior to reaching LA, Hurricane Gustav gathered strength in the Gulf of Mexico, inflicting significant damage to several countries, including Haiti/Dominican Republic, the Cayman Islands, and Cuba. Hurricane Gustav was acknowledged as a strong Category II Hurricane upon landfall. In the state of Louisiana, 34 parishes were declared as disaster areas, with approximately 1.5 million people lacking electrical power. Extensive flooding created an ideal environment for mosquito breeding, and the fact that there was no power meant that those remaining in the affected areas were much more likely to be exposed to mosquitoes potentially carrying disease. Adding insult to injury, Hurricane Ike made landfall in Texas on 13, September 2008, significantly delaying some rebuilding efforts. Though Ike did not hit Louisiana, areas in coastal south central and southwestern Louisiana, many of which had been adversely affected by Gustav, were subsequently reflooded by Ike. The most significantly affected were areas around Cameron Parish.

As Louisiana already had a background of West Nile Virus (WNV) circulating in mosquito pools and birds, the probability of transmission of this disease increases greatly after a hurricane event when mosquito populations are increasing. Furthermore, the potential for a serious encephalitis outbreak is also increased by post-hurricane conditions. In particular, power outages and living in temporary shelters expose people to additional mosquito bites. In response to these potential threats, the Louisiana Department of Health and Hospitals deemed it necessary to begin emergency mosquito spraying operations, and made an emergency request for assistance to FEMA. Aerial spray operations conducted by the 910 AW commenced shortly thereafter.

**3. RESULTS:**



A total of 771,406 acres were sprayed with 4074 gallons of Dibrom during spray operations following hurricanes Gustav and Ike. Attachment 1 is a listing of areas sprayed, with acreages, flight times, amount of chemical sprayed, and spray-on time. Attachments 2-6 graphically show areas sprayed. All spray locations were located in Southern Louisiana. Aerial applications were very effective in reducing numbers of mosquitoes. State entomologists and affected mosquito control districts reported effective sprays; in most cases control exceeded 90% of the mosquito population. Attachment 7 is a letter generated by the State of Louisiana, releasing the 910 AW from spray operations following the completion of the final spray areas.

#### 4. OPERATION LOCATION:

Barksdale AFB (Shreveport, LA) was chosen as the center for operations because it was relatively close to the areas of interest, and in the event that the State of Texas was to become involved, would be convenient for those operations as well. Although Barksdale is not a C-130 base, the commander was supportive of our efforts, and generously provided adequate space for the operation that was located right on the flightline with easy access to the aircraft. The facility provided was equipped with communications equipment, and the 910 Com flight worked closely with personnel at Barksdale to get email and internet connections established. Furthermore, flightline equipment was provided, and Barksdale also provided several vehicles for crew use, thereby significantly saving on the cost of rental vehicles. Fortunately there were no major mechanical events which would have required a dedicated C-130 facility. Overall support for this operation was outstanding.

#### 5. ENTOMOLOGICAL FACTORS:

- a. Pesticide: Dibrom Concentrate was the pesticide chosen by the State of Louisiana. This material is widely used in adult mosquito control operations in LA and has a historical precedent for use following mosquito outbreak emergencies. Indeed, it was used exclusively by the 757AS in the 2005 Hurricane Katrina/Rita spray contingency. The 757 Spray Flight, nor any other DoD agency made recommendations for the use of a particular insecticide, but rather served as the applicator of a product chosen by the requesting State. It is for this reason that this unit trains with more than a single type of pesticide to have experience using many types of pesticides prior to actual contingencies and know how a particular material functions with the application equipment. The Spray Flight is very familiar with using Dibrom and has reported often on the efficacy of such sprays. There are a few other products available for Public Health aerial application, some of which might be more desirable in certain situations.
- b. Spray areas: All spray boundaries were established by the State Department of Hospitals and Health Services (DHH) Medical Entomologist, with advisement from local mosquito control district directors. The preferred method for receiving spray area boundaries was in electronic format. Specifically this meant that files are delivered using the \*.shp file format which functions with geographical information systems (GIS). This method assures that the boundaries are exactly as the state requested. However, more often than not, areas were penned on maps which were e-mailed or had hardcopies faxed. The spray areas were then converted into electronic format and sent back to the state entomologist for confirmation. See section 6 for more information on mapping aspects.
- c. Insect surveillance & efficacy: Validating the need for an area to receive military sprays was extremely important in prioritizing spray areas. DHH Medical Entomologist(b) (6)

was the point of contact for the assignment of spray areas. Mr. (b) (6) worked with directors of local (Parish) mosquito abatement districts or public health departments to determine where there were high mosquito populations and much human activity occurring at the same time to determine the localized need for spray. In general, reductions of greater than 90% were reported from the field. Specific examples include reports from Iberia Parish where mosquito trap reductions were on the order of 97%. Similar results were seen in Cameron Parish. One exception was in Terrebonne Parish, where a retreatment was accomplished on the final day of spray ops. As the local MCDs operations return to normal it is expected that they will pass forward additional efficacy data.

- d. Spray monitoring. All spray operations were directed by an onboard AF entomologist, certified in EPA category 11 for pesticide application. Louisiana recognized the DoD pesticide applicator certification through a reciprocity program and confirmed such in writing and receipt of a license. Entomologist duties were conducted by Colonel (b) (6) Major (b) (6) (b) (6) and Major (b) (6)
- e. Spray timing: Timing insecticide applications with the period of maximum exposure of the target pest is a critical component of any pest control operation. Different mosquito species have different periods of activity and certainly flies are more active during the day than at night. Keeping these facts in mind, as well as considering the best way to avoid killing bees, a spray schedule was created to include only the final two hours of daylight for mosquito control. This strategy is, in fact, highly recommended on the label. Despite these precautions, a complaint was received regarding a bee kill. The area in question was just outside one of the spray blocks in Terrebonne parish. Pictures sent forward as a result of the complaint revealed a “super” with a small mound of dead bees at the opening. From the picture it did not appear that the bee kill was significant, however, the Louisiana Department of Agriculture and Forestry continues to investigate. Operating under these strict time constraints, large spray blocks were required for the C-130 airframe to be most effective. That is to say, the ability to rack up acreage would have been seriously hampered by multiple geographically separated spray blocks. Such spray blocks would require many more turns, equating to more time with the spray system off. Small blocks are better sprayed by smaller aircraft while large blocks better utilize the C-130’s size and speed. While this was the case in parishes such as Cameron and Iberia, some of the other parishes such as Terrebonne and Lafourche were subdivided into smaller blocks, principally over population hubs. As such, acreages accomplished per sortie were significantly less, simply because of the turn times involved and the maneuvering necessary to efficiently attack the block. Sorties were sprayed to as much as possible maximize the crosswind component, thereby maximizing the area the spray would affect. Most times this was possible; however there were certain instances where the wind would shift dramatically during the flight, such as was the case during the Iberia sortie, where the wind direction shifted 180 degrees in the course of 2 hours because of a change from sea breeze to land breeze. Also, there were some situations where the shape of the block was completely inappropriate for efficient spray.
- f. Spray configuration: Fuselage booms with stainless steel flat fan 8005 (Tee Jet) nozzles were used. The number of nozzles open was calculated to maintain approximately 40 pound per square inch pressure in the spray lines. The 0.66 oz/acre application rate required 12 nozzles open. The 0.75 application rate required 14 open nozzles.
- g. Spray swaths. Spray swath separation used for applications in this contingency was 2000 feet.

- h. Application rates: The amount of chemical applied against a certain pest was determined by the state point of contact (POC) after consultation with Air Force entomologists. Applications were made at 0.66 oz per acre, with the exception of 2 applications in Cameron Parrish, which were done at 0.75 oz/acre. All spray systems were calibrated prior to leaving home station. There was good agreement between the amount of chemical actually loaded and the amount the spray equipment indicated had been dispersed.
- i. Spray maintenance: Personnel from Spray Maintenance loaded and physically configured the aircraft on a daily basis. With over 13 hours of spray-on time during this mission the spray systems worked more in 2 weeks than in the previous year of normal spray operations. The systems had tremendous demands placed on them, but there were no major malfunctions, which is a testament to the professionalism of the Aerial Spray Maintenance Flight. The only adverse incident encountered was not with the spray system or the loading process. In this instance, TSGT (b) (6) (b) (6) was moving barrels and servicing the system in preparation for mission stand down and redeployment to home station, and somehow contacted an as yet unknown material that caused a severe reaction on the top of his hands. This reaction occurred after TSGT (b) (6) had washed his hands with soap and water and used a hand sanitizer. TSGT (b) (6) was immediately treated for the reaction at a local emergency room, and a follow-up was conducted at the emergency room the following day when TSGT (b) (6) returned to home station. A blood draw for cholinesterase levels was also preformed in case there was exposure to Dibrom and results from that test are pending. Furthermore, samples of all material TSGT (b) (6) might have come in contact with (soap, hand sanitizer, system cleaning solution, etc) were collected and given to doctors from the base clinic, who are having component analysis done on all products. Information from these tests is also pending.

## 6. MAPS AND NAVIGATION

Mapping and chart making has previously been the bane of contingency aerial spray operations. The problem previously was in obtaining charts and matching swath lines on charts with those created in the software directing the onboard GPS. A simple solution has been developed in the Aerial Spray Office which is partly the product of the digital age (digital maps available). Using a relatively affordable software program (approx. \$300) charts are viewed on a computer utilizing USGS topographic maps in 15- and 7.5 minute series (DeLorme X-Map version 4.5). Polygons can be directly drawn on the topographic background where the borders of important landmarks are readily seen (roads, water bodies, parish or county borders, wildlife areas, etc). Next, the actual proposed path of the aircraft is drawn over the spray areas. This path is the lane separation or swath width and was previously drawn on charts by hand which introduced some error. These polygons or spray blocks are then exported as CAD dxf (\*.dxf) files, which can then be converted into shapefiles (\*.shp). A shapefile is a computer graphic representation of geographic features with lat/long coordinates associated with it. These shapefiles can then be directly entered into the spray plane's GPS software. Shapefiles were also entered into the software program FalconView, a flight planning tool universally used by the Air Force. This allowed intended flight paths and potential obstacles to be added to the charts before they were printed on a large scale printer. Additionally, navigators had the option to use FalconView on a laptop during the spray sortie, creating another platform to confirm position and course. During previous contingencies operations, complete days were lost dealing with the complex issue of charts. The method discussed here allowed for quick turnaround (< 3 hours) from receiving potential spray areas to production of a usable spray chart. Nonetheless, mapping remains an integral and energy consuming portion of the mission. It is recommended to use a non-flying

crew member and/or entomologist to create charts to circumvent the problem of exceeding maximum duty day.

In addition to the mapping, navigation was also done using our new Wingman GPS navigation system. While the hardware in the aircraft worked admirably during the 2 week deployment, there were some issues with the computer based software, in that some of the mission logs were not being effectively recorded to an appropriate place on the computer where they could be observed and printed with information such as a time and date stamp, and aircraft information. To deal with these problems, a support call was made to the manufacturer of the system (ADAPCO), and technical representatives visited Barksdale to help iron out some of the problems. So far, the fixes seem to be working, and the manufacturer is working on revising some of the computer code to fix other quirky but non show-stopping issues with the software.

## 7. FLYING ACTIVITIES

- a. Developing a plan for unfamiliar areas: The aerial spray flight conducts training missions at DoD installations in CONUS as part of an ongoing pest control program for those installations. One critical component of these training flights is the preparation for the different types of terrain over which spray flights are conducted. In this response, spray areas varied all the way from flying over forested areas to flying over urban landscapes. All areas have hazards such as communications towers, power lines, other aircraft, birds, etc. While new charting technologies give a better projection of reality than was previously available, it is impossible to rely solely on charts. Upon reaching a new area, an aerial survey period was conducted at 300-500 feet above ground level (AGL). During the survey, the crew picked out ground reference points and obstacles from the air and confirmed them with the spray chart. Any flying hazards not appearing on the chart were noted. Following the aerial survey, a dry pass at spray altitude (150' AGL) was made to check the aircraft's heading, set drift kill, and make a Doppler wind reading. The onboard certified applicator (Entomologist) then determined if spray conditions were appropriate and signaled the crew to commence the application.
- b. Weather decisions: Spray operations always contend with weather. Some wind (3-5 knots) in at least a 45 degree crosswind component is desired. Strong winds or light and variable winds are not desirable. Weather conditions were generally outstanding during this mission except in the early days of the deployment. 19 and 20 October missions were cancelled due to inclement weather over the target areas. The Dibrom label indicates a maximum wind speed for application of 15 m.p.h. The decision to fly a spray sortie based on weather forecasts is made by the Mission Commander and Entomologist. Obviously, traveling 250 miles to begin spray operations only to find out that wind speeds are out of limits or that there are active thunderstorms is not good. Conversely, canceling on a weather forecast, and hearing later that conditions were excellent is discouraging as well. In practice, if the forecast was only marginally negative the mission went forward and a final determination was made once the spray area was reached. In the case where more than one area had been validated to receive sprays, bad weather could be avoided by choosing another area where conditions were more favorable. For example, the 23 October mission was diverted to Iberia Parish because of bad weather over the original targets in Jefferson and Plaquemines parishes.
- c. Communications: Four members from the 910<sup>th</sup> Communications Flight deployed to Barksdale. The role of communications in ground monitoring is discussed in Entomological Factors item 4. In short, the radio communications link could allow for aircraft to contact base operations approximately 40 minutes prior to landing. This gave the Mission Commander a reasonable lead time to plan if any contingencies had occurred during the sortie. Additional communications capabilities came from the use of Satellite phones in each aircraft that in many situations functioned better than the HF communications.

#### 8. PUBLIC AFFAIRS:

- a. Public Notification Procedures. The responsibility for notifying the public about aerial spray operations was assumed at the state level and coordinated with FEMA. A blanket statement which covers a given area for a given amount of time allows for the most flexibility in completing mission assignments and this is what was generally issued.
- b. Daily Reports: The Mission Commander issued a situation report (SITREP) generally within an hour of the completion of the evening's sortie(s). An example is included as attachment 8.
- c. News Conferences and news articles: Capt (b) (6) (b) (6) was the 910<sup>th</sup> Public Affairs representative who deployed initially to Barksdale, and then moved to FEMA's Baton Rouge facility in order to coordinate requests from news agencies for information concerning military mosquito sprays.

#### 10. LESSONS LEARNED

An after action report will follow to be submitted from the Aerial Spray Office after further discussion on items which can be improved upon.

//signed//

(b) (6) MAJ USAFR  
Pest Management Professional

(b) (6) (b) (6) MAJ USAFR  
Pest Management Professional

DATE	STATE	AREA	ACFT #	ACRES	RATE	T. ACRES	FLY TIME	T. FLY TIME	Gal.	T. GAL	S.O.T. (sec)	T. S.O.T.
21-Sep	La.	Lafourche	105	30,836	0.66	30,836	5.2	5.2	159	159	1929	1929
21-Sep	"	Terrebonne	108	49,272	0.66	80,108	5	10.2	255	414	3175	5104
22-Sep	La.	Terrebonne	105	52,648	0.66	132,756	4.1	14.3	274	688	3396	8500
22-Sep	"	Lafourche	108	32,884	0.66	165,640	4.3	18.6	169	857	2119	10619
23-Sep	La.	Iberia	105	64,508	0.66	230,148	4	22.6	336	1193	4160	14779
23-Sep	La.	Iberia	108	65,357	0.66	295,505	4.8	27.4	337	1530	4203	18982
24-Sep	"	Plaquemines	106	65,551	0.66	361,056	4.8	32.2	338	1868	4224	23206
24-Sep	La.	Jefferson	108	28,121	0.66	389,177	4.6	36.8	145	2013	1820	25026
25-Sep	"	St. Mary	106	69,540	0.66	458,717	4.4	41.2	358	2371	4481	29507
25-Sep	La.	St. Mary	108	70,837	0.66	529,554	4.2	45.4	370	2741	4602	34109
26-Sep	"	Iberia/Cameron	106	46,444	0.66	575,998	3.7	49.1	241	2982	2978	37087
26-Sep	La.	St. Mary	108	34,933	0.66	610,931	4.2	53.3	183	3165	2284	39371
29 Sep.	"	Cameron	106	73,145	0.75	684,076	3.8	57.1	428	3593	4683	44054
29 Sep.	La.	Cameron	108	40,830	0.75	724,906	3.5	60.6	241	3834	2631	46685
1-Oct	"	Terrebonne	108	46,500	0.66	771,406	4.4	65	240	4074	3000	49685
		Flight time (hrs)		65								
T.S.O.T.=Total spray on time (hrs + min)				13hrs 48 min								
		Total Acres in Louisiana		771,406								
		Total gallons in Louisiana		4,074								

Attachment 1. Areas sprayed, aircraft utilized, acreage sprayed, application rate, chemical applied and total flight times for aerial spray mission flown in support of hurricane relief.







Data use subject to license.

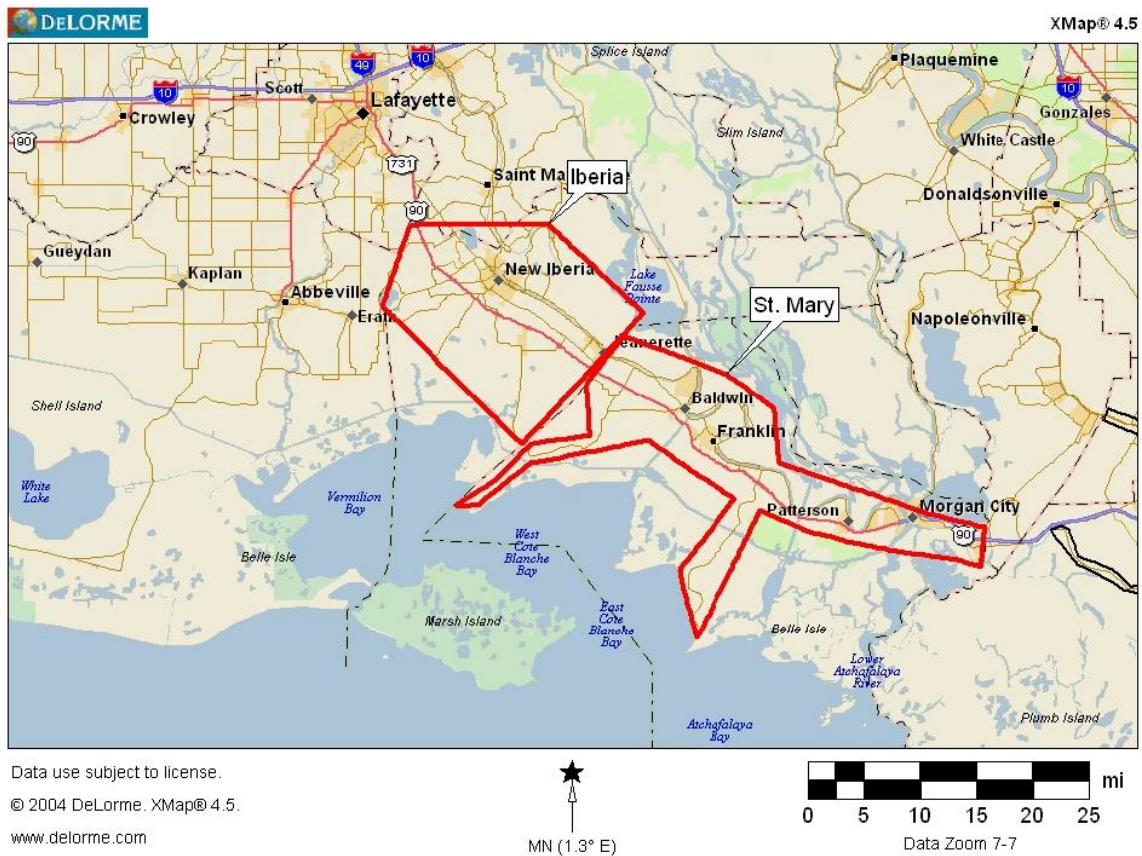
© 2004 DeLorme. XMap® 4.5.

www.delorme.com

★  
MN (0.0° W)

0 3 6 9 12 15 18 mi  
Data Zoom 8-3

Attachment 4. Spray areas in Jefferson and Plaquemines Parishes.



Attachment 5. Spray areas in Iberia and St. Mary's Parish.



Attachment 6. Spray areas in Cameron Parish.

Attachment 7. Sample of release letter produced by the Louisiana Dept of Health

**Bobby Jindal**  
GOVERNOR



**Alan Levine**  
SECRETARY

**State of Louisiana**  
Department of Health and Hospitals  
Office of the Secretary

Major (b) (6)  
Chief Entomologist  
Air Force Spray Flight

Captain (b) (6)  
Public Affairs Officer  
Air Force Spray Flight

910 AW/PA  
YOUNGSTOWN AIR RESERVE STATION  
3976 KING GRAVES ROAD., UNIT 12  
VIENNA, OH 4473-5912

Dear Major (b) (6) and Captain (b) (6)

On September 13, 2008, Governor Bobby Jindal and I requested that the Air Force Reserve 757th Airlift Squadron (AS) be tasked to conduct aerial spray operations for mosquito infestations in the Hurricane Ike storm surge-affected Coastal Parishes of Louisiana. The mission of 757AS was to eradicate disease carrying and nuisance mosquitoes in the aftermath of Hurricane Gustav.

In response to this request the 757AS, commanded by Lt Col (b) (6) established operations from Barksdale Air Force Base, LA. The operation sustained and supported two Modular Aerial Spray System-equipped C-130 aircraft and 54 associated personnel and equipment from the 910 Airlift Wing (AW), Youngstown ARS Air Force Reserve Corps.

The 910thAW is the only unit in the Department of Defense tasked to maintain a full-time, fixed-wing aerial spray capability. Four specially modified C-130H aircraft from the 910th are used to conduct aerial spray missions to control insects, vegetation on military installations and oil spills.

Barksdale AFB was chosen as the base of operations for the aircrews and maintenance personnel because of its proximity to the spray area, ability to handle C-130H aircraft and ability to support the mission without conflicting with other relief efforts.

The 757 AS was ready for commencement of operations on September 18, but inclement weather precluded applications until September 21st, when the first mission was flown over Terrebonne Parish. The final mission will be a re-treatment of sections of Terrebonne Parish where mosquito counts have again risen above threshold limits. All treatments were done at the request of and in conjunction with the parish governments and their mosquito abatement districts. Following the completion of this mission, the 910 AW is hereby released from its mission in Louisiana.



**Attachment 8. Example of a daily SITREP.**

DTG: 212330ZSEP2008

PERIOD: FROM 211300ZSEP2008 TO 212330ZSEP2008

SITREP 4

FROM: 757 AS (P) – AERIAL SPRAY OPERATION

TO: Lasher, Andy A. Lt Col USA NORAD USNORTHCOM J39  
601 AOC/AMD OMB  
AFNORTH A3X OMB  
AFNORTH CAT A3  
AFNORTH CAT A6  
AFNORTH DirMobFor OMB

INFO: (b) (6) (b) (6) (b) (6) Col USAF ACC AFNORTH/A3  
(b) (6) (b) (6) Col USAF ACC AFNORTH/A3  
(b) (6) (b) (6) COL USA USNORTHCOM HQs J35  
(b) (6) (b) (6) (b) (6) CIV USA USNORTHCOM HQs J35  
(b) (6) (b) (6) Civ USAF ACC AFNORTH/CS  
(b) (6) (b) (6) Maj USA USNORTHCOM HQs J35  
(b) (6) (b) (6) LTC USA USNORTHCOM HQs J35  
(b) (6) (b) (6) LtCol USAF ACC AFNORTH/A3X  
(b) (6) (b) (6) Lt Col USA norad usnorthcom J39  
(b) (6) (b) (6) LtCol USAF ACC AFNORTH/JTF-ST/DO (J3)  
(b) (6) (b) (6) CTR USAF ACC AFNORTH/A3  
(b) (6) (b) (6) Maj USAF ACC AFNORTH/A3X  
(b) (6) (b) (6) Col USA USNORTHCOM HQs J33  
(b) (6) (b) (6) LtCol USAF ACC 601 AOC/CISRD  
(b) (6) (b) (6) Maj USAF AFSPC SIDC/TCE  
(b) (6) LTC USA USNORTHCOM HQs J35  
(b) (6) (b) (6) TSgt USAF ANG AFNORTH/A3I  
(b) (6) (b) (6) Capt 910 CF/CC  
(b) (6) (b) (6) Maj USAF AFSPC AFSPC/SPP  
(b) (6) (b) (6) (b) (6) Col USA USNORTHCOM HQs J33  
(b) (6) (b) (6) (b) (6) LtCol USAF ACC 601 AOC/CAMD  
(b) (6) (b) (6) (b) (6) LtCol USAF ACC 601 AMD/AMD  
(b) (6) (b) (6) (b) (6) Maj USAF ACC 601 AOC/AMD  
(b) (6) (b) (6) (b) (6) Maj USAF ACC 601 AOC/AMD  
22 AF/CP Command Post V3  
AFRC/A2A3 Intelligence, Air, Space, and Info Ops  
(b) (6)  
(b) (6) Col USAF ACC AFNORTH/AFNSEP  
(b) (6) Col USAFR 910 AW/CC  
(b) (6) (b) (6) Col USAFR 910 OG/CC  
(b) (6) Lt Col USAFR 910 OSS/CC  
(b) (6) Col ACC AFNSEP

**SITUATION:** Mosquito infestations in many Areas of Louisiana. The 757th AS has been requested by the Louisiana Governor and Louisiana Public Health Department, tasked by the SECDEF to conduct Aerial Spray Operations in these infested areas. The mission of Aerial Spray is to eradicate disease carrying mosquitoes in the aftermath of Hurricane Gustav.

**Current Objective Areas:** Lafourche Parrish/Terrebonne Parrish. B PLAN – Iberia Parrish.

**WEATHER DISCUSSION:** Isolated thunderstorms were forecast in areas of southern Louisiana until after sunset. Iberia Parrish (B PLAN) was forecast to be CAVOK. Ceilings were forecast to be better than 2000 feet overcast, in and around the Objective Areas. Winds were light and variable from the east.

## 1. OPERATIONS/CONCEPT OF OPERATIONS.

1.A. The 757 AS (P), in response to JOINT STAFF WASHINGTON DC EXORD, is established. Lt Col J.D. Williams, 757 AS/CC is commanding the squadron operation, from Barksdale AFB, LA, to support three Modular Aerial Spray System (MASS) equipped C-130 aircraft and associated personnel and equipment from the 910AW, Youngstown ARS, OH (AFRC)

## 2. SIGNIFICANT EVENTS/MISSION TOTALS

UNIT	DEPLOYMENT				SPRAY MISSIONS				SUPPORT				REDEPLOYMENT			
	SORT	HRS	PRSNL	CRG TONS	SORT	HRS	ACREAGE	GAL	SORT	HRS	PRSNL	CRG TONS	SORT	HRS	PRSNL	CRG TONS
757 AW	5	15.7	56	14.3	4	13.3	80,108	414								
DAILY TOTALS	0	0.0	0	0.0	2	10.2	80,108	414	0	0.0	0	0	0	0.0	0	0.0
PREVIOUS DAYS TOTAL					2	3.1	0	0								
CUMULATIVE TOTALS	5	15.7	56	14.3	4	13.3	80,108	414								

2.A. **SIGNIFICANT EVENTS PAST 24 HOURS:** 2 missions were launched to the primary objective areas – Terrabone/Laforuche. Iberia was planned and briefed as the weather backup. Spray 05/08 took off as scheduled and surveyed the spray areas prior to the “spray on” time. Sunset was 0000Z. Spray 08 RTB’d with a minor radar problem, but launched in time to meet the spray on window, two hours prior to sunset. Civil Air Patrol took photography of tonight’s mission in Lafourche Parrish. Capt (b) (6) 910 AW/PA remains TDY to Baton Rouge, LA in support of AFNSEP.

2.B. **SIGNIFICANT EVENTS NEXT 24 HOURS:** 2 Missions are scheduled for chemical dispersal in Terrebone Parrish/Lafourche Parrish to finish several odd shaped areas. With good weather, we expect to complete these areas tomorrow night. Iberia Parrish is the weather backup. Takeoff time is 2030Z. Local media/interviews scheduled at 1900Z, Barksdale AFB, LA, with assistance from the 917 FW/PA.

2.C. **SIGNIFICANT EVENTS >24 HOURS:** 2 x Comm personnel expected to return to Youngstown ARS.

2.D. **REQUESTS FOR ASSISTANCE (RFA):** NONE

2.E. **REQUESTS FOR INFORMATION:** NONE

3. **LOGISTICS:** 3 x C-130 MASS FMC/2 x C-130 Aircraft FMC/1 x C-130 Aircraft NMCMU for #4 oil quantity transmitter (ETIC, parts + 2 hours). Expect 3 Aircraft FMC for tomorrow.

3.A. **SIGNIFICANT LOGISTIC CHANGES:** 3 x C-130 Aircraft FMC.

## 4. PERSONNEL:

4.B. **EMPLOYMENT OPERATIONS AIRCRAFT COMMANDERS:** See 4.B.2

4.B.2. **AERIAL SPRAY MISSION INFORMATION (TODAY)**

A/C CMDR	TYPE ACFT	SORTIES	HRS	ACRES	GALLONS	APP RATE	Last 4 SSAN	Spray On Time (SOT)
(b) (6)	C-130H						6096	
(b) (6)	C-130H	1	5.0	49,272	255	.66 oz/acre	8315	3175 sec
(b) (6)	C-130H	1	5.2	30,836	159	.66 oz/acre	3120	1929 sec

#### 4.C. FLIGHT MISSION CODES:

LOCATION	AIRFIELD ID	CALLSIGN	MISSION SYMBOL
Barksdale AFB, LA	KBAD	SPRAY 05,06,08	T3KH

#### 5. COMMUNICATIONS:

**5.A. POINTS OF CONTACT.** The 757 AS (P) is staffed from 1230Z (0730L CST) – 0230Z (2130L MDT) but will depend on flying activity. Please use the organizational e-mail contact for all operational issues and cell phones for after duty hour's contact.

COMMANDER			
NAME	Lt Col (b) (6) 757 AS/CC		
E-MAIL	(b) (6)		
DSN: (b) (6)	(b) (6)	CELL (b) (6)	
ALTERNATE CONTACT			
NAME	Lt Col (b) (6) Chief of Aerial Spray		
E-MAIL	(b) (6) (b) (6) (b) (6)		
DSN: (b) (6)	COM: (b) (6)	CELL: (b) (6)	

**6. SIGNIFICANT MEDIA EVENTS:** Planning interview with Shreveport media on 22 Sep 08.

#### RELEASER:

Lt Col (b) (6)  
 COMMANDER, 757 AS  
 DSN: (b) (6)





**DEPARTMENT OF THE AIR FORCE**  
**757AS/AERIAL SPRAY FLIGHT**  
**YOUNGSTOWN AIR RESERVE BASE**  
**VIENNA OH 44473-5924**

1 November 2005

MEMORANDUM FOR 757AS/DO

FROM: 757AS/DOS

SUBJECT: Pest Management Professional's Post Mission Report JTF Katrina/Rita

**1. SUMMARY**

On 8 September 2005, the 910<sup>th</sup> AW, Aerial Spray Flight deployed to conduct aerial spray operations for mosquito and filth fly control in support of the Federal Emergency Management Agency (FEMA) Hurricane Katrina relief effort and were officially tasked to the Joint Task Force (JTF) Katrina on 9 September 2005. Two spray aircraft, one spare aircraft, and three crews were placed at Duke Field, Florida. A total of 53 people were involved with the flying, entomology, maintenance, administrative, communication and life support issues relating to the mission. Following the landfall of Hurricane Rita (24 September), the State of Texas (TX) also requested mosquito control in counties affected by the storm. Still working from Duke Field, one plane sprayed in each state until Louisiana (LA) was complete, then both planes concentrated on completing the TX spray blocks. The mission was complete on 14 October 2005 and redeployment to Youngstown ARS, Ohio occurred on 18 October after spraying a total of 2.88 million acres.

**2. BACKGROUND:**

Hurricane Katrina made landfall on 29 August near Buras, LA. Prior to reaching LA, it crossed Florida as a Category 1 storm. Gathering strength in the Gulf of Mexico, Katrina became a Category 5 storm and eventually made landfall south of New Orleans as a Category 4 storm with 145 mph winds. Hurricane Katrina caused extensive damage as would be expected from such a powerful storm. High winds downed trees and destroyed homes, while heavy rain caused extensive flooding. When some levies in New Orleans collapsed, the City's worst nightmare was realized as widespread flooding ensued. Water rushed into homes and overran water treatment facilities to the point where travel by boat became most efficient. Pre-hurricane evacuations had been incomplete in New Orleans and the flooding now exacerbated the evacuation problem and significantly increased the difficulty of relief efforts. One major concern was the potential for filth fly production from habitat created by fecal contamination, muck, trash, and animal carcasses. It was the filth fly concern that prompted the quick deployment of the Aerial Spray Flight. The secondary concern was that Louisiana already had a background of West Nile Virus (WNV) circulating in mosquito pools and birds. The potential for a serious encephalitis outbreak is increased by post-hurricane conditions. In particular, power outages and living in temporary shelters expose people to additional mosquito bites. By early September 62 cases of WNV had been reported in LA and Mississippi and, thus, mosquito control was considered a high priority in the strategy to protect public health.

### 3. RESULTS:

A total of 2,880,622 acres were sprayed with 14,313 gallons of Dibrom during spray operations for JTF Katrina and Rita. In LA, 1,942,607 acres were and in TX, 938,015 acres. Over 19,000 man hours were spent in support of this operation. See attachment 1 for additional information and attachment 2 shows all areas sprayed. Aerial applications were very effective in reducing numbers of flies and mosquitoes. Military entomologists and the CDC entomologist observed first hand flies (sarcophagids, muscids, calliphorids, etc) suffering heavy mortality even within 15 minutes after spraying. Statistical data was not generated for fly control because of evacuations and limited personnel for surveillance during this timeframe. In contrast, mosquito control was well documented and nearly all areas showed reductions greater than 90%. In many cases mosquitoes disappeared completely for a period of time after the application.

### 4. OPERATION LOCATION:

Duke Field which is a 45-60 minute ferry flight was chosen as a base of operation because it was relatively proximal to the area of impact yet far enough removed to minimize the effects of the damaged infra-structure. The intelligent decision was to trade some ferry time for access to C-130 maintenance support, accommodations, vehicles, and fuel. The Duke Field Base Commander was extremely supportive, and it is difficult to imagine a better work environment. Essentially given a hanger to operate out of, this building included two air conditioned offices with telephones and computers. The Duke Field Communications Squadron established internet accounts and telephone lines for the operation. The choice to trade some ferry time for C-130 maintenance support yielded dividends on two occasions, first when an aircraft received leading edge wing damage, and later with an engine problem. Both incidences were the result of bird strikes, and both would have grounded the aircraft potentially for weeks if it were not for immediate access to C-130 support. It should be mentioned that the maintenance support received from the Duke Field went well beyond a normal support function; their staff worked around the clock, after the aforementioned events, to get spray planes back in the air after only 24 hrs!

### 5. ENTOMOLOGICAL FACTORS:

- a. Pesticide: Dibrom Concentrate was the pesticide chosen by the State of Louisiana (LA) and Texas (TX). This material is widely used in adult mosquito control operations in LA and has a historical precedent for use following mosquito outbreak emergencies. It is noted here that no DoD agency made recommendations for the use of a particular insecticide, but rather served as the applicator of a product chosen by the requesting State. It is for this reason that this unit trains with more than a single type of pesticide to have experience using many types of pesticides prior to actual contingencies and know how a particular material functions with the application equipment. The Spray Flight is very familiar with using Dibrom and has reported often on the efficacy of such sprays. This is certainly a positive aspect for using this chemical. However, Dibrom is very heavy and at times planes became weight-limited in regard to pesticide load, especially during applications at 0.75oz/acre over large spray blocks. The pyrethroid Anvil is less than half the weight of Dibrom and could have increased spray time and acreage on some sorties, but may not be as effective against some mosquito species.
- b. Spray areas: All spray boundaries were established by the State Entomologist with advisement from CDC entomologists and, where appropriate, from Air Force entomologists. For example, in LA, a strict criteria was followed to determine qualification to receive military sprays: 1. to receive sprays an area needed to be without a Mosquito Control District (MCD) and have some form of insect surveillance to verify a need for mosquito control; 2. If a Parish MCD had been temporarily disabled because of the storm, such a parish was also eligible to receive a military applied spray. The

preferred method for receiving spray areas was in electronic format. Specifically this meant that files were delivered using the \*.shp file format which functions with geographical information systems (GIS). This method assures that the boundaries are exactly as the state requested. This method was used for the majority of spray areas in LA. In TX, electronic maps were e-mailed or hardcopies faxed. See section 6 for more information on mapping aspects.

- c. Insect surveillance & efficacy: Validating the need for an area to receive military sprays was extremely important in prioritizing spray areas. The CDC entomologist was very helpful in this regard. Qualitative or anecdotal accounts of mosquito densities were not normally an acceptable means. Realizing that normal functions of local MCDs were compromised, a basic method of measuring mosquito densities (landing rates of mosquitoes per minute of time) was accepted. The level of expertise in identifying and monitoring mosquito populations was robust throughout both states and in communities where no formal MCD existed, direct mosquito landing rate counts functioned well, even if performed by individuals without entomological training. In general, reductions of greater than 90% were reported from the field. After Hurricane Rita, an emergence of *Psorophora* spp. was intense enough that the application rate was increased to 0.75oz/acre in order to maintain an appropriate level of control. It was particularly fortunate, that Air Force entomologists from the Air Force Research Laboratory at Brooks City Base, TX were released by their Commander to support the 910<sup>th</sup> AW mission on the ground in TX. Two active duty and one civilian entomologist worked for over two weeks gathering pre and post spray data on mosquito landing counts and trapping data. Data is shown for the TX spray block Skeeter2 in attachment 3. As the local MCDs operations return to normal it is expected that they will pass forward efficacy data. It is projected that this information will be compiled and eventually published in a scientific journal.
- d. Spray monitoring. All spray operations were directed by an onboard AF entomologist, certified in EPA category 11 for pesticide application. Both LA and TX recognized DoD pesticide applicator certification through a reciprocity program and confirmed such in writing. The majority of flights were also observed by DoD entomologists on the ground. While not mandatory, the role of these individuals was to gather environmental and biological data on the ground, confirm that the plane was operating safely, and lastly to serve as a spokesperson for the flight. In New Orleans, Navy entomologists and preventative health technicians participated in this role. Air Force Research Laboratory entomologists worked exclusively in this capacity in TX. In theory, ground monitors could use their mobile/satellite phones to relay information to base operations at Duke Field, in turn, the communications specialist could then relay that information on the high frequency antenna back to the airplane. Unfortunately, in practice, this did not prove effective. Satellite phones may be a quick fix for this problem in the future. Calls to Duke Field from entomologists in the field did serve the purpose of updating the Mission Commander of the status of the operation and environmental conditions during the application.
- e. Spray timing: Timing insecticide applications with the period of maximum exposure of the target pest is a critical component of any pest control operation. Different mosquito species have different periods of activity and certainly flies are more active during the day than at night. Keeping these facts in mind, as well as considering the best way to avoid killing bees, a spray schedule was created to include only the final two hours of daylight for mosquito control and three hours prior to sunset for fly control. Since fly control was only conducted in urban areas, there was less concern with causing honeybee mortality in these spray blocks. No negative feedback from beekeepers has been received

and it is believed that this was a highly successful policy. Operating under strict time constraints, large spray blocks were required for the C-130 airframe to be most effective. That is to say, the ability to rack up acreage would have been seriously hampered by multiple geographically separated spray blocks. Such spray blocks would require many more turns, equating to more time with the spray system off. Small blocks are better sprayed by smaller aircraft while large blocks better utilize the C-130's size and speed.

- f. Spray configuration: Fuselage booms with stainless steel flat fan (Tee Jet) nozzles were used. Sizes 8005 for mosquito control and 8008 for fly control were used. The number of nozzles open was calculated to maintain approximately 40 pound per square inch pressure in the spray lines.
- g. Spray swaths. Several swath widths were used during the operations. For filth fly control 1,000' foot swaths were used for more even control. This configuration is used during normal spray operations for biting flies at the Parris Island MCRD, SC. For adult mosquito control a 2,500 foot swaths was used in areas with a crosswind, which is the Spray Flight's accepted contingency swath width (routine mosquito control operations are conducted with 2,000 foot swaths). Data supporting the 2,500 foot swath width using caged mosquitoes has been previously reported on and presented in military and scientific venues. During sorties when there was very little wind, a 1,500 foot swath width was used.
- h. Application rates: The amount of chemical applied against a certain pest was determined by the state point of contact (POC) after consultation with Air Force and CDC entomologists. Against flies, the maximum mosquito control rate for Dibrom was applied (1.0 oz/acre). The operation began in LA using 0.5 oz/acre for mosquito control. Following the arrival of Hurricane Rita, woodland mosquito species appeared in large numbers and subsequently, the half ounce per acre was only reducing populations not eliminating them. Increasing the rate to 0.75 oz/acre was effective in eliminating these dense populations of mosquitoes. Later, 0.62 oz/acre was sufficient to eradicate local mosquito populations as numbers began to decrease. All spray systems were calibrated prior to leaving home station.
- i. Spray maintenance: Personnel from Spray Maintenance loaded and physically configured the aircraft on a daily basis. With over 46 hours of spray-on time during this mission the spray systems worked more in 5 weeks than in the previous 3 years of spray, to put such activity in perspective. Thus, the systems had tremendous demands placed on them. On one occasion, a main pump shaft seal failed resulting in fumes in the aircraft. Smoke and fume elimination procedures were accomplished, the crew donned oxygen masks and returned to Duke Field. Upon landing, the crew visited the Eglin AFB Clinic, were evaluated and released as asymptomatic to organophosphate exposure (information available on AMC Form 97). Apart from this instance the MASS units performed flawlessly which is a testament to the professionalism of the Aerial Spray Maintenance Flight.

## 6. MAPS

Mapping and chart making has previously been the bane of contingency aerial spray operations. The problem previously was in obtaining charts and matching swath lines on charts with those created in the software directing the onboard GPS. A simple solution has been developed in the Aerial Spray Office which is partly the product of the digital age (digital maps available). Using a relatively affordable software program (approx. \$300) charts are viewed on a computer utilizing USGS topographic maps in 15- and 7.5 minute series (DeLorme X-Map version 4.5). Polygons can be directly drawn on the topographic

background where the borders of important landmarks are readily seen (roads, water bodies, parish or county borders, wildlife areas, etc). This was one role for the forward deployed entomologist, particularly early on in LA. Next the actual proposed path of the aircraft is drawn over the spray areas. This path is the lane separation or swath width and was previously drawn on charts by hand which introduced some error. These polygons or spray blocks are then exported as shapefiles (\*.shp). A shapefile is a computer graphic representation of geographic features with lat/long coordinates associated with it. These shapefiles can then be directly entered into the spray plane's GPS software. Shapefiles were also entered into the software program FalconView, a flight planning tool universally used by the Air Force. This allowed intended flight paths and potential obstacles to be added to the charts before they were printed on a large scale printer. Additionally, navigators had the option to use FalconView on a laptop during the spray sortie, creating another platform to confirm position and course. During previous contingencies operations, complete days were lost dealing with the complex issue of charts. The method discussed here allowed for quick turnaround (< 3 hours) from receiving potential spray areas to production of a usable spray chart. Nonetheless, mapping remains an integral and energy consuming portion of the mission. It is recommended to use a non-flying crew member and/or entomologist to create charts to circumvent the problem of exceeding maximum duty day.

## 7. FLYING ACTIVITIES

- a. Developing a plan for unfamiliar areas: The aerial spray flight conducts training missions at DoD installations CONUS as part of a ongoing pest control program for those installations. One critical component of these training flights is the preparation for the different types of terrain over which spray flights are conducted. In this response, spray areas varied all the way from flying over forested areas to flying over urban landscapes (e.g., downtown New Orleans). All areas have hazards such as communications towers, power lines, other aircraft, birds, etc. While new charting technologies give a better projection of reality than was previously available, it is impossible to rely solely on charts. Upon reaching a new area, an aerial survey period was conducted at 300-500 feet above ground level (AGL). During the survey, the crew picked out ground reference points and obstacles from the air and confirmed them with the spray chart. Any flying hazards not appearing on the chart were noted. Following the aerial survey, a dry pass at spray altitude (150' AGL) was made to check the aircraft's heading, set drift kill, and make a Doppler wind reading. The onboard certified applicator (Entomologist) then determined if spray conditions were appropriate and signaled the crew to commence the application.
- b. Weather decisions: Spray operations always contend with weather. Some wind (3-5 knots) in at least a 45 degree crosswind component is desired. Strong winds or light and variable winds are not desirable. Weather conditions were outstanding during this mission and outside of the 5 days of weather cancellations during which Hurricane Rita passed, only 1 other cancellation was because of inclement weather. The Dibrom label indicates a maximum wind speed for application of 10 m.p.h. The decision to fly a spray sortie based on weather forecasts is made by the Mission Commander and Entomologist. Obviously, traveling 300 miles to begin spray operations only to find out that wind speeds are out of bounds or that there are active thunderstorms is not good. Conversely, canceling on a weather forecast, and hearing later that conditions were excellent is discouraging as well. In practice, if the forecast was only marginally negative the mission went forward and a final determination was made once the spray area was reached. In the case where more than one area had been validated to receive sprays, bad weather could be avoided by choosing another area where conditions were more favorable. For example, thunderstorms in LA on 6 October forced a sortie cancellation in that state but two planes then flew in TX where conditions were fine.



- c. Communications: Two members from the 910<sup>th</sup> Communications Flight deployed to Duke Field. The role of communications in ground monitoring is discussed in Entomological Factors item 4. In short, the radio communications link allowed for aircraft to contact base operations approximately 40 minutes prior to landing. This gave the Mission Commander a reasonable lead time to plan if any contingencies had occurred during the sortie. Later during the mission, the full capacity of the high frequency antenna was realized and communication with the spray aircraft and base operations at Duke Field was possible throughout the sortie.

#### 8. PUBLIC AFFAIRS:

- a. Public Notification Procedures. The responsibility for notifying the public about aerial spray operations was assumed at the state level for both LA and TX and coordinated with FEMA. Sample news releases are included in attachments 4 & 5. A blanket statement which covers a given area for a given amount of time allows for the most flexibility in completing mission assignments.
- b. Daily Reports: The Mission Commander issued a situation report (SITREP) generally within an hour of the completion of the evening's sortie(s). In addition, a daily "entomologist spray report" further served as a way to inform key military and civilian parties on the progress of the mission. The entomologist's report was written from the pest manager's point of view and contained a picture image of the areas sprayed (when possible), the flight of the aircraft, efficacy data on the reduction of mosquitoes or flies (where available), and the next day's projected spray area. An example is included as attachment 6.
- c. News Conferences and news articles. A 910<sup>th</sup> Public Affairs representative deployed to Duke Field and helped coordinate requests from news agencies for information concerning military mosquito sprays.

#### 9. CONTACTS:

##### a. FEMA

(b) (6) , Federal Coordinating Officer  
(b) (6) Capt, DCO TX (USA)

##### b. State of Louisiana

(b) (6) , Deputy Assistant Secretary, Office of Public Health  
(b) (6) , Medical Entomologist, Office of Public Health  
(b) (6) , Director, Vermilion Parish Mosquito Control  
(b) (6) , Director, Acadia Parish Mosquito Control  
(b) (6) , Director, Calcasieu Parish Mosquito Control

##### c. State of Texas

(b) (6) , State Vector Control Entomologist, Texas Dept of State Health Services  
(b) (6) nt, Director, Jefferson County Mosquito Control District  
(b) (6) , Director, Orange County Mosquito Control District

##### d. Centers for Disease Control

(b) (6) , Chief Entomologist, Division of Vector-Borne Infectious Diseases  
(b) (6) , Emergency Coordinator & Entomologist, Division of Vector-Borne Infectious Diseases  
(b) (6) , Lt Col, DoD Liaison to CDC, Office of the Director (USAF)

##### e. JTF Katrina

(b) (6) , Maj, Force Protection Officer (USA)

f. Armed Forces Pest Management Board  
(b) (6) on, LTC, Contingency Liaison Officer

g. Military Entomologists in the Joint Area of Operations  
(b) (6) , GS-13, AFIOH, Brooks City-Base (USAF)  
(b) (6) , 1LT, Air Force Research Laboratory (USAF)  
(b) (6) , 1LT, Air Force Research Laboratory (USAF)  
(b) (6) , LTJG, Navy Disease Vector Ecology & Control Center (USN)  
(b) (6) , 1LT, Executive Officer, 224th MEDDET

#### 10. LESSONS LEARNED

An after action report will follow to be submitted from the Aerial Spray Office after further discussion on items which can be improved upon.

#### 11. ACKNOWLEDGEMENTS

The success of this operation was a direct result of an amalgamation of individuals who have trained and studied within their disciplines to develop a level of excellence in what they do professionally. In particular, Dr. (b) (6) and Mr. (b) (6) formed a synergy which administered aerial sprays in a timely manner in LA during a period of high entropy. All of the personnel at Duke Field, Florida deserve the Aerial Spray Flight's gratitude for being such amiable and gracious hosts. The entomologists and their commanders from the Air Force Research Laboratory also warrant special mention since their activities yielded important scientific information on the efficacy of these application methods. All FEMA, DoD, and State personnel involved with the mission provided excellent support.

//signed//

(b) (6) (b) (6) MAJ, USAFR  
RESEARCH ENTOMOLOGIST

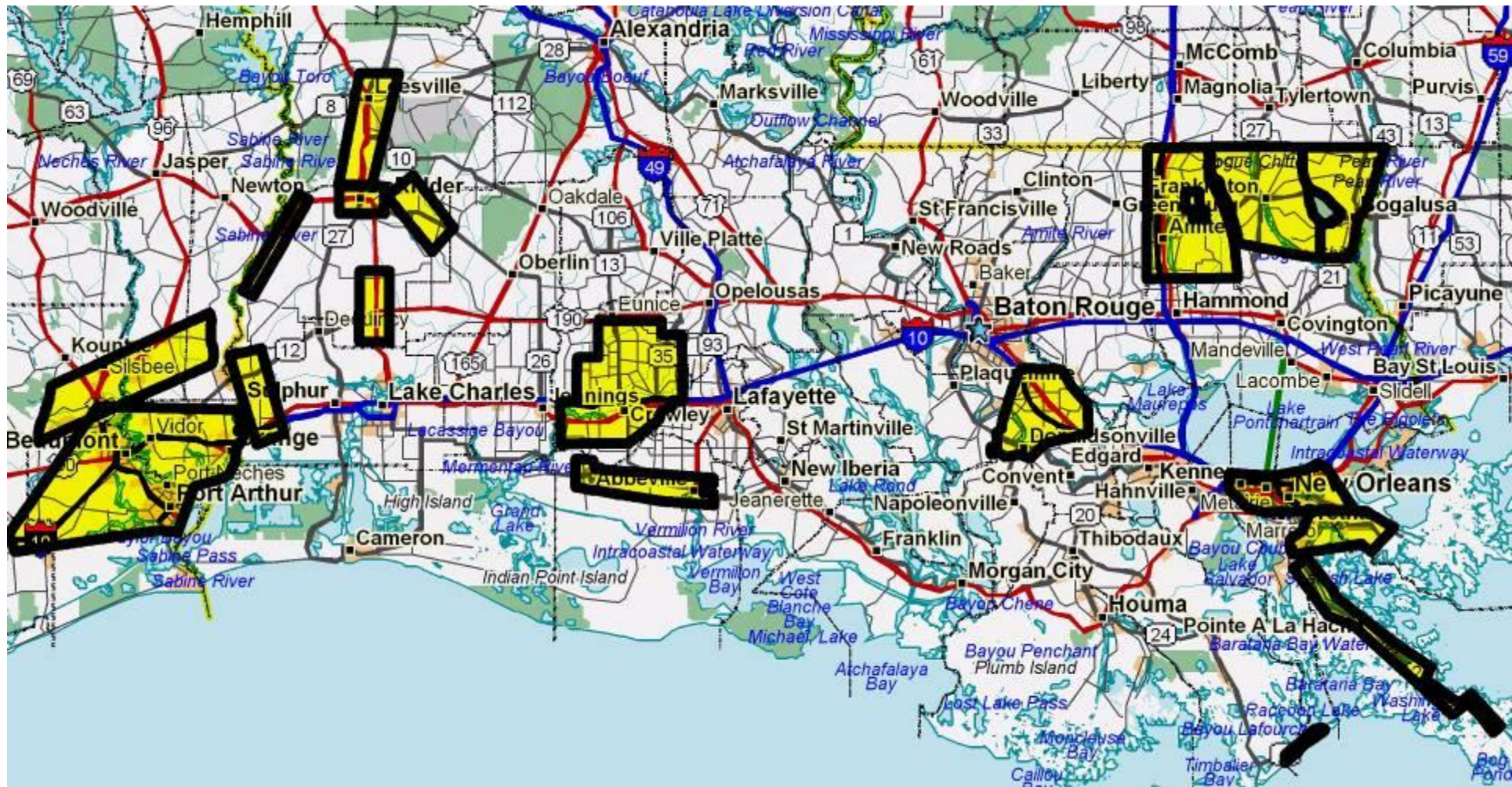


Attachment 1. Totals for USAF Vector Control Aerial Spray Flights following Hurricanes Katrina and Rita

DATE	STATE	AREA	ACFT #	ACRES	T. ACRES	FLY TIME	T. FLY TIME	Gal.	T. GAL	S.O.T.	T. S.O.T.
12-Sep	La.	St. Bernard Parish	9106	47,104	47,104	3.3	3.3	184	184	39	39
"	"	"	9107	45,824	92,928	3.3	6.6	179	363	40	1+19
13-Sep	La.	Orleans Parish	9106	28,416	121,344	4.0	10.6	222	585	49	2+18
"	"	"	9107	30,208	151,552	4.2	14.8	236	821	52	3+10
14-Sep	La.	"	9106	58,496	210,048	4.0	18.8	475	1296	2+01	5+11
15-Sep	La.	Washington Parish	9106	87,150	297,198	4.1	22.9	361	1657	1+15	6+26
"	"	"	9107	95,488	392,686	4.0	26.9	373	2030	1+21	7+47
16-Sep	La.	"	9106	85,409	478,095	3.9	30.8	340	2370	1+14	9+01
"	"	"	9107	104,704	582,799	4.0	34.8	409	2779	1+30	10+31
18-Sep	La.	Plaquemines & Jefferson Par	9106	36,352	619,151	4.2	39.0	142	2921	55	11+26
"	"	"	9107	61,366	680,517	4.1	43.1	242	3163	1+28	12+54
19-Sep	La.	Tangipohoa Parish	9106	110,592	791,109	4.3	47.4	432	3595	1+36	14+30
"	"	"	9107	102,912	894,021	4.4	51.8	402	3997	1+27	15+57
20-Sep	La.	Tangipohoa & Ascension	9106	74,368	968,389	4.4	56.2	295	4292	1+04	17+01
"	"	Parishs	9107	79,306	1,047,695	4.2	60.4	310	4602	1+08	18+09
21-Sep	La.	Ascension Parish	9106	58,100	1,105,795	4.0	64.4	230	4832	50	18+59
"	"	Orleans Parish	9107	11,008	1,116,803	2.9	67.3	43	4875	14	19+13
27-Sep	La.	Orleans Parish	9106	11,520	1,128,323	3.2	70.5	90	4965	25	19+38
"	"	"	9107	19,968	1,148,291	3.6	74.1	156	5121	42	20+20
28 Sep.	La.	Vermillion Parish	9107	84,349	1,232,640	4.6	78.7	336	5457	1+12	21+32
29 Sep.	La.	Acadia Parish	9106	72,276	1,304,916	4.6	83.3	294	5751	1+02	22+34
"	"	"	9107	97,488	1,402,404	4.8	88.1	373	6124	1+24	23+58
30-Sep	La.	Acadia Parish	9106	62,464	1,464,868	4.0	92.1	366	6490	55	24+53
"	"	"	9107	76,692	1,541,560	4.1	96.2	454	6944	1+06	25+59
1-Oct	La.	Calestieu Parish	9106	78,677	1,620,237	4.8	101.0	461	7405	1+07	27+06
1-Oct	Tx.	Orange Co.	9107	31,374	1,651,611	3.8	104.8	176	7581	27	27+33
3-Oct	La.	Beauregard Parish	9106	78,773	1,730,384	5.0	109.8	462	8043	1+08	28+41

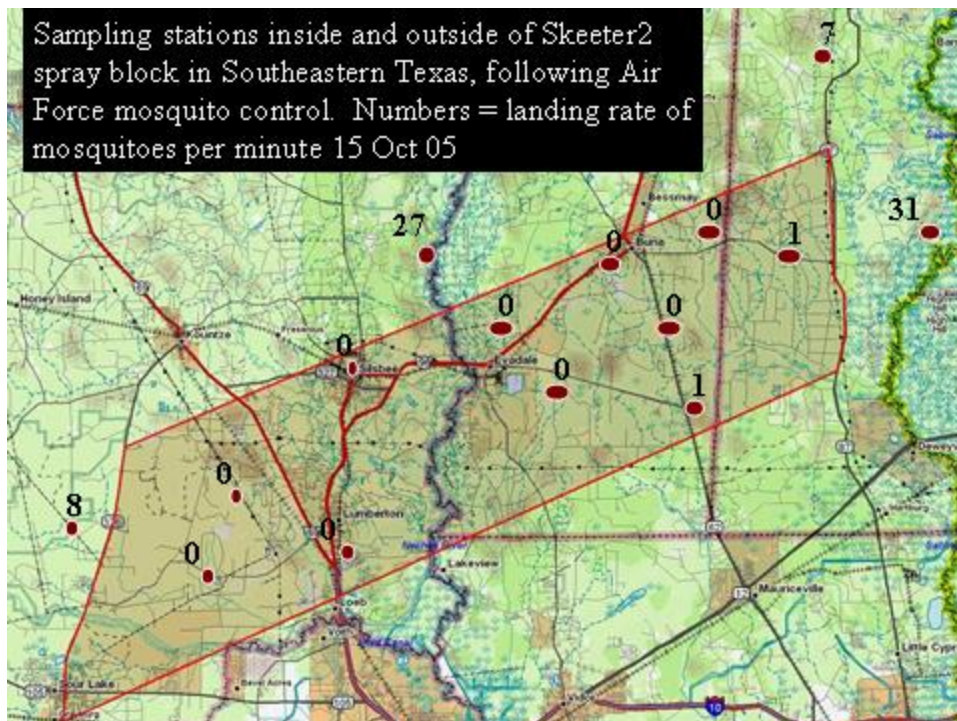
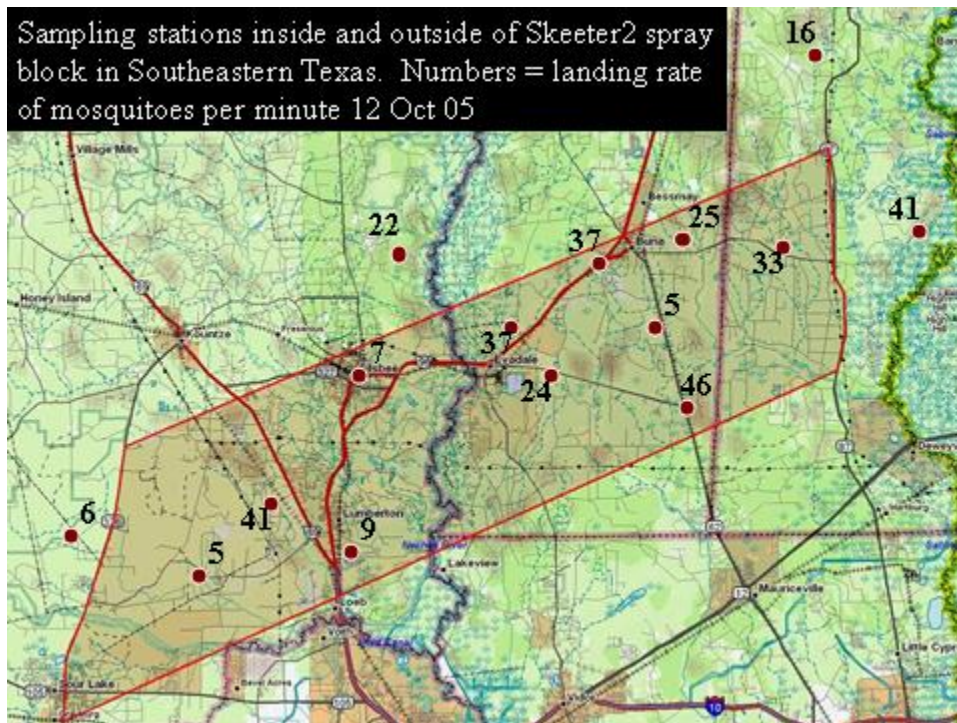
DATE	STATE	AREA	ACFT #	ACRES	T. ACRES	FLY TIME	T. FLY TIME	Gal.	T. GAL	S.O.T.	T. S.O.T.
3-Oct	Tx.	Orange Co.	9107	46,480	1,776,864	4.6	114.4	276	8319	40	29+21
4-Oct	La.	Beauregard Parish	9106	75,657	1,852,521	5.1	119.5	448	8767	1+05	30+26
4-Oct	Tx.	Orange Co.	9107	87,711	1,940,232	5.2	124.7	517	9284	1+16	31+42
5-Oct	La.	Vernon Parish	9106	51,541	1,991,773	4.0	128.7	302	9586	45	32+27
5-Oct	Tx.	Orange & Jefferson Co.	9107	44,984	2,036,757	4.0	132.7	262	9,848	39	33+06
6-Oct	Tx.	Orange & Jefferson Co.	9106	79,189	2,115,946	5.0	137.7	464	10,312	1+08	34+14
6-Oct	Tx.	Orange & Jefferson Co.	9107	74,752	2,190,698	5.0	142.7	434	10,746	1+04	35+18
8-Oct	Tx.	Orange & Jefferson Co.	9107	74,752	2,265,450	4.6	147.3	445	11,191	1+05	36+23
8-Oct	La.	Vernon Parish	9106	47,396	2,312,846	4.8	152.1	187	11,378	1+08	37+31
9-Oct	La.	Plaquemines Parish	9106	69,003	2,381,849	4.2	156.3	265	11,643	1+39	39+10
9-Oct	Tx.	Jefferson Co.	9107	74,043	2,455,892	4.7	161.0	434	12,077	1+04	40+14
11-Oct	Tx.	Jefferson & OrangeCo.	9106	94,122	2,550,014	5.3	166.3	490	12,567	1+21	41+35
11-Oct	Tx.	""	9107	66,556	2,616,570	5.1	171.4	384	12,951	57	42+32
12-Oct	Tx.	Orange Co.	9108	28,093	2,644,663	4.3	175.7	133	13,084	30	43+02
13-Oct	Tx.	Newton, Jasper, Orange, Hardin	9106	83,691	2,728,354	5.3	181	414	13,498	1+12	44+14
13-Oct	Tx.	Newton, Jasper, Orange, Hardin	9108	80,756	2,809,110	5.4	186.4	398	13,896	1+09	45+23
14-Oct	Tx.	All listed above plus Liberty	9108	71,512	2,880,622	5.0	191.4	417	14,313	1+01	46+24
		<b>S.O.T.=Spray on time</b>									
		<b>T.S.O.T.=Total spray on time</b>									
		Total Acres in Louisiana		1,942,607							
		Total Acres in Texas		938,015							
		Total gallons in Louisiana		9,069							
		Total gallons in Texas		5,244							

Attachment 2. Image of areas sprayed during JTF Katrina/Rita September and October 2005 by USAF Aerial Spray Flight.





Attachment 3. Figures showing landing rates of mosquitoes per minute inside and outside of the Skeeter2 spray block in Southeastern Texas.



### **LDHH Implements A Vector Control Management Plan**

The Louisiana Department of Health and Hospitals (LDHH) has developed a management plan in anticipation of the hatching of mosquitoes and flies due to the massive flooding in the area. Vector (disease carrying organisms) control is needed to protect public health from nuisances and diseases transmitted by mosquitoes and flies.

The LA DHH in coordination with LDAF, CDC, ATSDR, US EPA, DoD and in consultation with parish Mosquito Control Districts is implementing a vector control plan to reduce mosquitoes and flies in the areas affected by Hurricane Katrina.

Aerial application of routinely used pesticides, primarily Naled, will begin Sunday, September 11, 2005 on the East Bank of the Greater New Orleans area and surrounding areas. The spraying will occur during the last 3 hours of daylight. The US Air Force will conduct the aerial applications to assist vector control activities normally conducted by parish and local mosquito control districts.

The spraying will use the same pesticides as routinely sprayed to control mosquitoes in the south Louisiana region. "The timely initiation of preventive measures to control mosquitoes and flies is necessary to reduce the risk of vector-borne diseases" said Dr. (b) (6) .

Naled is a pesticide routinely used by Mosquito Control Districts in Louisiana. Naled is approved by US EPA and will be applied according to that agency's application rates. Studies have shown that Naled does not impact on human health or the environment when used for mosquito control.

The vector management plan will continue based on field monitoring of mosquitoes and flies in the region.

For more information call the Louisiana Department of Agriculture and Forestry's pesticide hotline at 225-925-3763.



**news**

1100 West 49th Street • Austin, Texas 78756 • (512) 458-7400

October 13, 2005

### **Air Force to Spray in Hardin, Jasper, Newton, Orange Counties**

The Texas Department of State Health Services (DSHS) announced today that post-Hurricane Rita aerial spraying for mosquitoes will begin tomorrow afternoon in Hardin, Jasper and Newton counties and that spraying will continue in part of Orange County.

The spraying is to prevent the possible spread of mosquito-borne illnesses, such as St. Louis encephalitis and West Nile infection, and to reduce a proliferation of nuisance mosquitoes after heavy rains and flooding in Southeast Texas.

Specially equipped U.S. Air Force Reserve C-130H cargo planes from the 910<sup>th</sup> Airlift Wing will be used in the spraying operation.

The gray planes may be flying as low as 150 feet above ground level when spraying. The project is expected to take several days. Flights will begin two hours before dusk and last for four to six hours each day.

Dibrom, a U.S. Environmental Protection Agency-approved insecticide, will be used. The application rate is one ounce or less of Dibrom per acre. The spraying poses no hazard to humans, animals or plants.

However, beekeepers in the region should take protective measures to prevent damage to their hives.

Aerial spraying was recently completed in Jefferson, Chambers and Liberty counties and in part of Orange County.

*(News Media: for more information contact (b) (6)  
(b) (6) )*

*DSHS Press Officer,*



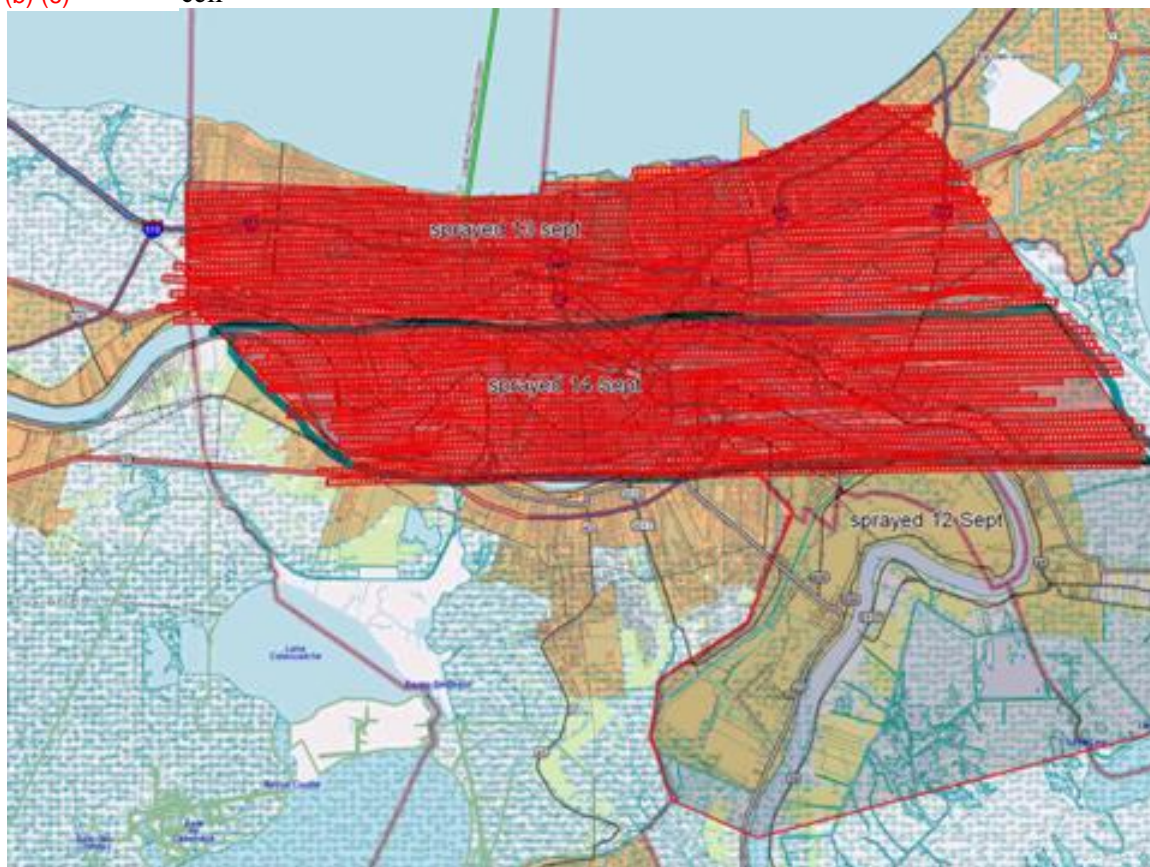
Attachment 6. Entomologist's Spray Report 14 September 2005.

Last night (14 Sept) the southern spray block of "Bug1", which included the heavily urbanized, downtown sections of the Orleans Parish was sprayed. Spraying began approx. 3 hrs prior to sunset in order to target filth flies. We used a 1000ft swath; 1 oz Dibrom/acre to treat 58,496 acres. See image below.

While on the ground in the French Qtr, we observed flies (sarcophagids, muscids, calliphorids, etc) which suffered heavy mortality even within 15 minutes after the spray pass. I expect that the fly problem will be largely eliminated as soon as they begin remove the trash bags from these areas. The fact that most of the trash we have encountered had been put into plastic bags has contained the fly problem which could have been much worse. Flies that were resting on the sides of building or especially in trees near garbage piles were obviously more impacted by the sprays than those flies under canopies or crawling around under the trash bags/piles. Environmental parameters were excellent yesterday evening again with partly cloudy skies and a light steady wind 3-6 knots @180-210°. Temperatures were in the high to middle 80's. We expect good control from such conditions and we hope they hold.

Tonight (15 Sept), the 1 AF CAT has approved Washington Parish ("Bug 3 & 4) as the next priority and it is scheduled to be sprayed (0.5 oz/acre Dibrom with 2,500 ft swaths for treating woodland and floodwater mosquitoes e.g., *Ps ferox*; *Ae vexans*). These blocks will require more than one sortie. Approx. 390,000 acres.

(b) (6) (b) (6) Maj, USAFR  
Entomologist, USAF Aerial Spray Flight  
Baton Rouge, LA  
(b) (6) cell







DEPARTMENT OF THE AIR FORCE  
910TH OPERATIONS GROUP  
3976 KING GRAVES RD UNIT 24  
VIENNA OH 44473-5924

12 January 2006

MEMORANDUM FOR 910 AW / DPMSC

FROM: 910th OPERATIONS GROUP/CC

SUBJECT: HUMANITARIAN MEDAL FOR HURRICANES KATRINA/RITA RELIEF

1. Records indicate the following individuals qualify for the Humanitarian Service Medal for immediate relief operations in support of Hurricanes Katrina and Rita relief from 29 August 2005 to 13 October 2005.

NAME	SSAN	UNIT	DATE
(b) (6) (b) (6) (b) (6) Maj	(b) (6)	757 AS	8 Sep 2005
(b) (6) (b) (6) (b) (6) TSgt		757 AS	8 Sep 2005
(b) (6) (b) (6) Maj		757 AS	19 Sep 2005
(b) (6) MSgt		757 AS	28 Sep 2005
(b) (6) Maj		757 AS	8 Sep 2005
(b) (6) SMSgt		757 AS	9 Oct 2005
(b) (6) Lt Col		757 AS	8 Sep 2005
(b) (6) (b) (6) Maj		757 AS	13 Sep 2005
(b) (6) Capt		757 AS	14 Oct 2005
(b) (6) Capt		773 AS	3 Oct 2005
(b) (6) TSgt		757 AS	8 Sep 2005
(b) (6) Maj		773 AS	8 Sep 2005
(b) (6) (b) (6) MSgt		757 AS	8 Sep 2005
(b) (6) (b) (6) A. Capt		757 AS	12 Sep 2005
(b) (6) (b) (6) L. MSgt		757 AS	28 Sep 2005
(b) (6) (b) (6) J. Col		910 OG	21 Sep 2005
(b) (6) Maj		757 AS	28 Sep 2005
(b) (6) CMSgt		757 AS	13 Sep 2005
(b) (6) (b) (6) Maj		757 AS	13 Sep 2005
(b) (6) Maj		757 AS	13 Sep 2005
(b) (6) SMSgt		773 AS	27 Sep 2005
(b) (6) MSgt		76 APS	12 Sep 2005
(b) (6) (b) (6) Lt Col		757 AS	12 Sep 2005
(b) (6) Maj		910 OSS	8 Oct 2005
(b) (6) MSgt		757 AS	8 Sep 2005
(b) (6) Lt Col		757 AS	3 Oct 2005
(b) (6) (b) (6) T. Maj		910 OSS	8 Sep 2005
(b) (6) (b) (6) Lt Col		757 AS	19 Sep 2005
(b) (6) (b) (6) Maj		757 AS	8 Sep 2005
(b) (6) SSgt		757 AS	28 Sep 2005
(b) (6) (b) (6) Maj		757 AS	27 Sep 2005
(b) (6) (b) (6) (b) (6) Capt		757 AS	18 Sep 2005

(b) (6)	(b) (6) <sup>(b) (6)</sup> Lt Col	(b) (6)	757 AS	27 Sep 2005
(b) (6)	. MSgt		757 AS	13 Sep 2005
(b) (6)	(b) (6) Maj		757 AS	8 Sep 2005
(b) (6)	. Lt Col		910 OSS	3 Oct 2005
(b) (6)	MSgt		757 AS	8 Sep 2005
(b) (6)	MSgt		757 AS	8 Sep 2005
(b) (6)	MSgt		757 AS	8 Oct 2005

(b) (6) <sup>(b) (6)</sup> (b) (6) Col, USAFR  
Commander, 910th Operations Group



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5926



21 June 2004

MEMORANDUM FOR 757 AS/DO

FROM: 757 AS/DOS

SUBJECT: Swath Characterization Test and Training Mission, Langley AFB

**1. Purpose:** To confirm an appropriate swath width when spraying ULV insecticides with fuselage booms. This test was a continuation of fuselage boom testing from Dec03 and Jan04, which showed a 2,000 ft swath width was obtained with mineral oil sprays. The current test reported here, used naled, further characterized the swath width, and confirmed insect mortality along the length of the effective swath by using caged, live mosquitoes. We propose to use the fuselage configuration for most ULV applications because it can be configured quickly, without the need of additional equipment, as is the case for the wing booms. The fuselage configuration will decrease our footprint in theater when the Spray Flight deploys. Finally, the high-pressure spray system, under development, will also use the fuselage boom configuration, so we are generating baseline data for comparison when the new system becomes available.

**2. Participants:** A list of test participants are included in attachment 1.

**3. Spray Configuration:**

Mass-SP2G  
Aircraft Number: 99105  
Mission Identifier: QZNRKA153

**4. Spray Parameters:**

Booms—Fuselage only.  
Nozzles—8008 TeeJet.  
Number of Nozzles—3 and 4 per side respectively, oriented straight down.  
Airspeed—200 knots ground speed.  
Altitude—150' and 500' AGL.  
Wind—90 degree crosswind component.

**5. Itinerary:**

01 June: Personnel Arrive at Langley AFB, VA. Total ferry time was 1.5 hours.  
02 June: No sorties flown. Winds out of bounds for spray; waiting for public notification for Craney Island area.  
03 June: One testing sortie flown with 2 individual tests completed.  
04 June: Return to Youngstown ARS. Ferry time 1.4 hours.

## 6. Methods:

Ten data collection stations were setup with spinning impingers (“spinners”) and placed in a west-east orientation along an access road on the north end of Craney Island (see attachment 2). Spinners were located 700’ apart and were equipped with Teflon-coated microscope slides to document droplet size and drift distance from point of release. Collection points also included caged mosquitoes as bioassays. Mosquitoes were collected the night before and placed 25 individuals per cage (73% *Culex salinarius* : 12% *Ochlerotatus sollicitans* : 15% other). Two cages with mosquitoes served as controls and were deployed an hour prior to the application and then transferred outside the spray area. The aircraft flew a spray pass north to south along the east access road on Craney Island, perpendicular to the line of spinners. Spray-on time was 60 seconds, half of which was dispensed prior to the aircrafts’ point of intersection with the collection transect. During the first test, aircraft offset was 200 ft from the 1<sup>st</sup> spinner location on the first pass and by 1000’ on the second. Aircraft altitude was 150’ AGL and flow rate was reported as 3.9 gal/min. Following a 30 minute waiting period, microscope slides and mosquitoes were collected to be counted later and were replaced with fresh slides and bioassay cages. Mosquitoes were transported immediately to the laboratory where they were transferred to fresh holding containers. Mosquito mortality was determined at 2, 12, and 24 hr. intervals. The test was repeated with the same parameters, except a single pass was made rather than two. Spray droplets were measured under a compound microscope equipped with a reticule. The target number of droplets to be measured per slide was 100. Ground wind conditions were stable during both tests and winds were recorded during the first test between 60-95 degrees at an average speed of 5 knots. Winds at altitude were from the same direction but averaged 8 knots. During the second test ground winds were 106-138 degrees at an average speed of 6 knots (in the aircraft 140° @ 11 knots). The average flow rate for the first two passes was 4.0 gal/min and 3.4 gal/min for the single pass during the second test. Boom pressure was measured between 25-30 psi.

**7. Results:** Our findings here confirm our previous work determining the real swath width of the fuselage boom configuration. Results were outstanding with mosquito mortality at 100% over the first 2,000 feet in both tests validating our projected 2,000 foot swath for ULV mosquito control with fuselage booms. Twelve hour mortality data is shown graphically in attachment 3. The second test, which consisted of a single pass, resulted in 100% mortality of caged mosquitoes 3,500 feet downwind and 93% mortality at 4,900 ft downwind. The two caged mosquitoes serving as controls showed no mortality at the 12 hour mark and 12% mortality after 24 hours. Corresponding volume median diameter (VMD) values of droplets collected at downwind sampling stations are included in attachment 4. The relative size of droplets collected was greatest near the flight path of the aircraft, and dropped substantially as downwind distance from the flight path increased. Values for VMD established during these tests are similar to previous work with the fuselage boom configuration. The first test had a range between 22.6 to 5.8 microns over the 1.2 mile sampling transect while the droplets from the second test ranged between 19.3 to 5.9 microns.

**8. Conclusions:** Ultra Low Volume (ULV) mosquito control sprays using the fuselage boom configuration were shown to be an effective method of application with the USAFR C-130H spray system. High mosquito mortality combined with proper droplet



size make the fuselage configuration an excellent choice for adult mosquito control operations. Swath characteristics generated from the tests at Craney Island, VA are on par with previous tests of the C-130 ULV wing-boom configuration. Within the field of mosquito control, it is generally accepted that the most effective droplet size range is 7-22 microns. The current VMDs reported here largely fall within this range. In fact, the VMD ranges generated in this study are substantially smaller than are reported from smaller slower flying aircraft. Because the flat-fan nozzles used in the majority of aerial mosquito control operations rely on wind shear to break up droplets, the smaller VMDs reported here may be a result of the relatively high flight speed (200 knots) typical of the Air Force operation. Additionally, calculated droplet sizes using Teflon-coated slides is significantly smaller than the size of droplets measured in a wind tunnel with a Malvern laser. This is because the field method of using slides tends to bias the larger droplets, at the expense of excluding smaller droplet spectrum. While the exact correlation between underreported droplet sizes on Teflon slides and those measured with a laser is a work in progress, it is certain that the droplets described in this study are well within the acceptable range for mosquito control. Currently, there is not a domestic wind tunnel available that will accommodate the 200 knot requirement and allow chemical testing. Thus, a future research objective is to determine a coefficient that will allow for congruity between the field method of using Teflon-coated slides and laser/wind tunnel technology.

**9. Recommendations:** Use the fuselage boom configuration for adult mosquito control as needed to reduce operational footprint, maintenance configuration time, and chemical waste. Continue with preparations for implementation of high pressure system which will be designed to use a similar fuselage configuration. Further swath characterization with this configuration should be a testing priority with special attention given to additional pesticide formulations, efficacy in wooded areas, and different release altitudes.

**10. Acknowledgements:** Excellent work by both the Aircrew and Spray Maintenance helped assure a successful test. Langley AFB provided vehicle support. The Army Corps of Engineers gave access and approval to spray at Craney Island on short notice. The Portsmouth mosquito control staff offered their knowledge and technical support to the test.

//Signed//

(b) (6) (b) (6)  
Research Entomologist

CAPT, USAFR

**Attachments:**

1. List of participants
2. Site map
3. Graph of mosquito mortality
4. Recovered droplet sizes

## 910 AW PARTICIPANTS

**a.     Aircraft:**

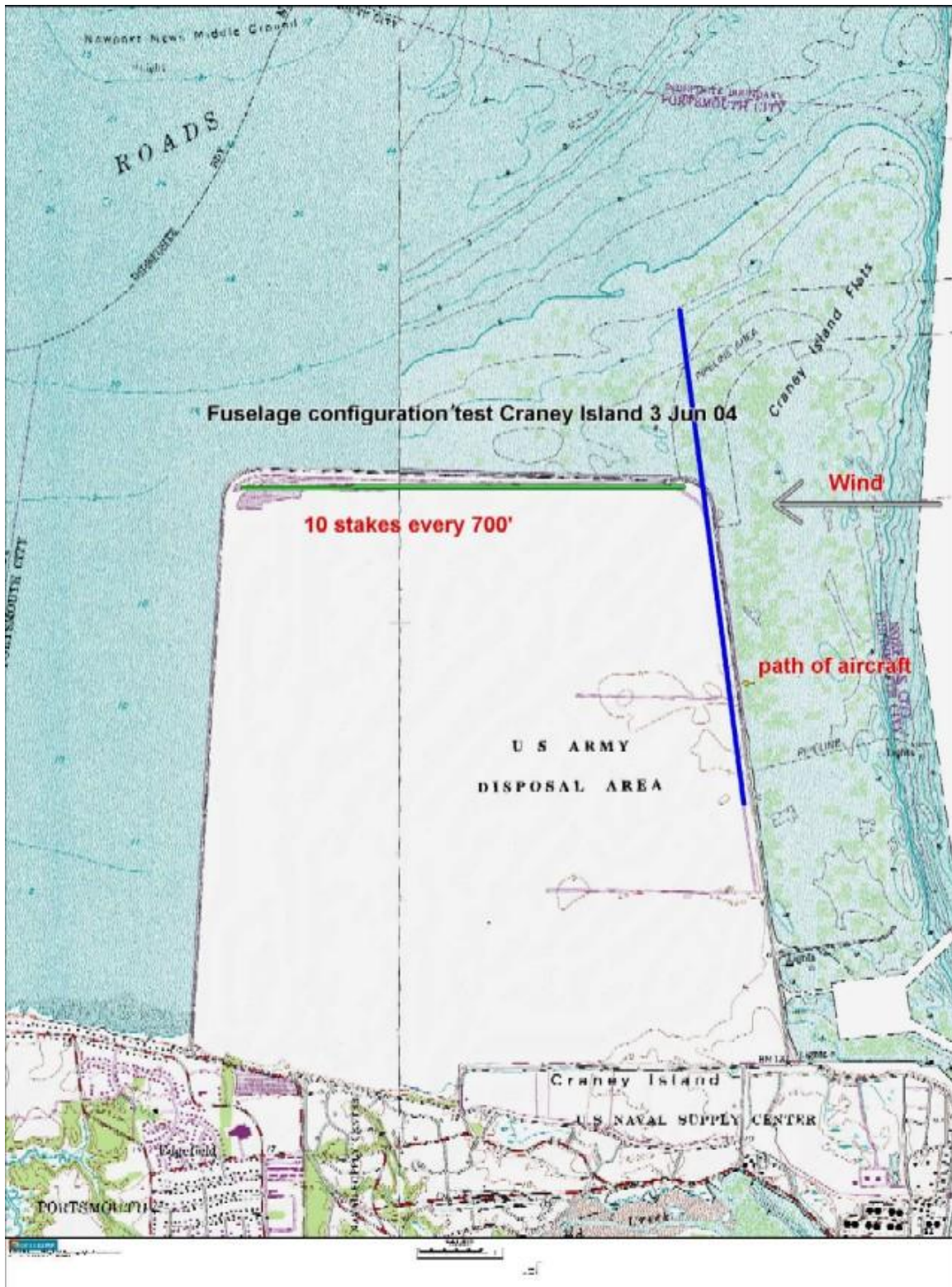
- (1)     Mission Commander: MAJ (b) (6)     (b) (6)
- (2)     Pilots: MAJ (b) (6)     (b) (6)     MAJ (b) (6)
- (3)     Navigators: MAJ (b) (6) (b) (6) (b) (6)
- (4)     Flight Engineers: MSG (b) (6)
- (5)     Spray Operators: MSG (b) (6)     , MSG (b) (6)     , TSG (b) (6)

**b.     Maintenance:**

- (1)     Spray Maintenance: MSG (b) (6)     , TSG (b) (6)     , TSG (b) (6)  
          (b) (6)
- (2)     Crew Chiefs: SSG (b) (6)     , SRA (b) (6)

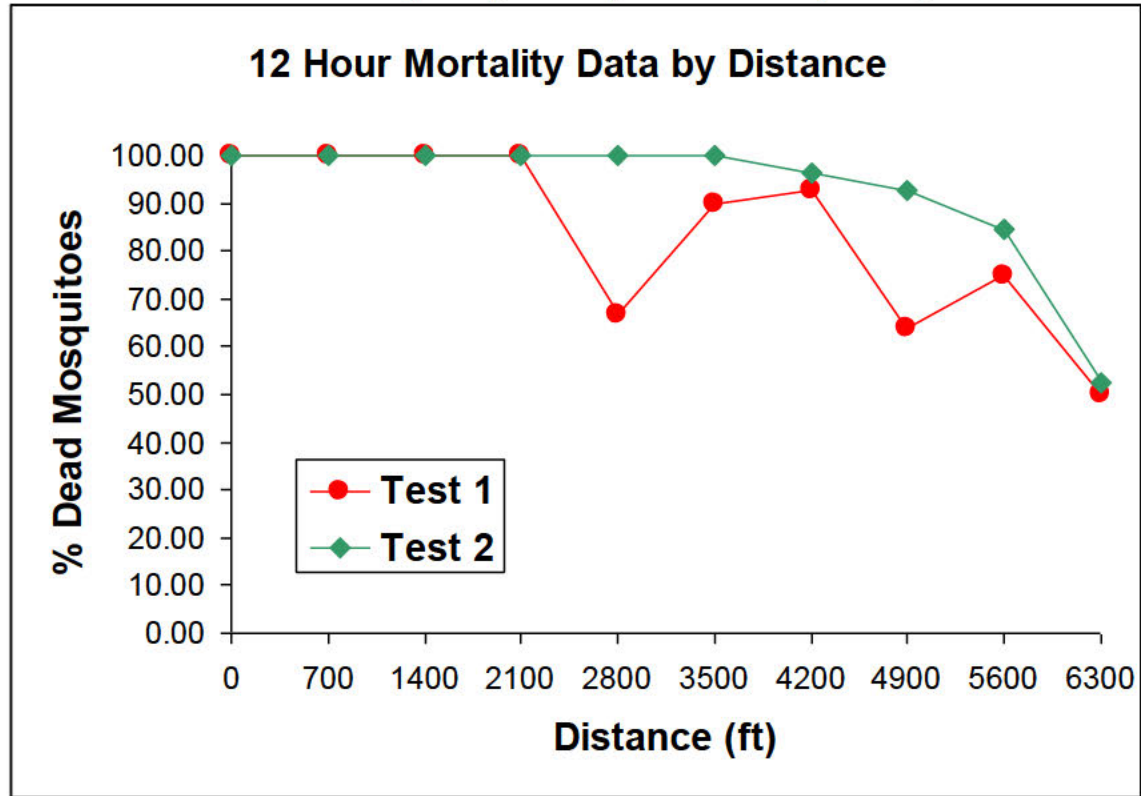
**c.     Entomologists: LTC (b) (6) (b) (6) MAJ (b) (6) (b) (6) CPT (b) (6) (b) (6)**  
          CPT (b) (6)     City of Portsmouth Staff (lead by (b) (6))

Attachment 2. Map of test area.





Attachment 3. 12 hour mortality of caged mosquitoes on Craney Island, June 04



Attachment 4. Volume median diameter (VMD) of droplets in micrometers collected downwind of aircraft

Distance from AC (feet)	0	700	1400	2100	2800	3500	4200	4900	5600	6300
test 1	22.6	10	7.3	7.9	6.3	6.8	6.4	6.5	6	5.8
test 2	No data	15.2	19.3	15	12.6	7.7	7.8	7.4	6.5	5.9



DEPARTMENT OF THE AIR FORCE  
YOUNGSTOWN AIR RESERVE STATION  
AERIAL SPRAY UNIT  
VIENNA OH 44473-5924



9 September 2008

MEMORANDUM FOR: FEMA

FROM: Colonel (b) (6)

SUBJECT: Air Force Aerial Spray Unit for vector control

1. In light of the recent hurricane activity, the resulting potential for transmission of mosquito-borne illness, and the impact on outdoor activities, including recovery efforts, I would like to confirm the ability of the Air Force Aerial Spray Unit as part of the emergency response package.
2. The Air Force Aerial Spray Unit trains year round maintaining the capability to respond to public health emergencies by participating in aerial spray operations in various locations throughout the United States. Our Unit always abides by federal, state, and local pesticide laws including any directions listed on a pesticide label. The Spray Unit has a great reputation among the Public Health Community, receiving the CDC's highest non-agency award in 2006, and a solid history for responding to vector control emergencies following Hurricanes. I am attaching documentation which describes the Spray Unit's history and success during Rita/Katrina efforts.
3. Response to past emergencies by the Unit has been swift. For example, following Hurricane Katrina the Unit was in place and ready to begin operations within 36 hours after receiving a Mission Assignment. Once assigned, the Unit has the largest capacity in the world to provide vector control! While private assets should be considered and utilized first, the requirements of a large area timely response may drive the need for utilizing the AF Spray Unit's large area spray capability.
4. During past hurricane relief efforts (Floyd and Rita/Katrina), the Spray Unit coordinated the purchase of pesticide and can do so again with approval and funding from FEMA. The host state has always selected the pesticide type. Therefore, use of the DOD as an aerial applicator should not result in a protracted waiting period.
5. When the Air Force Spray Unit is tasked for arthropod vector control, the cost per acre is relatively comparable to the civilian contractors. For example, if the Spray Unit had responded to Hurricane Dolly emergency mosquito spray applications, the estimated cost to FEMA would have been approximately \$0.95-1.01/acre. This value is based on cost estimates calculated to include aircraft flight hours, chemical acquisition, maintenance, personnel housing and transportation. This value is less than half what was charged by

commercial applicators using the same chemical based on costs posted in the Rio Grande Guardian 31 July. With good weather, the area could have been accomplished within 7 days of deploying the Unit with 2 C-130 aircraft spraying on an average 80K acres/day per aircraft.

6. Any further questions regarding the Air Force Aerial Spray Unit capabilities, operating practices, or ability to respond to a National Emergency can be directed to my point of contact: Maj (b) (6)

(b) (6)

Col, USAFR  
Commander, 910<sup>th</sup> Airlift Wing

Attachments:

1. Post-Mission Report Katrina/Rita Aerial Sprays
2. Post-Hurricane Rita mosquito surveillance and the efficacy of Air Force aerial applications for mosquito control in east Texas
3. The US Air Force Aerial Spray Unit: A History of Large Area Disease Vector Control Operations, WWII Through Katrina

Hurricane Katrina  
Billings

Bill Number	Dov #	Date/Amounts
<b>3505R0005-04</b>	CRD00513/5320 day	9-Nov-05
Spray Chemicals		\$980,640.00
Fuel for Aircraft		<del>\$150,395.00</del>
Aircraft Parts (644)		<del>\$19,163.66</del>
Aircraft Parts (609)		<del>\$1,704.13</del>
Chemicals (IMPAC purchased)		\$96,322.00
757 IMPAC purchases		\$1,000.00
Per diem Charges		\$59,034.44
TOTAL BILLED ON BILL 5-04		\$1,308,259.23 **

	Dov #	Amounts
1081 REFUND	RD00086/6024 day	
Aircraft Fuel		<del>-\$150,395.00</del>
Aircraft Parts (644)		<del>-\$19,163.66</del>
Aircraft Parts (609)		<del>-\$1,704.13</del>
TOTAL REFUNDED		-\$171,262.79 **

Bill Number	Dov #	Date/Amounts
<b>3506R0012-04</b>	CRD01439/6041 day	7-Feb-06
Civilian Overtime		\$1,904.43
Per diem Charges		\$6,355.91
Remaining 757 IMPAC Charges		\$633.64
TOTAL BILLED ON BILL 12-04		\$8,893.98 **

Bill Number	Dov #	Date/Amounts
3506R0011-01	CRD01387/6039 day	27-Jan-06
Civilian Over time		\$1,638.38
Per Diem		\$28,867.13
757 IMPAC purchases		\$415.98
Aircraft Maint IMPAC purchases		\$1,967.77
TOTAL BILLED on BILL 11-01		\$32,889.26

Bill Number	Dov #	Date/Amounts
	CRVA6729/7067 day	4-Jan-07
Aircraft Maint IMPAC Charges		
Per Audit Report		\$5,429.88

Bill Number	DOV #	Date/Amount
Aircraft Engine (Birdstrike)		\$85,816.52
Aircraft Parts		\$13,987.66
TOTAL Billed on this bill		\$99,804.18 **

TOTAL Billed/Received	\$1,284,013.74
-----------------------	----------------

FY05 MONEY Collected	\$1,245,694.60
FY06 MONEY Collected	\$38,319.14

\*\*FY05 CHARGES



**MISSION ASSIGNMENT REIMBURSEMENT REQUEST  
TRANSMITTAL FORM**

**SECTION I: ESF AGENCY SUBMISSION**

AGENCY: <u>910 AW / PMF</u> ADDRESS: <u>3976 King Graves Road Unit 05</u> <u>Youngstown Air Reserves</u> <u>Vicenza OH 44473-5905</u>	Current Bill Amount: <u>4092.92</u> Fiscal POC: <u>(b) (6)</u> Phone: <u>(b) (6)</u> Fax: <u>330 609-</u>
Type of Billing: <input checked="" type="checkbox"/> SF#1080 <input type="checkbox"/> SF 1081 (OPAC) <input type="checkbox"/> Other: _____	
Agency Location Code: _____ ESF # _____ ESF Agency Bill Number: <u>3506R0012-04 +</u> Primary ESF Tasking: _____ <u>3505R0005-04</u> Support ESF Tasking: _____ MA Number: _____ FEMA Disaster Number: <u>1603</u>	
Mission Description: <u>Mosquito Spraying due to Hurricane Katrina</u>	

Projected Completion Date: _____		Revised Completion Date: _____	
This is a partial bill <input type="checkbox"/> Resubmittal <input type="checkbox"/> Final Bill <input checked="" type="checkbox"/> no further obligations pending.		reviewed and are relevant to the mission assigned. Costs are reasonable, supported agency, and are not funded by another source. (Include applicable signatures)	
(b) (6)		Primary ESF Agency Project/Program Administrator <u>31 Jan 06</u> Date	<u>330-609-1517</u> Phone
		Support ESF Agency Project/Program Administrator _____ Date	_____ Phone
		Primary ESF Agency Financial Officer _____ Date	_____ Phone
		Support ESF Agency Financial Officer _____ Date	_____ Phone
Attachments: <input type="checkbox"/> SF 1081 (OPAC) <input checked="" type="checkbox"/> SF 1080 <input type="checkbox"/> Other Treasury Approved Form		Attachments: Purchase of Equipment Forms Refer to the Financial Management Annex to the Federal Response Plan (FRP) for applicable forms.	

**SECTION II: FEMA USE ONLY**

LOG# _____	PAYMENT AMOUNT APPROVED: _____ State Cost Share %: _____ State Cost Share Amount: _____
------------	---

ROUTING	SIGNATURE AND DATE
FINANCIAL REVIEW	
EXCEPTION: Returned to Agency	
PROGRAM REVIEW	
MISSION ASSIGNMENT	
COORDINATOR REVIEW	
LOGISTICS REVIEW <input type="checkbox"/> YES <input type="checkbox"/> NO	
DRM APPROVAL	
FORWARD FOR REIMBURSEMENT/ PAYMENT	
FINAL PAYMENT / DEOBLIGATION	DE-OBLIGATION AMT: _____

To receive reimbursement, completion of this form is required.

**MISSION ASSIGNMENT REIMBURSEMENT REQUEST  
TRANSMITTAL FORM**

Continuation (Page 2)

SECTION III: BILL SUBMISSIONS			
ESF AGENCY BILL ID NUMBER:: <u>3506R0012-04</u>		Previously Billed Amount: <u>1308,259.23</u>	Credit <u>171,262.79</u> <u>1145,890.42</u>
Number of bills submitted for this MA (including this bill) <u>2</u>		Current Bill Amount: <u>88,93.98</u>	
Total MA obligation (from RFA)		Total Billed to date: (including this bill)	
CURRENT CHARGES			\$ AMOUNT
Regular Hours - Unappropriated ONLY			<u>200</u>
Overtime or premium pay hours			<u>bill</u>
11xx Unappropriated wages, OT, and premium pay <u>Civilian Overtime</u>			<u>1904.43</u>
21 xx Travel of persons <u>Travel Per Diem</u>			<u>6355.91</u>
22xx Transport of things			
25xx Service Contracts			
25xx Equipment Lease Contracts			
26xx Materials <u>IMPAC Purchases</u>			<u>633.64</u>
31xx Equipment <u>plane repairs</u>			
31xx : "Sensitive" items			
31xx : Agency Stock replacement / repair			
Overhead (List each line item)	Qty.	Rate	
<u>Chemicals to Spray</u> <u>Fuel for aircraft</u>			= \$0.00
			= \$0.00
			= \$0.00
			= \$0.00
			= \$0.00
			= \$0.00
			= \$0.00
			= \$0.00
			= \$0.00
			= \$0.00
All Other (List each line item)	Qty.	Rate	
			= \$0.00
			= \$0.00
			= \$0.00
			= \$0.00
			= \$0.00
			= \$0.00
			= \$0.00
			= \$0.00
<b>TOTAL AMOUNT BILLED</b>			<b><u>8893.98</u></b>

Regular labor of permanent federal agency personnel and overhead cost are not eligible for reimbursement except when costs incurred would normally be paid from a trust, revolving or other fund. The Financial Manager of the agency requesting reimbursement for these costs must provide written certification with the bill stating that costs would normally be paid from a trust, revolving or other fund.

Agencies that qualify and may be seeking reimbursement must submit certified annual overhead rate proposals to FEMA OFM/DFD for approval prior to billing. OMB Circular A-87 should be used as a guide for this purpose. Indirect cost pools must be defined to explain how the costs are derived and applied. Indirect rates should be negotiated with FEMA annually.

References: MA billing instructions <http://www.fema.gov/ofm/billinst.htm>  
MA Progress report and instructions <http://www.fema.gov/ofm/maprogress>

8893.98  
1,308,259.23  
171,262.79  
1,136,996.44



August 1, 2008

(b) (6)

DHS FEMA VI  
IMAT - Operations Branch Director  
800 North Loop 288  
Denton, TX 76209

Dear Ms. (b) (6)

We have reviewed the landing count data provided to us by (b) (6) Texas Medical Entomologist, and others in Texas. Data sheets show that landing counts were made in a variety of locations within Hidalgo County on 7/29-30/2008. Most landing counts appear to have been conducted during daylight hours from 0730 to 1200, with a few collections made in the afternoon or evening hours. There are approximately 90 landing counts recorded that come from a variety of zones within the county, and the data appear to be representative of the flooded area.

Though there are a few areas with low counts (0-10), most are very high (30 or more per minute). This is consistent with observations from similar situations. The heavy rains associated with Hurricane Dolly have produced unusually large populations of floodwater mosquitoes across the affected area. Some of the species in these collections (based on identification provided by (b) (6) in a conference call) are quite mobile and can fly considerable distances from the larval habitats (floodplains, flooded pastures and fields, rice fields, standing water in woodlots) where they were produced.

We believe that biting mosquito populations at this density are having a significant impact on outdoor activities and are likely entering houses that are not adequately protected by window screens and/or air conditioning. It is also likely that evening/night time landing counts are even higher than recorded in the daytime counts, since most of the species encountered have their blood-feeding activity peaks in the evening and early nighttime hours. These are mosquito densities that would not be tolerated by most communities, even in normal situations where the community was not in the middle of recovering from a hurricane and flooding rains.

We believe that conducting aggressive mosquito control and providing repellents to residents and recovery workers are appropriate responses to this situation. Ground or/and aerial applications of mosquito adulticides when properly applied would provide short term relief from biting mosquitoes and benefit the recovery effort. Depending on the size of the area treated, weather patterns, and the mosquito species involved, the mosquito populations may rebound following treatment and may require re-treatment if the recovery operation is still in progress and exposure to the mosquitoes is unavoidable.

Applications of adulticides under the current conditions in Texas are addressed by the FEMA guidelines (see web site) which are copied or paraphrased below.

[http://www.fema.gov/government/grant/pa/9523\\_10.shtml](http://www.fema.gov/government/grant/pa/9523_10.shtml)



A large population of biting mosquitoes can pose an immediate threat to public health even when evidence of vector-borne diseases is not present or significant in the disaster affected area. Of particular concern are the following:

1. An extraordinary or unusual number of biting mosquitoes that can seriously impede response efforts. Workers that are required to work out-of-doors (i.e., debris removal operations, protection of damaged structures, restoration of power and telephone service, etc.) can often be significantly hampered in their work.
2. Housing may be compromised due to extended power outages (i.e., windows and doors are opened), which could increase the general public's exposure to mosquitoes. This could in turn result in secondary infections, especially among those with weakened immune systems such as the elderly, the very young, or the sick.

In addition, FEMA guidelines state:

Vector control measures may be eligible in the disaster area as emergency protective measures under 44 CFR §206.225(a)(3)(i). FEMA may provide reimbursement for such costs at the written request of the State or local public health officials after FEMA consults with the Centers for Disease Control and Prevention (CDC), based on the following:

2. A determination that a significant increase in the mosquito population and/or the change of biting mosquito species poses a threat to emergency workers who are required to work out-of-doors; thereby significantly hampering response and recovery efforts. Such evidence may include an abnormal rise in landing rates or trap counts, significant changes in species composition or estimate of infection rates, when compared to pre-disaster surveillance results.

We believe that the currently available data from Texas supports mosquito control activities such as adulticiding (e.g., ground and aerial applications), increased surveillance, and increased larvaciding. In addition, we feel that it is imperative that personal protective repellents be made readily available to residents, and recovery workers in the affected areas.

Sincerely,

(b) (6) Ph.D.  
Chief, Ecology, Entomology Activity  
Division of Vector-Borne Infectious Diseases  
Centers for Disease Control and Prevention  
3150 Rampart Road  
Fort Collins, CO 80521

Telephone: (b) (6)

Fax: 970 221-6476

E-mail: (b) (6)

and

(b) (6), Ph.D.

Chief, Arboviral Diseases Branch

Division of Vector-Borne Infectious Diseases

National Center for Zoonotic, Vector-Borne and Enteric Diseases

Centers for Disease Control and Prevention

3150 Rampart Road

Fort Collins, CO 80521

Phone (b) (6)

(b) (6)

U.S. Department of Homeland Security  
Federal Emergency Management Agency  
FEMA-DR-1780-TX  
Joint Field Office  
4001 North 23<sup>rd</sup> Street  
McAllen, TX 78501



# FEMA

August 2, 2008

MEMORANDUM FOR: Sandy Coachman, FCO  
FROM: Donald R. Fairley, REO  
SUBJECT: Vector Control in Cameron, Hidalgo and Willacy Counties for FEMA-DR-1780-TX

The purpose of this memo is to provide guidelines which must met in order to do aerial spraying in Cameron, Hidalgo and Willacy Counties.

1. Spraying must be the direct result of declared health and safety risk.
2. Spraying must be complete prior to August 23, 2008
3. Spray must be an adulticide (a pesticide designed to kill adult/mature mosquitoes).
4. The only approve chemicals are:
  - Products within the Pyrethrum family
  - Bayluscide
  - Dibromo/Bromex
5. Spraying is restricted to urban areas and Colonias. The attached map shows the aerial spraying target areas. However, within the target region, there are restricted zones which must not be sprayed. These sensitive areas are designated as Federal Lands/Sensitive Areas and Texas Parks and Wildlife Areas. Spray routes must be developed to avoid these sensitive areas and protect them from the effects of over-spray.

These parameters have been coordinated with the U.S. Fish and Wildlife Service (USFWS) and Texas Parks and Wildlife Department (TPWD) to insure compliance with the Endangered Species Act and other appropriate laws and regulations.



## Mosquito Spraying

### Justification:

In order for a state to request mosquito spraying or reimbursement for mosquito spraying, they must first provide one of the following support documents:

- Landing counts in accordance with CDC guidance, and/or
- Trapping and evidence of disease carrying mosquitoes in accordance with CDC guidance.

These methods must determine that the mosquito population meets the nuisance criteria through the landing counts or clearly identify that the current mosquito population is disease carrying, thereby creating a public health concern. This determination must be made by CDC in coordination with state and local health departments.

### Coordination Agencies:

Once the above criteria are met, coordination/approval with the following entities must occur:

- Approval from US Fish and Wildlife. This coordination usually performed by FEMA Environmental representative must include support documentation such as:
  1. Spraying must be the direct result of declared health and safety risk.
  2. Spraying must be complete prior to date determined by US Fish and Wildlife.
  3. Spray must be an adulticide (a pesticide designed to kill adult/mature mosquitoes).
  4. The only approved chemicals are:
    - Products within the Pyrethrum family
    - Bayluscide
    - Dibromo/Bromex
  5. Spraying is restricted to urban areas. Within the target region, there are restricted zones which must not be sprayed. These sensitive areas are designated as Federal Lands/Sensitive Areas and State Parks and Wildlife Areas. A preventative half mile to one mile buffer zone around these areas may be requested. Spray routes must be developed to avoid these sensitive areas and protect them from the effects of over-spray.
- If the State conducts the spraying additional coordination with following may need to occur:
  - Federal Air Administration (FAA)
  - Federal Prison Facilities
  - Customs and Border Patrol if spraying along a border area.

If the State does conduct spraying and wants costs to be reimbursed under Public Assistance they must meet the criteria outlined in *Eligibility of Vector Control (Mosquito Abatement) RP9523.10*.

- If FEMA determines to conduct the spraying using Stafford Act funds under DFA, two options are available:

- Contract with a commercial aerial applicator provider, licensed to spray mosquitoes. **This is the preferred option.**
- The second option is to Mission Assign Department of Defense (DOD). If this option is activated, in addition to the above coordination with CDC, USFWS, FAA, CBP (border areas) coordination must also be done with US Environmental Protection Agency and potentially Government Services Administration. DOD does not purchase chemicals for spraying and does not spray in accordance with the manufacturer's pesticide label. As a result, additional coordination with GSA to potentially purchase the chemical and coordination with EPA and CDC to ensure appropriate application of the chemical occurs. This generally results in a waiver from EPA. This process is a lengthy and time consuming process and can take up to a week or more to conduct all the coordination with state and federal agencies prior to movement of any personnel or aircraft.

STATE # 370

STATE # 370

FEMA # 038-08-112 284  
038-08-112 284

Print this page

U.S. DEPARTMENT OF HOMELAND SECURITY  
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**ACTION REQUEST**See reverse side for Paperwork Burden  
Disclosure NoticeO.M.B. No. 1660-0047  
Expires November 30,  
2007

Date: 9-02-08

**I. REQUESTING ASSISTANCE? (Completed by Requestor)**

Requestor Name (b) (6)

Title: Medical Entomologist

Phone No. (b) (6)

Requestor Organization: DHH/Office of Public Health

Fax No. 225-342-7552

Email  
Address: (b) (6)**II. REQUESTED ASSISTANCE (Completed by Requestor)**

Description of Requested Assistance: Vector Control - Mosquito abatement for arboviral control. Request: aerial application assistance from US Air Force 910 Airlift Wing.

Quantity: 2 - C130 aircraft, crews and support

**PRIORITY:**
☐ 1 Lifesaving      ☒ 3 High      ☐ 5 Normal  
☐ 2 Life sustaining      ☐ 4 Medium
Date/Time Needed:  
a.s.a.

Delivery Site Location: Aerial application to selected portions of the majority of the State of Louisiana to be determined and coordinated with CDC and 910 AW medical entomologists.

Site Point of Contact (POC)

(b) (6)

24-Hour Phone No.

(b) (6)

Fax No.

225-342-7552

\* Authorized State Approving Official Signature:

Date

**III. SOURCING THE REQUEST - REVIEW/COORDINATION (Operations Section Only)**

OPS Review By:

Log Review By:

Other Coordination By:

Other Coordination By:

Assigned Agency:

Donations

Other (Explain)

Requisitions

Procurement

Interagency Agreement

Mission Assignment

MA Task Order

Immediate Action Required:

☐ Yes☐ No

Date:

Time:

Action Request

ESF#

8

Assigned To:

**IV. STATEMENT OF WORK (Operations Section Only)**

OFA Action Officer

24-Hour Phone No.

Fax No.

FEMA Project Officer

24-Hour Phone No.

Fax No.

Justification/Statement of Work:

Estimated Completed Date:

Cost Estimate:

**V. ACTION TAKEN (Operations Section Only)**☐ Accepted☐ Rejected☐ Accountable Property Coordinated with APC

Disposition:



### Justification for Emergency Mosquito Control Work

As a result of extremely high levels of rainfall and resulting flooding, at least eight counties are experiencing greatly increased levels of mosquitoes. The flooding has resulted in exponentially larger areas of habitat for mosquito production. Surveillance traps have collected in excess of 150,000 mosquitoes per trap night in some areas, with landing rate counts of 200 per minute.

At these mosquito population levels, recovery activities, such as debris removal and road and sewer repair, are delayed or postponed, and return to normal economic activity is severely impacted. Participation in outdoor activities is almost impossible, and exposure to extreme levels of mosquito bites for school age population at typical school transportation pickups is a major concern. In some areas, severe impacts on livestock are being reported.

These high population levels may also result in increased exposure of residents to arthropod borne virus (arbovirus) diseases, such as West Nile Virus (WNV) diseases. West Nile virus activity is still at low levels in the impacted area, but the greatly increased mosquito populations and increased exposure to residents, increases the potential for disease transmission if amplification in bird populations was to occur. Peak activity for WNV is between August and October in Florida. Due to the time lag between infection and the onset of clinical symptoms, high rates of infection will not be evident until several weeks after exposure. Delaying action until infection rates are evident is not an option, since high rates of infection will have already occurred.

The counties affected at this point are: Baker, Brevard, Dixie, Glades, Hendry, Madison, Okeechobee, Union and Volusia. Additional counties may be identified within the next week as mosquito populations increase.





DEPARTMENT OF THE AIR FORCE  
YOUNGSTOWN AIR RESERVE BASE  
757AS/AERIAL SPRAY FLIGHT  
3976 KING GRAVES RD  
VIENNA OH 44473-5924

1 November 2005

MEMORANDUM FOR 757AS/DO (Maj (b) (6))

FROM: 757AS/DOS (Maj (b) (6))

SUBJECT: Pest Management Professional's Post Mission Report

1. SUMMARY

On 8 September 2005, the 910<sup>th</sup> AW, Aerial Spray Flight deployed to conduct aerial spray operations for mosquito and filth fly control in support of the Federal Emergency Management Agency (FEMA) Hurricane Katrina relief effort and were officially tasked to the Joint Task Force (JTF) Katrina on 9 September 2005. Two spray aircraft, one spare aircraft, and three crews were placed at Duke Field, Florida. A total of 53 people were involved with the flying, entomology, maintenance, administrative, communication and life support issues relating to the mission. Following the landfall of Hurricane Rita (24 September), the State of Texas (TX) also requested mosquito control in counties affected by the storm. Still working from Duke Field, one plane sprayed in each state until Louisiana (LA) was complete, then both planes concentrated on completing the TX spray blocks. The mission was complete on 14 October 2005 and redeployment to Youngstown ARS, Ohio occurred on 18 October after spraying a total of 2.88 million acres.

2. BACKGROUND:

Hurricane Katrina made landfall on 29 August near Buras, LA. Prior to reaching LA, it crossed Florida as a Category 1 storm. Gathering strength in the Gulf of Mexico, Katrina became a Category 5 storm and eventually made landfall south of New Orleans as a Category 4 storm with 145 mph winds. Hurricane Katrina caused extensive damage as would be expected from such a powerful storm. High winds downed trees and destroyed homes, while heavy rain caused extensive flooding. When some levees in New Orleans collapsed, the City's worst nightmare was realized as widespread flooding ensued. Water rushed into homes and overran water treatment facilities to the point where travel by boat became most efficient. Pre-hurricane evacuations had been incomplete in New Orleans and the flooding now exacerbated the evacuation problem and significantly increased the difficulty of relief efforts. One major concern was the potential for filth fly production from habitat created by fecal contamination, muck, trash, and animal carcasses. It was the filth fly concern that prompted the quick deployment of the Aerial Spray Flight. The secondary concern was that Louisiana already had a background of West Nile Virus (WNV) circulating in mosquito pools and birds. The potential for a serious encephalitis outbreak is increased by post-hurricane conditions. In particular, power outages and living in temporary shelters expose people to additional mosquito bites. By early September 62 cases of WNV had been reported in LA and Mississippi and, thus, mosquito control was considered a high priority in the strategy to protect public health.



### 3. RESULTS:

A total of 2,880,622 acres were sprayed with 14,313 gallons of Dibrom during spray operations for JTF Katrina and Rita. In LA, 1,942,607 acres were and in TX, 938,015 acres. Over 19,000 man hours were spent in support of this operation. See attachment 1 for additional information and attachment 2 shows all areas sprayed. Aerial applications were very effective in reducing numbers of flies and mosquitoes. Military entomologists and the CDC entomologist observed first hand flies (sarcophagids, muscids, calliphorids, etc) suffering heavy mortality even within 15 minutes after spraying. Statistical data was not generated for fly control because of evacuations and limited personnel for surveillance during this timeframe. Mosquito control was better documented and nearly all areas showed reductions greater than 90%. In many cases mosquitoes disappeared completely for a period of time after the application.

### 4. OPERATION LOCATION:

Duke Field which is only a 20-30 minute ferry flight was chosen as a base of operation because it was relatively proximal to the area of impact yet far enough removed to minimize the effects of the damaged infra-structure. The intelligent decision was to trade some ferry time for access to C-130 maintenance support, accommodations, vehicles, and fuel. The Duke Field Base Commander was extremely supportive, and it is difficult to imagine a better work environment. Essentially given a hanger to operate out of, this building included two air conditioned offices with telephones and computers. The Duke Field Communications Squadron established internet accounts and telephone lines for the operation. The choice to trade some ferry time for C-130 maintenance support yielded dividends on two occasions, first when an aircraft received leading edge wing damage, and later with an engine problem. Both incidences were the result of bird strikes, and both would have grounded the aircraft potentially for weeks if it were not for immediate access to C-130 support. It should be mentioned that the maintenance support received from the Duke Field went well beyond a normal support function; their staff worked around the clock, after the aforementioned events, to get spray planes back in the air after only 24 hrs!

### 5. ENTOMOLOGICAL FACTORS:

- a. Pesticide: Dibrom Concentrate was the pesticide chosen by the State of Louisiana (LA) and Texas (TX). This material is widely used in adult mosquito control operations in LA and has a historical precedent for use following mosquito outbreak emergencies. It is noted here that no DoD agency made recommendations for the use of a particular insecticide, but rather served as the applicator of a product chosen by the requesting State. It is for this reason that this unit trains with more than a single type of pesticide to have experience using many types of pesticides prior to actual contingencies and know how a particular material functions with the application equipment. The Spray Flight is very familiar with using Dibrom and has reported often on the efficacy of such sprays. This is certainly a positive aspect for using this chemical. However, Dibrom is very heavy and at times planes became weight-limited in regard to pesticide load, especially during applications at 0.75oz/acre over large spray blocks. The pyrethroid Anvil is less than half the weight of Dibrom and could have increased spray time and acreage on some sorties, but may not be as effective against some mosquito species.
- b. Spray areas: All spray boundaries were established by the State Entomologist with advisement from CDC entomologists and, where appropriate, from Air Force entomologists. For example, in LA, a strict criteria was followed to determine qualification to receive military sprays: 1. to receive sprays an area needed to be without



a Mosquito Control District (MCD) and have some form of insect surveillance to verify a need for mosquito control; 2. If a Parish MCD had been temporarily disabled because of the storm, such a parish was also eligible to receive a military applied spray. The preferred method for receiving spray areas was in electronic format. Specifically this meant that files were delivered using the \*.shp file format which functions with geographical information systems (GIS). This method assures that the boundaries are exactly as the state requested. This method was used for the majority of spray areas in LA. In TX, electronic maps were e-mailed or hardcopies faxed. See section 6 for more information on mapping aspects.

- c. Insect surveillance & efficacy: Validating the need for an area to receive military sprays was extremely important in prioritizing spray areas. The CDC entomologist was very helpful in this regard. Qualitative or anecdotal accounts of mosquito densities were not normally an acceptable means. Realizing that normal functions of local MCDs were compromised, a basic method of measuring mosquito densities (landing rates of mosquitoes per minute of time) was accepted. The level of expertise in identifying and monitoring mosquito populations was robust throughout both states and in communities where no formal MCD existed, direct mosquito landing rate counts functioned well, even if performed by individuals without entomological training. In general, reductions of greater than 90% were reported from the field. After Hurricane Rita, an emergence of *Psorophora* spp. was intense enough that the application rate was increased to 0.75oz/acre in order to maintain an appropriate level of control. It was particularly fortunate, that Air Force entomologists from the Air Force Research Laboratory at Brooks City Base, TX were released by their Commander to support the 910<sup>th</sup> AW mission on the ground in TX. Two active duty and one civilian entomologist worked for over two weeks gathering pre and post spray data on mosquito landing counts and trapping data. Data is shown for the TX spray block Skeeter2 in attachment 3. As the local MCDs operations return to normal it is expected that they will pass forward efficacy data. It is projected that this information will be compiled and eventually published in a scientific journal.
- d. Spray monitoring. All spray operations were directed by an onboard AF entomologist, certified in EPA category 11 for pesticide application. Both LA and TX recognized DoD pesticide applicator certification through a reciprocity program and confirmed such in writing. The majority of flights were also observed by DoD entomologists on the ground. While not mandatory, the role of these individuals was to gather environmental and biological data on the ground, confirm that the plane was operating safely, and lastly to serve as a spokesperson for the flight. In New Orleans, Navy entomologists and preventative health technicians participated in this role. Air Force Research Laboratory entomologists worked exclusively in this capacity in TX. In theory, ground monitors could use their mobile/satellite phones to relay information to base operations at Duke Field, in turn, the communications specialist could then relay that information on the high frequency antenna back to the airplane. Unfortunately, in practice, this did not prove effective. Satellite phones may be a quick fix for this problem in the future. Calls to Duke Field from entomologists in the field did serve the purpose of updating the Mission Commander of the status of the operation and environmental conditions during the application.
- e. Spray timing: Timing insecticide applications with the period of maximum exposure of the target pest is a critical component of any pest control operation. Different mosquito



species have different periods of activity and certainly flies are more active during the day than at night. Keeping these facts in mind, as well as considering the best way to avoid killing bees, a spray schedule was created to include only the final two hours of daylight for mosquito control and three hours prior to sunset for fly control. Since fly control was only conducted in urban areas, there was less concern with causing honeybee mortality in these spray blocks. No negative feedback from beekeepers has been received and it is believed that this was a highly successful policy. Operating under strict time constraints, large spray blocks were required for the C-130 airframe to be most effective. That is to say, the ability to rack up acreage would have been seriously hampered by multiple geographically separated spray blocks. Such spray blocks would require many more turns, equating to more time with the spray system off. Small blocks are better sprayed by smaller aircraft while large blocks better utilize the C-130's size and speed.

- f. Spray configuration: Fuselage booms with stainless steel flat fan (Tee Jet) nozzles were used. Sizes 8005 for mosquito control and 8008 for fly control were used. The number of nozzles open was calculated to maintain approximately 40 pound per square inch pressure in the spray lines.
- g. Spray swaths. Several swath widths were used during the operations. For filth fly control 1,000' foot swaths were used for more even control. This configuration is used during normal spray operations for biting flies at the Parris Island MCRD, SC. For adult mosquito control a 2,500 foot swaths was used in areas with a crosswind, which is the Spray Flight's accepted contingency swath width (routine mosquito control operations are conducted with 2,000 foot swaths). Data supporting the 2,500 foot swath width using caged mosquitoes has been previously reported on and presented in military and scientific venues. During sorties when there was very little wind, a 1,500 foot swath width was used.
- h. Application rates: The amount of chemical applied against a certain pest was determined by the state point of contact (POC) after consultation with Air Force and CDC entomologists. Against flies, the maximum mosquito control rate for Dibrom was applied (1.0 oz/acre). The operation began in LA using 0.5 oz/acre for mosquito control. Following the arrival of Hurricane Rita, woodland mosquito species appeared in large numbers and subsequently, the half ounce per acre was only reducing populations not eliminating them. Increasing the rate to 0.75 oz/acre was effective in eliminating these dense populations of mosquitoes. Later, 0.62 oz/acre was sufficient to eradicate local mosquito populations as numbers began to decrease. All spray systems were calibrated prior to leaving home station.
- i. Spray maintenance: Personnel from Spray Maintenance loaded and physically configured the aircraft on a daily basis. With over 46 hours of spray-on time during this mission the spray systems worked more in 5 weeks than in the previous 3 years of spray, to put such activity in perspective. Thus, the systems had tremendous demands placed on them. On one occasion, a main pump shaft seal failed resulting in fumes in the aircraft. Smoke and fume elimination procedures were accomplished, the crew donned oxygen masks and returned to Duke Field. Upon landing, the crew visited the Eglin AFB Clinic, were evaluated and released as asymptomatic to organophosphate exposure (information available on AMC Form 97). Apart from this instance the MASS units



performed flawlessly which is a testament to the professionalism of the Aerial Spray Maintenance Flight.

## 6. MAPS

Mapping and chart making has previously been the bane of contingency aerial spray operations. The problem previously was in obtaining charts and matching swath lines on charts with those created in the software directing the onboard GPS. A simple solution has been developed in the Aerial Spray Office which is partly the product of the digital age (digital maps available). Using a relatively affordable software program (approx. \$300) charts are viewed on a computer utilizing USGS topographic maps in 15- and 7.5 minute series (DeLorme X-Map version 4.5). Polygons can be directly drawn on the topographic background where the borders of important landmarks are readily seen (roads, water bodies, parish or county borders, wildlife areas, etc). This was one role for the forward deployed entomologist, particularly early on in LA. Next the actual proposed path of the aircraft is drawn over the spray areas. This path is the lane separation or swath width and was previously drawn on charts by hand which introduced some error. These polygons or spray blocks are then exported as shapefiles (\*.shp). A shapefile is a computer graphic representation of geographic features with lat/long coordinates associated with it. These shapefiles can then be directly entered into the spray plane's GPS software. Shapefiles were also entered into the software program FalconView, a flight planning tool universally used by the Air Force. This allowed intended flight paths and potential obstacles to be added to the charts before they were printed on a large scale printer. Additionally, navigators had the option to use FalconView on a laptop during the spray sortie, creating another platform to confirm position and course. During previous contingencies operations, complete days were lost dealing with the complex issue of charts. The method discussed here allowed for quick turnaround (< 3 hours) from receiving potential spray areas to production of a usable spray chart. Nonetheless, mapping remains an integral and energy consuming portion of the mission. It is recommended to use a non-flying crew member and/or entomologist to create charts to circumvent the problem of exceeding maximum duty day.

## 7. FLYING ACTIVITIES

- a. Developing a plan for unfamiliar areas: The aerial spray flight conducts training missions at DoD installations CONUS as part of a ongoing pest control program for those installations. One critical component of these training flights is the preparation for the different types of terrain over which spray flights are conducted. In this response, spray areas varied all the way from flying over forested areas to flying over urban landscapes (e.g., downtown New Orleans). All areas have hazards such as communications towers, power lines, other aircraft, birds, etc. While new charting technologies give a better projection of reality than was previously available, it is impossible to rely solely on charts. Upon reaching a new area, an aerial survey period was conducted at 300-500 feet above ground level (AGL). During the survey, the crew picked out ground reference points and obstacles from the air and confirmed them with the spray chart. Any flying hazards not appearing on the chart were noted. Following the aerial survey, a dry pass at spray altitude (150' AGL) was made to check the aircraft's heading, set drift kill, and make a Doppler wind reading. The onboard certified applicator (Entomologist) then determined if spray conditions were appropriate and signaled the crew to commence the application.
- b. Weather decisions: Spray operations always contend with weather. Some wind (3-5 knots) in at least a 45 degree crosswind component is desired. Strong winds or light and variable winds are not desirable. Weather conditions were outstanding during this



mission and outside of the 5 days of weather cancellations during which Hurricane Rita passed, only 1 other cancellation was because of inclement weather. The Dibrom label indicates a maximum wind speed for application of 10 m.p.h. The decision to fly a spray sortie based on weather forecasts is made by the Mission Commander and Entomologist. Obviously, traveling 300 miles to begin spray operations only to find out that wind speeds are out of bounds or that there are active thunderstorms is not good. Conversely, canceling on a weather forecast, and hearing later that conditions were excellent is discouraging as well. In practice, if the forecast was only marginally negative the mission went forward and a final determination was made once the spray area was reached. In the case where more than one area had been validated to receive sprays, bad weather could be avoided by choosing another area where conditions were more favorable. For example, thunderstorms in LA on 6 October forced a sortie cancellation in that state but two planes then flew in TX where conditions were fine.

- c. Communications: Two members from the 910<sup>th</sup> Communications Flight deployed to Duke Field. The role of communications in ground monitoring is discussed in Entomological Factors item 4. In short, the radio communications link allowed for aircraft to contact base operations approximately 40 minutes prior to landing. This gave the Mission Commander a reasonable lead time to plan if any contingencies had occurred during the sortie. Later during the mission, the full capacity of the high frequency antenna was realized and communication with the spray aircraft and base operations at Duke Field was possible throughout the sortie.

#### 8. PUBLIC AFFAIRS:

- a. Public Notification Procedures. The responsibility for notifying the public about aerial spray operations was assumed at the state level for both LA and TX and coordinated with FEMA. Sample news releases are included in attachments 4 & 5. A blanket statement which covers a given area for a given amount of time allows for the most flexibility in completing mission assignments.
- b. Daily Reports: The Mission Commander issued a situation report (SITREP) generally within an hour of the completion of the evening's sortie(s). In addition, a daily "entomologist spray report" further served as a way to inform key military and civilian parties on the progress of the mission. The entomologist's report was written from the pest manager's point of view and contained a picture image of the areas sprayed (when possible), the flight of the aircraft, efficacy data on the reduction of mosquitoes or flies (where available), and the next day's projected spray area. An example is included as attachment 6.
- c. News Conferences and news articles. A 910<sup>th</sup> Public Affairs representative deployed to Duke Field and helped coordinate requests from news agencies for information concerning military mosquito sprays.

#### 9. CONTACTS:

##### a. FEMA

(b) (6) Federal Coordinating Officer  
(b) (6) , Capt, DCO TX (USA)

##### b. State of Louisiana

(b) (6) Deputy Assistant Secretary, Office of Public Health  
(b) (6) Medical Entomologist, Office of Public Health  
(b) (6) Director, Vermilion Parish Mosquito Control  
(b) (6) , Director, Acadia Parish Mosquito Control

Lucas Terracina, Director, Calcasieu Parish Mosquito Control

c. State of Texas

(b) (6) State Vector Control Entomologist, Texas Dept of State Health Services  
(b) (6) Director, Jefferson County Mosquito Control District  
(b) (6) Director, Orange County Mosquito Control District

d. Centers for Disease Control

(b) (6) Chief Entomologist, Division of Vector-Borne Infectious Diseases  
(b) (6) Emergency Coordinator & Entomologist, Division of Vector-Borne Infectious Diseases  
(b) (6) Lt Col, DoD Liaison to CDC, Office of the Director (USAF)

e. JTF Katrina

(b) (6) Maj, Force Protection Officer (USA)

f. Armed Forces Pest Management Board

(b) (6) LTC, Contingency Liaison Officer

g. Military Entomologists in the Joint Area of Operations

(b) (6) GS-13, AFIOH, Brooks City-Base (USAF)  
(b) (6) 1LT, Air Force Research Laboratory (USAF)  
(b) (6) 1LT, Air Force Research Laboratory (USAF)  
(b) (6) LTJG, Navy Disease Vector Ecology & Control Center (USN)  
(b) (6) 1LT, Executive Officer, 224th MEDDET

10. LESSONS LEARNED

An after action report will follow to be submitted from the Aerial Spray Office after further discussion on items which can be improved upon.

11. ACKNOWLEDGEMENTS

The success of this operation was a direct result of an amalgamation of individuals who have trained and studied within their disciplines to develop a level of excellence in what they do professionally. In particular, Dr. (b) (6) and Mr. (b) (6) formed a synergy which administered aerial sprays in a timely manner in LA during a period of high entropy. All of the personnel at Duke Field, Florida deserve the Aerial Spray Flight's gratitude for being such amiable and gracious hosts. The entomologists and their commanders from the Air Force Research Laboratory also warrant special mention since their activities yielded important scientific information on the efficacy of these application methods. All FEMA, DoD, and State personnel involved with the mission provided excellent support.

//signed//

(b) (6) MAJ, USAFR  
RESEARCH ENTOMOLOGIST



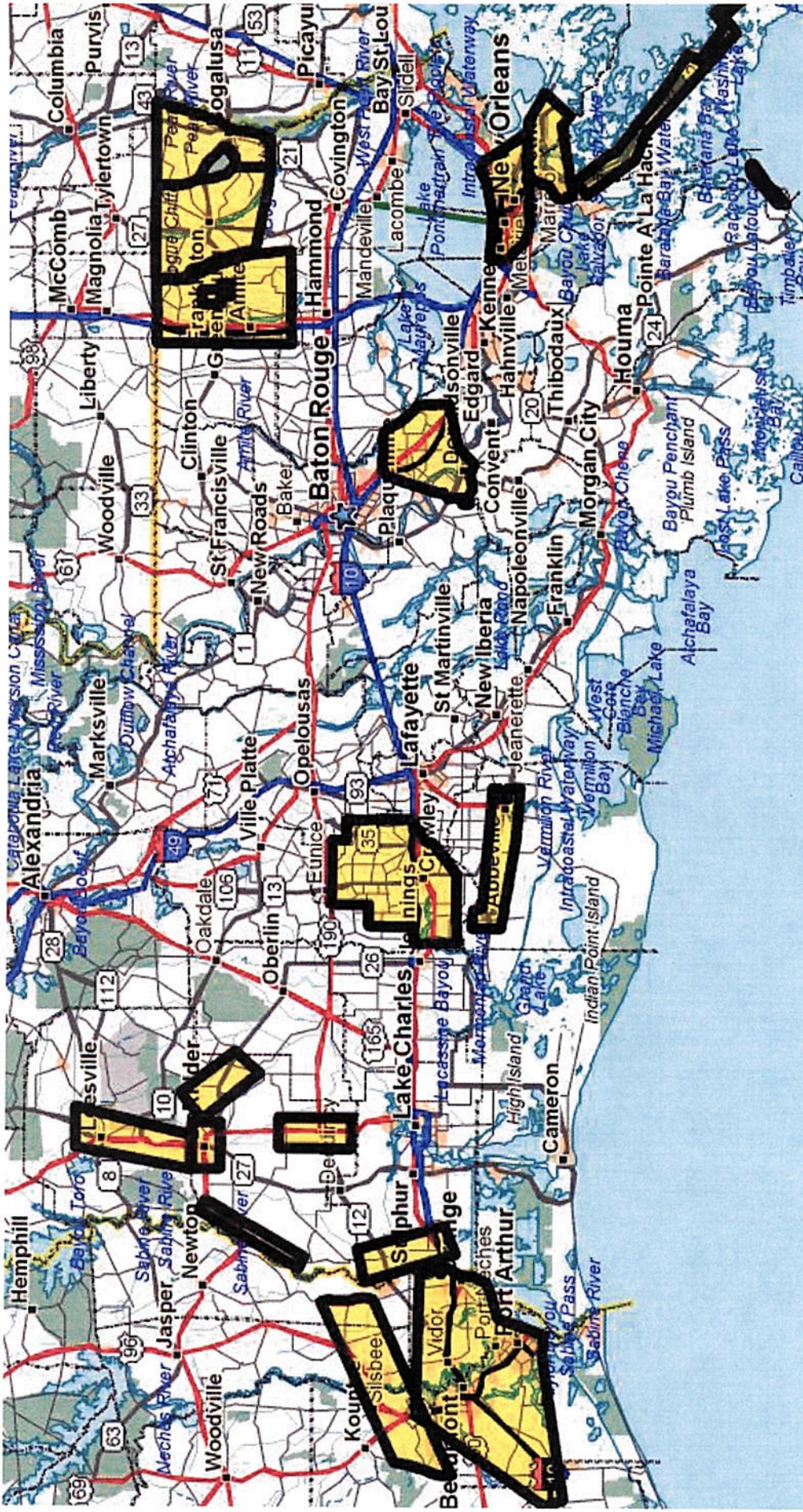
Attachment 1. Totals for USAF Vector Control Aerial Spray Flights following Hurricanes Katrina and Rita

DATE	STATE	AREA	ACFT #	ACRES	T. ACRES	FLY TIME	T. FLY TIME	Gal.	T. GAL	S.O.T.	T. S.O.T.
12-Sep	La.	St. Bernard Parish	9106	47,104	47,104	3.3	3.3	184	184	39	39
"	"	""	9107	45,824	92,928	3.3	6.6	179	363	40	1+19
13-Sep	La.	Orleans Parish	9106	28,416	121,344	4.0	10.6	222	585	49	2+18
"	"	""	9107	30,208	151,552	4.2	14.8	236	821	52	3+10
14-Sep	La.	""	9106	58,496	210,048	4.0	18.8	475	1296	2+01	5+11
15-Sep	La.	Washington Parish	9106	87,150	297,198	4.1	22.9	361	1657	1+15	6+26
"	"	""	9107	95,488	392,686	4.0	26.9	373	2030	1+21	7+47
16-Sep	La.	""	9106	85,409	478,095	3.9	30.8	340	2370	1+14	9+01
"	"	""	9107	104,704	582,799	4.0	34.8	409	2779	1+30	10+31
18-Sep	La.	Plaquemines & Jefferson Par	9106	36,352	619,151	4.2	39.0	142	2921	55	11+26
"	"	""	9107	61,366	680,517	4.1	43.1	242	3163	1+28	12+54
19-Sep	La.	Tangipohoa Parish	9106	110,592	791,109	4.3	47.4	432	3595	1+36	14+30
"	"	"	9107	102,912	894,021	4.4	51.8	402	3997	1+27	15+57
20-Sep	La.	Tangipohoa & Ascension	9106	74,368	968,389	4.4	56.2	295	4292	1+04	17+01
"	"	Parishes	9107	79,306	1,047,695	4.2	60.4	310	4602	1+08	18+09
21-Sep	La.	Ascension Parish	9106	58,100	1,105,795	4.0	64.4	230	4832	50	18+59
"	"	Orleans Parish	9107	11,008	1,116,803	2.9	67.3	43	4875	14	19+13
27-Sep	La.	Orleans Parish	9106	11,520	1,128,323	3.2	70.5	90	4965	25	19+38
"	"	""	9107	19,968	1,148,291	3.6	74.1	156	5121	42	20+20
28 Sep.	La.	Vermillion Parish	9107	84,349	1,232,640	4.6	78.7	336	5457	1+12	21+32
29 Sep.	La.	Acadia Parish	9106	72,276	1,304,916	4.6	83.3	294	5751	1+02	22+34
"	"	""	9107	97,488	1,402,404	4.8	88.1	373	6124	1+24	23+58
30-Sep	La.	Acadia Parish	9106	62,464	1,464,868	4.0	92.1	366	6490	55	24+53
"	"	""	9107	76,692	1,541,560	4.1	96.2	454	6944	1+06	25+59
1-Oct	La.	Calestieu Parish	9106	78,677	1,620,237	4.8	101.0	461	7405	1+07	27+06
1-Oct	Tx.	Orange Co.	9107	31,374	1,651,611	3.8	104.8	176	7581	27	27+33
3-Oct	La.	Beauregard Parish	9106	78,773	1,730,384	5.0	109.8	462	8043	1+08	28+41

DATE	STATE	AREA	ACFT #	ACRES	T. ACRES	FLY TIME	T. FLY TIME	Gal.	T. GAL	S.O.T.	T. S.O.T.
3-Oct	Tx.	Orange Co.	9107	46,480	1,776,864	4.6	114.4	276	8319	40	29+21
4-Oct	La.	Beauregard Parish	9106	75,657	1,852,521	5.1	119.5	448	8767	1+05	30+26
4-Oct	Tx.	Orange Co.	9107	87,711	1,940,232	5.2	124.7	517	9284	1+16	31+42
5-Oct	La.	Vernon Parish	9106	51,541	1,991,773	4.0	128.7	302	9586	45	32+27
5-Oct	Tx.	Orange & Jefferson Co.	9107	44,984	2,036,757	4.0	132.7	262	9,848	39	33+06
6-Oct	Tx.	Orange & Jefferson Co.	9106	79,189	2,115,946	5.0	137.7	464	10,312	1+08	34+14
6-Oct	Tx.	Orange & Jefferson Co.	9107	74,752	2,190,698	5.0	142.7	434	10,746	1+04	35+18
8-Oct	Tx.	Orange & Jefferson Co.	9107	74,752	2,265,450	4.6	147.3	445	11,191	1+05	36+23
8-Oct	La.	Vernon Parish	9106	47,396	2,312,846	4.8	152.1	187	11,378	1+08	37+31
9-Oct	La.	Plaquemines Parish	9106	69,003	2,381,849	4.2	156.3	265	11,643	1+39	39+10
9-Oct	Tx.	Jefferson Co.	9107	74,043	2,455,892	4.7	161.0	434	12,077	1+04	40+14
11-Oct	Tx.	Jefferson & Orange Co.	9106	94,122	2,550,014	5.3	166.3	490	12,567	1+21	41+35
11-Oct	Tx.	""	9107	66,556	2,616,570	5.1	171.4	384	12,951	57	42+32
12-Oct	Tx.	Orange Co.	9108	28,093	2,644,663	4.3	175.7	133	13,084	30	43+02
13-Oct	Tx.	Newton, Jasper, Orange, Hardin	9106	83,691	2,728,354	5.3	181	414	13,498	1+12	44+14
13-Oct	Tx.	Newton, Jasper, Orange, Hardin	9108	80,756	2,809,110	5.4	186.4	398	13,896	1+09	45+23
14-Oct	Tx.	All listed above plus Liberty	9108	71,512	2,880,622	5.0	191.4	417	14,313	1+01	46+24
		S.O.T.=Spray on time									
		T.S.O.T.=Total spray on time									
		Total Acres in Louisiana		1,942,607							
		Total Acres in Texas		938,015							
		Total gallons in Louisiana		9,069							
		Total gallons in Texas		5,244							



Attachment 2. Image of areas sprayed during JTF Katrina/Rita September and October 2005 by USAF Aerial Spray Flight.







### **LDHH Implements A Vector Control Management Plan**

The Louisiana Department of Health and Hospitals (LDHH) has developed a management plan in anticipation of the hatching of mosquitoes and flies due to the massive flooding in the area. Vector (disease carrying organisms) control is needed to protect public health from nuisances and diseases transmitted by mosquitoes and flies.

The LA DHH in coordination with LDAF, CDC, ATSDR, US EPA, DoD and in consultation with parish Mosquito Control Districts is implementing a vector control plan to reduce mosquitoes and flies in the areas affected by Hurricane Katrina.

Aerial application of routinely used pesticides, primarily Naled, will begin Sunday, September 11, 2005 on the East Bank of the Greater New Orleans area and surrounding areas. The spraying will occur during the last 3 hours of daylight. The US Air Force will conduct the aerial applications to assist vector control activities normally conducted by parish and local mosquito control districts.

The spraying will use the same pesticides as routinely sprayed to control mosquitoes in the south Louisiana region. "The timely initiation of preventive measures to control mosquitoes and flies is necessary to reduce the risk of vector-borne diseases" said Dr. Fred Cerise.

Naled is a pesticide routinely used by Mosquito Control Districts in Louisiana. Naled is approved by US EPA and will be applied according to that agency's application rates. Studies have shown that Naled does not impact on human health or the environment when used for mosquito control.

The vector management plan will continue based on field monitoring of mosquitoes and flies in the region.

For more information call the Louisiana Department of Agriculture and Forestry's pesticide hotline at 225-925-3763.





**news**

1100 West 49th Street • Austin, Texas 78756 • (512) 458-7400

October 13, 2005

### **Air Force to Spray in Hardin, Jasper, Newton, Orange Counties**

The Texas Department of State Health Services (DSHS) announced today that post-Hurricane Rita aerial spraying for mosquitoes will begin tomorrow afternoon in Hardin, Jasper and Newton counties and that spraying will continue in part of Orange County.

The spraying is to prevent the possible spread of mosquito-borne illnesses, such as St. Louis encephalitis and West Nile infection, and to reduce a proliferation of nuisance mosquitoes after heavy rains and flooding in Southeast Texas.

Specially equipped U.S. Air Force Reserve C-130H cargo planes from the 910<sup>th</sup> Airlift Wing will be used in the spraying operation.

The gray planes may be flying as low as 150 feet above ground level when spraying. The project is expected to take several days. Flights will begin two hours before dusk and last for four to six hours each day.

Dibrom, a U.S. Environmental Protection Agency-approved insecticide, will be used. The application rate is one ounce or less of Dibrom per acre. The spraying poses no hazard to humans, animals or plants.

However, beekeepers in the region should take protective measures to prevent damage to their hives.

Aerial spraying was recently completed in Jefferson, Chambers and Liberty counties and in part of Orange County.

*(News Media: for more information contact (b) (6) DSHS Press Officer,  
(b) (6)*

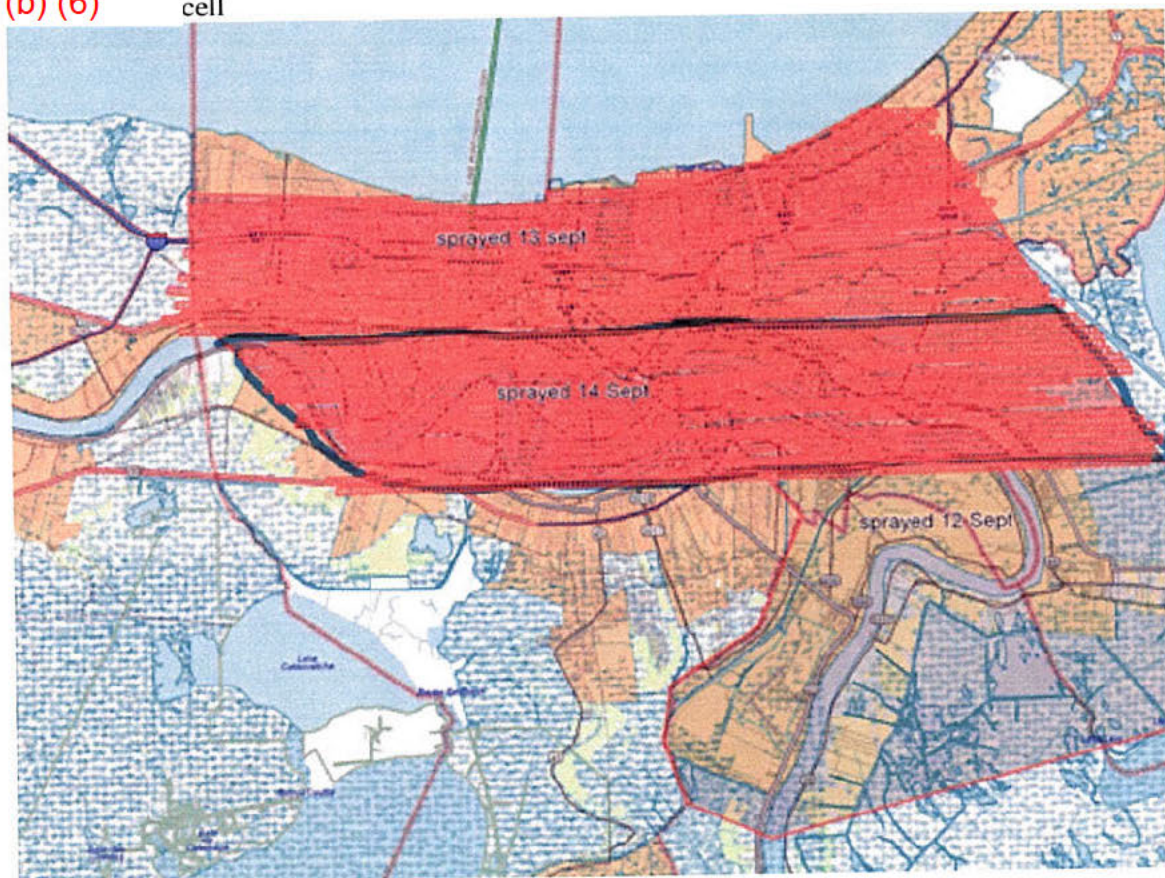
Attachment 6. Entomologist's Spray Report 14 September 2005.

Last night (14 Sept) the southern spray block of "Bug1", which included the heavily urbanized, downtown sections of the Orleans Parish was sprayed. Spraying began approx. 3 hrs prior to sunset in order to target filth flies. We used a 1000ft swath; 1 oz Dibrom/acre to treat 58,496 acres. See image below.

While on the ground in the French Qtr, we observed flies (sarcophagids, muscids, calliphorids, etc) which suffered heavy mortality even within 15 minutes after the spray pass. I expect that the fly problem will be largely eliminated as soon as they begin remove the trash bags from these areas. The fact that most of the trash we have encountered had been put into plastic bags has contained the fly problem which could have been much worse. Flies that were resting on the sides of building or especially in trees near garbage piles were obviously more impacted by the sprays than those flies under canopies or crawling around under the trash bags/piles. Environmental parameters were excellent yesterday evening again with partly cloudy skies and a light steady wind 3-6 knots @180-210°. Temperatures were in the high to middle 80's. We expect good control from such conditions and we hope they hold.

Tonight (15 Sept), the 1 AF CAT has approved Washington Parish ("Bug 3 & 4) as the next priority and it is scheduled to be sprayed (0.5 oz/acre Dibrom with 2,500 ft swaths for treating woodland and floodwater mosquitoes e.g., *Ps ferox*; *Ae vexans*). These blocks will require more than one sortie. Approx. 390,000 acres.

(b) (6) Maj, USAFR  
Entomologist, USAF Aerial Spray Flight  
Baton Rouge, LA  
(b) (6) cell







**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

18 JUN 09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at NSB Kings Bay, GA.

1. One C-130 will be available 25-28 June 09 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel stationed at NSB Kings Bay, GA.

2. Concept of Operations:

- a. 25 Jun (Thursday)  
1600L Show KYNG  
1800L Depart KYNG  
2030L Land KNIP
- b. 26 Jun (Friday)  
1700L Show KNIP  
1930L Depart KNIP  
2130L Land KNIP
- c. 27 Jun (Saturday)  
1330L Show KNIP  
1600L Depart KNIP  
1800L Land KNIP
- d. 28 Jun (Sunday)  
0800L Show KNIP  
1000L Depart KNIP  
1230L Land KYNG

3. Aerial Spray Operation:
  - a. Chemical: Dibrom
  - b. Altitude: 150 AGL
  - c. Application rates: 7.4 gal/min (.75-1.0 oz/acre)
  - d. Area: Approximately 15,000 acres
4. Maj (b) (6) will act as Mission Commander.
5. Lt Col (b) (6) will act as Aircraft Commander.
6. Support required at NSB Kings Bay, GA and NAS Jacksonville, FL has been completed.

(b) (6) (b) (6) Capt, USAFR  
Aerial Spray Coordinator



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

30 JUN 09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Langley AFB, VA.

1. One C-130 will be available 6-10 July 09 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel stationed at Langley AFB, VA.

2. Concept of Operations:

- a. 6 Jul (Monday)  
1500L Show KYNG  
1700L Depart KYNG  
1830L Land KLFI
- b. 7 Jul (Tuesday)  
1545L Show KLFI  
1815L Depart KLFI  
2045L Land KLFI
- c. 8 Jul (Wednesday)  
1545L Show KLFI  
1815L Depart KLFI  
2045L Land KLFI
- d. 9 Jul (Thursday)  
1545L Show KLFI  
1815L Depart KLFI  
2045L Land KLFI

- e. 10 Jul (Friday)  
1445L Show KLFI  
1645L Depart KLFI  
1815L Land KYNG

- 3. Aerial Spray Operation:
  - a. Chemical: Dibrom
  - b. Altitude: 150 AGL
  - c. Application rates: 3.6 gal/min (.50-.75 oz/acre)
  - d. Area: Approximately 125,000 acres but final acreage TBD
- 4. Maj (b) (6) (b) (6) will act as Mission Commander.
- 5. Maj (b) (6) (b) (6) will act as Aircraft Commander.
- 6. Support required at Langley AFB, VA has been arranged.

(b) (6) (b) (6) Capt, USAFR  
Aerial Spray Coordinator



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

7 OCT 09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Langley AFB, VA.

1. One C-130 will be available 13-17 Oct 09 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel stationed at Langley AFB, VA and surrounding communities.

2. Concept of Operations:

- a. 13 Oct (Tuesday)  
1500L Show KYNG  
1700L Depart KYNG  
1830L Land KLFI
- b. 14 Oct (Wednesday)  
1400L Show KLFI  
1615L Depart KLFI  
1845L Land KLFI
- c. 15 Oct (Thursday)  
1400L Show KLFI  
1615L Depart KLFI  
1845L Land KLFI
- d. 16 Oct (Friday)  
1400L Show KLFI  
1615L Depart KLFI  
1845L Land KLFI

- e. 17 Oct (Saturday)  
0845L Show KLFI  
1045L Depart KLFI  
1215L Land KYNG

- 3. Aerial Spray Operation:
  - a. Chemical: Dibrom
  - b. Altitude: 150 AGL
  - c. Application rates: 3.6 gal/min (.50-.75 oz/acre)
  - d. Area: Approximately 125,000 acres but final acreage TBD
- 4. Maj (b) (6) (b) (6) will act as Mission Commander.
- 5. LTC (b) (6) (b) (6) will act as Aircraft Commander.
- 6. Support required at Langley AFB, VA has been arranged.

(b) (6) (b) (6) Capt, USAFR  
Aerial Spray Coordinator



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

28AUG09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Langley AFB, VA.

1. One C-130 will be available 8-13 SEP 09 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel stationed at Langley AFB, VA.

2. Concept of Operations:

- a. 8 Sep (Tuesday)  
1500L Show KYNG  
1700L Depart KYNG  
1830L Land KLFI
- b. 9 Sep (Wednesday)  
1500L Show KLFI  
1730L Depart KLFI  
2000L Land KLFI
- c. 10 Sep (Thursday)  
1500L Show KLFI  
1730L Depart KLFI  
2000L Land KLFI
- d. 11 Sep (Friday)  
1500L Show KLFI  
1730L Depart KLFI  
2000L Land KLFI
- e. 12 Sep (Saturday)  
1500L Show KLFI



1730L Depart KLFI  
2000L Land KLFI

- f. 13Sep (Sunday)  
1000 Show KLFI  
1200 Depart KLFI  
1330 Land KLFI

3. Aerial Spray Operation:

- a. Chemical: Dibrom
- b. Altitude: 150 AGL
- c. Application rates: 3.6 gal/min (.50-.75 oz/acre)
- d. Area: Approximately 125,000 acres but final acreage TBD

4. Maj (b) (6) (b) (6) will act as Mission Commander.

5. Maj (b) (6) (b) (6) will act as Aircraft Commander.

6. Support required at Langley AFB, VA has been arranged.

(b) (6) (b) (6) Maj, USAFR  
Assistant Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**757 Airlift Squadron, Aerial Spray Unit**  
**Youngstown Air Reserve Station, Unit 24**  
**Vienna OH 44473-5924**

9 June 2008

MEMORANDUM FOR: 757 AS/DO

FROM: 757 AS/DOS

SUBJECT: Trip Report MEXUS GULF 2008 Full-Scale Exercise, South Padre Island, TX (2-6 June 2008).

**1. Introduction:** The Aerial Spray Unit deployed to South Padre Island, Texas (2-6 June 2008) to participate in the multiple agency, international full-scale exercise MEXUS GULF 2008, hosted by US Coast Guard. The operational objective of the exercise was to test the effectiveness of the recently modified MEXUSGULF Annex of the MEXUS Plan; a treaty between the United States and Mexico to respond to oil or hazmat spills that threaten to migrate across the border. The scope of this exercise included a host of participants from regional services to federal and international.

The exercise scenario begins with the sinking of the M/V VOYGER 10 miles off South Padre Island, TX, with the subsequent spill of fuel oil threatening sensitive bay-side estuary complexes in southern Texas and Tamaulipas, Mexico. While oil spill response scenarios have been exercised repeatedly, working on an international border adds considerable complexity to the resolution of such a disaster.

The Aerial Spray Unit's role (hereafter Spray10) in this exercise was to respond as part of the real-equipment used to mitigate negative effects of the oil spill and by working in conjunction with USCG airborne and surface assets to apply a simulated oil dispersant (water) to the "oil slick". Coordination and direction of the C-130 application was carried out by two spotter aircraft and a diagrammatic representation is shown in Attachment 1 along with a photo taken from Spotter1. A discussion of the effectiveness of spotter directed dispersant application is given in Attachment 2.

Spray10 also made a Mexican government requested and approved demonstration flight for the Mexican Navy off-shore near the port of Mezquital.

## **2. Operational Schedule (local times)**

### **2 JUNE (Monday)**

1200: Showtime

1400: Depart KYNG

1730: Land KBRO/Safety Briefing

**3 JUN (Tuesday):**

0800-1600: Exercise training and briefings. Dispersant, JRC Set up, ICS (all crew to attend)

**4 JUN (Wednesday):**

\*\*0700: Alert/Show time

ASAP after show: Load Chemical

0845 Take off KBRO to be at spill location at 0900

1030 Upload of additional simulated dispersant (water)

1100 Take off KBRO for demonstration in Mexican waters off the port of Mezquital

**5 JUN (Thursday):**

0800: Show time

0830 Load Chemical

0930: Take off KBRO

1100 Land KBRO

1300-1700: Debrief and Hotwash with entire exercise group

**6 JUN (Friday):**

0700 Show

0900 Depart KRBO

1530 Land KYNG

**3. Spray Parameters:**

- a. Nozzles – Raindrop nozzles oriented straight back.
- b. 8 (16 total) on each fuselage boom; evenly spaced.
- c. Booms – fuselage only
- d. Airspeed – 200 knots ground speed.
- e. Altitude – 100 feet above water.
- f. Application Rate – 7 Gal/Acre
- g. Flow Rate – 277 Gal/Min
- h. Spray -- water (as simulated dispersant).
- i. Number of passes –
- j. Pressure – 50-60 psi
- k. Total spray applied – 300 gallons
- l. Flight times: 2 ferry sorties (9.6 hrs); 3 spray sorties 4.9 hrs

**4. 910 AW Participants:****a. Aircrew:**

- 1) Mission Commander: Capt (b) (6) (b) (6)
- 2) Pilots: LTC (b) (6) (b) (6) Capt (b) (6) , Capt (b) (6) (b) (6)
- 3) Navigators: LTC (b) (6)
- 4) Flight Engineers: MSgt (b) (6) TSgt (b) (6)
- 5) Spray Operators: MSgt (b) (6) MSgt (b) (6)

**b. Maintenance:**

- 1) Spray Maintenance: MSgt (b) (6) MSgt (b) (6) MSgt (b) (6)  
SSgt (b) (6)
  - 2) Crew Chief(s): SSgt (b) (6) SSgt (b) (6)
  - 3) Avionics: MSgt (b) (6) (b) (6)
- c. **Scientific Advisor:** Maj (b) (6) (b) (6)

**5. Discussion:** The exercise was largely considered a success, and very favorable comments were given by the Executive Directors, regarding the groups ability to overcome the language barrier as well as the geographical barrier of the international border. Because the Air Force Spray Unit has participated in such exercises before, Spray Unit members were instrumental in the air operational planning and execution of this exercise. In particular, Capt (b) (6) and Maj (b) (6) served as exercise evaluators with a primary responsibility for the areas of “Dispersant response” and “testing the Memorandum of Agreement (MOA)” between the Director of Military Support and the United States Coast Guard and the Air Force Reserve Command. Evaluations of these aspects are included in Attachment 3. The Aerial Spray Unit next deploys to San Diego, CA to participate in San Diego Prep2008. Additional exercise details can be obtained by contacting Maj. (b) (6) (b) (6)  
(b) (6) (b) (6) (b) (6)

**6. Recommendations:** Continue to participate and practice the application of oil dispersants. A tasking was given to USCG 8<sup>th</sup> District personnel to update MOA with AFRC and recommend the 910<sup>th</sup> AW representative be Capt (b) (6) with Maj (b) (6) as secondary. Recommend practicing quick turning the aircraft with rapid reloading of the MASS by spray maintenance personnel in place of cancelled summer mosquito control missions with water applications for droplet analysis at the Ravenna Arsenal, OH.

**7. Acknowledgements:** CAPT (b) (6), CDR (b) (6), and Mr. (b) (6) of the USCG deserve special mention for their coordination efforts and insight. An additional thank you to the USCG HH-65 flight crew and USCG Aux pilots for their efforts as airborne spotters for dispersant application training.

//Signed//

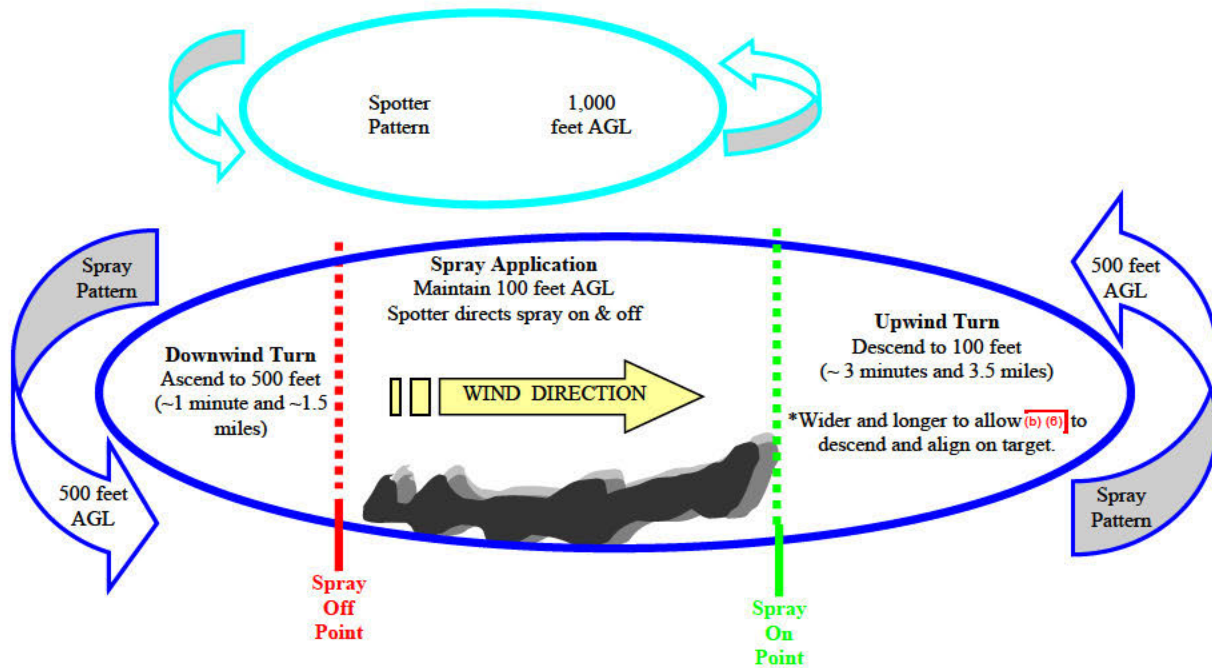
(b) (6) (b) (6) MAJ, USAFR  
Research Entomologist

**Attachments:**

1. Diagrammatic representation of flight pattern for dispersant application and spotter aircraft. Photo showing the USAFR C-130H making application during exercise.
2. Evaluation of spray exercise of oil dispersants.



Attachment 1. Diagrammatic representation of flight pattern for dispersant application and spotter aircraft (adapted from Matt Weakly). Photo is USAFR C-130H spraying water as a simulated oil dispersant, 4 June 2008.



## **Evaluation of Spray Exercise:**

Background: An airborne spotter is necessary to make functional and effective dispersant applications with aircraft. At the low altitude of a fixed wing spray aircraft, the crew cannot determine the position of the slick and proper start and stop of the dispersant application.

The use of two types of spotter aircraft served as an excellent contrast of methods between rotary and fixed wing platforms. On 4 Jun (Wed), a Coast Guard HH-65 Dolphin (hereafter Spotter 1), from Sector Corpus Christi with a crew of 3, served as the rotary wing spotter. This aerial platform also facilitated marking the simulated oil spill (hereafter spill) area with dye markers after the spill boundaries had been marked with buoys by the USCGC BRANDT.

Buoys were difficult to observe from the air at 300 ft and only 1/7 of the dye markers actuated but despite these difficulties Spotter 1 made radio contact with the USAF C-130 (hereafter Spray10) and with the BRANDT and began the exercise.

Spotter 1 decided to guide the first three simulated oil dispersion passes from a hover position 1,000 ft east of the spill at 1,000 ft above ground level (AGL) with the Aviation Electrical Technician making the actual radio calls to Spray10. This position gave Spotter 1 the ability to clearly see Spray 10's approach by looking away from the sun. At 1,000 ft AGL and 1,000 feet separation from Spray 10, the angle also made it difficult for the spotter to accurately determine when to direct Spray 10 to turn the dispersant on and, especially, off. The 4<sup>th</sup>-6<sup>th</sup> passes were spotted by attempting to move in transit with Spray10, radio commands to Spray10 were now from the Spotter1 copilot. On the 4<sup>th</sup> pass, Spotter 1 was in front of Spray10 which made calling spray-on and spray-off difficult. On the 5-6<sup>th</sup> passes, Spotter 1 was better positioned by guiding from behind. Subsequently, these passes proved to be the most successful of the sortie. Spotter 1 next tried using their aircraft as a landmark for the turn-on point for Spray10 on the 7<sup>th</sup>, this method functioned well enough but calling the spray-off was still more difficult than during the 5-6<sup>th</sup> passes. The final passes (8-10) used the same technique as passes 5-6. Excellent piloting but additional verbal inputs to Spray10 were needed at times. This would have been easier if the oil slick had been better marked.

Recommendation: The modern HH-65 Dolphin along with the highly adept crew is recommended for use as a rotary wing spotter aircraft. Minimum crew of 2 required for this engaging mission. Suggest that minimum length of oil sick be 1 mile for C-130 operations. Anything smaller would likely be treated with another aircraft type (e.g., King Air). The half-mile slick in this scenario only allowed for about 8 seconds of spray-on time for Spray10. For demonstration purposes, it would also be nice to have an extended spray period. Consider trial use of HU-25 Falcon as a high-level spotter aircraft equipped with forward looking infrared.

On 5 June (Thurs.), a Cessna 172 USCG Auxiliary was used as a spotter aircraft (Spotter 2). Spotter 2 setup a shorter but synchronous orbit with Spray10, positioning themselves 1500 ft east of the slick and maintaining an altitude of 1,500 ft. Excellent piloting by Spotter2 kept their aircraft in position to call for spray-on and spray-off. Eight spray passes were flown.

Recommendation: The Cessna 172, is a slightly underpowered but functional platform for directing dispersant applications. Recommend closer separation than 1,500 ft for better accuracy once air controller is comfortable with the spotter and spray aircraft's ability to function together safely. Completion of the Memorandum of Agreement with the U.S. Coast Guard and the Air Force Reserve Command should be revised and signed by current leadership. Once complete, the MOA should be properly tested for functionality during a future exercise of this nature.

//signed//

(b) (6) (b) (6) Major, USAFR  
Scientific Advisor for Air Force Aerial Spray Squadron  
Dispersant Spray Exercise Evaluator





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

10 JUN 09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Minot, ND

1. One C-130 will be available 15-19 Jun 09 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations effecting the health and welfare of the citizens of Minot AFB and the City of Minot, ND. Operations will be conducted out of Minot AFB.

2. Concept of Operations:

- a. 15 Jun (Monday)  
1300 Show KYNG  
1500 Depart KYNG  
1730 Land KMIB
- b. 16-17 Jun (Tuesday-Wednesday)  
1600 Show KMIB  
1930 Depart KMIB  
2200 Land KMIB
- c. 18 Jun (Thursday)  
Training or Wx Backup Times TBD
- d. 19 Jun (Friday)  
0700 Show KMIB  
0900 Depart KMIB  
1300 Land KYNG

3. Aerial Spray Operation:

- a. Chemical: Trumpet
- b. Altitude: 150 AGL
- c. Application rates: 6.5 gal/min (.90 oz/acre)
- d. Area: Approximately 15000 acres

4. Lt Col (b) (6) will act as Mission Commander.
5. Maj (b) (6) (b) (6) will act as Aircraft Commander
6. Support required at Minot AFB has been completed.

(b) (6) (b) (6) Maj, USAFR  
Assistant Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

9 JULY 09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Minot and Williston, ND.

1. One C-130 will be available 15-24 July 09 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel stationed at Minot AFB and Williston, ND and surrounding areas.

2. Concept of Operations:

- a. 15 Jul (Wednesday)  
1505L Show KYNG  
1705L Depart KYNG  
1940L Land KMIB
- b. 16 Jul (Thursday) Spray Minot AFB  
1800L Show KMIB  
2000L Depart KMIB  
2145L Land KMIB
- c. 17 Jul (Friday) WX Backup for Minot AFB  
0500L Show KMIB  
0700L Depart KMIB  
0845L Land KMIB
- d. 18 Jul (Saturday) Static Display for Minot AFB Air Show
- e. 19 Jul (Sunday) Down Day Per User's Request
- f. 20 Jul (Monday) Spray Williston  
1800L Show KMIB  
2000L Depart KMIB  
2200L Land KMIB

- g. 21 Jul (Tuesday) Spray Minot  
1800L Show KMIB  
2000L Depart KMIB  
2200L Land KMIB
  - h. 22-23 Jul (Wednesday & Thursday) WX Backup for Minot and Williston  
1800L Show KMIB  
2000L Depart KMIB  
2200L Land KMIB
  - i. 24 Jul (Friday)  
1400L Show KMIB  
1600L Depart KMIB  
2035L Land KYNG
3. Aerial Spray Operation:
- a. Chemical: Trumpet (Minot) & Zenivex (Williston)
  - b. Altitude: 150 AGL
  - c. Application rates: 7.4 gal/min (.6 - .75 oz/acre)
  - d. Area: Approximately 14,000 acres (Minot) & 8,000 acres (Williston)
4. Maj (b) (6) (b) (6) will act as Mission Commander.
5. Lt Col (b) (6) will act as Aircraft Commander.
6. Support required at Minot AFB, ND has been completed.

(b) (6) (b) (6) Capt, USAFR  
Aerial Spray Coordinator

**AC/MC Notes:**

1. Look in the plan for contact information at Kings Bay and Jacksonville Center. Primary contact at Kings Bay is (b) (6) (b) (6). His home phone number if needed is (b) (6). He should be in the office, but may have you contact him at home if any needs are outside of his work hours.
2. Obtain cell phone numbers for spray maintenance and aircraft commander. Phone contact with the personnel at KNIP is needed to determine if loading of chemical should take place.
3. Contact (b) (6) of Jacksonville special missions section 2 hours prior to mission with an update on plan to spray or not spray. The decision does not need to be made by the time you call, but if there is no chance of spraying or the mission is cancelling for sure, he wants to know as early as possible. His #'s: (b) (6). He has the Aircraft Commander's cell number.
4. SWFLANT is the primary scheduler of activities in P-50 at ground level. If anything changes in their schedule, it could effect or clearance into the spray area. If you need to check with them, contact Steve Mallone.
5. Billeting has 16 rooms reserved. If the mission delays or is unable to depart on Thursday, please contact billeting and enterprise at the numbers listed in the plan.
6. A driver should be assigned from Kings Bay to transport the chemical to the aircraft and take away the waste materials. If no one's there, contact either Keith Scott or Lt Rico to find out what the situation is.
7. If Kings Bay is sprayed on Friday, the plan is to return on Saturday.
8. All waiver information is placed in the back of the blue binder under P-50 info. The physical copy of the P-50 waiver is there, and I have the electronic copy in my email.
9. File IFR: KNIP to P-50 with a 2 hour delay at P-50 at 3000'. Ensure the aircraft is squawking 5107 prior to entering P-50. If ATC fails to give this in the clearance....WTF them. Please follow all information as listed in the plan. It should be in accordance with the emails from JAX center. Pre-printed 175's are in the folder.
10. Please return the Blue folder to my office along with copies of all 781's, call AFRC each evening, and fill out the Mission Report with the spray data.

If you encounter any significant difficulties or areas I can improve this plan, please ensure I am notified so I can make appropriate changes in the future. This is still a new mission, so some items may have been overlooked or not encountered as of yet. Thanks.

(b) (6) (b) (6)

### Mission Commander Notes:

1. Look in the plan for contact information at Kings Bay and Jacksonville Center. Primary contact at Kings Bay is (b) (6) . His home phone number if needed is (b) (6) . He should be in the office, but may have you contact him at home if any needs are outside of his work hours.
2. Obtain cell phone numbers for spray maintenance and aircraft commander. You and the Entomologist will most likely be driving up to Kings Bay to make a weather call and be on the ground for the spray operation. Phone contact with the personnel at KNIP is needed to determine if loading of chemical should take place.
3. Contact (b) (6) of Jacksonville special missions section 2 hours prior mission with an update on plan to spray or not spray. The decision does not need to be made by the time you call, but if there is no chance of spraying or the mission is cancelling for sure, he wants to know as early as possible.
4. SWFLANT is the primary scheduler of activities in P-50 at ground level. If anything changes in their schedule, it could effect or clearance into the spray area. If you need to check with them, contact Steve Mallone.
5. Billeting should have 16 rooms reserved. I had sent you an email saying (b) (6) room was cancelled, but I was unable to contact billeting that night to cancel it. Msgt (b) (6) was added to the mission Thursday, so he can take Hodors room now. The name will just need changed upon arrival. If the mission delays or is unable to depart on Monday, please contact billeting and enterprise at the numbers listed in the plan.
6. A driver should be assigned from Kings Bay to transport the chemical to the aircraft and take away the waste materials. If no one there, contact either (b) (6) or Lt (b) (6) to find out what the situation is. Maj (b) (6) was working this issue when I left.
7. Plan objectives: #1 is to spray Kings Bay. If King's Bay is sprayed on Tuesday, then Wednesday should follow the schedule of events listed in the plan on the right side in red. No additional days are built in or expected. KNIP has a large number of aircraft arriving for an exercise on 25 APR, so we are not planning to extend the mission for any reasons at this time. Please ensure (b) (6) at NBC is notified of times and the plan to spray NBC should the plan work out that way.
8. All waiver information is placed in the back of the blue binder under P-50 info. The physical copy of the P-50 waiver is there, and I have the electronic copy in my email.
9. Aircrew is to file IFR: KNIP to P-50 with a 2 hour delay at P-50 at 3000'. Please follow all information as listed in the plan. It should be in accordance with the emails from Jax center.
10. Please return the Blue folder to my office along with copies of all 781's, call AFRC each evening, and fill out the Mission Report with the spray data.

If you encounter any significant difficulties or areas I can improve this plan, please ensure I am notified so I can make appropriate changes in the future. This is will only be our 2<sup>nd</sup> application at Kings Bay, so some items may have been overlooked or not encountered as of yet. Thanks.

(b) (6) (b) (6) CAPT, USAFR

## Mission Commander Summary For Hill Spray 2006—31 March through 9 April

The overall plan was adjusted to accommodate the loss of one plane for 3 days (due to engine change) and weather (Tuesday 4/3 cancelled due to winds, Wednesday 4/4 canceled due to rain/winds, and Thursday 4/5 cancelled due to low visibility/snow).

Some problems were related to using Hill Air Force Base personnel to mix chemical (3 civilian, 3 military people). Unfamiliarity with mixing equipment and a tendency of Krovar to solidify led to delays, loss of sorties, and damaged equipment (blown seals). No sense of urgency was present with the Hill personnel; they were often the limiting factor in the efficiency and number of sorties that could be accomplished in a day.

15 flying sorties were needed to complete the spraying of targets 24, 21, and North LZ. Nine sorties were done in the first three days with one airplane: 1 sortie on 4/1, 5 sorties on 4/2, and 3 sorties on 4/3. Six sorties were accomplished with two airplanes on Friday, 4/7, to complete the mission (plus two additional flush flights). Compared to September, spraying, winds did not consistently pick up as the day wore on. Spraying was accomplished well into the afternoon (5 pm on Sunday) as lower temperatures did not create thermal heating and afternoon wind gusts. There is however, more of a chance for severe weather at this time of year (pot luck—week before had great weather with low winds throughout the day).

### Recommendations:

- Adjust plan to reflect a need for only 16 sorties to complete 24, 21, and North LZ (18 if you include flushing)
- Have advance team secure at least 2 passes for the gate near base ops and weather (one for mission commander, one for first crew of the day). Crews were sometimes delayed up to a half hour trying to get base ops to let them in.
- Consider bringing Youngstown people out to mix chemical. We can control them and we will probably also benefit from less damaged equipment.
- Include reporting phone numbers and information to be passed to 22<sup>nd</sup> Air Force in plan.
- Include commercial phone numbers in the plan:

--Automatic weather at Eagle range is 801 586-1795

--Hill exchanges are 801 777-xxxx, or 801 776-xxxx



**757<sup>th</sup> AERIAL SPRAY SQUADRON**  
**PMP'S POST-MISSION REPORT**  
**Mountain Home AFB, ID Saylor Creek Range 13-28 Sept 2007**

**1. MISSION BASICS:**

- a. Installation Sprayed: Mountain Home AFB, Saylor Creek Range, ID (attachment 1)
- b. Mission Duration: 13-28 September 2007
- c. Purpose of Application: Herbicide application to control cheatgrass to suppress range fires and maintain sagebrush population
- d. Application Date(s) and time(s) (Local):
  - (1) 16 Sept: 0945-1015 (1.5); 1030-1251 (1.4)
  - (2) 17 Sept: 0905-1015 (1.2)
  - (3) 18 Sept: 0710-0805 (0.9); 0855-1000 (1.1)
  - (4) 19 Sept: 0710-0810 (1.0); 0855-1010 (1.2)
  - (5) 20 Sept: 0705-0810 (1.1); 0845-0945 (1.0)
  - (6) 21 Sept: 0710-0815 (1.1); 0845-0940 (0.9); 1010-1055 (0.8)
  - (7) 25 Sept: 0720-0819 (0.9); 0920-1010 (0.8)
- e. Acres Treated: Total 3,243 acres: 547 (16 Sept); 263 (17 Sept); 484 (18 Sept); 485 (19 Sept); 519 (20 Sept); 622 (21 Sept); 323 (25 Sept)
- f. Project Coordinator (Name/Rank/Title/Phone #): (b) (6) , Natural Resource Manager (b) (6)
- g. Date Spray Map Last Approved: 13 September 2007
- h. Installation In-Briefing: (When/Where/Briefer/s): 13 Sept 07, Mountain Home AFB, Angelia Binder, LTC (b) (6) Maj (b) (6) (b) (6) LTC (b) (6) (b) (6) , CAPT (b) (6) (b) (6) CAPT (b) (6) (b) (6) CAPT (b) (6) (b) (6)

**2. OPERATIONAL:**

- a. **Aircrew:**
  - (1) Mission Commander: LTC (b) (6) (b) (6) MAJ (b) (6) (b) (6)
  - (2) Pilots: CPT (b) (6) (b) (6) , CAPT (b) (6) (b) (6) CAPT (b) (6) (b) (6)
  - (3) Navigator: LTC (b) (6) (b) (6)
  - (4) Flight Engineer: MSG (b) (6) (b) (6) MSG (b) (6) (b) (6)
  - (5) Spray Operators: MSG (b) (6) (b) (6) MSG (b) (6) (b) (6) MSG (b) (6)
- b. **Maintenance:**
  - (1) Spray MX: TSG (b) (6) , TSG (b) (6) , TSGT (b) (6) TSGT (b) (6)
  - (2) Crew Chiefs: TSGT (b) (6) , A1C (b) (6)
  - (3) Avionics: (b) (6) , SMSGT (b) (6)
- c. **Entomologists:** LTC (b) (6) (b) (6) MAJ (b) (6) LTC (b) (6)
- d. **Flying Data:**
  - (1) Spray Sorties/Hours: 14 Sorties; 14.9 hours
  - (2) Ferry Sorties/Hours:
    - (a) Spray A/C 99106: 2 Ferries; 11.5 Hours

**3. PESTICIDE:**

- a. Trade Name: Plateau<sup>®</sup>
- b. EPA Registration Number: 241-365
- c. Formulation Sprayed: Liquid herbicide (23.6% active ingredient)
- d. Gallons Pesticide Loaded: 16 (16 Sept); 7 (17 Sept); 14 (18 Sept); 14 (19 Sept); 14 (20 Sept); 21 (21 Sept); 14 (25 Sept)
- e. Gallons Pesticide Applied: 16 (16 Sept); 7 (17 Sept); 14 (18 Sept); 14 (19 Sept); 14 (20 Sept); 21 (21 Sept)

- Sept); 14 (25 Sept)
- f. Gallons and Name Diluent Used: 1,800 gallons water per lift
- g. Gallons and Name of Flush Used: 200 per final daily lift; 600 Gal of water final flush
- h. Other Additives Used: gallons of Sta-Put®; 28 (16 Sept); 14 (17 Sept); 28 (18 Sept); 21 (19 Sept); 21 (20 Sept); 20 (21 Sept); 10 (25 Sept)
- i. Application Rate: 7 Gal/Acre 15-20 Sept 06 (4 oz/acre Plateau®)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): C-130 (99105)
- b. Spray System (Modules Used) and System ID #: SP-3G
- c. Spray System Configuration: Wing and fuselage booms
- d. Nozzle Type/Size: Raindrop nozzles
- e. Nozzle Orientation & Number Used: Fuselage; Straight Back; 17 total (8 right, 9 left)
- f. Pressure: 40 psi
- g. Flow Rate: 325 gpm

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 100 Ft
- b. Spray Offset: weather dependant. No offset when flown into the wind.
- c. Spray Release Altitude: 100 Ft AGL
- d. Ground Speed: 200 knots

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):  
Ground: 120-160°/5-8 mph (16 Sept); 286°/8-10 mph (17 Sept); 240-260°/6-8 mph (18 Sept); 60-110°/3-6 mph (19 Sept); 220°/4-5 mph (20 Sept); 270°/6-7 mph (21 Sept); 090°/7-8 mph (25 Sept)
- b. Temperature (Degrees Fahrenheit): 55° (17 Sept); 51-60° (18 Sept); 46-49° (19 Sept); 43-45° (20 Sept); 42° (21 Sept); 34° (25 Sept)
- c. Relative Humidity: 51-55% (16 Sept); 40% (17 Sept); 41-46 % (18 Sept); 66-69% (19 Sept); 60% (20 Sept); 33% (21 Sept); 34 (25 Sept)
- d. Source: Ground observations

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Visual observation from PMP on range
  - (2) Results: See remarks
- b. Effectiveness:
  - (1) Technique/s Used: Vegetation measurements
  - (2) Results: Will be determined in the spring of 2008

**8. REMARKS:** This mission is the follow-on to the extremely successful application of Plateau herbicide completed in 2006. As can be seen in attachment 2, cheatgrass was effectively controlled in the areas where herbicide was aerially applied. Based on last years success the acreage which was applied with Plateau in 2007 nearly doubled. As before, the purpose was to control cheatgrass and minimize fire hazards, thereby preserving some of the remaining scrub sage habitat. Plateau is an excellent material to work with, and it is biologically active at low concentration levels (e.g., 4oz/acre). The integrated pest management approach is to prevent germination of cheatgrass seeds the following year while allowing native grasses and vegetation (less prone to burn) to become established. The fuselage boom configuration and resulting 100 foot swath width was tested and confirmed at home station & Youngstown ARS) prior to the 2006 mission. All other spray parameters remained the same from last year. On the Saylor Creek range the same swath width was confirmed visually by ground support. Coverage of the

spray block was excellent, as shown in attachment 1. The majority of the sorties were flown with a headwind or tailwind with less than a 45% crosswind component. Efficacy for the 2007 application of Plateau will be determined by Mountain Home AFB Office of Natural Resources during the spring season 2008. If the 2007 application is as successful as the previous, and if additional money is available, an application on another section of the range will likely be planed for 2008. We would like to thank the folks at Mountain Home AFB, particularly (b) (6) (b) (6) for the excellent support we received. We also appreciate the vehicle support and the Fire Department who filled us up with water just before dawn daily and played along with a quick turn on our final flush sortie. Finally, many thanks to the members of the crew who remained for the entire 2 week deployment.

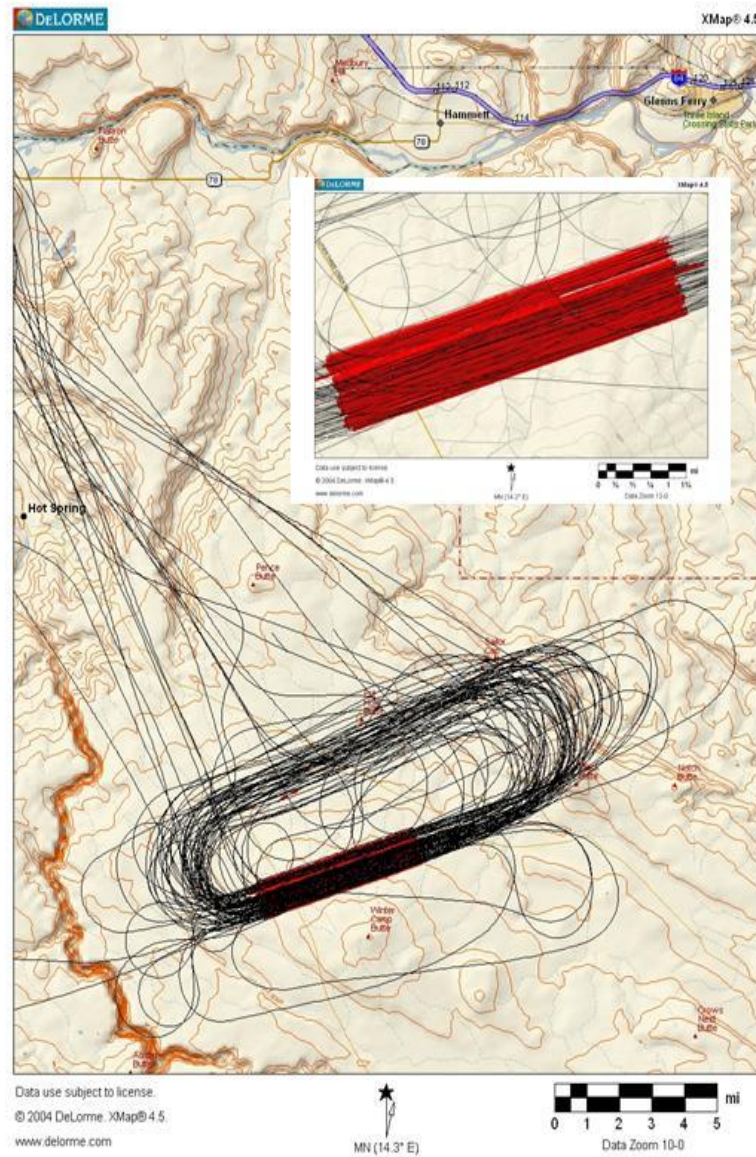
//signed//

(b) (6) **MAJ, USAFR**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL**

**Attachments:**

- 1. Map of Spray Blocks and aircraft track**
- 2. Photo of area treated with Plateau in 2006 on Saylor Creek Range**

**Attachment 1. Map of application on Saylor Creek Range, ID 13-28 September 2007. Black indicates path of aircraft; red is area applied with herbicide. Inset: Close up of spray area.**



**Attachment 2. View of area successfully treated with Plateau herbicide in 2006. Photo by Angelia Binder.**







**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
**3976 KING GRAVES RD UNIT 26**  
**VIENNA OH 44473-5926**

28 AUG 07

**MEMORANDAM FOR HQ AFRC/DOOM**

**FROM:** 757 AS/DOS

**SUBJECT:** Concept of Operations for Aerial Spray at Mountain Home AFB, ID

**Objective/Purpose/Benefit:** To prevent fire hazards, inhibit annual re-growth of cheat grass allowing native vegetation to establish and be competitive.

1. **Capability:** Spray Aircraft Available 13-28 SEP 07.
2. **Concept of Operations:**  
**13 SEP (Thursday):**
  - 0800: Show at KYNG
  - 1000: Depart KYNG
  - 1400: Land KMUO (Local)
  - 1430 Safety Briefing, MX configures aircraft; plan next day's mission
  - 1530 Spray Mission In-brief for at Base Operations Bldg 262

**Support Aircraft**

0800 Crew show  
1005 Depart YNG  
1435 Land MOU  
Spray Maintenance additional personnel will ride on support aircraft.

**14-20 SEP 07: Range Time 0700-1000, (1-2 sorties per day if possible)**

0545: Show time  
0722: Sunrise  
0710: Take Off KMUO (As determined by Mission Cmdr)  
1000: Land KMUO

**27 SEP 07 (Thursday)**

Maintenance system clean up

**27 SEP 07 Support Aircraft Arrival:**

1000 Depart YNG  
1430 Arrive MOU

**28 SEP (Friday) Both Aircraft**

0830: Show time  
1000: Take Off KMUO  
1730: Land KYNG

4. **Spray Parameters:**
  - a. **Altitude:** 100' AGL
  - b. **Swath Width.** 100 feet
  - c. **Flow Rate.** 326 gal/min
  - d. **Application Rate.** 7 gal/acre approximately 3200 acres to be treated for cheat grass
  - e. **Ground Speed:** 200 Knots
  - f. **Chemical:** Plateau
5. **Mission Commander:** LTC (b) (6)
6. **Aircraft Commander:** CPT (b) (6) (b) (6)
7. Any questions concerning this mission please contact the Aerial Spray Office, DSN (b) (6) .

(b) (6) (b) (6) CAPT, USAFR  
757AS Assistant Chief of Aerial Spray





**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
**3976 KING GRAVES RD UNIT 26**  
**VIENNA OH 44473-5926**

28 AUG 07

**MEMORANDAM FOR HQ AFRC/DOOM**

**FROM:** 757 AS/DOS

**SUBJECT:** Concept of Operations for Aerial Spray at Mountain Home AFB, ID

**Objective/Purpose/Benefit:** To prevent fire hazards, inhibit annual re-growth of cheat grass allowing native vegetation to establish and be competitive.

1. **Capability:** Spray Aircraft Available 13-28 SEP 07.

2. **Concept of Operations:**

**13 SEP (Thursday):**

0800: Show at KYNG

1000: Depart KYNG

1400: Land KMUO (Local)

1430 Safety Briefing, MX configures aircraft; plan next day's mission

1530 Spray Mission In-brief for at Base Operations Bldg 262

**Support Aircraft**

0800 Crew show

1005 Depart YNG

1435 Land MOU

Spray Maintenance additional personnel will ride on support aircraft.

**14-20 SEP 07: Range Time 0700-1000, (1-2 sorties per day if possible)**

0545: Show time

0722: Sunrise

0710: Take Off KMUO (As determined by Mission Cmdr)

1000: Land KMUO

**27 SEP 07 (Thursday)**

Maintenance system clean up

**27 SEP 07 Support Aircraft Arrival:**

1000 Depart YNG

1430 Arrive MOU

**28 SEP (Friday) Both Aircraft**

0830: Show time

1000: Take Off KMUO

1730: Land KYNG

4. **Spray Parameters:**
  - a. **Altitude:** 100' AGL
  - b. **Swath Width.** 100 feet
  - c. **Flow Rate.** 326 gal/min
  - d. **Application Rate.** 7 gal/acre approximately 3200 acres to be treated for cheat grass
  - e. **Ground Speed:** 200 Knots
  - f. **Chemical:** Plateau
5. **Mission Commander:** LTC (b) (6)
6. **Aircraft Commander:** CPT (b) (6) (b) (6)
7. Any questions concerning this mission please contact the Aerial Spray Office, DSN (b) (6)

(b) (6) (b) (6) CAPT, USAFR  
757AS Assistant Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON**  
**3976 KING GRAVES RD UNIT 26**  
**VIENNA OH 44473-5926**

26 AUG 08

**MEMORANDAM FOR HQ AFRC/DOOM**

**FROM:** 757 AS/DOS

**SUBJECT:** Concept of Operations for Aerial Spray at Mountain Home AFB, ID

**Objective/Purpose/Benefit:** To prevent fire hazards and inhibit annual re-growth of cheat grass allowing native vegetation to establish and be competitive.

1. **Capability:** Spray Aircraft Available 12-28 SEP 08
2. **Concept of Operations:**
  - 12 SEP (Friday):
    - 0600: Show at KYNG
    - 0800: Depart KYNG
    - 1200: Land KMUO (Local)
  - 13-14 SEP (Saturday and Sunday):
    - Static Display for MUO Air show
  - 15 SEP (Monday):
    - Support Aircraft**
      - 0800: Crew show
      - 1000: Depart KYNG
      - 1400: Arrive MUO
    - Positioned Crew:**
      - 1300: Installation Briefing with CE Commander
      - 1400: Arrival of support aircraft
  - 16-26 SEP: Range Time 0700-1000, (2 sorties per day WX permitting)
    - 0545: Show time
    - 0730: Sunrise (+/- 6 minutes)
    - 0715: Take off KMUO
    - 1000: Land KMUO
  - 27 SEP (Thursday):
    - Support Aircraft at YNG**
      - 0800: Crew show
      - 1000: Depart KYNG
      - 1400: Land KMOU
    - In Place Personnel:**
      - MASS clean up
      - 1400: Arrival of support aircraft

**28 SEP (Friday) Both Aircraft**

0830: Show time

1000: Take Off KMUO


1730: Land KYNG

**\*\*If complete with mission early, aircraft and crew will return to YNG early.**

4. **Spray Parameters:**
  - a. **Altitude:** 100' AGL
  - b. **Swath Width.** 100 feet
  - c. **Flow Rate.** 326 gal/min
  - d. **Application Rate.** 7 gal/acre approximately 3200 acres to be treated for cheat grass
  - e. **Ground Speed:** 200 Knots
  - f. **Chemical:** Plateau
5. **Mission Commander:** Maj (b) (6)
6. **Aircraft Commander:** CAPT (b) (6) (b) (6)
7. Any questions concerning this mission please contact the Aerial Spray Office, DSN (b) (6)  
(b) (6)

(b) (6) (b) (6) CAPT, USAFR  
757 Aerial Spray

No certificate may be issued unless a completed application form has been received (14 C.F.R. 91.101, and 105).

 <p><b>US Department of Transportation Federal Aviation Administration</b></p> <p><b>APPLICATION FOR CERTIFICATE OF WAIVER OR AUTHORIZATION</b></p>		Form Approved: O.M.B. No. 2120-0027 08/31/2008	
		<b>APPLICANTS - DO NOT USE THESE SPACES</b>	
		Region	Date
		Action <input type="checkbox"/> Approved <input type="checkbox"/> Disapproved - <i>Explain under "Remarks"</i>	
		Signature of authorized FAA representative	
<b>INSTRUCTIONS</b>			
<p>Submit this application in triplicate (3) to any FAA Flight Standards district office.</p> <p>Applicants requesting a Certificate of Waiver or Authorization for an aviation event must complete all the applicable items on this form and attach a properly marked 7.5 series Topographic Quadrangle Map(s), published by the U.S. Geological Survey (scale 1:24,000), of the proposed operating area. The map(s) must include scale depictions of the flightlines, showlines, race courses, and the location of the air event control point, Police dispatch, ambulance, and fire fighting equipment. The applicant may also wish to submit photographs and scale diagrams as supplemental material to assist in the FAA's evaluation of a particular site. Application for a Certificate of Waiver or Authorization must be submitted 45 days prior to the requested date of the event.</p> <p>Applicants requesting a Certificate of Waiver or Authorization for activities other than an aviation event will complete items 1 through 8 only and the certification, item 15, on the reverse.</p>			
1. Name of organization  United States Air Force, 757th Airlift Squadron, Aerial Spray Unit		2. Name of responsible person  (b) (6)	
3. Permanent mailing address  House number and street or route number  Youngstown Air Reserve Station	City  Vienna	State and ZIP code  OH 44473	Telephone No.  (b) (6)
4. FAR section and number to be waived			
5. Detailed description of proposed operation ( <i>Attach supplement if needed</i> ) Conduct aerial spray operations over Naval Submarine Base, Kings Bay, GA. per installation commander request to control nuisance and disease vectoring mosquitoes. See proposed operational plan.			
6. Area of operation ( <i>Location, altitudes, etc.</i> )  Naval Submarine Base, Kings Bay, GA. Application will be conducted at 1000' AGL or below			
7a. Beginning ( <i>Date and hour</i> )  12 Apr 2008; 1400 1600		7b. Ending ( <i>Date and hour</i> )  13 Apr 2008; 2030	
8. Aircraft make and model (a)	Pilot's Name (b)	Certificate number and rating (c)	Home address ( <i>Street, City, State</i> ) (d)
C130H	(b) (6) Maj	DoD	Youngstown Air Reserve Station, Vienna OH 44473
C130H	(b) (6) Capt	DoD	Youngstown Air Reserve Station, Vienna OH 44473
C130H	(b) (6) Maj	DoD	Youngstown Air Reserve Station, Vienna OH 44473
C130H	(b) (6) LTC	DoD	Youngstown Air Reserve Station, Vienna OH 44473
C130H	(b) (6) Maj	DoD	Youngstown Air Reserve Station, Vienna OH 44473
C130H	(b) (6) Maj	DoD	Youngstown Air Reserve Station, Vienna OH 44473



▶ <b>ITEMS 9 THROUGH 14 TO BE FILLED OUT FOR AIR SHOW/AIR RACE WAIVER REQUESTS ONLY.</b>				
9. The air event will be sponsored by:				
10. Permanent mailing address	House number and street or route number	City	State and ZIP code	Telephone No.
11. Policing <i>(Describe provisions to be made for policing the event.)</i>				
12. Emergency facilities <i>(Mark all that will be available at time and place of air event.)</i>				
<div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Physician  <input type="checkbox"/> Ambulance         </div> <div> <input type="checkbox"/> Fire truck  <input type="checkbox"/> Crash wagon         </div> <div> <input type="checkbox"/> Other - Specify _____          _____       </div> </div>				
13. Air Traffic control <i>(Describe method of controlling traffic, including provision for arrival and departure of scheduled aircraft.)</i>				
14. Schedule of Events <i>(include arrival and departure of scheduled aircraft and other periods the airport may be open.)</i>				
Hour (a)	Date (b)	Event (c)		
If sufficient space is not available, the entire schedule of events may be submitted on separate sheets, in the order and manner indicated above.				
<div style="display: flex; align-items: center;"> <div style="font-size: 2em; margin-right: 10px;">➤</div> <div> <p style="margin: 0;">Please Read</p> <p style="margin: 0;">The undersigned applicant accepts full responsibility for the strict observance of the terms of the Certificate of Waiver or Authorization, and understands that the authorization contained in such certificate will be strictly limited to the above described operation.</p> </div> </div>				
15. Certification - I CERTIFY that the foregoing statements are true.				
Date	Signature of Applicant			
3 Apr 08	(b) (6)			
Remarks				

**PUBLIC AFFAIRS RELEASE: AERIAL SPRAY FOR MOSQUITOES**

King's Bay has requested assistance from the 910th Airlift Wing, Air Force Aerial Spray Squadron to conduct aerial spraying for mosquito control 11-13 April 2008.

Spring precipitation and recent rains have produced large populations of mosquitoes. Base Public Health and Pest Management personnel have determined areas on base where mosquito larvae develop. Many of these mosquitoes are efficient vectors of Eastern Equine Encephalitis and West Nile virus, as well as presenting a serious nuisance to personnel working outside. Surveillance using light traps, larval counts, and biting complaints are used to determine where and when pesticide applications are justified.

The Air Force Aerial Spray Squadron will be applying US Environmental Protection Agency registered pesticides. Adult mosquito control will occur during the final 3 daylight hours prior to sunset on April 12. Operations may be rescheduled for April 13 if foul weather prevents scheduled operations. The applications will be made using a modified C-130H cargo aircraft at 100-150 above ground level. The Public Works Department will conduct an in-brief on 11 April to confirm the areas to be treated, ensure safety and environmental preparations have been addressed, and resolve any questions from surrounding communities.

The public has been notified of Kings Bay's intent to conduct aerial spraying for mosquitoes to protect public health, ease working conditions, and improve quality of life for members on Station. Concerned citizens should contact the Kings Bay Public Affairs Office at (912) 573-4718.





**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON-AERIAL SPRAY**  
**3976 King Graves Rd Unit 26**  
**Vienna OH 44473-5926**

14 August 2008

MEMORANDUM FOR HQ AFRC/DOOM

FROM: 757 AS/DOS

SUBJECT: Concept of Operations for Aerial Spray at Tyndall AFB, FL.

1. Objective/Purpose/Benefits of the Spray Mission: Support visit with 1<sup>st</sup> AF to include briefing, static display and spray sortie using water.

2. Capability: Spray Aircraft available on 20-21 August.

3. Concept of Operations:

20 AUG (Wednesday)

1300 Show

1500 Depart KYNG

1645 Land KPAM

21 AUG (Thursday)

0900-1100 AOC tour

1100-1200 Working Lunch/Brief 1<sup>st</sup> AF

1200-1300 Static Display

1300-1600 Spray Flight

1700 Depart KPAM

2045 Land KYNG

4. Aircraft Commander: Capt (b) (6) (b) (6)

5. Support required at Tyndall AFB, FL has been coordinated.

// SIGNED //

(b) (6) (b) (6) CAPT, USAFR  
757 Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## TYNDALL AFB, FL

### 20-21 AUGUST 2008

**OBJECTIVE/PURPOSE AND BENEFIT:** Mission is in support of visit with 1<sup>st</sup> AF to include brief, static display and spray sortie.

#### 1. 910 AW PARTICIPANTS:

- a. **Commander:** Col McGregor
- b. **Aircrew:**
  - (1) Pilots: Col (b) (6) Maj (b) (6) Capt (b) (6) Capt (b) (6)
  - (2) Navigators: Maj (b) (6)
  - (3) Flight Engineers: MSgt (b) (6) TSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6) MSgt (b) (6)
- b. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) MSgt (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6) SRA (b) (6)
  - (3) Avionics: SSgt (b) (6)
- c. **Entomologist:** Maj (b) (6)

#### 2. PPR REQUIREMENTS: PAM 082002

#### 3. PLANNED SEQUENCE OF EVENTS: All times are local

##### 20 AUG (Wednesday)

1300 Show  
1500 Depart KYNG  
1645 Land KPAM

##### 21 AUG (Thursday)

0900-1000 AOC tour (optional) \*\*Meet at AOC main turnstile  
1100-1200 1<sup>st</sup> AF Briefing  
1100-1200 Working lunch/brief 1<sup>st</sup> AF (\$8.00)  
1200-1300 Static Display  
1300-1600 Spray Flight (Duration of flight will be approximately 1-1.5 hrs)  
1700 Depart KPAM  
2045 Land KYNG

**Special Notes:** Attendees will be Maj Gen (b) (6) 1<sup>st</sup> AFNORTH/CC, COL (b) (6) 22<sup>nd</sup> AF, Mr (b) (6) AFRC; LTC (b) (6) 601 AOC/1<sup>st</sup> AF, MAJ (b) (6) 601 AOC/1<sup>st</sup> AF. Possible attendees not confirmed at this time: Mr. (b) (6) -Chief of Staff/1<sup>st</sup> AF, Col (b) (6) -601 AOC/CC, CAPT Carson (USN)

- All Briefings will be conducted at the 601<sup>st</sup>.
- PA/Media may be present for Static Display and Flight

#### 4. SPRAY CONFIGURATION: SP-2G, Fire Dept (ext 4777) supplying water POC Chief (b) (6)

- a. **Mass:** 2-Module System with 10-8070's installed
- b. **Differential GPS:** Wingman Installed
- c. **Aircraft:** 89-9106
- d. **Mission Identifier:** QZNRKA204233

#### 5. SPRAY PARAMETERS: AS NEEDED

#### 6. AIR TO GROUND RADIO FREQUENCIES:

Tyndall TWR: 133.95/384.4 Tyndall APP: N119.1/379.3  
Tyndall GND: 121.9/259.3 S136.4/338.35  
Tyndall CLNC: 118.05/289.4  
Tyndall ATIS: 254.4

Monitor 259.375 while in the MOA (Departure will hand off)

7. **BILLETING: On Base at Sand Dollar Inn:** DSN: 523-4210
8. **TRANSPORTATION:** Provided by Tyndall AFB, One staff car, two 7 pax vans, one 15 pax van. All at Base Ops.
9. **CONTACTS:**
- a. **Tyndall AFB, FL:** Com: (850) 283-XXXX; DSN: 523-XXXX
- (1) Chief Environmental Compliance (Spray Coordinator): (b) (6) , Cell? FAX 3854
  - (2) Pest Control (b) (6)
  - (3) PAM TWR: x8596
  - (4) Airfield Manager: x2291
  - (5) Base Ops: x4244
  - (6) Transportation: x4872
  - (7) Billeting: x4210 Fax 4800
  - (8) Bay County Mosquito Control: (b) (6) Director, (b) (6)
  - (9) Gulf County Mosquito Control: (b) (6) , Assistant Director, (b) (6)
  - (10) RAPCON: Chief (b) (6) /Supervisor (b) (6)
  - (11) Airspace Manager: Mr. (b) (6)
- b. **Homestead ARB, FL:** Commercial (305) 224-XXXX; DSN 791-xxxx
- (1) Spray Coordinator (Base Safety Officer): Lt Col (b) (6) ; cell, (b) (6)
  - (2) Natural Resources Program Manager: Dr. (b) (6)
  - (3) HST TWR: (305) 224-6524
  - (4) Airfield Manager: x7072
  - (5) Base Ops: x7516/7071 Fax 7512
  - (6) Billeting: x7198 Fax 7290
  - (7) Transportation: x7766/7767
  - (8) Weather:
- c. **Miami-Dade County Mosquito Control:** (b) (6) , office; (b) (6)
- d. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext
1. 910 AW/CC: Col (b) (6)
  2. 910 AW Command Post: Ext 1315; FAX 1161
  3. 910 AW/PA: Capt (b) (6) (b) (6) FAX 1022
  4. 910 OG/CC: Col (b) (6) (b) (6) (b) (6) / (b) (6)
  5. 910 OG: Airfield Manager, Ext 1186/1526
  6. 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
  7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
  8. 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) ; FAX 1657
  9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) (b) (6) (b) (6) FAX 1616
  10. 910 LG/CC: Ext 1225
  11. 910 LG/LGM: Ext 1352
  12. Maintenance Control: Ext 1327
  13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6) (b) (6)
  14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
  15. Cellular Spray Phones:
    - Mission Commander: (b) (6)



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

12 JUN 09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Parris Island MCRD, SC

1. One C-130 will be available 22-25 Jun 09 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in biting midge and mosquito populations effecting the health and welfare of the recruits and other personnel at Parris Island MCRD, SC. Operations will be conducted out of Beaufort MCAS, SC.

2. Concept of Operations:

- a. 22 Jun (Monday)  
1400 Show KYNG  
1600 Depart KYNG  
1800 Land KNBC
- b. 23 Jun (Tuesday)  
1600 Show KNBC  
1930 Depart KNBC  
2100 Land KNBC
- c. 24 Jun (Wednesday)  
Training or Wx Backup Times TBD
- d. 25 Jun (Friday)  
0800 Show KNBC  
1000 Depart KNBC  
1200 Land KYNG

3. Aerial Spray Operation:

- a. Chemical: Dibrom
- b. Altitude: 150 AGL
- c. Application rates: 2.7 gal/min (.75 oz/acre)
- d. Area: Approximately 7500 acres

4. Maj (b) (6) (b) (6) will act as Mission Commander.
5. Maj (b) (6) (b) (6) will act as Aircraft Commander
6. Support required at Beaufort MCAS and Parris Island MCRD has been completed.

(b) (6) (b) (6) Maj, USAFR  
Assistant Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

22 Sep 09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Parris Island MCRD, SC.

1. One C-130 will be available 5-9 October 09 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito and biting midge populations effecting the health and welfare of the personnel stationed at Parris Island MCRD, SC.

2. Concept of Operations:

- a. 5 Oct (Monday)  
0900L Show KYNG  
1100L Depart KYNG  
1300L Land KNBC
- b. 6 Oct (Tuesday)  
1530L Show KNBC  
1730L Depart KNBC  
1930L Land KNBC
- c. 7 Oct (Wednesday)  
1530L Show KNBC  
1730L Depart KNBC  
1930L Land KNBC
- d. 8 Oct (Thursday)  
1530L Show KNBC  
1730L Depart KNBC  
1930L Land KNBC

- e. 9 Oct (Friday)  
0930L Show KNBC  
1130L Depart KNBC  
1330L Land KYNG

3. Aerial Spray Operation:

- a. Chemical: Duet
- b. Altitude: 150 AGL
- c. Application rates: Approximately 3.6 gal/min (0.5 oz/acre)
- d. Area: Approximately 8,000 acres

4. Maj (b) (6) (b) (6) will act as Mission Commander.

5. Maj (b) (6) will act as Aircraft Commander.

6. Support required at Beaufort MCAS and Parris Island MCRD has been coordinated.

(b) (6) (b) (6) CAPT, USAFR  
Aerial Spray Coordinator



**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**PARRIS ISLAND MCRD, SC 21 – 24 APR 2008**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 21-24 APR 2008
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Dates: 22 APR and 23 APR 2008
- b. **Aircrew:**
  - (1) Pilots: COL (b) (6), Mission Commander, LTC (b) (6), MAJ (b) (6)
  - (2) Navigator: MAJ (b) (6)
  - (3) Flight Engineers: MSGT (b) (6)
  - (4) Spray Operators: MSGT (b) (6), MSGT (b) (6), TSGT (b) (6)
- b. **Maintenance:**
  - (1) Spray Maintenance: TSGT (b) (6), TSGT (b) (6), TSGT (b) (6)
  - (2) Crew Chiefs: TSGT (b) (6), SSGT (b) (6)
  - (3) Avionics: (b) (6)
- c. Entomologist: LTC (b) (6)
- d. **Flying Data:**
  - (1) Spray Sorties 22 APR 1.0 and 1.2
  - (2) Spray Sortie 23 APR 1.0
  - (3) Ferry Sorties/Hours: 2.0/2.0 on 21 APR and 24 APR

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 44 Gal Dibrom<sup>®</sup> (22 APR)
- e. Gallons Pesticide Applied: 42
- f. Gallons and Name Diluent Used: N/A
- g. Gallons and Name of Flush Used: 7 gal Marvel Mystery Oil
- h. Other Additives Used: None
- i. Application Rate: 0.75 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet<sup>®</sup> 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 7 oriented straight down
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 2.7 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 3000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) 22 APR 08 – 300°/6 knots at 1800; 330°/4.5 knots at 1930
  - (2) 23 APR 08 -- 60°/6 knots with gusts to 10 knots at 1825; dropped to 5-8 knots at 1830
- b. Temperature (Degrees Fahrenheit):
  - (1) 22 APR 08 – 73 at 1800; 69 at 1930
  - (2) 23 APR 08 – 71 at 1825
- c. Relative Humidity:
  - (1) 22 APR 08 – 51% at 1800; 56% at 1930
  - (2) 23 APR 08 – 71% at 1825
- d. Cloud Cover: 25% on 22 APR 08; 50% on 23 APR 08 following a brief shower
- e. Source: Ground observations at Parris Island MCRD

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Acres sprayed and gallons used:
  - (1) 22 APR 2008 – 6,060 acres; 38 gallons.
  - (2) 23 APR 2008 – 1,311 acres; 4 gallons.
- b. Deposition Pattern:
  - (1) Technique/s Used: visual observation of aircraft course (GPS); 2 Bald eagle's nests were given a 0.5 mile radius for no-fly
  - (2) Results: Good coverage throughout spray area, but see remarks
- c. Effectiveness:
  - (1) Technique/s Used: Weekly collections of midges and mosquitoes with light traps and landing rates in regions frequented by recruits involved in training
  - (2) Results: Control efficacy will be determined by Parris Island MCRD staff.

**8. REMARKS:** Two sorties were flown on 22 APR 2008 due to partially plugged nozzles on the first sortie. The aircraft returned to Beaufort MCAS for maintenance between sorties, so did not have enough time to finish the spray on 22 APR 2008. Spray swaths 1 and 2 on the 51/231 chart were not sprayed. All other swaths up to swath 19 were flown. Biting midges were active during the spray. Landing counts for biting midges and mosquitoes were conducted in shaded areas protected from the wind on 23 APR 2008 during the middle of the day because it was overcast and temperatures were relatively cool. All counts were zero with the exception of Horse Island which, with the wind drift on 22 APR 2008 would not have been sprayed. Landing counts were two per minute for biting midges, and six per minute for mosquitoes. Priorities for the 23 APR 2008 spray were first to complete the area not sprayed on 22 APR which included training areas on the south end of the Island, second, Horse Island, and third, the area between the administrative area on the east side of the Island and the rifle range. The evening of 23 APR 08 at 1900 following the spray, biting midges were very active in the administrative area, and on the western causeway. Landing counts from 24 APR 2008 are below:

- (1) Horse Island – 1828 to 1833 – 2 biting midges/5 min; no mosquitoes
- (2) Rifle Range – 1844 – no midges or mosquitoes, but breezy
- (3) Water Tower – 1850 – no midges or mosquitoes
- (4) Golf Course – 1900 – no midges or mosquitoes
- (5) Jim Clark's Office – 1819-1922 – 2 biting midges/3 min; no mosquitoes

It appears that a few spots did not receive complete coverage because of wind direction and avoiding the no spray areas for eagle's nests, and the problem with some nozzle plugging on 22 APR.

(b) (6) <sup>signed//</sup>  
LTC, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL





DEPARTMENT OF THE AIR FORCE  
YOUNGSTOWN AIR RESERVE STATION  
757AS/AERIAL SPRAY UNIT  
VIENNA OH 44473-5924

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT**  
**UTAH TEST AND TRAINING RANGE, MARCH 31 - 10 APRIL 2009**

**1. MISSION BASICS:**

- a. Installation Sprayed: Utah Test and Training Range (UTTR)
- b. Mission Duration: 31 MAR – 10 APR 2009
- c. Purpose of Application: Weed control on UTTR Targets 21 and 24, to facilitate UXO recovery
- d. Application Dates: 2 APR, 6 APR, 7 APR 2009
- e. Times of Application (Local): 2 APR 0835-1045; 6 APR 0740-1610; 7 APR 0715-1323; 8 APR 0715-0905
- f. Acres Treated: 1,048 on Targets 21, 24; 31 on Wildcat; Total = 1,079
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) Range Specialist/DSN 777-5345; Pest Shop Coordinator/Supervisor, (b) (6) DSN (b) (6)
- h. Date Spray Map Last Approved: 31 MAR 09
- j. Installation In-Briefing: (When/Where/Briefer/s): MAJ (b) (6) MAJ (b) (6) at Building 1274 with Matt Bolduc.

**2. OPERATIONAL:**

**Mission Commander:** MAJ (b) (6) (b) (6)

**AIRCREW1: AC 108-CALL SIGN: SPRAY 06**

- a. Pilots: MAJ (b) (6) (b) (6) MAJ (b) (6)
- b. Navigators: MAJ (b) (6)
- c. Flight Engineers: MSgt (b) (6)
- d. Spray Operators: SMSgt (b) (6) MSgt (b) (6) SSgt (b) (6)
- e. Crew Chiefs: MSgt (b) (6) SrA (b) (6)

**AIRCREW 2: AC 108- CALL SIGN: SPRAY 08**

- f. Pilots: MAJ (b) (6) MAJ (b) (6) Maj (b) (6)
- g. Navigators: LTC (b) (6) (b) (6)
- h. Flight Engineers: MSgt (b) (6)
- i. Spray Operators: MSgt (b) (6) MSgt (b) (6) (b) (6)
- j. Crew Chiefs: MSgt (b) (6) SrA (b) (6)

**k. Entomologists:** LTC (b) (6) (b) (6) application supervision, Cat 11 (UTTR), MAJ (b) (6) (b) (6) pesticide mixing and loading Cat 11, safety briefer (Hill AFB)

**l. Ground Support:** SMSgt (b) (6) (b) (6) (UTTR), LTC (b) (6) (b) (6) SMSgt (b) (6) (Hill)

**m. Flying Data:**

- (1) 2 Spray Sorties on 2 APR – 1 106; 2 108.
- (2) 7 Spray Sorties on 6 APR – 3 106; 4 108.
- (3) 5 Spray Sorties on 7 APR – 3 106; 2 108.
- (4) 2 Spray Sorties (flush) on 8 APR – 1 106; 1 108.
- (5) Ferry Sorties/hours: 5/25.8
- (6) Spray sorties/hours: 16/20.8

**3. PESTICIDE:**

- a. Trade Name: Krovar® IDF

- b. EPA Registration Number: 352-505
- c. Formulation Sprayed: 10 lbs Krovar® per 22.5 gallons formulation.
- d. Gallons Pesticide Mix Loaded: 24,295
- e. Gallons Pesticide Mix Applied: 24,215
- f. Formulation Used: 450 lbs Krovar®, 4.0 gal StaPut®, ½ gal No-Foam®, 200 ounces Hi-Light® Dye, remainder water per 1000 gal of spray mix.
- g. Gallons and Name of Flush Used: 900 gal water
- h. Other Additives Used: 99.8 gal StaPut®; 40 gal Hi-Light® dye; 12.5 gal No-foam
- i. Application Rate: 22.5 gal/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99106, 99108
- b. Spray System (Modules Used) and System ID #: 3 and 5.
- c. Spray System Configuration: 3-Module System/ UHV Fuselage Booms
- d. Nozzle Type/Size: UHV Fuselage
- e. Nozzle Orientation & Number Used: 2 oriented straight back.
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 366 gallons per minute.

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 35'
- b. Spray Off-set: Given by spray ground
- c. Spray Release Altitude: 100' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) 2 APR – beginning 160° at 15 knots; ending 160° at 19 knots
  - (2) 6 APR – beginning 360° at 1.5 knots; ending 20° at 3 knots.
  - (3) 7 APR – beginning 20° at 3 knots; ending 270° at 5 knots.
- b. Temperature (Degrees Fahrenheit):
  - (1) 2 APR – 37° F - 45° F
  - (2) 6 APR – 37° F - 53° F
  - (3) 7 APR – 32° F - 48° F
- c. Relative Humidity:
  - (1) 2 APR – 41- 30 %
  - (2) 6 APR – 60-26 %
  - (3) 7 APR – 56-45 %
- d. Cloud Cover: Partly cloudy to overcast during the 2 April spray and clear on 6-7 April.
- e. Source: Ground observations at UTTR Target 21.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique Used: blue dye pattern on targets and observations from ground markers.
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Techniques Used: monitoring of weed emergence in spring.
  - (2) Results: will be determined this spring by range personnel.

**8. REMARKS:**

- a. A factor in the planning for this mission was the grounding of the C-130 fleet pending replacement of a series of structural bolts just prior to the start dates. 910<sup>th</sup> MXS worked

diligently to provide the 388<sup>th</sup> RANS with 2 spray aircraft. Consequently, spray aircraft also flew additional self-supporting ferry sorties to put personnel and equipment in place. Construction on the Hill AFB runway and specifically on the alert ramp prevented the mission from using Zulu Ops as a command post this year. Instead, we mixed and loaded near Air Freight terminal ramp, an acceptable but not ideal location as it is logistically difficult to access. Herbicide applications on the UTTR began 2 April but were discontinued early morning after wind speeds on the targets made controlling the swath difficult. Two subsequent poor weather days further delayed the mission. The range was closed 4-5 April. On 6 April conditions improved significantly and the operation encountered what may be described as the “perfect calm”; a record 7 sorties were completed as environmental conditions miraculously remained favorable throughout the day. Excellent conditions prevailed again on 7 April and the Spray Flight finished all assigned targets. In addition, good coverage for the current application was observed by the onboard entomologist. However, some lane skips undoubtedly occurred on Target 21 resulting from pesticide drift, as fewer gallons were applied there this year. The additional herbicide was used to treat the Wildcat Mountain target which has not been treated for at least 10 years. The lack of a proper command post notwithstanding, we received good support from various organization on Hill including the 75 CES personnel lead by (b) (6) (b) (6). His team of 4 individuals mixed over 3 tons of Krovar on 6 April, during the record-setting application day. This was demanding physical labor and the team worked diligently to get the two spray aircraft back on target as quickly as possible. The 388 RANS (b) (6) ) did a great job in providing timely communication, information, and direction, which directly contributed to mission success. SMSgt (b) (6) (75 LRS) ensured we had access to Bldg. 900 during mission hours. Finally, we extend a special thanks to LtCol (b) (6) (514 FLTS) for serving, once again, as our base sponsor.

- b. An aerial review of the target areas by the entomologist found control from the 2008 application was effective. This finding, coupled with logistic factors for the 388<sup>th</sup>, indicate that the 2010 application will be scheduled again near the end of March or early April timeframe. There is also discussion of increasing the number of potential spray targets in the near future.

//signed//

(b) (6) (b) (6) LtCol, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

//signed//

(b) (6) MAJ, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

## Attachment 1: Summary Spray Chart

**2 -8 April 2009****SPRAY OPERATIONS SUMMARY FOR UTAH TEST AND TRAINING RANGE**

<b>DATE April</b>	<b>SORTIE #</b>	<b>AIRCRAFT #</b>	<b>SPRAY ON TIME (min)</b>	<b>TARGET</b>	<b>PASSES</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>FLYING HOURS</b>
2	1	108	4.7	21,24	8	79	1771	1.3
2	2	106	4.7	21,24	6	73	1641	1.3
6	3	108	5.0	21,24	8	80	1793	1.3
6	4	106	4.5	21,24	7	72	1620	1.1
6	5	108	5.0	24,21	8	79	1777	1.3
6	6	106	4.1	24,21	7	67	1515	1.3
6	7	108	5.0	21	13	76	1710	1.3
6	8	106	4.7	21	13	75	1677	1.3
6	9	108	5.5	21	15	84	1889	1.4
7	10	106	4.4	21	12	72	1616	1.3
7	11	108	5.0	21	13	81	1818	1.3
7	12	106	4.5	21	12	74	1661	1.3
7	13	108	5.5	21	15	84	1891	1.3
7	14	106	5.4	21, WC*	12	83	1836	2.0
8	Flush	108	Flush/Rinse	21	Flush	n/a	n/a	0.9
8	Flush	106	Flush/Rinse	21	Flush	n/a	n/a	1.1
		Totals	68		149	1,079	24,215	20.8

\*WC = Wildcat Mountain target

# USCG HH-65 Dolphin

## **Objectives**

E.iii.--Conduct all field operations in accordance with the Site Safety Plan.

E.iv. Conduct all field operations in accordance with restrictions relating to marine mammals, endangered species, and cultural resources.

E.vii.--Deploy observation technologies for water surface, water column, shoreline, and the seafloor to collect operationally relevant data in real time and near real time.

F.iv.--Conduct fieldwork to collect ephemeral data including SCAT, water samples, wildlife, shellfish, and economic information.



**Figure 1. A USCGC HH-65 Dolphin will be the first Aircraft on Scene at Safe Seas 2006.**

## **Overview**

### **Aerial Observation Training**

NOAA HAZMAT personnel will provide oil spill observation training to US Coast Guard Aviators using deployed drift cards and real environmental conditions present during the exercise.

### **Aerial Observations**

The observations observed in the training will be properly recorded and mapped in order to provide over-flight information to command post personnel and to help initiate oil spill trajectory models.



## **Overview**

The USCG HH-65 will be available for one AM sortie on Wednesday 9 August. The helicopter can execute tasking from the IC (Incident Commander) as appropriate. On scene time is approximately 1 hr 45 min. This helicopter can carry one passenger as designated by the NOAA Safe Seas organizers.

## **Team**

LEAD:	LT (b) (6)	/LT (b) (6) (b) (6)
Air Boss:	LT (b) (6)	
NOAA Trainer:	(b) (6) (b) (6)	NOAA HAZMAT

## **Location**

Based out of USCG Air Station San Francisco at SFO Int'l Airport. Operation center phone: 650-808-2901/2902. Sortie details must be given to Air Station schedule officer, LT (b) (6) (b) (6) by 2 August 2006. This includes requested on scene time, location, passenger information, and any modification to the concept of operations below.

The primary operating area shall be offshore from Bolinas Bay, IVO N37° 49.5' W122° 41.5'

## **Concept of Operations**

This will be the first aircraft on scene for the exercise. It will be simulating a request from USCG Sector San Francisco regarding the surveillance of a simulated oil spill in vicinity of position N37° 39.00' W122° 38.0'.

The HH-65C will conduct area surveillance and provide a pollution and weather report to the Incident Commander.

The HH-65C will take video of the scene. This video tape can either be transported directly to Coast Guard Island in Alameda, or will be taken to Air Sta San Francisco. (Note: Depending on the location of the Incident Command Post, the tape can be taken directly to it – further discussion should be had with either LT (b) (6) or LT (b) (6) regarding the feasibility of this.)

The HH-65 will be off scene prior to the commencement of the spray dispersant exercise conducted with the USAF C-130, the NOAA amphibious aircraft, and charter aircraft. No exercise aircraft will be flying in conjunction with the HH-65's on scene time.

## **Comms Plan**

CALL SIGN: "Coast Guard 65 \_\_ \_\_"

**HH65 Comms Capabilities:**

Radio	VHF-AM	UHF	FM	HF
1	Yes	Yes	Yes	
2	Yes	Yes	Yes	
3			Yes	
4				Yes

**Comms Plan:**

Call Sign	VHF-AM	UHF	FM	HF
Incident Command	?	?	?	?
Sector San Francisco			CH 21	
NOAA 64	122.85			
Golden Gate Common	124.3			
Pacific Responder	122.85	345.0	?	?
Spray 1	122.85	345.0		
Spotter 6	122.85	345.0		

Call Sign	Unit Description
Incident Command	Incident Command Post
Sector San Francisco	Sector San Francisco
NOAA 64	NOAA Lake Amphibian aircraft used for dispersant exercise. N64RF. Will be a high cover safety aircraft and used for aerial surveillance.
Spray 1	USAF C-130 for dispersant exercise
Spotter 6	Charter aircraft for dispersant exercise
Pacific Responder	Research Vessel Pacific Responder
Golden Gate Common	General aviation frequency used for low flying aircraft in the vicinity of San Francisco Bay

**Data Plan**

Information will be relayed to the command post via the NOAA observer.

**Safety Plan**

A representative from this mission will participate in the Aviation Flight Safety and Planning meeting to be held on Tuesday, August 8<sup>th</sup> at the USCG Air Station, SF at 1400.

The HH-65 will be off scene prior to the commencement of the spray dispersant exercise conducted with the USAF C-130, the NOAA amphibious aircraft, and charter aircraft. No exercise aircraft will be flying in conjunction with the HH-65's on scene time.

The HH-65 will maintain Air Station San Francisco training weather minimums (500 ft, 2 NM) at all times.

The HH-65C is TCAS equipped.

### **Contingencies**

If weather conditions prohibit over flight offshore, the HH-65 will conduct over flights in San Pablo Bay and report weather conditions to the IC.



## **Objectives**

E.iii.--Conduct all field operations in accordance with the Site Safety Plan.

E.iv. Conduct all field operations in accordance with restrictions relating to marine mammals, endangered species, and cultural resources.

E.viii-- Deploy dispersant application assets and follow-on Special Monitoring of Applied Response Technologies (SMART) in order to test the California Dispersant Plan.



**Figure 1** Figure 1 The NOAA Lake Amphibian Aircraft will fly as the Task Force Command plane and provide safety coordination from the highest altitude of the evolution.

## **Dispersant Application**

The U.S. Air Force Reserve will deploy from Youngstown, Ohio, in order to simulate the application of oil dispersants that were approved by the Regional Response Team during the Table Top portion of the exercise in July.

This evolution will also involve the participation of the NOAA Lake Amphibian aircraft as well as an California Department of Forestry and Fire Prevention Air Attack fire response aircraft. The C-130 and Air Attack aircraft will fly in opposing racetrack formation applying water over the drift card/fluorocine dye "slick". The C-130 will do eight passes at 100 feet altitude applying approximately 1000 gallons of water. The NOAA aircraft will serve as a safety plane, and will include an expert tactical commander to assist in this capacity.



**Figure 2** The California State Air Attack Aircraft provides spray spotting for fire fighting and dispersant application.



**Figure 3** The U.S. Air Force Reserve's 910th Air Wing will provide a Spray equipped C-130 to simulate dispersant application from an altitude of 100 feet.

# NOAA Lake Amphibian

## **Objectives**

E.iii.--Conduct all field operations in accordance with the Site Safety Plan.

E.iv. Conduct all field operations in accordance with restrictions relating to marine mammals, endangered species, and cultural resources.

E.vii.--Deploy observation technologies for water surface, water column, shoreline, and the seafloor to collect operationally relevant data in real time and near real time.

E.viii-- Deploy dispersant application assets and follow-on Special Monitoring of Applied Response Technologies (SMART) in order to test the California Dispersant Plan.

F.iv.-- Conduct fieldwork to collect ephemeral data including SCAT, water samples, wildlife, shellfish, and economic information.

## **Overview**

### **Dispersant Application Safety Plane**

The NOAA Lake Amphibian will be conducting two missions during the simulated dispersant application. In the first mission the plane will fly over the northern and southern operations areas in order to map the spatial extent of trust resources. This survey will then be used to facilitate the second mission, which is to serve as the Safety Plane during the application of simulated dispersant.

### **Wildlife Survey**

In advance of the C-130 led aerial dispersant application, NOAA, assisted by trained wildlife observers will conduct a wildlife survey in order to ensure the absence of trust resources that might be affected during the exercise. The results of this survey will be fed into the operations cycle.

## **Team**

NOAA Pilot: LCDR (sel) (b) (6)  
Air Boss: LT (b) (6), USCG  
Observer: (b) (6), Channel Islands National Marine Sanctuary  
Videographer:

## **Location**

Aircraft will take off from Half Moon Bay (KHAF). LT (b) (6) is the Pilot in Command, cell phone (b) (6).

On scene times will be established on Tuesday 8 August at the Air Ops Planning and Safety Meeting..

The primary operating area shall be offshore from Ocean Beach, IVO N37° 39.00' W122° 38.0'.

## **Concept of Operations**

Altitudes and operating details shall be thoroughly briefed with all pilots prior to the exercise.

Check in with the IC to establish the location of the Coast Guard helicopter. If the helo is still in the area, make traffic calls on Golden Gate Common (124.3) or maintain flight following with NORCAL approach (135.1)

NOAA 64 will conduct an aerial surveillance IAW Incident Command tasking. This will include a survey and report to the IC regarding marine wildlife, reports on the simulated oil spill status, and weather.

In preparation for the dispersant exercise, NOAA 64 will climb to the pre-briefed cover altitude and check in with NORCAL approach on 135.1. Once established in an orbit, NOAA 64 will direct SPRAY 1 and SPOTTER 6 into the exercise area on 122.85. Visual traffic advisories and advisories from NORCAL approach will be relayed to exercise aircraft via 122.85.

RV PACIFIC RESPONDER will monitor 122.85 as well. Any advisories to the dispersant operation from the IC shall be made via RV PACIFIC RESPONDER.

## **Comms Plan**

**CALL SIGN: "NOAA 64"**

**N64RF Comms Capabilities:**

<b>Radio</b>	<b>VHF-AM</b>	<b>UHF</b>	<b>FM</b>	<b>HF</b>
<b>1</b>	Yes			
<b>2</b>	Yes			

**Comms Plan:**

<b>Call Sign</b>	<b>VHF-AM</b>	<b>UHF</b>	<b>FM</b>	<b>HF</b>
<b>Incident Command</b>	?	?	?	?
<b>Sector San Francisco</b>			CH 21	
<b>Coast Guard 65</b>	124.3	345.0	CH 21	5696
<b>Golden Gate Common</b>	124.3			
<b>Pacific Responder</b>	122.85	345.0	?	?
<b>Spray 1</b>	122.85	345.0		
<b>Spotter 6</b>	122.85	345.0		

<b>Call Sign</b>	<b>Unit Description</b>
<b>Incident Command</b>	Incident Command Post
<b>Sector San Francisco</b>	Sector San Francisco
<b>Coast Guard 65</b>	USCG HH-65C helicopter.
<b>Spray 1</b>	USAF C-130 for dispersant exercise
<b>Spotter 6</b>	Charter aircraft for dispersant exercise
<b>Pacific Responder</b>	Research Vessel Pacific Responder
<b>Golden Gate Common</b>	General aviation frequency used for low flying aircraft in the vicinity of San Francisco Bay

## **Data Plan**

## **Safety Plan**

Maintain VMC at all times.



Ensure altitudes, comms, and procedures are briefed with all pilots prior to the exercise.

Utilize visual scanning and NORCAL approach to provide aircraft traffic advisories to SPRAY 1 and SPOTTER 6.

Do not over-fly within ½ NM of the coast lower than 2000 feet due to the sensitivity of nesting birds.

Remain clear of SFO Class B Airspace at all times.

### **Contingencies**

If weather conditions prohibit over flight offshore, the spray dispersant exercise will be moved to the San Pablo Bay (SGD/170/15NM), 15 NM South of Scaggs Island VOR. This decision will be made by the IC based on weather reports from the HH-65 and NOAA 64.

An A-B line in the San Pablo bay will be based on GPS positions:

A: N38° 02.1' W122° 24.0'

B: N38° 03.0' W122° 22.9'

In this case, the dispersant exercise will be conducted with air assets only, specifically NOAA 64, SPOTTER 6, and SPRAY 1.

The San Pablo Bay has a higher concentration of air traffic than offshore. Pilots must be extra diligent of possible non-exercise traffic interference.

NOAA 64 shall orbit at the pre-briefed altitude check in with Oakland Center (freq TBD) to receive traffic advisories. Advisories will be given to SPOTTER 6 and SPRAY 1 via 122.85.

# USAF 910<sup>th</sup> Air Wing C-130 (Spray 1)

## Overview

The U.S. Air Reserve will deploy from Youngstown, Ohio in order to simulate the application of dispersants.

During the exercise, the C-130 will be based out of Moffet Field (KNUQ).

## Team

### 910 AW PARTICIPANTS:

#### a. Aircrew:

- (1) Mission Commander: MAJ (b) (6) (6)
- (2) Pilots: MAJ (b) (6) (b) (6) MAJ (b) (6)
- (3) Navigators: MAJ (b) (6) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: SMS (b) (6) , MSG (b) (6) (b) (6)

#### b. Spray Maintenance:

- (1) Spray Maintenance: TSG (b) (6) , TSG (b) (6) , TSG (b) (6)
- (2) Crew Chiefs:

#### c. CPMP: MAJ (b) (6) (b) (6) CPT (b) (6) ?

#### d. Public Affairs: CPT (b) (6) (b) (6)

## Location

The C-130 will be based out of Moffet Field.

The NOAA Lake Amphibian and chartered spotter aircraft will be based out of Half Moon Bay (KHAF).

If offshore weather permits, the evolution will occur in the vicinity of the Southern Operating area (37° 39.00N, 122° 38.00W).

## **Concept of Operations**

### **PART 1: LOGISTICS**

#### **A. TIMELINE:**

##### **6 Aug (Sunday):                    PPR 0601**

- 1000: Show Time
- 1     200: Depart KYNG
- 1630: Land KNUQ
- 1630: Safety Briefing

##### **7 Aug (Monday):**

- 1200-1500: Safe Seas Media Day, Piers 30-32  
(b) (6) (b) (6)                    (b) (6)    (b) (6)                    all YNG personnel invited

##### **8 Aug (Tuesday):**

- 1200: Safe Seas 2006 Emergency Response Exercise Planning Meeting  
Dispersant application Training.  
USCG San Francisco Air Station, Bldg ?
- 1900: Safe Seas 2006 Reception at Hyde Street Marina—all invited to attend

##### **9 Aug (Wednesday):**

- 0900: Show Time
- 1030: Depart KNUQ - Safe Seas 2006 Emergency Response Exercise
- 1115: Disperse Applications over simulated oil spill
- 1230: Land KNUQ

##### **10 Aug (Thursday):**

- 1230: Safe Seas 2006 Emergency Response Exercise Hot Wash  
USCG San Francisco Air Station, Command Post

##### **11 Aug (Friday):**

- 0600: Show Time
- 0800: Depart KNUQ
- 1730: Land KYNG

#### **B. SPRAY CONFIGURATION:**

- a.     MASS – SP2G
- b.     Aircraft Number: 106
- c.     Mission Identifier: QZNRKA025218

#### **C. SPRAY PARAMETERS:**

- a.     Nozzles – Raindrop nozzles oriented straight back.

- b. 8 (16 total) on each fuselage boom; evenly spaced.
- c. Booms – fuselage only
- d. Airspeed – 170 knots ground speed.
- e. Altitude – 100 feet above water.
- f. Application Rate – 7 Gal/Acre
- g. Flow Rate – 277 Gal/Min
- h. Spray -- water only.
- i. Number of passes – as needed.
- j. Pressure – 40 psi

#### **D. LOADING:**

- a. 950 gallons of water
- b. **Furnished by Installation:**
  - (1) Water
  - (2) Truck
  - (3) Two B-5 or B-1 Stands

#### **E. TRANSPORTATION:**

*ENTERPRISE RENTAL CAR AGENCY-pick up at Base Ops*

- #079918 confirmation, 6 Full Size @ \$47 per day or \$282 per week, 650-934-0760, poc Meg

- (b) (6)
- (b) (6)
- (b) (6)
- (b) (6)
- **Crew Chiefs**
- (b) (6)

#### **F. QUARTERS:**

Lodging Rate \$99.50, per diem rate \$101.

- Quality Inn Mountain View, 650-934-0155, (b) (6) Confirmations 122081-122097

## G. CONTACTS:

### a. Safe Seas 2006 :

- (1) Moffett Federal Airfield: 650-603-9213
- (2) Moffett Airport Police and Fire: 650-604-5416
- (3) USCG San Francisco: 650-808-2900
  - Operations Center x 2901, 2902
  - Commander x 2910
  - Ops Officer x 2920/2921
- (4) USCG Com Officer: Ltjg (b) (6) : (b) (6)
- (5) USCG Air Boss: Lt (b) (6) : (b) (6) , Cel (b) (6)
- (6) NOAA Responder: (b) (6) : (b) (6) Cel (b) (6)
- (7) USCG (b) (6) , Cel (b) (6)

### b. 910AW / 757AS Youngstown ARS OH:

DSN: 346-XXXX;

COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046, 2+ Ext

- (1) 910 AW/CC: COL (b) (6) (b) (6)
- (2) 910 AW Command Post: Ext 1315, FAX 1161
- (3) 910 AW/PA: Cpt (b) (6) (b) (6) (b) (6) , 1022
- (4) 910 OG/CC: Ext 1257 / 1179, FAX 1172
- (5) 910 OSF/OSA Airfield Manager: (b) (6)
- (6) 757 AS/DO Operations Officer: Maj (b) (6) (b) (6) (b) (6)
- (7) 757 AS/DOO Ops Admin: SMS (b) (6) (b) (6) FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office: Capt (b) (6) (b) (6) Maj (b) (6) (b) (6)  
(b) (6) , FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) 910 LG/LGMS: Spray Maintenance: SMS (b) (6) Ext (b) (6)
- (13) 910 LG/LGL: Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Cellular Phones:
  - Mission Commander (b) (6)
  - PMP Ground Support (b) (6)
  - Spray Maintenance (b) (6)

## PART 2: DISPERSANT EVOLUTION

Three aircraft will be involved in the evolution:

Aircraft	Purpose	Point of Contact
USAF C-130 "SPRAY 1"	Product Application	(b) (6) (b) (6) Research Entomologist Youngstown Air Reserve Station (757 AS/DOS) Vienna, Ohio 44473 (b) (6) office DSN (b) (6) 330.609.1616, fax (b) (6) (b) (6) (b) (6)
NOAA Lake Amphibian "NOAA 64"	Safety / Cover	LT (b) (6) XO, CINMS Work: (b) (6) Mobil
Chartered Aircraft "SPOTTER 6"	Spotter	(b) (6)

The primary operating area shall be offshore from Ocean Beach, IVO N37° 39.00' W122° 38.0'.

All altitudes and procedures shall be pre-briefed by all pilots prior to the evolution.

The evolution will start with NOAA 64 taking a high cover position IVO of the reported spill.

NOAA 64 shall establish comms with RV *PACIFIC RESPONDER* on 122.85 as well as NORCAL approach on 135.1.

The A-B line shall be IVO position 37° 39.00N, 122° 38.00W. This A-B line will either be pre-briefed or communicated to SPRAY 1 via the IC. Depending on comms capabilities of the IC, this information may need to be relayed through RV *PACIFIC RESPONDER*.

The C-130, SPRAY 1, shall establish a holding pattern at 1800 ft MSL on the SFO 230 radial at 20 DME (SFO/230/20). Establish comms with NOAA 64 on 122.85.

The charter aircraft, SPOTTER 6, shall hold at 2800 ft MSL on the SFO 210 radial at 20 DME (SFO/210/20). Establish comms with NOAA 64 on 122.85.

When NOAA 64 is established in orbit and ready to begin the exercise, NOAA 64 shall direct SPRAY 1 and SPOTTER 6 on scene to commence dispersant operations. NOAA 64 shall provide traffic and safety advisories to SPRAY 1 and SPOTTER 6 on 122.85.

Air to air comms between SPRAY 1 and SPOTTER 6 shall be on 122.85.

Remain clear of SFO Class B airspace at all times.

Do not over-fly within ½ NM of the coast lower than 2000 feet due to the sensitivity of nesting birds.

## Comms Plan

**CALL SIGN: "NOAA 64"**

**N64RF Comms Cababilities:**

Radio	VHF-AM	UHF	FM	HF
1	Yes			
2	Yes			

**CALL SIGN: "SPOTTER 6"**

**Charter Aircraft Comms Cababilities:**

Radio	VHF-AM	UHF	FM	HF
1	?			
2	?			

**CALL SIGN: "SPRAY 1"**

**USAF C-130 Comms Cababilities:**

Radio	VHF-AM	UHF	FM	HF
1	Yes			
2	Yes			
3		Yes		
5		Yes		

**Comms Plan:**

Call Sign	VHF-AM	UHF	FM	HF
Incident Command	?	?	?	?
Sector San Francisco			CH 21	
Coast Guard 65	124.3	345.0	CH 21	5696
Golden Gate Common	124.3			
Pacific Responder	122.85	345.0	?	?
Spray 1	122.85	345.0		
Spotter 6	122.85	345.0		
NOAA 64	122.85			



<b>Call Sign</b>	<b>Unit Description</b>
<b>Incident Command</b>	Incident Command Post
<b>Sector San Francisco</b>	Sector San Francisco
<b>Coast Guard 65</b>	USCG HH-65C helicopter.
<b>Spray 1</b>	USAF C-130 for dispersant exercise
<b>Spotter 6</b>	Charter aircraft for dispersant exercise
<b>NOAA 64</b>	NOAA Lake Amphibian aircraft used for dispersant exercise. N64RF.
<b>Pacific Responder</b>	Research Vessel Pacific Responder
<b>Golden Gate Common</b>	General aviation frequency used for low flying aircraft in the vicinity of San Francisco Bay

### **Data Plan**

### **Safety Plan**

Maintain VMC at all times.

Ensure altitudes, comms, and procedures are briefed with all pilots prior to the exercise.

NOAA 64 shall provide traffic advisories to SPRAY 1 and SPOTTER 6 on 122.85.

Do not over-fly within ½ NM of the coast lower than 2000 feet due to the sensitivity of nesting birds.

SPRAY 1 is TCAS equipped.

Remain clear of SFO Class B Airspace at all times.

### **Contingencies**

If weather conditions prohibit over flight offshore, the spray dispersant exercise will be moved to the San Pablo Bay (SGD/170/15NM), 15 NM South of Scaggs Island VOR. This decision will be made by the IC based on weather reports from the HH-65 and NOAA 64.

An A-B line in the San Pablo bay will be based on GPS positions:

A: N38° 02.1' W122° 24.0'

B: N38° 03.0' W122° 22.9'

In this case, the dispersant exercise will be conducted with air assets only, specifically NOAA 64, SPOTTER 6, and SPRAY 1.

The San Pablo Bay has a higher concentration of air traffic than offshore. Pilots must be extra diligent of possible non-exercise traffic interference.

NOAA 64 shall orbit at the pre-briefed altitude check in with Oakland Center (freq TBD) to receive traffic advisories. Advisories will be given to SPOTTER 6 and SPRAY 1 via 122.85.

SPRAY 1 shall hold at SAU/300/15 at 5500 ft MSL and establish comms with NOAA 64.

SPOTTER 6 shall hold at SAU/280/15 at 4500 ft MSL and establish comms with NOAA 64.

NOAA shall direct SPRAY 1 and SPOTTER 6 over San Pablo Bay when ready to commence the exercise.

Pilots should make every effort to remain “feet wet” at all times when operating below 1000 feet – particularly the C-130. A-B line adjustments should be made to accommodate this. Also, avoid the north shore of San Pablo Bay due to a wildlife refuge (see the SFO Terminal Area Chart). Also, A-B line adjustments should be made to stay reasonably clear of any non-exercise vessel traffic.

# Cal DFG *Partenavia*

## **Objectives**

E.iii.--Conduct all field operations in accordance with the Site Safety Plan.

E.iv. Conduct all field operations in accordance with restrictions relating to marine mammals, endangered species, and cultural resources.

E.vii.—Conduct geo-referenced aerial photography of #2 dye plume in real time for as long as the plume is visible or conditions allow in order to test the California Dispersed Oil Monitoring Plan.



## **Overview**

After a dispersant application, decision makers need to know whether or not it was effective and trustee agencies need to know the amount of oil forced into the water column for Natural Damage Assessment. Special Monitoring of Applied Response Technologies (SMART) is a systems of observation protocols intended to answer these questions.

SMART monitoring will be led from scientists aboard the California Fish and Game Partenavia Aircraft. As they conduct aerial geo-referenced imagery, they will direct the NOAA Research Vessel Shearwater (see above mission description) to the location of the dispersed oil plume (dye in the case of this exercise). Scientists from Louisiana State University and the U.S. Coast Guard Pacific Strike Team who will be aboard Shearwater will use special fluorometers to measure amount and distribution of particles in the water column.

## **Team**

DFD pilot: (b) (6)

DFG observer: Dr. (b) (6)

ASA observer: Dr. (b) (6)

## **Concept of Operations**

Conduct aerial photography of dye dispersion. The aircraft will continuously circle over the dye plume taking photographs at approximately 3 minutes interval. The altitude will increase as the dye plume expands. Expected altitudes will begin at 2000' and may reach as high as 8000' later in the day. Operations may be restricted due to low visibility, overcast, or air traffic control.

## **Comms Plan**

The aircraft will maintain two-way radio communications with air traffic control on assigned airband frequencies.

The aircraft will also monitor channel 81A and/or 83A.

Furthermore direct communication with the *Pacific Responder* and/or the *Shearwater* will be established using DFG radios. Hand-held radio(s) will be provided by Dr. Nordhausen.

## **Data Plan**

Digital photographs and GPS information will be collected, analyzed, and archived by Dr. Nordhausen and Dr. French McCay.

## **Safety Plan**

The aircraft will be operated in accordance with all applicable laws and DFG SOPs

## **Contingencies**

**Cell phone numbers:**

(b) (6)

(b) (6)

## Safe Seas 2006 Emergency Response Exercise

Safe Seas 2006 (SS2006) is a multi-agency effort lead by the National Oceanic and Atmospheric Administration (NOAA) in collaboration with U.S. Coast Guard, California Office of Spill Prevention and Response, Harley Marine Services, and the Department of Interior. More than 300 people will participate in training, field operations, oceanographic surveys, and incident command post activities. Vessels and aircraft from NOAA, the U.S. Coast Guard, U.S. Air Force Reserve, Marine Spill Response Corporation, Alameda County Sheriff's Department, and Bodega Marine Laboratory are expected to participate in the exercise. Additionally, the Central and Northern California Ocean Observing System will activate the new surface current mapping radar in support of exercise data requirements.

The Safe Seas 2006 exercise will build on the successful Safe Sanctuaries 2005 exercise held in the Florida Keys National Marine Sanctuary, as well as agency-wide experience in response to the 2005 Hurricanes Katrina, Rita, and Wilma.

**R/V Mussel Point**

- Oceanographic Ops
- UAS Control

**P/B ALCO 85**

- AUV Ops
- POPEIE Buoy Recovery
- Drift Cards

**USCGC Aspen**

- SORS (Tech. Demo)
- VIP Escort

**Air OPS:**

- Lake Amphib Surveys
- HH65 Dolphin Surveys & POPEIE Buoy release
- C-130 Dispersant Ops

**R/V Shearwater**

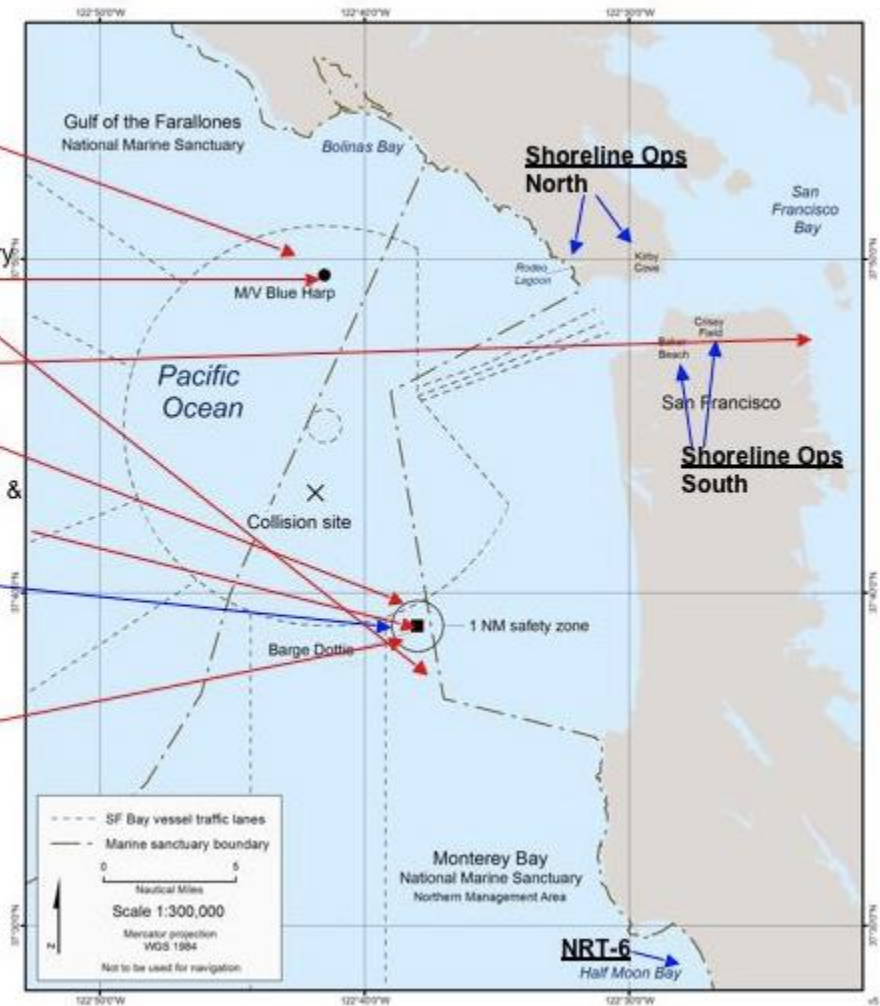
- Driftcards
- QREB
- SMART
- Oceanographic Ops

**W/C Pacific Responder**

- Skimming Ops
- Forward CMD Post

Barge Dottie:  
37° 39.0' N 122° 38.0' W

M/V Blue Harp:  
37° 49.5' N 122° 41.5' W



The SS2006 exercise design will focus on a simulated marine collision occurring about 17 nm from Golden Gate in central California.



## Proposed Scenario

The SS2006 exercise design focuses on the marine collision of a bulk freight cargo ship **M/V Blue Harp** inbound to San Francisco from Long Beach, with the outbound **tug Earnest Campbell**, towing the **tank barge Dottie**, en route to Los Angeles. The barge sinks from the collision, with oil spilling from both the barge and damaged cargo ship. As a result of the collision, Dottie releases oil and the Blue Harp threatens to release its fuel due to sustained damage.



A simulation of the tug Earnest Campbell with the tank barge Dottie under tow.

The pollutants spilled during this exercise will be simulated by the release of hundreds of drift cards, which are designed to model floating pollutants at the site of the hypothetical collision and sinking. Using this scenario, the Safe Seas 2006 exercise will bring together federal, state, and local responders in order to increase response readiness to a large oil spill in a National Marine Sanctuary in central California.

## Activities Timeline

The following activities and training are planned for SS2006:

Date	Activity	Location
7 August	Short Courses / Technology Demonstration	Lower Fort Mason, San Francisco
8 August	Short Courses	Lower Fort Mason, San Francisco
9-10 August	Full Scale Exercise	Mission Bay Conference Center, San Francisco

## Safe Seas 2006 Participants

More information on event participants.

- [National Marine Sanctuary Program](#) Information about our nation's marine sanctuaries--their history and current management, their scientific and educational programs, and their continuing efforts to conserve our ocean and coastal resources. [leaves OR&R site]
- [California Office of Spill Prevention and Response \(OSPR\)](#) The Office of Spill Prevention and Response works to provide the best achievable protection of California's natural resources by preventing, preparing for, and responding to oil and chemical spills, and through restoring and enhancing affected resources.



[leaves OR&R site]

- [U.S. Coast Guard: Sector San Francisco](#) USCG Sector San Francisco works to protect the public, the environment, and U.S. economic interests in its region's ports and waterways, along the coast, on international waters, or in any maritime region as required to support national security. [leaves OR&R site]
- [Harley Marine Services, Inc.](#) Harley Marine Services is a family of customer service oriented marine services companies whose primary focus is spill prevention. Harley Marine subsidiaries are continually training their operators to meet federal and state regulatory requirements for dealing with the products they transport. [leaves OR&R site]
- [Golden Gate National Recreation Area](#) The Golden Gate National Recreation Area (GGNRA) is one of the largest urban national parks in the world. Rich in natural resources, the park also contains numerous historical and cultural resources. [leaves OR&R site]
- [NOAA's Marine Debris Program](#) The NOAA Marine Debris Program is committed to identifying, removing, reducing, and preventing debris in the marine environment, on a national and an international level. The Program has identified a number of strategies to address marine debris. [leaves OR&R site]
- [Central and Northern California Ocean Observing System \(CeNCOOS\)](#) CeNCOOS is collaborating with NOAA OR&R for the Safe Seas scenario in San Francisco, Aug. 7-11, 2006. The CeNCOOS site provides information about Safe Seas activities and data access, partner institutes, and other resources. [leaves OR&R site]



**SAFE SEAS MEDIA DAY ACTIVITIES**  
**Monday, August 7, 12:30 p.m. - 2:00 p.m.**  
**Pier 30-32, The Embarcadero, San Francisco, CA**

A one and a half hour media opportunity --- on Monday afternoon, August 7 at Pier 30-32 --- to interview key drill participants and get a first hand close-up look as some of the equipment that will be deployed during the actual Safe Seas drill on Wednesday, August 9. Listed below are the participants we currently anticipate being present.

**U.S. COAST GUARD**

**USCG Cutter *Aspen***

The *Aspen* will deploy its Spilled Oil Spill Recovery System (SORS). The SORS is a self-contained mechanical containment and recovery system that allows the *Aspen* to act as a first responder to any petroleum spills and begin the process of its removal from navigational waters and the open ocean. The *Aspen* is 225-foot long, 46-foot beam, 2000 LT, 18-foot navigable draft, bow and stern thrusters, single screw controllable pitch propeller, and has 42 crew and seven officers onboard.

As this will be a live demonstration, the Alameda County Sheriff's Department high speed 85-foot patrol boat, the *Alco 85*, will be on scene to ensure on-water navigational safety. On Wednesday the patrol boat will be the platform for launch on an autonomous underwater vehicle (AUV).

**Mobile Satellite Communications Trailer**

The Coast Guard will demonstrate its newly developed mobile communications trailer that can provide satellite and other communications links to provide communications capabilities to remote and forward deployed command posts.

**Pacific Strike Team**

The Pacific Strike Team will be on hand to explain their role as part of the SMART demonstration (See R/V *Shearwater*). The Strike Teams are the Coast Guard's highly trained, highly mobile, first responders that are used to respond to a variety of emergencies throughout the nation. Their role was critically displayed in the response to hurricanes Katrina and Rita.

**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)**

**National Marine Sanctuaries - NOAA R/V *Shearwater***

The NOAA R/V *Shearwater* is the primary research vessel of the Channel Islands National Marine Sanctuary. It is a 62-foot high-speed Teknicraft catamaran used primarily as a research platform, conducting biotic and abiotic oceanographic research in the waters of the Santa Barbara Channel in Southern California. In addition to this role the vessel serves as a host for educational field trips and emergency response in and around the Channel Islands National Marine Sanctuary. The A-frame and winch configuration are used for a variety of projects including trawls, sediment sampling, and towing equipment such as sidescan sonar and remotely operated vehicles. The wet and dry labs allow on-board processing of samples and

data. Extensive dive operations are supported by onboard facilities and equipment. Recent efforts within the Sanctuary have included sea bird research, archeological/cultural research (primarily shipwrecks) and collecting baseline data for emerging management issues. On board berthing, stowage, galley and safety equipment allow for multiple-day excursions with crews of up to ten scientists.

For the Safe Seas drill the *Shearwater* will conduct three primary missions. First, it will serve as the deployment and recovery platform for the Quick Response Estuarine Buoy (below). It will then collect environmental information that is critical to NOAA's emergency response oceanographers that leads to increased accuracy of oil spill trajectory forecasts and a better understanding of the fate of dispersed oil (simulated for this exercise). Lastly, *Shearwater's* stability and maneuverability make her an excellent vessel to conduct Special Monitoring of Applied Response Technologies (SMART). After dispersants are applied during a real incident, decision makers need to know if they are effective and trustee agencies need to have an idea of how much oil has been dispersed. SMART Monitoring uses a technical flurometer protocol to measure the distribution of dispersed oil (non-toxic dye for the exercise). One of these flurometers, a Hydrolab multi-parameter water meter and other field data collection equipment will be presented during the demonstration by Louisiana State University's team of response chemists.

#### **Quick Response Estuarine Buoy (QREB)**

NOAA's Quick Response Estuarine Buoy (QREB) will be deployed by the *R/V Shearwater* in the southern operating area near the simulated site of the sinking of the barge *Dottie*. Data from the moored QREB includes ocean current profiles from an Acoustic Doppler Current Profiler (ADCP), ocean temperature and salinity data, and meteorological data which will be transmitted real-time to oil spill modelers and decision makers in the command post.

#### **NOAA Office of Coast Survey AUV Team - Hydrographic Autonomous Underwater Vehicle**

NOAA's Office of Coast Survey AUV Team will display its Hydrographic Autonomous Underwater Vehicle (AUV). The AUV is a hand-deployable vehicle that can be programmed to operate independently from shore, pier, or support vessel. The AUV is equipped with side scan sonar that can be used to detect and map submerged wrecks, rocks, and obstructions that could pose a hazard to navigation for commercial and recreational vessels. NOAA intends to use AUV's to increase the efficiency of its survey fleet and provide rapid response for port and harbor surveys.

The AUV will be deployed during the Safe Seas Exercise to map several existing wrecks in the immediate vicinity of the simulated sunken barge *Dottie* in order to demonstrate the type and quality of data that can be obtained to assist responders in evaluating the position and condition of a submerged wreck.

#### **NOAA Office of Coast Survey - Navigational Response Team (NRT) Boat**

NOAA's Office of Coast Survey will display equipment used in providing rapid response capability to identify and assist in clearing of navigational waterways following a natural or manmade disaster such as a ship collision, oil spill or hurricane. Equipment display will include the 30-foot outboard trailer-transported response boat and its on board survey equipment. The NRT Team #6 unit is California-based but responds as needed anywhere in country. The three-person crew, who will be available for interviews, participated in reopening of navigational waterways last fall in the Gulf of Mexico following Hurricanes Katrina and Rita.

### **NOAA Office of Response and Restoration - Data Collection From Remote Sites**

NOAA's Office of Response and Restoration will demonstrate its new field tools: a new database for managing Shoreline Cleanup Assessment Technique (SCAT) data and eSCAT, an electronic interface for SCAT data collection using GPS enabled Pocket PC handheld devices. These tools integrate Marine Debris assessment. Safe Seas is an opportunity to showcase the advancement of information technology and integration of marine debris assessment into the SCAT framework. Demonstration format will include: a poster to describe the systems, laptop demonstrations of the database and photo-logging software, demos of the hand-held devices, and examples of products to support response decision-making.

### **OILED WILDLIFE CARE NETWORK**

#### **Field Stabilization Unit and Capture Equipment:**

The Oiled Wildlife Care Network (OWCN) will display and demonstrated marine mammal and bird response capabilities, including demonstration of field stabilization unit and specialized capture gear. Included will be display of a 21-foot mobile field animal hospital and a "capture" truck. The field hospital includes animal examination station and caging while the capture truck includes a specially modified all-terrain vehicle for tracking and capturing injured or threatened marine mammals and other animals.

The OWCN strives to ensure that wildlife exposed to petroleum products in the environment receive the best achievable treatment by providing access to permanent wildlife rehabilitation facilities and trained personnel that are maintained in a constant state of readiness for oil spill response within California. The OWCN is sponsored by OSPR from interest earned on the state's Oil Spill Response Trust Fund, and its management is a collaborative program with the Wildlife Health Center located in the UC Davis School of Veterinary Medicine.

Quick, expedient and effective response is essential to saving lives during an oil spill. Every minute the animals are exposed the toxins means greater risk for severe, life-threatening health problems. The OWCN is proud to have a 50-75% save rate of oiled animals they have helped.

### **MARINE SPILL RESPONSE CORPORATION**

#### **OSRV *Pacific Responder***

The Marine Spill Response Corporation (MSRC) will have available one of its fleet of 210-foot response vessels (OSRVs) and will demonstrated the use of oil spill response vessel boom deployment and skimmer recovery technology and offer ship tours. The OSRVs have temporary storage for 4,000 barrels of recovered oil, and have the ability to separate oil and water aboard ship using two oil-water separation systems. To enable the OSRV to sustain cleanup operations, recovered oil is transferred into other vessels or barges. In addition to these 15 OSRVs, MSRC also operates two other OSRVs in the San Francisco Bay and four in Southern California.

MSRC is an independent, non-profit, national spill response company dedicated to rapid response. MSRC's capabilities include a large inventory of vessels, equipment, and trained personnel, complemented by a large contractor workforce in numerous locations in the continental U.S., Hawaii, and the Caribbean. MSRC also provides dedicated access to alternative response technologies such as in situ burn kits and aerial and vessel dispersant spraying. Although MSRC was created to respond to catastrophic spills, today's MSRC has broadened its scope of services. MSRC's mission now includes response to oil spills of any size, shoreline cleanup and, as appropriate, hazardous material spill response and response to spills outside the U.S.

## **NATIONAL PARK SERVICE**

Personnel from the Golden Gate National Recreation Area unit of the National Park Service will be available for interviews and informational guidance.

During the Wednesday exercise the Golden Gate National Recreation Area (GGNRA), the Marine Spill Response Corporation (MSRC), and the California Office of Spill Prevention and Response (OSPR), will join together to test oil spill response protective strategies at Crissy Field in San Francisco, CA. These strategies have been developed by OSPR, GGNRA, and MSRC as a part of the San Francisco Bay Area oil spill contingency planning process and are the first line of defense in protecting the rich habitat at Crissy Field.

This partnership is a valuable tool in protecting cultural and natural resources of GGNRA. OSPR and MSRC provide technological and technical support, whereas GGNRA provides local knowledge of the resources and aids in the development of effective strategies.

## **CENTRAL AND NORTHERN CALIFORNIA OCEAN OBSERVING SYSTEM (CeNCOOS ) High Frequency Radar Coastal Current Monitors**

A system of high frequency (HF) radars for monitoring coastal currents is a core component of NOAA's planned Integrated Ocean Observing System (IOOS). To date, the most significant network of HF radars is in California where voter-approved propositions funded the Coastal Ocean Currents Monitoring Program (COCMP).

The Safe Seas 2006 exercise will occur in an area represented by the Central and Northern California Ocean Observing System (CeNCOOS) Regional Association, a COCMP member. CeNCOOS is providing ocean current data from their HF radars in near-real-time to the Safe Seas Incident Command Post. This CeNCOOS-NOAA effort shows the potential for regional HF radar observing systems to aid NOAA and USCG missions in spill response, search and rescue, and ecosystem monitoring.

NOAA's IOOS Team has recently been partnering with COCMP members to facilitate the transition to 24/7 operations the dozens of existing HF radars in US coastal states. This partnership has resulted in the development of quality control and quality assurance metrics in addition to the creation of a prototype NOAA national HF radar data server.

## **CALIFORNIA OFFICE OF SPILL PREVENTION AND RESPONSE (OSPR)**

The California Department of Fish and Game's Office of Spill Prevention and Response (OSPR) is the state's lead agency in responding to hazardous spills in both marine and inland environments. The mission of OSPR is to provide the best achievable protection of California's natural resources by preventing, preparing for, and responding to spills of oil and other deleterious materials, and through restoring and enhancing affected resources. OSPR's mobile exhibit will be on display with a host of pamphlets, brochures posters and a video display with educational information geared toward the public and the news media.

## **U.S. AIR FORCE RESERVE**

The U.S. Air Force Reserve's 910<sup>th</sup> Airlift Wing, based at Youngstown Air Reserve Station, in Vienna, Ohio maintains the Defense Department's only full-time, fixed-wing aerial spray capability. The 757<sup>th</sup> Airlift Squadron of the 910<sup>th</sup> Airlift Wing conducts aerial spray missions capable of controlling insects having public health significance, and missions for vegetation management on military bombing ranges, and missions responding to oil spill

contingencies. Four specially-modified C-130H aircraft, equipped with the Modular Aerial Spray System (MASS), are used for aerial spray operations.

In the Safe Seas drill the oil spill response capabilities of the 910th Airlift Wing will be incorporated with passes of C-130H aircraft over the site of the spill simulating the aerial spray dispersing detergent use to control oil spill spread. The 910<sup>th</sup>'s mobile exhibit will be on display with a host of fact sheets explaining the mission of the 910th Airlift Wing and the aerial spray capability as well as a video geared toward educating public audiences about the military's reason for being involved with aerial spray applications.





**DEPARTMENT OF THE AIR FORCE**  
**757 Airlift Squadron, Aerial Spray**  
**Youngstown Air Reserve Station, Unit 24**  
**Vienna OH 44473-5924**

16 August 2006

MEMORANDUM FOR 757 AS/DO

FROM: 757 AS/DOS

SUBJECT: Trip Report Safe Seas Exercise, San Francisco, CA. 7-11 August 2006

**1. Introduction:** The Aerial Spray Unit deployed to Moffet Federal Field, California (7-11 Aug 2006) to participate in the multiple agency exercise Safe Seas 2006, hosted by the National Oceanic & Atmospheric Administration (NOAA). This exercise marked the return of Air Force aerial spray participation in oil dispersant exercises, as this group had not participated in such an exercise since Santa Barbara, California in 2002. More than 250 personnel participated in this drill, including representatives from the host organization NOAA, the U.S. Coast Guard, the U.S. Department of the Interior, the California Department of Fish and Game, U.S. Air Force, Office of Spill Prevention and Response, other state trustees, and oil and marine transportation industry representatives. This was the largest such emergency drill to date.

The Safe Seas 2006 exercise design focused on a collision between a bulk freight cargo ship, inbound to San Francisco, with an outbound tug, towing the tank barge Dottie. The barge sinks from the collision, with oil spilling from both the barge and damaged cargo ship inside the Monterey Bay National Marine Sanctuary (attachment 1). The pollutants spilled during this exercise were simulated by the release of thousands of drift cards, which are designed to model floating pollutants at the site of the hypothetical collision and sinking. Additionally, 500 gallons of sodium fluorescein, a marine safe dye were put into the water to simulate an oil slick and give participants a visual target during operations (attachment 2). The Aerial Spray Unit's role in this exercise was to apply a simulated oil dispersant (water) to the "oil slick". Coordination of the application was carried out by "Spotter 6", a Cessna 337 aircraft operating at medium altitude (600-800 AGL), which called the spray on and off to the C-130 navigator. Air operations were further managed by "Calif. Fish and Game 8", a Partenavia aircraft, who served as the air operations supervisor during the operation.

The operational objective was to practice the application of oil dispersants within a realistic multi-agency contingency response exercise.

**2. Operational Schedule (local times)**

**7 Aug (Monday):**

0500: Show Time

0645: Depart KYNG

1145: Land KNUQ

1200-1500: Safe Seas Media Day, Piers 30-32 on San Francisco Warf.

Technology and equipment display for emergency response drill.



**8 Aug (Tuesday):**

1000-1630: Safe Seas 2006 Emergency Response Exercise Planning Meeting, USCG San Francisco Air Station, Hanger Admin Bldg. Discussed the application of oil dispersants in California, principles and practices/pre-approval status. Developed operational plan for exercise. Developed final communication guidelines and frequencies.

**9 Aug (Wednesday):**

0800: Show Time

1040: Depart KNUQ - Safe Seas 2006 Emergency Response Exercise

1130: Dispersed water over simulated oil spill

1340: Land KNUQ

**10 Aug (Thursday):**

1000: Safe Seas 2006 Emergency Response Exercise Hot Wash

USCG San Francisco Air Station, Command Post

**11 Aug (Friday):**

0600: Show Time

0800: Depart KNUQ

1730: Land KYNG

**3. Spray Parameters:**

- a. Nozzles – Raindrop nozzles oriented straight back.
- b. 8 (16 total) on each fuselage boom; evenly spaced.
- c. Booms – fuselage only
- d. Airspeed – 200 knots ground speed.
- e. Altitude – 100 feet above water.
- f. Application Rate – 7 Gal/Acre
- g. Flow Rate – 277 Gal/Min
- h. Spray -- water only.
- i. Number of passes – 7 passes over oil slick
- j. Pressure – 40 psi
- k. Total spray applied – 300 gallons
- l. Flight times: 2 ferry sorties (8.0; 6.6/total 14.6 hrs); 1 spray sortie 3.0 hrs

**4. 910 AW Participants:****a. Aircrew:**

- (1) Mission Commander: MAJ (b) (6) (6)
- (2) Pilots: MAJ (b) (6) (6) MAJ (b) (6)
- (3) Navigators: LTC (b) (6) (b) (6)
- (4) Flight Engineers: MSG (b) (6)
- (5) Spray Operators: MSG (b) (6) , MSG (b) (6) (b) (6)

**b. Spray Maintenance:**

- (1) Spray Maintenance: TSG (b) (6) , TSG (b) (6) , TSG (b) (6) (b) (6)
- (2) Crew Chiefs: MSG (b) (6) , A1C (b) (6)

- c. **Scientific/Technological advisor:** MAJ (b) (6) (b) (6)
- d. **Public Affairs:** CPT (b) (6) (b) (6)

**5. Discussion:** The exercise was considered a success, in particular, the normally foggy marine layer associated with San Francisco weather cooperated with an outstanding day for these operations and none of the contingency plans had to be initiated. There were a few items which could have been improved on. Relying on surface vessels to create a visual A-B line was counter productive as they physically were not orientated with an into the wind run as is required to maintain the proper application swath width. The spotter aircraft or the spray aircraft, at a higher altitude could easily set the A-B line. If the spotter aircraft is slow in comparison to the speed of a C-130 sprayer, then they can be more effective by calling the spray on and off at a higher altitude. This will allow the spotter to orbit and easily get into position to call spray on and off over the radio. Several times during the operation, the spotter aircraft was poorly positioned to make these calls which was a result of the difference of airspeed between aircraft and misjudging position, even with the excellent piloting and appropriately timed spray on and off calls; the higher altitude will eliminate this problem. Another important aspect of this exercise for the Air Spray Unit was the many contacts that were made during the drill. The Spray flight has been invited to participate in the U.S. Coast Guard oil spill exercise in the pacific northwest during Spring 2007 (exact location undetermined) and the Texas Land Management exercise along the Gulf Coast 2007 (exact location undetermined). Full details of the exercise can be obtained by contacting Maj. (b) (6) (b) (6) (b) (6) (b) (6)

**6. Recommendations:** Continue to participate and practice the application of oil dispersants. Recommend practicing quick turning the aircraft with rapid reloading of the MASS by spray maintenance personnel during winter training opportunities at Avon Park, FL. Carry on with working the Memorandum of Understanding (MOU) between the Coast Guard and 910 AW Aerial Spray Unit for Oil Spill Dispersant Application. With a more robust agreement in place, consider storing the primary dispersant, Corexit, at a Youngstown facility so that spray aircraft leaving Youngstown ARS can arrive at the spill location with a full load. Expediency is often paramount in the application of oil dispersants since the window of opportunity is narrow.

**7. Acknowledgements:** Lt (b) (6), (b) (6), and (b) (6) of NOAA, along with LT (b) (6) and (b) (6) from the USCG deserve special mention. Their insight and planning insured that the Oil Dispersant Task Force portion of the exercise was accomplished without incident.

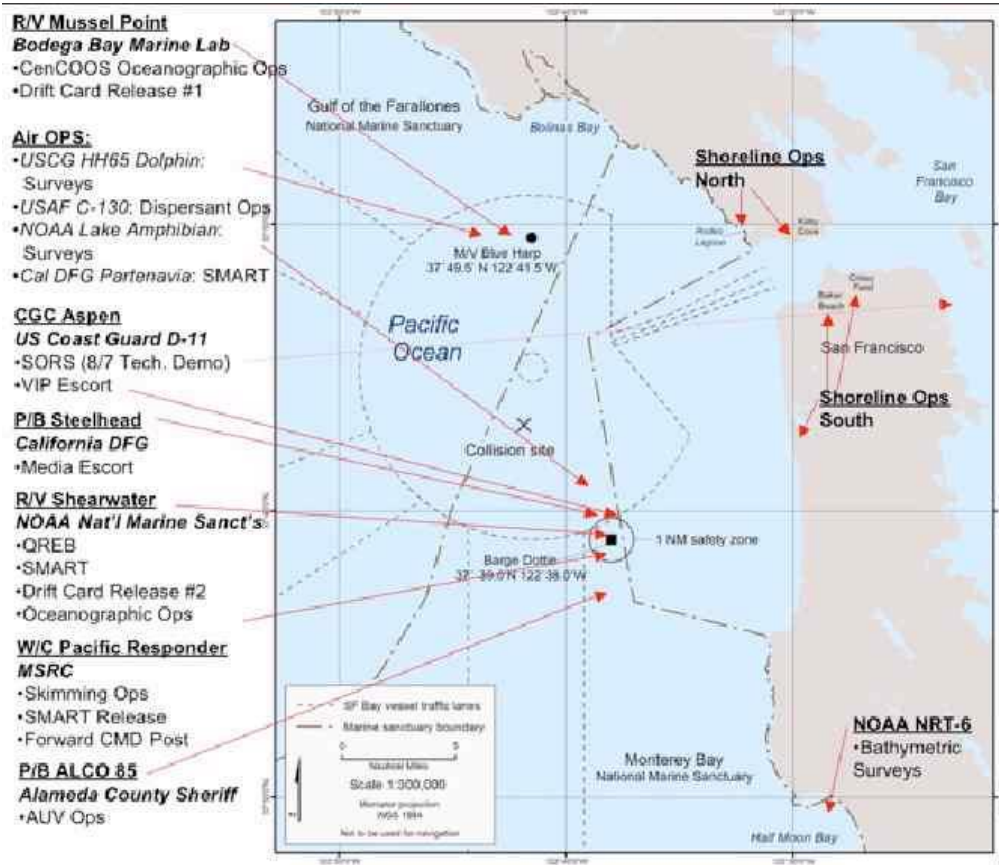
//Signed//

(b) (6) (b) (6) MAJ, USAFR  
Research Entomologist

Attachments:

1. Chart showing location of simulated collision of surface vessels and resulting oil spill
2. Photo showing the USAFR C-130H spray plane over the fluorescein dye oil slick

Attachment 1. Chart showing location of simulated collision of surface vessels and resulting oil spill



Attachment 2. Photo showing the USAF C-130H spray plane over the fluorescein dye “oil slick”







**DEPARTMENT OF THE AIR FORCE**  
**757 Airlift Squadron, Aerial Spray**  
**Youngstown Air Reserve Station, Unit 24**  
**Vienna OH 44473-5924**

16 June 2008

MEMORANDUM FOR 757 AS/DO

FROM: 757 AS/DOS

SUBJECT: Trip Report Oil Spill Response Exercise, San Diego, CA. 9-13 June 2008

**1. Introduction:** The 757 AS Aerial Spray Unit deployed to Halsey Field, North Island NAS, California (9-13 Jun 2008) to participate in the multiple agency exercise Safe Seas 2006, hosted by the United States Coast Guard (USCG). More than 300 personnel participated in this drill, including representatives from the host organization the USCG, the U.S. Department of the Interior, the California Department of Fish and Game, National Oceanic and Atmospheric Administration, Office of Spill Prevention and Response, other state trustees, and oil and marine transportation industry representatives.

The operational objective was to practice the application of oil dispersants within a realistic multi-agency contingency response exercise. This exercise focused on a simulated collision between an oil tanker, inbound to San Diego, with a US Navy ship approximately 30 nm from the coast. Due to this simulated collision, both ships began leaking oil. The pollutants spilled during this exercise were simulated by the release of 500 gallons of sodium fluorescein, a marine safe dye was put into the water to simulate an oil slick and give participants a visual target during operations (attachment 1). The 910AW Aerial Spray Unit's role in this exercise was to apply a simulated oil dispersant (water) to the "oil slick". Application coordination was carried out by two different aircraft, a USCG HH-60, "Coast Guard Helo" and "Fish and Game 8", a Partenavia aircraft. Each aircraft was on site at different times providing the 910AW an opportunity to work with both rotary and fixed wing spotters.

**2. Operational Schedule (local times)**

9 JUNE (Monday)

0800: Showtime

1000: Depart KYNG

1330: Land KNZY/Safety Briefing

1600: MC and AC brief with Spotter Aircraft personnel and USCG

10 JUN (Tuesday):

Briefings: Emergency Response Exercise Planning Meeting, San Diego Convention  
Discuss the application of oil dispersants in California, principles and practices/pre-approval status. Review operational plan for exercise and communication guidelines.

11 JUN (Wednesday):

1030: Show time

1045: Load water  
1200: Takeoff KNZY  
1300: Land KNZY, reload water for MX training  
1400: Takeoff KNZY  
1500: Land KNZY, reload water for MX training  
1600: Takeoff KNZY (No sortie - no spotter support)  
1700: Land KNZY

12 JUN (Thursday):

0730: Show time  
0745: Load water  
0900: Takeoff KNZY  
1000: Land KNZY, reload water for MX training  
1100: Takeoff KNZY  
1200: Land KNZY, reload water for MX training  
1300: Takeoff KNZY (No sortie - no spotter support)  
1400: Land KNZY

13 JUN (Friday):

0700 Show  
0900 Depart KNZY  
1830 Land KYNG

CONFIGURATION: SP2G

- a. System: 2-Module System/ Fuselage Booms
- b. Nozzle Tips/Orientation: Raindrop nozzles straight back
- c. Number: Fuselage only, 16 total (8 each side) straight back
- d. Booms: Fuselage
- e. Aircraft: 899107
- f. Mission Identifier: QZNRKA537161

SPRAY PARAMETERS:

- a. Nozzles – Raindrop nozzles oriented straight back.
- b. 8 (16 total) on each fuselage boom; evenly spaced.
- c. Booms – fuselage only
- d. Airspeed – 200 knots ground speed.
- e. Altitude – 100 feet above water.
- f. Application Rate – 7 Gal/Acre
- g. Flow Rate – 277 Gal/Min
- h. Spray -- water only.
- i. Number of passes – max # per sortie. No flow rate decrease to increase passes.
- j. Pressure – 40 psi

LOADING: Water from fire hydrant at KNZY 900 gallons of water per sortie

. 910 AW PARTICIPANTS:

Aircrew:

1) MC: Maj (b) (6)  
2) Pilots: LTC (b) (6) Maj (b) (6)  
3) Navigators: LTC (b) (6)  
4) Engineers: MSgt (b) (6)  
5) Spray Operators: MSgt (b) (6) MSgt (b) (6)  
Maintenance:  
1) Spray Maintenance: TSgt (b) (6) TSgt (b) (6) TSgt (b) (6) SRA (b) (6)  
2) Crew Chief(s): TSgt (b) (6) A1C (b) (6)  
3) Avionics: TSgt (b) (6) (b) (6)  
Scientific Advisors: Maj (b) (6) Maj (b) (6)  
  
Public Affairs: Maj (b) (6) 22AF PA

**5. Discussion:** The exercise was considered a success for several reasons. Although the aircraft arrived at San Diego with two grounding maintenance problems, hard work by the maintenance team prevented any training sorties from being lost. The 910 AW was able to accomplish numerous events during the exercise. For several aircrew members and maintainers this was their first oil spill exercise. Additionally, the opportunity for much needed rapid reload training was accomplished. Lastly, the 910 AW was able demonstrate its capability to USCG, 22AF, and multiple other government and civilian organizations.

During the exercise both fixed wing aircraft and helicopters were utilized as spotters. Although each worked well; the helos, with their ability to hover, seemed to provide more accurate and timely information to the spray crew. On the first day, an USAFR observer rode along with both spotter aircraft to help relay information and calls to the spray aircraft. On the second exercise day, the spotter helo carried no experienced observer. Subsequently, the information flow from the spotter to the C-130 was reduced but effective. Also the final planned sortie on both days was cancelled due to no availability of spotter aircraft. The use of surface vessels to create a visual A-B line was discussed but ruled out due to past counterproductive experiences utilizing this type of targeting. Full details of the exercise can be obtained by contacting Maj. (b) (6)

**6. Recommendations:** Continue to participate and practice the application of oil dispersants. Recommend the refinement of a quick turn checklist for rapid reloading of the MASS by spray maintenance personnel. Consider the use of smoking flares to mark the edge of slick (recommendation per CA Fish & Game pilot). Clarify the Memorandum of Agreement (MOA) between the Coast Guard and 910 AW Aerial Spray Unit for Oil Spill Dispersant Application. With this new MOA in hand, test the system by having the 910AW be requested through the proper channels during the exercise. (The 910AW can already be prepositioned.) Lastly, continue increase the knowledge of 910AW capabilities among the entire community: government, civilian, and corporate entities in case of a major oil spill.

**7. Acknowledgements:** The aerial spray maintenance team along with the crew chiefs and MSgt Sharbon from Avonics deserve special recognition. Their proactive mind-set and actions permitted the aircraft to be fixed without the loss of any sorties. This crucial support enabled the 910 AW to demonstrate its unique abilities to the other organizations involved in the exercise.

//Signed//

(b) (6), MAJ, USAFR  
910AW Aerial Spray Mission Commander

Attachments:

1. Photo showing the USAFR C-130H spray plane spraying water.



2. Photo showing the fluorescein dye “oil slick” being laid in the ocean.





## USCG District One Spill Response Notes and POCs

New Brunswick Nas Ops – Lt (b) (6) POC for the operations side

Joe Simokaitis – FAA rep for military ops in NE Maine, com (b) (6) ext (b) (6)  
(need NOTAM to go to Bangor GADO) Ref. FAR 91.119 also discuss part 137  
Also thinks we need waiver to fly within 500 feet of any person or vessel

Bill Rooks knows conditions of quarters on base – supposed to be nice and new

Email host base document to (b) (6) / also if we have waiver from  
AFRC to fly below 500 email to J.J.

USCG POCs (b) (6) – Environmental equipment specialist

(b) (6)

Cell (b) (6) Fax: 617 223 8094

Email: (b) (6)

First Coast Guard District (m)

Room 632

408 Atlantic Ave.

Boston, MA 02110-3350

Lt. (b) (6) (b) (6) – Marine Environmental Response

(b) (6) Cell: (b) (6) (same office as (b) (6) )

Email: (b) (6) (b) (6)



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

22 May 09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Williston Army Corps, ND

1. One C-130 will be available 27 May – 5 Jun 09 for the requested larvacide spray mission. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations effecting the health and welfare of the citizens of Williston. Operations will be conducted out of Minot AFB, ND since no suitable airfield is in the vicinity of Williston.

2. Concept of Operations:

- a. 27 May (Wednesday)  
Spray aircraft:  
0800 Show KYNG  
1000 Depart KYNG  
1010 Support aircraft depart YNG for O/B to MIB  
1245 Land KMIB
- b. 28 May – 4 Jun (Thursday-Thursday)  
\*Multiple lifts flown each day (2-3 as weather permits)  
0400 Show KMIB  
0545 Depart KMIB  
1300 Final Land KMIB
- c. 4 Jun (Thursday) Return support aircraft  
0800 Show KYNG  
1000 Depart KYNG  
1245 Land KMIB
- d. 5 Jun (Friday)  
0600 Show KMIB  
0800 Depart KMIB

0805 Support aircraft depart KMIB  
1300 Land KYNG

3. Aerial Spray Operation:
  - a. Chemical: Vectobac
  - b. Altitude: 100 AGL
  - c. Application rates: 373 gal/min; 4 gal/acre
  - d. Area: Approximately 8000 acres
4. Lt Col (b) (6) will act as Mission Commander.
5. Maj (b) (6) (b) (6) will act as Aircraft Commander
6. Support required at Hill AFB and the UTTR has been completed.

(b) (6) (b) (6) Maj, USAFR  
Assistant Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

8 Feb 2010

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Hill AFB Aerial Spray Trainer

1. One Aerial Spray equipped C-130 will be available 1-5 March 2010 for spray flight proficiency training on Targets 21, 24 and Nord LZ at Utah Test and Training Range (UTTR). Initial copilot and navigator spray training will be accomplished.

2. Concept of Operations:

- a. 1 Mar (Monday)  
0900 Show KYNG  
1100 Depart KYNG  
1405 Land KHIF
- b. 2-4 Mar (Tuesday-Thursday)  
1615 Depart KHIF  
1630-1830 Range Time  
1845 Land KHIF
- c. 5 Mar (Friday)  
0845 Show KHIF  
1045 Depart KHIF  
1750 Land KYNG

3. Aircraft will be SP1G configured.

4. Maj (b) (6) will be the Aircraft Commander.

5. Support required at Hill AFB, UT has been arranged.

(b) (6)  
757 Aerial Spray

, Capt, USAFR

# **SPRAY OPERATIONAL SCHEDULE**

## **UTAH TEST AND TRAINING RANGE MISSION**

### **1-5 MARCH 2010**

**PURPOSE/BENEFIT/OBJECTIVE:** Aerial spray flight proficiency training on Targets 21, 24 and Nord LZ at the Utah Test and Training Range (UTTR).

MI: QZNRKA659060

#### **1. AIRCREW:**

- a. **Pilots:** Maj (b) (6) , Capt (b) (6) Capt (b) (6) (Driving to & from Hill)
- b. **Navigators:** Maj (b) (6) , LTC (b) (6) (b) (6)
- c. **Flight Engineers:** CMSgt (b) (6)
- d. **Spray Operators:** SSgt (b) (6)

#### **2. MISSION SUPPORT:**

- a. **Crew Chiefs:** TSgt (b) (6) , SSgt (b) (6)
- b. **Spray MX:** TSgt (b) (6) , TSgt (b) (6) ext (b) (6)
- c. **Pest Management:** Maj (b) (6)

#### **3. IN-BRIEFING:** Flight Line Driving

- a. **When/Time:** 1 Mar 2010, 1500-1600L
- b. **Where:** Base Ops (Have Rental Vehicle Information, Mil Driver License and FLT LN Drivers Card)
- c. **Who:** **EVERYONE driving on flightline!**

#### **4. PLANNED SEQUENCE OF EVENTS:** Hill AFB Tower Control and Runway Hours 24/7

##### **NOTES:**

- 1. Initial copilot and navigator training.
- 2. All Times Are Local

- a. 1 Mar (Monday)
  - 0900 Show KYNG
  - 1100 Depart KYNG
  - 1405 Land KHIF
  - 1630 Depart KHIF (1530-1800 Range Time/Areas include Targets 21, 24 & Nord LZ/SFC up to 15K)
  - 1800 Land KHIF
- b. 2-3 Mar (Tuesday-Wednesday)
  - 1615 Depart KHIF (1630-1830 Range Time/Areas include Targets 21, 24 & Nord LZ/SFC up to 15K)
  - 1845 Land KHIF
- c. 4 Mar (Thursday)
  - 1515 Depart KHIF (1530-1800 Range Time/Areas include Targets 21, 24 & Nord LZ/SFC up to 15K)
  - 1745 Land KHIF
- d. 5 Mar (Friday)
  - 0800 Show KHIF
  - 1000 Depart KHIF
  - 1705 Land KYNG

**5. ITEMS TO TAKE:**

- a. **Navigator:** Maps, computer

**6. SPRAY CONFIGURATION: SP1G**

**7. PPR REQUIREMENTS: LJ0101**

**8. PARKING PLAN: Base Ops side of ramp**

**9. RADIO FREQUENCIES:**

- **Clover Range Control:** UHF 285.65, 275.9, 361.4 (p)
- **Eagle Tower:** UHF 351.0; Mawk 4 ((b) (6))
- **Diddle Knoll & Spray Ops Freq:** UHF 398.1 (Primary), 383.2 (Back-up); VHF 134.1, 118.45
- **Base OPS:** 139.3

**10. SPRAY PARAMETERS:**

- a. **All simulated depending upon training needs.**

**11. CONTACTS:** Commercial prefix (801) 777-XXXX; DSN 777-xxxx

a. **388<sup>th</sup> RANS/RSO, Range Control Officer/Installation Spray Coordinator:**

((b) (6)) 6066 Cedar Lane, Bldg 1274S; 777-5345; FAX: 9205  
Cell Phone # ((b) (6))

((b) (6))

- **Hill Range Control:** 7-9386, Current OPS; 7-9385
- **Range Scheduler:** 7-9386
- **Eagle Tower:** 7-1515/6
- **Clover Operations:** 7-7575
- **Clover DO: 586-3103**
- **388<sup>th</sup> RANS/RSL Radio Freq Monitor:** 7-6715
- **388<sup>th</sup> RANS/RSR Resource Monitor:** 5-4257

b. **Environmental Coordinator:** ((b) (6))

c. **OASIS RANGE SUPPORT DIRECTORATE:**

Oasis Chief: 75 CEG/CEU ((b) (6)) ((b) (6))

Oasis Civil Engineering: ((b) (6))

North Range Security: 7-1521/2/4

**d. Hill AFB Base OPS:** 7-1861

**e. Entomology:** (b) (6)

**f. Weather:** Hill AFB: 7-2018; UTTR: 7-1516/63  
ASOS at Eagle Range 6-1765/1795  
Need Dash1 daily at 0600

**g. Billeting: On Base**

- **Billeting Office Mountain View Inn, DSN 777-0802/1844, FAX 775-2014**

**COM (801) 777-0802; FAX 775-2014**

**POC Natasha Coats, DSN 777-1844**

- Holiday Inn Express, Layton UT 1695 Woodland Park Dr

Comfort Inn (\$48+Tax) 877 North 499 West, 801 544-5577

Holiday Inn (Odgen): 1-800-999-6841 or 801 399-5671

Airport Hilton Inn: 1-800-648-9668 or 801 539-1515

Ogden Park: 247 24<sup>th</sup>, 801 627-1190/800 421-7599

La Quinta Inns: 1965 N 1200 W Layton, 801 776-6700

Alana Motel: 116 N Main Street, Clearfield, 801 825-2221 or 2321

**h. Car Contact:** Hertz Rental Car (b) (6) at the BX 801-825-7300 (2 Vans, 1FS car)

Reservation in (b) (6) (b) (6) name

Vans-(b) (6) // FS Car – (b) (6)

Van \$55 per day//Cars \$39

**Hill Motor Pool: 75 LRS/Dispatch DSN 777-1843,: 1 Van (b) (6)**

**i. Hill AFB:** Base Commander: Col (b) (6)

Airfield Manager: (b) (6)

Base Operations: 7-1861; FAX: 7-2221

Weather: 7-2018

Transit Alert: 7-3886

C-130 Maintenance Contact: 7-2478

Fuels: 7-7423/7-7311 available 0900-1800 daily after hours contact CP

Billeting: 7-1844

Chow Hall: 7-3428 Breakfast M-F 0530-0730, S-S 0700-1900

Golf Course: 7-1108



**j. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Brent (b) (6) ; FAX 1022
- (4) 910 OG/CC: Col (b) (6)
- (5) 910 OS/OSA: Airfield Manager, (b) (6)
- (6) 757 AS/DO: Maj (b) (6) (b) (6)
- (7) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (8) 757 AS/DOO: Ops Admin: TSgt (b) (6) ; FAX 1657
- (9) 757 AS/DOS: Aerial Spray, Maj (b) (6) (b) (6) ; FAX 1616
- (10) 910 LG/CC: Ext 1225
- (11) 910 LG/LGM: Ext 1352
- (12) Maintenance Control: Ext 1327
- (13) 910 LG/LGMS: Spray Maintenance, Ext 1132
- (14) 910 LG/LGL, Ext 1137
- (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) ((b) (6) (b) (6) cell (b) (6)
  - Spray Maintenance: (b) (6)

**12. GENERAL TARGET INFORMATION:**

**a. Target 21:**

- (1) Dimensions: 4,980' X 7,770'
- (2) Acreage: 888
- (3) Acres Sprayed in 2004: 888
- (4) Aircraft Loads: 18,869 Gal
- (5) Sorties: 17
- (6) Passes (35' Swath): 157
- (7) Spray-On Time/Pass: 23 Seconds
- (8) Spray Heading: 00/180

**b. Target 24:**

- (1) Dimensions: 1,600' X 6,080'
- (2) Acreage: 223
- (3) Acres Sprayed in 2004: 223
- (4) Aircraft Loads: 5,263 Gal
- (5) Sorties: 7
- (6) Passes (35' Swath): 47

- (7) Spray-On Time/Pass: 18 Seconds
- (8) Spray Heading: 00/180

### **UTTR GEOGRAPHIC LOCATION**

Target areas on UTTR are geographically located in northwestern Utah, directly west of the Great Salt Lake and Hill Air Force Base. The complex is positioned between 40 and 41 degrees north latitude and close to 113 degrees ten minutes west longitude. The targets are within range 12 west and Township two and three north, Salt Lake Baseline Meridian.

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **AVON PARK, FL**

### **4-8 JAN 2010**

**PURPOSE/OBJECTIVE/BENEFIT:** Aerial Spray flight training for aircrews over Avon Park Bombing range. (Initial training for (b) (6) )

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

1. Pilots: Maj (b) (6) , Maj (b) (6) , Capt (b) (6)
2. Navigators: LtCol (b) (6)
3. Flight Engineers: MSgt (b) (6) , TSgt (b) (6)(b) (6)

##### **b. Spray Operators: MSgt (b) (6) , MSgt (b) (6) , SSgt (b) (6)**

##### **c. Maintenance:**

1. Spray Maintenance: TSgt (b) (6) , TSgt (b) (6)
2. Avionics: MSgt (b) (6)
3. Crew Chiefs: TSgt (b) (6) , SSgt (b) (6)

##### **d. Entomologist/Ground Support: None**

#### **2. SCHEDULE: (All time Local) All times and sequence of events are subject to change depending upon the needs of the training and range.**

##### **4 JAN (MON):**

1100: Show Time KYNG  
1300: Depart KYNG  
1600: Land KMCF (MCF PPR 004AB02)

##### **5 JAN (TUE): Range scheduled: 1130-1330**

0900: Show Time  
1100: Takeoff  
1400: Land

##### **6 JAN (WED): Range scheduled: 1130-1330**

0900: Show Time  
1100: Takeoff  
1400: Land

##### **7 JAN (THUR): Range Times 1130-1330**

0900: Show at aircraft  
1100: Takeoff  
1400: Land

##### **8 JAN (FRI): Range Times 1130-1330**

0900: Show  
1100: Takeoff KMCF  
1300: Land  
1400: Depart KMCF  
1700: Land KYNG

\*If using range time for training, otherwise departure TBD by MC/AC.

#### **3. ITEMS TO TAKE:**

- ##### **a. Navigator:**
- Maps with "No-Spray" Areas Marked  
Mission computer

**4. AIR TO GROUND FREQUENCIES:**

- a. **Spray: Primary ~~392.2~~; Secondary ~~340.8~~**
- b. **Interplane: Primary ~~123.45~~; Secondary ~~122.9~~**
- c. **Patrick: ~~TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2~~**
- d. **Avon Park: TWR-292.2 (p), 126.15, 276.6 (s) Hrs 0700-2300 M-F, S-S per flying schedule DSN 968-7138**
- e. **MacDill: TWR-123.7; GND-118.575; ATIS-133.825; CMD POST-311.0; PTD-372.2**

**5. SPRAY CONFIGURATION:**

- a. **MASS – SP2G**
- b. **Aircraft Number: 89-9105**
- c. **Nozzle Tips/Orientation: LV/HV 14 Raindrop nozzles oriented straight back**
- d. **Mission Identifier: QZNRKA468004**

**6. MISSION PROTOCOLS:**

- a. **Altitude:** 100 and 150 AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Chemical:** Water
- d. **Application Rate:** TBD based on spray operator training needs
- e. **Flow Rate:** TBD
- f. **Acreage:** Configuration for training only.
- g. **Swath Width:** TBD depending upon training profile each day

**7. CONTACTS:**

- a. **Quarters:** MacDill AFB Lodging DSN 968-4259 FAX 968-2660  
InterContinental Hotel \$120 per night  
4860 West Kennedy Blvd  
Tampa, FL 33609  
POC: (b) (6) , Senior Sales Manager  
(813) 286-4035
- b. **Transportation:**  
**3 Vans - \$75/day**  
Enterprise Rental MacDill AFB:  
(813) 840 2613 Attn: (b) (6)  
Van – (b) (6) (b) (6) (b) (6)
- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350
  - (1) Weather: MacDill AFB Forecaster (DSN 968-2854)
  - (2) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)
  - (3) MacDill AFB Ops Gp CC 968-3014
  - (4) MacDill AFB Fire Dept Call Dispatch, 968-3630 and ask for Assistant Chief on duty for water support; They will try to work out a Hydrant available; Only if needing additional support -Fire Dept, Chief (b) (6) x-(b) (6)

- d. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX  
 DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN  
 Avon Control Tower & Range Control Scheduling DSN 968-7176/7138  
 Avon Airfield Manager: 968-2902  
 Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number
- (1) Range Operations Manager: (b) (6) , Bldg 236, (b) (6)
  - (2) Avon Range Control Tower: ext 176
  - (1) Flight Chief of Civ Engineer: (b) (6) , Bldg 29, (b) (6)
  - (2) Chief, Environmental Flight: (b) (6)(b) (6) , Bldg 29, (b) (6) also Wildlife Biologist (b) (6)
  - (3) Fuels: ext 118 or Cel (b) (6)
  - (4) Range Support Manager: Mr (b) (6) Bldg 29, (b) (6)
  - (5) Range Control/Schedule: (b) (6) Bldg 41, (b) (6)
- See Attached Avon Park Org directory for additional listings**
- (9) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)  
 Range VHF: 126.15
- f. **Sebring AP:** Mgr: (b) (6) fuel needs)  
 BEEPER: 1 (863) 999-8622 ENTER YOUR PHONE# ENTER #  
 Asst Mgr: (b) (6) X-
- g. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
 Toll Free 1 - 800 - 278 - 7046,+2 + Ext
- 1. 910 AW/CC: Col (b) (6)
  - 2. 910 AW Command Post: Ext 1315; FAX 1161
  - 3. 910 AW/PA: (b) (6) ; FAX 1022
  - 4. 910 OG/CC: LtCol (b) (6)
  - 5. 910 OG: Airfield Manager, Ext 1186/1526
  - 6. 757 AS/DO: Maj (b) (6) (b) (6)
  - 7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
  - 8. 757 AS/DOO: Ops Admin: Ext 1239; FAX 1657
  - 9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6)(b) (6) FAX 1616
  - 10. 910 LG/CC: Ext 1225
  - 11. 910 LG/LGM: Ext 1352
  - 12. Maintenance Control: Ext 1327
  - 13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
  - 14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
  - 15. Cellular Spray Phones:
    - Mission Commander:(b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 12-15 October 10

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes at LFI and the surrounding communities.

**1. 910 AW PARTICIPANTS:**

**a. Aircrew:**

- (1) Pilots: Lt Col (b) (6) , Lt Col (b) (6)
- (2) Navigator: Lt Col (b) (6)
- (3) Flight Engineers: Msgt (b) (6)
- (4) Spray Operators: MSgt (b) (6)(b) (6) , Tsgt (b) (6)

**b. Maintenance:**

- 1. Spray Maintenance: TSgt (b) (6) , Ssgt (b) (6) , Msgt (b) (6)
- 2. Crew Chiefs: Ssgt (b) (6)(b) (6) SRA (b) (6)
- 3. Avionics: TSgt (b) (6)

**c. Entomologist:** Maj (b) (6)

**2. Vehicles:** Langley will supply us with 2x9pax vans and 2 cars

- **MC / Entomologist:** One Car
- **Ops:** One van (9 pax), One car
- **Mx:** One Van (9 pax)

**3. Billeting:** 14 rooms on base DSN 574-4667 or Comm (757) 764-4667 FAX DSN 574-3038

**4. PPR:** 1013AS01

**5. SCHEDULE: (All times local) THIS MISSION WILL RETURN EARLY IF ABLE**

**12 Oct (Tuesday): Deploy to LFI**

- 0800: Show time
- 1000: Takeoff YNG
- 1130: Land LFI w/safety briefing immediately following
- 1230: Installation briefing and aircraft configuration
- 1400: Load/Weather call
- 1500: Calibrate system
- 1630: T/O LFI
- 1835: Sunset
- 1900: Land LFI

**13-14 Oct (Wednesday-Thursday): Spray LFI**

- 1415: Show time
- 1430: WX decision, load Dibrom
- 1630: Takeoff LFI
- 1835-1833: Sunset
- 1900: Land LFI

**15 Oct (Friday): Redeploy to YNG**

- 0800: Show time
- 1000: Takeoff LFI
- 1130: Land KYNG

**6. ITEMS TO TAKE:**

- a. Entomologist:** Kestrel Weather Monitor, Compass, PCM Card, Pest Safety Binder, VHF Radios, Laptop Computer
- b. Navigator:** Maps/Map Bag, Validation Map
- c. Spray Operator:** Safety Gear, Calibration Tables
- d. Spray Maintenance:** Deployment Kit/Supply Kit

**7. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Langley Tower:** DSN 574-5326
- b. **Langley Base Ops:** DSN 574-2504
- c. **Camp Perry:** (757) 229-2121 ext 2263
- d. **Consideration calls:**
  - i. Newport News
  - ii. Ft Eustis/Felker AAF Tower
  - iii. Norfolk NS/Chambers Tower

**8. PARKING PLAN: Taxiway Foxtrot with the North Ramp as an alternate**

**9. RADIO FREQUENCIES:**

- a. **Felker AAF Tower (Ft Eustis): 126.3, 269.25, 248.2, 241.0**
  - (1) Ops phone DSN 826-3588
  - (2) Tower phone DSN 826-3530
  - (3) Flight Service 122.2
- b. **Newport News-Williamsburg Int: CTAF – 118.7 or 257.9(Operating Hours 1000Z-0200Z)**
  - (1) Ground – **121.9** or 348.6 (phone 877-0221 ops)
  - (2) Tower – **118.7** (phone 877-2862) voice mail 7-2962
  - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
- c. **Langley AFB: Tower DSN 574-7999**
  - (1) Tower - **125.0** or 253.5
  - (2) Ground - **121.7** or 275.8
  - (3) Clearance – **118.85** or 257.625
  - (4) Metro - **239.8**
  - (5) ATIS – 270.1
- d. **Norfolk NAS (Chambers Fld): Tower –124.3, 379.15, Base Ops, DSN 262-3419, will transfer to TWR**
- e. **Norfolk Approach: 118.9 or 353.7**
- f. **Spray Ground: 123.4**

**10. IN-BRIEFING: 1200 hrs on Tuesday in the CE Conference Room**

**11. SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS ULV; Fuselage booms
- b. **Nozzle Tips/Orientation:** 9 8005 nozzles -- straight down (4 left - 5 right)
- c. **Aircraft:** 90-9107
- d. **Mission Identifier:** QZNRKA097286

**12. SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 0.5 oz/acre
- e. **Flow Rate:** 3.6 Gallons/Minute
- f. **Acreage:** Potentially 125,000 acres on the peninsula but final acreage TBD
- g. **Swath Width:** 2000 foot

**13. PESTICIDE LOADING:**

- a. **How Much Pesticide:** see entomologist
- b. **Where:** Taxi Way F Aero Club Ramp or North Ramp if constructions isn't complete
- c. **When:** 1430 hrs each day pending weather and heat index.\*\*Calibration performed unless otherwise directed by the Entomologist or Mission Commander
- d. **Furnished by Installation:**
  - (1) Pesticide
  - (2) Loading Equipment/Crew
  - (3) Hazardous Waste Disposal
  - (4) Two B-5 or B-1 Stands



- 14. CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**
- a. LANGLEY AFB VA:**  
 Wing Commander: DSN 574-5321  
 Mission Support Group Commander: DSN 574-7995  
 Civil Engineer: DSN 574-2025  
 Deputy Chief/Civil Engineer: Ms. (b) (6)  
 Environmental Coordinator: DSN 574-3987; FAX 3503  
 Base Operations: DSN 574-2504  
 Langley Control Tower: DSN 574-5326  
 Weather: Langley AFB, DSN 574-5907  
 Ft Eustis: DSN 297-5300/3343  
 Command Post: DSN 574-5411  
 Pest Control Foreman: (b) (6) , DSN (b) (6) cell phone (b) (6)  
 Pest Control NCOIC to TSgt (b) (6)  
 Public Affairs: DSN 574-2018/2010/2019  
 Fuels: DSN 574-4312/3623/4224  
 Motor Pool: 574-7514/5712 (2 vans and 1 staff vehicle were requested)  
 ACC PMP: Steve Robertson, DSN 574-2766  
 Fire Department Comm: 757-764-2222
- a. FT EUSTIS VA:** Environmental Coordinator: DSN 927- 4152/2375
- b. Hampton Mosquito Control:** 757 850-3305
- c. York County Mosquito Control:** (757)-890-3780
- d. Poquoson:** (b) (6)
- e. City of Portsmouth Biologist:** (757) 393-8666
- f. Newport News Mosq. Control:** (757) 269-2750
- g. Camp Peary:** (757) 229-2121 Ext 2263, (b) (6) (b) (6) or (b) (6) (b) (6)
- h. Ft Monroe: ?**
- i. Newport News/Williamsburg Int.:**  
 (1) Fixed Base Operator: Flight Int 877-6401  
 (2) Flight Service: 877-0209  
 (3) Tower: 877-2962  
 (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport
- j. Norfolk NAS VA:** DSN 564-2442/7598 or COM (757)-444-2442/7598  
 (1) Weather: DSN 565-2500
- k. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
 Toll Free 1 - 800 - 278 - 7046, + Ext  
 (1) 910 AW/CC: Col (b) (6)  
 (2) 910 AW Command Post: Ext 1315; FAX 1161  
 (3) 910 AW/PA: Maj (b) (6) ; FAX 1022  
 (4) 910 OG/CC: Col (b) (6)  
 (5) 910 OS/OSA: Airfield Manager, (b) (6)  
 (6) 757 AS/DO: Maj (b) (6) (b) (6)  
 (7) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371  
 (8) 757 AS/DOO: Ops Admin: MSgt (b) (6) FAX 1657  
 (9) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) , Capt (b) (6) ; FAX 1616  
 (10) 910 LG/CC: Ext 1225  
 (11) 910 LG/LGM: Ext 1352  
 (12) Maintenance Control: Ext 1327  
 (13) 910 LG/LGMS: Spray Maintenance, Ext 1132  
 (14) 910 LG/LGL, Ext 1137  
 (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342  
 (16) Cellular Spray Phones:

- Mission Commander: (b) (6)
- Entomologist: (b) (6) (b) (6) cell (b) (6)

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **PARRIS ISLAND MCRD, SC**

### **5-9 OCT 09**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### **1. 910 AW PARTICIPANTS:**

- a. Aircrew:**
  - (1) Pilots: Maj (b) (6) , Maj (b) (6)
  - (2) Navigators: Maj (b) (6)
  - (3) Flight Engineers: CMSgt (b) (6)
  - (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6) , MSgt (b) (6)
- b. Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , MSgt (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6) SSgt (b) (6)
  - (3) Avionics: TSgt (b) (6)
- c. Pest Management Professionals/Entomologist:** Maj (b) (6) Maj (b) (6) (MC)
- d. Public Affairs:** Maj (b) (6) TSgt (b) (6)

#### **2. PPR REQUIREMENTS: 278-01**

**3. PLANNED SEQUENCE OF EVENTS:** (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

##### **5 OCT (Monday): Deploy to KNBC**

0900: Show Time  
1100: Takeoff KYNG  
1300: Land KNBC  
1315: Safety Briefing

##### **6 OCT (Tuesday): Adulticide Spray**

TBD Installation Brief  
1600: Show Time/WX Decision  
1600: Load Chemical  
1730: Takeoff KNBC  
1901: Sunset

##### **7 OCT (Wednesday): WX Backup**

1600: Show Time/WX Decision  
1600: Load Chemical  
1730: Takeoff KNBC  
1859: Sunset

##### **8 OCT (Thursday): Adulticide Spray**

1600: Show Time/WX Decision  
1600: Load Chemical  
1730: Takeoff KNBC  
1858: Sunset

##### **9 OCT (Friday): Redeploy to KYNG**

1130: Show Time  
1330: Takeoff KNBC  
1530: Land KYNG

#### **4. ITEMS TO TAKE/NOTES:**

- a. Mission Commander:**

- (1) Mission Commander Cell Phone
- (2) Blue Force Tracker

**b. Entomologist/CPMP:**

- (1) New and Improved Wind Gauge & Compass
- (2) VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder

**c. Navigators:**

- (1) Maps
- (2) Templates

**d. Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** 15 open for 8003's oriented straight down
- d. **Differential GPS:** Installed
- e. **Aircraft:** 89-9106
- f. **Mission Identifier:** QZNRKA013278

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**  
Duet -- Prallithrin (1%); Sumithrin (5%); Piperonyl Butoxide (5%)  
Signal Word: Caution  
Flushing Agent: BVA oil
- b. **Application:** 1.24 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 4.5 gallons/Minute

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading 2.5 drums of Duet

**8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

- Air Traffic Control: 119.05 Beaufort MCAS TWR
- Hilton Head Arpt: 118.8 CTAF
- Beaufort Co Arpt: 122.7 UNI
- Spray Ground: Primary 123.45 Secondary 130.30**

**10. TRANSPORTATION:** Parris Island will provide two vans and staff car for transportation to and from quarters and for messing. (1 Van for MX, 1 Van for Aircrew E's, Staff Car for O's)

**11. SPRAY MONITORING/TESTING:** This is an evaluation test of Duet for control of mosquitoes and biting midges. Please see Entomologist for application parameters. There will be caged mosquitoes and droplet collection devices used. Ms. (b) (6) and Mr. (b) (6) of Clarke Mosquito Control will be participating.

**12. CONTACTS:**

- a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX
  - (1) Environmental Coordinator (Spray Coordinator):  
(b) (6), DSN (b) (6), Cel (b) (6); (b) (6) Cel (b) (6)  
FAX (843) 228-2616; (b) (6)
  - (2) Assistant Chief of Staff I & L: Col (b) (6), DSN (b) (6)

- (3) Pest Control Foreman: DSN 335-3663  
(4) P.I. Motor Pool: (b) (6) , DSN (b) (6)  
(5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)  
(6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)  
(7) P.I. Rifle Range: DSN: 335-3183/3624
- b. **Beaufort MCAS SC:** (Commercial (843) 228-XXXX)  
(1) Beaufort MCAS Environmental: (b) (6) , DSN (b) (6) ; (b) (6) , DSN (b) (6)  
(2) Fuels: DSN: 335-7049/7448/7168  
(3) MCAS Beaufort Airfield MGR: Lt Col (b) (6) (Ops Officer) Airfield manager (b) (6)  
DSN: (b) (6) . Base Ops is ext 7301/2/3  
(Airfield Manager is (b) (6) , DSN: 335-6316) approves after hrs requests  
(4) Trans Alert/VAL: DSN: 335-7110  
(5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)
- c. **Beaufort County Mosquito Control:** (b) (6)  
d. **Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) , DSN: (b) (6)  
e. **Quarters:**  
**Holiday Inn and Suites, 17 Rooms Holiday Inn and Suites**  
**\$94/night (843) 379-3100 FAX (843) 379-3101 contact (b) (6)**  
Ramada Inn (843) 524-2144/Fax 1704  
Hampton Inn (843) 986-0600 (FAX 0494)  
Sleep Inn (843) 522-3361 FAX (843) 522-9929  
Parris Island Billeting DSN: 335-2744 (FAX: 3815); (843) 228-3960  
Comfort Inn (843) 525-9366 (FAX 1529)  
Best Western (Sea Island Motel) (843) 524- 4121  
Port Royal Days Inn (843) 524-1551  
Best Western Pt South (I-95) (843) 726-8101
- Kingstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1-800-278-7046,+2 + Ext
- 910 AW/CC: Col (b) (6)
  - 910 AW Command Post: Ext 1315; FAX 1161
  - 910 AW/PA: Maj (b) (6) ; FAX 1022
  - 910 OG/CC: LTC (b) (6) (b) (6)
  - 910 OG: Airfield Manager, (b) (6)
  - 757 AS/DO: Maj (b) (6) (b) (6)
  - 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
  - 757 AS/DOO: Ops Admin: SMS (b) (6) ; FAX 1657
  - 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) FAX 1616
  - 910 LG/CC: Ext 1225
  - 910 LG/LGM: Ext 1352
  - Maintenance Control: Ext 1327
  - 910 LG/LGMS: Spray Maintenance, SMS (b) (6)
  - Omega/SATO Travel: Ext 1772; 1-800-285-6342
  - Cellular Spray Phones:
    - Mission Commander: (b) (6) cell phone (b) (6)

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**PARRIS ISLAND MCRD, SC 5-9 Oct 2009**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 5-9 October 2009
- c. Purpose of Application: Biting midge control
- d. Application Date: 6 October 2009
- e. Time/s of Application (Local): 1730-1930
- f. Acres Treated: 6,013
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6)  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 6 October 2009
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 6 Oct; Assistant Chief of Staff,  
Installations and Logistics, COL (b) (6) briefed by Maj (b) (6) Maj (b) (6)
- k. Mission Identifier: QZNRKA013278

**2. OPERATIONAL:**

- a. Mission Commander: Maj (b) (6)
- b. Aircrew:
  - (1) Pilots: Maj (b) (6) , Maj (b) (6)
  - (2) Navigators: Maj (b) (6)
  - (3) Flight Engineers: CMSgt (b) (6)
  - (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6) , MSgt (b) (6)
- c. Maintenance:
  - (1) Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , MSgt (b) (6)  
(b) (6)
  - (2) Crew Chiefs: TSgt (b) (6) , SSgt (b) (6)
  - (3) Avionics: TSgt (b) (6)
- d. Entomologists: Maj (b) (6) Maj (b) (6)
- e. Public Affairs: Maj (b) (6) TSgt (b) (6)
- f. Flying Data:
  - (1) Spray Sorties/Hours: 2.0
  - (2) Ferry Sorties/Hours: 2/4.2

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Duet®
- b. EPA Registration Number: 1021-1795-8329
- c. Formulation Sprayed: Prallithrin (1%); Sumithrin (5%); Piperonyl Butoxide (5%)
- d. Gallons Pesticide Loaded: 70 gal
- e. Gallons Pesticide Applied: 58 gal
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 10 gal/BVA oil
- h. Other Additives Used: None
- i. Application Rate: 1.24 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 16 oriented straight down
- f. Pressure: 35 p.s.i.
- g. Flow Rate: 4.5 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 270-330°/3-0 Knots
  - (2) Release Altitude: 300° /5-3 Knots
- b. Temperature (Degrees Fahrenheit): 75° F
- c. Relative Humidity: 76-87%
- d. Cloud Cover: Partly Cloudy
- e. Source: Ground observations at the MCRD Rifle Range/Aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: glass microscope slides; caged mosquitoes
  - (2) Results: coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito and midge numbers were determined prior to and after spraying using CO<sub>2</sub>-baited traps, landing counts, and caged mosquitoes.
  - (2) Results: Inconclusive based on poor sites (golf course & village housing) was 90% two days following application, marked improvement was reported by other personnel on the Depot.

**8. REMARKS:** A relatively new public health pesticide for mosquito control (Duet) was analyzed for its effect on biting midges. This insecticide boasts a low mammalian toxicity and contains an insect irritant that, in theory, will excite biting flies to take to the wing where contact with the active ingredient component is more likely. Considerable effort was input into this trial from the Marine Corps, Air Force, and the Manufacturer in regard to pre- and post-analysis of the spray. Mosquitoes and midge numbers were closely monitored and identified to species. Unfortunately, environmental conditions were extremely poor during the application. Wind speed was initially good but dropped to zero within 10 minutes of beginning the application. While there were reasonable mosquito mortalities in the exposed cages, trap collections and landing rates of biting midges showed little to no effect. It is important that this pesticide receive a thorough and fair examination, thus, one or two applications will be repeated in the spring.

//signed//

(b) (6)

**MAJ, USAFR**

**DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL**





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

21 April 10

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Kings Bay NSB, GA

1. One C-130 will be available 6-9 May 10 for the requested spray aerial insecticide mission to control nuisance and vector mosquitoes and thus reducing the negative impact on outdoor duty.

2. Concept of Operations:

- a. 6 May (Thursday)  
1500 Show KYNG  
1700 Depart KYNG  
1930 Land KNIP
- b. 7 May (Friday)  
1630 Show KNIP  
1800 Depart KNIP  
2000 Land KNIP
- c. 8 May (Saturday)  
1630 Show KNIP  
1800 Depart KNIP  
2000 Land KNIP
- d. 9 May (Sunday)  
1200 Show KNIP  
1400 Depart KNIP  
1630 Land KYNG

3. Maj (b) (6) will act as Mission Commander.

4. Maj (b) (6) (b) (6) will act as Aircraft Commander.
5. Support required at Kings Bay NSB, GA and Jacksonville NAS, FL has been completed.

(b) (6) Capt, USAFR  
757<sup>th</sup> Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## NSB, KINGS BAY, GA

### 6-9 May 2010

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at NSB, Kings Bay, GA.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: : Maj (b) (6) (b) (6) Maj (b) (6)
- (2) Navigators: Maj (b) (6)
- (3) Flight Engineers: SrA (b) (6)
- (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , SrA (b) (6)
- (2) Crew Chiefs: TSgt (b) (6) , SrA (b) (6)
- (3) Avionics: TSgt (b) (6)

##### c. Entomologist: MC Maj (b) (6)

#### 2. PPR REQUIREMENTS: 40701

**3. PLANNED SEQUENCE OF EVENTS:** (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

- a. 6 May (Thursday)  
1500 Show KYNG  
1700 Depart KYNG  
1930 Land KNIP
- b. 7 May (Friday)  
1630 Show KNIP  
1800 Depart KNIP  
2000 Land KNIP
- c. 8 May (Saturday)  
1630 Show KNIP  
1800 Depart KNIP  
2000 Land KNIP
- d. 9 May (Sunday)  
1200 Show KNIP  
1400 Depart KNIP  
1630 Land KYNG

**\*\*We will return when the spray is complete**

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

- (1) Mission Commander Cell Phone use 330.360.1936
- (2) Blue Force Tracker

##### b. Entomologist:

- (1) Wind Gauge & Compass
- (2) VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder

##### c. Navigators:

- (1) Maps
- (2) Templates

**d. Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** size = 8005; 18 open for 7.3 flow rate; oriented straight down.
- d. **Differential GPS:** Wingman Installed
- e. **Aircraft:** 89-9106
- f. **Mission Identifier:** QZNRKA020727

**6. Adult mosquito control spray Parameters: (Kings Bay)**

- a. **Pesticide:**
  - Trumpet® EC (78% AI naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Water
- b. **Application:** 1.0 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 2,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 15,000 Acres
- g. **Spray-On Time:** 16 minutes
- h. **Flow Rate:** 7.3 gallons/minute

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading 4 drums of Trumpet for Kings Bay.

**8. PARKING PLAN: NAS Jacksonville, FL**

**9. AIR TO GROUND RADIO FREQUENCIES:**

Navy Jax Ops-	310.2	Tower	120.0/340.2
Ground	128.6/336.4	<b>Spray Ground:</b>	<b>123.45 VHF</b>
ATIS	281.0		

**10. TRANSPORTATION:**

Enterprise Car Rental: 904-772-7007

5 FS Cars (b) (6) (b) (6) (b) (6) (b) (6) (b) (6) \$42/day+5gov policy

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP and by NSB Kings Bay pest control.

**12. Quarters:**

Hampton Inn Jacksonville-Orange Park Contact is (b) (6) (904)-777-5313 \$79/night  
6135 Youngerman Circle, Jacksonville, FL 32244  
Confirmation #80419625

**13. CONTACTS:**

- a. **Naval Submarine Base Kings Bay, GA (Com: (912) 573-xxxx; DSN 573-xxxx)**
  - (1) **Spray Coordinator:** (b) (6)
  - (2) Strategic Weapons Facility Atlantic (SWFLANT) x0551

**b. Naval Air Station Jacksonville, FL (NAS JAX)**

- (1) For requesting PPR: DSN 942-2511
- (2) Transient line office, DSN 942-3843
- (3) Weather ??
- (4) Tower – 942-2516

**c. FAA JAX Center.** Mr. (b) (6), Mission Specialist<sup>(b) (6)</sup>

**f. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6) (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Maj (b) (6) (b) (6) FAX 1022
4. 910 OG/CC: LtCol (b) (6) (b) (6) (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6); FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6) (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander (b) (6) (b) (6)



DEPARTMENT OF THE AIR FORCE  
757 Airlift Squadron – Aerial Spray Operations  
3976 King Graves Rd Unit 24  
Vienna OH 44473-5924

**910 AW AERIAL SPRAY**  
**Army Corps of Engineers Williston, ND 7-17 Jun 2010**  
**PMP'S POST-MISSION REPORT**

**1. MISSION BASICS:**

- a. Installation Sprayed: Army Corps of Engineers property near Williston
- b. Mission Duration: 7-17 Jun 2010
- c. Purpose of Application: Control nuisance and vector mosquitoes (larval stages)
- d. Application Dates: 8-10; 14-16 Jun 2010
- e. Times of Application: see attachment 1.
- f. Acres Treated: 13,757
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6)
- h. Date Spray Map Last Approved: 5 Jun 2010 (electronically delivered)
- i. Date of Waste Generation Letter: 26 May 2009
- j. Installation In-Briefing: (When/Where/Briefer/s): 7 Jun, 2010; Williston ACE Conference Room, Maj (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: LtCol (b) (6) (7-11); Maj (b) (6) (13-17)
- b. Certified PMP/Entomologists (Category 11): Maj (b) (6) Maj (b) (6) (13-17) (b) (6) (safety briefers)
- c. **Aircrew Spray 08: MI: QZNRK9902158**
  - Pilots: Maj (b) (6) (b) (6) Capt (b) (6) (7-11), LtCol (b) (6) (13-17)
  - Navigators: Lt Col (b) (6) (7-11); Lt Col (b) (6) (13-17)
  - Flight Engineers: MSgt (b) (6) (7-11); TSgt (b) (6) (13-17)
  - Spray Operators: MSgt (b) (6) MSgt (b) (6) (7-11); MSgt (b) (6) (b) (6) (13-17)**Aircrew Spray 04: MI: QZNRK9901158**
  - Pilots: Capt (b) (6) (7-11), Lt Col (b) (6) (7-11), Capt (b) (6) (b) (6) (13-16) Maj (b) (6) (b) (6) (13-16)
  - Navigators: Lt Col (b) (6) (7-11); Lt Col (b) (6) (b) (6) (13-16)
  - Flight Engineers: MSgt (b) (6) (7-11); MSgt (b) (6) (13-16)
  - Spray Operators: MSgt (b) (6) (7-16), MSgt (b) (6) (7-16)
- d. Maintenance:
  - Spray Maintenance: TSgt (b) (6) TSgt (b) (6) (b) (6) TSgt (b) (6) (b) (6) SSgt (b) (6) TSgt (b) (6) SSgt (b) (6) (b) (6)
  - Crew Chief(s): TSgt (b) (6) SrA (b) (6) SrA (b) (6) (b) (6) TSgt (b) (6)
  - Avionics: TSgt (b) (6)
  - Engines: TSgt (b) (6)
- e. Flying Data:
  - (1) Spray Sorties/Hours: 31 + 2 flush/44.7
  - (2) Ferry Sorties/Hours: 6/23.0

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Vectobac 12AS (1200 ITU/mg)
- b. EPA Registration Number: 73049-38
- c. Gallons Pesticide Loaded: 2,579
- d. Pesticide Applied: 2,579 gal
- e. Diluent: 52,485 gallons water and 1,000 gallons of water rinse and flush
- f. Other Additives Used: Poly Control® drift reduction agent (32oz/load; 8 gal total)
- g. Application Rate: 24 oz/acre Vectobac 12AS®

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 9107
- b. Spray System (Modules Used) and System ID #: 3
- c. Spray System Configuration: SP3-Module System/Fuselage Booms
- d. Nozzle Type/Size: Raindrop nozzles
- e. Nozzle Orientation & Number Used: 24- straight back
- f. Pressure (PSI): 59-60
- g. Flow Rate: 372 gpm

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 200'
- b. Spray Offset: none
- c. Spray Release Altitude: 100'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): variable conditions at speeds varying calm to 15 kts. Sprays were conducted into the wind.
- b. Temperature (Degrees Fahrenheit): 43-72° F
- c. Relative Humidity: 35-93%
- d. Cloud Cover: varied between cloudy to clear
- e. Source: Ground observations/aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Areas were sampled using standard larval surveillance techniques to determine pest densities. Larval density ranged between 9-200 larvae per dip depending on location
- b. Effectiveness:
  - (1) Technique/s Used: Larval dip samples
  - (2) Results: Good results were encountered in treated areas. Attachment 3.

**8. REMARKS:** This is the second application at the Williston Army Corps of Engineers (ACE) property near Williston ND. Based on the success of last year's application, the treatment area has been doubled this year in an effort to further reduce mosquito breeding in the river confluence near Williston. Attachment 2 shows that overall numbers of adult



mosquitoes were reduced in 2009 following the aggressive aerial larviciding by the Air Force. The success of last year's application resulted in additional congressional funding for the project and allowed for the increased acreage. Attachment 4 shows the portion of the proposed spray blocks actually treated by the Air Force. Portions of the spray blocks were left for smaller aircraft and priorities were determined daily by Williston Vector Control. Post-application sampling was very encouraging with many locations exhibiting greater than 95% reductions in mosquito numbers (Attachment 3). We appreciate the support of all the agencies involved, but specifically Minot AFB 5CES who received and temporarily stored the larvicide and helped coordinate the loading and mixing location. Adult mosquito control may occur at Williston during the 19-23 July mission to Minot AFB, if this can be coordinated.

//Signed//

**Major (b) (6)                      PhD, USAFR**  
**Certified Pest Management Professional**

//Signed//

**Major (b) (6)                      PhD, USAFR**  
**Certified Pest Management Professional**

4 attachments

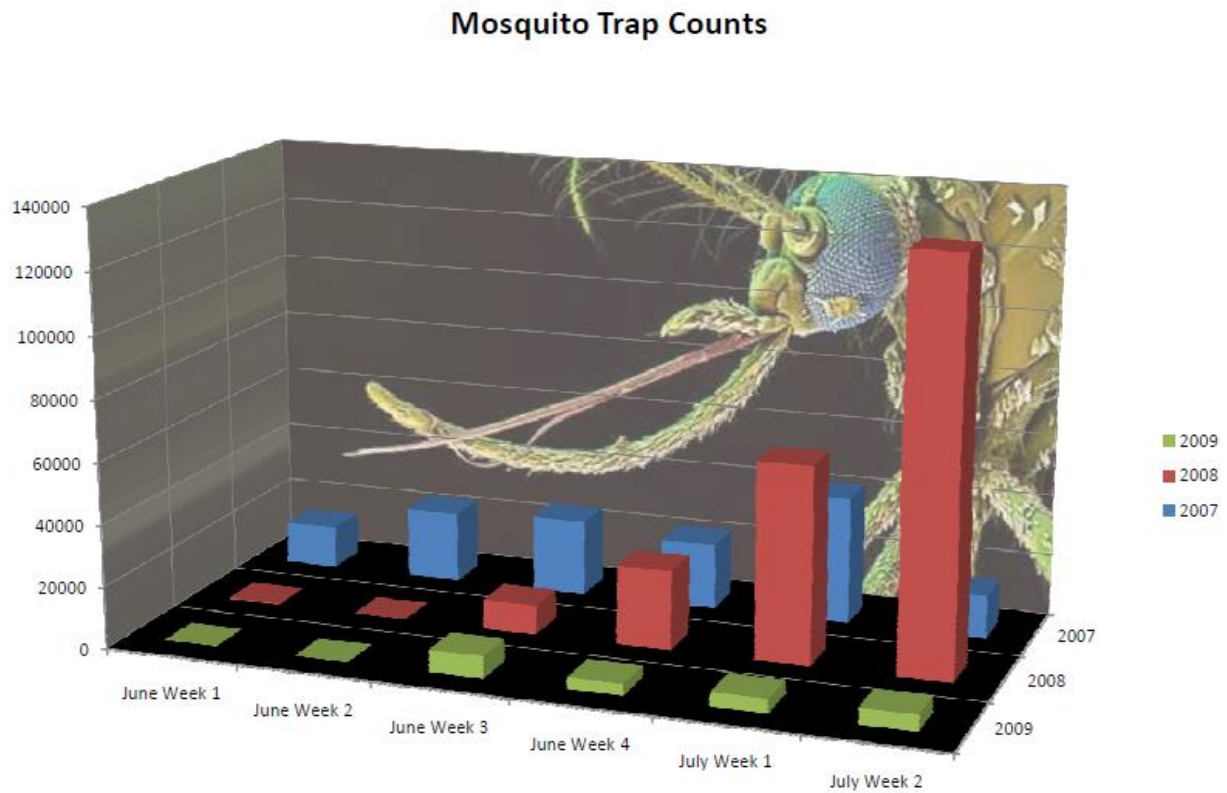
## Attachment 1: Summary Spray Chart

**8-16 June 2010****SPRAY OPERATIONS SUMMARY FOR WILLISTON ACE**

<b>DATE Jun</b>	<b>SORTIE #</b>	<b>TIME OF APPLICATION</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>FLYING HOURS</b>
8	1	0637-0807	465	1860	1.5
8	2	0904-1024	453	1810	1.3
8	3	1110-1230	453	1810	1.3
9	4	0547-0733	450	1798	1.8
9	5	0853-0913	481	1924	1.3
9	6	1105-1207	97	387	1.1
10	7	0615-0734	394	1575	1.3
10	8	0829-1004	470	1880	1.6
10	9	1005-1130	462	1849	1.4
10	10	1102-1219	467	1871	1.3
10	11	1220-1340	454	1815	1.3
10	12	1330-1507	462	1850	1.6
10	13	1450-1515	460	1841	1.4
14	14	0940-1105	448	1791	1.4
14	15	1135-1239	458	1832	1.2
14	16	1220-1340	468	1872	1.3
14	17	1402-1518	459	1834	1.3
14	18	1505-1630	466	1863	1.4
14	19	1605-1726	467	1868	1.4
15	20	0610-0735	453	1812	1.4
15	21	0645-0815	459	1834	1.5
15	22	0813-0941	442	1768	1.5
15	23	0900-1015	465	1859	1.3
15	24	1015-1130	444	1820	1.3
15	25	1055-1213	456	1825	1.3
15	26	1235-1350	434	1736	1.3
15	27	1310-1428	446	1782	1.3
16	28	0625-0745	445	1781	1.3

16	29	0640-0805	465	1859	1.4
16	30	0854-1045	448	1794	1.8
16	31	0900-1021	466	1864	1.4
16	Flush	1100-1146	n/a	n/a	0.8
16	Flush	1132-1225	n/a	n/a	0.9
Totals			13,757	55,064	44.7

Attachment 2. Overall mosquito numbers collected in light traps at Williston



Attachment 3. Pre & Post Samples for the USAF Spray Mission over Missouri River near Williston, ND 8-16 Jun 10. Numbers represent the number of mosquito larvae collected in a standard “dip”.

#### Unit 1: Chicken Foot

Pre- 120 160 120 200+ 160 200+  
Post- 16 20 22 25 11 28

#### Corp Dike

Pre- 100+ 100+ 160 100 160 160  
Post- 9 11 15 8 13 18

#### Unit 2: Big Timber

Pre- 180 200+ 180 160 200+ 200+  
Post- 12 9 13 11 11 8

#### Long Island

Pre- 100+ 140 100 180 120 180  
Post- 13 20 12 13 7 17

#### Unit 3: Indian Hill

Pre- 200+ 200 200+ 180 200 200  
Post- 16 13 22 18 17 12

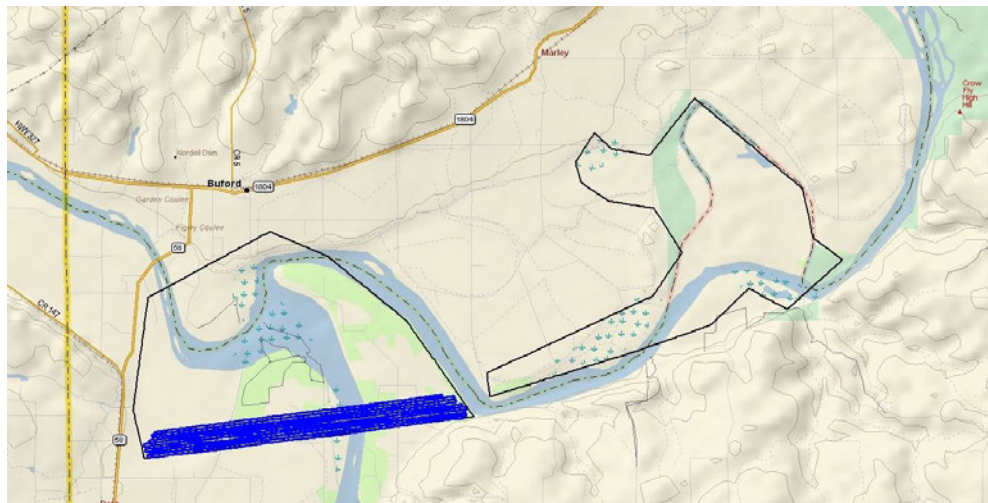
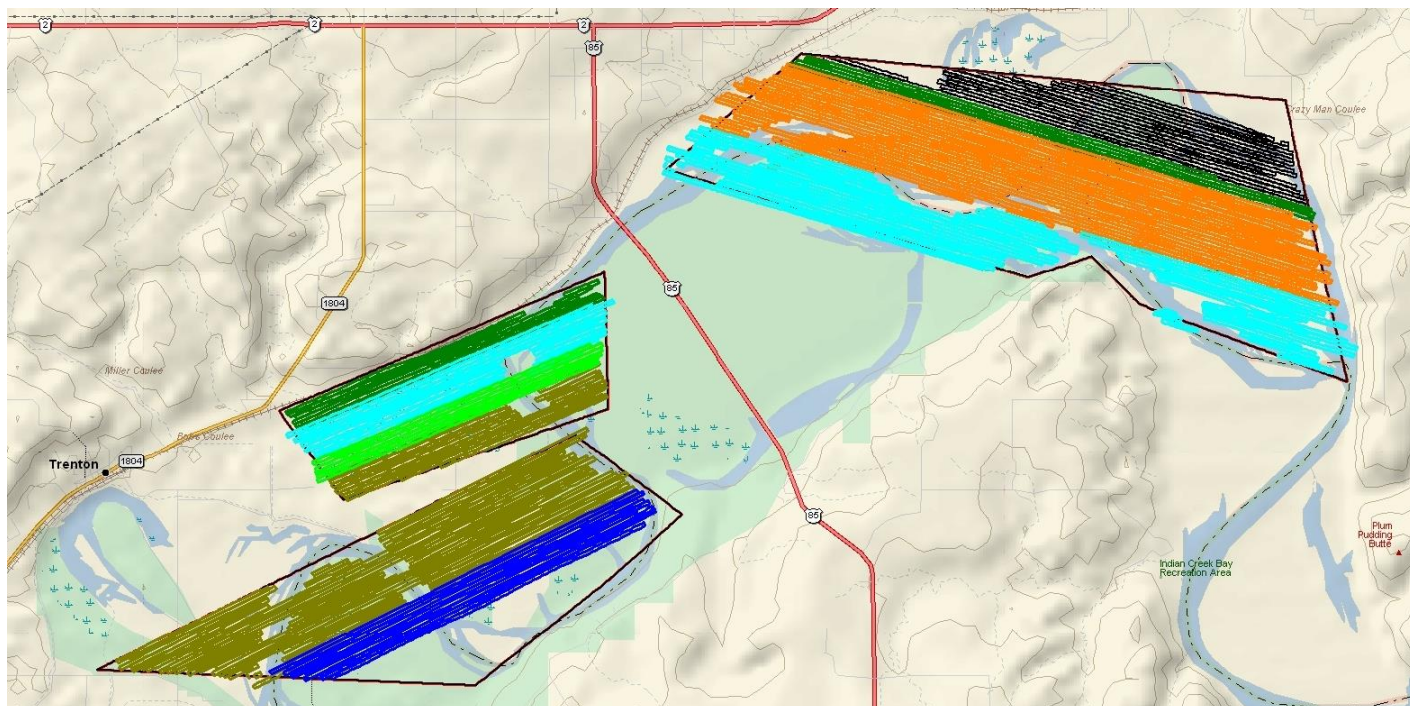
#### Unit 4: Control Unit

Pre- 200 200+ 140 200 180 200+  
Post- 60 90 100 60 100 100

\*Because of weather and other factors, the Confluence area was not revisited for post- sampling. Almost all post-application sample dips contained only late instar and pupae, indications of an effective application.

Pre-sampling occurred 4-13 Jun 10. Post-sampling was done from 11-20 Jun 10.

Attachment 4. Maps of larvicide spray locations on Army Corps of Engineers property near Williston ND. Colored lines indicate sprays on various days. Priority of spray blocks was dictated by the Williston Vector Control and weather conditions.





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

7 Jan 2010

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for NAS Jacksonville, FL Static Display

1. One Aerial Spray equipped C-130 will be available 8-9 Feb 2010 to provide a static display for the attendees of the Tri-Services pest Management Convention. The personnel attending are DoD members serving the Air Force, Army and Navy installations. The 757AS was invited to provide this static display and give presentations regarding the Aerial Spray Mission.

2. Concept of Operations:

- a. 8 Feb (Monday)  
1500 Show KYNG  
1700 Depart KYNG  
2000 Land KNIP
- b. 9 Feb (Tuesday)  
1330-1700 Static Display KNIP  
1900 Depart KNIP  
2130 Land KYNG

3. Aircraft will be SP2G configured with ULV booms.

5. Maj Tom Markovich will act as Aircraft Commander.

6. Support required at Jacksonville NAS, FL has been completed.

(b) (6)  
757 Aerial Spray

, Capt, USAFR

# AERIAL SPRAY OPERATIONAL SCHEDULE

## NAS JACKSONVILLE, FL

### 8-9 FEB 2010

**OBJECTIVE/PURPOSE AND BENEFIT:** Provide a static display for the members of the Tri-Services Pest Management Convention to include DoD personnel serving Air Force, Army and Navy installations.

**1. 910 AW PARTICIPANTS:**

**a. Aircrew:**

1. Pilots: Maj (b) (6) (b) (6) Capt (b) (6)
2. Navigators: LTC (b) (6)
3. Flight Engineers: MSgt (b) (6)
4. Spray Operators: MSgt (b) (6) rgett, TSgt (b) (6)

**b. Maintenance:**

1. Spray Maintenance: TSgt (b) (6) , TSgt (b) (6)
2. Crew Chiefs: SSgt (b) (6) , SrA (b) (6) (b) (6)

**c. Entomologist:** Maj (b) (6) Maj (b) (6) (Both will be in place and will remain in place)

**2. PPR REQUIREMENTS: 20801**

**3. PLANNED SEQUENCE OF EVENTS:** (All times local) Scheduled times may vary depending upon weather, and needs of the Entomologist.

**08 Feb Monday**

1500 Show  
1700 Depart KYNG  
1930 Land KNIP

**09 Feb Tuesday**

1330-1700 Static Display  
1900 Depart KNIP  
2130 Land KYNG

**4. SPRAY CONFIGURATION: SP-2G**

- a. Mass:** 2-Module System
- b. Booms:** Stainless Steel ULV Fuselage Booms
- c. Nozzles:** 8005's.
- d. Differential GPS:** Wingman Installed
- e. Aircraft:** 90-9108
- f. Mission Identifier:** QINRKA485039

**5. AIR TO GROUND RADIO FREQUENCIES:**

Navy Jax Ops	310.2	Tower	120.0/360.2
Ground	128.6/336.4	ATIS	281.0
Metro	343.5		



**6. Transportation:**

Enterprise Car Rental: 904-772-7007 Fax: 904-269-5573  
1 Full Size Sedan ((b) (6)) \$59/day and 1 Minivan ((b) (6)) \$95/day

**7. Quarters:**

Hampton Inn Jacksonville-Orange Park Contact is ((b) (6)) (904)-777-5313 \$79/night  
6135 Youngerman Circle, Jacksonville, FL 32244 Confirmation #82612053

**8. CONTACTS:**

**a. Naval Air Station Jacksonville, FL (NAS JAX)**

1. For requesting PPR: DSN 942-2511
2. Transient line office: DSN 942-3843
3. Weather, Naval Aviation Forecast Center: DSN 564-2594/Comm 757-444-2594
4. Tower: DSN 942-2516

**b. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col ((b) (6)) ((b) (6))
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Maj ((b) (6)) ((b) (6)) FAX 1022
4. 910 OG/CC: LTC ((b) (6))
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj ((b) (6)) ((b) (6)) ((b) (6))
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMSgt ((b) (6)) ((b) (6)) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Maj ((b) (6)) ((b) (6)) ((b) (6)) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMSgt ((b) (6)) ((b) (6))
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:

- ((b) (6)) ((b) (6))

# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 9-13 Aug Jul 2010

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks and Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) Pilots: Maj (b) (6) , Lt Col (b) (6)
- 2) Navigators: Maj (b) (6)
- 3) Flight Engineers: MSgt (b) (6)
- 4) Spray Operators: MSgt (b) (6) , MSgt (b) (6) , SSgt (b) (6)
- 5) Mission Commander: Maj (b) (6) (b) (6)

##### b. Maintenance:

- 1) Spray Maintenance: MSgt (b) (6) , MSgt (b) (6) , A1C (b) (6)
- 2) Crew Chief(s): SSgt (b) (6) , SSgt (b) (6)
- 3) Avionics: TSgt (b) (6)

##### c. Entomologist: Maj (b) (6)

#### 2. SCHEDULE: (All Local Times)

- a. 9 Aug (Monday)  
1500L Show KYNG  
1700L Depart KYNG  
1900L Land KRDR
- b. 10Aug (Tuesday)  
1300L Installation in-brief CE Conference Rm (msn cdr + ento, mandatory)  
1700L Show KRDR Weather decision (load + calibrate)  
1930L Depart KRDR spray GFAFB  
2050L Sunset  
2130L Land KRDR
- c. 11 Aug (Wednesday)  
1700L Show KRDR  
1900L Depart KRDR Spray City of GF  
2048L Sunset  
2130L Land KRDR
- d. 12 Aug (Thursday)  
1700L Show KRDR  
1930L Depart KRDR Weather backup/training  
2048L Sunset  
2130L Land KRDR
- e. 13 Aug (Friday)  
1130 Show KRDR  
1330 Depart KRDR  
1600 Land KYNG

#### 3. ITEMS TO TAKE

- a. **Mission Commander:** Cellular Phone, Mission Folder, FFT
- b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder,  
1 VHF Radio, Water Sensitive Cards, Card Holders with  
Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors,  
Project Notebook, Entomologist's Tool Kit
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

**4. PPR: 08-09-01/AN**

**5. RADIO FREQUENCIES: Air To Ground Primary VHF 123.45 KRDR Tower 124.9 V; Grand Forks International 118.4 V**

**6. CONFIGURATION: SP2G**

- a. System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. Nozzle Tips/Orientation:** ULV (adulthood): 8005 Tee Jet oriented straight down
- c. Number:** ULV: 18 8005s total (9 each side)
- e. Aircraft:** 89-9105
- f. Mission Identifier:** QZNRK9901221

**7. SPRAY PARAMETERS:**

**a. Adulthood**

- (1) **Area to be treated:** 11,518 acres (Grand Forks AFB), 18,346 (Grand Forks) and 877 (Grand Forks Intl)
- (2) **Altitude:** 150' for Adulthood application
- (3) **Swath Width.** 2000 feet
- (4) **Flow Rate.** 7.26 gallons/minute ULV
- (5) **Application Rate.** 1.0 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots
- (7) **Flush:** With water, triple rinse, then air purge

**8. SPRAY MIXING AND LOADING:** The amount of Trumpet to load will be determined on site

**9. TRANSPORTATION: Transportation provided by base (DSN362-3976): One 15 pax van (OPS), three 6 pax trucks (MC, OPS, MX), one 1.5 ton truck (spray MX). Vehicles at base ops with the exception of Trumpet loaded truck**

**10. LODGING: Onbase Billeting :** DSN 362-7200 or (701) 594-8431, FAX 362-3069 14 Rooms Reserved  
-- Prime Knight DSN 362-3844 or (701) 747-3844

**11. CONTACTS:**

**a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**

- (1) **Base Operations:** Airfield Manager DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx20
- (2) **Pest Management:** TSgt (b) (6) or TSgt (b) (6) DSN (b) (6) , FAX 3432
- (3) **Base Civil Engineer:** Lt Col (b) (6)
- (4) **Environmental Officer:** (b) (6) , DSN (b) (6) , FAX 6155,4907
- (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
- (6) **Weather:** DSN 362-4396
- (6) **Billeting:** DSN 362-3070/6189/7200 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844

**(7) Fargo FSDO: POC (b) (6)**

**b. 910 AW, Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Col (b) (6)
- (5) 910 Base Ops: Airfield Manager: Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
- (7) 757 AS/DOO: Ops Admin: TSgt (b) (6) ; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) ; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: MSgt (b) (6) Cell: (b) (6)
- (13) 910 LG/LGL: Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - Entomologist: (b) (6)
  - Mission Commander: (b) (6)
  - Spray Maintenance: (b) (6)

# 910 AW AERIAL SPRAY UNIT POST-MISSION REPORT

## GRAND FORKS AFB – ADULT MOSQUITO CONTROL 9-13 August 2010

### 1. MISSION BASICS:

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 9-13 August 2010
- c. Purpose of Application: Control adult nuisance and vector mosquitoes
- d. Application Date: 11 Aug 2010
- e. Time of Application (Local): 1945-2100 hrs
- f. Acres Treated: 12,544
- g. Project Coordinator/s (Name/Rank, Title, Phone #): TSgt (b) (6) NCOIC Pest Management Shop, DSN (b) (6)
- h. Date Spray Map Last Approved: 10 Aug 2010
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): GFAFB CE Conference Room, Maj (b) (6) (b) (6) Maj (b) (6) Maj (b) (6) , LtCol (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: Maj (b) (6) (b) (6)
- b. Entomologist (Category 11): Maj (b) (6)
- c. Aircrew:
  - 1) Pilots: Maj (b) (6) , Lt Col (b) (6)
  - 2) Navigators: Maj (b) (6)
  - 3) Flight Engineers: MSgt (b) (6)
  - 4) Spray Operators: MSgt (b) (6) , MSgt (b) (6) , SSgt (b) (6)
- b. Maintenance:
  - 1) Spray Maintenance: MSgt (b) (6) , MSgt (b) (6) , A1C (b) (6) (b) (6)
  - 2) Crew Chief(s): SSgt (b) (6) , SSgt (b) (6)
  - 3) Avionics: TSgt (b) (6)

#### Flying Data:

- (1) Spray Sorties/Hours: 1/1.3
- (2) Ferry Sorties/Hours: 2/6.7
- (3) Mission ID: QZNRK9901221

### 3. PESTICIDES:

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 120 gal Trumpet® (11 Aug)
- d. Gallons Pesticide Applied: 98 gal Trumpet® (29 June)
- e. Gallons and Name of Flush Used: none
- f. Other Additives Used: none
- g. Application Rate: 1.0 oz/acre Trumpet®

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99107
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 20 straight down
- f. Pressure (PSI): 38 PSI
- g. Flow Rate: 7.26 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off Set: 4000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 275-285° @ 5-6 knots (aerial observation)
- b. Temperature (Degrees Fahrenheit): 84-78 °F
- c. Relative Humidity: 63-80%
- d. Cloud Cover: Clear
- e. Source: Ground observations and National Weather Service

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. The 319 MDG/ADS conducts adult mosquito trapping to monitor mosquito densities on base.
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito traps
  - (2) Results: Trap data pending from 319 MDG/ADS

**8. REMARKS:** The threat of West Nile virus (WNV) prompted GFAFB public health to make the decision to spray the base with Trumpet EC. The application began 1.5 hrs before sunset and continued for 20 minutes after sunset to maximize the efficiency of our spray effort to peak mosquito activity. The activity period of the primary vector of WNV in North Dakota (*Culex tarsalis*) is after sunset. A night operations profile is currently being developed. Had such a practice been in place, both the base and the City of Grand Forks could have been sprayed on 11 August, as meteorological conditions were favorable during the AFB application. Since the current mission was restricted after sunset flight time, only the Base proper was covered on 11 August. Unfortunately, weather conditions did not support an application the following day; consequently, we were unable to complete the City of Grand Forks spray area before the end of the allotted mission. Preliminary post-spray observations indicate excellent control of mosquitoes. Pending trap count data should confirm this. The city of Larimore, ND was also included in this adulticide application. Many thanks to TSGT (b) (6) and the staff of the GFAFB pest control shop.

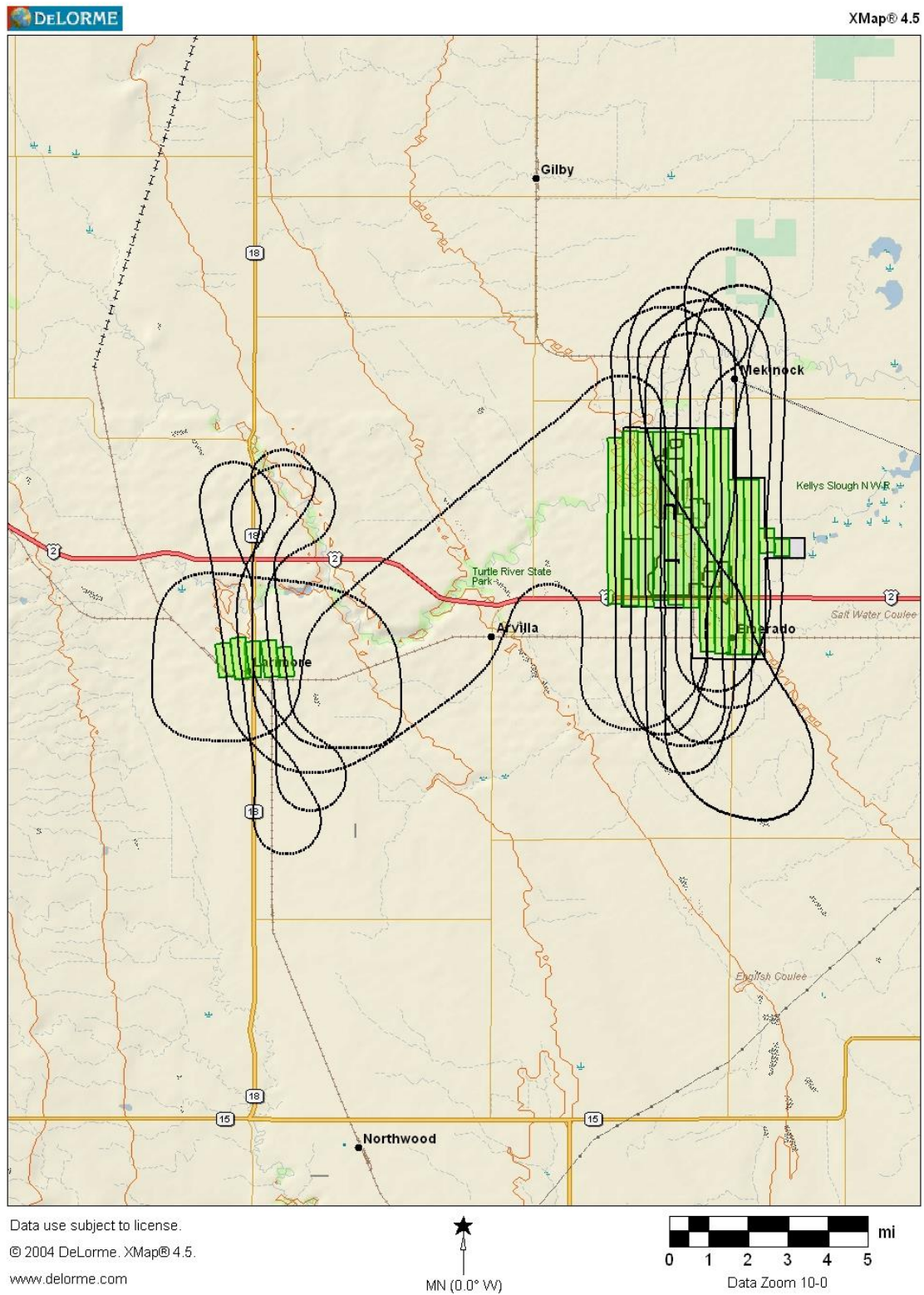
//signed//

(b) (6)

Maj, USAFR

DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

**Attachment 1. Image shows Grand Forks AFB, City of Larimore spray blocks (black) and pesticide application swaths (green) during application on 11 Aug 2010. A 4000' offset was used to compensate for winds.**





# AERIAL SPRAY OPERATIONAL SCHEDULE

## MCRD, PARRIS ISLAND, SC

### 12-15 April 2010

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC. Conduct trial with Duet for efficacy evaluation against biting midges.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: LTC (b) (6) , LTC (b) (6) , Maj (b) (6)
- (2) Navigators: LTC (b) (6) , LTC (b) (6) (b) (6)
- (3) Flight Engineers: SSgt (b) (6)
- (4) Spray Operators: SMSgt (b) (6) , MSgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSgt (b) (6) , SSgt (b) (6) , SrA (b) (6)
- (2) Crew Chiefs: TSgt (b) (6) , SrA (b) (6)
- (3) Avionics: TSgt (b) (6)

##### c. Entomologist: Maj (b) (6) Maj (b) (6) (MC)

#### 2. PPR REQUIREMENTS: 102-01 SPRAY07

**3. PLANNED SEQUENCE OF EVENTS:** (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

##### 12 APR (Monday)

0800: Show  
1000: Depart KYNG  
1200: Land KNBC  
1915: Safety Brief

##### 13 APR (Tuesday)

**TBD Installation Brief**

1630: Show  
1700: WX Decision and Load Chemical  
1830: Depart KNBC  
2000: Land KNBC  
Sunset: 1951

##### 14 APR (Wednesday) WX Backup or Training

1630: Show (Earlier if Training)  
1700: WX Decision and Load Chemical  
1830: Depart KNBC  
2000: Land KNBC  
Sunset: 1952

##### 15 APR (Thursday) **\*\*Departure time may slip depending upon Wednesday evening completion time.**

0900: Show  
1100: Depart KNBC  
1300: Land KYNG



**4. ITEMS TO TAKE/NOTES:**

- a. **Mission Commander:**
  - (1) Mission Commander Cell Phone
- b. **Entomologist:**
  - (1) Wind Gauge & Compass
  - (2) VHF Radios and Cellular Phone
  - (3) Pesticide Safety Binder
- c. **Navigators:**
  - (1) Maps
  - (2) Templates
- d. **Spray Maintenance:**
  - (1) Spill Kit
  - (2) Safety Equipment
  - (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** size = 8003; 13 open
- d. **Differential GPS:** Wingman Installed
- e. **Aircraft:** 90-9107
- f. **Mission Identifier:** QZNRKA902102

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Duet—Prallithring (1%); Sumithrin (5%); Piperonyl Butoxide (5%)
  - Signal Word: Caution
  - Flushing Agent: BVA Oil
- b. **Application:** 1.24 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 4.7 gallons/Minute

**9. PARKING PLAN:** NAS Beaufort, SC. Please limit number of vehicles and trips on the flight line

**10. AIR TO GROUND RADIO FREQUENCIES:**

Beaufort Tower:	119.05/340.2 MCAS TWR
Beaufort Approach	123.7
Hilton Head Arpt:	118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)
Beaufort Co Arpt:	122.7 UNI
Spray Ground:	123.4

**11. TRANSPORTATION:** Parris Island will provide 3 vehicles for transportation to and from quarters and for messing. Vehicles will be at Base Operations.

**12. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP &Parris Island MCRD Project Coordinator.

### 13. CONTACTS:

- a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX
- (1) Environmental Coordinator (Spray Coordinator):  
(b) (6) DSN (b) (6) , Cel (b) (6) ; (b) (6) (b) (6) Cel (b) (6)  
FAX (843) 228-2616; (b) (6)
  - (2) Assistant Chief of Staff I & L: COL (b) (6) , DSN (b) (6)
  - (3) Pest Control: DSN 335-2364
  - (4) P.I. Motor Pool: (b) (6) DSN (b) (6)
  - (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
  - (6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)
  - (7) P.I. Rifle Range: DSN: 335-3183/3624
- b. **Beaufort MCAS SC:** (Commercial (843) 228-XXXX)
- (1) Beaufort MCAS Environmental: (b) (6) , DSN (b) (6) ; (b) (6) (b) (6) DSN (b) (6)
  - (2) Fuels: DSN: 335-7049/7448/7168
  - (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6)  
DSN: (b) (6) Base Ops is ext 7301/2/3  
(After duty hours: (b) (6) , DSN: (b) (6)
  - (4) Trans Alert/VAL: DSN: 335-7110
  - (5) Weather: DSN 335-7001/7926/7/9 ([www.beaufort.usmc.mil](http://www.beaufort.usmc.mil))
  - (6) Billeting: DSN 335-7676
- c. **Beaufort County Mosquito Control:** (b) (6) , (b) (6)
- d. **Naval Occupational Health/Preventive Medicine:** LtJG (b) (6) DSN: (b) (6)
- e. **Quarters: 16 Rooms at the Holiday Inn \$142/night (843) 379-3100**  
**2225 Boundary St Beaufort, SC**
- |                                 |   |
|---------------------------------|---|
| Comfort Inn and Suites          | (843) 379-9400                            |
| Ramada Inn                      | (843) 524-2144/Fax 1704                   |
| Hampton Inn                     | (843) 986-0600 (FAX 0494)                 |
| Sleep Inn                       | (843) 522-3361 FAX (843) 522-9929         |
| Parris Island Billeting         | DSN: 335-2744 (FAX: 3815); (843) 228-3960 |
| Comfort Inn                     | (843) 525-9366 (FAX 1529)                 |
| Best Western (Sea Island Motel) | (843) 524- 4121                           |
| Port Royal Days Inn             | (843) 524-1551                            |
- f. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext
1. 910 AW/CC: Col (b) (6) (b) (6)
  2. 910 AW Command Post: Ext 1315; FAX 1161
  3. 910 AW/PA: Maj (b) (6) ; FAX 1022
  4. 910 OG/CC: Col (b) (6)
  5. 910 OG: Airfield Manager, Ext 1186/1526
  6. 757 AS/DO: Maj (b) (6) (b) (6) Ext 1793
  7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
  8. 757 AS/DOO: Ops Admin: TSgt (b) (6) ; FAX 1657
  9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) 1503 FAX 1616
  10. 910 LG/CC: Ext 1225
  11. 910 LG/LGM: Ext 1352
  12. Maintenance Control: Ext 1327
  13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6) Ext 1132/1586
  14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
  15. Cellular Spray Phones:
    - Mission Commander: (b) (6)
    - Entomologist: (b) (6) (b) (6) (b) (6) (b) (6)

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**PARRIS ISLAND MCRD, SC 12-15 Apr 2010**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 12-15 April 201009
- c. Purpose of Application: Biting midge control; testing effects of the mosquito adulticide Duet
- d. Application Date: 14 April 2010
- e. Time/s of Application (Local): 2034-2145 hrs
- f. Acres Treated: 5,759
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) ,  
Environmental/Spray Coordinator, DSN <sup>(b)</sup>(b) (6)
- h. Date Spray Map Last Approved: 6 October 2009
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 13 Apr; Assistant Chief of Staff,  
Installations and Logistics, COL (b) (6) briefed by Maj (b) (6) Maj (b) (6)
- k. Mission Identifier: QZNRKA902102

**2. OPERATIONAL:**

- a. Mission Commander: Maj (b) (6)
- b. Aircrew:
  - (1) Pilots: Lt Col (b) (6) , Lt Col (b) (6) , Maj (b) (6)
  - (2) Navigators: Lt Col (b) (6) , Lt Col (b) (6) (b) (6)
  - (3) Flight Engineers: SSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6) , MSgt (b) (6)
- c. Maintenance:
  - (1) Spray Maintenance: TSgt (b) (6) , SSgt (b) (6) , SrA (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6) , SrA (b) (6)
  - (3) Avionics: TSgt (b) (6)
- d. Entomologists: Maj (b) (6) Maj (b) (6)
- f. Flying Data:
  - (1) Spray Sorties/Hours: 2.0 + 1 training sortie 1.5 hrs
  - (2) Ferry Sorties/Hours: 2/4.2

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Duet®
- b. EPA Registration Number: 1021-1795-8329
- c. Formulation Sprayed: Prallithrin (1%); Sumithrin (5%); Piperonyl Butoxide (5%)
- d. Gallons Pesticide Loaded: 70 gal
- e. Gallons Pesticide Applied: 59 gal
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 10 gal/BVA oil
- h. Other Additives Used: None
- i. Application Rate: 1.24 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99107
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 16 oriented straight down
- f. Pressure: 35 p.s.i.
- g. Flow Rate: 4.5 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 096-125°/3.4-4.7 knots
  - (2) Release Altitude: 090-130/12-19 knots
- b. Temperature (Degrees Fahrenheit): 64° F
- c. Relative Humidity: 76-87%
- d. Cloud Cover: mostly cloudy
- e. Source: Ground observations at the MCRD Rifle Range/Aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: glass microscope slides; caged mosquitoes; landing rates
  - (2) Results: coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito and midge numbers were determined prior to and after spraying using CO<sub>2</sub>-baited traps, landing counts, and caged mosquitoes.
  - (2) Results: mosquito numbers were reduced; biting midge numbers did not appear to be affected by the application.

**8. REMARKS:** A relatively new public health pesticide for mosquito control (Duet) was analyzed for its effect on biting midges. This insecticide boasts a low mammalian toxicity and contains an insect irritant that, in theory, will excite biting flies to take to the wing where contact with the active ingredient component is more likely. Considerable effort was input into this trial from the Marine Corps, Air Force, Beaufort County Mosquito Control, and Clarke (the manufacturer) in regard to pre- and post-analysis of the spray. The flight of the spray aircraft is shown in Attachment 1. Mosquitoes and midge numbers were closely monitored and identified to species. Biting midges were present in high densities and mosquito numbers were low/moderate. Caged mosquitoes were favorably impacted by the sprays with an average mortality of 95% and 3/4 locations reporting 100% (Attachment 2). Likewise, wild mosquitoes numbers were also reduced following the sprays (Attachment 3). Unfortunately, the purpose of this test was specifically aimed at biting midges and our results were less than exciting regarding the reduction of *Culicoides* spp. Attachment 4 shows the numbers of midges collected before and after the spray. While a decrease in midge numbers was observed the day after the spray, a decrease was also observed at the control site. Overall, midge numbers actually increased following the duet application while numbers increased at the control site. The statistical significance of trapping densities and landing rates of biting midges before and after was measured with the Wilcoxon's signed rank test. The only significant change ( $P<0.05$ ) detected was the difference in landing rates, which were lower overall on Parris Island after the sprays (see attachment 5). However, landing rates were lower at the control site as well. Since there were only 2 measurements made at the control site compared to 4 measurements (4 trapping locations) on

Parris Island, the strength of these analysis is rather weak. The power of these comparisons could be improved in the future by increasing the number of samples for the control category. An additional factor worth noting is the sudden change in environmental conditions just as the application began. While daytime temperatures had been in the mid-70's, the temperature suddenly dropped to 64°F about 30 minutes before the application began. There were few if any midges actually flying during the spray. This was not the preferred situation but with only the single opportunity the application was continued. Nonetheless, we found corroborating evidence that pesticide droplets were distributed throughout the spray area in droplet densities reported on microscope slides and with high mortality of mosquitoes in bioassay cages. Midges are not normally put into bioassay cages as the tight mesh fabric required to contain them does not permit pesticide drops to pass through the cage interior. Also worth noting is that some of the Duet loaded and sprayed appears to have been irregular. Spray Maintenance personnel found a sandy substance in the MASS filters following the application. Upon further inspection the 30 gal drum of Duet had material that resembled pond scum floating on the surface of the remaining product. The manufacturer is investigating this issue and will provide more information at a later date. The next opportunity for Parris Island MCRD to receive military aerial sprays is scheduled for 10-14 May 2010. At present, an additional trial with Duet is planned, if pest populations are present. A special thanks to Beaufort Co. Mosquito Control for use of their excellent facilities.

//signed//

(b) (6)

MAJ, PhD, USAFR

DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

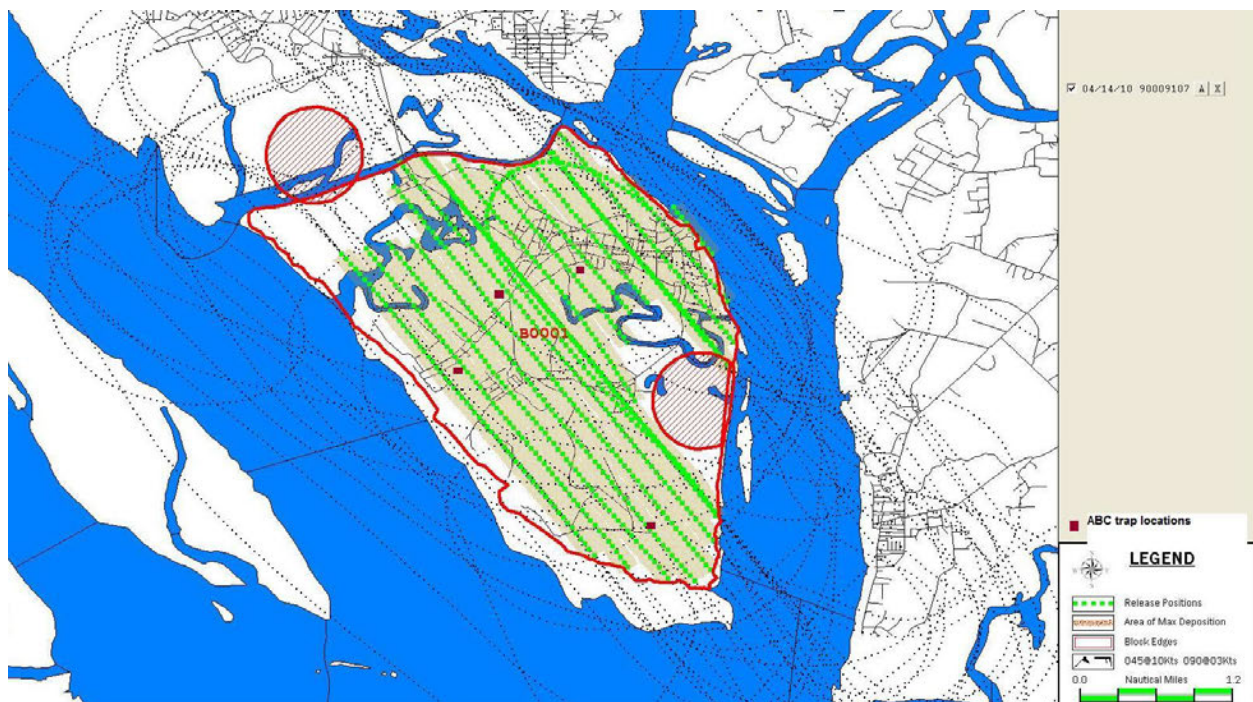
//signed//

(b) (6)

MAJ, PhD, USAFR

DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

Attachment 1. Image showing track of the spray aircraft for 14 April 2010. Red outlines are block edges. Circles represent bald eagle nesting areas that were avoided as no spray/no fly areas. Small red squares were trapping locations for midges and mosquitoes; landing counts were made at these locations as well.



Attachment 2. Mortality of caged mosquitoes serving as bioassays to determine efficacy of Duet.

			24-hrs Post Mortality						Droplets/
Cage Location			Dead	Total	% mortality	ave mort	Corrected mortality	DV.5	cm2
Control - shell point			1	26	4%	2%	na	Hock Spinners	
			0	24	0%				
#1 Child Develop			25	25	100%	100%	100%	38.4	351.2
			23	23	100%				
#2 Weapons			18	23	78%	81%	81%	33.2	119.8
			21	25	84%				
#3 Golf Course			24	24	100%	100%	100%	39.6	328.4
			26	26	100%				
#4 Veterinarian			25	25	100%	100%	100%	29.7	451.4
			28	28	100%				

Attachment 3. Mosquitoes collected using ABC traps with carbon dioxide. Mosquito numbers decreased following the duet application while numbers increased at the control site.

	all locations (except control)					
	<i>Ae. taeniorhynchus</i>	<i>An. crucians</i>	<i>Cx. salinarius</i>	<i>Ae. vexans</i>		other
13-Apr	33	6	77	108		8
14-Apr	22	7	72	57		0
<b>Spray Day</b>						
16-Apr	0	0	3	8		0
17-Apr	0	0	7	6		0
	Shell Point (Control)					
	<i>Ae. taeniorhynchus</i>	<i>An. crucians</i>	<i>Cx. salinarius</i>	<i>Ae. vexans</i>		other
13-Apr	228	8	68			8
14-Apr	0	2	52	172		0
<b>Spray Day</b>						
16-Apr	244	12	88	228		0
17-Apr	420	14	148	144		0

Attachment 4. Biting midges collected using ABC traps with carbon dioxide. While a decrease in midge numbers was observed the day after the spray, a decrease was also observed at the control site. Overall, midge numbers actually increased following the duet application while numbers increased at the control site. See Attachment 5 for statistical significance.

		all locations (except control)		
DATE		furens	hollensis	melleus
13-Apr		432	360	131
14-Apr		1828	1295.75	276.25
<b>Spray Day</b>				
16-Apr		1240.25	1168	197.5
17-Apr		2299.5	2498.5	562.5
		Shell Point (Control)		
DATE		furens	hollensis	melleus
13-Apr		22	646	4
14-Apr		85	267	13
<b>Spray Day</b>				
16-Apr		44	164	4
17-Apr		28	51	11

Attachment 5. Statistical significance of trapping densities and landing rates of biting midges before and after a Duet spray at Parris Island (Apr 2010). Test used was Wilcoxon's signed rank test. LR=landing rate; PI = Parris Island; B=before; A=after; ABC=American Biophysics traps baited with carbon dioxide. The only significant change ( $P<0.05$ ) detected was the difference in landing rates following Duet spray on Parris Island. The power of this analysis could be improved in the future by increasing the number of samples for the control category.

	<i>P</i> value
Landing rate PI B-A	0.018
LR controls B-A	0.18
LR PI vs controls B-B	0.18
LR PI vs controls A-A	0.18
ABC PI B-A	0.263
ABC control B-A	0.18
ABC PI vs control B-A	0.18
ABC PI B-A	0.18





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

5 Aug 10

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Mountain Home AFB, ID

1. Aerial Spray flight proficiency training will be accomplished at Saylor Creek Bombing Range near Mountain Home AFB, ID. Spray will aid their fire prevention program treating an invasive grass species (Cheat grass) that creates a fire hazard and has overtaken many of the areas on the bombing range. The operation applies herbicides targeting Cheat grass but allowing native fire resistant vegetation (sagebrush) to re-establish and become competitive.

2. Concept of Operations:

- a. 13 September (Monday)
  - 0900 Show KYNG
  - 1100 Spray aircraft depart KYNG
  - 1105 Support aircraft depart KYNG
  - 1430 Spray aircraft land KMUO
  - 1435 Support aircraft land KMUO
  - 1600 Installation briefing
- b. 14-17 September (Tuesday-Friday)
  - Spray aircraft:
    - 0500 Show KMUO
    - 0700 Depart KMUO
    - 0815 Land MUO
    - 0900 Depart KMUO
    - 1015 Land KMUO
- c. Saturday and Sunday airfield closed
  - \*\*Swap out crew members on Saturday as needed

- d. 20-23 September (Monday-Thursday)
  - 0500 Show KMUO
  - 0700 Depart MUO
  - 0815 Land MUO
  - 0900 Depart KMUO
  - 1015 Land KMUO
- e. 23 September (Thursday) Support aircraft
  - 0900 Show KYNG
  - 1100 Depart KYNG
  - 1430 Land KMUO
- f. 24 September (Friday)
  - 0700 Show KMUO
  - 0900 Spray aircraft depart KMUO
  - 0905 Support aircraft depart KMUO
  - 1630 Spray aircraft land KYNG
  - 1635 Support aircraft land KYNG

- 3. Maj (b) (6) (b) (6) will act as Mission Commander.
- 4. Lt Col (b) (6) will act as Aircraft Commander
- 5. Support required at Mountain Home AFB and Saylor Creek has been completed.

(b) (6) (b) (6) Maj, USAFR  
757AS Chief of Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## MOUNTAIN HOME AFB RANGE, ID

### 13-24 SEPTEMBER 2010

**PURPOSE/BENEFITS/OBJECTIVES.** To prevent fire hazards, inhibit annual re-growth of cheatgrass on Saylor Creek Range and allow native vegetation to establish and be competitive.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) Mission Commander: Maj (b) (6)
- 2) Pilots: Lt Col (b) (6) 13-24 Sep, Lt Col (b) (6) (13-18 Sep); Lt Col (b) (6) (13-18 Sep), IP??
- 3) Navigator: Capt (b) (6) ;
- 4) Flight Engineer: SSgt (b) (6) (b) (6) 13-18 Sep; Msgt (b) (6) , Smsgt (b) (6) 18-23 Sep
- 5) Spray Operators: Msgt (b) (6) , Msgt (b) (6) , Msgt (b) (6) (17-23)

##### b. Maintenance:

- 1) Spray MX:\*TSgt (b) (6) , Tsgt (b) (6) , Tsgt (b) (6) , Tsgt (b) (6)
- 2) Crew Chiefs: Msgt (b) (6) , Tsgt (b) (6)
- 3) Hyd/Prop/EE/Avi/Com- Tsgt (b) (6) , Tsgt (b) (6) , Tsgt (b) (6) , Tsgt (b) (6) (b) (6) Tsgt (b) (6)
- c. Entomologists: LtCol (b) (6) (14-18 Sep), Maj (b) (6) (14-18 Sep), Maj (b) (6) (17-24 Sep)

#### 2. SCHEDULE: (Local times; total of 13 lifts required, 1-3 lifts per day)

##### 13 SEP (Monday):

0900: Show KYNG

**QZNRK9901256**

**PPR #245812**

1100: Depart KYNG

1430: Land KMUO (Local)

**\*\* ASAP After landing** Safety Briefing, MX configures aircraft; plan next day's mission

1530: Installation Briefing

##### **Support Aircraft**

**QDNRK9901256**

**PPR#245817**

0900 Crew show

1105 Depart YNG

1435 Land MUO

\*All extra crew and maintenance ride on support aircraft

##### 14 SEP (Tuesday): Range Time 0700-1000, (1-3 sorties if possible)

0530: Crew Show time/Load water and chemical

**0700:** Take Off KMUO (As determined by Mission Cmdr)

0723: Sunrise

##### 15 SEP (Wednesday): Range Time: 0700-1000, (1-3 sorties if possible)

0530: Show time/Load water and Chemical

**0700:** Take Off KMUO

0724: Sunrise

##### 16 SEP (Thursday): Range Time: 0700-1000 (1-3 sorties if possible)

0530: Show time

**0700:** Take Off KMUO

0725: Sunrise

##### 17 SEP (Friday): Range Time 0700-1000, (1-3 sorties )

0530: Crew Show time/Load water and chemical (FOD WALK @MUO)

**0700:** Take Off KMUO (As determined by Mission Cmdr)

0726: Sunrise

**17 Sept \*\*SWAPOUT AIRCRAFT YNG QDNRK9901260 PPR#245824**

0800: Show KYNG

1000: Depart KYNG

1330: Land KMUO

18 Sept:

0700 Show KMUO

0900 Depart KMUO

1600 Land KYNG

**20 SEP (Monday): Range Time 0700-1000, (1-3 sorties if possible)**

0530: Crew Show time/Load water and chemical

**0700:** Take Off KMUO (As determined by Mission Cmdr)

0730: Sunrise

**21 SEP (Tuesday): Range Time 0700-1000, (1-3 sorties if possible)**

0530: Crew Show time/Load water and chemical

**0700:** Take Off KMUO (As determined by Mission Cmdr)

0730: Sunrise

**22 SEP (Wednesday):**

0530: Crew Show time/Load water and chemical

**0700:** Take Off KMUO (As determined by Mission Cmdr)

0730: Sunrise

**23 Sep (Thursday)**

0530: Crew Show time/Load water and chemical

**0700:** Take Off KMUO (As determined by Mission Cmdr)

0730: Sunrise

**Support Aircraft QDNRK9901266 PPR# 245826**

0900 Show YNG

1100 Depart YNG

1430 Arrive KMUO

**24 Sep (Friday)**

0700: Crew Show time

**0900:** Take Off KMUO (As determined by Mission Cmdr)

1630: Land KYNG

**\*\* If no delays are encountered, the mission will return to YNG after completion of last flush sortie and cleaning of system.**

### **3. ITEMS TO TAKE:**

- a. Mission Commander:** 1 Cellular Phone
- b. Entomologist:** UHF Radio, Cardholders, Water Sensitive Cards, Tool Kit, VHF Radio, Cell Phone, Laptop Computer
- c. Navigator:** Maps/Map Bag, Validation Map,
- d. Spray Operator:** Safety Gear, computer
- e. Spray Maintenance:** Mobility Kit, MASS Spares, Spill Kit, Pesticide Safety Binder, Safety Equipment and Tool and other equipment

### **4. NOTIFICATION NECESSARY FOR THIS MISSION: N/A**

**5. PARKING PLAN:** Transient Ramp in front of Base Operations

**6. RADIO FREQUENCIES:**

- a. **Air To Ground:** Entomologists: 123.45 VHF; 292.2 (range); Maintenance 384.7
- b. **Mt Home:** PTD: 372.2/138.9, ACC CP (Raymond 27): 381.3, ATIS: 273.5, TWR: 133.85 / 253.5, GND: 120.5 / 275.8, RAPCON: 259.1, Salt Lake Center: 387.15/363.0
- c. **Range:** Saylor Creek Range (Cowboy Control): 236.05pri/381.3sec/134.1tertiary  
If Cowboy Control isn't up, contact MUO APP on 371.2  
Sagebrush Control: 251.2, Paradise MOA: 272.7/236.05/225.55  
Owyhee MOA: 392.2/266.35, Bruneau/Sheep Creek MOA: 251.875

**7. IN-BRIEFING:** 1630 Airfield Management Office

**8. Billeting:**

On Base in Billeting

**9. Vehicles:** Mountain Home is providing vehicles.

1 - 6 PAX truck

3 - 15 Pax Van

1 - Staff Car

\*\*Vehicles must be washed and cleaned out prior to return

**10. SPRAY CONFIGURATION:**

- a. **System:** SP-3G
- b. **Nozzle Tips/Orientation:** Raindrop/Straight Back
- c. **Number:** Fuselage – 17 nozzles (8 left side: 9 right side)
- d. **Booms:** Fuselage
- e. **Aircraft:** 90-9108
- f. **Profile:** Planned HV Profile

**11. SPRAY PARAMETERS:**

- a. **Altitude:** 100' AGL (we are treating at 46.5 acres/minute)
- b. **Swath Width.** 100 feet
- c. **Flow Rate.** 326 gal/min
- d. **Application Rate.** 7 gal/acre; approximately 3,200 acres to be treated for cheatgrass
- e. **Ground Speed:** 200 Knots

**12. SPRAY MIXING AND LOADING:**

**a. Composition of Each Gallon:**

- (1) 0.57 ounces of Plateau® (we want 4oz in 7 gallons per acre)
- (2) 1 ounce of Sta-put® Drift Retardant
- (3) 126.4 ounces of water

**b. First Load (4 Tanks of 450 gallons each + sump of 75 gallons)**

(1) Fill to 450 gal water/tank using the pump on the water tanker truck. This is done by putting the filler hose into the rear tank with all tanks open to the common sump. Total water in tanks = 1,800 gal.

(2) 75 gal/water in sump

(3) Total water added = 1,800 gallons

(4) Upload 8.03 gal (30.4L)/Plateau; add 14 gal Sta-put while agitating approximately 5-7 min  
Total quantity mix 1822 gallons

### 13. SPRAY MONITORING OR TESTING: Performed by the CPMPs

### 14. CONTACTS:

#### a. Mountain Home AFB, ID:

- (1) Base Ops: DSN: 728-2222; COMM: (208)-828-2222 TSgt (b) (6)
- (2) Transit Alert: (b) (6) DSN (b) (6)
- (3) OG Col (b) (6) : DSN (b) (6)
- (4) Conservation Chief/Spray Project POC, (b) (6) : DSN (b) (6) cell (b) (6)  
(b) (6)
- (5) Entomology: TSgt (b) (6) , SSgt (b) (6) , (b) (6) : DSN (b) (6)
- (6) Weather Superintendent, Sgt (b) (6) or Weather NCOIC, TSgt (b) (6) : DSN  
(b) (6)
- (7) Weather: Lt (b) (6) DSN (b) (6) Maj (b) (6) : DSN (b) (6) .
- (8) Billeting: Sagebrush Hotel DSN 728-5151, FAX: 4797
- (9) Transportation: SSgt (b) (6) FAX: 1619
- (10) Weather to be provided:
  - Davis Mothan AFB, DSN 228-6590
  - Mountain Home AFB, Lt (b) (6) DSN <sup>(b)</sup>(b) (6) , Maj (b) (6) , DSN (b) (6)  
(b) (6)
- (11) Fire Dept (CEF): Chief (b) (6) , (b) (6) , TSgt (b) (6) DSN  
728-6292 dispatch

#### b. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046, 2, + Ext

- (1) 910 AW/CC: COL (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Maj (b) (6) (b) (6) ; FAX 1022
- (1) 910 OG/CC Col (b) (6)  
910 OSF/OSA, Airfield Manager:, (b) (6)
- (2) 910 OG/SOF (Operations Supervisor Desk): Ext 1069; FAX 1371
- (3) 757 AS/DO: MAJ (b) (6) (b) (6) (b) (6)
- (4) 757 AS/DOO, Ops Admin: SMS (b) (6) (b) (6) ; FAX 1657
- (5) 757 AS/DOS: Aerial Spray Office, Maj <sup>(b)</sup>(b) (6) (b) (6) (b) (6)  
CAPT (b) (6) , FAX 1616
- (6) 910 LG/CC:, Ext 1225  
910 MA: Maintenance Officer, Ext 1144
- (7) 910 LG/LGM:, Ext 1352
- (8) Maintenance Control: Ext 1348
- (9) 910 LG/LGMS: Spray Maintenance: SMS (b) (6) (b) (6)
- (10) 910 LG/LGL: CMS (b) (6)
- (11) Omega/SATO Travel: Ext 1772; 1 (800) 285 – 6342
- (12) Cellular Phones: Mission Commander: (b) (6)  
PMP/Entomologist/Ground Support:  
(330) 301-2737 (b) (6) (b) (6) (b) (6)  
Spray Maintenance: (b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## AVON PARK, FL

### 9-13 FEB 2009 Ch 1

**PURPOSE/OBJECTIVE/BENEFIT:** Flight testing of the Quantity Indicator System MASS upgrade. Aerial Spray flight training for aircrews over Avon Park Bombing range.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

1. Pilots: Capt (b) (6) (b) (6) LTC (b) (6) , Maj (b) (6) , Maj (b) (6)
2. Navigators: Maj (b) (6)
3. Flight Engineers: Msgt (b) (6)

##### b. Spray Operators: Sms (b) (6) , Msgt (b) (6) , Msgt (b) (6)

##### c. Maintenance:

1. Spray Maintenance: Smsgt (b) (6) Msgt (b) (6) , Msgt (b) (6)
2. Avionics: Ssgt (b) (6) , Ssgt (b) (6)
3. Crew Chiefs: Tsg (b) (6) , SRA (b) (6)
4. Engine Shop: Tsg (b) (6)

##### d. Entomologist/Ground Support: None

#### 2. SCHEDULE: (All time Local) All times and sequence of events are subject to change depending upon the needs of the training and range.

9 FEB (MON)

1400: Show Time KYNG  
1600: Depart KYNG  
1930 Land KMCf

10 FEB (TUE): Range scheduled: 1200-1500

Ground testing of QIS: Complete remaining ground testing items as required. Upon completion of ground items, flight testing of the EMI will be conducted at MCF. Upon completion of testing, the crew will depart out to KAGR

0800 or TBA Show Time  
1200 or TBA Take Off  
1500 Land Time

\*\*Schedule for remainder of week will be flexible depending upon the QIS testing.

11 FEB (WED): Range scheduled: 1200-1500

1000 Show at aircraft  
1200 T/O MCF  
\*\* Training at Avon Park Range or overwater  
1500 Land MCF

12 FEB (THUR): Range Times 1200-1500

1000 Show at aircraft  
1200 T/O MCF  
1500 Land MCF

13 FEB (FRI)

0900: Show Time  
1100: Depart KMCf  
1430: Land KYNG

#### 3. ITEMS TO TAKE:

- ##### a. Navigator:
- Maps with "No-Spray" Areas Marked  
Mission computer

#### 4. AIR TO GROUND FREQUENCIES:

- ##### a. Spray: Primary 392.2; Secondary 340.8



- b. Interplane: Primary 123.45; Secondary 122.9
- c. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- d. **Avon Park: TWR-292.2 (p), 126.15, 276.6 (s) Hrs 0700-2300 M-F, S-S per flying schedule DSN 968-7138**
- e. MacDill: TWR-123.7; GND-118.575; ATIS-133.825; CMD POST-311.0; PTD-372.2

**5. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 89-9105
- c. Nozzle Tips/Orientation: LV/HV 14 Raindrop nozzles oriented straight back
- d. Mission Identifier: QZNRKA346011

**6. MISSION PROTOCOLS:**

- a. **Altitude:** 100 and 150 AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Chemical:** Water
- d. **Application Rate:** TBD based on spray operator training needs
- e. **Flow Rate:** TBD
- f. **Acreage:** Configuration for training only.
- g. **Swath Width:** TBD depending upon training profile each day

**7. CONTACTS:**

- a. **Quarters:**  
**Springhill Suites**  
813-639-9600  
4835 W Cypress St Tampa, FL 33607
- b. Transportation:  
**Vehicles: 4 Vans - \$80/day;**  
Enterprise Rental MacDill AFB:  
(813) 840 2613 Attn: David  
Van – (b) (6) (b) (6) (b) (6) (b) (6)
- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350  
(1) Weather: MacDill AFB Forecaster (DSN 968-2854)  
(2) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)  
(3) MacDill AFB Ops Gp CC 968-3014
- d. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX  
DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN  
Avon Control Tower & Range Control Scheduling DSN 968-7176  
Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number  
(1) Range Operations Manager: (b) (6) , Bldg 236,(b) (6)  
(2) Avon Range Control Tower: ext 176  
(1) Flight Chief of Civ Engineer: (b) (6) Bldg 29,(b) (6)  
(2) Chief, Environmental Flight: (b) (6) , Bldg 29, (b) (6) also Wildlife Biologist (b) (6)  
(3) Fuels: ext 118 or Cel (b) (6)  
(4) Range Support Manager: Mr (b) (6) Bldg 29, (b) (6)  
(5) Range Control/Schedule: (b) (6) , Bldg 41,(b) (6)  
**See Attached Avon Park Org directory for additional listings**  
(9) Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)  
Range VHF: 126.15
- f. **Sebring AP:** Mgr: Mr (b) (6) (fuel needs)  
BEEPER: 1 (863) 999-8622 ENTER YOUR PHONE# ENTER #  
Asst Mgr: (b) (6) X-

g. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6) (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Capt (b) (6) ; FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Capt (b) (6) (b) (6) (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMS (b) (6) (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6)
  - Spray Maintenance: (b) (6)

# SPRAY OPERATIONAL SCHEDULE

## UTAH TEST AND TRAINING RANGE MISSION

### 16-26 MARCH 2010 **Ch 1**

**PURPOSE/BENEFIT/OBJECTIVE:** Aerial spray herbicide mission controlling Halogeton on Targets 21, 24, and Wildcat at the Utah Test and Training Range (UTTR) aiding vegetation control for bombing mission test evaluations and unexploded ordnance recovery.

#### 1. **AIRCREW1: AC 108-CALL SIGN: SPRAY 08**

- a. **Pilots:** MAJ (b) (6) (b) (6) , Maj (b) (6) \*, Maj (b) (6) \*, Capt (b) (6) \*
- b. **Navigators:** LTC (b) (6)
- c. **Flight Engineers:** Msg (b) (6)
- d. **Spray Operators:** Msg (b) (6) , Msg (b) (6)
- e. **Crew Chiefs:** Msg (b) (6) , Sra (b) (6)

#### **AIRCREW 2: AC 105- CALL SIGN: SPRAY 05**

- f. **Pilots:** MAJ (b) (6) , Capt (b) (6) , Maj (b) (6) \*
- g. **Navigators:** LtCol (b) (6)
- h. **Flight Engineers:** Msgt (b) (6) , Tsgt (b) (6) (b) (6)
- i. **Spray Operators:** Msgt (b) (6) , Tsgt (b) (6)
- j. **Crew Chiefs:** Msgt (b) (6) , Sra (b) (6)

#### 2. **MISSION SUPPORT:**

- a. **Mission Commander:** Maj (b) (6) (b) (6)
  - 1. Makes final decision on all changes to the schedule
  - 2. Confirm all hotel information is correct upon check in
  - 3. Report flight data to AFRC daily (See contact info on reporting sheet)
- b. **Entomologists:** Maj (b) (6) (in place) , Lt Col (b) (6) (In place 17 Mar comm. air)
- c. **ARMS:** None

#### 3. **UTTR GROUND PARTY:**

- a. **Entomologist/Pest Management Professional(s):** Lt Col (b) (6) will direct ground sprays as certified applicator
- Additional Range support personnel:  
17-19 March – (b) (6)  
21-24 March – (b) (6)

#### 4. **MAINTENANCE:**

- a. **910 MX Supervisor:** Msgt (b) (6)
- b. **910 Spray MX:** Tsgt (b) (6) , Tsgt (b) (6) , Tsgt (b) (6) , Tsgt (b) (6) (b) (6)  
Tsgt (b) (6) , Tsgt (b) (6)
- c. **Instruments/Avionics:** Tsgt (b) (6) (b) (6) Tsgt (b) (6)
- d. **Hydraulics/Electrician:** Ssgt (b) (6) , Ssgt (b) (6)
- e. **Engine:** Tsgt (b) (6)

#### 5. **COMM:** None

#### 6. **IN-BRIEFING:** (UTTR Staff)

- a. **When/Time:** 1400 or upon arrival whichever is earlier
- b. **Where:** Forestry ramp and Base Operations
- c. **Who:** **EVERYONE!! Do Not leave area until cleared out by the MC.**
- d. **Briefing Plan**
  - a. Vehicles- See item **16.h** below
  - b. FLT Line Driving
  - c. Schedule of events
  - d. Billeting- See item **16.g** below

- e. Weather call
- f. Cellular Phone numbers for all personnel (Provide info to MC)

**7. PLANNED SEQUENCE OF EVENTS: Hill AFB Tower Control and Runway Hours 24/7**

**NOTES:**

- 1. Scheduling reflects no weather or maintenance delays. In the event of weather or maintenance delays, the missions will be adjusted as required. **ALL TIMES SUBJECT TO ADJUSTMENT BY MISSION COMMANDER**
- 2. **DUTY DAY FOR CIVILIANS WILL BE AS REQUIRED WITHIN CREW REST CONSTRAINTS.**
- 3. Tower Control, Runway & Airfield hours 24/7
- 4. **UTTR RANGE TIMES: 1400-1900Z**
- 5. **ALL MX & A/C PERSONNEL WILL REMAIN ON DUTY UNTIL AIRCRAFT IS PRE-FLIGHT COMPLETE AND RELEASED BY THE MISSION COMMANDER.**

**a. 16 March (Tuesday)**

**Vader02                      MI: QDNRKA579075      PPR: LJ 16-01**

0800 Show KYNG

1000 Depart KYNG with extra crew, maintenance, and support equipment

1330 Land KHIF drop off extra crew, maintenance, and support equipment

Time TBD: MC, Maint, and extra crew members work out logistics of buildings, access cards, vehicles, and obtain billeting information prior to crews arriving on 17 March.

**b. 17 March (Wednesday)**

**Spray08                      MI: QZNRKA580076      PPR: LJ17-01**

0800 Show KYNG load spray module

1000 Spray 08 Depart KYNG

1330 Spray 08 Arrive KHIF

**c. 18 March (Thursday)**

**Spray 05                      MI: QZNRKA581077      PPR: LJ18-01**

0800 Show KYNG

1000 Spray 05 Depart KYNG

1330 Spray 05 Land KHIF

**18-19 March (Thursday-Friday) 2 sorties as wx permits each day.**

0500 Show KHIF Spray 08 crew 1; 0545 Spray 05 Crew 2 (Alternating daily)

0530 Weather call and mixing begin

0730 Depart KHIF

1300 Land KHIF

**\*\*Weekend flying is currently unavailable due to range funding. If wx delayed, then weekend operations will be considered as a last resort per Hill AFB.**

**d. 22-25 March (Monday-Thursday) 2 sorties as wx permits each day.**

0500 Show KHIF

0530 Weather call and mixing begin

0730 Depart KHIF

1300 Land KHIF

**25 March Support Aircraft**

**VaderXX                      MI: QDNRKA578084      PPR: LJ25-01**

0800 Show KYNG

1000 Depart KYNG

1400 Arrive KHIF

**e. 26 March (Friday) All personnel**

0730 Checked out of billeting

0800 Return Rental vehicles

1000/1005/1010 Depart KHIF

1600/1605/1610 Land KYNG

\*\*If completed early, the aircrews and airframes may return early. TBD by the mission commander.

**8. ITEMS TO TAKE:**

**a. PMP:**

(1) Project Notebook with Recording Sheets and Maps

(2) Laptop Computer and Batteries

(3) 2 Compasses and Stop Watch

(4) 2 Signal Mirrors and 2 Spot Lights

(5) Measuring Wheels and Tape

(6) Entomologists' Tool Kit

(7) UHF/VHF Radios and VHF Radios

(8) Cellular Phone

**b. Mission Commander:** Mission Folder, Cellular Phone

**c. Navigator:** Maps

**d. Spray Maintenance:**

(1) MASS Spares and Spill Kit

(2) Tools and Other Equipment

(3) Herbicide Safety Binder

(4) Safety Equipment

**e. Maintenance:** Applicable Equipment

**9. SPRAY CONFIGURATION: SP3G**

**a.** Two Aircraft and Systems

**b.** MASS Modules 1, 2 and 3

**c.** UHV Fuselage booms oriented straight back

**10. PPR REQUIREMENTS:** All required, see Form 33 setup sheets for aircraft

**11. PARKING PLAN:** Forestry Ramp and Building requested

**12. RADIO FREQUENCIES:**

- **Clover Range Control:** UHF 285.65, 275.9, 361.4 (p)

- **Eagle Tower:** UHF 351.0; Mawk 4 **((b) (6))**

- **Diddle Knoll & Spray Ops Freq:** UHF 398.1 (Primary), 383.2 (Back-up); VHF 134.1, 118.45

- **Spray Inter plane:** UHF 237.05 / VHF 138.375

- **Spray Ground to Spray Maintenance:** See **Iridium Phones**

- **Base OPS:** 139.3

- **HF Operations:** Designated by Comm. See attached list.

- **Communications Ground Freq:** LMR nets are trunked at Hill.

- **IRIDIUM PHONES** - Numbers TBD Upon issue

**13. SPRAY PARAMETERS:**

**a. Herbicide:** Krovar 1DF®

**b. Application Rate:** 22.5 gal/acre (10 lbs of Krovar in 22.4 gal of water)

**c. Acreage:** 1,283 Acres (Targets 21, 24 and a couple passes on Nord LZ)

**d. Ground Speed:** 200 Knots (337.55 ft/sec)

- e. **Spray Altitude:** 100 Feet AGL
- f. **Swath Width:** 35 Feet
- g. **Flow Rate:** 366.1 Gallons/Minute

**14. HERBICIDE LOADING: (For Partial Loads Use Table on Last Page)**

**a. Sequence for Loading 1,000 Gallon Mixing Tank:**

- (1) Fill with water up to 750 Gallon Mark, then add:
  - (a) 450 Pounds of Krovar 1DF® (9 bags, 50 # each)
  - (b) 4.0 Gallons (15,140 ml) of StaPut®
  - (c) 64 Ounces (1,892 ml) of Foam Fighter F®
  - (d) 200 Ounces (5,913 ml) Hi-Light® Dye
  - (e) Add Water to 1,000 Gallon Mark and Agitate for 30 Minutes

- b. When:** Start at 0500 Hours on first full day of spraying and adjust as necessary through end of the daily mission as called by Mission Commander.

**c. Items to be furnished by installation:**

- (1) Krovar 1 DF® (12,660 pounds)
- (2) Foam Fighter F® (15 gallons)
- (3) StaPut® Additive (114 gallons)
- (4) Hi-Light® Dye (45 gallons)
- (5) Remove Nutra-Sol Tank Cleaner
- (6) Loading Personnel and All Loading Equipment
- (7) All Necessary Cleanup and Hazardous Waste Disposal
- (8) Aircraft Support Equipment and TA Support
- (9) Wash Rack and Fuel Priority

**15. SPRAY MONITORING AND TESTING.** By CPMP & ground support personnel

**16. CONTACTS:** Commercial prefix (801) 777-XXXX; DSN 777-xxxx

**a. 388<sup>th</sup> RANS/RSO, Range Control Officer/Installation Spray Coordinator:**

(b) (6) 6066 Cedar Lane, Bldg 1274S; (b) (6) ; FAX: 9205  
Cell Phone # (b) (6)

(b) (6)

- **Hill Range Control:** 7-9386, Current OPS; 7-9385
- **Range Scheduler:** 7-9386
- **Eagle Tower:** 7-1515/6
- **Clover Operations:** 7-7575
- **Clover DO:** 586-3103
- **388<sup>th</sup> RANS/RSL Radio Freq Monitor:** 7-6715
- **388<sup>th</sup> RANS/RSR Resource Monitor:** 5-4257

**b. Environmental Coordinator:** Charles Sanford 775-6904

**c. OASIS RANGE SUPPORT DIRECTORATE:**

Oasis Chief: 75 CEG/CEU (b) (6)

Oasis Civil Engineering: (b) (6)

North Range Security: 7-1521/2/4

**d. Hill AFB Base OPS:** 7-1861

**e. Entomology:** (b) (6)

**f. Weather:** Hill AFB: 7-2018; UTTR: 7-1516/63  
ASOS at Eagle Range 6-1765/1795  
Need Dash1 daily at 0600

- f. **Billeting: Billeting Office Mountain View Inn, DSN 777-0802/1844, FAX 775-2014**  
**Plan on base lodging. If off base lodging is needed, mission commander will coordinate.**

**Nugget (Wendover): 1-(800)-848-7300 (UTTR Personnel)**

**h. Car Contact:**

**1. Hertz Rental Car (Joey) at BX 801-825-7300**

**8 SUV's, 1 LG SUV, 2 St Car (Requested)**

MC/Entomologists/ARMS- Minivan- (b) (6)

Spray Crew1 – 2 Minivans- (b) (6) (17<sup>th</sup>), (b) (6) (17<sup>th</sup>)

Spray Crew2 – 2 Minivans – (b) (6) (17<sup>th</sup>), (b) (6)

Spray MX – FS Car – (b) (6) Minivan - (b) (6)

MX Specialists – Minivan - (b) (6)

Crew Chiefs – Minivan – (b) (6) (17<sup>th</sup>)

Mx Super – FS Car - (b) (6)

**Range: 1 SUV's – (b) (6) (b) (6)**

**2. Hill Motor Pool: 75 LRS/Dispatch DSN 777-1843, All Reserved: 1 total**  
**Still no vehicles available at this time! If they come available, some rentals may be cancelled.**

**i. Hill AFB: 75<sup>th</sup> Air Base Commander: Col (b) (6)**

Airfield Manager: (b) (6)

Base Operations: (b) (6) ; 7-1861; FAX: 7-2221

Sponsor: Msgt (b) (6) 514FLT (b) (6)

Weather: 7-2018

Transit Alert: 7-3886

C-130 Maintenance Contact: 7-2478

Fuels: 7-7423/7-7311 available 0900-1800 daily after hours contact CP

Billeting: 7-1844

Chow Hall: 7-3428 Breakfast M-F 0530-0730, S-S 0700-1900

Golf Course: 7-1108

Public Affairs: 7-5201

Supply: 7-5391 (922 OE)

**j. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

**Toll Free 1 - 800 - 278 - 7046, + Ext**

- (1) 910 AW/CC: Col (b) (6) (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Maj (b) (6) ; FAX 1022
- (4) 910 OG/CC: Col (b) (6)
- (4) 910 OS/OSA: Airfield Manager, Ext 1186/1526
- (5) 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
- (6) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (7) 757 AS/DOO: Ops Admin: Ext 1239; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office: Maj (b) (6) (b) (6) (b) (6) ; Capt (b) (6) ; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1327
- (12) 910 LG/LGMS: Spray Maintenance, Ext 1132
- (13) 910 LG/LGL, Ext 1137



- (14) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (15) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: Mark's cell (b) (6)

**17. SEQUENCING:**

- a. Target sequencing is determined by UTTR personnel based upon EOD clearance schedule and airspace scheduling.
- b. Spray ops aircraft must stay south of Base Leg Knoll during turns on north run on Target 21. Coordination with range control is essential to assure that this portion of the range is released for air operations.
- c. When winds blow directly from one side of the target to the middle of the target or during early morning when wind speed is low, ground monitors will direct the "dress up" of the target edges.
- d. **Spraying Priorities:**
  - (1) Target 21
  - (2) Target 24
  - (3) Wildcat (Rinse/excess material)
- k. **Multiple-Target Alignments for Possible Future Operations.**  
Whenever possible, multiple in line targets will be treated on the same pass to facilitate aircraft line-up and turning efficiency (in which case two separate ground-monitoring and marking parties will be required).
  - (1) The west edges of Targets 21 & 24 are contiguous and can be treated on the same pass with a spray-off gap between targets.

**18. GENERAL TARGET INFORMATION:**

- a. **Target 21:**
  - (1) Dimensions: 4,980' X 7,770'
  - (2) Acreage: 888
  - (3) Acres Sprayed in 2004: 888
  - (4) Aircraft Loads: 18,869 Gal
  - (5) Sorties: 17
  - (6) Passes (35' Swath): 157
  - (7) Spray-On Time/Pass: 23 Seconds
  - (8) Spray Heading: 00/180
- b. **Target 24:**
  - (1) Dimensions: 1,600' X 6,080'
  - (2) Acreage: 223
  - (3) Acres Sprayed in 2004: 223
  - (4) Aircraft Loads: 5,263 Gal
  - (5) Sorties: 7
  - (6) Passes (35' Swath): 47
  - (7) Spray-On Time/Pass: 18 Seconds
  - (8) Spray Heading: 00/180
- c. WildCat  
Box coordinates:
 

NW Corner:	N402650.85	W1131629.59
NE Corner:	N402647.49	W1131621.76
SE Corner:	N402539.63	W1131711.16
SW Corner:	N402543.14	W1131719.00

**UTTR GEOGRAPHIC LOCATION**

Target areas on UTTR are geographically located in northwestern Utah, directly west of the Great Salt Lake and Hill Air Force Base. The complex is positioned between 40 and 41 degrees north latitude and close to 113 degrees ten minutes west longitude. The targets are within range 12 west and Township two and three north, Salt Lake Baseline Meridian.



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

8 Mar 10

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Hill AFB/UTTR UT

1. Aerial Spray flight proficiency training will be accomplished on targets 21, 24, and Wildcat at the Utah Test and Training Range(UTTR) applying Krovar controlling vegetation (i.e Halogenton) growth aiding bombing mission test evaluations and unexploded ordinance recovery. Two Spray configured C-130's will be available 17-26 March 10 for the requested spray mission. One Support C-130 will be used for position and deposition of spray ground personnel and maintenance equipment.

2. Concept of Operations:

- a. 16 March (Tuesday)  
0800 Show KYNG  
1000 Depart KYNG with extra crew, maintenance, and support equipment  
1330 Land KHIF drop off extra crew, maintenance, and support equipment
- b. 17 March (Wednesday)  
0800 Show KYNG load spray module  
1000 1<sup>st</sup> Spray aircraft depart KYNG  
1330 1<sup>st</sup> Spray aircraft Land KHIF
- c. 18 March (Thursday)  
1000 2<sup>nd</sup> Spray aircraft depart KYNG  
1330 2<sup>nd</sup> Spray aircraft Land KHIF
- d. 18-19 March (Thursday-Friday)  
0500 Show KHIF  
0745 Depart KHIF  
1300 Land KHIF  
\*\* 2 spray sorties planned each day per aircraft
- e. 22-25 March (Monday-Thursday)  
0500 Show KHIF

0745 Depart KHIF

1300 Land KHIF

\*\* 2 sorties planned each day per aircraft

f. 26 March (Friday)

0800 Show KHIF

1000 1<sup>st</sup> Spray aircraft depart KHIF

1005 2<sup>nd</sup> Spray aircraft depart KHIF

1600 1<sup>st</sup> Spray aircraft land KYNG

1605 2<sup>nd</sup> Spray aircraft land KYNG

3. Maj (b) (6) (b) (6) will act as Mission Commander.
4. Maj (b) (6) and Maj (b) (6) (b) (6) will act as Aircraft Commanders
5. Support required at Hill AFB and the UTTR has been completed.

(b) (6) (b) (6) Maj, USAFR  
Chief of Aerial Spray



DEPARTMENT OF THE AIR FORCE  
757 Airlift Squadron – Aerial Spray Operations  
3976 King Graves Rd Unit 24  
Vienna OH 44473-5924

**910 AW AERIAL SPRAY UNIT -- POST-MISSION REPORT  
MINOT AFB ADULT MOSQUITO CONTROL & ARMY CORPS  
OF ENGINEERS PROPERTY NEAR WILLISTON 19-23 JUL 2010**

**1. MISSION BASICS:**

- a. Installation Sprayed: Minot AFB, North Dakota and Army Corps of Engineers Property near Williston, ND.
- b. Mission Duration: 19-23 July 2010
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date/s: 20-22 July 2010
- e. Time/s of Application (Local): 2030-2139 (20 Jul), 2030-2233 (21 Jul), 2000-2215 (22 Jul)
- f. Acres Treated: 5,301 (20 Jul), 13,764 (21 Jul), 26,505 (22 Jul) = 45,570 acres
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6), Pest control supervisor/spray coordinator, DSN (b) (6), Land Manager, Army Corps of Engineers (b) (6)
- h. Date Spray Map Last Approved: 19 July 2010
- i. Date of Waste Generation Letter: 17 July 2006
- j. Installation In-Briefing: (When/Where/Briefer/s): 19 Jul; 5 CES Conference Room; Maj (b) (6) (Mission Commander)

**2. OPERATIONAL:**

- a. Mission Commander: Maj (b) (6)
- b. Entomologists (Category 11): LtCol (b) (6), Maj (b) (6) (safety briefer)
- c. Aircrew:
  - Pilots: LtCol (b) (6), LtCol (b) (6), Maj (b) (6)
  - Navigators: LtCol (b) (6), Capt (b) (6)
  - Flight Engineers: SSgt (b) (6), (b) (6)
  - Spray Operators: MSgt (b) (6), MSgt (b) (6), TSgt (b) (6), (b) (6), SSgt (b) (6)
- d. Maintenance:
  - Spray Maintenance: TSgt (b) (6), TSgt (b) (6), SrA (b) (6), (b) (6)
  - Crew Chief(s): MSgt (b) (6), SrA (b) (6)
  - Avionics: TSgt (b) (6)

**Flying Data:**

- (1) Spray Sorties/Hours: 3 sorties (1.2 + 2.2 + 2.3) = 5.7
- (2) Ferry Sorties/Hours: 2 sorties (4.0 + 3.5) = 7.5

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet<sup>®</sup> EC Concentrate (78% naled); Zenivex (20% etofenprox)
- b. EPA Registration Number: 59639-90-5481 Trumpet; 2724-791 Zenivex
- c. Formulation Sprayed: Emulsified Concentrate; E20
- d. Gallons Pesticide Loaded: 135 gal Trumpet (21 Jul) 60 gal Zenivex (20 Jul)
- e. Gallons Pesticide Applied: 37 gal (20 Jul); 97 gal (21 Jul) 60 gal (22 Jul)
- f. Gallons and Name Diluent Used: 60 gal BVA-13 (with Zenivex)
- g. Gallons and Name of Flush Used: 15 gal – water (Trumpet); 15 gal – BVA oil (Zenivex)
- h. Other Additives Used: None
- i. Application Rate: 0.90 oz/acre (20-21 Jul); 0.32 oz/acre (22 Jul)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet<sup>®</sup> 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 20-8005's (21-22 Jul); 10-8005s (22 Jul); oriented straight down
- f. Pressure: 37-42 psi
- g. Flow Rate: 6.5 gallons per minute (20-21 Jul); 4.4 gallons per minute (22 Jul)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray offset: 2000' (20-22 Jul)
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 2-5 knots @ 030° (20 Jul); 5 knots @ 090 (21 Jul); 8 @ 090° (22 Jul)
  - (2) Release Altitude: 5-8 knots @ 030° (20 Jul); 7 knots @ 100° (21 Jul); 10 @ 070° (22 Jul)
- b. Temperature (Degrees Fahrenheit): 71-64° (20 Jul); 79-77° (21 Jul); 72° (22 Jul)
- c. Relative humidity: 54-73% (20 Jul); 68-79% (21 Jul); 48-70% (22 Jul)
- d. Cloud Cover: Scattered clouds
- e. Source: Ground observations and aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Monitoring in Williston was done with New Jersey light traps results were favorable.
- b. Minot AFB Public Health collects mosquitoes and send them for identification to Brooks AFB. No data was reported from the city of Minot, but judging the excellent environmental conditions and results at the AFB, we expect significant reduction in mosquito activity.

**8. REMARKS:** This is a relatively complex spray mission which involves two different pesticides and sprays at two separate locations (Minot and Williston). Much of the background work coordinating these activities was carried out by the Pest Control Supervisor (5<sup>th</sup> CES), Minot AFB, Ms. Vicki Johnson, and her staff. This shop's planning was, once again, a critical contributing factor to mission success. Minot AFB and the city of Minot were sprayed to control adult mosquitoes. The community of Burlington, northeast of Minot (approximately 1,034 acres), was added this year. Areas treated are shown in

Attachment 1. Results of the sprays were reported to be favorable but actual species identifications and numbers are pending analysis at Brooks AFB. All spraying was optimized by beginning sprays no earlier in the day than two hours prior to sunset in order to maximize control the target mosquito species, *Aedes vexans* and *Culex tarsalis* within our operational parameters.

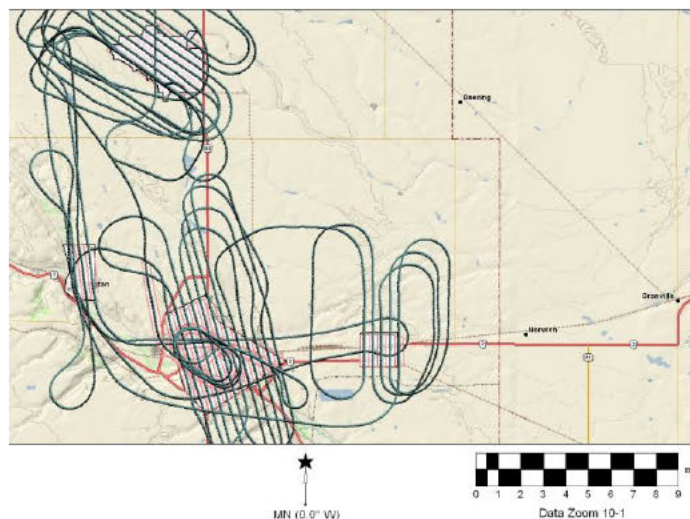
This is the second year for a Zenivex (etofenprox) application at Williston and Watford City. Areas treated are shown in Attachment 2. Trapping within the treatment area indicated a significant drop in mosquito numbers the day after the spray when compared to pre-spray numbers (i.e., 188 [pre] to 36 [post]). It is likely that a longer period of mosquito relief could be made possible by increasing the size of the spray block, but there are also significant economic considerations in doing so.

Upgrade training was accomplished on all sorties for the navigator, spray operators, and spray maintenance sections.

//signed//

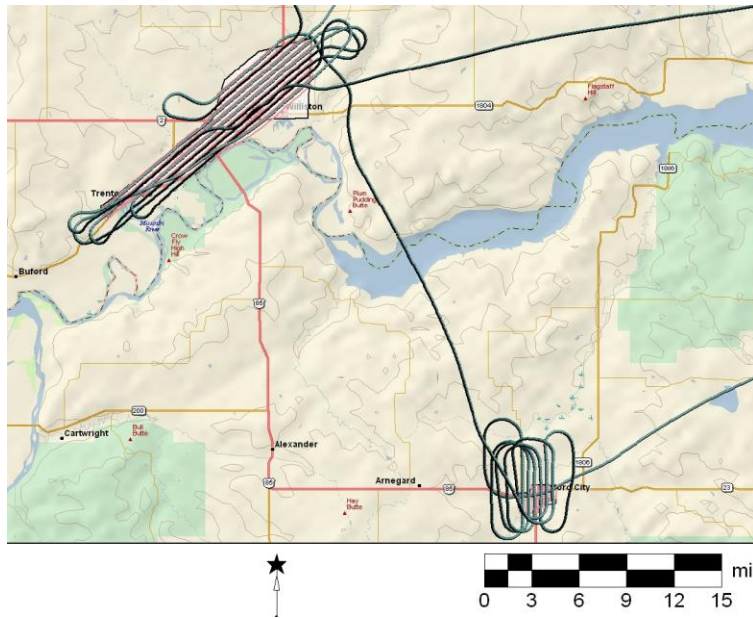
(b) (6) MAJ, USAFR  
Entomologist and DoD Certified Applicator

Attachment 1. Shows the Minot AFB area spray blocks and track of the aircraft. The black outlines represent the proposed treatment area. The green lines are the track of the aircraft while the red lines inside the spray blocks represent when the aircraft was spraying.





Attachment 2. Shows the Williston area spray block and track of the aircraft. The black outlines represent the proposed treatment area. The green lines are the track of the aircraft while the red lines inside the spray blocks represent when the aircraft was spraying.



# AERIAL SPRAY OPERATIONAL SCHEDULE

## Minot AFB, ND and Williston ACE, ND

### 19-23 July 2010

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Minot AFB, ND and the developed areas surrounding the Army Corp of Engineers property near Williston, ND.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: LTC (b) (6), LTC (b) (6), Maj (b) (6)
- (2) Navigators: LTC (b) (6), Capt (b) (6)
- (3) Flight Engineers: SSgt (b) (6) (b) (6)
- (4) Spray Operators: MSgt (b) (6), MSgt (b) (6), TSgt (b) (6), SSgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSgt (b) (6), TSgt (b) (6), SRA (b) (6)
- (2) Crew Chief(s): MSgt (b) (6), SRA (b) (6)
- (3) Avionics: TSgt (b) (6)

##### c. Entomologists: Maj (b) (6) (MC;), LTC (b) (6) (TR arriving at MOT @ 1300 hrs, 18 Jul)

#### 2. SCHEDULE: (All Local Times)

- a. 19 Jul (Monday)
  - 0800L Show KYNG
  - 1000L Depart KYNG
  - 1235L Land KMIB
  - 1400L Installation in-brief, CE conference room
- b. 20 Jul (Tuesday) Spray Minot AFB
  - 1730L Show KMIB
  - 1930L Depart KMIB
  - 2130L Land KMIB
- c. 21 Jul (Wednesday) Spray Minot
  - 1730L Show KMIB
  - 1930L Depart KMIB
  - 2130L Land KMIB
- d. 22 Jul (Thursday) Spray Williston
  - 1730L Show KMIB
  - 1930L Depart KMIB
  - 2130L Land KMIB
- e. 23 Jul (Friday)
  - 1130L Show KMIB
  - 1330L Depart KMIB
  - 1805L Land KYNG

#### 3. ITEMS TO TAKE

- a. **Mission Commander:** Cellular Phone, Mission Folder, FFT
- b. **Entomologist:** Cell Phone, Wind Gauge, Compass, Pest Safety Binder, 1 UHF Radio, 1 VHF radio Project Notebook
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment

#### 4. PPR: 19 01 DL

#### 5. RADIO FREQUENCIES: Air To Ground Primary VHF 123.45

Minot AFB Tower 120.65 V, 236.6, 253.5; Minot International 118.2 V or Unicom 122.95

#### 6. CONFIGURATION: SP2G

- a. **System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. **Nozzle Tips/Orientation:** ULV (adulticide): 8005 Tee Jet oriented straight down

c. **Number:** ULV: 10 8005s total (5 each side) for 1000' swaths and 20 8005's (10 each side) for 2000' swaths at Williston 8 8003s (4 each side)

d. **Aircraft:** 89-9106

e. **Mission Identifier:** QZNRK9901200

## 7. SPRAY PARAMETERS:

### a. Adulticide (Minot AFB- Trumpet)

- (1) **Area to be treated:** 26,800 acres
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 1000 feet for AFB; 2000' City of Minot or as determined by the PMP
- (4) **Flow Rate.** 3.6 gallons/minute for 1000' swaths; 7.2 gal/min for 2000' swaths
- (5) **Application Rate.** 1.0 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots (338 Feet/Second)
- (7) **Flush:** With water, triple rinse, then air purge

### b. Adulticide (Williston ACE - Zenivex)

- (1) **Area to be treated:** ~6,500 acres
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 2000' City of Williston or as determined by the PMP
- (4) **Flow Rate.** 2.2 gal/minute
- (5) **Application Rate.** 0.035 lbs/acre A.I. Zenivex, ULV (0.30 oz/acre)
- (6) **Ground Speed:** 200 Knots (338 Feet/Second)
- (7) **Flush:** With BVA, triple rinse, then air purge

8. **SPRAY MIXING AND LOADING:** See Ento; A good flush with water after Trumpet sprays; flush with BVA after Zenivex spray

9. **TRANSPORTATION:** 2 Vans, 1 6 PAX, 1 car (Rental-(b) (6)) will be available at MIB.

10. **LODGING:** Holiday Inn Express. 300 37<sup>th</sup> Ave SW Minot. (701) 837-3140  
Best Western Kelly Inn 1510 26th Avenue SW • Minot 58701 (710) 852-4300  
Billing POC: (b) (6) DSN 453-6161  
MC will provide Non-A's

## 11. CONTACTS:

### a. Minot AFB ND: DSN prefix: 453- Commercial area code and prefix (701) 723 -

1. **Base Operations:** x2347 (SSgt (b) (6)) Airfield Manager: TSgt (b) (6) (b) (6) /TSgt (b) (6) (b) (6) FAX: 3637
2. **Environmental Officer:** (b) (6) (b) (6)
3. **Base Civil Engineer:** Lt Col (b) (6)
4. **Pest Management:** (b) (6) (cell: (b) (6))
5. **Public Affairs:** Capt (b) (6) (b) (6)
6. **Weather:** TSgt (b) (6) Capt (b) (6)
7. **Billeting:** SSgt (b) (6), TSgt (b) (6) (if you have problems w/this number use (b) (6))
8. **Fire Dept:** x2461
9. **Transient Alert:** x3153, closes at 1730L
10. **Minot AFB Twr** x3330
11. **Minot Int'l Twr (Magic City Twr)** (b) (6)

### b. Williston

1. **Vector control district:** (b) (6)
2. **Army Corps of Engineers:** (b) (6), office; (b) (6) cell
3. **Williston ADS** 125.925

### c. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Ext 1236; FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 Base Ops: Airfield Manager: Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181
6. 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
7. 757 AS/DOO: Ops Admin: MSgt (b) (6), (b) (6) FAX 1657
8. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) FAX 1616
9. 910 LG/CC: Ext 1225
10. 910 LG/LGM: Ext 1352
11. Maintenance Control: Ext 1348
12. LG/LGMS: Spray Maintenance: MSgt (b) (6) Cell: (b) (6)
13. 910 LG/LGL: Ext 1137
14. Omega/SATO Travel: Ext 1772; (800) 285-6342

**15.** Supervisor of Flight Desk: 1069, FAX: 1371

**16.** Cellular Spray Phones:

- Mission Commander: (b) (6)
- Spray Maintenance: (b) (6)
- (b) (6) cell (b) (6)
- (b) (6) cell: (b) (6)



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

22 Jan 2010

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for LAIRCM Spray Test Flight

1. One Aerial Spray equipped C-130 will be available 22-26 Feb 2010 to observe the effects of the LAIRCM "A" package on the spray dispersal pattern using BVA oil with dye. Oil sensitive cards will be placed on the ground in a linear arrangement to verify effective swath width. Cards will also be placed on and near the LAIRCM "A" package to sample for BVA oil deposition. Continuation and upgrade training will be conducted after testing is complete.

2. Concept of Operations:

- a. 22 Feb (Monday)  
1100 Show KYNG  
1300 Depart KYNG  
1600 Land KMCF
- b. 23-25 Feb (Tuesday-Thursday)  
0845 Depart KMCF  
0900-1300 Avon Park Range Time  
1315 Land KMCF
- c. 26 Feb (Friday)  
0800 Show KMCF  
1000 Depart KMCF  
1300 Land KYNG

3. Plan subject to change based on test results.

4. Aircraft will be SP2G configured with ULV booms.
5. Maj (b) (6) (b) (6) will act as Aircraft Commander.
6. Support required at MacDill AFB and Avon Park, FL has been arranged.

(b) (6) , Capt, USAFR  
757 Aerial Spray



DEPARTMENT OF THE AIR FORCE  
757 AERIAL SPRAY SQUADRON  
Youngstown Air Reserve Station  
Vienna OH 44473-5926

5 March 2010

MEMORANDUM FOR 757 AS/DO

FROM: 757 AS/DOS

SUBJECT: LAIRCM EFFECTS ON AERIAL SPRAY

**1. Purpose:** Observe the effects of the LAIRCM "A" package to determine if the spray pattern is adversely affected and to determine if the LAIRCM package would disrupt airflow and create a situation where the spray might contaminate the airframe.

**2. Participants:**

**Mission Commander:** Maj (b) (6)

**Aircrew:**

1. Pilots: LTC (b) (6), MAJ (b) (6), CAPT (b) (6)
2. Navigators: LTC (b) (6)
3. Flight Engineers: MSGT (b) (6)
4. Spray Operators: SMSgt (b) (6), MSGT (b) (6)

**Maintenance:**

1. Spray Maintenance: TSgt (b) (6), SSG (b) (6), TSgt (b) (6)
2. Avionics: TSgt (b) (6)
3. Crew Chiefs: MSGT (b) (6), SRA (b) (6)

**Entomologists:**

1. MAJ (b) (6)

**3. Spray Configuration:**

Mass-SP2G  
Aircraft Number: 99104  
Mission Identifier: QZNRKA561053

**4. Spray Parameters:**

Booms: Fuselage only.  
Nozzles: 8005 TeeJet.  
Number of Nozzles: 9 total (8005)  
Application rate: 3.6 Gallons/minute  
Airspeed: 200 knots ground speed.  
Altitude: 150' AGL.  
Wind: Into the wind application

**5. Aerial Spray Flight Data:**

- |                              |                      |                   |
|------------------------------|----------------------|-------------------|
| a. 22 Feb 10: Ferry          | KYNG-KMCF 1750-2012Z | Flight Hours: 3.9 |
| b. 23 Feb 10: Testing Sortie | KMCF-KMCF 1625-1735Z | Flight Hours: 1.3 |



- |                              |                      |                   |
|------------------------------|----------------------|-------------------|
| c. 24 Feb 10: Testing Sortie | KMCF-KMCF 1615-1900Z | Flight Hours: 2.7 |
| d. 25 Feb 10: Ferry          | KMCF-KYNG 1730-2125Z | Flight Hours: 3.9 |

## **5. Methods & Materials:**

### **Airframe Contamination**

Twenty-two oil sensitive cards (Ciba-Geigy Corp.) were affixed to the airframe with duct tape around the LAIRCM pods, running up lateral-ventral sides of the fuselage aft of the spray booms, on the ventral side of the horizontal stabilizer, and on the fuselage “beavertail” (ventral side) (Fig 1.). Nozzles were 9 nozzles (5 port, 4 starboard) were opened up inboard with respect to the aircraft center-line. The aircraft took off, flew to Avon Park Range, and sprayed BVA oil dyed with a fluorescent optical brightener (Uvitex, Ciba-Geigy Corp.) for a total of one minute. The aircraft then returned to MacDill AFB, and the oil-sensitive cards were inspected for contamination. After initial inspection, cards were removed and illuminated under a UV source to further verify lack of contamination.

### **Aerosol Cloud Distribution**

Nine collection stations were outfitted with spinning impingers (glass microscope slides) and were placed at 200 foot intervals along Kissimmee Road where it intersects Tank trail (Fig. 2). This location was chosen to allow for the aircraft to make an into-the-wind application while flying over the center of the line of aerosol collectors. Nine 8005 flat fan nozzles (4 and 5 per side, respectively) on fuselage booms were used to produce a flow rate of approximately 3.6 gallons per minute at 40 psi (equivalent to 0.5 oz/acre). Aircraft passes were made on a course perpendicular to the collection stations, with each pass totaling 60 seconds of spray-on time (30 seconds prior and 30 seconds post collector line). Two passes were conducted for each test, with a total of 2 tests completed. After the last pass was completed and the spray cloud to settle, the spinning slides were collected and viewed under a fluorescent compound microscope. 100 drops (if available) were counted for each sampling station. Drops were measured and graphed by station for volume mean diameter (VMD), numerical median diameter (NMD), and drop density (number of drops per cm<sup>2</sup>) for each station. This data was compared to baseline data collected in 2004 using similar methods.

## **Results:**

### **Aircraft Contamination**

Table 1 shows drops collected on the oil-sensitive cards placed on the aircraft. The only card that displayed any contamination was card number 22, which was placed on the anterior section of the LAIRCM blister. Card 22 showed 15 discrete drops per square centimeter. However, it should be noted that contamination of this card was likely caused by fuel overflow from the starboard inboard engine nacelle upon engine shutdown. Not only was this observed by ground personnel at engine shutdown, but the drops on the card were far too large as to have been caused by spray contamination. Subsequent inspection of the contaminated card under a UV light indicated no fluorescence, thereby discounting the possibility that the card was contaminated by any material coming out of the spray system.

### **Aerosol Collection**

Table 2 shows both the droplet density and the VMD, or volume mean diameter of the droplets dispensed from the aircraft. VMD is a convenient and well-accepted expression of droplet size. Droplet density for the 2010 test ranged from 2.2 to 118.6 drops per centimeter squared. As expected, droplet density was greatest on the collectors (numbers 4 and 5) directly below the aircraft flight path. The same pattern can be seen from the 2004 baseline data. Interestingly, however, the densities were significantly less than observed in the latest test. This is not a negative finding. Generally speaking, increased droplet densities are desirable. The discrepancies are probably a result of different atmospherics in each situation. VMD of droplets collected in 2004 were approximately 58.0 microns. All droplets collected from each location in the recent test were all below 56.0 microns. Most VMD's ranged in the mid to high 40's. The VMD's of the 2004 and 2010 test appear to be entirely consistent.

### **Conclusion:**

There is no indication that the LAIRCM modification causes airframe contamination or adversely affects the pattern and distribution of the spray coming from the aircraft. While we hesitate to say that the LAIRCM package actually "enhances" the spray, data from the most recent trial is actually more favorable than the 2004 trial in terms of the spray characteristics deemed to be desirable.

//signed//

(b) (6) Maj, USAFR  
Research Entomologist

Attachment 1. Figures and Tables.

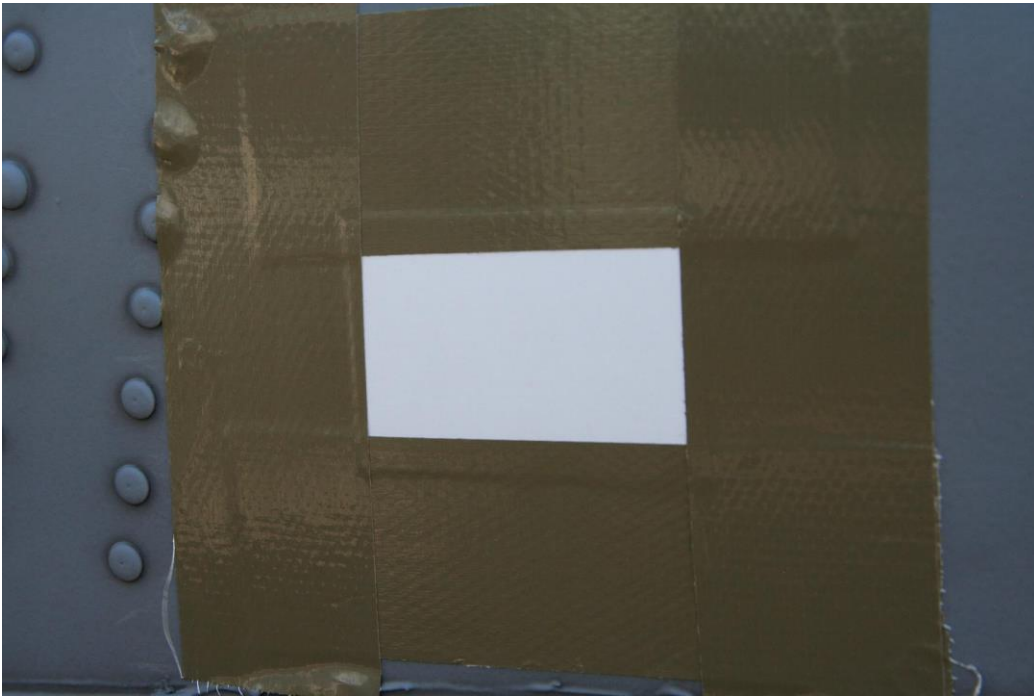
Figure 1. Illustrations of oil-sensitive cards, placement on aircraft, and contaminated and non-contaminated cards.



a. Cards placed on ventral aspect of fuselage and stabilizer aft of spray booms.



b. Close-up of card placement on fuselage aft of LAIRCM blisters.



c. Example of uncontaminated card prior to flight



d. Example of uncontaminated card after flight



e. Card 22. Picture of the only card contaminated during study. Card was located on starboard side of aircraft on the front of the LAIRCM blister.

Figure 2. Test site at Avon Park for LAIRCM testing 24 Feb 2010. Aerosol collectors were placed on Kissimmee Road and aircraft flew perpendicular to the transect line over the center collector.

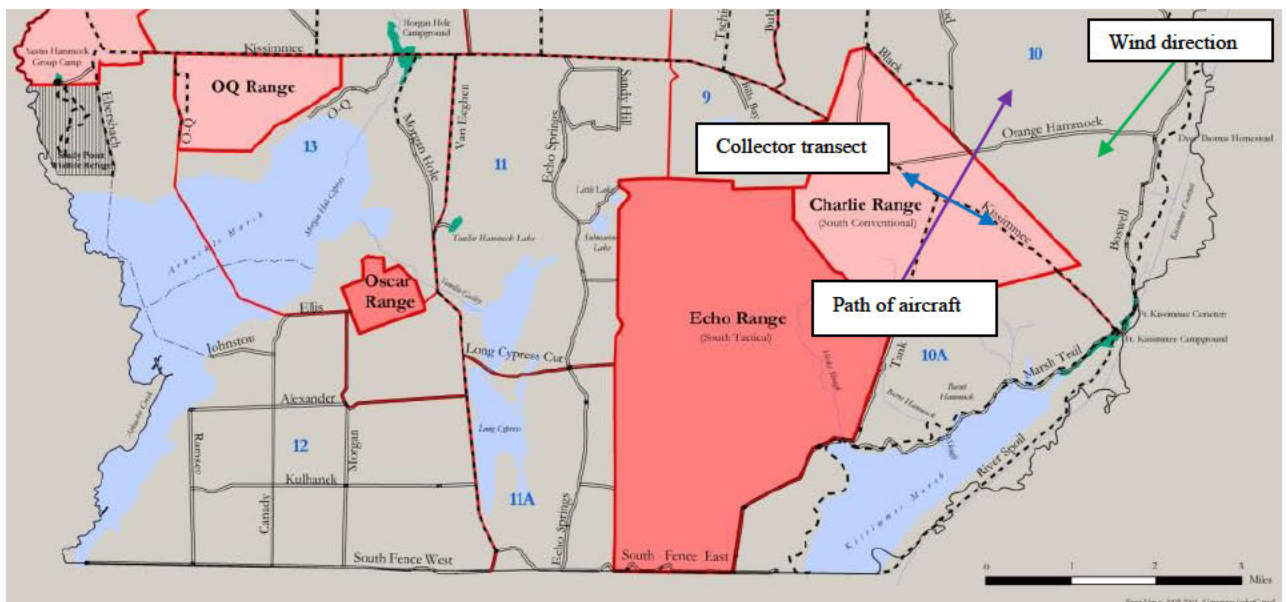


Table 1. Number of drops on Oil  
sensitive cards.

Card Number	No. of drops
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	0
21	0
22	15

Table 2. Droplet Density and Mean Diameter of Droplets from 2004 baseline data and the 2010 test.

		Droplet Density and Volume Mean Diameter of Droplets								
		Aerosol Collector Number and Location								
		1	2	3	4	5	6	7	8	9
2004 Baseline Data	Droplet Density	8.3	6.9	5.9	7.4	62.5	50	53	29	3
	Volume Mean Diameter	58.0 Microns VMD pooled from entire data set (not broken out by station)								
2010 Data	Droplet Density (cm2)	17.3	33.7	79.1	118.6	85.6	59.3	62.3	2.2	0
	Volume Mean Diameter	49.6	44.9	48.3	42.1	45.6	56	55.6	34.2	0



# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **AVON PARK, FL**

### **22-26 FEB 2010**

**PURPOSE/OBJECTIVE/BENEFIT:** Observe the effects of the LAIRCM “A” package on the spray dispersal pattern using BVA oil with dye. Aerosol collectors will be placed on the ground in a linear arrangement to verify effective swath width. Cards will also be placed on and near the LAIRCM “A” package to sample for BVA oil deposition. Continuation of training will take place after the testing is complete.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

1. Pilots: LTC (b) (6) , Maj (b) (6) (b) (6) Capt (b) (6) , Capt (b) (6)
2. Nav: Maj (b) (6)
3. Flight Engineer: MSgt (b) (6)

##### **b. Spray Operators: SMSgt (b) (6) , MSgt (b) (6)**

##### **c. Maintenance:**

1. Spray Maintenance: TSgt (b) (6) , SSgt (b) (6) , TSgt (b) (6)
2. Avionics: TSgt (b) (6) , TSgt (b) (6)
3. Crew Chiefs: MSgt (b) (6) , SrA (b) (6)

##### **d. Entomologist/Ground Support: Maj (b) (6) (Mission Commander)**

#### **2. SCHEDULE: All times are local and subject to change depending upon test and range needs.**

22 Feb (Monday)

1100 Show KYNG

1300 Depart KYNG

1500 Land KWRB

WRB PPR: **KD2204**

1530 Depart KWRB

1645 Land KMCF

MCF PPR: **053RE01**

23-25 Feb (Tuesday-Thursday)

0945 Showtime

1115 Depart KMCF

1130-1330 Avon Park Range Time (Live fire in Oscar, Bravo and Foxtrot Ranges)

1345 Land KMCF

26 Feb (Friday)

0900 Show KMCF

1100 Depart KMCF

1215 Land KWRB

WRB PPR: Obtain Wednesday

1245 Depart KWRB

1445 Land KYNG

**3. ITEMS TO TAKE:**

- a. **Navigator:** Maps with “No-Spray” Areas Marked  
Mission computer

**4. AIR TO GROUND FREQUENCIES:**

- a. **Spray: Primary 123.45**
- b. Patrick: TWR-133.75; GND-124.35; CMD POST-383.0; PTD-372.2
- c. **Avon Park: TWR-292.2 (p), 126.15, 276.6 (s) Hrs 0700-2300 M-F, S-S per flying schedule DSN 968-7138**
- d. MacDill: TWR-123.7; GND-118.575; ATIS-133.825; CMD POST-311.0; PTD-372.2

**5. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 89-9104
- c. Nozzle Tips/Orientation: ULV booms with 8005 nozzles
- d. Mission Identifier: QZNRKA561053

**6. MISSION PROTOCOLS:**

- a. **Altitude:** 150 AGL for testing, as needed for training
- b. **Ground Speed:** 200 KNOTS
- c. **Chemical:** BVA oil
- d. **Application Rate:** .50 oz/acre
- e. **Flow Rate:** 3.6 gal/min

**A. ULV oil test for aircraft contamination (Tuesday)**

20 oil sensitive cards will be taped to rear fuselage and tail section of the aircraft (empennage). Spray aircraft will enter spray area on Avon range and go to “spray-on” for one minute with soybean oil at 150’ AGL. After landing, the cards will be inspected for presence of oil spotting. Test can be repeated if it is deemed appropriate and/or there is enough range time left.

**B. ULV droplet characterization test using fuselage spray configuration and into the wind (Wednesday)**

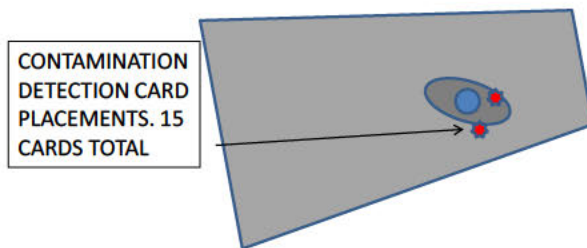
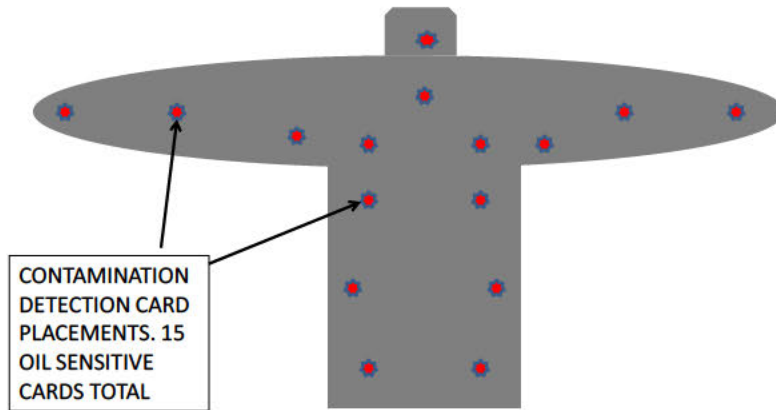
Glass droplet collectors will be deployed over a 2000 ft transect at 200 ft intervals. Aircraft will fly with either tailwind or headwind over center collector, which will be indicated by a vehicle, lamp, or mirror flash (coordinated prior to takeoff). Spray will be turned on for 45 seconds prior to and 45 after the collecting point (assuming headwind) maintaining 150’ AGL. Glass droplet collectors will be collected after waiting 15 minutes for droplets to settle; droplets will be counted and measured.

**7. CONTACTS:**

- a. **Quarters:** On base at MacDill
- b. **Transportation:**  
**Vehicles: 2 Vans – 3 Cars**  
Enterprise Rental MacDill AFB: Vehicles will be at Base Ops  
(813) 840 2613  
2 Vans - (b) (6) and (b) (6) 3 Cars – (b) (6) (b) (6) and (b) (6)

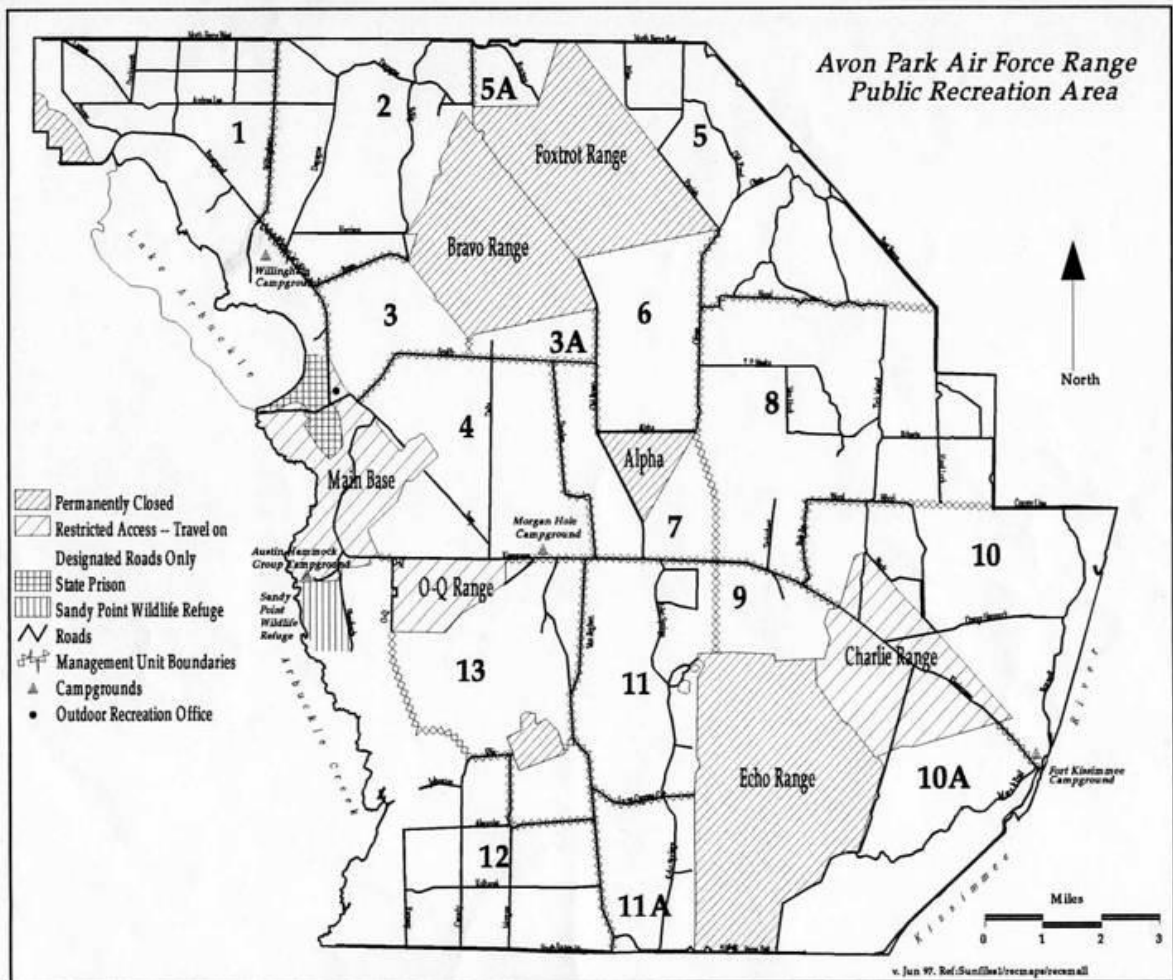
- c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350
1. Weather: MacDill AFB Forecaster (DSN 968-2854)
  2. Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)
  3. MacDill AFB Ops Gp CC 968-3014
- d. **Avon Park, Fla.** Commercial prefix (863) 452-4XXX
- DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN  
 Avon Control Tower & Range Control Scheduling DSN 968-7176  
 Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number
1. Range Operations Manager: (b) (6) , Bldg 236, (b) (6)
  2. Avon Range Control Tower: ext 176
  3. Flight Chief of Civ Engineer: (b) (6) , Bldg 29, (b) (6)
  4. Chief, Environmental Flight: (b) (6) , Bldg 29, (b) (6) also Wildlife Biologist (b) (6)
  5. Fuels: ext 118 or Cel (b) (6)
  6. Range Support Manager: Mr (b) (6) Bldg 29, (b) (6)
  7. Range Control/Schedule: (b) (6) , Bldg 41, (b) (6)
- See Attached Avon Park Org directory for additional listings**
8. Range UHF Frequency: 292.2 (Primary), 276.6 (Secondary)  
 Range VHF: 126.15
- f. **Sebring AP:** Mgr: (b) (6) (fuel needs)  
 BEEPER: 1 (863) 999-8622 ENTER YOUR PHONE# ENTER #  
 Asst Mgr: (b) (6) x-
- g. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX
- Toll Free 1- 800-278-7046,+2 + Ext
1. 910 AW/CC: Col (b) (6) (b) (6)
  2. 910 AW Command Post: Ext 1315; FAX 1161
  3. 910 AW/PA: Maj (b) (6) FAX 1022
  4. 910 OG/CC: LtCol (b) (6)
  5. 910 OG: Airfield Manager, Ext 1186/1526
  6. 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
  7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
  8. 757 AS/DOO: Ops Admin: SMS (b) (6) (b) (6) FAX 1657
  9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) FAX 1616
  10. 910 LG/CC: Ext 1225
  11. 910 LG/LGM: Ext 1352
  12. Maintenance Control: Ext 1327
  13. 910 LG/LGMS: Spray Maintenance, SMSgt (b) (6) (b) (6)
  14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
  15. Cellular Spray Phones:
    - Mission Commander: (b) (6)
    - Entomologist: (b) (6)

VIEW OF MODIFIED AERIAL SPRAY C130 LOOKING UP



View of oil sensitive cards on Laircm pod for flight test  
(typical left / right)

Attachment 1 (above). Placement of oil sensitive cards on aircraft.



Attachment 2. Map of Avon Park Range.



DEPARTMENT OF THE AIR FORCE  
757 Airlift Squadron – Aerial Spray Operations  
3976 King Graves Rd Unit 24  
Vienna OH 44473-5924

**910 AW AERIAL SPRAY UNIT -- POST-MISSION REPORT  
ADULT MOSQUITO CONTROL AT WILLISTON, ND AND  
ARMY CORPS OF ENGINEERS PROPERTY 23-26 AUGUST 2010**

**1. MISSION BASICS:**

- a. Installation Sprayed: Williston, North Dakota and Army Corps of Engineers Property near Williston, ND.
- b. Mission Duration: 23-26 August 2010
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date/s: 25 August 2010
- e. Time/s of Application (Local): 1845-2137 (25 Aug)
- f. Acres Treated: 26,005 (25 Aug)
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6), Pest control supervisor/spray coordinator, DSN (b) (6), Land Manager, (b) (6), Williston Vector Control, (b) (6)
- h. Date Spray Map Last Approved: 23 Aug 2010
- i. Date of Waste Generation Letter: 17 July 2006
- j. Installation In-Briefing: (When/Where/Briefer/s): Teleconference inbrief; Maj (b) (6) (Mission Commander) and (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Maj (b) (6)
- b. Certified PMP/Entomologists (Category 11): Maj (b) (6) (safety briefer), Maj (b) (6)
- c. Aircrew:
  - Pilots: LtCol (b) (6), Maj (b) (6)
  - Navigators: LtCol (b) (6), LtCol (b) (6)
  - Flight Engineers: MSgt (b) (6)
  - Spray Operators: MSgt (b) (6), TSgt (b) (6), MSgt (b) (6)
- d. Maintenance:
  - Spray Maintenance: TSgt (b) (6), TSgt (b) (6), SrA (b) (6)
  - Crew Chief(s): SSgt (b) (6), SrA (b) (6)
  - Avionics: SSgt (b) (6)

**Flying Data:**

- (1) Spray Sorties/Hours: 2 sorties (1.8 + 2.9) = 4.7
- (2) Ferry Sorties/Hours: 2 sorties (3.9 + 3.4) = 7.3

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Zenivex (20% etofenprox)
- b. EPA Registration Number: 2724-791 Zenivex
- c. Formulation Sprayed: E20
- d. Gallons Pesticide Loaded: 60 gal Zenivex
- e. Gallons Pesticide Applied: 60 gal
- f. Gallons and Name Diluent Used: 60 gal BVA-13
- g. Gallons and Name of Flush Used: 15 gal; BVA-13
- h. Other Additives Used: None
- i. Application Rate: 0.32 oz/acre (0.035 lbs/acre)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 10-8005s total
- f. Pressure: 43-50 psi
- g. Flow Rate: 4.3 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray offset: 2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 4-5 knots @ 070-100°
  - (2) Release Altitude: 7 knots @ 140°
- b. Temperature (Degrees Fahrenheit): 75°
- c. Relative humidity: 39-58% (16 Jul) & 53% (17 Jul)
- d. Cloud Cover: Scattered clouds
- e. Source: Ground observations and aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Pre and Post-treatment monitoring in Williston was done with New Jersey light traps.
- b. Pre-monitoring average trap counts of 130 mosquitos/trap prior to spray (Monday trap counts); Post-spray trap counts averaged 4.5 mosquitos/trap on the evening of the spray and 10 mosquitos/trap/day on the following weekend.

**8. REMARKS:** This was the 2nd year of spray operations conducted for the Army Corps of Engineers and surrounding areas. A large larviciding project was completed earlier in the year and there was indication of significant population reduction. However, large numbers of adult mosquitoes were present in Williston just before the spray. This area was treated with Zenivex, a newly EPA registered mosquito adulticide with low mammalian toxicity. As in previous years, the spray was extremely effective following the spray, but increased slightly the following evening, presumably because of mosquito immigration into the treatment areas. Attachment 1 shows the area treated around Williston on 25 August. Attachment 2 shows treated area around Watford City, a community located approximately This was the last application for the Williston area this year. Pending funding of the project next year, we again hope to apply larvicides and adulticides with the cooperation of the Army Corps of Engineers and the City of Williston.



Once again the 5<sup>th</sup> CES at Minot AFB provided outstanding support for our operation; Special thanks go out to Ms. (b) (6) for making this mission proceed smoothly.

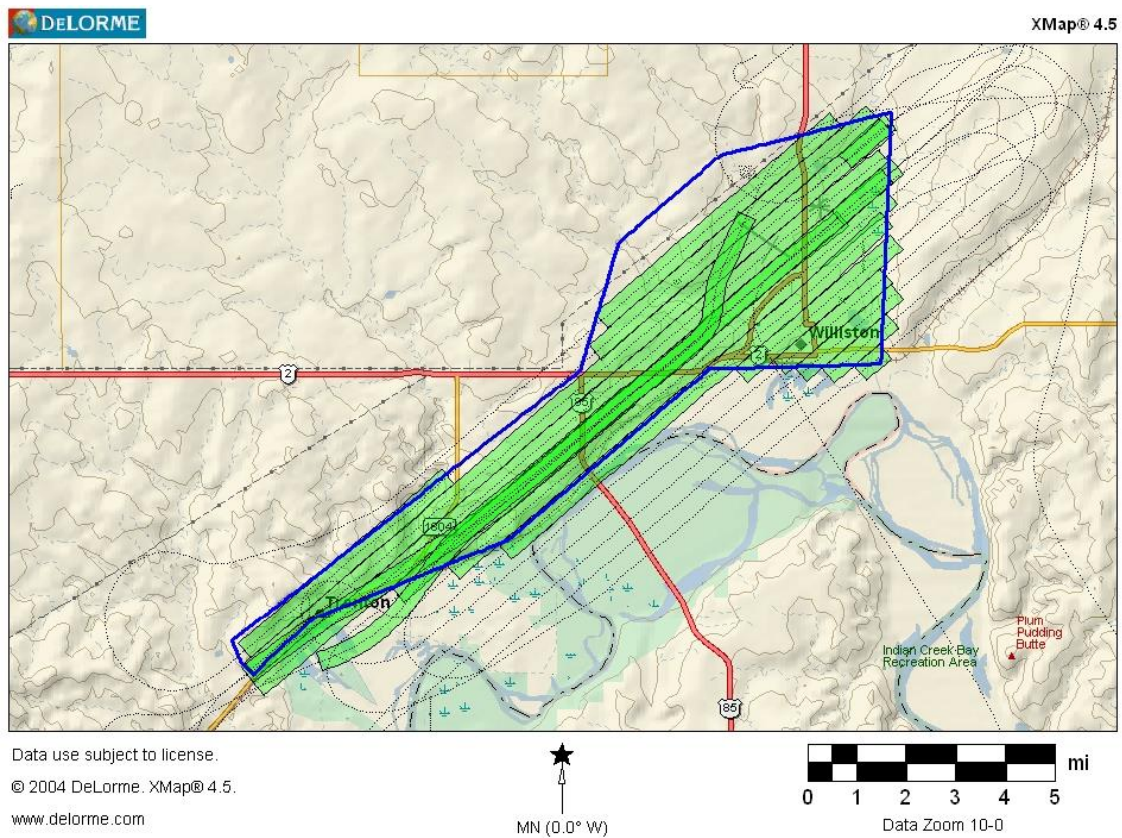
//signed//

(b) (6) MAJ, USAFR  
Entomologist and DoD Certified Applicator

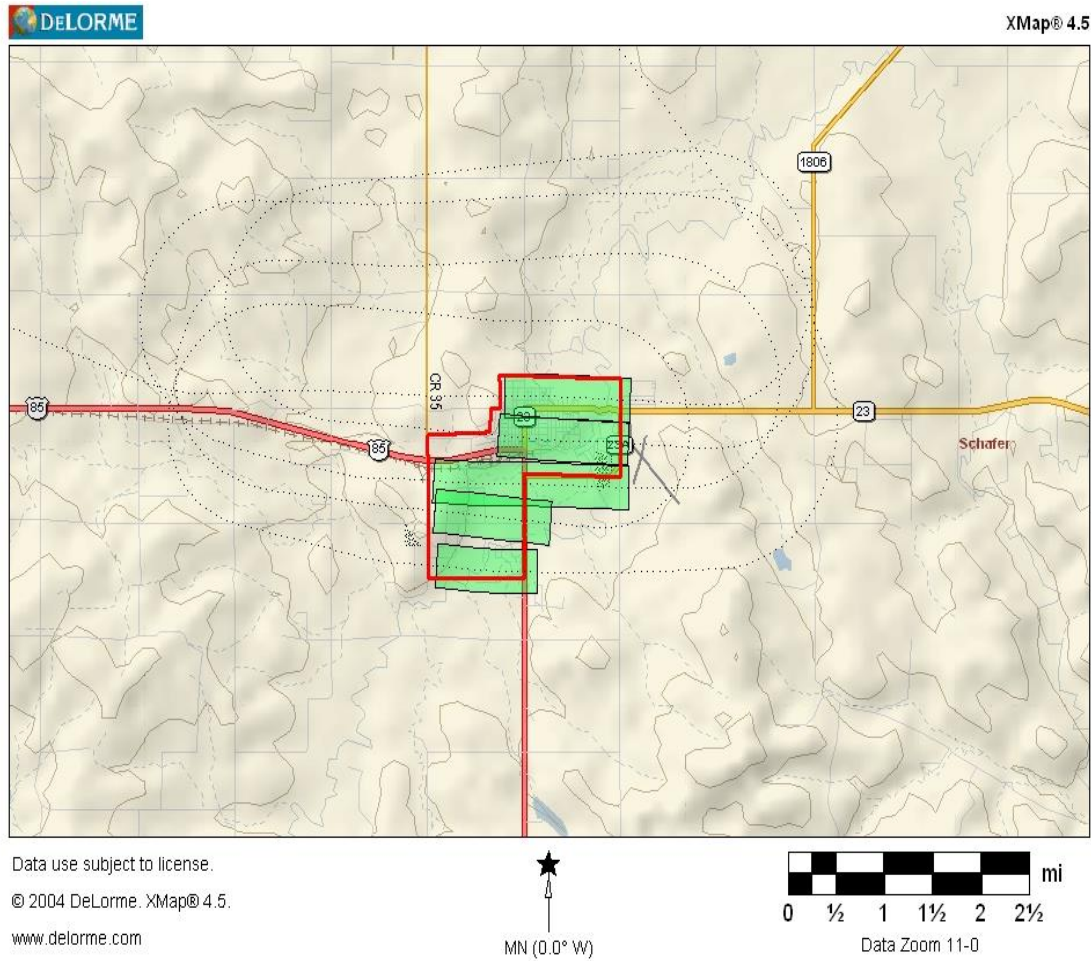
//signed//

(b) (6) MAJ, USAFR  
Entomologist and DoD Certified Applicator

Attachment 1. Williston area spray block. The blue outline represents the proposed treatment area. The green blocks represent spray release. Locations were sprayed outside the block so that the pesticide would drift back into the target area with the prevailing wind direction.



Attachment 2. Watford City area spray block. The red outline represents the proposed treatment area. The green blocks represent spray release. Locations were sprayed outside the block so that the pesticide would drift back into the target area with the prevailing wind direction.





DEPARTMENT OF THE AIR FORCE  
757 Airlift Squadron – Aerial Spray Operations  
3976 King Graves Rd Unit 24  
Vienna OH 44473-5924

**910 AW AERIAL SPRAY UNIT -- POST-MISSION REPORT  
ADULT MOSQUITO CONTROL AT WILLISTON, ND AND  
ARMY CORPS OF ENGINEERS PROPERTY 23-26 AUGUST 2010**

**1. MISSION BASICS:**

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- f. Acres Treated: 26,005 (25 Aug)
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6), Pest control supervisor/spray coordinator, DSN (b) (6), (b) (6), Land Manager, (b) (6), (b) (6), Williston Vector Control, (b) (6)
- h. Date Spray Map Last Approved: 23 Aug 2010
- i. Date of Waste Generation Letter: 17 July 2006
- j. Installation In-Briefing: (When/Where/Briefer/s): Teleconference inbrief; Maj (b) (6) (Mission Commander) and (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Maj (b) (6)
- b. Certified PMP/Entomologists (Category 11): Maj (b) (6) (safety briefer), Maj (b) (6)
- c. Aircrew:
  - Pilots: LtCol (b) (6), Maj (b) (6), (b) (6)
  - Navigators: LtCol (b) (6), LtCol (b) (6)
  - Flight Engineers: MSgt (b) (6)
  - Spray Operators: MSgt (b) (6), TSgt (b) (6), MSgt (b) (6)
- d. Maintenance:
  - Spray Maintenance: TSgt (b) (6), TSgt (b) (6), SrA (b) (6)
  - Crew Chief(s): SSgt (b) (6), SrA (b) (6)
  - Avionics: SSgt (b) (6)

**Flying Data:**

- (1) Spray Sorties/Hours: 2 sorties (1.8 + 2.9) = 4.7
- (2) Ferry Sorties/Hours: 2 sorties (3.9 + 3.4) = 7.3



### **3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Zenivex (20% etofenprox)
- b. EPA Registration Number: 2724-791 Zenivex
- c. Formulation Sprayed: E20
- d. Gallons Pesticide Loaded: 60 gal Zenivex
- e. Gallons Pesticide Applied: 60 gal
- f. Gallons and Name Diluent Used: 60 gal BVA-13
- g. Gallons and Name of Flush Used: 15 gal; BVA-13
- h. Other Additives Used: None
- i. Application Rate: 0.32 oz/acre (0.035 lbs/acre)

### **4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 10-8005s total
- f. Pressure: 43-50 psi
- g. Flow Rate: 4.3 gallons per minute

### **5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray offset: 2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

### **6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 4-5 knots @ 070-100°
  - (2) Release Altitude: 7 knots @ 140°
- b. Temperature (Degrees Fahrenheit): 75°
- c. Relative humidity: 39-58% (16 Jul) & 53% (17 Jul)
- d. Cloud Cover: Scattered clouds
- e. Source: Ground observations and aircraft

### **7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Pre and Post-treatment monitoring in Williston was done with New Jersey light traps.
- b. Pre-monitoring average trap counts of 130 mosquitos/trap prior to spray; Post-spray trap counts averaged 4.5 mosquitos/trap on the evening of the spray and 10 mosquitos/trap/day on the following weekend.

**8. REMARKS:** This was the 2nd year of spray operations conducted for the Army Corps of Engineers and surrounding areas. A large larviciding project was completed earlier in the year and there was indication of significant population reduction. However, large numbers of adult mosquitoes were present in Williston just before the spray. This area was treated with Zenivex, a newly EPA registered mosquito adulticide with low mammalian toxicity. As in previous years, the spray was extremely effective following the spray, but increased slightly the following evening, presumably because of mosquito immigration into the treatment areas. Attachment 1 shows the area treated around Williston on 25 August. Attachment 2 shows treated area around Watford City, a community located approximately This was the last application for the Williston area this year. Pending funding of the project next year, we again hope to apply larvicides and adulticides with the cooperation of the Army Corps of Engineers and the City of Williston.

Once again the 5<sup>th</sup> CES at Minot AFB provided outstanding support for our operation; Special thanks go out to Ms. (b) (6) for making this mission proceed smoothly.

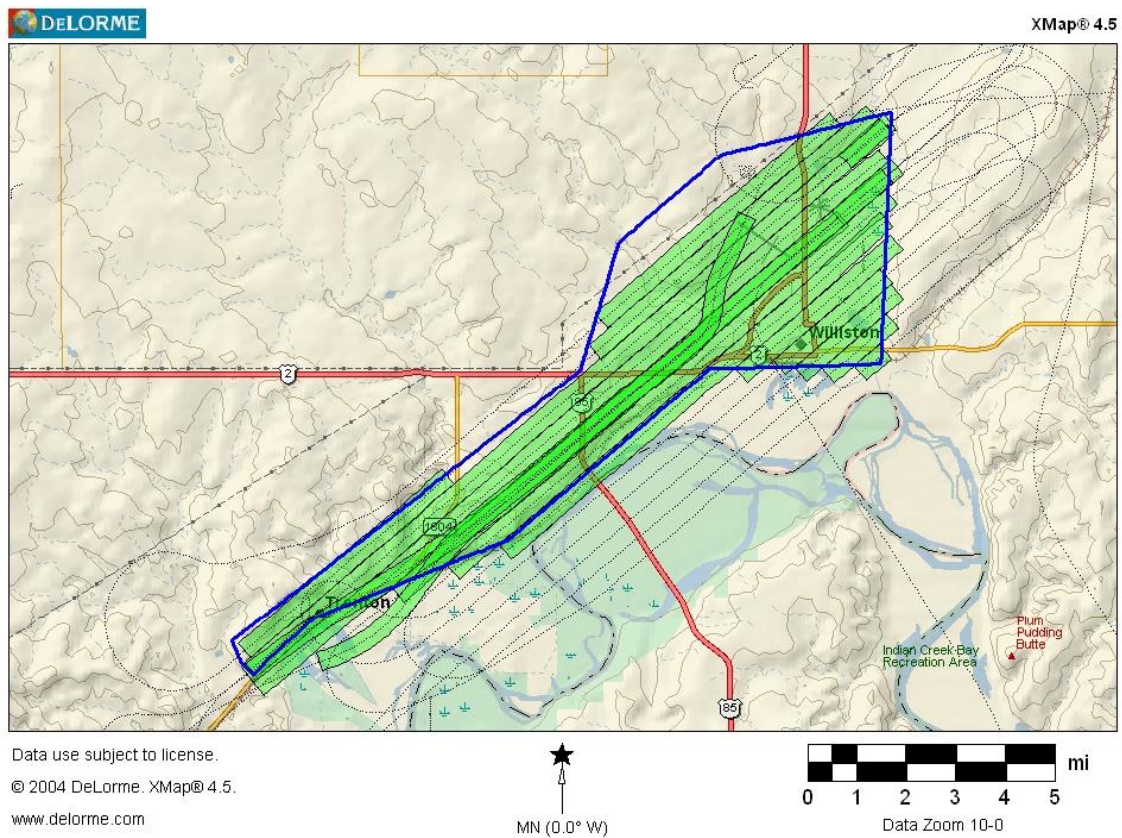
//signed//

(b) (6) MAJ, USAFR  
Entomologist and DoD Certified Applicator

//signed//

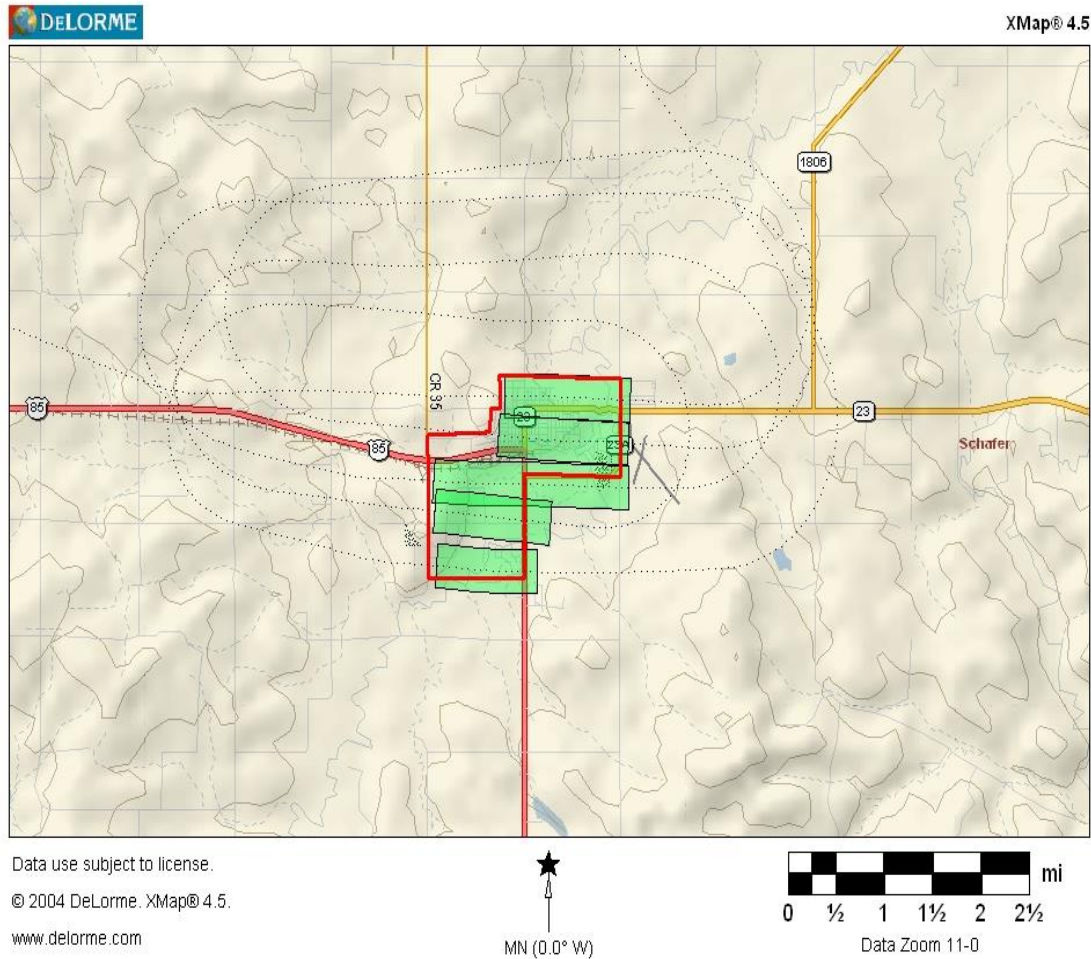
(b) (6) MAJ, USAFR  
Entomologist and DoD Certified Applicator

Attachment 1. Williston area spray block. The blue outline represents the proposed treatment area. The green blocks represent spray release. Locations were sprayed outside the block so that the pesticide would drift back into the target area with the prevailing wind direction.





Attachment 2. Watford City area spray block. The red outline represents the proposed treatment area. The green blocks represent spray release. Locations were sprayed outside the block so that the pesticide would drift back into the target area with the prevailing wind direction.



# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 28 Jun – 2 Jul 2010

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks and Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) Pilots: LTC (b) (6), LTC (b) (6)
- 2) Navigators: LTC (b) (6)
- 3) Flight Engineers: MSgt (b) (6)
- 4) Spray Operators: MSgt (b) (6), MSgt (b) (6)
- 5) Mission Commander: LTC (b) (6)

##### b. Maintenance:

- 1) Spray Maintenance: TSgt (b) (6), TSgt (b) (6), SrA (b) (6)
- 2) Crew Chief(s): TSgt (b) (6), SrA (b) (6)
- 3) Avionics: TSgt (b) (6) (b) (6)

##### c. Entomologists/Ground Support: Maj (b) (6)

#### 2. SCHEDULE: (All Local Times)

- a. 28 Jun (Monday)  
0800L Show KYNG  
1000L Depart KYNG  
1200L Land KRDR
- b. 29 Jun (Tuesday)  
1700L Show KRDR  
1930L Depart KRDR  
2130L Land KRDR
- c. 30 Jun (Wednesday)  
1700L Show KRDR  
1930L Depart KRDR  
2130L Land KRDR
- d. 1 Jul (Thursday)  
1700L Show KRDR  
1930L Depart KRDR  
2130L Land KRDR
- e. 2 Jul (Friday)  
1130 Show KRDR  
1330 Depart KRDR  
1730 Land KYNG

#### 3. ITEMS TO TAKE

- a. **Mission Commander:** Cellular Phone, Mission Folder, FFT
- b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder,  
1 VHF Radio, Water Sensitive Cards, Card Holders with  
Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors,  
Project Notebook, Entomologist's Tool Kit
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

#### 4. PPR: 06-28-01ST

#### 5. RADIO FREQUENCIES: Air To Ground Primary VHF 123.45 KRDR Tower 124.9 V; Grand Forks International 118.4 V

**6. CONFIGURATION: SP2G**

- a. System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. Nozzle Tips/Orientation:** ULV (adulticide): 8005 Tee Jet oriented straight down
- c. Number:** ULV: 18 8005s total (9 each side)
- e. Aircraft:** 90-9107
- f. Mission Identifier:** QZNRK9901179

**7. SPRAY PARAMETERS:**

**a. Adulticide**

- (1) **Area to be treated:** 11,518 acres (Grand Forks AFB), 18,346 (Grand Forks) and 877 (Grand Forks Intl)
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 2000 feet
- (4) **Flow Rate.** 7.26 gallons/minute ULV
- (5) **Application Rate.** 1.0 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 Knots
- (7) **Flush:** With water, triple rinse, then air purge

**8. SPRAY MIXING AND LOADING:** The amount of Trumpet to load will be determined on site

**9. TRANSPORTATION: Transportation provided by base (DSN362-3976): One 15 pax van (OPS), three 6 pax trucks (MC, OPS, MX), one 1.5 ton truck (spray MX). Vehicles at base ops with the exception of Trumpet loaded truck**

**10. LODGING: Onbase Billeting :** DSN 362-7200 or (701) 594-8431, FAX 362-3069 14 Rooms Reserved  
-- Prime Knight DSN 362-3844 or (701) 747-3844

**11. CONTACTS:**

**a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**

- (1) **Base Operations:** Airfield Manager DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx20
- (2) **Pest Management:** TSgt (b) (6) or SSgt (b) (6) DSN (b) (6) , FAX 3432
- (3) **Base Civil Engineer:** Lt Col (b) (6)
- (4) **Environmental Officer:** (b) (6) , DSN 3(b) (6) , FAX 6155, TSgt (b) (6) DSN (b) (6)
- (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
- (6) **Weather:** DSN 362-4396
- (6) **Billeting:** DSN 362-3070/6189/7200 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844
- (7) **Fargo FSDO: POC** (b) (6)

**b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Col (b) (6)
- (5) 910 Base Ops: Airfield Manager: Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
- (7) 757 AS/DOO: Ops Admin: TSgt (b) (6) ; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) or 1652; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: MSgt (b) (6) Cell: (b) (6)
- (13) 910 LG/LGL: Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - Entomologist:
  - Mission Commander:
  - Spray Maintenance

(b) (6)

Date	Tail Number	Mission ID	ICAO	Flt Time	Gallons	Ferry Sortie	Spray Sortie
29-Apr-10	909107	QZNRK9901117	KHSA	0.8		1	
29-Apr-10	899105	QZNRK1401119	KHSA	3.2		1	
1-May-10	909107	QZNRK9901121	KHSA	1.8	1582		1
1-May-10	899105	QZNRK1401121	KHSA	1.5			1
4-May-10	909107	QZNRK9901124	KHSA	2.9	3415		2
4-May-10	899105	QZNRK1401124	KHSA	2.7	3064		2
5-May-10	899106	QZNRK9901125	KHSA	3.3		1	
5-May-10	899105	QZNRK1401125	KHSA	6.2	6970		4
5-May-10	909107	QZNRK9901125	KHSA	3.7	5239		3
6-May-10	909107	QZNRK9901125	KHSA	4.3	5494		3
6-May-10	899105	QZNRK1401126	KHSA	4.5	3444		3
7-May-10	899105	QZNRK1401127	KHSA	1.7			1
7-May-10	909107	QZNRK9901127	KHSA	1.9			1
8-May-10	899105	QZNRK9901128	KHSA	7.5	5345		3
8-May-10	909107	QZNRK1401128	KHSA	6.2	5199		3
9-May-10	899105	QZNRK9901129	KHSA	7.7	9487		5
9-May-10	909107	QZNRK1401129	KHSA	8.4	8797		5
10-May-10	909107	QZNRK1401130	KHSA	7.9	9735		5
10-May-10	899105	QZNRK9901130	KHSA	7.9	9553		5
12-May-10	899105	QZNRK9901132	KHSA	5.6	5856		3
12-May-10	899106	QZNRK1401132	KHSA	1.7	2041		1
13-May-10	909107	QZNRK1401133	KHSA	1.6			1
13-May-10	909107	QZNRK1401133	KHSA	2.9		1	
13-May-10	909108	QZNRK1401133	KHSA	3.3		1	
13-May-10	899105	QZNRK9901133	KHSA	7.8	9932		5
13-May-10	899106	QZNRK1401133	KHSA	7.7	8148		4
14-May-10	899106	QZNRK1401134	KHSA	6.3	7998		4
14-May-10	909108	QZNRK9901134	KHSA	1.3	1311		1
15-May-10	899106	QZNRK1401135	KHSA	1.8	1920		2
15-May-10	909108	QZNRK9901135	KHSA	1.8	1790		1
17-May-10	899106	QZNRK1401137	KHSA	1.5			1
17-May-10	909108	QZNRK9901137	KHSA	1.1			1
21-May-10	899106	QZNRK1401141	KHSA	1.7	1819		1
21-May-10	899105	QZNRK9901141	KHSA	3.0	3634		2
21-May-10	909108	QZNRK1401141	KHSA	2.0	1719		1
22-May-10	899106	QZNRK1401142	KHSA	6.8	9121		5
22-May-10	899105	QZNRK9901142	KHSA	5.9	5985		3
23-May-10	899105	QZNRK9901143	KHSA	3.1	1775		1
23-May-10	899106	QZNRK1401143	KHSA	3.7	2018		1
27-May-10	899102	QZNRK9901147	KHSA	3.3		1	
28-May-10	899106	QZNRK1401148	KHSA	3.5	2000		1
28-May-10	899105	QZNRK9901148	KHSA	1.9	1897		1
30-May-10	899105	QZNRK9901150	KHSA	1.9	2001		1
30-May-10	909108	QZNRK1401150	KHSA	1.6	1983		1
31-May-10	899105	QZNRK9901151	KHSA	1.4	1943		1
31-May-10	909108	QZNRK1401151	KHSA	1.8	2070		2

2-Jun-10	899106 QZNRK9901152	KHSA	2.9		1	
3-Jun-10	909108 QZNRK9901154	KHSA	2.0	2000		1
4-Jun-10	909108 QZNRK1401155	KHSA	3.4		1	
4-Jun-10	909107 XJZF502HG155	KHSA	5.9		2	
4-Jun-10	899105 QZNRK1401155	KHSA	3.0		1	
4-Jun-10	899104 XJZF503HG155	KHSA	6.8		2	

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## Aerial Spray Mission Set up Check list

### Pre Planning:

#### 2 Months out:

1. Confirm Dates with Entos
2. Request Range Times

#### 1-2 Months out:

3. Arrange Cars/Hotels

1. Concept Message sent to AFRC DOOM, Aerial Spray SITREP and 22AF CP
2. Set up flights
  - a. Flying Planner
  - b. Aircraft Scheduled – Ext 1672
  - c. Input Flights into SMS
  - d. Add Mission ID's to Local Flying Schedule- Send to Current Ops
  - e. Email to : (b) (6) (757 orderly room), (b) (6) (TMO), (b) (6) , (b) (6) , (b) (6) (b) (6) , Plans Contact list.: MSN ID, Rental Car Info
3. Build Mission Plan:
  - a. Contact Spray/Maintenance: (b) (6) (spray), (b) (6) (Maint/crew chiefs), (b) (6) (avionics)
  - b. Arrange PPR
  - c. Arrange Billeting, 17 rooms blocked-send names
  - d. Arrange Vehicles/transportation
  - e. Arrange for Ravens when needed ((b) (6) )
4. Contact Plans and set up a concept briefing:
  - a. Send copy of Mission Plan to the Plans office
  - b. Plans will coordinate with Maint, SF, etc. to be at meeting
5. Build Folders:
  - a. Setup sheet/Form 33
  - b. Suitability reports
  - c. Billeting Letters
  - d. mission notes
  - e. Sunrise/Sunset tables



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

22 Dec 09

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray Training Avon Park, FL

1. One C-130 aerial spray equipped aircraft will be available 4-8 Jan 10 to proceed from Youngstown ARS, OH and stage at MacDill AFB, FL. The mission purpose is to conduct winter aerial spray semi-annual currency and proficiency training over Avon Park Bombing Range, FL and coastal waters.

2. Concept of Operations:

- a. 4 January (Monday)  
1100 Show KYNG  
1300 Depart KYNG  
1600 Land KMCF
- b. 5-7 January (Tuesday-Thursday) Range: 1130-1330  
0900 Show KMCF  
1100 Depart KMCF  
1400 Land KMCF
- c. 8 January (Friday) Range: 1130-1330  
0900 Show KMCF  
1100 Depart KMCF  
1300 Land KMCF  
1400 Depart KMCF  
1700 Land KYNG

3. Spray Configuration:

- a. MASS – SP2G
- b. MI: QZNRKA468004
- c. Parameters – 150' and 100' AGL
- d. Chemical – Water for training only

4. Maj (b) (6) will serve as Mission Commander and Aircraft Commander.
5. Support required at MacDill AFB has been arranged.

(b) (6) (b) (6) Maj, USAFR  
Assistant Chief of Aerial Spray

### Actual Spray Missions

[illegible]

## SUPPORT

[illegible]

## TRAINING

[illegible]



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

2 August 10

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Grand Forks and Grand Forks AFB, ND.

1. One C-130 will be available 9-13 Aug 10 for the requested adulticide spray mission. Aerial spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel stationed at Grand Forks AFB, ND.

2. Concept of Operations:

- a. 9 Aug (Monday)  
1500L Show KYNG  
1700L Depart KYNG  
1900L Land KRDR
- b. 10 Aug (Tuesday)  
1700L Show KRDR  
1930L Depart KRDR  
2130L Land KRDR
- c. 11 Aug (Wednesday)  
1700L Show KRDR  
1930L Depart KRDR  
2130L Land KRDR
- d. 12 Aug (Thursday)  
1700L Show KRDR  
1930L Depart KRDR  
2130L Land KRDR
- e. 13 Aug (Friday)  
1130 Show KRDR

1330 Depart KRDR  
1730 Land KYNG

3. Aerial Spray Operation:
  - a. Chemical: Trumpet
  - b. Altitude: 150 AGL
  - c. Application rates: 7.26 gal/min (1.0 oz/acre)
  - d. Area: Approximately 29,900 acres
4. Maj (b) (6) (b) (6) will act as Mission Commander.
5. Maj (b) (6) will act as Aircraft Commander.
6. Support required at Grand Forks AFB, ND has been completed.

(b) (6) (b) (6) Major, USAFR  
757AS Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

15 June 10

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Grand Forks and Grand Forks AFB, ND.

1. One C-130 will be available 28 Jun – 2 Jul 10 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel stationed at Grand Forks AFB, ND.

2. Concept of Operations:

- a. 28 Jun (Monday)  
0800L Show KYNG  
1000L Depart KYNG  
1200L Land KRDR
- b. 29 Jun (Tuesday)  
1700L Show KRDR  
1930L Depart KRDR  
2130L Land KRDR
- c. 30 Jun (Wednesday)  
1700L Show KRDR  
1930L Depart KRDR  
2130L Land KRDR
- d. 1 Jul (Thursday)  
1700L Show KRDR  
1930L Depart KRDR  
2130L Land KRDR



- e. 2 Jul (Friday)  
1130 Show KRDR  
1330 Depart KRDR  
1730 Land KYNG

3. Aerial Spray Operation:

- a. Chemical: Trumpet
- b. Altitude: 150 AGL
- c. Application rates: 7.26 gal/min (1.0 oz/acre)
- d. Area: Approximately 29,900 acres

4. Maj (b) (6) will act as Mission Commander.

5. Lt Col (b) (6) will act as Aircraft Commander.

6. Support required at Grand Forks AFB, ND has been completed.

(b) (6), Capt, USAFR  
Aerial Spray Coordinator



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

16 AUG 10

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Homestead ARB, FL

1. One C-130 will be available 23-27 Aug 2010 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations effecting the health and welfare of the citizens of Homestead ARB and surrounding Miami-Dade County. Operations will be conducted out of Homestead ARB, FL.

2. Concept of Operations:

- a. 23 Aug (Monday)  
Spray aircraft:  
1500 Show KYNG  
1700 Depart KYNG  
2000 Land KHST
- b. 24-26 Aug (Tuesday-Thursday)  
1730 Show  
1930 T/O  
2130 Land
- c. 27 Aug (Friday)  
0600 Show KHST  
0800 Depart KHST  
1300 Land KYNG

3. Aerial Spray Operation:

- a. Chemical: Dibrom
- b. Altitude: 150 AGL
- c. Application rates: 3.6 gal/min (0.5 oz/acre)
- d. Area: Approximately 30,000-80,000 acres TBD.

4. Maj (b) (6) will act as Mission Commander.

5. Maj (b) (6) (b) (6) will act as Aircraft Commander
6. Support required at Homestead ARB, FL has been completed.

(b) (6) (b) (6) Maj, USAFR  
757AS Chief of Aerial Spray

**910 AW AERIAL SPRAY UNIT POST-MISSION REPORT**  
**GRAND FORKS AFB – ADULT MOSQUITO CONTROL 28 June-2 July,**  
**2010**

**1. MISSION BASICS:**

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 11-14 August 2009
- c. Purpose of Application: Control adult nuisance and vector mosquitoes
- d. Application Date: 29 June 2010
- e. Time of Application (Local): 0758-0932 (29 June)
- f. Acres Treated: 12,183
- g. Project Coordinator/s (Name/Rank, Title, Phone #): TSG (b) (6) NCOIC Pest  
Management Shop, DSN (b) (6)
- h. Date Spray Map Last Approved: 28 June 2010
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): GFAFB CE, MAJ (b) (6) LTC  
(b) (6), LTC (b) (6), LTC (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: LTC (b) (6)
- b. Certified PMP/s (Category 11): MAJ (b) (6)
- c. Aircrew:
  - 1) Pilots: LTC (b) (6), LTC (b) (6)
  - 2) Navigators: LTC (b) (6)
  - 3) Flight Engineers: SMS (b) (6)
  - 4) Spray Operators: MSGT (b) (6), MSGT (b) (6)
- d. Safety Briefer: MAJ (b) (6)
- e. Spray Maintenance: TSGT (b) (6), TSGT (b) (6), SRA (b) (6)
- f. Spray Ground Monitors: LTC (b) (6)
- g. Crew Chief: TSGT (b) (6), SRA (b) (6)
- h. Avionics: TSGT (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 1/1.6
  - (2) Ferry Sorties/Hours: 2/6.4

**3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 120 gal Trumpet® (29 June)
- d. Gallons Pesticide Applied: 95 gal Trumpet® (29 June)
- e. Gallons and Name of Flush Used: 50 gal/water
- f. Other Additives Used: none
- g. Application Rate: 1.0 oz/acre Trumpet®

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99107
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 20 straight down
- f. Pressure (PSI): 38 PSI
- g. Flow Rate: 7.26 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off Set: 2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 130° @ 10 knots (aerial observation) (29 June)
- b. Temperature (Degrees Fahrenheit): 74 °F (29 June)
- c. Relative Humidity: 47%
- d. Cloud Cover: Clear
- e. Source: Ground observations and National Weather Service

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

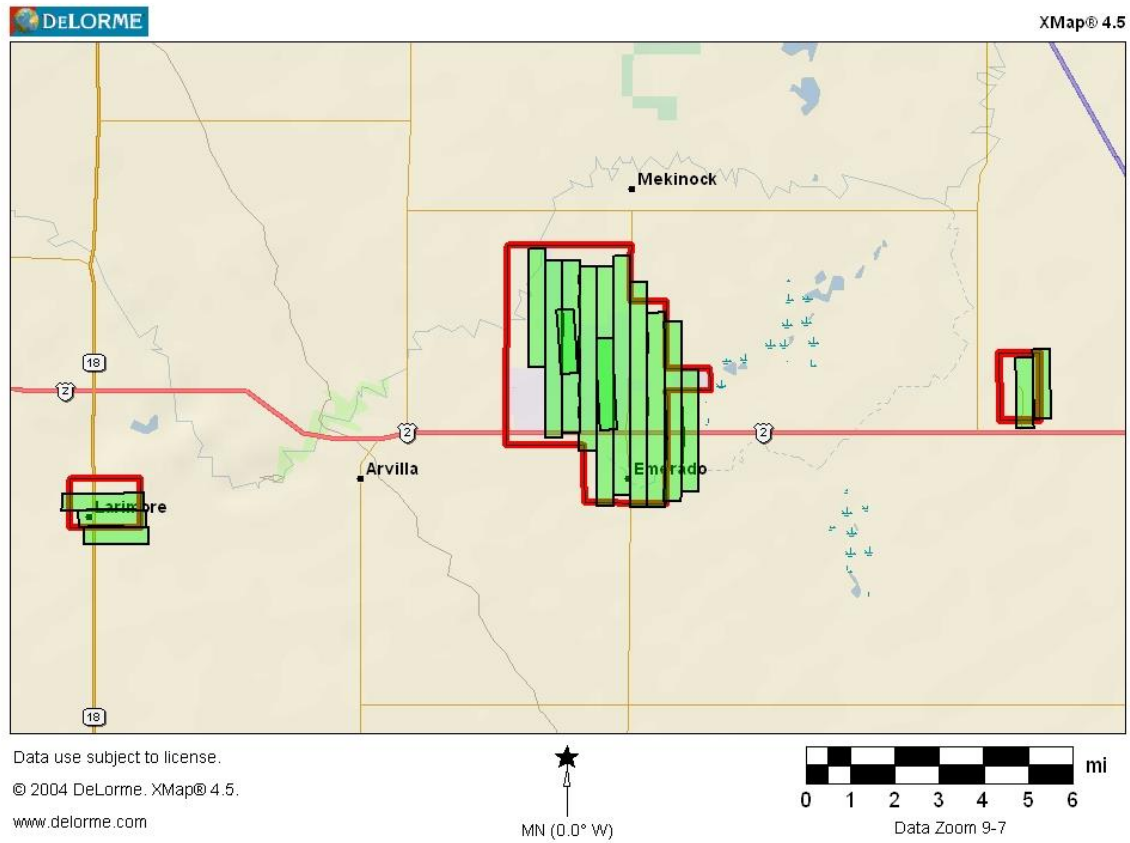
- a. The 319 MDG/ADS conducts adult mosquito trapping to monitor mosquito densities on base.
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito traps
  - (2) Results: Trap data pending from 319 MDG/ADS

**8. REMARKS:** Mosquito counts prior to this spray were approximately 120/trap. The threat of West Nile Virus prompted AF public health to make the decision to spray the base with Trumpet EC. The applications were made during the last 1.5 hrs of daylight to maximize the correlation between the spray period and mosquito activity. Meteorological conditions were good during the AFB application, with a moderate unidirectional wind assuring good coverage. Preliminary post-spray observations indicate excellent control of mosquitoes. Pending trap count data will undoubtedly confirm this. The city of Larimore, ND was also included in this adulticide application. Many thanks to TSGT Nicholas and the staff of the GFAFB pest control shop.

//signed//

(b) (6) Maj, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

**Attachment 1. Image shows Grand Forks AFB, City of Larimore, and Grand Forks International Airport spray blocks (red) and pesticide application swaths (green) during application on 29 June 2010. A 2000' offset was used to compensate for winds.**





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

30 SEP 10

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Langley AFB, VA.

1. One C-130 will be available 12-15 OCT 10 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel stationed at Langley AFB, VA and surrounding communities.

2. Concept of Operations:

- a. 12 Oct (Tuesday)  
1500L Show KYNG  
1700L Depart KYNG  
1830L Land KLFI
- b. 13 Oct (Wednesday)  
1400L Show KLFI  
1630L Depart KLFI  
1900L Land KLFI
- c. 14 Oct (Thursday)  
1400L Show KLFI  
1630L Depart KLFI  
1900L Land KLFI
- d. 15 Oct (Friday)  
0800L Show KLFI  
1000L Depart KLFI  
1130L Land KYNG



3. Aerial Spray Operation:
  - a. Chemical: Dibrom
  - b. Altitude: 150 AGL
  - c. Application rates: 3.6 gal/min (.50-.75 oz/acre)
  - d. Area: Approximately 125,000 acres but final acreage TBD
4. Maj (b) (6) (b) (6) will act as Mission Commander.
5. Lt Col (b) (6) will act as Aircraft Commander.
6. Support required at Langley AFB, VA has been arranged.

(b) (6) (b) (6) Major, USAFR  
757AS Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

2 Jul 10

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Minot and Williston, ND.

1. One C-130 will be available 19-23 July for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel stationed at Minot AFB and Williston, ND.

2. Concept of Operations:

- a. 19 Jul (Monday)  
0800L Show KYNG  
1000L Depart KYNG  
1235L Land KMIB
- b. 20 Jul (Tuesday) Spray Minot AFB  
1730L Show KMIB  
1930L Depart KMIB  
2130L Land KMIB
- c. 21 Jul (Wednesday) Spray Minot  
1730L Show KMIB  
1930L Depart KMIB  
2130L Land KMIB
- d. 22 Jul (Thursday) Spray Williston  
1730L Show KMIB  
1930L Depart KMIB  
2130L Land KMIB

- e. 23 Jul (Friday)  
1130L Show KMIB  
1330L Depart KMIB  
1805L Land KYNG

3. Aerial Spray Operation:

- a. Chemical: Trumpet (Minot) & Zenivex (Williston)
- b. Altitude: 150 AGL
- c. Application rates: 7.4 gal/min (.6 - .75 oz/acre)
- d. Area: Approximately 14,000 acres (Minot) & 8,000 acres (Williston)

4. Maj (b) (6) will act as Mission Commander.

5. Lt Col (b) (6) will act as Aircraft Commander.

6. Support required at Minot AFB, ND has been completed.

(b) (6), Capt, USAFR  
Aerial Spray Coordinator



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

16 Feb 2010

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for 1<sup>st</sup> AF/AFNORTH MASS brief

1. Mission is in support of visit with 1<sup>st</sup> AF/AFNORTH CC to include aerial spray brief, static display and aerial spray familiarization flight.

2. Concept of Operations:

- a. 3 Mar (Wednesday)  
1100 Show KYNG  
1300 Depart KYNG  
1440 Land KPAM
- b. 4 Mar (Thursday)  
1000-1100 1<sup>st</sup> AF Briefing  
1100-1200 Working Lunch  
1200-1300 Static Display  
1300-1600 Spray Familiarization Flight
- c. 5 Mar (Friday)  
0900 Show KPAM  
1100 Depart KPAM  
1440 Land KYNG

3. Plan subject to change based on 1<sup>st</sup> AF/AFNORTH CC schedule.

4. Maj (b) (6) (b) (6) will act as Aircraft Commander.

5. Support required at Tyndall AFB has been arranged.

(b) (6)  
757 Aerial Spray

, Capt, USAFR

# AERIAL SPRAY OPERATIONAL SCHEDULE

## TYNDALL AFB, FL

### 3-4 March 10

**OBJECTIVE/PURPOSE AND BENEFIT:** Mission is in support of visit with 1<sup>st</sup> AF to include brief, static display and spray sortie.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: Col (b) (6) Col (b) (6) LTC (b) (6) Maj (b) (6) Maj (b) (6) Capt (b) (6)
- (2) Navigators: LTC (b) (6)
- (3) Flight Engineers: MSgt (b) (6)
- (4) Spray Operators: MSgt (b) (6) MSgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSgt (b) (6) TSgt (b) (6)
- (2) Crew Chiefs: MSgt (b) (6) SSgt (b) (6)
- (3) Avionics: MSgt (b) (6)

##### c. Entomologist: Maj (b) (6) LTC (b) (6)

#### 2. PPR REQUIREMENTS: PAM 030301

#### 3. PLANNED SEQUENCE OF EVENTS: All times are local

##### 3 Mar (Wednesday)

- 1100 Show
- 1300 Depart KYNG
- 1440 Land KPAM

##### 4 Mar (Thursday)

- 0745-0800 Refreshments in room 102 (A2 conf room), AFNORTH bldg 1212
- 0800-0830 910AW, MASS Briefing – Maj (b) (6)
- 0830-0930 1st AF Briefing – Mr. (b) (6) CoS
- 0930-0945 Travel to the AOC Entry Control Point
- 0945-1100 AOC Tour for the MASS Entourage
- 1100-1200 Lunch (Club or Marina)
- 1200-1300 Static Display – Flight line
- 1300-1600 Spray Flight(s), NOTE: Duration of flight(s) will be approximately 45-60 minutes - Please make sure names are on PAX Manifest (1 - 3 demo flights) Tyndall D MOA 1300-1600L
- 1700 Depart KPAM
- 2040 Land KYNG

- All Briefings will be conducted at the 601<sup>st</sup>.
- PA/Media may be present for Static Display and Flight

#### 4. SPRAY CONFIGURATION: SP2G, Fire Dept (ext 4777) supplying water POC Mr (b) (6)

- a. **Mass:** 2-Module System with rain drop nozzles
- b. **Differential GPS:** Wingman Installed
- c. **Aircraft:** 90-9108
- d. **Mission Identifier:** QINRKA694062

#### 5. SPRAY PARAMETERS: AS NEEDED

#### 6. AIR TO GROUND RADIO FREQUENCIES:

- Tyndall TWR: 133.95/384.4 Tyndall APP: N119.1/379.3
- Tyndall GND: 121.9/259.3 S136.4/338.35
- Tyndall CLNC: 118.05/289.4 123.1 CAP Freq spray below 1000 //cap above 1000
- Tyndall ATIS: 254.4 265.77 checking in the MOA (Departure should hand off)

7. **BILLETING:** Holiday Inn Express    Directions and contact info are in folder
8. **TRANSPORTATION:** Provided by Tyndall AFB, One staff car, two 15 pax van. Call trans upon arrival
9. **CONTACTS:**
  - a. **Tyndall AFB, FL:** Com: (850) 283-XXXX; DSN: 523-XXXX  
    1. Chief Environmental Compliance (Spray Coordinator): (b) (6) , FAX 3854
    2. Pest Control (b) (6)
    3. PAM TWR: x8596
    4. Airfield Manager: x2291
    5. Base Ops: x4244
    6. Transportation: x4872
    7. Billeting: x4210 Fax 4800
    8. Bay County Mosquito Control: (b) (6) , Director, (b) (6)
    9. Gulf County Mosquito Control: (b) (6) , Assistant Director, (b) (6)
    10. RAPCON: Chief (b) (6) x(b) (6)/Supervisor (b) (6)
    11. Airspace Manager: Mr. (b) (6) Range scheduling x-0001 Tyndall D MOA 1300-1600L
    12. Civil Air Patrol: (b) (6) Phone Range with Dept (PAM LOW4)
  - b. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext  
    1. 910 AW/CC: Col (b) (6)
    2. 910 AW Command Post: Ext 1315; FAX 1161
    3. 910 AW/PA: Maj (b) (6) (b) (6) ; FAX 1022
    4. 910 OG/CC: Col (b) (6)
    5. 910 OG: Airfield Manager, Ext 1186/1526
    6. 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
    7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
    8. 757 AS/DOO: Ops Admin: TSgt (b) (6) ; FAX 1657
    9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) FAX 1616
    10. 910 LG/CC: Ext 1225
    11. 910 LG/LGM: Ext 1352
    12. Maintenance Control: Ext 1327
    13. 910 LG/LGMS: Spray Maintenance, SMSgt (b) (6) (b) (6)
    14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
    15. Cellular Spray Phones:
      - Mission Commander: (b) (6)



DEPARTMENT OF THE AIR FORCE  
YOUNGSTOWN AIR RESERVE STATION  
757AS/AERIAL SPRAY UNIT  
VIENNA OH 44473-5924

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
UTAH TEST AND TRAINING RANGE, 16-26 MARCH 2010**

**1. MISSION BASICS:**

- a. Installation Sprayed: Utah Test and Training Range (UTTR)
- b. Mission Duration: 16-26 MAR 2010
- c. Purpose of Application: Weed control on UTTR Targets 21 and 24, to facilitate UXO recovery
- d. Application Dates: 18,19,22-23 March 2010
- e. Times of Application (Local): 18 Mar 1150-1311; 19 Mar 0740-1245; 22 Mar 0720-1245; 23 Mar 0835-1259
- f. Acres Treated: 1,168
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) Range Specialist/DSN (b) (6) Pest Shop Coordinator/Supervisor, (b) (6) DSN (b) (6)
- h. Date Spray Map Last Approved: 17 MAR 10
- j. Installation In-Briefing: (When/Where/Briefer/s): Maj (b) (6) Maj (b) (6) at Building 1274 with (b) (6)

**2. OPERATIONAL:**

**Mission Commander:** Maj (b) (6) (b) (6)

**AIRCREW 1: AC 105- CALL SIGN: SPRAY 05**

- a. Pilots: Maj Pat Fassnacht, Capt (b) (6), Maj (b) (6)
- b. Navigators: LtCol (b) (6)
- c. Flight Engineers: MSgt (b) (6), TSgt (b) (6) (b) (6)
- d. Spray Operators: MSgt (b) (6), TSgt (b) (6)
- e. Crew Chiefs: MSgt (b) (6), Sra (b) (6)

**AIRCREW 2: AC 106- CALL SIGN: SPRAY 06**

- f. Pilots: Maj (b) (6) (b) (6), Maj (b) (6), Maj (b) (6), Capt (b) (6)
- g. Navigators: LtCol (b) (6)
- h. Flight Engineers: MSgt (b) (6)
- i. Spray Operators: MSgt (b) (6), MSgt (b) (6)
- j. Crew Chiefs: MSgt (b) (6), Sra (b) (6)

- k. Entomologists: LtCol (b) (6) application supervision, Cat 11 (UTTR), Maj (b) (6) pesticide mixing and loading Cat 11, safety briefer (Hill AFB)

**MAINTENANCE:**

- l. 910 MX Supervisor: MSgt (b) (6)
- m. 910 Spray MX: TSgt (b) (6), TSgt (b) (6), TSgt (b) (6), TSgt (b) (6), TSgt (b) (6)
- n. Instruments/Avionics: TSgt (b) (6), TSgt (b) (6)
- o. Hydraulics/Electrician: SSgt (b) (6), SSgt (b) (6)
- p. Engine: TSgt (b) (6)

**m. Flying Data:**



- (1) 1 Spray Sortie on 18 Mar - 106
- (2) 4 Spray Sorties on 19 Mar - 2 105; 2 106
- (3) 5 Spray Sorties on 22 Mar - 2 105; 3 106
- (4) 4 Spray Sorties on 23 Mar - 2 105; 2 106
- (5) 4 Spray Sorties (flush) on 24 Mar - 2 105; 2 106
- (6) Ferry Sorties/hours: 4/19.8
- (7) Spray sorties/hours (including flush): 16/24.3

**3. PESTICIDE:**

- a. Trade Name: Krovar<sup>®</sup> IDF
- b. EPA Registration Number: 352-505
- c. Formulation Sprayed: 10 lbs Krovar<sup>®</sup> per 22.5 gallons formulation.
- d. Gallons Pesticide Mix Loaded: 25,366
- e. Gallons Pesticide Mix Applied: 25,366
- f. Formulation Used (per load): 450 lbs Krovar<sup>®</sup>, 4.0 gal StaPut<sup>®</sup>, ½ gal No-Foam<sup>®</sup>, 200 ounces Hi-Light<sup>®</sup> Dye, remainder water per 1000 gal of spray mix. Total of 12,175 lbs applied
- g. Gallons and Name of Flush Used: 900 gal water
- h. Other Additives Used: 100 gal StaPut<sup>®</sup>; 40 gal Hi-Light<sup>®</sup> dye; 12.5 gal No-foam
- i. Application Rate: 22.5 gal/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99106, 99105
- b. Spray System (Modules Used) and System ID #: 3 and 5.
- c. Spray System Configuration: 3-Module System/ UHV Fuselage Booms
- d. Nozzle Type/Size: UHV Fuselage
- e. Nozzle Orientation & Number Used: 2 oriented straight back.
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 366 gallons per minute.

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 35ft
- b. Spray Off-set: Given by spray ground
- c. Spray Release Altitude: 100' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) 18 Mar – 025° @ 22 knots
  - (2) 19 Mar – 010-015° beginning at 18 knots 15 knots
  - (3) 22 Mar – 010-020° beginning 6 knots ending at 12 knots
  - (4) 23 Mar – 005-320° beginning 7 knots ending at 3 knots
- b. Source: Ground observations at UTTR Target 21.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique Used: blue dye to as a deposition indicator on targets and observations from ground markers.
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Techniques Used: monitoring of weed emergence in spring.
  - (2) Results: will be determined this spring by range personnel.

**8. REMARKS:**

- a. This year, the Aerial Spray Team operated from the US Forest Service facility and we extend our thanks for the use of their building as a Command Post. This mission featured the use of new mixing trailers that can be ferried on C-130s and feature improved ergonomics and efficient mixing of herbicide. These new trailers contributed to a successful mission by reducing the labor and shortening the time associated with herbicide mixing. We thank MSgt (b) (6) (514 FLTS/DOC) for serving as our base sponsor. Effectiveness of the application will be evaluated during the growing season but based on the outstanding environmental conditions encountered this year, we expect excellent results from this application. A prevailing northerly wind component and mild temperatures allowed for a consistent and even deposition of Krovar on targets 21 and 24. Individual sortie data are shown in Attachment 1.

//signed//

(b) (6)

**Maj, USAFR**

**DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

## Attachment 1: Summary Spray Chart

**18 - 23 March 2010****SPRAY OPERATIONS SUMMARY FOR UTAH TEST AND TRAINING RANGE**

<b>DATE March</b>	<b>SORTIE #</b>	<b>AIRCRAFT #</b>	<b>SPRAY ON TIME (min)</b>	<b>TARGET</b>	<b>PASSES</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>FLYING HOURS</b>
18	1	106	4.7	21,24	7	77	1672	1.4
19	2	105	4.9	21,24	8	81	1823	1.6
19	3	106	5.8	21,24	9	95	1964	1.5
19	4	105	4.8	21,24	7	79	1778	1.3
19	5	106	5.7	21	14	93	1897	1.7
22	6	106	5.0	21	12	82	1670	1.3
22	7	105	4.8	21	13	81	1823	1.3
22	8	106	4.9	21	13	79	1781	1.4
22	9	105	4.9	21	13	82	1845	1.5
22	10	106	5.5	21	14	89	1832	1.5
23	11	105	4.8	21	13	78	1755	1.4
23	12	106	5.1	21	13	84	1850	1.2
23	13	105	4.8	21	13	79	1776	1.7
23	14	106	5.5	21	14	89	1900	1.7
24	Flush	105	Flush/Rinse x2	21	Flush	n/a	n/a	1.9
24	Flush	106	Flush/Rinse x2	21	Flush	n/a	n/a	1.9
		Totals	71.2		163	1,168	25,366	24.3



Totals for April 2009-present:

8 States involved /sprayed: GA, ND, VA, ID, UT, SC, LA, FL

Total for missions:

Mosquitoes      363,229 Acres treated; 1934 Gallons of Dibrom, Zenivex, Trumpet, and Duet combined, 26 Sorties with 48.2 flying hours

First time the mission has been used to spray an AFRC base (Homestead ARS, FL). This was the first ever AFRC-AFRC aerial spray mission. All other missions have involved Active duty locations.

Larvacide      22,290 Acres treated; 85580 gallons of Vectobac and Altosid; 55 Sorties with 76.2 flying hours

Herbicides      9,281 Acres Treated; 94243 Gallons of Krovar and Plateau; 59 Sorties with 66.5 hours of flying

Oil Spill      30,094 Acres treated, 148,956 gallons, 92 Sorties with 150.9 hours of flying

First time the aerial spray unit was used for an oil dispersion mission was in the Gulf of Mexico. Training missions have been conducted for the past 15 years, but this was the only time a spill was of sufficient size to warrant USAF participation. Unit was mobilized and on scene within 24 hours of notification and was spraying within 24 hours of spray authorization. Very remarkable for the first use ever.



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

9 AUG 10

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Williston Army Corps, ND

1. One C-130 will be available 23-26 Aug 2010 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations effecting the health and welfare of the citizens of Williston. Operations will be conducted out of Minot AFB, ND since no suitable airfield is in the vicinity of Williston.

2. Concept of Operations:

- a. 23 Aug (Monday)  
Spray aircraft:  
1500 Show KYNG  
1700 Depart KYNG  
1930 Land KMIB
- b. 24-25 Aug (Tuesday-Wednesday)  
1730 Show KMIB  
1930 T/O KMIB  
2130 Land KMIB
- c. 26 Aug (Thursday)  
1000 Show KMIB  
1200 Depart KMIB  
1530 Land KYNG

3. Aerial Spray Operation:

- a. Chemical: Zenivex
- b. Altitude: 150 AGL
- c. Application rates: 2.2 gal/minute (.3oz/acre)
- d. Area: Approximately 26500 acres

4. Maj (b) (6) will act as Mission Commander.
5. Maj (b) (6) (b) (6) will act as Aircraft Commander
6. Support required at Minot AFB and Williston Army Corps has been completed.

(b) (6) (b) (6) Maj, USAFR  
757AS Chief of Aerial Spray



# AERIAL SPRAY OPERATIONAL SCHEDULE

## WILLISTON ARMY CORPS OF ENGINEERS, WILLISTON, ND

### 23-26 Aug 2010

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector adult mosquitoes in order to improve working conditions and lower risk of vector-borne illness to individuals working and living in and around the City of Williston and the Army Corps of Engineers property.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew Spray 06: MI: QZNRK9901235

- (1) Pilots: Maj (b) (6) (b) (6) Lt Col (b) (6)
- (2) Navigators: Lt Col (b) (6) , Lt Col (b) (6)
- (3) Flight Engineers: Msgt (b) (6)
- (4) Spray Operators: Msgt (b) (6) , Msgt (b) (6) , Tsgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: Tsgt (b) (6) , Tsgt (b) (6) , Sra (b) (6) (b) (6)
- (2) Crew Chief(s): Ssgt (b) (6) , Sra (b) (6)
- (3) Avionics: Ssgt (b) (6)

##### c. Entomologists: Maj (b) (6) (MC), Maj (b) (6)

#### 2. SCHEDULE: (All Local Times)

##### 23 Aug (Mon):

- 1500 Show time
- 1700 Depart KYNG PPR 2301AS
- 1930 Land KMIB

##### 24 Aug (Tuesday):

- 1400 Installation in-Brief via teleconference
- 1730 Show Load Chemical/Weather call
- 1900 T/O MIB
- 2130 Land MIB
- 2051 Sunset

##### 25 Aug (Wednesday):

- 1730 Show Load Chemical/Weather call
- 1900 T/O MIB
- 2130 Land MIB
- 2049 Sunset

##### 26 Aug (Thursday):

- 1000 Show
- 1200 T/O MIB
- 1530 Land YNG

#### 3. ITEMS TO TAKE

- a. **Mission Commander:** Cellular Phone, Mission Folder
- b. **Entomologist:** Cell Phone, Wind Gauge, Compass, Pest Safety Binder, 1 VHF radio Project Notebook
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment

#### 4. RADIO FREQUENCIES: Air To Ground Primary UHF 392.2; VHF 123.45

Minot AFB Tower 120.65 V, 236.6, 253.5; Minot International 118.2 V, 393.1 or Unicom 122.95

#### 5. CONFIGURATION: SP2G

- a. **System:** 2-Module System/Fuselage Booms
- b. **Nozzle Tips/Orientation:** T jet Straight down
- c. **Number:** 10- 8005s (5 each side)
- d. **Booms:** Fuselage
- e. **Aircraft:** 899106
- f. **Mission Identifier:** See in itinerary

#### 6. SPRAY PARAMETERS:

**Adulticide (Williston ACE - Zenivex)**

- (1) **Area to be treated:** ~26,500 acres
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 2000' City of Williston or as determined by the PMP
- (4) **Flow Rate.** 2.2 gal/minute
- (5) **Application Rate.** 0.035 lbs/acre A.I. Zenivex, ULV (0.30 oz/acre)
- (6) **Ground Speed:** 200 Knots (338 Feet/Second)
- (7) **Flush:** With BVA, triple rinse, then air purge

**7. SPRAY MIXING AND LOADING:** See Ento; A good flush with BVA after Zenivex spray

**8. TRANSPORTATION:** 5 FS Cars; 1 Midsize

AVIS Rental International Airport  
25 Airport Road, Suite 17  
Minot ND 58703 ,  
701-838-7665

**9. LODGING:**

Hotel TBD by Billeting

**10. CONTACTS:**

**a. Minot AFB ND: DSN prefix: 453- Commercial area code and prefix (701) 723 -**

1. **Base Operations:** x(b) (6) (SSgt (b) (6) Airfield Manager: TSgt (b) (6) (b) (6) /TSgt (b) (6) FAX: 3637
2. **Environmental Officer:** (b) (6)
3. **Base Civil Engineer:** Lt Col (b) (6)
4. **Pest Management:** (b) (6) (cell: (b) (6) )
5. **Public Affairs:** Capt (b) (6)
6. **Weather:** TSgt (b) (6) /Capt (b) (6)
7. **Billeting:** SSgt (b) (6) , TSgt (b) (6) (if you have problems w/this number use (b) (6)
8. **Fire Dept:** x2461
9. **Transient Alert:** x3153, closes at 1730L
10. **Minot AFB Twr –** x3330
11. **Minot Int'l Twr (Magic City Twr)** (b) (6)

**b. Williston**

1. **Vector control district:** (b) (6)
2. **Army Corps of Engineers:** (b) (6) , office; (b) (6) , cell
3. **Williston ADS** 125.925

**b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Ext 1236; FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 Base Ops: Airfield Manager: Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181
6. 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
7. 757 AS/DOO: Ops Admin: Ext 1239; FAX 1657
8. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) or Capt (b) (6) ; FAX 1616
9. 910 LG/CC: Ext 1225
10. 910 LG/LGM: Ext 1352
11. Maintenance Control: Ext 1348
12. LG/LGMS: Spray Maintenance: Msgt (b) (6) Cell: (b) (6)
13. 910 LG/LGL: Ext 1137
14. Omega/SATO Travel: Ext 1772; (800) 285-6342
15. Supervisor of Flight Desk: 1069, FAX: 1371
16. Cellular Spray Phones:
  - Mission Commander (b) (6) (b) (6)
  - Spray Maintenance (b) (6)
  - Ento phone (b) (6) (b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## WILLISTON ARMY CORPS OF ENGINEERS, WILLISTON, ND

### 7-17 Jun 2010

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes, with larvicide, in order to improve working conditions and lower risk of vector-borne illness to individuals working and living in and around the City of Williston.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew Spray 08: MI: QZNRK9902158

- (1) Pilots: LtCol Tim Austin (MC) Maj (b) (6) (b) (6) Capt (b) (6) (7-11)
- (2) Navigators: Lt Col (b) (6) (7-11); Lt Col (b) (6) (13-17)
- (3) Flight Engineers: Msgt (b) (6) (7-11); Tsgt (b) (6) (13-17)
- (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6) (7-11); Msgt (b) (6) (13-17)

##### Aircrew Spray 04: MI: QZNRK9901158

- (1) Pilots: Capt (b) (6) (7-11) , Lt Col (b) (6) (7-11), Pilot TBD (13-17) Pilot TBD (13-17)
- (2) Navigators: Lt Col (b) (6) (7-11); Lt Col (b) (6) (b) (6) (13-17)
- (3) Flight Engineers: Msgt (b) (6) (7-11); Msgt (b) (6) (13-17)
- (4) Spray Operators: Msgt (b) (6) , Msgt (b) (6)

##### Vader 24: MI: QDNRK9901158

##### b. Maintenance:

- (1) Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , Tsgt (b) (6) , SSgt (b) (6) , Tsgt (b) (6) , Ssgt (b) (6)
- (2) Crew Chief(s): (b) (6) (b) (6) (b) (6) (b) (6)
- (3) Avionics: (b) (6)
- (4) Engines: (b) (6)

##### c. Entomologist: Maj (b) (6) (Will be at Williston); Maj (b) (6) (13-17)

#### 2. SCHEDULE: (All Local Times)

##### 7 Jun (Mon):

0800 Show time  
1000 Spray 04 depart KYNG **PPR 0702KC**  
1005 Spray 08 depart KYNG **PPR 0703KC**  
1010 Support Aircraft depart KYNG **PPR 0704KC**  
1245 Land KMIB  
1300 Safety brief, and mission plan coordination briefings. Depart to get vehicles, hotels, etc  
1800 Installation in-Brief via teleconference

##### 8-11 Jun (Tue-Fri): \*As many sorties as wx permits each day

0400 Show time/WX Decision  
0430 Load water & Vectobac  
0545 04Takeoff KMIB (larvicide Spray Sortie) at Williston ACE property (near KISN).  
0630 08 Takeoff KMIB  
0555 Sunrise

##### 11 Jun (Fri): Swap out return

1300 Spray04 Depart KMIB  
1730 Land KYNG

##### 13 Jun (Sun) PPR 1301KP

1100 Show KYNG  
1300 Depart KYNG  
1545 Land KMIB

##### 14-16 (Mon-Wed) : As many sorties as wx permits each day

0400 Show time/WX Decision  
0430 Load water & Vectobac  
0545 05Takeoff KMIB (larvicide Spray Sortie) at Williston ACE property (near KISN).  
0630 08 Takeoff KMIB  
0555 Sunrise

##### 16 Jun (Wed) PPR 1601KC

0800 Show KYNG  
1000 Depart KYNG  
1300 Arrive KMIB

**17 Jun (Thur)**

0800 Show KMIB  
1000 Spray 05 depart KMIB  
1005 Spray 08 depart KMIB  
1010 Support aircraft depart KMIB  
1430 Land KYNG

**3. ITEMS TO TAKE**

- a. **Mission Commander:** Cellular Phone, Mission Folder
- b. **Entomologist:** Cell Phone, Wind Gauge, Compass, Pest Safety Binder,  
1 VHF radio Project Notebook
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment

**4. KMIB PPR: See in itinerary**

**5. RADIO FREQUENCIES: Air To Ground Primary UHF 392.2; VHF 123.45**

Minot AFB Tower 120.65 V, 236.6, 253.5; Minot International 118.2 V, 393.1 or Unicom 122.95

**6. CONFIGURATION: SP3G**

- a. **System:** 3-Module System/Fuselage Booms
- b. **Nozzle Tips/Orientation:**  
Larvicide: Raindrop nozzles straight back
- c. **Number:**  
Larvicide: fuselage only, 24 total (12 each side) straight back
- d. **Booms:** Fuselage
- e. **Aircraft:** 909108, 899104
- f. **Mission Identifier:** See in itinerary

**7. SPRAY PARAMETERS:**

- a. **Larvicide**
  - (1) **Area to be treated:** approx. 24,000 acres (plan on 52 sorties as able)
  - (2) **Altitude:** 100' for Larvicide application
  - (3) **Swath Width.** 200 feet
  - (4) **Flow Rate.** 372 gallons/minute \*\*Please spray out entire volume on each sortie!
- b. **Application Rate.** 4 gallons/acre (water with 1.5 pints of Vectobac®)
- c. **Ground Speed:** 200 Knots

**8. SPRAY MIXING AND LOADING:** Plan to load 1800 gallons of water per lift.

Full load will consist of 1800 gallons of water + 85 gallons of Vectobac AS + 4 gallons of Staput

Subsequent loads can be calculated by the following formulas:

Determine the volume remaining in MASS. Add water to give 1800 gallons total. Then add Vectobac at 0.05 gallons per gallon of water added; Staput is added at 0.00023 gallons per gallon of water added.

**9. TRANSPORTATION:**

Enterprise Rent a Car  
1825 S Broadway  
Minot ND 58701  
(701)838-3800 Office  
(701)838-4255 Fax

(b) (6) (b) (6) (b) (6) (b) (6) , (b) (6) Spray Mx (x2), (b) (6) (b) (6) – FS Car  
CC's - Minivan

**10. LODGING:**

Grand International  
1505 North Broadway

## 11. CONTACTS:

### a. Minot AFB ND: DSN prefix: 453- Commercial area code and prefix (701) 723 -

1. Base Operations: x2347 (SSgt (b) (6) Airfield Manager: TSgt (b) (6) /TSgt (b) (6) FAX: 3637
2. Environmental Officer: (b) (6)
3. Base Civil Engineer: Lt Col (b) (6)
4. Pest Management: (b) (6) (cell: (b) (6)
5. Public Affairs: Capt (b) (6)
6. Weather: TSgt (b) (6) /Capt (b) (6)
7. Billeting: SSgt (b) (6) , TSgt (b) (6) (if you have problems w/this number use (b) (6)
8. Fire Dept: x2461
9. Transient Alert: x3153, closes at 1730L
10. Minot AFB Twr – x3330
11. Minot Int'l Twr (Magic City Twr) (b) (6)

### b. Williston

1. Vector control district: (b) (6)
2. Army Corps of Engineers: (b) (6) , office; (b) (6) , cell
3. Williston ADS 125.925

### b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Ext 1236; FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 Base Ops: Airfield Manager: Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181
6. 757 AS/DO: Maj (b) (6) (b) (6) (b) (6)
7. 757 AS/DOO: Ops Admin: Ext 1239; FAX 1657
8. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) or Capt (b) (6) x(b) (6); FAX 1616
9. 910 LG/CC: Ext 1225
10. 910 LG/LGM: Ext 1352
11. Maintenance Control: Ext 1348
12. LG/LGMS: Spray Maintenance: Msgt (b) (6) Cell: (b) (6)
13. 910 LG/LGL: Ext 1137
14. Omega/SATO Travel: Ext 1772; (800) 285-6342
15. Supervisor of Flight Desk: 1069, FAX: 1371
16. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Spray Maintenance: (b) (6)
  - Ento phone (b) (6)



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION  
VIENNA OH 44473-5924**

1 November 2010

MEMORANDUM FOR AFRC/A3OO

FROM: 757 AS/DOS

SUBJECT: FY 10 Aerial Spray Annual Report (1 Oct 09 – 30 Sep 10)

1. INTRODUCTION. FY 10 was the 38<sup>th</sup> year of aerial spray operations as a Department of Defense (DoD) resource assigned to the US Air Force Reserve. The purpose of this mission is to provide aerial spray support to U.S. military forces worldwide as prescribed in DoD Instruction 4150.7, DoD Pest Management Program. Highlights of this year's aerial spray activities include:
  - a. Completed emergency response to apply oil dispersants as part of the Unified Emergency Response to the sinking of the Deepwater Horizon platform and the massive oil leak in Mississippi Canyon 238; 148,956 gallons of dispersant were sprayed to disperse oil slicks and ultimately protect the Louisiana coast line.
  - b. Implemented a field test to determine if aerial spray is compatible with LAIRCM equipment. There is no indication that the LAIRCM modification causes airframe contamination or adversely affects the pattern and distribution of the spray coming from the aircraft.
  - c. The Aerial Application of Pesticides course was not taught in FY10 as the Spray Unit was deployed in support of the emergency response to Deepwater Horizon disaster in the Gulf of Mexico. The course was rescheduled and consequently taught in October 2010. Results will be recorded in the FY11 annual report.
  - d. Two aircraft were sent to make larvicide applications for the Army Corps of Engineers at Williston, ND. The nearly 14,000 acres treated was the largest mosquito larvicide mission completed to date.
  - e. Conducted a static display and familiarization flight for key members of the AFNORTH staff familiarizing them with aerial spray mission capabilities of the 757AS.



Reports of individual missions may be obtained by contacting Lt Col (b) (6) at 757 AS/DOS, Youngstown Air Reserve Station, 3976 King Graves Road, Vienna OH 44473-5926; DSN (b) (6) ; Commercial (b) (6) .

2. MISSION ACCOMPLISHMENTS:

- a. A list of all missions accomplished in FY10 and their associated data is found in attachment 1. A list of all aerial spray tests, demonstrations, exercise missions, and locally generated spray training completed in FY10 is found in attachment 2.
- b. Static displays were given on 3 occasions in conjunction with operational spray missions for: Armed Forces Pest Management Board, NAS Jacksonville, FL, Louisiana/Texas Mosquito Control Association, Lake Charles, LA, and 1stAF/CC and staff, Tyndall AFB, FL.

3. CAPABILITIES OF THE AERIAL SPRAY MISSION:

- a. Aircraft. Four C-130H aircraft are modified to perform the aerial spray missions. Two additional aircraft are modified to accept the MASS (Tail Numbers 89-9103 & 89-9104 were modified in FY09).
- b. Spray Systems. Six Modular Aerial Spray Systems were available.
- c. Global Positioning Systems (GPS). 11 Wingman GX Global Positioning Systems were available.
- d. Quantity Indicating System upgrade on MASS is in-progress with 90% of the systems completed.

4. PERSONNEL INVOLVED WITH AERIAL SPRAY DURING FY10:

- a. Major (b) (6) is now Chief of Aerial Spray. MSgt(b) (6) is now Chief of the Aerial Spray Maintenance Flight.
- b. 910 AW personnel from the Maintenance Group, Public Affairs, and Communications Flight deployed to support the aerial spray mission and accomplish training in FY10.

5. APPROVED AERIAL SPRAY PROJECTS (project location/pest):

- a. Yorktown Naval Weapons Station, Cheatham Annex, and Camp Peary, VA. Mosquitoes
- b. Grand Forks Air Force Base, ND. Mosquitoes
- c. Minot Air Force Base, ND. Mosquitoes
- d. Langley Air Force Base, VA. Mosquitoes



- e. Craney Island, VA. Mosquitoes
- f. Ft. Eustis, VA. Mosquitoes
- g. Ft. Monroe, VA. Mosquitoes
- h. Eglin Air Force Base, FL. Mosquitoes
- i. Homestead Air Reserve Base, FL. Mosquitoes
- j. Parris Island MCRD, SC. Biting Midges and Mosquitoes
- k. Utah Test and Training Range, Hill AFB UT. Halogeton
- l. Army Corps of Engineers, Williston, ND. Mosquitoes
- m. Saylor Creek Range, Idaho. Cheatgrass
- n. Tyndall AFB, FL. Mosquitoes, biting midges, and dog flies

//Signed//

(b) (6)

Research Entomologist

Lt Col, USAFR

Attachments

1 & 2. Aerial Spray Statistics

Distribution via e-mail

Cc:

AFRC/A3

AFRC/HO

AFRC/PA

910 AW/PA

910 AW/HO

AFPMB

## Attachment 1.

## FY 10 AERIAL SPRAY MISSIONS (1 OCT 09 – 30 SEP 10)

DATE	LOCATION	PEST	ACRES	RATE/ACRE		GALS	SORTIES		HOURS	
				OZ	GAL		SPRAY/FERRY		SPRAY	FERRY
5-9 Oct 09	Parris Island MCRD, SC	Midges	6,013	1.24		58	1	2	2.0	4.2
16-26 Mar 10	UTTR/Hill AFB, UT	Halogeton Control	1,168		22.5	25,366 <sup>1</sup>	16	4	24.3	19.8
12-15 Apr 10	Parris Island MCRD, SC	Midges/Mosquitoes	5,759	1.24		59	2	2	3.5	4.2
28 Apr – 4 Jun 10	Deepwater Horizon, Stennis IAP, MS	Oil dispersants	30,094		5	148,956	93	6	150.9	35.8
7-17 Jun 10	Williston ACE, ND	Mosquito larvicide	13,757	24		2,579	33	6	44.7	23.0
28 Jun-2 Jul 10	Grand Forks AFB, ND	Mosquitoes	12,183	1.0		95	1	2	1.6	6.4
19-23 Jul 10	Minot AFB/Williston ACE, ND	Mosquitoes	45,570	0.90- 0.32		194	3	2	5.7	7.5
9-13 Aug 10	Grand Forks AFB, ND	Mosquitoes	12,544	1.0		98	1	2	1.3	6.7
23-26 Aug 10	Williston ACE, ND	Mosquitoes	26,005	0.32		60	2	2	4.7	7.3
13-24 Sep 10	Mountain Home AFB, ID	Cheat Grass control	3,831		7	100	14	8	12.8	44.4
		<b>TOTALS:</b>	156,924			177,565	166	36	251.5	159.3

+Training was accomplished on every mission listed above but not specifically noted in the text to minimize redundancy in this document

<sup>1</sup>Includes gallons of water as a solvent

**FY 10 AERIAL SPRAY TESTS, DEMONSTRATIONS,  
EXERCISE MISSIONS, LOCAL, & TDY SPRAY TRAINING  
(1 Oct 09 - 30 Sep 10)**

<u>DATE</u>	<u>PURPOSE/LOCATION</u>	<u>SORTIES</u>		<u>FLYING HOURS</u>	
		SPRAY	FERRY	SPRAY	FERRY
8-10 Feb 10	Static display for military pest managers at the Armed Forces Pest Management Board's Tri-Service Conference, Jacksonville Naval Air Station, FL		2		5.6
22-26 Feb 10	Observation of effects of LAIRCM on spray patterns	2	2	3.9	7.7
3-5 Mar	Static display, brief, and spray sortie for 1st Air Force staff.	3	2	2.7	5.3
27-28 Apr	Gulf Coast Fly-in for mosquito pesticide applicators. Static display		1		3.3
All FY10	Local & TDY spray training sorties	8	4	21.3	16.5
	Totals	13	11	27.9	38.4



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION  
VIENNA OH 44473-5924**

1 November 2011

MEMORANDUM FOR AFRC/A3OO

FROM: 757 AS/DOS

SUBJECT: FY 11 Aerial Spray Annual Report (1 Oct 10 – 30 Sep 11)

1. INTRODUCTION. FY 11 was the 39<sup>th</sup> year of aerial spray operations as a Department of Defense (DoD) resource assigned to the US Air Force Reserve. The purpose of this mission is to provide aerial spray support to U.S. military forces worldwide as prescribed in DoD Instruction 4150.7, DoD Pest Management Program. Highlights of this year's aerial spray activities include:
  - a. Received notification that funding for developing a new modular aerial spray system (MASS) has been identified. Projecting an industry day in early FY12 for contractors to develop bids to construct a beta module based on supplied application criteria. The current MASS is now over 25 years old.
  - b. Began collaboration with USDA scientists and Navy entomologists to investigate the movement and behavior of insecticide movement and droplet fate under different environmental conditions and release altitudes. Work was done at Army National Guard's Camp Blanding and the sorties were flown from Jacksonville Naval Air Station in Florida.
  - c. Consultation on aerial spray project for 156 AW, Muñoz Air Base, Puerto Rico. Presented capability to Wing Commander, Puerto Rico Public Health Department, and Centers for Disease Control Dengue Lab. A statement of need was prepared by Mr. (b) (6), National Guard Bureau. A private contractor will most likely be hired to spray the Air Base.
2. MISSION ACCOMPLISHMENTS:
  - a. A list of all missions accomplished in FY11 and their associated data is found in attachment 1. A list of all aerial spray tests, demonstrations, exercise missions, and locally generated spray training completed in FY11 is found in attachment 2.
  - b. The Aerial Application of Pesticides Course was taught in October and again in May at Youngstown ARS. The course was taught twice in FY11 as the Spray Unit was

deployed in support of the emergency response to Deepwater Horizon disaster in the Gulf of Mexico during the scheduled period in FY10. The course was rescheduled and consequently taught in October 2010. This course provided certification training in Aerial Application Pest Control (Category 11) as required by the Environmental Protection Agency. Course Director, Maj (b) (6) reported 18 students attended and completed the course. Nine attended for initial certification, and 9 for recertification during October. In May, Maj (b) (6) reported 13 students attended and completed the course. Six attended for initial certification, 6 for re-certification, and 1 for informational purposes.

Reports of individual missions may be obtained by contacting Lt Col (b) (6) at 757 AS/DOS, Youngstown Air Reserve Station, 3976 King Graves Road, Vienna OH 44473-5926; DSN (b) (6) ; Commercial (b) (6) .

### 3. CAPABILITIES OF THE AERIAL SPRAY MISSION:

- a. Aircraft. Four C-130H aircraft are modified to perform the aerial spray missions. Two additional aircraft are modified to accept the MASS (Tail Numbers 89-9103 & 89-9104 were modified in FY09).
- b. Spray Systems. Six Modular Aerial Spray Systems were available.
- c. Global Positioning Systems (GPS). 11 Wingman GX Global Positioning Systems were available.

### 4. PERSONNEL INVOLVED WITH AERIAL SPRAY DURING FY11:

- a. Changes to staffing include MSgt (b) (6) , as the Chief of the Aerial Spray Maintenance Flight; TSgt (b) (6) began as MASS specialist in the Maintenance Flight. MSgt (b) (6) is now the Spray Operator working in the Operations Spray Shop. Finally, Maj (b) (6) and Capt (b) (6) are traditional reserve medical entomologists new in FY11.
- b. 910 AW personnel from the Maintenance Group, and Public Affairs deployed to support the aerial spray mission and accomplish training in FY11.

### 5. APPROVED AERIAL SPRAY PROJECTS (project location/pest):

- a. Yorktown Naval Weapons Station, Cheatham Annex, and Camp Peary, VA. Mosquitoes
- b. Grand Forks Air Force Base, ND. Mosquitoes
- c. Minot Air Force Base, ND. Mosquitoes
- d. Langley Air Force Base, VA. Mosquitoes

- e. Craney Island, VA. Mosquitoes
- f. Ft. Eustis, VA. Mosquitoes
- g. Ft. Monroe, VA. Mosquitoes
- h. Eglin Air Force Base, FL. Mosquitoes
- i. Homestead Air Reserve Base, FL. Mosquitoes
- j. Parris Island MCRD, SC. Biting Midges and Mosquitoes
- k. Utah Test and Training Range, Hill AFB UT. Halogeton
- l. Army Corps of Engineers, Williston, ND. Mosquitoes
- m. Saylor Creek Range, Idaho. Cheatgrass
- n. Tyndall AFB, FL. Mosquitoes, biting midges, and dog flies

//Signed//

(b) (6)  
Research Entomologist

Lt Col, USAFR

#### Attachments

1 & 2. Aerial Spray Statistics

#### Distribution via e-mail

Cc:

AFRC/A3

AFRC/HO

AFRC/PA

910 AW/PA

910 AW/HO

AFPMB

## Attachment 1.

## FY 11 AERIAL SPRAY MISSIONS (1 OCT 10 – 30 SEP 11)

DATE	LOCATION	PEST	ACRES	RATE/ACRE		GALS	SORTIES		HOURS	
				OZ	GAL		SPRAY/FERRY		SPRAY	FERRY
18-21 Oct 10	Parris Island MCRD, SC	Midges	8,258	1.24		80	1	2	1.7	4.3
28 Mar- 8 Apr 11	UTTR/Hill AFB, UT	Halogeton Control	1,172		22.5	25,733 <sup>1</sup>	16	4	21.8	19.5
2-5 May 11	Parris Island MCRD, SC	Midges/Mosquitoes	7,680	0.75		45	1	2	2.4	4.6
23-27 May 11	Grand Forks AFB, ND	Mosquito larvicide	1,425	0.75		12	6	2	5.6	6.5
31 May – 10 Jun 11	Williston ACE, ND	Mosquito larvicide	8,248	24		1,547	21	4	36.3	14.7
20-25 Jun 11	Langley AFB, VA	Adult mosquitoes	49,156	0.5		196	3	2	4.4	2.7
27-30 Jun 11	Grand Forks/Minot AFB, ND	Mosquitoes	23,518	1.0		180	2	2	5.2	6.8
18-22 Jul 11	Minot AFB/Williston ACE, ND	Mosquitoes	46,163	0.82-0.32		250	2	2	5.3	8.3
25-29 Jul 11	Homestead AFB, FL	Mosquitoes	96,850	.48		360	3	2	6.7	7.4
8-11 Aug 11	Grand Forks AFB/Williston, ND	Mosquitoes, gnats	45,784	0.90, 0.31		170	2	2	6.6	6.6
22-26 Aug 11	Langley AFB, VA	Adult mosquitoes	17,498	0.5		73	2	2	3.1	3.0
12-23 Sep 11	Mountain Home AFB, ID	Cheat Grass control	3,322		7	104	13	6	12.4	34.2
		<b>TOTALS:</b>	309,074			28,750	72	32	111.5	118.6

+Training was accomplished on every mission listed above but not specifically noted in the text to minimize redundancy in this document

<sup>1</sup>Includes gallons of water or mineral oil as a solvent



**FY 11 AERIAL SPRAY TESTS, DEMONSTRATIONS,  
EXERCISE MISSIONS, LOCAL, & TDY SPRAY TRAINING  
(1 Oct 10 - 30 Sep 11)**

<u>DATE</u>	<u>PURPOSE/LOCATION</u>	<u>SORTIES</u>		<u>FLYING HOURS</u>	
		SPRAY	FERRY	SPRAY	FERRY
6-10 Dec 10	Testing of 300' and higher release heights to support effective night mosquito control operations. Avon Park Range, FL	3	2	6.9	6.4
24-28 Jan 11	Testing of 500' and higher release heights to support effective night mosquito control operations. Avon Park Range, FL	2	2	2.9	6.4
8-11Feb 11	Swath width characterization, logistics development and range orientation for future Barry Goldwater range/Luke AFB herbicide application mission	2	2	4.0	11.8
18-22 Apr 11	Aerial insecticide efficacy evaluation in partnership with USDA and the U.S. Navy using Aqualuer 20+20 and BVA oil in various vegetation canopies on Camp Blanding.	2	2	4.9	5.2
9-12 May	Test for swath width using wing booms and raindrop nozzles. Student orientation flight over Ravenna Arsenal	2	0	3.0	0

<u>DATE</u>	<u>PURPOSE/LOCATION</u>	<u>SORTIES</u>		<u>FLYING HOURS</u>	
10-13 May	Multi-Agency operational exercise organized by US Coast Guard for oil spill cleanup response. San Diego, CA	2	2	2.9	13.6
16-19 May	Training at Parris Island MCRD after low insect activity cancelled actual application	2	2	2.9	4.5
All FY11	Local & other TDY Spray Training Sorties	10	2	15.3	4.5
Totals		27	14	45.8	52.4



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION  
VIENNA OH 44473-5924**

1 November 2012

MEMORANDUM FOR AFRC/A3OO

FROM: 757 AS/DOS

SUBJECT: FY 12 Aerial Spray Annual Report (1 Oct 11 – 30 Sep 12)

1. INTRODUCTION. Fiscal year 2012 was the 40<sup>th</sup> year of aerial spray operations as a Department of Defense (DoD) resource assigned to the US Air Force Reserve. The purpose of this mission is to provide aerial spray support to U.S. military forces worldwide as prescribed in DoD Instruction 4150.07, DoD Pest Management Program. Highlights of this year's aerial spray activities include:
  - a. Received verbal order from AFRC/A3 to terminate "off federal-property sprays" pending a program review recommended by the AFRC Comptroller and AFRC/JAZ who questioned the legality of these types of sprays, a practice which has been in place since 1959. The order came as a crew was poised to spray the city of Williston to control pest mosquitoes and the story was covered the following day in the Williston Herald. The suspension did not include pesticide applications on military properties. Preliminary Review Officer, Col (b) (6) visited the unit in August for interviews and fact finding. At this writing the Spray Unit has not received word on the conclusions of the investigation.
  - b. AFRC/A3 identified a remedy for the Aerial Spray training program which normally includes pesticide applications over non-federal property. An Innovative Ready Training (IRT) project is approved through the OASD/RA and MAJCOM and will provide the opportunity to satisfy valid unit training requirements while providing a direct benefit to a community. In short, the IRT is a more formalized version of what was already in place (with the addition of an approval process above the MAJCOM level). It is expected that most communities previously benefiting from military sprays will complete the IRT application packages. It is worth noting that the IRT spray missions do not have to be hosted by military installations, which creates potential new training opportunities in communities with serious vector borne problems but without a host military installation. At this time, several communities are in various stages of the IRT approval process.
  - c. The Spray Unit responded to an emergency request for mosquito control at Joint Base Charleston. Excellent results from this spray (97% reduction in mosquito numbers),

prompted a letter from the Wing Commander and consequently, JB Charleston has initiated an environmental assessment to determine if this installation can received routine aerial sprays.

- d. Further collaboration with the USDA/ARS Center for Medical and Veterinary Entomology in support of the Deployed Warfighter Protection Program was accomplished at the Naval Air Facility, El Centro. The project aims to determine the effects of hot and dry environmental conditions on aerially applied pesticides, relative to pest control in desert areas. Results will be published in the scientific literature and findings implemented in pest control strategies to protect troop health.
- e. Rotary nozzle evaluations and droplet analysis at high speeds (200 kts) were made at the USDA-ARS-Areawide Pest Management Research Unit, Texas A&M University, College Station, TX. Rotary nozzles produce a more effective pesticide droplet spectrum and will likely be used with the new modular aerial spray system (MASS) as part of the technology upgrade.
- f. Development of the new MASS continues. An industry day was accomplished with AFRC contracting and SPO. A statement of work has been completed. It is anticipated that the contract will go out to bid shortly.
- g. West Nile virus was more active nationwide in 2012 than in any previous year since 2003 (3,545 cases by end of FY12). About 38 percent of the cases were reported from Texas and prompted health officials in Dallas to begin aerial spraying. Because of the limited scope of the emergency spray, a contractor was selected to do the application. The Spray Unit provided the Centers for Disease Control and the TX EPA with guidance on efficacy of sprays and setting up contracts.
- h. The Aerial Application of Pesticides Course taught in May 2012. This course provided certification training in Aerial Application Pest Control (Category 11) as required by DoDI 4150.07 and is certified by the Environmental Protection Agency. Course Director, Lt Col (b) (6) reported 9 students attended and completed the course. Five attended for initial certification, and 4 for re-certification.
- i. Two new aerial spray projects were approved this year. Luke AFB completed documentation for a spray project to control Sahara mustard on the Barry M. Goldwater Range. The first application is anticipated in early 2013.

Reports of individual missions may be obtained by contacting Lt Col (b) (6) at 757 AS/DOS, Youngstown Air Reserve Station, 3976 King Graves Road, Vienna OH 44473-5926; DSN (b) (6)(b) (6) Commercial (b) (6) .

## 2. MISSION ACCOMPLISHMENTS:

- a. A list of all missions accomplished in FY12 and their associated data is found in attachment 1. A list of all aerial spray tests, demonstrations, exercise missions, and locally generated spray training completed in FY12 is found in attachment 2.

### 3. CAPABILITIES OF THE AERIAL SPRAY MISSION:

- a. Aircraft. Four C-130H aircraft are modified to perform the aerial spray missions. Two additional aircraft are modified to accept the MASS but are not plumbed for wing booms, only fuselage booms.
- b. Spray Systems. Six Modular Aerial Spray Systems (MASS) were available.
- c. Global Positioning Systems (GPS). 11 Wingman GX Global Positioning Systems were available.

### 4. PERSONNEL INVOLVED WITH AERIAL SPRAY DURING FY12:

- a. Lt Col (b) (6), a navigator and TSgt (b) (6), a flight engineer, were assigned to the Aerial Spray Office.
- b. 910 AW personnel from the Maintenance Group deployed to support the aerial spray mission and accomplish training in FY12.

### 5. APPROVED AERIAL SPRAY PROJECTS (project location/pest):

- a. Army Corps of Engineers, Craney Island, VA. Mosquitoes
- b. Army Corps of Engineers, Williston, ND. Mosquitoes
- c. Barry M. Goldwater Range, AZ. Sahara mustard
- d. Eglin Air Force Base, FL. Mosquitoes
- e. Ft. Eustis, VA. Mosquitoes
- f. Ft. Monroe, VA. Mosquitoes
- g. Grand Forks Air Force Base, ND. Mosquitoes
- h. Homestead Air Reserve Base, FL. Mosquitoes
- i. Langley Air Force Base, VA. Mosquitoes
- j. Minot Air Force Base, ND. Mosquitoes
- k. Naval Submarine Base, Kings Bay, GA. Biting midges and mosquitoes
- l. Parris Island MCRD, SC. Biting Midges and mosquitoes
- m. Saylor Creek Range, ID. Cheatgrass
- n. Smoky Hill Air National Guard Range, Salina, KS. Musk thistle

- o. Tyndall AFB, FL. Mosquitoes, biting midges, and dog flies
- p. Utah Test and Training Range, Hill AFB UT. Halogeton
- q. Yorktown Naval Weapons Station, Cheatham Annex, and Camp Peary, VA. Mosquitoes

//signed//

(b) (6)

Research Entomologist

Lt Col, USAFR

Attachments

1 & 2. Aerial Spray Statistics

Distribution via e-mail

Cc:

AFRC/A3

AFRC/HO

AFRC/PA

910 AW/PA

910 AW/HO

AFPMB

## Attachment 1.

## FY 12 AERIAL SPRAY MISSIONS (1 OCT 11 – 30 SEP 12)

DATE	LOCATION	PEST	ACRES	RATE/ACRE		GALS	SORTIES			HOURS	
				OZ	GAL		SPRAY/FERRY			SPRAY	FERRY
3-6 Oct 11	Langley AFB, VA	Adult mosquitoes	72,447	0.5		280	3	2		6.4	3.3
11-14 Oct 11	Parris Island MCRD, SC	Midges/mosquitoes	7,509	1.0		44	1	2		2.2	3.7
24-26 Oct 11	Parris Island MCRD, SC	Midges/mosquitoes	7,500	0.99		45	1	2		1.8	3.9
2-5 Apr 12	Parris Island MCRD, SC	Midges/Mosquitoes	5,930	0.6		28	1	2		1.6	4.3
4-22 Jun 12	Williston ACE, ND	Mosquito larvicide	6,800	24		1,275	17	4		26.5	14.7
9-13 Jul 12	Homestead ARB, FL	Mosquitoes	70,640	0.5		277	3	2		3.9	7.3
17-19 Aug 12	Naval Submarine Base, Kings Bay, GA	Mosquitoes, midges	13,670	0.82		88	1	2		1.8	4.9
13-21 Sep 12	Mountain Home AFB, ID	Cheat Grass control	3,459	2		52	14	6		12.5	33.7
		<b>TOTALS:</b>	187,955			2,089	41	22		56.7	75.8

+Training was accomplished on every mission listed above but not specifically noted in the text to minimize redundancy in this document



**FY 12 AERIAL SPRAY TESTS, DEMONSTRATIONS,  
EXERCISE MISSIONS, LOCAL, & TDY SPRAY TRAINING  
(1 Oct 11 - 30 Sep 12)**

<u>DATE</u>	<u>PURPOSE/LOCATION</u>	<u>SORTIES</u>		<u>FLYING HOURS</u>	
		SPRAY	FERRY	SPRAY	FERRY
12-16 Dec 11	Swath width characterization, develop logistics and conduct range orientation for future Barry Goldwater range/Luke AFB herbicide application mission	2	2	5.4	11.9
23-27 Jan 12	Testing of 400' release heights to support effective night mosquito control operations. Avon Park Range, FL	3	2	6.9	6.8
23-26 Apr 12	Training at Parris Island MCRD after low insect activity cancelled actual application	2	2	4.0	3.9
14-18 May 12	Thunderstorms prevented an actual application of pesticide. Training sorties were made over the Recruit Depot	2	2	3.8	4.5
22 May 12	Swath characterization sortie flown in support of the Aerial Application of Pesticides Course at KYNG	1	0	1.5	0

<u>DATE</u>	<u>PURPOSE/LOCATION</u>	<u>SORTIES</u>		<u>FLYING HOURS</u>	
		SPRAY	FERRY	SPRAY	FERRY
23-27 July	Aerial insecticide efficacy evaluation in partnership with USDA and the U.S. Navy. Tested behavior of pesticide when applied in high temperatures in a desert environment	3	3	4.1	13.6
All FY12	Local & TDY Spray Training Sorties	27	7	40.9	37.6
	Totals	42	20	69.5	82.8



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

1 November 2013

MEMORANDUM FOR AFRC/A3OO

FROM: 757 AS/DOS

SUBJECT: FY 13 Aerial Spray Annual Report (1 Oct 12 – 30 Sep 13)

1. INTRODUCTION. Fiscal year 2013 was the 41<sup>st</sup> year of aerial spray operations as a Department of Defense (DoD) resource assigned to the US Air Force Reserve. The purpose of this mission is to provide aerial spray support to U.S. military forces worldwide as prescribed in DoD Instruction 4150.07, DoD Pest Management Program. Highlights of this year's aerial spray activities include:
  - a. Late in FY12, AFRC/A3 identified a remedy for the Aerial Spray Training Program shutdown, which normally included pesticide applications over non-federal property. An Innovative Ready Training (IRT) project approved through the OASD/RA and MAJCOM was found to meet unit training requirements while providing a direct benefit to a community while following a clear legal justification. A total of 5 IRT projects dealing with 6 entities were approved in FY13. Aerial spray operations occurred at all of these, except the Grand Forks location in FY13 (see attachment 1).
  - b. The Spray Unit was directed in September 2013 by AFRC/A3 to develop a night time aerial spray program that targets late flying disease vectors. The Aerial Spray Operations shop is currently developing proposals for the safe execution of this developing mission. Night time aerial spray operations are commonplace in the civilian sector and supported for military operations by the Armed Forces Pest Management Board, Air Force Surgeon General, and Centers for Disease Control.
  - c. Further collaboration with the USDA/ARS Center for Medical and Veterinary Entomology in support of the Deployed Warfighter Protection Program with a second spray evaluation at the Naval Air Facility, El Centro in late July. The project aims to determine the effects of hot and dry environmental conditions on aerially applied pesticides, relative to pest control in desert areas. This round of trials used Dibrom, a commonly used mosquito adulticide. Results will be published in the scientific literature and findings implemented in pest control strategies to protect troop health.
  - d. A newly approved spray project at the Barry M. Goldwater Range had the first Air Force aerial application of glyphosate for control of invasive plant species. This project

treated roadways infested with Sahara mustard and was shown to be moderately effective in controlling plant growth. The rapid coverage of the area makes the C-130 platform an excellent choice while the application timing which must follow quickly after rain is critical for control but logistically difficult to plan for.

- e. Development of the new MASS continues. The acquisition process is underway. Review and selection of submitted bids is scheduled to occur February/March 2014.
- f. The Aerial Application of Pesticides Course taught in January in conjunction with the Florida Mosquito Control Associations' (FMCA) annual fly-in and was held in Ft Meyers, FL. This course provided certification training in Aerial Application Pest Control (Category 11) as required by DoDI 4150.07 and is certified by the Environmental Protection Agency. Course Director, Lt Col (b) (6) reported 160 people attended the course and fly-in. Eight attended for initial certification, and 6 for re-certification.
- g. Budgetary constraints cancelled the planned first ever aerial spray refresher which was to be held in conjunction with the FMCA event in FL (see 1.f.). In its place, 37 spray operations personnel in all crew positions completed a modified 3 day ground and flight training syllabus at home station. Flight training consisted of both HV and an overwater oil spill sorties.
- h. One new aerial spray project was approved this year. Barksdale AFB completed documentation for mosquito control.

Reports of individual missions may be obtained by contacting Lt Col (b) (6) at 757 AS/DOS, Youngstown Air Reserve Station, 3976 King Graves Road, Vienna OH 44473-5926; DSN (b) (6) ; Commercial (b) (6) .

## 2. MISSION ACCOMPLISHMENTS:

- a. A list of all missions accomplished in FY13 and their associated data is found in attachment 1. A list of all aerial spray tests, demonstrations, exercise missions, and locally generated spray training completed in FY13 is found in attachment 2.

## 3. CAPABILITIES OF THE AERIAL SPRAY MISSION:

- a. Aircraft. Four C-130H aircraft are modified to perform the aerial spray missions. Two additional aircraft are modified to accept the MASS but are not plumbed for wing booms, only fuselage booms.
- b. Spray Systems. Six Modular Aerial Spray Systems (MASS) were available.
- c. Global Positioning Systems (GPS). 11 Wingman GX Global Positioning Systems were available.

4. PERSONNEL INVOLVED WITH AERIAL SPRAY DURING FY13:

- a. Capt (b) (6), a pilot, was assigned to the Aerial Spray Office.
- b. 910 AW personnel from the Maintenance Group deployed to support the aerial spray mission and accomplish training in FY13.

5. APPROVED AERIAL SPRAY PROJECTS (project location/pest):

- a. Army Corps of Engineers, Craney Island, VA. Mosquitoes
- b. Army Corps of Engineers, Williston, ND. Mosquitoes
- c. Barksdale AFB, LA. Mosquitoes
- d. Barry M. Goldwater Range, AZ. Sahara mustard
- e. Eglin Air Force Base, FL. Mosquitoes
- f. Ft. Eustis, VA. Mosquitoes
- g. Grand Forks Air Force Base, ND. Mosquitoes
- h. Homestead Air Reserve Base, FL. Mosquitoes
- i. Langley Air Force Base, VA. Mosquitoes
- j. Minot Air Force Base, ND. Mosquitoes
- k. Naval Submarine Base, Kings Bay, GA. Biting midges and mosquitoes
- l. Parris Island MCRD, SC. Biting Midges and mosquitoes
- m. Saylor Creek Range, ID. Cheatgrass
- n. Smoky Hill Air National Guard Range, Salina, KS. Musk thistle
- o. Tyndall AFB, FL. Mosquitoes, biting midges, and dog flies
- p. Utah Test and Training Range, Hill AFB UT. Halogeton
- q. Yorktown Naval Weapons Station, Cheatham Annex, and Camp Peary, VA. Mosquitoes

6. INNOVATIVE READINESS TRAINING - APPROVED MISSIONS (location/pest)

- a. Grand Forks, ND. Mosquitoes.
- b. Miami-Dade County, FL. Mosquitoes.

- c. Hampton Roads, VA. including Poquoson and York County. Mosquitoes.
- d. Minot, ND. Mosquitoes.
- b. Williston, ND. Mosquitoes.

(b) (6) //signed//  
Research Entomologist Lt Col, USAFR

Attachments  
1 & 2. Aerial Spray Statistics

Distribution via e-mail

Cc:  
AFRC/A3  
AFRC/HO  
AFRC/PA  
910 AW/PA  
910 AW/HO  
AFPMB

## Attachment 1.

## FY 13 AERIAL SPRAY MISSIONS (1 OCT 12 – 30 SEP 13)

Date	Location	Target Pest	Chemical	Acres	oz/ acre	gal/ acre	Gal total <sup>1</sup>	Spray Sorties	Ferry Sorties	Spray Hours	Ferry Hours
1-4 Oct 12	Parris Island MCRD	biting midges	Dibrom	4,410	0.75		26	2	2	1.6	4.1
15-19 Oct 12	Parris Island MCRD	biting midges	Dibrom	7,922	0.87		54	1	2	1	3.8
29 Oct-9 Nov 12	Smokey Hill ANGR	musk thistle	Milestone	3,926		7	26,599	17	2	18.6	5.5
25 Feb - 1 Mar	Luke AFB	Sahara mustard	Ranger Pro	192		10	165	2	2	3	6
11-22 Mar 13	Hill AFB	halogeton	Krovar	1094		22.5	24,621	14	4	31	19.5
8-12 Apr 13	Parris Island MCRD	biting midges	Dibrom	6145			35	2	2	2.3	2
28 May-7 June 13	Williston (ACE)	mosquitoes	Vectobac	6,882		5	31,697	16	4	50.1	12.6
6-Jun	Grand Forks AFB	mosquitoes	Altosid	1,142		5	5,705	3	0	6.2	n/a
14-16 Jun 13	JB Charleston	saltmarsh mosquitoes	Trumpet	17,670	0.9		150	1	2	1.9	3.9
30-Jun-13	Minot AFB	mosquitoes	Trumpet	4,510	1.1		30	1	2	1.7	7
1-Jul-13	City of Minot	mosquitoes	Trumpet	9,578	1.1		86	1	0	1.8	0
2-Jul	Williston/Watford City	mosquitoes	Permanone 30 30	26,132	1.1		74	1	0	3.4	0
8-11 Jul	Grand Forks AFB	mosquitoes	Trumpet	11,500	1		86	1	2	1.6	7.1
15-19 Jul	Minot AFB / Williston	mosquitoes	no spray mx prob	0			0	0	2	0	7
22-26 Jul	Langley AFB	mosquitoes	Dibrom	7,680	0.5		30	1	2	1.8	3
30-Jul	Minot AFB	mosquitoes	Trumpet	4,530			24	1	2	1	6.9
31-Jul	City of Minot	mosquitoes	Trumpet	9,023	0.75		66	1	0	1.6	0
1-Aug	Williston/Watford City	mosquitoes	Permanone 30 30	32,838			92	1	0	2.9	0
5-7 Aug	Grand Forks AFB	mosquitoes	Trumpet	9,404	1		71	2	2	2.1	6
26-30 Aug	Langley AFB <sup>2</sup>	mosquitoes	Dibrom	29,154	0.5			3	3	3.2	3
3-6 Sep	JB Charleston	saltmarsh mosquitoes	Trumpet	17,860	0.85		120	1	2	2.7	4.4
17-27 Sep	Mountain Home AFB	cheat grass	Plateau	3,062		7	21,190	13	2	8.6	10.8
			<b>Totals</b>	<b>214,654</b>			<b>110,921</b>	<b>85</b>	<b>39</b>	<b>148.1</b>	<b>112.6</b>

+Training was accomplished on every mission listed above but not specifically noted in the text to minimize redundancy in this document

<sup>1</sup>Gallons sprayed include water used to dilute active ingredients

<sup>2</sup>All but 7,680 acres were part of an IRT not the AFB



Attachment 2

## FY 13 AERIAL SPRAY TESTS, DEMONSTRATIONS, EXERCISE MISSIONS, LOCAL, & TDY SPRAY TRAINING (1 Oct 12 - 30 Sep 13)

Date	Location	Target Pest	Chemical	Acres	oz/ acre	gal/ acre	Gal total <sup>1</sup>	Spray Sorties	Ferry Sorties	Spray Hours	Ferry Hours
12-Oct-12	Ravenna		water					1		1	
17-Oct-12	Parris Island MCRD	300' Testing for NVG						1		1.4	
18-Oct-12	Parris Island MCRD							1		1	
7-8 Nov 12	Smokey Hill ANGR		water					4		3	
18-Nov-12	Ravenna		water					1		1.4	
19-Nov-12	Ravenna		water					1		1.5	
12-Dec-12	Ravenna/Lake Erie		water					1		1.5	
13-Jan-13	Avon Park FL	DOD spray course						5	6	5.5	8.6
14-Jan-13	Ravenna/Lake Erie	spray refresher	water					2		2.8	
15-Jan-13	Ravenna/Lake Erie	spray refresher	water					2		2.7	
16-Jan-13	Ravenna/Lake Erie	spray refresher	water					1		1.5	
9-Apr-13	Parris Island MCRD	300' Testing for NVG	Dibrom	463			3	1		1.6	
20-May-13	Ravenna		water					1		1.4	
21-May-13	Ravenna		water					1		1.5	
29Jul -2 Aug	El Centro NAF	USDA test	Dibrom	790	0.5		8	2	2	3.8	13
			<b>Totals</b>	<b>1,253</b>			<b>11</b>	<b>25</b>	<b>8</b>	<b>31.6</b>	<b>21.6</b>

+ Events without ferry hours were conducted from home station or in conjunction with actual spray missions.



DEPARTMENT OF THE AIR FORCE  
AIR FORCE AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION

1 November 2014

MEMORANDUM FOR AFRC/A3OO

FROM: 757 AS/DOS

SUBJECT: FY 14 Aerial Spray Annual Report (1 Oct 13 – 30 Sep 14)

1. INTRODUCTION. Fiscal year 2014 was the 42<sup>st</sup> year of aerial spray operations as a Department of Defense (DoD) resource assigned to the US Air Force Reserve. The purpose of this mission is to provide aerial spray support to U.S. military forces worldwide as prescribed in DoD Instruction 4150.07, DoD Pest Management Program. Highlights of this year's aerial spray activities include:
  - a. Two aircraft and 3 crews were deployed in support of our AEF commitment in Southeast Asia during FY14 for approximately 120 days. This impacted aerial spray training and readiness by limiting the number of airframes and qualified members available to perform spray missions. Through volunteers, the unit was able to cover domestic spraying with training partners completing Innovative Readiness Training (IRT), invasive species mitigation, and vector control in operations occurred at all of these, except the Grand Forks location in FY14 (see attachment 1).
  - b. The Spray Unit was directed in September 2013 by AFRC to develop a night time aerial spray program to target late flying disease vectors (i.e., vectors of West Nile virus and malaria). Subsequently, the NVG spray training syllabus was completed and approved by AFRC/A3. The initial NVG spray trainer occurred on 8 Jul 2014. Actual pesticide applications are anticipated to begin in April, following winter training.
  - c. Further collaboration in FY14 with the USDA/ARS Center for Medical and Veterinary Entomology (CMAVE) looked at the use of military aerial assets to control *Aedes aegypti* resting in houses. Methods included caged mosquitoes inside structures that are part of an urban warfare training center at Camp Blanding Army National Guard, Florida. Current dogma contends aerial sprays are unable to reach mosquitoes indoors and the trials use new technologies such as the use of dispersion modeling to offset sprays to drift indoors. Initial results were promising and additional trials are scheduled for FY15. An evaluation of the performance of naled under adverse environmental conditions was cancelled by the host facility (Naval Air Facility, El Centro, CA) in late July because of other "high value" users on the range. Results will

be published in the scientific literature and findings implemented in pest control strategies to protect troop health.

- d. The 910<sup>th</sup> conducted its second annual aerial spray refresher from 24-28 February at MacDill AFB. Training consisted of both ground and flight training for over 65 aircrew, entomologists, and spray maintenance personnel. Seven practice sorties were flown; training in all aerial spray mission sets: vector control, herbicide, and oil spill response.
- e. Development of the new MASS continues. Source selection is anticipated by end of CY2014. Following the selection, the contractor will begin development on the first unit. Flight testing is anticipated during 2016.
- f. The Aerial Application of Pesticides Course taught in May at Youngstown Air Reserve Station Ohio. This course provided certification training in Aerial Application Pest Control (Category 11) as required by DoDI 4150.07 and is certified by the Environmental Protection Agency. Course Director, Lt Col (b) (6) reported 16 people attended the course. Nine attended for initial certification, and 7 for re-certification.
- g. The flying portion of a planned full-scale Pacific exercise with the US Coast Guard was cancelled in May when the C-130 fleet was grounded for bleed air problems. Spray expertise was still given to this exercise with 2 members working in the Incident Command Center (ICC) to handle simulated air operations. Consequently, this portion of the exercise dispersed oil in their sector in record time.
- h. Members from the Spray Unit answered solicitations consultations from (i) Bureau of Land Management, regarding the potential of controlling the fire hazard from medusa head rye in eastern Oregon; (ii) Department of Health, American Samoa regarding aerial adulticiding to control the dengue outbreak; (iii) Lawrence Livermore National Laboratories, regarding the development of a disaster scenario involving aerial sprays; (iv) 61st Preventive Medicine Detachment regarding military sprays to control mosquitoes and flies in Liberia; (v) East Baton Rouge Mosquito and Rodent Control and Salt Lake City Mosquito Control District regarding military sprays under the IRT program; (vi) provided support to the AFPMB with one member serving as Chair, Contingency Advisory Committee.
- i. During the summer the Aerial Spray Unit was visited by 2 high ranking officers who received briefings and familiarization flights. The AFRC/CC, Lt Gen (b) (6) visited in June while Maj Gen Hanson, AMC/DO, arrived in August.

Reports of individual missions may be obtained by contacting Lt Col (b) (6) at 757 AS/DOS, Youngstown Air Reserve Station, 3976 King Graves Road, Vienna OH 44473-5926; DSN (b) (6) ; Commercial (b) (6) .

## 2. MISSION ACCOMPLISHMENTS:

- a. A list of all missions accomplished in FY14 and their associated data is found in attachment 1. A list of all aerial spray tests, demonstrations, exercise missions, and locally generated spray training completed in FY14 is found in attachment 2.

## 3. CAPABILITIES OF THE AERIAL SPRAY MISSION:

- a. Aircraft. Four C-130H aircraft are modified to perform the aerial spray missions. Two additional aircraft are modified to accept the MASS but are not plumbed for wing booms, only fuselage booms.
- b. Spray Systems. Six Modular Aerial Spray Systems (MASS) were available.
- c. Global Positioning Systems (GPS). 11 Wingman GX Global Positioning Systems were available.

## 4. PERSONNEL INVOLVED WITH AERIAL SPRAY DURING FY14:

- a. Lt Col (b) (6) navigator, became Chief of the Aerial Spray Office.
- b. 910 AW personnel from the Maintenance Group deployed to support the aerial spray mission and accomplish training in FY14.

## 5. APPROVED AERIAL SPRAY PROJECTS (project location/pest):

- a. Army Corps of Engineers, Craney Island, VA. Mosquitoes
- b. Army Corps of Engineers, Williston, ND. Mosquitoes
- c. Barksdale AFB, LA. Mosquitoes
- d. Barry M. Goldwater Range, AZ. Sahara mustard
- e. Eglin Air Force Base, FL. Mosquitoes
- f. Ft. Eustis, VA. Mosquitoes
- g. Grand Forks Air Force Base, ND. Mosquitoes
- h. Homestead Air Reserve Base, FL. Mosquitoes
- i. Langley Air Force Base, VA. Mosquitoes
- j. Minot Air Force Base, ND. Mosquitoes
- k. Naval Submarine Base, Kings Bay, GA. Biting midges and mosquitoes

- l. Parris Island MCRD, SC. Biting Midges and mosquitoes
  - m. Saylor Creek Range, ID. Cheatgrass
  - n. Smoky Hill Air National Guard Range, Salina, KS. Musk thistle
  - o. Tyndall AFB, FL. Mosquitoes, biting midges, and dog flies
  - p. Utah Test and Training Range, Hill AFB UT. Halogeton
  - q. Yorktown Naval Weapons Station, Cheatham Annex, and Camp Peary, VA. Mosquitoes
6. INNOVATIVE READINESS TRAINING - APPROVED MISSIONS (location/pest)
- a. Grand Forks, ND. Mosquitoes.
  - b. Miami-Dade County, FL. Mosquitoes.
  - c. Hampton Roads, VA. Poquoson and York County. Mosquitoes.
  - d. Minot, ND. Mosquitoes.
  - b. Williston and Watford City, ND. Mosquitoes.

//SIGNED//  
**(b) (6)** Lt Col, USAFR  
Research Entomologist

Attachments  
1 & 2. Aerial Spray Statistics

Distribution via e-mail

Cc:  
AFRC/A3  
AFRC/HO  
AFRC/PA  
910 AW/PA  
910 AW/HO  
AFPMB

## Attachment 1.

## FY14 AERIAL SPRAY MISSIONS (1 OCT 13 – 30 SEP 14)

Date	Location	Target Pest	Chemical	Acres	oz/ acre	gal/ acre <sup>1</sup>	Gal total	Spray Sorties	Ferry Sorties	Spray Hours	Ferry Hours
22-25 OCT 13	PARRIS ISLAND, SC	MIDGES	DIBROM	6,534	0.75		40	1	3	1.9	4.8
4-15 NOV 13	SMOKEY HILL, KS	MUSK THISTLE	MILESTONE	3,415		7	23,904	17	2	20.9	6.1
10-21 MAR 14	UTTR (HILL AFB)	VEGETATION	KROVAR	1,396		22.5	29,294	19	4	26.1	19.9
31 MAR-2 APR 14	PARRIS ISLAND, SC	MIDGES	DIBROM	6,800	0.68		40	1	2	1.9	3.9
5-9 MAY 14	PARRIS ISLAND, SC	MIDGES	DIBROM	7,500	0.85		47	1	2	1.9	4
27 MAY-6 JUN 14	WILLISTON ACE	MOSQUITO LARVAE	VECTOBAC	4,184		5	20,357	12	2	20.4	7
1 JUNE 14	GRAND FORKS AFB	MOSQUITO LARVAE	ALTOSID	912		2	1,845	2	0	3.5	0
16-20 JUNE 14	MINOT <sup>2</sup>	MOSQUITOES	TRUMPET	5,813	0.9		41	1	2	1.2	6.9
24-27 JUN 14	JB CHARLESTON	MOSQUITOES	TRUMPET	17,980	0.85		120	1	2	1.3	3.9
30 JUN-3 JUL 14	GRAND FORKS AFB	MOSQUITOES	TRUMPET	11,625	1		90	1	2	1.3	6.2
14-18 JULY 14	MINOT <sup>2</sup>	MOSQUITOES	TRUMPET	25,947	0.9		210	3	1	3.3	3.8
17 JUL 14	WILLISTON WATFORD	MOSQUITOES	ZENIVEX	34,875	0.32		160	1	0	2.9	0
28 JUL-2 AUG 14	HOMESTEAD, ARB <sup>2</sup>	MOSQUITOES	DIBROM	30,000	0.5		120	2	2	4.3	7.2
25-29 AUG 14	HOMESTEAD, ARB <sup>2</sup>	MOSQUITOES	DIBROM	26,902	0.45		120	3	2	5.9	7.2
2-3 SEPT 14	CRANEY ISLAND	MOSQUITOES	DIBROM	7,837	0.5		45	1	2	1.2	2.9
6-8 SEPT 14	JB CHARLESTON	MOSQUITOES	TRUMPET	17,763	0.85		120	1	2	1.7	4
15-26 SEPT 14	MOUNTAIN HOME, ID	CHEAT GRASS	PLATEAU	2,927		7	19,793	11	2	10.2	11.9
			<b>TOTALS</b>	<b>212,410</b>			<b>96,346</b>	<b>78</b>	<b>32</b>	<b>109.9</b>	<b>99.7</b>

+Training was accomplished on every mission listed above but not specifically noted in the text to minimize redundancy in this document

<sup>1</sup>Gallons sprayed include water used to dilute active ingredients

<sup>2</sup>Portions of these applications were also community IRT sprays and not just the military installation

**FY14 AERIAL SPRAY TESTS, DEMONSTRATIONS,  
EXERCISE MISSIONS, LOCAL, & TDY SPRAY TRAINING  
(1 Oct 13 - 30 Sep 14)**

<b>Date</b>	<b>Location</b>	<b>Target Pest</b>	<b>Chemical</b>	<b>Acres</b>	<b>oz/ acre</b>	<b>gal/ acre</b>	<b>Gal total</b>	<b>Spray Sorties</b>	<b>Ferry Sorties</b>	<b>Spray Hours</b>	<b>Ferry Hours</b>
28 OCT-1 NOV	CAMP BLANDING, FL	USDA TEST	DIBROM	2,109	1	*	30	3	2	3.7	5.3
10-Feb-14	RAVENNA	NONE	NONE	0	*	*	*	1	0	0.7	0
24-28 FEB 14	AVON PARK, FL	NONE	WATER	0	*	*	*	7	4	14.9	11.6
13-May-14	RAVENNA	NONE	WATER	0	*	*	*	2	0	2.6	0
7-Jun-14	RAVENNA	GEN JACKSON FLT	NONE	0	*	*	*	1	0	0.7	0
24-Jun-14	RAVENNA	NONE	NONE	0	*	*	*	1	*	0.6	*
26-Jun-14	OVERWATER @ CHS	NONE	NONE	0	1	*	*	1	*	1.4	*
15-Aug-14	RAVENNA	GEN HANSON FLT	WATER	0	*	*	*	1	0	0.7	0
			<b>TOTALS</b>	<b>2,109</b>			<b>30</b>	<b>17</b>	<b>6</b>	<b>25.3</b>	<b>16.9</b>

+ Events without ferry hours were conducted from home station or in conjunction with actual spray missions.





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

1 November 2015

MEMORANDUM FOR AFRC/A300

FROM: 757 AS/DOS

SUBJECT: FY 15 Aerial Spray Annual Report (1 Oct 14 – 30 Sep 15)

1. INTRODUCTION. Fiscal year 2015 was the 42<sup>st</sup> year of aerial spray operations as a Department of Defense (DoD) resource assigned to the US Air Force Reserve. The purpose of this mission is to provide aerial spray support to U.S. military forces worldwide as prescribed in DoD Instruction 4150.07, DoD Pest Management Program. Highlights of this year's aerial spray activities include:
  - a. The Spray Unit was directed in September 2014 by AFRC to develop a night time aerial spray program that targets late flying disease vectors (i.e., West Nile virus and malaria). Following the development and approval of a Night Vision Goggle (NVG) spray training syllabus and initial training flights, the first actual NVG night application occurred on 8 April 2015. Since this first application, 5 additional treatments at two other military installations have occurred. Better than average control was recorded with some locations reporting some of the best control ever recorded. It is anticipated that nearly all adult mosquito control will be conducted at night as this new capability is developed over the next couple of years.
  - b. Development of the new Modular Aerial Spray System continues: An \$11.5 million contract for the development and delivery of a new MASS was signed in February by Battelle Memorial Institute in Columbus, OH. The company moved quickly with preliminary designs and forecasts for delivery as early as June 2016. However, as of the end of FY15, delays had occurred. Pending resolution of the issues by early in January 2016, the delivery and flight testing is anticipated during summer 2017.
  - c. Further collaboration in FY15 with the USDA/ARS Center for Medical and Veterinary Entomology (CMAVE) looked at the use of military aerial assets to control *Aedes aegypti* resting in houses. The domiciles are simulated by placing caged mosquitoes both inside and outside of structures at the Florida Army National Guard Urban Warfare Training Center at Camp Blanding. The objectives of this test were to determine the efficacy of aerially applied etofenprox (a synthetic pyrethroid) in such systems. After cancellation of an evaluation in FY14 at the Naval Air Facility, El

Centro, CA, the Spray Unit returned in late July 2015 to continue our efficacy evaluations in partnership with the USDA-CMAVE. This year Duet and Zenivex E20, which are commonly used pyrethroid-class pesticides in vector control operations, were evaluated. Applications were carried out over a 3 day period when ambient temperatures were between 88-106 °F. A series of tests were designed to evaluate the behavior of these pesticides when applied because of other “high value” users on the range. Results will be presented at professional meetings and published in peer reviewed scientific journals, while the findings will be implemented in pest control strategies to protect troop health.

- d. The 910th conducted its 3rd annual aerial spray refresher from 11-17 January at MacDill AFB. Training consisted of both ground and flight training for over 89 aircrew, entomologists, and spray maintenance personnel. Eleven training sorties were flown at the Avon Park AFR; training in all aerial spray mission sets: vector control, herbicide, and oil spill response. In addition, some night sorties using NVGs were also flown, although only water was sprayed.
- e. The Aerial Application of Pesticides Course taught in 4-8 May at Youngstown Air Reserve Station Ohio. This course provided certification training in Aerial Application Pest Control (Category 11) as required by DoDI 4150.07 and is certified by the Environmental Protection Agency. Course Director, Lt Col (b) (6) reported 13 people attended the course. Eleven attended for initial certification, and 2 for re-certification.
- f. The Spray Panel, initiated in Oct 2014 FY14 continued which is a multi-faceted group reviewing and making suggestions Aerial Spray Panel (ASP) is to enhance communication, coordination, and planning with respect to the aerial spray mission. One notable success of the ASP was to develop a procedure to effectively calibrate the current MASS. Since the adoption of these procedures, MASS calibration has been 100% successful.
- g. Members from the Spray Unit answered solicitations consultations from (i) Hill AFB office of Natural Resources regarding plans for cheatgrass sprays on the Utah Test and Training Range; subsequently, these new areas will likely be sprayed in the Fall of FY2016; (ii) Joint Base Elmendorf, AK requested input in developing an Environmental Assessment for mosquitoes, this could ultimately result in larvicide applications by the Spray Unit at a future date, depending on the success of the Base to convince outside parties that environmental concerns are minimal; (iii) Members consulted with personnel from the Airborne Icing Tanker Project from Edwards AFB, with the potential to use spray aircraft to generate ice plumes. After 6 months of discussions the project engineers determined that the MASS would not produce the proper cloud from the C-130 platform; (iv) Lt Col (b) (6) deployed with SOUTHCOM to support New Horizons Honduras in June 2015; (v) provided support to the American Mosquito Control Association with one member serving as Chair, Science & Technology Committee; (vi) provided support to the AFPMB with one member serving as Chair, Contingency Advisory Committee.

- h. The Aerial Spray Unit was visited by 2 DV general officers who received briefings and/or familiarization flights: the AMC/CC, Gen. McDew, and Maj Gen Harris, 22AF/CC, visited in 2015.
- i. Lt Col (b) (6) published a paper titled "Development of Air Force Aerial Spray Night Operations: High Altitude Swath Characterization" in the Army Medical Department Journal (July-Sept 2015). Other authors were Lt Col (b) (6), Dr. (b) (6), Dr. (b) (6), and Dr. (b) (6).

Reports of individual missions may be obtained by contacting Lt Col (b) (6) at 757 AS/DOS, Youngstown Air Reserve Station, 3976 King Graves Road, Vienna OH 44473-5926; DSN (b) (6) Commercial (b) (6).

## 2. MISSION ACCOMPLISHMENTS:

- a. A list of all missions accomplished in FY15 and their associated data is found in attachment 1. A list of all aerial spray tests, demonstrations, exercise missions, and locally generated spray training completed in FY15 is found in attachment 2.

## 3. CAPABILITIES OF THE AERIAL SPRAY MISSION:

- a. Aircraft. Four C-130H aircraft are modified to perform the aerial spray missions. Two additional aircraft are modified to accept the MASS but are not plumbed for wing booms, only fuselage booms.
- b. Spray Systems. Six Modular Aerial Spray Systems (MASS) were available.
- c. Global Positioning Systems (GPS). 11 Wingman GX Global Positioning Systems were available.

## 4. PERSONNEL INVOLVED WITH AERIAL SPRAY DURING FY15:

- a. Lt Col (b) (6), navigator, became Chief of the Aerial Spray Office. MSgt (b) (6) joined the Aerial Spray Office, as Load Master.
- b. 910 AW personnel from the Maintenance Group deployed to support the aerial spray mission and accomplish training in FY15.

## 5. APPROVED AERIAL SPRAY PROJECTS (project, location, pest):

- a. Army Corps of Engineers, Craney Island, VA. Mosquitoes
- b. Army Corps of Engineers, Williston, ND. Mosquitoes
- c. Barksdale AFB, LA. Mosquitoes
- d. Barry M. Goldwater Range, AZ. Sahara mustard
- e. Eglin Air Force Base, FL. Mosquitoes

- f. Ft. Eustis, VA. Mosquitoes
  - g. Grand Forks Air Force Base, ND. Mosquitoes
  - h. Homestead Air Reserve Base, FL. Mosquitoes
  - i. Langley Air Force Base, VA. Mosquitoes
  - j. Minot Air Force Base, ND. Mosquitoes
  - k. Naval Submarine Base, Kings Bay, GA. Biting midges and mosquitoes
  - l. Parris Island MCRD, SC. Biting Midges and mosquitoes
  - m. Saylor Creek Range, ID. Cheatgrass
  - n. Smoky Hill Air National Guard Range, Salina, KS. Musk thistle
  - o. Tyndall AFB, FL. Mosquitoes, biting midges, and dog flies
  - p. Utah Test and Training Range, Hill AFB UT. Halogeton
  - q. Yorktown Naval Weapons Station, Cheatham Annex, and Camp Peary, VA. Mosquitoes
6. INNOVATIVE READINESS TRAINING - APPROVED MISSIONS (location/pest)
- a. Grand Forks, ND. Mosquitoes.
  - b. Miami-Dade County, FL. Mosquitoes.
  - c. Poquoson, VA. Mosquitoes.
  - d. York County, VA. Mosquitoes.
  - e. Minot, ND. Mosquitoes.
  - f. Williston, ND. Including Watford City and Trenton. Mosquitoes.

//SIGNED//

(b) (6))

Research Entomologist

Lt Col, USAFR

Attachments

1 & 2. Aerial Spray Statistics

Distribution via e-mail

Cc:  
AFRC/A3  
AFRC/HO  
AFRC/PA  
910 AW/PA  
910 AW/HO  
AFPMB

## Attachment 1.

# FY 15 AERIAL SPRAY MISSIONS (1 OCT 14 – 30 SEP 15)

Date	Location	Target Pest	Chemical	Acres	oz/ acre	gal/ acre	Gal total <sup>1</sup>	Spray Sorties	Ferry Sorties	Spray Hours	Ferry Hours
6 - 10 Oct 2014	Parris Island MCRD,SC	Midges/mosquitoes	D brom	6,828	0.75	n/a	43	1	2	1.5	4
27 - 30 Oct 2014	Parris Island MCRD,SC	Midges/mosquitoes	D brom	8,000		n/a	49	1	2	2	4.2
23 - 27 Feb 2015	Luke AFB	Saharan Mustard	Cornerstone	227	n/a	10	1,950	3	2	3.4	11.5
10 - 19 March 2015	UTTR	Halogeton	Krovar	1,539	n/a	22.5	32,075	24	4	32.4	19.5
6 - 9 April 2015	Parris Island MCRD,SC	Midges/mosquitoes	D brom	6,851	0.9	n/a	53	2	2	4.3	4.1
17-18 April 2015	Charleston	Mosquito	Trumpet EC	0	0	0	0	0	2	0	4.2
20 - 23 April 2015	Parris Island MCRD,SC	Midges/mosquitoes	D brom	6,564	0.76	n/a	39	2	2	2.8	4.6
26 May - 5 June 2015	Williston	Mosquito Larvae	Vectobac	1,080	n/a	5	5,400	7	2	15.3	7.1
18 - 21 June 2015	Charleston	Mosquito	Trumpet EC	17,924	0.85	n/a	120	2	2	3	4.2
22 - 26 June 2015	Minot <sup>2</sup>	Mosquito	Trumpet EC	3,748	0.75	n/a	24	2	2	1.4	7.3
22 - 26 June 2015	Watford/Williston	Mosquito	Duet	26,400	1	n/a	165	1	0	2.9	0
29 June - 2 July 2015	Grand Forks	Mosquito	Trumpet EC	4,841	1	n/a	45	2	2	1.7	6.3
13-16 July 2015	Minot	Mosquito	Trumpet EC	13,203	0.75	n/a	75	2	2	2.5	7.3
24-29 July 2015	El Centro	Mosquito	Duet	2,635	1	n/a	21	2	1	3.8	7
24-29 July 2015	El Centro	Mosquito	Zenivex	2,450	0.6	n/a	20	1	1	2.8	6.3
3-6 August 2015	Langley AFB	Mosquito	Trumpet EC	11,960	0.9	n/a	90	1	2	2	2.8
17-21 August 2015	Minot2	Mosquito	Trumpet EC	22,500	0.75	n/a	130	1	2	2.1	6.8
17-21 August 2015	Watford/Williston	Mosquito	Duet	26,000	1.2	n/a	245	1	0	2.1	0
10-13 September 2015	Charleston	Mosquito	Trumpet EC	17,489	0.85	n/a	120	1	2	2.5	4
14-25 September 2015	Mountain Home AFB	Cheat Grass	Plateau	2,737	n/a	7	18,183	10	4	12	12.2
			<b>Totals</b>	<b>182,976</b>			<b>58,847</b>	<b>66</b>	<b>38</b>	<b>100.5</b>	<b>123.4</b>

+Training was accomplished on every mission listed above but not specifically noted in the text to minimize redundancy in this document

<sup>1</sup>Gallons sprayed include water used to dilute active ingredients

<sup>2</sup>Portions of these applications were also community IRT sprays



Attachment 2

## FY 15 AERIAL SPRAY TESTS, DEMONSTRATIONS, EXERCISE MISSIONS, LOCAL, & TDY SPRAY TRAINING (1 Oct 14 - 30 Sep 15)

Date	Location	Target Pest	Chemical	Acres	oz/ acre	gal/ acre	Gal total	Spray Sorties	Ferry Sorties	Spray Hours	Ferry Hours
8-Oct-14	Parris Island MCRD,SC	w/ USDA 300ft	Dibrom	2,109	1		11	1	0	2.5	0
29-Oct-14	Parris Island MCRD,SC	overwater	none	0	0	0	0	1	0	0.8	0
2-Nov-14	Ravenna	none	none	0	0	0	0	1	0	1.3	0
3-Nov-14	Ravenna	none	none	0	0	0	0	1	0	1.3	0
8-11 Dec 14	Camp Blanding / Avon Park	w/ USDA drift test	Zenivex	827			7.6	2	2	5.5	8.7
11-17 Jan 15	Avon Park	none	none	0	0	0	0	11	4	16.2	11.3
7-Feb-15	Ravenna	none	none	0	0	0	0	1	0	1.6	0
7-Feb-15	Ravenna AMC eval	none	none	0	0	0	0	1	0	1.2	0
8-Mar-15	Ravenna	none	none	0	0	0	0	1	0	2	0
6-May-15	Ravenna	none	none	0	0	0	0	1	0	2.3	0
27-May-15	Ravenna	none	none	0	0	0	0	1	0	1.6	0
28-May-15	Ravenna	none	none	0	0	0	0	1	0	1.5	0
29-May-15	Ravenna	none	none	0	0	0	0	1	0	2.3	0
3-Jun-15	Ravenna	none	none	0	0	0	0	1	0	1.5	0
4-Jun-15	Ravenna	none	none	0	0	0	0	1	0	1.4	0
8-Jun-15	Ravenna	none	none	0	0	0	0	1	0	0.7	0
9-Jun-15	Ravenna	none	none	0	0	0	0	1	0	0.7	0
					<b>Totals</b>		<b>7.6</b>	<b>27</b>	<b>6</b>	<b>41.9</b>	<b>20</b>

+ Events without ferry hours were conducted from home station or in conjunction with actual spray missions.





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

1 November 2017

MEMORANDUM FOR AFRC/A3OO

FROM: 757 AS/DOS

SUBJECT: FY 17 Aerial Spray Annual Report (1 Oct 16 – 30 Sep 17)

1. INTRODUCTION. Fiscal year 2017 was the 44<sup>th</sup> year of aerial spray operations as a Department of Defense (DoD) resource assigned to the US Air Force Reserve. The purpose of this mission is to provide aerial spray support to U.S. military forces worldwide as prescribed in DoD Instruction 4150.07, DoD Pest Management Program. Highlights of this year's aerial spray activities include:
  - a. On 8 September 2017, the 910th AW, the United States Air Force's (USAF) Aerial Spray Unit arrived in San Antonio, Texas to conduct large-area aerial spray operations for mosquito control in support of the Federal Emergency Management Agency (FEMA) and Texas Department of State Health Services (DSHS) Hurricane Harvey relief effort. Two C-130 aircraft equipped with Modified Aerial Spray Systems (MASS) and three crews were placed at Joint Base Kelly, Kelly Annex, Texas and flew the first mosquito control aerial spray sortie on the night of 9 September. On 12 September, an additional spray aircraft arrived with a fourth spray aircrew and beginning 13 September, three aircraft were available for aerial sprays. A total of 92 personnel from the 910th Airlift Wing were involved with the flying, entomology, maintenance, administrative support, communication support, and life support for this mission. The mission was complete on 21 September 2017 and the Spray Unit was released by FEMA and returned to Youngstown ARS, Ohio on 23 September after treating a total of 2.7 million acres. This was a Unit record for maximum acres sprayed in shortest period of time and was a result of the development of the night operations capability and excellent aircraft performance (minimal maintenance issues).
  - b. Development of the new Modular Aerial Spray System continues: An \$11.5 million contract for the development and delivery of a new MASS was signed in February 2016 by Battelle Memorial Institute in Columbus, OH. Battelle has since renegotiated on some costs and deliverables. The "critical design review" (CDR) has been partially met and the test plan is in good shape having been discussed at a face to face meeting at Robins AFB in July and at length on various teleconferences since. The current optimistic forecast for the new MASS delivery is December 2018.

- c. The 910th conducted the 5th Annual Aerial Spray Refresher from 6-17 March at Hill AFB and was carried out in tandem with the actual invasive weed control mission on the Utah Test and Training Range (UTTR). Training consisted of both ground and flight training for over 70 aircrew, entomologists, and spray maintenance personnel. Training sorties using water were flown at UTTR over several days. In addition, ground training was accomplished in the classroom, on the ramp, and also on the UTTR. In addition visitors from AMC and 22<sup>nd</sup> AF received familiarization with the spray mission, flew sorties, and provided constructive feedback during this timeframe.
- d. The Aerial Application of Pesticides Course was taught 8-12 May at Youngstown Air Reserve Station OH. This course provided certification training in Aerial Application Pest Control (Category 11) as required by DoDI 4150.07 and is certified by the Environmental Protection Agency. Course Director, Lt Col (b) (6) reported 17 members attended the course from the Air Force, Army and Navy. Nine for initial certification and 8 for re-certification. The 910<sup>th</sup> supported the course with 18 staff members for teaching and flying purposes.
- e. Members from the Spray Unit answered consultations from various local, State, and federal agencies regarding vector ecology and aerial spraying. Lt Col (b) (6) and Maj (b) (6) participated in a Subject Matter Expert Exchange with the Peruvian Air Force Surgeon General Section in Lima Peru, sponsored by the 12AF/SG, speaking on the Air Force Aerial Spray capability. The Peruvians were interested and have started a dialogue with their state partners the West Virginia National Guard about developing this capability.

Reports of individual missions may be obtained by contacting Lt Col (b) (6) at 757 AS/DOS, Youngstown Air Reserve Station, 3976 King Graves Road, Vienna OH 44473-5926; DSN (b) (6) ; Commercial (b) (6) .

## 2. MISSION ACCOMPLISHMENTS:

- a. A list of all missions accomplished in FY17 and their associated data is found in attachment 1. A list of all aerial spray tests, demonstrations, exercise missions, and locally generated spray training completed in FY17 is found in attachment 2. Attachment 3 shows the flights used to support aerial spray operations.

## 3. CAPABILITIES OF THE AERIAL SPRAY MISSION:

- a. Aircraft. Four C-130H aircraft are modified to perform the aerial spray missions. Two additional aircraft are modified to accept the MASS but are not plumbed for wing booms, only fuselage booms.
- b. Spray Systems. Six Modular Aerial Spray Systems (MASS) were available.
- c. Global Positioning Systems (GPS). 10 Wingman GX Global Positioning Systems were available.

4. PERSONNEL INVOLVED WITH AERIAL SPRAY DURING FY17:

- a. Capt (b) (6) and MSgt (b) (6) joined the Aerial Spray Office as Spray Pilot and Spray Operator (Loadmaster), respectively. The Aerial Spray Maintenance Flight added TSgt (b) (6), TSgt (b) (6), and TSgt (b) (6) as MASS specialists.
- b. 910 AW personnel from Operations Group, Maintenance Group, Public Affairs, Communications, and Installation Personnel Readiness deployed to support the aerial spray mission and accomplish training in FY17.

5. APPROVED AERIAL SPRAY PROJECTS (project, location, pest):

- a. Army Corps of Engineers, Craney Island, VA. Mosquitoes
- b. Army Corps of Engineers, Williston, ND. Mosquitoes
- c. Barksdale AFB, LA. Mosquitoes
- d. Barry M. Goldwater Range, AZ. Sahara mustard
- e. Eglin Air Force Base, FL. Mosquitoes
- f. Ft. Eustis, VA. Mosquitoes
- g. Grand Forks Air Force Base, ND. Mosquitoes
- h. Homestead Air Reserve Base, FL. Mosquitoes
- i. Langley Air Force Base, VA. Mosquitoes
- j. Minot Air Force Base, ND. Mosquitoes
- k. Naval Submarine Base, Kings Bay, GA. Biting midges and mosquitoes
- l. MCRD Parris Island, SC. Biting Midges and mosquitoes
- m. Saylor Creek Range, ID. Cheat grass
- n. Smoky Hill Air National Guard Range, Salina, KS. Musk thistle
- o. Tyndall AFB, FL. Mosquitoes, biting midges, and dog flies
- p. Utah Test and Training Range, Hill AFB UT. Halogeton
- q. Utah Test and Training Range, Hill AFB UT. Cheat grass control/fire breaks
- r. Naval Weapons Station Yorktown, Cheatham Annex, and Camp Peary, VA. Mosquitoes

6. INNOVATIVE READINESS TRAINING - APPROVED MISSIONS (location/pest)

- a. Grand Forks, ND. Mosquitoes.
- b. Minot, ND. Mosquitoes.
- c. Williston, ND. Including Watford City and Trenton. Mosquitoes.

//SIGNED//

(b) (6))

Research Entomologist

Lt Col, USAF

Attachments

- 1. Aerial Spray Statistics

Distribution via e-mail

Cc: Aerial Spray Distribution List

Attachment 1.

## FY 17 AERIAL SPRAY MISSIONS (1 OCT 16 – 30 SEP 17)

FY17 Spray Missions															
	Date	Location	Target Pest	Chemical	Acres	oz/ acre	gal/ acre	Gal of pesticide	Gal total <sup>1</sup>	Spray Sorties	Ferry Sorties	Support Sorties	Total Sorties	Ferry Hours	Spray Hours
1	3-5 Oct 16	Parris Island MCRD, SC	Midges/mosquitoes	Dibrom	0	0	0	0	0	0	2	0	2	4	0
2	24-29 Oct 16	Smoky Hill ANGR, KS	Musk thistle	Milestone	1,963	n/a	6.85	76.2	13,440	8	2	3	13	4	7.6
3	22-27 Jan 17	Camp Blanding, FL	Testing	VectoBac	286	n/a	0.24	100 lbs	71	2	2	0	4	5.0	6.4
4	6-17 Mar 17	Hill UTTR, UT	Halogeton	Krovar	1,522	n/a	22.5	15,775 lbs	31,690	31	6	2	39	29.2	51.1
5	17-21 Apr 17	Parris Island MCRD, SC/Kings Bay, GA	Midges/mosquitoes	Dibrom	18,093	.89/ 83	n/a	120	120	2	2	0	4	4.2	4.7
6	2-5 May 17	Parris Island MCRD, SC	Midges/mosquitoes	Dibrom	5,610	0.94	n/a	41	41	1	2	0	3	4.4	1.8
8	3-7 June 17	Grand Forks AFB	Mosquito/Larvicide	Altosid	1,819	0.93	2.5	13.2	4,500	5	2	0	7	6.6	6.1
9	12-21 June 17	Williston, ND (ACE)	Mosquito/Larvicide	VectoBac	2,714	n/a	5	679	13,336	7	2	2	11	7.6	13
10	22-25 June 17	Charleston, SC	Nuisance/Vector Salt Marsh Mosquito	Trumpet	16,341	0.89	n/a	115	115	1	2	2	5	4	2.3
12	17-21 July 17	Minot/Williston, ND <sup>2</sup>	Adult Mosquito	Trumpet	26,053	0.97	n/a	199	199	1	2	2	5	7.4	2.8
13	31 July - 3 Aug 17	Langley, VA/Craney Island, VA	Adult Mosquito	Trumpet	12,461	0.89	n/a	90	90	2	2	0	4	2.9	3.6
14	14-19 Aug 17	El Centro, CA	Testing	Aqua Zenivex/Altosid	1,440	0.83	n/a	127	127	4	3	0	7	14.6	4.6
19	8-23 Sept 17	Hurricane Harvey Relief, TX	Adult Mosquito	Dibrom	2,696,056	0.69	n/a	14,579	14,579	28	4	4	36	16.8	138.6
Totals					2,784,358				78,308	92	33	15	140	110.7	242.6

+Training was accomplished on every mission listed above but not specifically noted in the text to minimize redundancy in this document

<sup>1</sup>Gallons sprayed include water used to dilute active ingredients

<sup>2</sup>Portions of these applications were also community IRT sprays





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND**

29 Jan 2021

MEMORANDUM FOR AFRC/A300

FROM: 757 AS/DOS  
3976 King Graves Road Unit 24  
Vienna OH 44473-5924

SUBJECT: FY20 Aerial Spray Annual Report (1 Oct 19 – 30 Sep 20)

1. INTRODUCTION. Fiscal year 2020 was the 47<sup>th</sup> year of aerial spray operations as a Department of Defense (DoD) resource assigned to the US Air Force Reserve. The purpose of this mission is to provide aerial spray support to U.S. military forces worldwide as prescribed in DoD Instruction 4150.07, DoD Pest Management Program. Highlights of this year's aerial spray activities include:
  - a. COVID-19 and subsequent restrictions severely impacted the ability of the squadron to meet routine aerial spray missions. Five missions scheduled from mid-March to mid-June were effectively cancelled. The 9-20 March Hill/UTTR mission was cancelled by the user (Hill AFB). The remainder cancelled for Covid-19 were cancelled by local direction. (Attachment 1). This halved our effective spray season. Training was significantly impacted with respect to aircrew currency for the remaining missions in FY20.
  - b. The 910 OG/CC Aerial Spray Panel meeting occurred only in November and March FY20 (Normally meets quarterly).
  - c. The new Modular Aerial Spray System (MASS) was completed and delivered on-site late September 2020. Initial sign-off test appeared to be favorable. However, the Technical Orders (T.O.s) delivered by Battelle regarding the system were 80% unacceptable per the contracting office. Thus, no further movement has transpired on adopting the new MASS system for operational use. Currently, there are negotiations in progress regarding the acceptance of aforementioned T.O.s between the contracting office and the manufacturer (Battelle). Our expectation is to get the new MASS in operation sometime in FY21, but that remains to be seen.
  - d. The Spray Unit is still awaiting some resolution on a contract for a new off-the-shelf Differential GPS suitable for supporting aerial spray applications and submitted findings and recommendation of a specific GPS system to the AFRC C130 System Program Office (SPO) during the final quarter of FY18. Statement of work was submitted, but for some reason the contracting office felt it was unacceptable. Work had resumed to draft a new statement of work and contract, but the COVID situation essentially relegated that concept too far down the list of priorities. Meanwhile, the aerial spray unit continues to use the antiquated and unsupportable current GPS system. Emergency hurricane response in early FY21 demonstrated that the status of the current system is at the end of its service life, and the current GPS resources are stretched thin, almost to being a severe limiting factor on mission capability.

- e. The Spray Unit began a cheat grass control/fire break project on the Utah Test and Training Range (UTTR), UT in October 2017. The success of aerial application methods in controlling the exotic invasive weed, cheat grass, and the subsequent recovery of native vegetation, continues to be a prospect for additional training opportunities. The value of fire prevention on the ranges is proving to be invaluable. The Spray Unit expanded UTTR cheatgrass program to include U.S. Army's Dugway Proving Grounds on an experimental basis in FY20. Based on reported success in achieving goals of fire suppression and habitat restoration, the Dugway project expanded greatly in FY21. Reports from Hill AFB in spring of 2019 indicated excellent control and all parties are in favor of extending the project beyond the original 3-year period, if funding can be obtained.
- f. The Aerial Application of Pesticides Course was cancelled this year in light of DoD-wide general restriction of movement due to COVID-19. This is the first time in over 20 years that Cat 11 certification was not conducted on an annual basis.

All students who had signed up for the proposed 4-6 May 2020 course were granted 1-2 year extensions by their respective certifying officials on their Category 11 certification renewal. The next Aerial Application of Pesticides Course is scheduled for 3-6 May 2021.

- g. Members from the Spray Unit answered consultations from various local, state, and federal agencies regarding vector ecology and aerial spraying. Lt Col (b) (6) and Lt Col (b) (6) have worked to develop a community based Innovative Readiness Program in conjunction with Salt Lake City mosquito abatement department to develop (and test) aerial applications of pesticide in the greater SLC area. As of this writing, SLC has drafted one of the principle legal documents necessary to make this happen. Lt Col (b) (6) is continuing to work with SLC mosquito abatement to potential make application possible in FY21.
- h. One area of interest that the Spray Unit continues to focus on will be the further development of the technique for ultra-low volume sprays of mosquito larvicides to control container breeding mosquitoes, and in particular, *Aedes aegypti*, the vector of Zika virus, Dengue virus, Yellow fever virus, and the like. This developing technique, which targets the immature stage of the mosquito, uses the MASS wing booms configuration or rotary atomizers (new MASS capability) and flow rates which have not been part of traditional mosquito control. The method was part of the response recommended by the CDC and the Air Force during Zika virus outbreaks in Miami, FL in 2016 and has been a focus of develop for several years before that. The Spray Unit is still refining the technique by conducting configuration tests with water and with larvicide on federal property before moving to the next step of integrating the method with an innovative readiness training project or a DoD project. The next test will be conducted in February 2021. Unfortunately, as mentioned previously, the new MASS with rotary atomizer capability will not be available at this time.

## 2. MISSION ACCOMPLISHMENTS:

A list of all missions accomplished in FY20 (training, actuals, and aerial spray research/assessments if appropriate) and their associated data is found in attachment 1. Reports detailing these individual missions may be obtained by contacting Lt Col (b) (6) at 757 AS/DOS, Youngstown Air Reserve Station, 3976 King Graves Road, Vienna OH 44473-5926; DSN (b) (6) ; Commercial (b) (6) .



### 3. CAPABILITIES OF THE AERIAL SPRAY MISSION:

- a. Aircraft: All eight C-130H aircraft assigned to the 910<sup>th</sup> are now modified to perform the aerial spray mission. Seven aircraft are capable of spraying from fuselage booms only. One aircraft is configured to utilize both wing and fuselage spray booms
- b. Spray Systems: Six Modular Aerial Spray Systems (MASS) were available.
- c. Global Positioning Systems (GPS): Eight Wingman GX Global Positioning Systems were available.

### 4. PERSONNEL INVOLVED WITH AERIAL SPRAY DURING FY19:

- a. Maj (b) (6) was designated as acting Chief of Spray, replacing Maj (b) (6).  
SMSgt (b) (6) as Spray Maintenance Superintendent, replacing SMSgt (b) (6).  
Lt Col (b) (6) replaced Lt Col (b) (6) as Aerial Spray Lead Entomologist.
- b. 910 AW personnel from Operations Group, Maintenance Group, Public Affairs, Communications, and Installation Personnel Readiness deployed to support the aerial spray mission and accomplish training in FY20.

### 5. APPROVED AERIAL SPRAY PROJECTS (project, location, pest):

- a. Army Corps of Engineers, Craney Island, VA. Mosquitoes
- b. Army Corps of Engineers, Williston, ND. Mosquitoes
- c. Barksdale AFB, LA. Mosquitoes (never utilized)
- d. Barry M. Goldwater Range, AZ. Sahara mustard (last application FY15)
- e. Dugway Army Proving Grounds, UT. Cheat grass control/fire breaks
- f. Eglin Air Force Base, FL. Mosquitoes (not regularly utilized)
- g. Ft. Eustis, VA. Mosquitoes (not regularly utilized, currently in NEPA re-write)
- h. Grand Forks Air Force Base, ND. Mosquitoes
- i. Homestead Air Reserve Base, FL. Mosquitoes
- j. Joint Base Charleston, SC. Mosquitoes
- k. Langley Air Force Base, VA. Mosquitoes
- l. Minot Air Force Base, ND. Mosquitoes
- m. Naval Submarine Base, Kings Bay, GA. Biting midges and mosquitoes
- n. Parris Island MCRD, SC. Biting Midges and mosquitoes
- o. Saylor Creek Range, ID. Cheat grass
- p. Smoky Hill Air National Guard Range, Salina, KS. Musk thistle
- q. Tyndall AFB, FL. Mosquitoes, biting midges, and dog flies

- r. Utah Test and Training Range, Hill AFB UT. Halogeton
  - s. Utah Test and Training Range, Hill AFB UT. Cheat grass control/fire breaks
  - t. Yorktown Naval Weapons Station, Cheatham Annex, and Camp Peary, VA. Mosquitoes (not regularly utilized)
6. INNOVATIVE READINESS TRAINING - APPROVED MISSIONS (location/pest)
- a. Grand Forks, ND. Mosquitoes. (not used in FY20)
  - b. Miami-Dade County, FL. Mosquitoes. (not used in FY20)
  - c. Minot, ND. Mosquitoes.
  - d. Williston, ND. Including Watford City and Trenton. Mosquitoes.

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Lt Col (b) (6) Ph.D, USAFR  
Chief Entomologist, 910 AS/DOS

Attachment1: Aerial Spray Statistics

cc: Distribution via e-mail  
AFRC/A3  
AFRC/HO  
AFRC/PA  
910 AW/PA  
AFPMB

# FY 20 AERIAL SPRAY MISSIONS (1 OCT 19 – 30 SEP 20)

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**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND**

4 December 2021

MEMORANDUM FOR AFRC/A3OO

FROM: 757 AS/DOS  
3976 King Graves Road Unit 24  
Vienna OH 44473-5924

SUBJECT: FY21Aerial Spray Annual Report (1 Oct 20 – 30 Sep 21)

1. INTRODUCTION. Fiscal year 2021 was the 47<sup>th</sup> year of aerial spray operations as a Department of Defense (DoD) resource currently assigned to the US Air Force Reserve. The purpose of this mission is to provide aerial spray support to U.S. military forces worldwide as prescribed in DoD Instruction 4150.07, DoD Pest Management Program. Highlights of this year's aerial spray activities include:
  - a. FY 2021 aerial spray missions had more latitude and completion records than FY 2020. One of the biggest hindrances to scheduled aerial spray missions was lack of appropriate funding due to budgetary shortfalls which were essentially a result of COVID crisis stemming from FY 2020. In short, 910 AW completed 13 of 17 scheduled aerial spray missions for effect and training in FY 2021. This of course was a remarkable increase from FY 2020, and should be applauded, although a significant (metric) amount overall was contributed by deployment for Hurricane Delta relief. Four missions scheduled from mid-June to mid-September were cancelled, mostly at the behest of the customer, due to lack of pest populations to justify the cost of the event(s). Overall, the general success ratio was quite positive. FY 2021 by all accounts was a good year with respect to accomplishment and local training. Overall 1,050,272 acres were effectively treated, using 34,806 gallons of material and 278.8 flying hours including actual spray and ferry sorties. Attachment 1 contains the specifics of individual mission accomplishments.
  - b. Hurricane Delta: Hurricane Delta was a culmination of 3 significant weather events enveloping the Louisiana area. The 910 AW was alerted late September with respect to potential for local needs. LA State entomologist indicated that local resources were stretched thin based on multiple weather strikes on SW and Central LA, and the need for mosquito/vector control. Subsequently, the state of LA declared an emergency and involved FEMA and local DSCA representatives. Subsequent activity from 910 AW spray unit was deployment of 2 spray aircraft and a spare aircraft to Barksdale AFB to support mosquito control efforts not available to local parishes (jurisdictions). Ultimate outcome was pest control application to 906+ thousand acres in Southern and central Louisiana at behest of LA governor's office and FEMA/DSCA authorities.
  - c. The new Modular Aerial Spray System (MASS) developed and delivered remains a functional "hangar queen/paper-weight" due to ongoing contract difficulties between SPO/contracting and manufacturer (Battelle). Our current expectation is to get the new MASS in operation and tested sometime in FY 2022, but that remains to be seen. This circumstance is from our (910 AW) perspective unacceptable, but unfortunately we are bound by contractual limitations, most of which are not in the AF favor.

- d. The Spray Unit is **STILL** awaiting some resolution on a functional Statement of Work and subsequent contract for a new off-the-shelf Differential GPS. Appropriate system was fully identified in FY 2018 with reasonable expectations that the issue would be resolved in an equally reasonable timeframe. Iterations of requirements from SPO/Contracting office stymied every suitable avenue for acceptable contract or resolution. Naturally, the COVID crisis was a reasonable short-term factor (excuse) for doing nothing. In theory, work has resumed to draft a new statement of work and contract. We do not hold our collective breath(s). Meanwhile, the aerial spray unit continues to use the antiquated and largely unsupportable current GPS system. Emergency hurricane response in early FY 2021 demonstrated that the status of the current system is at the end of its service life, and current GPS resources are stretched thin, almost to being a severe limiting factor on mission capability.
- e. The Spray Unit began a cheat grass control/fire break project on the Utah Test and Training Range (UTTR), UT in October 2017. The success of aerial application methods in controlling the exotic invasive weed, cheat grass, and the subsequent recovery of native vegetation, continues to be a prospect for additional training opportunities. The value of fire prevention on the ranges is proving to be invaluable. The Spray Unit expanded UTTR cheatgrass program to include U.S. Army's Dugway Proving Grounds on an experimental basis in FY 2020. Based on reported success in achieving goals of fire suppression and habitat restoration, the Dugway project expanded in FY 2021. Reports from Hill AFB/Dugway PG in spring of 2020 indicated excellent control and all parties are in favor of extending the project well beyond the original 3-year period, if appropriate funding can be obtained/maintained.
- f. The Aerial Application of Pesticides Course was successfully completed 3-6 May 2021. This initiative was in response to FY 2020 cancellation due to COVID restrictions and lack of necessary training for DoD/EPA Category 11 (aerial spray) for DoD personnel as a result. Although authorization for activities and subsequent details were somewhat torturous (COVID restrictions), local command stepped and approved this training to proceed. In addition, the Civilian component of the 910 AW (CAC, Lodging, COM, and PAX) provided outstanding support. In addition to didactic activities, a "real world" field test was conducted, as well as a realistic local orientation flight for participants. Nineteen DoD personnel attended for certification; 9 were for initial certification, and 10 were for recertification. Next scheduled Cat 11 (aerial spray) training activity is scheduled for 9-14 January 2022 in St. Augustine FL, in conjunction with the annual Florida Mosquito Control Association (FMCA) annual Fly-In.
- g. Members from the Spray Unit answered consultations from various local, state, and federal agencies regarding vector ecology and aerial spraying. Lt Col (b) (6) and Lt Col (b) (6) have worked have worked to develop a community based Innovative Readiness Program in conjunction with Salt Lake City (SLC) mosquito abatement department to develop (and test) aerial applications of pesticide in the greater SLC area. As of this writing, SLC had drafted one of the principle legal documents necessary to make this happen. However, a significant public backlash based on a private individual and his/hers adamant refusal of the concept in local media made the 2021 IRT concept unpalatable to SLC mosquito control authorities. SLC will readdress these issues if future, with general expectation that this project may be incorporated into IRT framework. In interim, 910 AW has been approached by pest management professional at Selfridge ANG with concept of spraying airfield for control of vegetation and related pests that are of significant importance to BASH at same airfield. We (910 AW) remain open to the initiative provided all regulatory requirements are fulfilled.

- h. One area of interest that the Spray Unit continues to focus on will be the further development of the technique for ultra-low volume sprays of mosquito larvicides to control container breeding mosquitoes, and in particular, *Aedes aegypti*, the vector of Zika virus, Dengue virus, Yellow fever virus, and the like. This developing technique, which targets the immature stage of the mosquito, uses the MASS wing booms configuration or rotary atomizers (new MASS capability) and flow rates which have not been part of traditional mosquito control. The method was part of the response recommended by the CDC and the Air Force during Zika virus outbreaks in Miami, FL in 2016 and had been a focus of development for several years before that. The Spray Unit is still refining the technique by conducting configuration tests with water and with larvicide on federal property before moving to the next step of integrating the method with an innovative readiness training project or a DoD project. In conjunction, a DWFP grant has been applied for from private contractor with tacit approval of AFPMB and subsidiary organizations. Current status is that 910 AW will provide potential assistance with understanding that all testing activities will be conducted within our standard testing/training parameters.

## 2. MISSION ACCOMPLISHMENTS:

A list of all missions accomplished in FY 2021 (training, actuals, and aerial spray research/assessments if appropriate) and their associated data is found in attachments 1. Reports detailing these individual missions may be obtained by contacting Lt Col (b) (6) at 757 AS/DOS, Youngstown Air Reserve Station, 3976 King Graves Road, Vienna OH 44473-5926; DSN (b) (6)(b) (6) Commercial (b) (6)

## 3. CAPABILITIES OF THE AERIAL SPRAY MISSION:

- a. Aircraft: All eight C-130H aircraft assigned to the 910<sup>th</sup> are modified to perform the aerial spray mission. Seven aircraft are capable of spraying from fuselage booms only.
- b. Spray Systems: Six Modular Aerial Spray Systems (MASS) were available. Updated spray system unavailable due to contractual/TO obligations.
- c. Global Positioning Systems (GPS): Seven Wingman GX Global Positioning Systems were available.

## 4. PERSONNEL INVOLVED WITH AERIAL SPRAY DURING FY21:

- a. No significant changes from FY 2020, save for (b) (6) (Aerial Spray MXS), will eventually be replaced by SMSgt (b) (6) (b) (6) pending hiring unfreeze. Lt Col (b) (6) is Chief of Aerial Spray. Lt Col (b) (6) remains Aerial Spray Lead Entomologist. All initial queries regarding aerial spray can be accomplished with contact with aforementioned individuals.

## 5. APPROVED AERIAL SPRAY PROJECTS (project, location, pest):

- a. Army Corps of Engineers, Craney Island, VA. Mosquitoes
- b. Army Corps of Engineers, Williston, ND. Mosquitoes
- c. Barksdale AFB, LA. Mosquitoes (never utilized)
- d. Barry M. Goldwater Range, AZ. Sahara mustard (last application FY15)

- e. Dugway Army Proving Grounds, UT. Cheat grass control/fire breaks
  - f. Eglin Air Force Base, FL. Mosquitoes (not regularly utilized)
  - g. Ft. Eustis, VA. Mosquitoes (not regularly utilized, currently in NEPA re-write)
  - h. Grand Forks Air Force Base, ND. Mosquitoes
  - i. Homestead Air Reserve Base, FL. Mosquitoes
  - j. Joint Base Charleston, SC. Mosquitoes
  - k. Langley Air Force Base, VA. Mosquitoes
  - l. Minot Air Force Base, ND. Mosquitoes
  - m. Naval Submarine Base, Kings Bay, GA. Biting midges and mosquitoes
  - n. Parris Island MCRD, SC. Biting Midges and mosquitoes
  - o. Saylor Creek Range, ID. Cheat grass
  - p. Smoky Hill Air National Guard Range, Salina, KS. Musk thistle
  - q. Tyndall AFB, FL. Mosquitoes, biting midges, and dog flies
  - r. Utah Test and Training Range, Hill AFB UT. Halogeton
  - s. Utah Test and Training Range, Hill AFB UT. Cheat grass control/fire breaks
  - t. Yorktown Naval Weapons Station, Cheatham Annex, and Camp Peary, VA. Mosquitoes (not regularly utilized)
6. INNOVATIVE READINESS TRAINING - APPROVED MISSIONS (location/pest)
- a. Grand Forks, ND. Mosquitoes. (not used in FY21)
  - b. Miami-Dade County, FL. Mosquitoes. (not used in FY21)
  - c. Minot, ND. Mosquitoes.
  - d. Williston, ND. Including Watford City and Trenton. Mosquitoes.

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Ph.D, Lt Col, USAF  
Chief Entomologist, 757 AS/DOS



Attachment 1: Aerial Spray Statistics

cc: Distribution via e-mail

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AFRC/HO

AFRC/PA

910 AW/PA

AFPMB

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**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND**

4 November 2022

MEMORANDUM FOR AFRC/A3OO

FROM: 757 AS/DOS  
3976 King Graves Road Unit 24  
Vienna OH 44473-5924

SUBJECT: FY22Aerial Spray Annual Report (1 Oct 21 – 30 Sep 22)

1. INTRODUCTION. Fiscal year 2022 was the 48<sup>th</sup> year of aerial spray operations as a Department of Defense (DoD) resource currently assigned to the US Air Force Reserve. The purpose of this mission is to provide aerial spray support to U.S. military forces worldwide, and CONUS civilian organizations through DSCA and training initiatives as prescribed in DoD Instruction 4150.07, DoD Pest Management Program. Highlights of this year's aerial spray activities include:
  - a. FY 2022 aerial spray missions: One of the biggest hindrances to scheduled aerial spray missions was lack of appropriate funding due to budgetary shortfalls, lack of proper NEPA documentation, as well as functional incapability (MXS) at end of FY22. In short, 910 AW completed 12 of 16 scheduled aerial spray missions for effect and training in FY 2022 (Attachment 1). An additional factor at tail end of FY 2022 was a significant safety of flight issue with MXS issues regarding propellor hub depot maintenance, which overall shut down C-130 H2 model operations, resulting in incompleteness of Sept 22 Mt Home spray mission. One spray aircraft is still parked on ramp at MHAFB based on safety grounding. Despite MXS/OPS standdown, the general success ratio was quite positive. FY 2022 by all accounts was reasonable with respect to accomplishment and local training. Overall 165,018 acres were effectively treated, using 51,939 gallons of material (neat and diluted). Total amount of concentrated Active ingredient (manufacturer formulations) was 1475 gallons. Overall, a total of 241.3 flying hours for FY 22 spray mission, with components 69.6 spray hours, 90.8 ferry hours, and 80.9 support hours. Required training was achieved, despite cancellations and safety standdown. Attachment 1 contains the specifics of individual mission accomplishments.
  - b. **Cancellations:** As depicted in Attachment 1, there were spray cancellations in FY 22 schedule. Cancellation for JB Charleston (9-11 May) was at users behest, as there were no significant populations of target pests available to treat. Larvicide application cancellation at Williston ACE/Grand Forks were multifactorial. As mentioned previously, NEPA documentation was found to be lacking in certification, and drought conditions in ND area precluded need to apply larvicide based on user larval mosquito population sampling and predictions. NEPA and IRT requirements have been rectified with respect to legal requirements to spray at those locales, but drought conditions and subsequent mosquito populations are well beyond the purview of this office, and we concurred with local Pest Management Professional recommendation regarding need. 910AW concurred with those recommendations. An additional cancellation was incurred on 8-12 Minot mission. Original concept was to include City of Williston ND (IRT approved) for a mosquito adulticide application as adjunct to Minot AFB/City of Minot application. However, a bird strike and subsequent MXS issues precluded completion of

application. Mission cancellations at Camp Blanding in Jan and Feb 2022 occurred because there was an expectation of new EMASS being on-line at that time for testing, which obviously was not manifested considering the current sign-off scenario explained in following point.

- c. The new Modular Aerial Spray System (EMASS) developed and delivered currently remains flight incapable due to pending sign-off by SPO and Warrner-Robins test center. Expectation for flight sign-off anticipated mid-December 2022. On a positive note, 910AW is capable to conducting ground (static) tests with various configurations. 910 AW personnel are using latent time to investigate output and stability of the system to anticipate application of new EMASS system in 2023.
- d. The Aerial Spray Unit has achieved some resolution on a functional Statement of Work and subsequent contract for a new off-the-shelf Differential GPS to replace rapidly obsolete previous GPS system. Appropriate system (Ag-Nav) was fully identified in FY 2018 with reasonable expectations that the issue would be resolved in an equally reasonable timeframe. Naturally, that did not happen. According to SPO/Civ contractor representatives (as of Sep 2022), the SOW has been approved, and the contractors and vendors involved have been identified. The status of the current system is at the end of its service life, and current GPS resources are stretched thin, almost to being a severe limiting factor on mission capability. I will comment that current status of C-130 H2 fleet (grounding until repair), will probably have a negative effect on AG-GPS upgrades in the short-term scenarios.
- e. The DoD Aerial Application of Pesticides Course (Cat 11) was successfully completed 9-14 January 2022 at Anastasia County Mosquito Control District, and NE Regional Airport, FL. DoD training activities were held in conjunction with the Florida Mosquito Control Association's annual "Fly-in" event, whereby mosquito control aerial applicators gather in forum to discuss relevant topics relating to aerial spray activities. This event was an excellent opportunity for DoD personnel to get a civilian perspective into aerial spray operations. In addition to didactic activities, a field test was conducted, utilizing one runway at NE Regional Airport to characterize effective swath width from C-130 H2 aircraft. Naturally, the entire concept of doing this was a logistic nightmare, but Civilian staff from Anastasia MCD and airport manager and staff at NE Regional coordinated with DoD requirements to make the event remarkably smooth and pleasant. Eight DoD personnel attended for certification; 4 were for initial certification, and 4 were for recertification. Breakdown of component groups was 3 AF, 2 Army, 3 Navy/Marines. Next scheduled Cat 11 (aerial spray) training activity is scheduled for 8-12 May January 2023 at Youngstown Air Reserve Station.
- f. Members from the Spray Unit answered consultations from various local, state, and federal agencies regarding vector ecology and aerial spraying. Lt Col (b) (6) and spray office personnel have worked to sustain a community based Innovative Readiness Program in conjunction with current users (specifically City of Minot, and City of Williston, ND). IRT POC (Chief (b) (6) ) has indicated all FY 23 applications have been properly addressed and approved. We (910 AW) remain open to additional IRT applications provided all regulatory requirements are fulfilled, and the 757 AS are adequately trained with functional assets to respond. Hurricane Ian potential response at end of Sept 2022 with DSCA/FEMA/CDC was definitely an issue, but as C-130 H2 spray model availability was limited, we (910 AW) essentially got "lucky" in that it was late in the spray season, However, there was excellent organization of Florida spray applicators and contractors, and they were apparently able to effectively respond to FEMA/CDC requests for intervention.
- g. One area of interest that the Spray Unit continues to focus on will be the further development

of the technique for ultra-low volume sprays of mosquito larvicides to control container breeding mosquitoes, and in particular, *Aedes aegypti*, the primary vector of Zika virus, Dengue virus, yellow fever virus, and the like. Aerial spray group was anticipating use of new EMASS rotary nozzles for field testing, but that initiative has been stymied by functional sign-off of new EMASS. We are expecting better atomization of material and increased efficiency (Swath Width). However, we cannot confirm at this time. Naturally, we will pursue this initiative when we can actually fly (no prop issues) and spray again (EMASS signoff) in future.

## 2. MISSION ACCOMPLISHMENTS:

A list of all missions accomplished in FY 2022 (training, actuals, and aerial spray research/ assessments if appropriate) and their associated data is found in attachments 1. Reports detailing these individual missions may be obtained by contacting Lt Col (b) (6) at 757 AS/DOS, Youngstown Air Reserve Station, 3976 King Graves Road, Vienna OH 44473-5926; DSN (b) (6) Commercial (b) (6) Mobile (b) (6)

## 3. CAPABILITIES OF THE AERIAL SPRAY MISSION:

- a. Aircraft: Eight C-130H aircraft assigned to the 910<sup>th</sup> are modified to perform aerial spray mission. All aircraft are capable of spraying from fuselage booms only based on new system configuration.
- b. Spray Systems: Six Modular Aerial Spray Systems (MASS) were available. Updated spray system unavailable due to contractual/TO obligations.
- c. Global Positioning Systems (GPS): Seven Wingman GX Global Positioning Systems were available.

## 4. PERSONNEL INVOLVED WITH AERIAL SPRAY DURING FY21:

- a. No significant changes from FY 2021, except that Col (b) (6) has been released from 757 AS as of Oct 22 due to his promotion status. Lt Col (b) (6) is Chief of Aerial Spray. Lt Col (b) (6) is Aerial Spray Lead Entomologist. Lt Col (b) (6) is planning on assuming AFRC Pest Management Command Entomologist duties from Col (b) (6) following informational back-brief and receipt of database. All initial queries regarding aerial spray can be accomplished with contact with aforementioned individuals.

## 5. APPROVED AERIAL SPRAY PROJECTS (project, location, pest):

- a. Army Corps of Engineers, Craney Island, VA. Mosquitoes
- b. Army Corps of Engineers, Williston, ND. Mosquitoes
- c. Barksdale AFB, LA. Mosquitoes (never utilized)
- d. Barry M. Goldwater Range, AZ. Sahara mustard (last application FY15)
- e. Dugway Army Proving Grounds, UT. Cheat grass control/fire breaks
- f. Eglin Air Force Base, FL. Mosquitoes (not regularly utilized)

- g. Ft. Eustis, VA. Mosquitoes (not regularly utilized, currently in NEPA commentary for EA re-write)
  - h. Grand Forks Air Force Base, ND. Mosquitoes
  - i. Homestead Air Reserve Base, FL. Mosquitoes
  - j. Joint Base Charleston, SC. Mosquitoes
  - k. Langley Air Force Base, VA. Mosquitoes
  - l. Minot Air Force Base, ND. Mosquitoes
  - m. Naval Submarine Base, Kings Bay, GA. Biting midges and mosquitoes (not utilized currently)
  - n. Parris Island MCRD, SC. Biting Midges and mosquitoes
  - o. Saylor Creek Range, ID (Mt Home AFB). Cheat grass and invasive weeds
  - p. Smoky Hill Air National Guard Range, Salina, KS. Musk thistle (not utilized currently)
  - q. Tyndall AFB, FL. Mosquitoes, biting midges, and dog flies
  - r. Utah Test and Training Range, Hill AFB UT. Halogeton and invasive herb species.
  - s. Utah Test and Training Range, Hill AFB UT. Cheat grass control/fire breaks
  - t. Yorktown Naval Weapons Station, Cheatham Annex, and Camp Peary, VA. Mosquitoes (not regularly utilized)
6. INNOVATIVE READINESS TRAINING - APPROVED MISSIONS (location/pest)
- a. Minot, ND. Including city of Burlington (adjacent to City of Minot). Mosquitoes. (current)
  - b. Williston, ND. Including Watford City. Mosquitoes. (current, not used in FY 22)

(b) (6) (b) (6)  
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(b) (6) Ph.D, Lt Col, USAF  
Chief Entomologist, 757 AS/DOS

Attachment 1: Aerial Spray Statistics FY 2022

cc: Distribution via e-mail

AFRC/A3

AFRC/HO

AFRC/PA

910 AW/PA

AFPMB







**DEPARTMENT OF THE AIR FORCE  
AIR FORCE AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

1 November 2016

MEMORANDUM FOR AFRC/A3OO

FROM: 757 AS/DOS

SUBJECT: FY 16 Aerial Spray Annual Report (1 Oct 15 – 30 Sep 16)

1. INTRODUCTION. Fiscal year 2016 was the 43<sup>rd</sup> year of aerial spray operations as a Department of Defense (DoD) resource assigned to the US Air Force Reserve. The purpose of this mission is to provide aerial spray support to U.S. military forces worldwide as prescribed in DoD Instruction 4150.07, DoD Pest Management Program. Highlights of this year's aerial spray activities include:
  - a. Development of the new Modular Aerial Spray System continues: An \$11.5 million contract for the development and delivery of a new MASS was signed in February 2016 by Battelle Memorial Institute in Columbus, OH. Battelle has since renegotiated on some costs and deliverables. These discussions slowed the development process down, with AFRC ultimately capitulating to the developer's requests. Evaluation of the new rotary nozzle system is complete. The next important phase, the "critical design review" (CDR) which is scheduled for December. The current optimistic forecast for delivery is June 2017.
  - b. The Spray Unit began a collaboration with entomologists from the U.S. Air Force's School of Aerospace Medicine (USAFSAM) aimed at measuring the efficacy of night sprays on mosquitoes, biting midges, and ticks. Further collaboration in FY17 is anticipated with entomologists from USAFSAM making these analyses at Parris Island Marine Corps Recruit Depot, SC or at Joint Base Charleston, SC.
  - c. The 910th conducted the 4th Annual Aerial Spray Refresher from 7-18 March at Hill AFB and was carried out in tandem with the actual invasive weed control mission on the Utah Test and Training Range. Training consisted of both ground and flight training for over 70 aircrew, entomologists, and spray maintenance personnel. Training sorties using water were flown at UTTR over several days. In addition, ground training was accomplished in the classroom, on the ramp, and also on the UTTR.
  - d. The Aerial Application of Pesticides Course taught in 10-14 January at Lee County Mosquito Control District in Ft. Myers, Florida. This course provided certification

training in Aerial Application Pest Control (Category 11) as required by DoDI 4150.07 and is certified by the Environmental Protection Agency. Course Director, Lt Col (b) (6) reported 9 members attended the course from the Air Force, Army and Navy. Two attended for initial certification, and 7 for re-certification. The 910<sup>th</sup> supported the course with 18 staff members for teaching and flying purposes.

- e. Members from the Spray Unit answered consultations from various local, State, and federal agency regarding vector ecology and aerial spraying (i) Lt Col (b) (6) was invited to visit the Navy Medical Research Unit 6, Peru, where he participated in spatial repellent studies in February.; (ii) Lt Col (b) (6) deployed with SOUTHCOM to support New Horizons Dominican Republic May 2016; (iii) Drs. (b) (6) and (b) (6) worked with the Centers for Disease Control to answer questions regarding medical entomology issues related to the spread of Zika virus in the U.S. In particular, they developed an aerial spray plan for Puerto Rico, which was ultimately dismissed by the Puerto Rican Governor. However, the plan was later implemented in South Florida and the method endorsed by the CDC Director, who stated Zika virus transmission had been interrupted in Miami's Wynwood neighborhood where aerially spraying took place.

Reports of individual missions may be obtained by contacting Lt Col (b) (6) at 757 AS/DOS, Youngstown Air Reserve Station, 3976 King Graves Road, Vienna OH 44473-5926; DSN (b) (6) Commercial (b) (6)

## 2. MISSION ACCOMPLISHMENTS:

- a. A list of all missions accomplished in FY16 and their associated data is found in attachment 1. A list of all aerial spray tests, demonstrations, exercise missions, and locally generated spray training completed in FY16 is found in attachment 2. Attachment 3 shows the flights used to support aerial spray operations.

## 3. CAPABILITIES OF THE AERIAL SPRAY MISSION:

- a. Aircraft. Four C-130H aircraft are modified to perform the aerial spray missions. Two additional aircraft are modified to accept the MASS but are not plumbed for wing booms, only fuselage booms.
- b. Spray Systems. Six Modular Aerial Spray Systems (MASS) were available.
- c. Global Positioning Systems (GPS). 11 Wingman GX Global Positioning Systems were available.

## 4. PERSONNEL INVOLVED WITH AERIAL SPRAY DURING FY16:

- a. Maj (b) (6), pilot, became Chief of Aerial Spray. Lt Col (b) (6) acted as Chief of Aerial Spray while the 757AS was deployed. Maj (b) (6) joined the Aerial Spray Office, as Spray Navigator.
- b. 910 AW personnel from the Maintenance Group deployed to support the aerial spray mission and accomplish training in FY16.

5. APPROVED AERIAL SPRAY PROJECTS (project, location, pest):

- a. Army Corps of Engineers, Craney Island, VA. Mosquitoes
- b. Army Corps of Engineers, Williston, ND. Mosquitoes
- c. Barksdale AFB, LA. Mosquitoes
- d. Barry M. Goldwater Range, AZ. Sahara mustard
- e. Eglin Air Force Base, FL. Mosquitoes
- f. Ft. Eustis, VA. Mosquitoes
- g. Grand Forks Air Force Base, ND. Mosquitoes
- h. Homestead Air Reserve Base, FL. Mosquitoes
- i. Langley Air Force Base, VA. Mosquitoes
- j. Minot Air Force Base, ND. Mosquitoes
- k. Naval Submarine Base, Kings Bay, GA. Biting midges and mosquitoes
- l. Parris Island MCRD, SC. Biting Midges and mosquitoes
- m. Saylor Creek Range, ID. Cheat grass
- n. Smoky Hill Air National Guard Range, Salina, KS. Musk thistle
- o. Tyndall AFB, FL. Mosquitoes, biting midges, and dog flies
- p. Utah Test and Training Range, Hill AFB UT. Halogeton
- q. Yorktown Naval Weapons Station, Cheatham Annex, and Camp Peary, VA. Mosquitoes

6. INNOVATIVE READINESS TRAINING - APPROVED MISSIONS (location/pest)

- a. Grand Forks, ND. Mosquitoes.
- b. Miami-Dade County, FL. Mosquitoes.
- c. Poquoson, VA. Mosquitoes.
- d. York County, VA. Mosquitoes.
- e. Minot, ND. Mosquitoes.
- f. Williston, ND. Including Watford City and Trenton. Mosquitoes.

//SIGNED//

(b) (6)

Research Entomologist

Lt Col, USAF

Attachments

1, 2, & 3. Aerial Spray Statistics

Distribution via e-mail

Cc:

AFRC/A3

AFRC/HO

AFRC/PA

910 AW/PA

910 AW/HO

AFPMB

Attachment 1.

## FY 16 AERIAL SPRAY MISSIONS (1 OCT 15 – 30 SEP 16)

Date	Location	Target Pest	Chemical	Acres	oz/ acre	gal/ acre	Gal of pesticide	Gal total <sup>1</sup>	Spray Sorties	Ferry Sorties	Flush Sorties	Spray Hours	Ferry Hours
5-8 Oct 2015	Parris Island MCRD, SC	Midges/mosquitoes	Dibrom	6,660	0.72		38	38	1	2		1.6	4.1
19-22 Oct 2015	Parris Island MCRD, SC	Midges/mosquitoes	Dibrom	6,953	0.75		41	41	1	2		2.4	5.3
9-20 Nov 2015	Smoky Hill ANGR, KS	Musk thistle	Milestone	3,926	1	7	150	26,582	17	2		19.3	5.3
8-12 Dec 15	Camp Blanding, FL	aegypti ( cages)	VectoBacWDG	202	0.25		68	68	1	2		3	5.7
7-18 Mar 16	Hill UTTR, UT	Halogeton	Krovar	1,539	10lbs/ac	22.5	15,300 lbs	31,834	19	8	4	29.7	39.4
5-7 Apr 16	Parris Island MCRD, SC	Midges/mosquitoes	Dibrom	5,775	0.78		35	35	1	2		2.5	3.8
19-22 Apr 16	Parris Island MCRD, SC	Midges/mosquitoes	Dibrom	7,410	0.78		35	35	1	2		1.4	3.5
4-7 May 16	JB Charleston, SC	Midges/mosquitoes	Trumpet	17,614	0.85		120	120	1	2		2.3	4.2
31 May - 10 Jun 16	Army Corps of Eng, ND	Ae. vexans	VectoBac	6,206	32		1,594	28,178	16	2	1	30.6	14.1
16-19 Jun 16	JB Charleston, SC	Midges/mosquitoes	Trumpet	0			0	0	0	2		0	4.4
27 Jun - 1 Jul 16	Minot AFB, Williston, ND <sup>2</sup>	Ae. vexans	Trumpet	36,375	0.75		209	209	3	3		6.1	10.5
17-22 Jul 16	Minot AFB, Williston, ND <sup>2</sup>	Ae. vexans	Trumpet	55,046	0.75		330	330	3	2		6.3	7.4
30-31 Aug 16	JB Charleston, SC	Midges/mosquitoes	Trumpet	17,587	0.87		120	120	1	2		2.4	4.4
12-23 Sep 16	Saylor Creek Range, ID	cheat grass	imazapic amn	2,711	4	6.3	77.6	17,167	10	4		8.2	12.6
<b>Totals</b>				<b>168,004</b>			<b>2,818</b>	<b>104,757</b>	<b>75</b>	<b>37</b>		<b>115.8</b>	<b>124.7</b>

+Training was accomplished on every mission listed above but not specifically noted in the text to minimize redundancy in this document

<sup>1</sup>Gallons sprayed include water used to dilute active ingredients

<sup>2</sup>Portions of these applications were also community IRT sprays

## Attachment 2

## FY 16 AERIAL SPRAY TESTS, DEMONSTRATIONS, EXERCISE MISSIONS, LOCAL, & TDY SPRAY TRAINING (1 Oct 15 - 30 Sep 16)

Date	Location	Chemical	Acres	oz/ acre	gal/ acre	Gal of pestici de	Gal total	Spray Sorties	Ferry Sorties		Spray Hours	Ferry Hours
6-Oct-15	Parris Island	none	0	0		0	0	1	0		0.7	0
20-Oct-15	Parris Island	none	0	0	0	0	0	1	0		1.2	0
21-Oct-15	Ravenna/PI	none	0	0	0	0	0	5	0		6.2	0
6-Dec-15	Ravenna	none	0	0	0	0	0	0	0		1.5	0
7-Dec-15	Ravenna	none	0	0	0	0	0	0	0		3.6	0
10-14-Jan-16	Fort Myers	none	0	0	0	0	0	2	2		2.3	7.2
11-Jan-16	Ravenna	none	0	0	0	0	0	1	0		1.7	0
11-Jan-16	Ravenna	none	0	0	0	0	0	1	0		1	0
25-Jan-16	Ravenna	none	0	0	0	0	0	1	0		1.4	0
25-Jan-16	Ravenna	none	0	0	0	0	0	1	0		1.7	0
21-Apr-16	Parris Island	none	0	0	0	0	0	1	0		0.8	0
16-May-16	Ravenna	none	0	0	0	0	0	1	0		1.5	0
17-May-16	Ravenna	none	0	0	0	0	0	1	0		1.7	0
20-Jun-16	Ravenna	none	0	0	0	0	0	1	0		1.5	0
13-Jul-16	Ravenna	none	0	0	0	0	0	1	0		1.7	0
<b>Totals</b>								<b>18</b>	<b>2</b>		<b>28.5</b>	

+ Events without ferry hours were conducted from home station or in conjunction with actual spray missions.

## Attachment 3

## FY 16 AERIAL SPRAY SUPPORT FLIGHTS (1 Oct 15 - 30 Sep 16)

Date	Location	Mission								Sorties	Ferry Hours
9-Nov-15	yng-sln-yng	Salina								2	5.9
14-Nov-15	yng-sln-yng	Salina								2	5.5
20-Nov-15	yng-sln-yng	Salina								2	5.9
11-12 Mar-16	hif-slc-yng-hif	Hill Swap								3	11.9
31-May-16	yng-mot-yng	Williston ACE								2	14
9-10 Jun 16	yng-mot-yng	Williston ACE								2	7.3
12-13-Sep-16	yng-muo-yng	Mtn Home								2	11.5
22-23-Sep-16	yng-muo-yng	Mtn Home								2	11.9
<b>Totals</b>										<b>17</b>	<b>73.9</b>





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

1 November 2018

MEMORANDUM FOR AFRC/A300

FROM: 757 AS/DOS  
3976 King Graves Road Unit 24  
Vienna OH 44473-5924

SUBJECT: FY18 Aerial Spray Annual Report (1 Oct 17 – 30 Sep 18)

1. INTRODUCTION. Fiscal year 2018 was the 45<sup>th</sup> year of aerial spray operations as a Department of Defense (DoD) resource assigned to the US Air Force Reserve. The purpose of this mission is to provide aerial spray support to U.S. military forces worldwide as prescribed in DoD Instruction 4150.07, DoD Pest Management Program. Highlights of this year's aerial spray activities include:
  - a. Development of the new Modular Aerial Spray System (MASS) continues: Conversations and physical meetings with staff at AFRC and engineers from Battelle Memorial Institute in Columbus, OH continue. Battelle has since renegotiated on some costs and deliverables. In addition, it appears that at least one of the subcontractors have not been able to immediately meet design specifications and, consequently, the new MASS delivery has been delayed. The current expected delivery date for setup and initial training at Youngstown ARS is 1 February 2019. Following the in-house training, the new MASS will be flown and tested locally, and later in the year, during routine spray operation projects.
  - b. The Spray Unit finished reviewing available off-the-shelf Agricultural GPS units in order to replace the aging Wingman system currently used when conducting aerial spray operations. The final recommendations, based on a rubric of requirements, has been submitted to AFRC. The new system should be purchased and installed in FY19.
  - c. The Spray Unit began a cheat grass control/fire break project on the Utah Test and Training Range (UTTR), UT in October 2017. The mission is flown from Hill AFB, UT and is sponsored by the 75CES Natural Resources and UTTR/HQ. Reports from Hill AFB in spring of 2018 indicated excellent control and the project has been deemed a smashing success. It is understood that the project has received funding for an additional 4 years.
  - d. The 910th conducted the 5th Annual Aerial Spray Refresher from 5-16 March at Hill AFB and was carried out in tandem with the actual invasive weed control mission on the UTTR. Training consisted of both ground and flight training for over 70 aircrew, entomologists, and spray maintenance personnel. A total of 24 training sorties took place over the two week period. The Refresher provides an excellent opportunity to review procedures, upgrade members, and receive new regulatory guidance. The training was accomplished in the classroom, on the ramp, and also on the UTTR.
  - e. The Aerial Application of Pesticides Course taught in 7-11 May at Youngstown Air Reserve Station, OH. This course provided certification training in Aerial Application Pest Control (Category 11) as required by DoDI 4150.07 and is certified by the Environmental Protection Agency. Course Director, Lt Col (b) (6) reported 26 DoD members attended the course from the Air Force, Army, and Navy. Twenty attended for initial certification and 6 for re-certification. The 910<sup>th</sup> supported the course with 18 staff members for teaching and flying purposes.

- f. The 910<sup>th</sup> AW was asked by the Virginia National Guard (Army), via a letter from MG Hoyer to MG La Fave (22AF/CC), to support their State Partnership Program with Peru by teaching the Spray Course to members of the Peruvian Air Force in Peru. The Peruvians are looking for ways to combat the rising insect vector threat in Peru. At this writing, the final approval for this action is pending at the U.S. embassy in Lima, Peru.
- g. During 13-17 August, the Spray Unit continued scientific investigations into the movement of pesticide droplets into buildings for adult mosquito control (specifically *Aedes aegypti* control as this is the vector of Zika virus, dengue, and yellow fever). These trials were conducted at the Florida National Guard Joint Training Center, Camp Blanding, Florida with collaborators participating from U.S. Department of Agriculture's Center for Medical and Veterinary Entomology, Navy's Entomology Center of Excellence, Manatee County Mosquito Control District, and AMVAC. Results were encouraging and final conclusions will be published in a scientific journal.
- h. Members from the Spray Unit answered consultations from various local, state, and federal agencies regarding vector ecology and aerial spraying (i) Hurricane Florence, made news in September when it caused major damage in Carolinas. The Aerial Spray Unit received "prepare to deploy" orders but both North and South Carolina state officials ultimately decided to deal with storm related mosquito issues at the county level. It appears that these decisions were made at relatively high levels as Lt Col (b) (6) had several lengthy discussions with the State Entomologists from both states who had detailed questions on how to request military aerial sprays. In the end, neither Hurricane Florence nor Michael created an environment that local officials felt required military aerial mosquito control. (ii) Lt Col (b) (6) was invited by SOUTHCOM to support New Horizons Panama (June 2018) and participated as the medical entomologist for the mission team which included subject matter exchanges with Panamanian scientists and physicians at the Gorgas Institute. This exercise also involved field surveillance for yellow fever along the Darien Gap in Southern Panama.

## 2. MISSION ACCOMPLISHMENTS:

A list of all missions accomplished in FY18 (training, actuals, and aerial spray research/assessments) and their associated data is found in attachment 1. Reports detailing these individual missions may be obtained by contacting Lt Col (b) (6) at 757 AS/DOS, Youngstown Air Reserve Station, 3976 King Graves Road, Vienna OH 44473-5926; DSN(b) (6) ; Commercial (b) (6) .

## 3. CAPABILITIES OF THE AERIAL SPRAY MISSION:

- a. Aircraft. Four C-130H aircraft are modified to perform the aerial spray missions. Two additional aircraft are modified to accept the MASS but are not plumbed for wing booms, only fuselage booms. The AF Form 1067 has been signed authorizing aircraft 923021, 923022, 923023, and 923024 to be modified for Aerial Spray operations. Completion date for modification is expected to be complete by March of 2019. Aircraft 899104 remains assigned to Maxwell AFB and is available for an emergency spray response if necessary.
- b. Spray Systems. Six Modular Aerial Spray Systems (MASS) were available.

- c. Global Positioning Systems (GPS). 11 Wingman GX Global Positioning Systems were available.

4. PERSONNEL INVOLVED WITH AERIAL SPRAY DURING FY18:

- a. Maj (b) (6) continues as Chief of Spray. MSgt (b) (6) left the Aerial Spray Office, a new spray operator has not yet been nominated as her replacement.
- b. 910 AW personnel from Operations Group, Maintenance Group, Public Affairs, and Communications deployed to support the aerial spray mission and accomplish training in FY18.

5. APPROVED AERIAL SPRAY PROJECTS (project, location, pest):

- a. Army Corps of Engineers, Craney Island, VA. Mosquitoes
- b. Army Corps of Engineers, Williston, ND. Mosquitoes
- c. Barksdale AFB, LA. Mosquitoes (never utilized)
- d. Barry M. Goldwater Range, AZ. Sahara mustard (last application FY15)
- e. Eglin Air Force Base, FL. Mosquitoes (not regularly utilized)
- f. Ft. Eustis, VA. Mosquitoes (not regularly utilized)
- g. Grand Forks Air Force Base, ND. Mosquitoes
- h. Homestead Air Reserve Base, FL. Mosquitoes
- i. Joint Base Charleston, SC. Mosquitoes
- j. Langley Air Force Base, VA. Mosquitoes
- k. Minot Air Force Base, ND. Mosquitoes
- l. Naval Submarine Base, Kings Bay, GA. Biting midges and mosquitoes
- m. Parris Island MCRD, SC. Biting Midges and mosquitoes
- n. Saylor Creek Range, ID. Cheat grass
- o. Smoky Hill Air National Guard Range, Salina, KS. Musk thistle
- p. Tyndall AFB, FL. Mosquitoes, biting midges, and dog flies (never utilized)
- q. Utah Test and Training Range, Hill AFB UT. Halogeton
- r. Utah Test and Training Range, Hill AFB UT. Cheat grass control/fire breaks
- s. Yorktown Naval Weapons Station, Cheatham Annex, and Camp Peary, VA. Mosquitoes (not regularly utilized)

6. INNOVATIVE READINESS TRAINING - APPROVED MISSIONS (location/pest)
- a. Grand Forks, ND. Mosquitoes. (not used in FY18)
  - b. Minot, ND. Mosquitoes.
  - c. Williston, ND. Including Watford City and Trenton. Mosquitoes.

//SIGNED//

(b) (6) (b) (6)  
Research Entomologist

Lt Col, USAF

Attachment 1: Aerial Spray Statistics

cc: Distribution via e-mail

AFRC/A3

AFRC/HO

AFRC/PA

910 AW/PA

910 AW/HO

AFPMB

## Attachment 1. Aerial Spray Statistics.

# FY 18 AERIAL SPRAY MISSIONS (1 OCT 17 – 30 SEP 18)

FY18 Spray Missions																		
SMI	Date	Location	Target Pest	Product	Acres	oz/ acre	gal/ acre	Gal of product	Gal total <sup>1</sup>	Spray Sorties	Ferry Sorties	Flush Sorties	Support Sorties	Spray Hours	Ferry Hours	Flush Hours	Support Hours	Total Hours
SM18-1	3-7 Oct 2017	JB Charleston/Parris Island MCRD, SC	Midge/Mosquito	Dibrom/Trumpet	26,590	0.71/0.83	n/a	165	165	2	2	0	0	3.7	4.1	0.0	0.0	7.8
SM18-2	22-27 Oct 17	Hill UTTR, UT	Cheat grass	Plateau	1,540	6	n/a	72.5	10,677	6	2	0	4	7.5	10.4	0.0	20.8	38.7
SM18-3	6-17 Nov 2017	Smokey Hill ANGR, KS	Musk thistle	Milestone	3,236	5	n/a	134	22,402	14	4	0	6	12.7	11.7	0	17.3	41.7
SM18-4	CNX	Refresher																
SM18-5	CNX	Blanding																
SM18-6	5-16 Mar 2018	Hill UTTR, UT	Halogeton	Krovax	1,518	n/a	22.5	15,250 lbs	31,834	21	4	5	6	29.4	20.1	5.7	40.5	95.7
SM18-7	17-20 Apr 2018	Parris Island MCRD, SC	Midge/Mosquito	Dibrom	6,750	0.76	n/a	40	40	1	2	0	0	2.5	4.1	0	0	6.6
SM18-8	7-11 May 2018	Aerial Spray Course, YARS	Training	Water	n/a	n/a	n/a	n/a	n/a	2	0	0	0	3.5	0	0	0	3.5
SM18-9	15-19 May 2018	JB Charleston, SC	Mosquito	Trumpet	17,738	0.87	n/a	120	120	1	2	0	0	2	4	0	0	6
SM18-10	29 May-6 Jun 2018	Williston ACE	Mosquito	Vectobac	827	n/a	4.7	185	3,760	2	2	0	4	4.3	7.1	0	14.7	26.1
SM18-11	11-15 Jun 2018	Grand Forks	Mosquito	Altosid	1,607	n/a	2.3	10.6	3,645	4	2	0	0	5.2	6.1	0	0	11.3
SM18-12	18-21 Jun 2018	JB Charleston, SC	Mosquito	Trumpet	17,738	0.87	n/a	120	120	1	2	0	0	2	4	0	0	6
SM18-13	25-29 Jun 2018	Minot/Williston ND <sup>2</sup>	Mosquito	Trumpet	48,923	1	n/a	394	394	2	2	0	0	6.2	6.8	0	0	13
SM18-14	16-20 Jul 2018	Minot/Williston ND <sup>2</sup>	Mosquito	Trumpet	12,183	0.98	n/a	210	210	1	2	0	0	1.6	6.4	0	0	8
SM18-15	30 Jul-02 Aug 2018	Langley/Craney Island	Mosquito	Dibrom	12,105	0.93	n/a	88	88	2	2	0	0	2.4	3.2	0	0	5.6
SM18-16	13-17 Aug 2018	Camp Blanding/JAX	Mosquito	Dibrom	1,963	2.05	n/a	15	15	2	2	0	0	4.6	5.3	0	0	9.9
SM18-17	20-23 Aug 2018	Minot/Williston ND <sup>2</sup>	Mosquito	Dibrom	27,794	0.97	n/a	210	210	1	2	0	0	4.5	7.8	0	0	12.3
SM18-18	29-30 Aug 2018	Langley/Craney Island	Mosquito	Trumpet	12,010	0.96	n/a	90	90	1	2	0	0	2	2.8	0	0	4.8
SM18-19	6-9 Sep 2018	Charleston	Mosquito	Trumpet	3,615	1	n/a	28	28	1	2	0	0	1.5	4.2	0	0	5.7
SM18-20	CNX	Mountain Home																
Totals					196,137				73,798	64	36	5	20	95.6	108.1	5.7	93.3	302.7

+Training was accomplished on every mission listed above but not specifically noted in the text to minimize redundancy in this document

<sup>1</sup>Gallons sprayed include water used to dilute active ingredients

<sup>2</sup>Portions of these applications were also community IRT sprays



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND**

1 November 2019

MEMORANDUM FOR AFRC/A300

FROM: 757 AS/DOS  
3976 King Graves Road Unit 24  
Vienna OH 44473-5924

SUBJECT: FY19 Aerial Spray Annual Report (1 Oct 18 – 30 Sep 19)

1. INTRODUCTION. Fiscal year 2019 was the 46<sup>th</sup> year of aerial spray operations as a Department of Defense (DoD) resource assigned to the US Air Force Reserve. The purpose of this mission is to provide aerial spray support to U.S. military forces worldwide as prescribed in DoD Instruction 4150.07, DoD Pest Management Program. Highlights of this year's aerial spray activities include:
  - a. The 757<sup>th</sup> Airlift Squadron was deployed in support of the squadron's Air and Space Expeditionary Force operations which included 4 aircraft and 6 crews (plus overhead) from 10 May – 18 September 2019. This deployment, along with the associated requirements for pre-deployment flight training, impacted the ability of the squadron to meet routine aerial spray missions, relative to a non-deployment year. For example, of the 9 spray mission cancellations in FY19, 7 were initiated by the 910<sup>th</sup> Operations Group, in order to support pre-deployment training, because resources were deployed, or because of the process of reconstituting resources (Attachment 1).
  - b. The 910 OG/CC reduced the Aerial Spray Panel meeting frequency from monthly to quarterly.
  - c. Development of the new Modular Aerial Spray System (MASS) continues: Conversations and physical meetings with staff at AFRC and engineers from Battelle Memorial Institute in Columbus, OH continue. On 26 September, a limited attendance meeting took place between senior staff members of Battelle and AFRC. Following this meeting, Battelle confirmed they will deliver the new MASS for training at Youngstown in the Fall of 2020. Following in-house training, the new MASS will be flown and tested locally followed by additional confirmation of the range of MASS function during routine operational spray projects.
  - d. The Spray Unit reviewed available off-the-shelf Differential GPS products suitable for supporting aerial spray applications and submitted findings to the AFRC C130 System Program Office (SPO) during the final quarter of FY18. Recent communication with the SPO indicated that the SPO intends to invite bids for the installation and testing contract for the replacement system in February or March 2020. Hopefully, the selected company can move quickly to have the new system selected and installed in FY20.
  - e. The Spray Unit responded to a request from the Tyndall AFB Wing Commander for an "emergency" spray application. The application was made to reduce the potential of vector-borne disease following a massive surge of mosquitoes related to the increased habitat created

by the destructive force of Hurricane Michael. The process to make such a spray was simplified because Tyndall AFB had previously submitted all the environmental paperwork to be considered an “approved spray project” (see section 5.p.).

- f. The Spray Unit began a cheat grass control/fire break project on the Utah Test and Training Range (UTTR), UT in October 2017. The success of aerial application methods in controlling the exotic invasive weed, cheat grass, and the subsequent recovery of native vegetation, continues to be a prospect for additional training opportunities. The Spray Unit continued work on the UTTR in FY2019 working from Hill AFB, UT where the project is sponsored by the 75CES Natural Resources via an invitation letter from the Base Commander and UTTR/HQ. Additionally, the U.S. Army’s Dugway Proving Grounds has completed all environmental paperwork to begin cheat grass control on their property. It is expected that the Spray Unit will begin including applications for fire breaks on the Army property in October 2019 (FY2020). Reports from Hill AFB in spring of 2019 indicated excellent control and all parties are in favor of extending the project beyond the original 3-year period, if funding can be obtained.
- g. The Aerial Application of Pesticides Course was taught in conjunction with the Florida Mosquito Control Association’s “Aerial Spray Short Course” 7-11 January at the Lee County Mosquito Control District, Fort Myers, FL. This course provided certification training in Aerial Application Pest Control (Category 11) as required by DoDI 4150.07 and is certified by the Environmental Protection Agency. Course Director, Lt Col (b) (6) reported 14 DoD members attended the course from the Air Force, Army and Navy. Three attended for initial certification, and 11 for re-certification. The 910<sup>th</sup> supported the course with 17 staff members for teaching and flying purposes. In Addition to the military members, over 200 additional public health workers from county, state, and federal positions from across the U.S., attended the combined course, which included presentations and workshop discussions on innovations in the aerial application of pesticides to control mosquitoes. The 910<sup>th</sup> staff also, performed a static display of the MASS at Page Field and conducted a field exercise with the students, spraying water to demonstrate characterization of spray parameters for mosquito larviciding.
- h. The 910<sup>th</sup> AW was asked by the Virginia National Guard (Army) to support their State Partnership Program with Peru by hosting on 17 June in Youngstown, OH, Maj Gen Carlos Elera, from the Air Attaché of the Peruvian Embassy. The Peruvians continue to face vector control challenges impacting both their military operations and civilian population. General Elera visited to receive an overview on the capability of the MASS mission. General Elera met with the 910<sup>th</sup> Wing Commander, Col (b) (6), and senior staff for discussions, attended a briefing in Spanish on the MASS mission by international health specialist Lt Col (b) (6) and toured the Aerial Spray Maintenance Facility. A local aerial spray flight was planned but could be not accomplished because of poor weather. The next step in continuing to build this partnership will be decided between the U.S. State Department and the Peruvian Air Force. It has been proposed that the 910<sup>th</sup> teach the aerial spray course in Peru as an introduction to the Peruvian military, who can then determine if they wish to develop such a capability for themselves. This event was covered by the 910<sup>th</sup> Public Affairs Office and subsequently published here: <https://www.youngstown.afrc.af.mil/News/Article-Display/Article/1942318/peruvian-air-force-seeks-aerial-spray-familiarization-at-youngstown-air-reserve/>



- i. Members from the Spray Unit answered consultations from various local, state, and federal agencies regarding vector ecology and aerial spraying (i) Lt Col (b) (6) Maj (b) (6) and Capt. (b) (6) visited Little Rock AFB and briefed the Little Rock AFB Community Council on the Air Force Aerial Spray Program including how to develop a community based Innovative Readiness Program. The mayor of the local community of Lonoke is organizing this project. On 18 September, the Aerial Spray office was inspected by Lt Col (b) (6) as part of the 910AW's Unit Effectiveness Inspection (UEI). (ii) Lt Col (b) (6) attended the Armed Forces Pest Management Board meeting and the American Mosquito Control Association meeting.
- j. One area of interest that the Spray Unit continues to focus on will be the further development of the technique for ultra-low volume sprays of mosquito larvicides to control container breeding mosquitoes, and in particular, *Aedes aegypti*, the vector of Zika virus. This developing technique, which targets the immature stage of the mosquito, uses the MASS wing booms configuration and flow rates which have not been part of traditional mosquito control. However, the method was part of the response recommended by the CDC and the Air Force during Zika virus outbreaks in Miami, FL in 2016 and has been a focus of develop for several years before that. The Spray Unit is still refining the technique by conducting configuration tests with water and with larvicide on federal property before moving to the next step of integrating the method with an innovative readiness training project, perhaps with the Miami Dade County project in mosquito infested areas near Homestead ARS, FL.

## 2. MISSION ACCOMPLISHMENTS:

A list of all missions accomplished in FY19 (training, actuals, and aerial spray research/ assessments) and their associated data is found in attachment 1. Reports detailing these individual missions may be obtained by contacting Lt Col (b) (6) at 757 AS/DOS, Youngstown Air Reserve Station, 3976 King Graves Road, Vienna OH 44473-5926; DSN (b) (6) Commercial (b) (6)

## 3. CAPABILITIES OF THE AERIAL SPRAY MISSION:

- a. Aircraft. All eight C-130H aircraft assigned to the 910<sup>th</sup> are now modified to perform the aerial spray mission. Four aircraft are capable of spraying from fuselage booms only. Another four are fully modified for wing boom sprays but some of these are undergoing repairs.
- b. Spray Systems. Six Modular Aerial Spray Systems (MASS) were available.
- c. Global Positioning Systems (GPS). Eleven Wingman GX Global Positioning Systems were available.

## 4. PERSONNEL INVOLVED WITH AERIAL SPRAY DURING FY19:

- a. Maj (b) (6) continued as Chief of Spray. SMSgt (b) (6), Spray Maintenance Superintendent, departed the 910<sup>th</sup> for a position with the National Guard. This position was still open as of 31 October. MSgt (b) (6), who re-joined Spray Maintenance in FY19 was acting Superintendent. TSgt (b) (6) also departed Spray Maintenance.

- b. 910 AW personnel from Operations Group, Maintenance Group, Public Affairs, Communications, and Installation Personnel Readiness deployed to support the aerial spray mission and accomplish training in FY19.

5. APPROVED AERIAL SPRAY PROJECTS (project, location, pest):

- a. Army Corps of Engineers, Craney Island, VA. Mosquitoes
- b. Army Corps of Engineers, Williston, ND. Mosquitoes
- c. Barksdale AFB, LA. Mosquitoes (never utilized)
- d. Barry M. Goldwater Range, AZ. Sahara mustard (last application FY15)
- e. Dugway Army Proving Grounds, UT. Cheat grass control/fire breaks
- f. Eglin Air Force Base, FL. Mosquitoes (not regularly utilized)
- g. Ft. Eustis, VA. Mosquitoes (not regularly utilized)
- h. Grand Forks Air Force Base, ND. Mosquitoes
- i. Homestead Air Reserve Base, FL. Mosquitoes
- j. Joint Base Charleston, SC. Mosquitoes
- k. Langley Air Force Base, VA. Mosquitoes
- l. Minot Air Force Base, ND. Mosquitoes
- m. Naval Submarine Base, Kings Bay, GA. Biting midges and mosquitoes
- n. Parris Island MCRD, SC. Biting Midges and mosquitoes
- o. Saylor Creek Range, ID. Cheat grass
- p. Smoky Hill Air National Guard Range, Salina, KS. Musk thistle
- q. Tyndall AFB, FL. Mosquitoes, biting midges, and dog flies (utilized this year)
- r. Utah Test and Training Range, Hill AFB UT. Halogeton
- s. Utah Test and Training Range, Hill AFB UT. Cheat grass control/fire breaks
- t. Yorktown Naval Weapons Station, Cheatham Annex, and Camp Peary, VA. Mosquitoes (not regularly utilized)

6. INNOVATIVE READINESS TRAINING - APPROVED MISSIONS (location/pest)

- a. Grand Forks, ND. Mosquitoes. (not used in FY19)
- b. Miami-Dade County, FL. Mosquitoes. (not used in FY19)

- c. Minot, ND. Mosquitoes.
- d. Williston, ND. Including Watford City and Trenton. Mosquitoes.

(b) (6)

ARK.S.1236024551

(b) (6) (b) (6)  
Chief Entomologist

(b) (6) Digitally signed by

(b) (6) (b) (6)(b) (6)

51  
Date: 2020.01.10 09:25:39 -05'00'

Ph.D, Lt Col, USAF

Attachment1: Aerial Spray Statistics

cc: Distribution via e-mail

AFRC/A3

AFRC/HO

AFRC/PA

910 AW/PA

AFPMB

## Attachment 1.

# FY 19 AERIAL SPRAY MISSIONS (1 OCT 18 – 30 SEP 19)

FY19 Spray Missions																		
SMI	Date	Location	Target Pest	Product	Acres	oz/ acre	gal/ acre	Gal of product	Gal total <sup>1</sup>	Spray Sorties	Ferry Sorties	Flush Sorties	Support Sorties	Spray Hours	Ferry Hours	Flush Hours	Support Hours	Total Hours
SM19-1	3-6 Oct 2018	MCRD Parris Island, SC	Midge/Mosquito	Dibrom	6,650	0.87	n/a	45	45	1	3	0	1	2.4	8.9	0.0	1.9	13.2
SM 19-2	14-20 Oct 2018	Hill UTTR, UT	Cheatgrass	Plateau	1,730	6	n/a	72.5	11,235	7	2	0	4	7.8	10.2	0.0	20.3	38.3
SM 19-3	CNX	Peru	TR	Water														0
SM 19-4	7-11 Jan 2019	FMCA Course Fort Meyers, FL	TR	Water	n/a	n/a	5	500	500	1	3	0	0	1	3.7	0	0	4.7
SM 19-5	CNX	Camp Blanding, Jacksonville, FL																0
SM 19-6	CNX	Hill UTTR, UT																0
SM 19-7	15-18 Apr 2019	JB Charleston/MCRD Pt. SC/Tyndall AFB, FL	Midge/Mosquito	Dibrom/Trumpet	30,874	1.11/0.86	n/a	255	255	2	4	0	0	6.5	6.5	0	0	13
SM 19-8	CNX	JB Charleston/MCRD Parris Island, SC																0
SM 19-9	28 May-7 Jun 2019	Grand Forks AFB/Williston ACE, ND	Mosquito	Vectobac/Altosid	2,438	n/a	6	13,630	13,630	8	2	0	1	16.5	7.3	0	20.9	44.7
SM 19-10	CNX	Grand Forks AFB, ND																0
SM 19-11	17-23 Jun 2019	JB Charleston/MCRD Parris Island, SC	Midge/Mosquito	Dibrom/Trumpet	25,312	0.75/0.85	n/a	165	165	2	2	0	0	3.8	4.2	0	0	8
SM 19-12	CNX	Minot/Williston, ND																0
SM 19-13	15-19 Jul 2019	Minot/Williston/Grand Forks ND <sup>2</sup>	Mosquito	Imperium	40,349	0.95	n/a	300	300	2	2	0	0	4.6	7.3	0	0	11.9
SM 19-14	CNX	Langley AFB/Craney Island ACE, VA																0
SM 19-15	26-28 Aug 2019	Langley AFB, VA/Tyndall AFB, FL	Mosquito	Trumpet	38,244			300	300	2	3	0	1	3.3	6.8	0	1.3	11.4
SM 19-16	CNX	Langley AFB/Craney Island ACE, VA																0
SM 19-17	5-8 Sep 2019	JB Charleston/MCRD Parris Island, SC	Mosquito	Trumpet	25,838	0.8/1.1		180	300	2	2	0	0	5	4	0	0	9
SM 19-18	CNX	Mt Home AFB, D																0
					171,435				26,730	27	23	0		50.9	58.9	0	44.4	154.2

+Training was accomplished on every mission listed above but not specifically noted in the text to minimize redundancy in this document

<sup>1</sup>Gallons sprayed include water used to dilute active ingredients

<sup>2</sup>Portions of these applications were also community IRT sprays



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

28 APR 11

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Parris Island MCRD, SC

1. Aerial spray mission controlling biting midges and mosquitoes with insecticide to reduce the negative impact on outdoor training at Parris Island MCRD, SC.

2. Concept of Operations:

- a. 2 May (Monday)  
1700 Depart KYNG  
1900 Land KNBC
- b. 23 May (Tuesday)  
1400 Installation Brief  
1800 Depart KNBC  
2000 Land KNBC
- c. 4 May (Wednesday)  
1800 Depart KNBC (Training Sortie)  
2000 Land KNBC
- d. 5 May (Thursday)  
1000 Depart KNBC  
1200 Land KYNG

3. Lt Col (b) (6) will act as Mission Commander. Maj (b) (6) (b) (6) will be the Aircraft Commander. Support at Parris Island MCRD and Beaufort MCAS has been completed.

(b) (6) (b) (6) Major, USAFR  
757AS Chief of Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## MCRD, PARRIS ISLAND, SC

### 2-5 May 2011

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: Maj (b) (6) (b) (6) Lt Col (b) (6) , Lt Col (b) (6)
- (2) Navigators: Lt Col (b) (6)
- (3) Flight Engineers: TSgt (b) (6)
- (4) Spray Operators: MSgt (b) (6) , TSgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: SSgt (b) (6) (Lead), TSgt (b) (6) , SSgt (b) (6)
- (2) Crew Chiefs: SSgt (b) (6) , SSgt (b) (6)
- (3) Avionics: MSgt (b) (6)

##### c. Entomologist: Lt Col (b) (6) (b) (6) (MC)

#### 2. PPR REQUIREMENTS: 122-01

#### 3. PLANNED SEQUENCE OF EVENTS: (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

##### 2 May (Monday)

1500: Show  
1700: Depart KYNG  
1900: Land KNBC  
1930: Safety Brief

##### 3 May (Tuesday) Fly training sortie prior to actual application; Start application at calculated time based on sunset.

TBD Installation Brief  
1600: Show  
1630: WX Decision and Load Chemical  
1800: Depart KNBC  
2000: Land KNBC  
Sunset: 2005

##### 4 May (Wednesday) WX Backup or Training

1600: Show (Earlier if Training)  
1630: WX Decision and Load Chemical  
1800: Depart KNBC  
2000: Land KNBC  
Sunset: 2006

##### 5 May (Thursday) \*\*Departure time may slip depending upon Wednesday evening completion time.

1000: Show  
1200: Depart KNBC  
1400: Land KYNG

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

- (1) Mission Commander Cell Phone

- (2) **Friendly Force Tracker**
- b. **Entomologist:**
  - (1) Wind Gauge & Compass
  - (2) VHF Radios and Cellular Phone
  - (3) Pesticide Safety Binder
- c. **Navigators:**
  - (1) Maps
  - (2) Templates
- d. **Spray Maintenance:**
  - (1) Spill Kit
  - (2) Safety Equipment
  - (3) Loading and Clean-up Equipment and Supplies

## 5. **SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** size = 8003; 14 open If rate goes to 1 oz/acre then we would need 18 sites open
- d. **Differential GPS:** Wingman Installed
- e. **Aircraft:** 89-9105
- f. **Mission Identifier:** QZNRK9901122

## 6. **SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: BVA
- b. **Application:** 0.75 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 15:45 Minutes
- h. **Flow Rate:** 2.7 gallons/Minute

## 9. **PARKING PLAN:** NAS Beaufort, SC. Please limit number of vehicles and trips on the flight line

## 10. **AIR TO GROUND RADIO FREQUENCIES:**

Beaufort Tower: 119.05/340.2 MCAS TWR  
 Beaufort Approach 123.7  
 Hilton Head Arpt: 118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)  
 Beaufort Co Arpt: 122.7 UNI  
 Spray Ground: 123.4 VHF

## 11. **TRANSPORTATION:** Parris Island will provide 3 vehicles for transportation to and from quarters and for messing. Vehicles will be at Base Operations.

## 12. **SPRAY MONITORING/TESTING:** Ground monitoring by CPMP &Parris Island MCRD Project Coordinator.

## 12. **CONTACTS:**

- a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX
  - (1) Environmental Coordinator (Spray Coordinator):



(b) (6) DSN (b) (6) , Cell (b) (6) . HazWaste: (b) (6) , DSN (b) (6) ; Cell (b) (6)  
Cell (b) (6) , DSN (b) (6) Cell (b) (6)

- (2) FAX (843) 228-2616; NREAO, (b) (6) DSN (b) (6)  
Assistant Chief of Staff I & L: Col (b) (6) , DSN (b) (6) ; Deputy AC/S (b) (6)  
DSN (b) (6)  
(3) Pest Control Foreman: DSN 335-3663  
(4) P.I. Motor Pool: (b) (6) , DSN (b) (6)  
(5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)  
(6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)  
(7) P.I. Rifle Range: DSN: 335-3183/3624

**b. Beaufort MCAS SC:** (Commercial (843) 228-XXXX)

- (1) Beaufort MCAS Environmental: (b) (6) , DSN (b) (6) ; (b) (6) , DSN (b) (6)  
(2) Fuels: DSN: 335-7049/7448/7168  
(3) MCAS Beaufort Airfield MGR: Lt Col (b) (6) (Ops Officer) Airfield manager (b) (6)  
DSN: (b) (6) . Base Ops is ext 7301/2/3  
(Airfield Manager is (b) (6) , DSN: (b) (6) ) approves after hrs requests  
(4) Trans Alert/VAL: DSN: 335-7110  
(5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)

**c. Beaufort County Mosquito Control:** (b) (6)

**d. Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) , DSN: (b) (6)

**e. Quarters:** Holiday Inn 2225 Boundary St, Beaufort, SC \$127/night (843) 379-3100 Fax (843) 379-3101

Comfort Inn and Suites	(843) 379-9400
Ramada Inn	(843) 524-2144 (FAX 1704)
Hampton Inn	(843) 986-0600 (FAX 0494)
Sleep Inn	(843) 522-3361 (FAX (9929)
Parris Island Billeting	DSN: 335-2744 (FAX: 3815); (843) 228-3960
Comfort Inn	(843) 525-9366 (FAX 1529)
Best Western (Sea Island Motel)	(843) 524- 4121
Port Royal Days Inn	(843) 524-1551

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Maj (b) (6) FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: TSgt (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, MSG (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) ((b) (6))

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**PARRIS ISLAND MCRD, SC 2-5 May 2011**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 2-5 May 2011
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 3 May 2011
- e. Time/s of Application (Local): 1810-2025 hrs
- f. Acres Treated: 7,680
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) ,  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 3 May 2011
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 3 May; Assistant Chief of Staff,  
Installations and Logistics, Col (b) (6) briefed by Lt Col (b) (6) Lt Col  
(b) (6)
- k. Mission Identifier: QZNRK9901122

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6) (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Maj (b) (6) (b) (6) Lt Col (b) (6) , Lt Col (b) (6)
  - (2) Navigators: Lt Col (b) (6)
  - (3) Flight Engineers: TSgt (b) (6)
  - (4) Spray Operators: MSgt (b) (6) TSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) , SSgt (b) (6) , , SSgt (b) (6)  
VanWinkle
  - (2) Crew Chiefs: SSgt (b) (6) , SSgt (b) (6)
  - (3) Avionics: MSgt (b) (6)
- d. **Entomologist:** Lt Col (b) (6) (b) (6)
- e. **Flying Data:**
  - (1) Spray Sorties/Hours: 1/2.4
  - (2) Ferry Sorties/Hours: 2/4.6

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 45 gal
- e. Gallons Pesticide Applied: 45 gal
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 10 gal/BVA oil
- h. Other Additives Used: None
- i. Application Rate: 0.75 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99108
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 14, oriented straight down
- f. Pressure: 42 p.s.i.
- g. Flow Rate: 2.7 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS (19 Apr):**

- a. Winds (Direction/Speed):
  - (1) Ground: 307°/5-8 Knots
  - (2) Release Altitude: 310-335° /12 Knots
- b. Temperature (Degrees Fahrenheit): 69-72° F
- c. Relative Humidity: 21-35%
- d. Cloud Cover: Partly Cloudy
- e. Source: Ground observations at the MCRD causeway/Aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: visual observation of aircraft course (GPS)
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: Mosquitoes numbers were determined prior to spraying using light traps. Post-spray monitoring was carried out by Natural Resources personnel.
  - (2) Results: Good results were reported from those working outdoors.

**8. REMARKS:** This was the second application of FY2011 at Parris Island and mosquito and midges were present in moderate numbers. On 3 May, the application was cancelled due to high winds. The application went forward as planned on 4 May when conditions were acceptable for aerial spray operations (Attachment 1). The mission was carried out without incident and the Parris Island Environmental Staff reported good control the following morning. Light trap data is shown in Attachment 2. Since the application was made during the light trap collection period reported for 5 May (4-5 May), surveillance data from 6 May represents the first full collection period following the application. Only two light trap sites had collections on 6 May, and these showed an overall average mosquito reduction of 86%. The next potential application date is 17 May 2011.

//signed//

(b) (6) (b) (6)

**Lt Col, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL**



Attachment 1. Flight path of aircraft while applying Dibrom, 4 May 11. Green indicates spray boundaries. Blue lines are the spray on areas. Black dots are path of the aircraft. Wind from northwest required sprays outside of the boundaries but pesticide drifted into the treatment area.



Attachment 2. Mosquito Counts. The aerial application was made during the collection period reported for 4-5 May. Data from 6 May is the first full sample period following the application.

	HORSE ISLAND				LEATHER NECK SQUARE				RIFLE RANGE				ELLIOT'S BEACH			
May-08 6-May MoNTH/date	3	4	5	6	3	4	5	6	3	4	5	6	3	4	5	6
<i>Aedes</i> sp.																
<i>Anopheles</i> sp.																
<i>Culex</i> sp.																
<i>Culiseta</i> sp.																
<i>Ochlerotatus</i> sp.																
<i>Psorophora</i> sp.																
<i>Toxorhynchites</i> sp.																
Other	3	25	25	2		3	4		6		8		25	25	25	5
Males																
TOTAL	3	25	25	2	0	3	4	0	6	0	8	0	25	25	25	5
≥ 25 Females/Trap	No	yes	yes	No	No	No	No	No	No	No	No	No	yes	yes	yes	No

# AERIAL SPRAY OPERATIONAL SCHEDULE

## MCRD, PARRIS ISLAND, SC

### 3-6 Oct 2011

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: Maj (b) (6)      Capt (b) (6)      Capt (b) (6)
- (2) Navigators: Capt (b) (6)
- (3) Flight Engineers: (b) (6)      MSgt (b) (6) (b) (6)
- (4) Spray Operators: MSgt (b) (6)      , MSgt (b) (6) (b) (6)      MSgt (b) (6) (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSgt (b) (6)      , SrA (b) (6)      , SrA (b) (6)      , AIC (b) (6)
- (2) Crew Chiefs: MSgt (b) (6)      SSgt (b) (6)
- (3) Avionics: MSgt (b) (6)

##### c. Entomologist: Maj (b) (6) (b) (6)      (MC), Capt (b) (6)

#### 2. PPR REQUIREMENTS: 276-01

#### 3. PLANNED SEQUENCE OF EVENTS: (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

##### 3 OCT (Monday)

1500: Show  
1700: Depart KYNG  
1900: Land KNBC  
2000: Safety Brief

##### 4 OCT (Tuesday)

TBD Installation Brief  
1400: Show  
1430: WX Decision and Load Chemical  
1600: Depart KNBC \*\*\* (1hr training flight prior to actual spray)  
1900: Land KNBC  
Sunset: 1904

##### 5 OCT (Wednesday) WX Backup or Training

1400: Show (Earlier if Training)  
1430: WX Decision and Load Chemical  
1600: Depart KNBC \*\*\* (1hr training flight prior to actual spray)  
1900: Land KNBC  
Sunset: 1903

##### 6 OCT (Thursday) \*\*Departure time may slip depending upon Wednesday evening completion time.

1000: Show  
1200: Depart KNBC  
1400: Land KYNG

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

- (1) Mission Commander Cell Phone
- (2) Friendly Force Tracker

- b. **Entomologist:**
  - (1) Wind Gauge & Compass
  - (2) VHF Radios and Cellular Phone
  - (3) Pesticide Safety Binder
- c. **Navigators:**
  - (1) Maps
  - (2) Templates
- d. **Spray Maintenance:**
  - (1) Spill Kit
  - (2) Safety Equipment
  - (3) Loading and Clean-up Equipment and Supplies

## 5. **SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** size = 8003: 14 open If rate goes to 1oz/acre then we will need 18 sites open
- d. **Differential GPS:** Wingman Installed
- e. **Aircraft:** 89-9106
- f. **Mission Identifier:** QZNRK9901276

## 6. **SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: BVA
- b. **Application:** 0.75 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 15:45 Minutes
- h. **Flow Rate:** 2.7 gallons/Minute

## 9. **PARKING PLAN:** NAS Beaufort, SC. Please limit number of vehicles and trips on the flight line

## 10. **AIR TO GROUND RADIO FREQUENCIES:**

Beaufort Tower:	119.05/340.2 MCAS TWR
Beaufort Approach	123.7
Hilton Head Arpt:	118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)
Beaufort Co Arpt:	122.7 UNI
Spray Ground:	123.4

## 11. **TRANSPORTATION:** Parris Island will provide 3 vehicles for transportation to and from quarters and for messing. Vehicles will be at Base Operations.

## 12. **SPRAY MONITORING/TESTING:** Ground monitoring by CPMP &Parris Island MCRD Project Coordinator.

## 12. **CONTACTS:**

- a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX
  - (1) **Environmental Coordinator (Spray Coordinator):**

(b) (6), DSN (b) (6), Cell (b) (6) HazWaste: (b) (6), DSN (b) (6); Cell (b) (6)  
 (b) (6) Cell (b) (6), DSN (b) (6) Cell (b) (6)

FAX (843) 228-2616; NREAO, (b) (6) DSN (b) (6)

(2) Assistant Chief of Staff I & L: Col (b) (6), DSN (b) (6) Deputy AC/S (b) (6)  
 (b) (6) DSN (b) (6)

(3) Pest Control Foreman: DSN 335-3663

(4) P.I. Motor Pool: (b) (6), DSN (b) (6)

(5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)

(6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)

(7) P.I. Rifle Range: DSN: 335-3183/3624

**b. Beaufort MCAS SC:** (Commercial (843) 228-XXXX)

(1) Beaufort MCAS Environmental: (b) (6), DSN (b) (6); (b) (6), DSN (b) (6)

(2) Fuels: DSN: 335-7049/7448/7168

(3) MCAS Beaufort Airfield MGR: Lt Col (b) (6) (Ops Officer) Airfield manager (b) (6)  
 DSN: (b) (6), Base Ops is ext 7301/2/3  
 (Airfield Manager is (b) (6), DSN: (b) (6) approves after hrs requests

(4) Trans Alert/VAL: DSN: 335-7110

(5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)

**c. Beaufort County Mosquito Control:** (b) (6)

**d. Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) DSN: (b) (6)

**e. Quarters:** Holiday Inn 2225 Boundary St, Beaufort, SC \$104 + tax/night (843) 379-3100 Fax (843) 379-3101  
 18 Rooms reserved, need names NLT 30Sep

Comfort Inn and Suites (843) 379-9400

Ramada Inn (843) 524-2144/Fax 1704

Hampton Inn (843) 986-0600 (FAX 0494)

Sleep Inn (843) 522-3361 FAX (843) 522-9929

Parris Island Billeting DSN: 335-2744 (FAX: 3815); (843) 228-3960

Comfort Inn (843) 525-9366 (FAX 1529)

Best Western (Sea Island Motel) (843) 524- 4121

Port Royal Days Inn (843) 524-1551

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
 Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Maj (b) (6); FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: TSgt (b) (6); FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) 1503 FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, MSG (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) (b) (6) (b) (6) (b) (6)





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

20 September 11

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Parris Island MCRD, SC

1. Aerial spray mission controlling biting midges and mosquitoes with insecticide to reduce the negative impact on outdoor training at Parris Island MCRD, SC.

2. Concept of Operations:

**3 OCT (Monday)**

1500: Show  
1700: Depart KYNG  
1900: Land KNBC  
2000: Safety Brief

**4 OCT (Tuesday)**

TBD Installation Brief  
1400: Show  
1430: WX Decision and Load Chemical  
1600: Depart KNBC \*\*\* (1hr training flight prior to actual spray)  
1900: Land KNBC  
Sunset: 1904

**5 OCT (Wednesday) WX Backup or Training**

1400: Show (Earlier if Training)  
1430: WX Decision and Load Chemical  
1600: Depart KNBC \*\*\* (1hr training flight prior to actual spray)  
1900: Land KNBC  
Sunset: 1903

**6 OCT (Thursday) \*\*Departure time may slip depending upon Wednesday evening completion time.**

1000: Show  
1200: Depart KNBC  
1400: Land KYNG

3. Maj (b) (6) (b) (6) will act as Mission Commander Capt. (b) (6) will be the Aircraft Commander. Support at Parris Island MCRD and Beaufort MCAS has been completed.

(b) (6), MSgt, USAFR  
757AS Aerial Spray



DEPARTMENT OF THE AIR FORCE  
757 AERIAL SPRAY SQUADRON  
Youngstown Air Reserve Station  
Vienna OH 44473-5926

20 January 2010

MEMORANDUM FOR 757 AS/DO

FROM: 757 AS/DOS

**SUBJECT:** Report on testing of 300' above ground level release height for mosquito sprays and subsequent effective swath width using droplet analysis during Test and Training Mission at Avon Park AF Range, Florida 6-10 December 10.

**1. Purpose:** Determine swath characteristics (i.e. droplet drift, swath offsets, average droplet size at various distances downwind) of BVA oil ( a common pesticide carrier) dispersed at altitudes of 300' AGL by the C-130 aerial spray platform. In these tests, a fluorescent dye was added to distinguish material sprayed from the aircraft with microscopic drops naturally occurring in the environment.

**2. Participants:**

**Aircrew:**

1. Pilots: Maj (b) (6) (b) (6) Capt (b) (6) , Capt (b) (6)
2. Navigators: Maj (b) (6)
3. Flight Engineers: MSGT (b) (6)
4. Spray Operators: MSGT (b) (6) , MSGT (b) (6)
5. LZ Supervisor: LTC (b) (6)

**Maintenance:**

1. Spray Maintenance: TSgt (b) (6) , MSgt (b) (6) , SSGT (b) (6)  
(b) (6) (b) (6)
2. Avionics: SrA (b) (6)
3. Crew Chiefs: SSGT (b) (6) , SSGT (b) (6)

**Entomologists:**

1. Maj (b) (6) (b) (6) LtCol (b) (6) , Capt (b) (6) (entomology technical support)

**3. Spray Configuration:**

Mass-SP2G  
Aircraft Number: 99104  
Mission Identifier: QZNRKA9901340

**4. Spray Parameters:**

Booms—Fuselage only.  
Nozzles—8005 TeeJet.  
Number of Nozzles— 7 per side (8005)  
Airspeed—200 knots ground speed.  
Altitude—300' AGL.

Wind— looking for 90 degree crosswind component.

### 5. Aerial Spray Flight Data:

a. 6 Dec 10: Ferry	KYNG-KAGR 1820-2115Z	Flight Hours: 2.9
b. 7 Dec 10: Training Sortie	KAGR-KAGR1448-1651Z	Flight Hours: 2.1
c. 8 Dec 10: Spray Sortie	KAGR-KAGR1415-1705Z	Flight Hours: 2.8
d. 9 Dec 10: Spray Sortie	KAGR-KAGR1435-1635Z	Flight Hours: 2.0
e. 10 Dec 10: Ferry	KAGR-KYNG1335-1702Z	Flight Hours: 3.5

### 6. Methods & Results:

Ten collection stations were outfitted with spinning impingers (glass microscope slides) at 0.25 mile intervals for the first mile, followed by 0.5 mile intervals for the remaining 4.5 mile sampling line along Van Eegan Road beginning where it intersects with Kissimmee Road (see figure 1). Twenty 8005 flat fan nozzles (7 per side) on fuselage booms were used along with a flow rate of approximately 7.2 gallons per minute at 50 psi of BVA oil (equivalent to 1.0 oz/acre). Aircraft passes were made on a course perpendicular to the collection stations, with each pass totaling 60 seconds of spray-on time. Two spray passes were conducted for each test. After the last pass was completed and after giving time for the spray cloud to settle, the spinning slides were collected and viewed under a fluorescent compound microscope. One hundred drops (if available) were counted for each sampling station. Drops were measured and graphed by station for volume mean diameter (VMD), numerical median diameter (NMD), and drop density (number of drops per cm<sup>2</sup>) for each station. All aircraft traffic at application altitude was confined to Kissimmee Road. Sprays avoided the OQ range per our agreement with US Fish & Wildlife. Pilot training was accomplished on all spray flights.

7 December: No testing was carried out as winds were unacceptably high and from an adverse direction (45 degrees crosswind component).

8 December: A test was conducted along Van Eegan. Winds were ideal averaging approximately 3.9 knots (Table 1) approximately parallel to the sampling line. Figure 1 shows drop characteristics at each sampling station along Van Eegan road. Drop density was, as expected, greatest at the station approximately 0.25 miles from the release point at 20 drops/sq. centimeter and decreased to approximately 5 drops/ sq centimeter at 2.0 miles from the release point. No drops were collected at any sampling stations past this point. Droplet size (volume mean diameter) ranged from approximately 43 microns at a station 0.5 miles from the release point, decreasing to approximately 27 microns at the station located 2.0 miles from the release point. It should be noted that a majority of the droplets were in the 7-22 micron size class, however a relatively large amount of the spray volume was represented by smaller numbers of large droplets, skewing the VMD to a higher size class. Temperatures were relatively low (average 50 degrees F), so droplet evaporation was probably not a significant factor.

9 December: On this date winds were again relatively light and predominately out of the north prior and during oil application (3-5 knots @ 340°-016°). Two passes were made by the aircraft from east to west along Kissimmee Rd and the collection transect was set up as before perpendicular to the aircraft path, again along Van Eegan Rd. During the actual application, the winds were recorded on the ground at approximately 3.6 knots,

almost directly out of the north. Droplet characteristics are graphed in figure 2. The highest droplet density (approximately 29 drops/sq. centimeter) was seen at 0.5 mile from the release site (station 1). Droplet densities decreased fairly steadily to approximately 3 drops/sq. centimeter and the station 2.0 miles from the release point. As in the previous test, no droplets were recovered from any station further down range. Droplet size was similar to the first test. Volume mean diameter of slightly over 50 microns was seen at the station 0.25 miles from the release point, and decreased to approximately 27 microns at the station 2.0 miles from the release point. Again the majority of the droplets were in the 7-22 micron size class, with larger drops skewing the VMD's upward. Temperature during this test was relatively low (mid 50's), so as before droplet evaporation was probably not a factor in the data collection and analysis.

**7. Conclusions:** These tests can be considered replications as the data appear remarkably consistent for similar testing conditions at a 300 foot AGL release height. These data seem to indicate an approximately 1.75 nominal swath of recoverable droplets when wind speeds are generally less than 5.0 knots. The data also suggest an offset of approximately 0.25 miles under the aforementioned conditions. In summary, it appears the aerosol cloud is "controllable" when utilizing a release height of 300 feet. However, what is missing from this series of tests is a bioassay which might correlate mosquito kill (i.e. effectiveness) with the droplet characteristics reported here. Thus, while we might be fairly confident of the nominal swath width of the aerosol cloud, we do not yet know the effective swath width under similar conditions.

**8. Recommendations:** Conduct a similar series of tests using an active ingredient (Dibrom or similar) using mosquito bioassays as well as droplet analysis equipment. Also recommend repeating these tests at higher altitude as additional support for proof of concept in NVG night pesticide applications.

**9. Acknowledgements:** Many thanks to Capt (b) (6) SSgt (b) (6) , TSgt (b) (6) and MSgt (b) (6) for assistance in these field trials.

//signed//

(b) (6) (b) (6) Maj, USAFR  
Research Entomologist

Attachment 1. Figures and Table.

Figure 1. Test site at Avon Park for 300 ft altitude testing with BVA oil 8-9 December 2010. Spray collectors were set on Van Eeghan road and the aircraft flew directly overhead Kissimmee road.

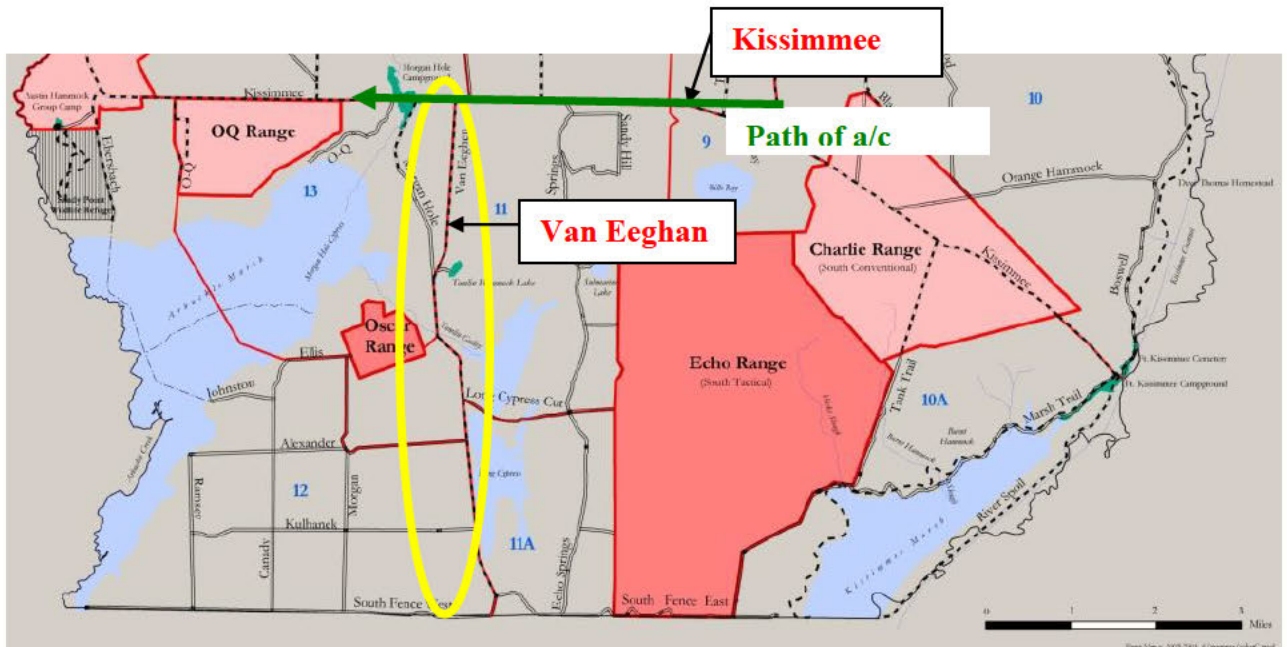


Figure 2. Aerosol cloud data summary at each station along sampling line on 8 Dec 2010. VMD is the volume mean diameter of the spray cloud at each sampling station. NMD is the numeric mean diameter at each sampling station.

## REMSpC Slide Analysis

### Line Data

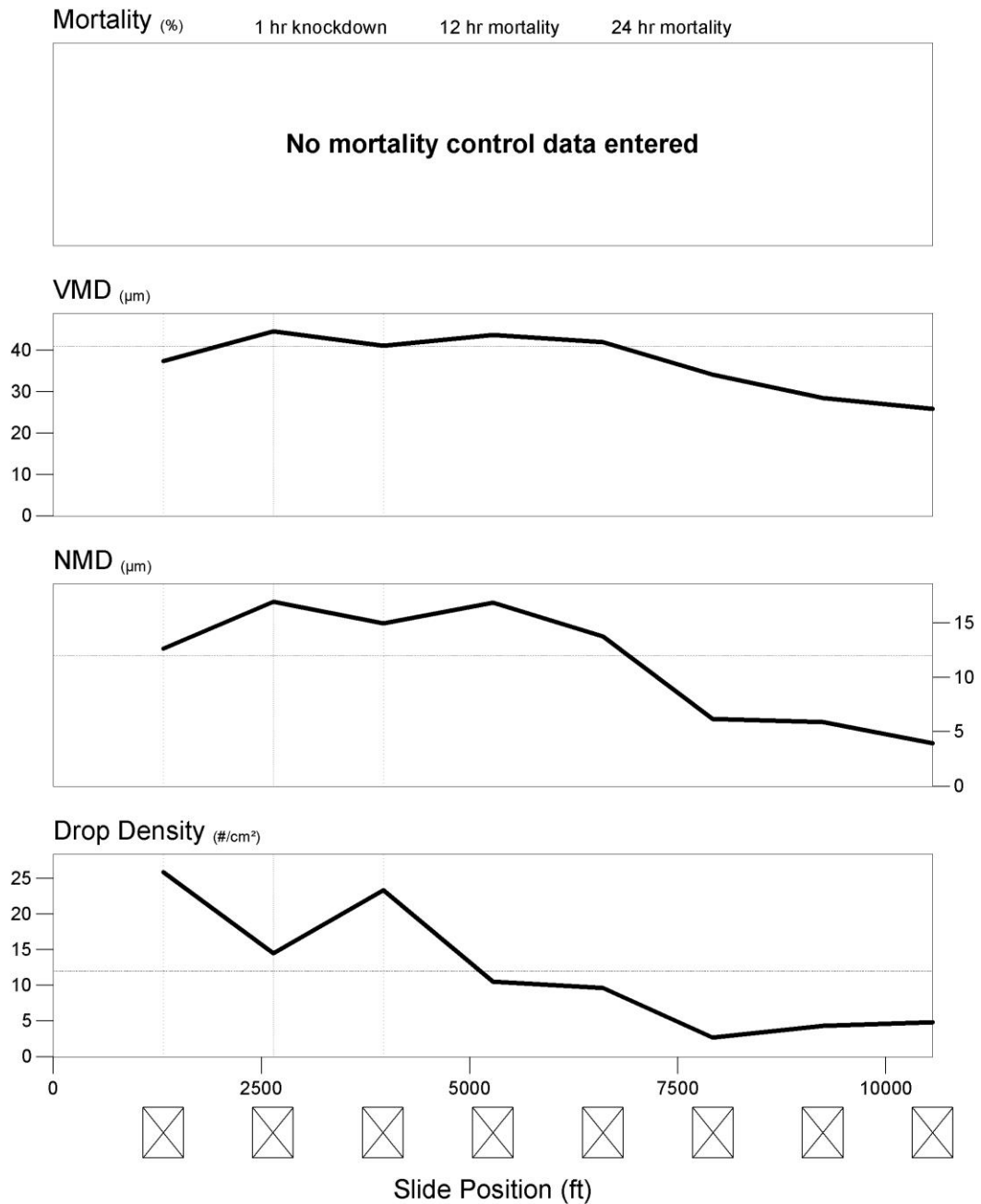




Figure 3. Aerosol cloud data summary at each station along sampling line on 9 Dec 2010. VMD is the volume mean diameter of the spray cloud at each sampling station. NMD is the numeric mean diameter at each sampling station.

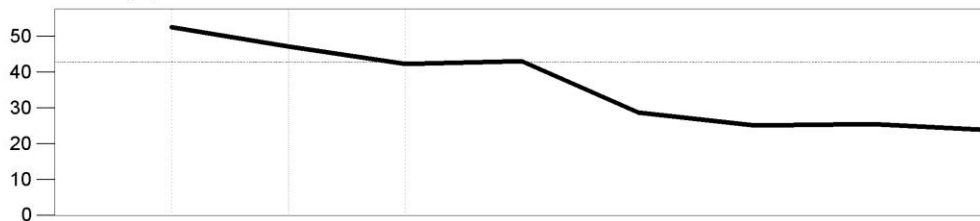
## REMSpC Slide Analysis

### Line Data

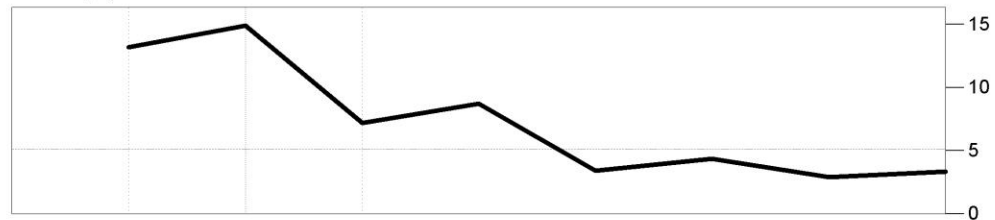
Mortality (%)      1 hr knockdown      12 hr mortality      24 hr mortality

**No mortality control data entered**

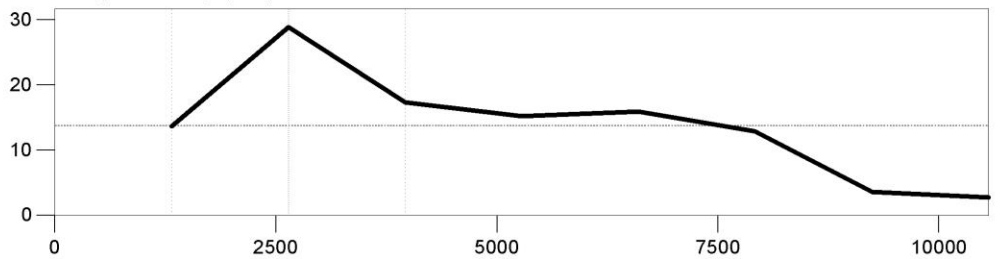
VMD ( $\mu\text{m}$ )



NMD ( $\mu\text{m}$ )



Drop Density ( $\#/\text{cm}^2$ )



Slide Position (ft)

Table 1. Meteorological conditions during Spray Testing 8 Dec 2010.

Date	time	wind hdg	wnd spd	temp	rh
12/8/2010	9:30:00	5	4.1	48.2	50.7
12/8/2010	9:32:00	27	5.1	48	50.5
12/8/2010	9:34:00	54	4.9	49.3	49.5
12/8/2010	9:36:00	49	7.1	48.7	49
12/8/2010	9:38:00	357	4.6	50.6	49.5
12/8/2010	9:40:00	31	3.3	48.3	48.3
12/8/2010	9:42:00	10	2.7	49.5	48
12/8/2010	9:44:00	359	4.1	50.5	49.3
12/8/2010	9:46:00	72	4.2	50.9	47.4
12/8/2010	9:48:00	345	3.1	49.4	49
12/8/2010	9:50:00	16	3.4	49.7	48.8
12/8/2010	9:52:00	60	2	50.2	46.4
12/8/2010	9:54:00	349	4.3	50.2	47.9
12/8/2010	9:56:00	12	3.7	51	45.9
12/8/2010	9:58:00	20	4.7	51.1	45.4
12/8/2010	10:00:00	331	3.8	51.5	47.4
12/8/2010	10:02:00	336	2.4	51.5	45.3
12/8/2010	10:04:00	1	4.3	50.9	43.7
12/8/2010	10:06:00	43	5	51.5	43.5
12/8/2010	10:08:00	59	2.6	51.2	44.4
12/8/2010	10:10:00	344	4.3	50.5	45.5
12/8/2010	10:12:00	339	2.3	51.1	45.6
Average			3.909091	50.17273	47.31818



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

15 Dec 10

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray Training Avon Park, FL

1. One C-130 aerial spray equipped aircraft will be available 7-11 Mar 11 to proceed from Youngstown ARS, OH and stage at MacDill Aux Field, FL. The mission purpose is to conduct winter aerial spray semi-annual currency and proficiency training over Avon Park Bombing Range, FL and coastal waters. Additionally, 757AS entomologists will be conducting ground collection and analysis of ULV real swath width data for determining the control of aerial spray materials from 100' AGL and higher altitude applications.

2. Concept of Operations:

a. 24 January (Monday)

1000 Show KYNG  
1200 Depart KYNG  
1500 Land KAGR

b. 25-27 January (Tuesday-Thursday) Range: 0900-1300

0700 Show KAGR  
0900 Depart KAGR  
1300 Land KAGR

c. 28 January (Friday)

0800 Show KAGR  
1000 Depart KAGR  
1300 Land KYNG

3. Spray Configuration:

- a. MASS – SP2G
- b. MI: QZNRK9901024
- c. Parameters –100' AGL and above
- d. Chemical – BVA Oil to analyze swath width and droplet spectrum on slides

4. Maj (b) (6) (b) (6) will serve as Mission Commander.

5. Support required at Avon Park Bombing Range and LZ has been arranged.

(b) (6) , Capt, USAFR  
757<sup>th</sup> Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

AVON PARK, FL

7-11 March 11

**PURPOSE/OBJECTIVE/BENEFIT:** Flight testing of effective swath width at varying altitudes. Test will be conducted with BVA oil. Testing will monitor drop activity via slide readings.

## 1. 910 AW PARTICIPANTS:

### a. Aircrew:

1. Pilots: LTC (b) (6) (LZSO) (in place), LTC (b) (6), Maj (b) (6) (b) (6), Capt (b) (6)  
Capt (b) (6)
2. Navigators: LTC (b) (6)
3. Flight Engineers: SMSgt (b) (6)
4. Spray Operators: SMSgt (b) (6), MSgt (b) (6), MSgt (b) (6), SSgt (b) (6),  
SSgt Brent Bate

### b. Maintenance:

1. Spray Maintenance: TSgt (b) (6), TSgt (b) (6), SSgt (b) (6) (Lead)
2. Avionics: TSgt (b) (6)
3. Crew Chiefs: TSgt (b) (6), TSgt (b) (6)

### c. Entomologist/Ground Support: LTC (b) (6) (b) (6), Maj (b) (6) (b) (6)

## 2. SCHEDULE: (All times Local) All times and sequence of events are subject to change depending upon the needs of the testing and training.

### a. 24 January (Monday) (23 STS has the field until 1400 for airdrops)

1000 Show KYNG  
1200 Depart KYNG  
1500 Land KAGR

### b. 25-27 January (Tuesday-Thursday) Range: 0900-1300 except for Tuesday which is 0900-1200

0700 Show KAGR  
0900 Depart KAGR  
1300 Land KAGR

### c. 28 January (Friday) (23 STS has the airfield at 1130 for airdrops)

0800 Show KAGR  
1000 Depart KAGR  
1300 Land KYNG

## 3. ITEMS TO TAKE:

### a. Navigator: Maps with "No-Spray" Areas Marked

## 4. AIR TO GROUND FREQUENCIES:

- a. Spray: Primary 123.45, Secondary 122.9
- b. Patrick: TWR 133.75; GND 124.35; CMD POST 311.0; PTD 372.2
- c. Avon Park: TWR 292.2 (p), 126.15, 276.6 (s range) Hrs 0700-2300 M-F, S-S per flying schedule
- d. MacDill: TWR 123.7; GND 118.575; ATIS 133.825; CMD POST 311.0; PTD 372.2

## 5. SPRAY CONFIGURATION:

- a. MASS – SP2G
- b. Aircraft Number: 89-9103
- c. Nozzle Tips/Orientation: Fourteen 8005 nozzles -- straight down
- d. Mission Identifier: QZNRK9901024

## 6. MISSION PROTOCOLS:

- a. Altitude: up to 500' AGL flight effective swath characteristic testing/evaluation
- b. Ground Speed: 200 KNOTS
- c. Pesticide: None, BVA Oil
- d. Application Rate: 1.0 oz/acre
- e. Flow Rate: 7.2 Gallons/Minute
- f. Acreage: Configuration for testing only.
- g. Swath Width: As required
- h. \*\*\*See last page for details on mission protocols\*\*\*

7. **CONTACTS:**

a. **Quarters:**

- Residence Inn Sebring (863) 314-9100 POC: Bruline Bikar 21 rooms reserved
- Holiday Inn Express (863) 386-1115 POC: Teresa Hammond
- Quality Inn (863) 385-4500 FAX (863) 382-4793
- Sebring/Avon Park: Inn on the Lakes, (863) 471-9400, POC is Charmain
- Jacaronda (863) 453-2211; 19 East Main St, Avon Park, FL \$ 27.29
- Oak Tree Inn (863) 453-3165
- Days Inn (863) 382-1148, 800 329-7466

b. **Transportation:**

Avon Park Enterprise POC (b) (6) (863) 452-5483; Fax (863) 452-5947  
Sebring Enterprise POC (b) (6) (863) 385-6969; Fax (863) 385-3416  
(All vehicles will be at Avon Park Flight Ramp)  
Aircrew x 2, Ento – 3 Vans  
Grenier, , Spray MX, CC's – 3 Full Size Cars

c. **MacDill AFB:** DSN prefix 968; (813)-828-xxxx; Base Operations – Ext 2350

- (1) Weather: MacDill AFB Forecaster (DSN 968-2854)
- (2) Range Scheduling MacDill: DSN 968-4641 (Current Ops Scheduling)
- (3) MacDill AFB Ops Gp CC 968-3014

d. **Avon Park, Fla. Commercial prefix (863) 452-4XXX**

DSN 968-7+Avon Park Ext XXX; DSN from Avon Range phones: 4+94+DSN

Avon Control Tower & Range Control Scheduling DSN 968-7176

Local phone calls from Avon Range: Sebring 82 + number; Avon Park 81 + number

- (1) Range Operations Manager: (b) (6) Bldg 236, (b) (6)
  - (2) Avon Range Control Tower: ext 176
  - (1) Flight Chief of Civ Engineer: (b) (6) , Bldg 29, (b) (6)
  - (2) Chief, Environmental Flight: (b) (6) , Bldg 29, (b) (6) also Wildlife Biologist (b) (6)
  - (3) Fuels: ext 118 or Cel (b) (6)
  - (4) Range Support Manager: Mr (b) (6) , Bldg 29, (b) (6)
  - (5) Range Control/Schedule: (b) (6) , Bldg 41, (b) (6)
- See Attached Avon Park Org directory for additional listings**
- (6) Range UHF Frequency: 292.2 (Primary), 276.6 (South Range)  
Range VHF: 126.15

f. **Sebring AP:** Sebring Flight Center (863) 655-6455 (fuel needs)

Mgr: (b) (6) cell (b) (6)  
Sebring FBO freq 122.7

g. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046, +2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Maj (b) (6) ; FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: TSgt (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, MSgt (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: 330-233-2149
  - Entomologist: (b) (6) ((b) (6)) (b) (6) ((b) (6))

## December 6-10 2010 Avon Park 500ft release Mission Protocols

**Purpose:** To determine the effectiveness and swath characterization of a 500' release of simulated adulticide using droplet analysis. These tests will be a continuation of tests conducted in early 2006 at Avon Park, FL to determine the proper methods for potential night spray operations.

### Proposed methods:

15 Sampling stations will be placed along a 5 mile transect. Sampling stations will be located approximately  $\frac{1}{4}$  mile apart for the first 5 stations, and  $\frac{1}{2}$  mile apart for the remainder. Each sampling station will be composed of a slide spinner mounted on a wood dowel pole, equipped with 2 teflon slides.

Two trials will be conducted each consisting of a single pass application dispensed at a rate of 1.0 ounces per acre (based on a 2000 foot swath). This translates into a flow rate of 7.2 gallons per minute. The sampling transect will be positioned parallel to the prevailing wind and the flight path of the aircraft will be perpendicular to the transect. Depending on prevailing wind velocity, the flight path (offset) of the aircraft will be from 1000 to 2000 feet upwind of the first sampling station.

TeeJet nozzles (8005) will be used for both trials. In both tests, fluorescent dye will be added to the spray tanks (0.25% Uvitex OB) to facilitate droplet counting and sizing using UV microscopy. Spray will be turned on 30 seconds prior to coming abeam of the sampling line and will be turned off 30 seconds after coming abeam of the sampling line. 30 minutes after each application, slides will be collected for analysis. Spray droplets will be counted and sized with a UV microscope equipped with a sizing reticle. 100 drops (if available) will be counted on each slide and the total area counted will be calculated.

### Materials/Resources required:

30 gallons BVA oil

Readily accessible, fairly open 5 mile long transects (N-S and E-W)

15 spinners/30 teflon slides/10 wooden dowels

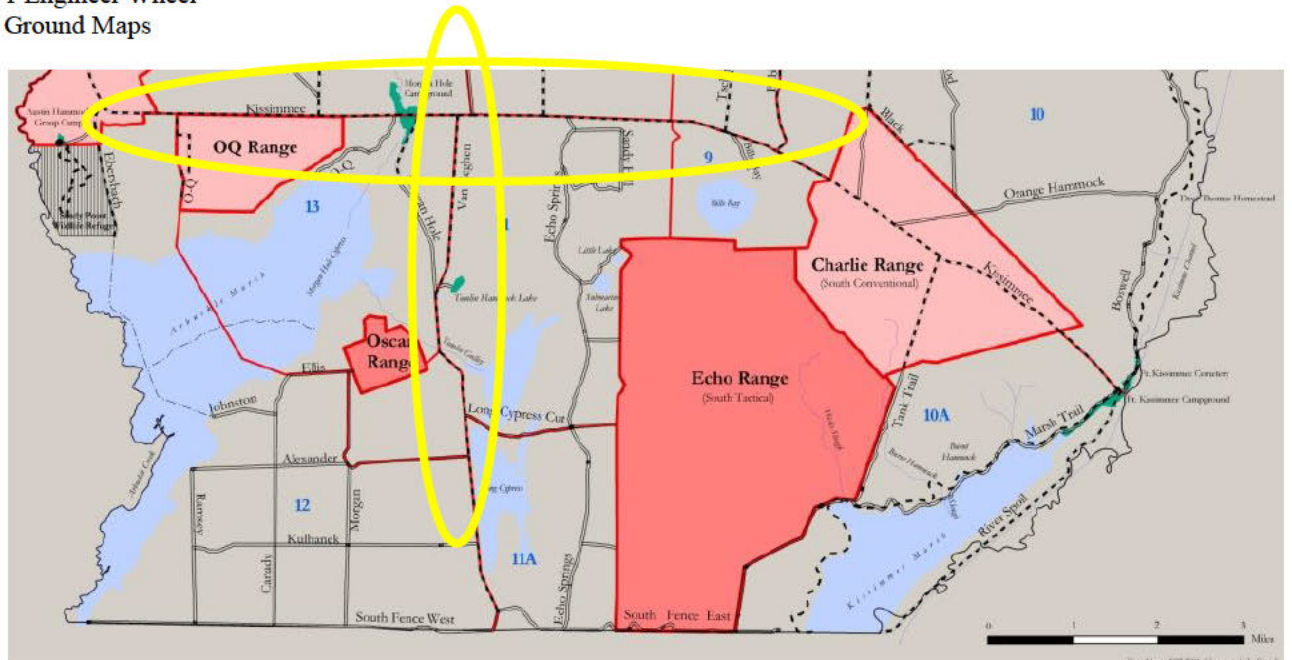
UV microscope

1 Signal Mirror

1 Spot Light

1 Engineer Wheel

Ground Maps







DEPARTMENT OF THE AIR FORCE  
757 Airlift Squadron – Aerial Spray Operations  
3976 King Graves Rd Unit 24  
Vienna OH 44473-5924

**910 AW AERIAL SPRAY UNIT -- POST-MISSION REPORT  
GRAND FORKS AFB & ARMY CORPS OF ENGINEERS  
PROPERTY NEAR WILLISTON ADULT MOSQUITO  
CONTROL 8-11 Aug 2011**

**1. MISSION BASICS:**

- a. Installation Sprayed: Grand Forks AFB & Williston ACE, North Dakota
- b. Mission Duration: 9-11 August 2011
- c. Purpose of Application: Control adult nuisance and vector mosquitoes (and gnats)
- d. Application Dates 9 & 10 Aug 2011
- e. Time of Application (Local): 1938-2048 hrs (9 Aug), 1925-2125 (10 Aug)
- f. Acres Treated: 12,248 (9 Aug); 33,536 (10 Aug); 45,784 total
- g. Project Coordinator/s (Name/Rank, Title, Phone #): TSgt(b) (6) NCOIC Pest Management Shop, DSN (b) (6)(b) (6) ACE
- h. Date Spray Map Last Approved: 10 Aug 2011
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): GFAFB CE Conference Room, LtCol (b) (6) Lt Col (b) (6)(b) (6) to Maj (b) (6) 319 CES/CC

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Entomologist (Category 11): Lt Col (b) (6)(b) (6) (safety briefer), Capt(b) (6) (b) (6)
- c. Aircrew:
  - 1) Pilots: Lt Col (b) (6), Maj (b) (6) Capt(b) (6)
  - 2) Navigators: Lt Col(b) (6), Lt Col(b) (6)
  - 3) Flight Engineer: TSgt(b) (6)
  - 4) Spray Operators: MSgt(b) (6) MSgt(b) (6) SSgt(b) (6) SSgt(b) (6)
- b. Maintenance:
  - 1) Spray Maintenance: (b) (6) TSgt (b) (6) TSgt (b) (6) SSgt(b) (6)
  - Crew Chief(s): MSgt (b) (6) TSgt (b) (6)
  - 2) Avionics: MSgt(b) (6)

**Flying Data:**

- (1) Spray Sorties/Hours: 2/2.1 (9Aug) + 4.5 (10 Aug); total 6.6
- (2) Ferry Sorties/Hours: 2/6.6
- (3) Mission ID: QZNRK9901220

**3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 90 gal Trumpet® (9 Aug); 80 gal Zenivex® in 80 gal of BVA (10 Aug)
- d. Gallons Pesticide Applied: 90 gal Trumpet® (9 Aug); 80 gal Zenivex® in 80 gal of BVA (10 Aug)

- e. Gallons and Name of Flush Used: 25 gal water (9 Aug); 15 gal BVA (10 Aug)
- f. Other Additives Used: none
- g. Application Rate: 0.94 oz/acre Trumpet® (9 Aug); 0.31 oz/acre Zenivex

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan (9 Aug); TeeJet® 8003 (10 Aug)
- e. Nozzle Orientation & Number Used: 17 straight down (9 Aug); 15 straight down (10 Aug)
- f. Pressure (PSI): 41-52 PSI (9 Aug); 31-38 PSI (10 Aug)
- g. Flow Rate: 7.0 GPM (9 Aug); 4.4 GPM (10 Aug)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off Set: 2000-4000' depending on wind speed
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 322-040° @ 4-9 knots (aerial observation); 2-4 knots (ground observation) (9 Aug); 212°@6-14 knots (aerial observation, Watford City), 018-030°@4-12 knots (aerial observation, Williston), 010°@2-4 knots (ground observation, Williston) (10 Aug)
- b. Temperature (Degrees Fahrenheit): 73-66 °F (9 Aug); 69-67°F (10 Aug)
- c. Relative Humidity: 55-80% (9 Aug); 73% (10 Aug)
- d. Cloud Cover: scattered clouds (9 Aug); scattered clouds/showers (10 Aug)
- e. Source: Ground observations and onboard aircraft readings

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. The 319 CES pest management conducts adult mosquito trapping to monitor mosquito densities on base. Williston Vector Control uses New Jersey traps to monitor mosquito densities.
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito magnet traps
  - (2) Results: GFAFB pest management reported an overall reduction of 74% of all mosquitoes the day after sprays (attachment 1); Williston Vector Control reported near complete control of gnats the day following the application.

**8. (b) (6)** Continued moderate numbers of mosquitoes prompted GFAFB to make the decision to make an aerial spray application. The city of Larimore, ND was also included in this mosquito adulticide application. With an extra day left in the schedule, GFAFB graciously allowed spray operations to continue on 10 Aug to treat the Williston area near the Army Corps of Engineers property located on the western end of North Dakota. Areas treated are shown in attachments 2&3. Post-spray trap count data showed acceptable mosquito reductions (75%) following the application, and unless a night operation is approved, this reduction level may be the normal level against species that fly primarily at night. Many thanks to MSgt (b) (6) and the staff of the GFAFB pest control shop.

//signed//

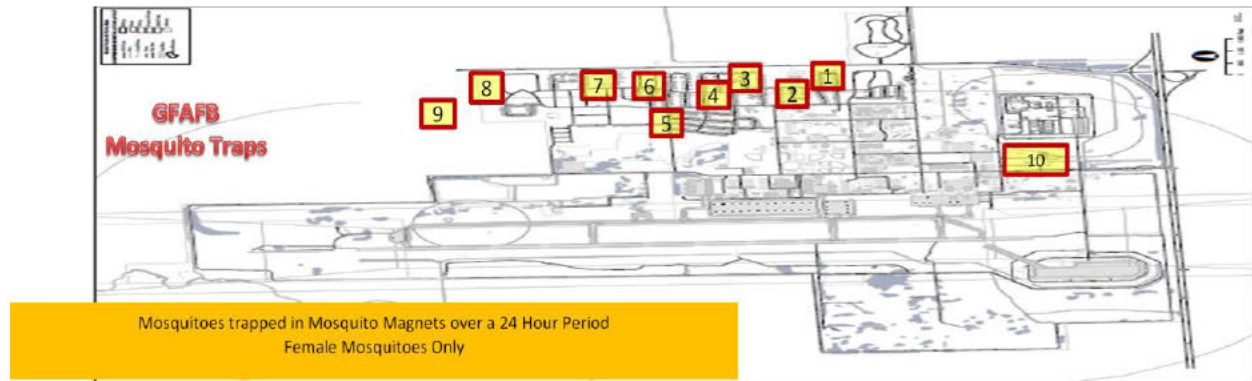
(b) (6) (b) (6)

Lt Col, USAFR

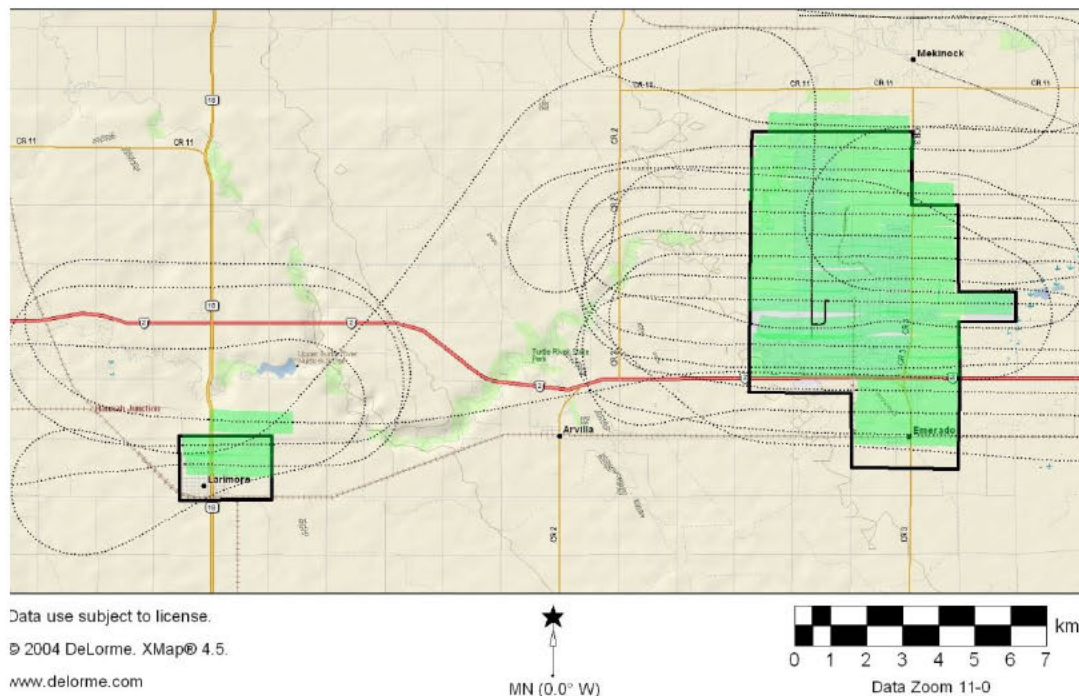
**DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

**Attachment 1. Numbers of mosquitoes trapped before and after aerial sprays at GFAFB by 319 CES Pest Management.**

Weather Conditions									Date	Temp	Wind	Rain	Visibility
Trap #	1	2	3	4	5	6	7	8					
Location	N. Gate	Cedar	Hickham	Hemlock	Holly	Montana	Redwood	Beech	Totals	AVG	Speed	Y/N	Visibility
9-Aug-11	111	1133	70	155	741	117	132	741	3,303	68	12	N	Overcast
10-Aug-11	41	411	35	40	220	18	25	60	858	69	5	N	Overcast

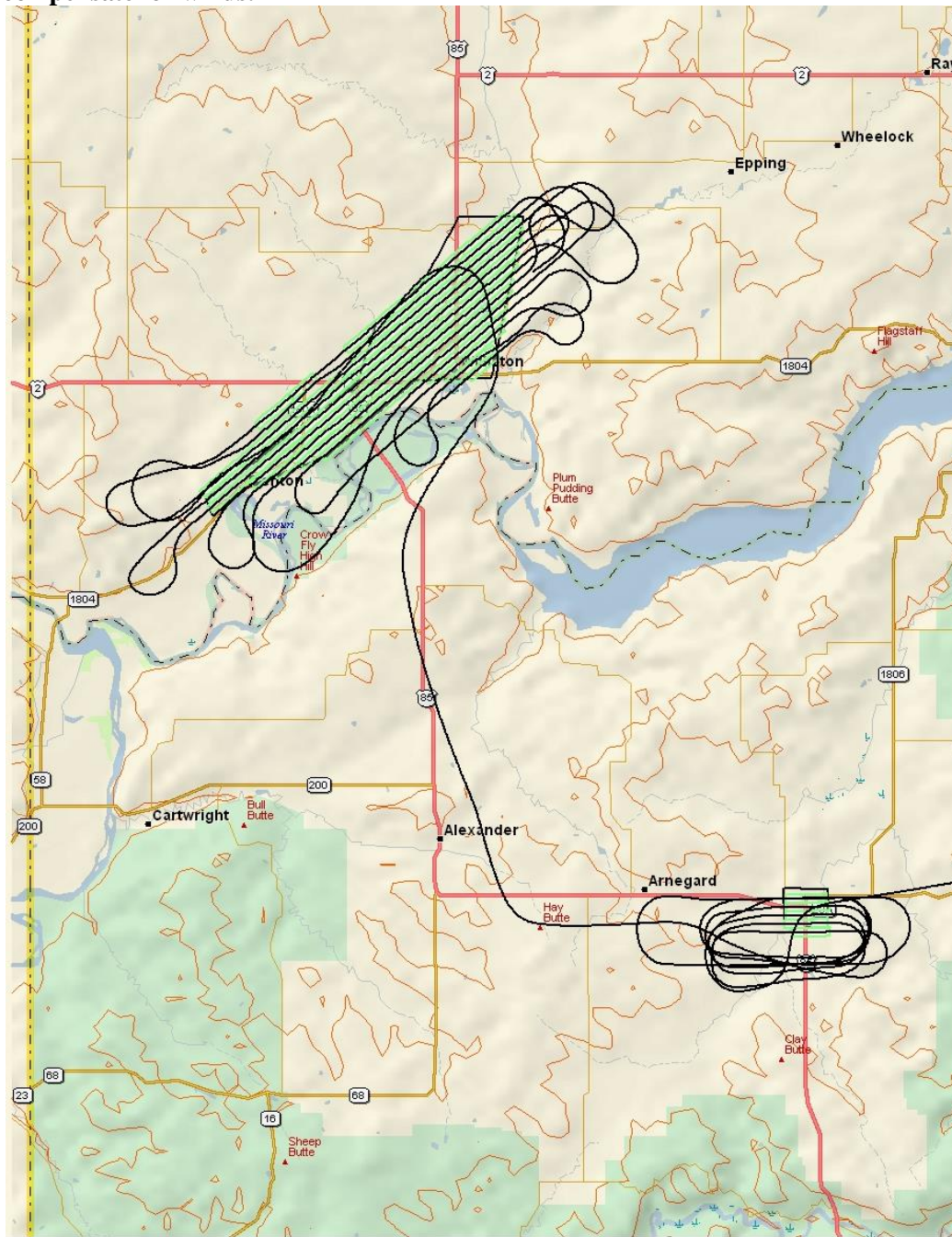


**Attachment 2. Image shows Grand Forks AFB, City of Larimore spray blocks (black) and pesticide application swaths (green) during the application on 9 Aug 2011. A 2000' offset was used to compensate for winds.**





**Attachment 3. Image shows Williston and Watford City, ND spray blocks (black) and pesticide application swaths (green) during the application on 10 Aug 2011. A 2000' offset was used to compensate for winds.**



DeLorme, XMap® 4.5.  
 DeLorme.com

★  
 MN (0.0° W)

0 3 6 9 12 15 18 km  
 Data Zoom 9-0



DEPARTMENT OF THE AIR FORCE  
757 AERIAL SPRAY SQUADRON  
Youngstown Air Reserve Station  
Vienna OH 44473-5926

17 Feb 2011

MEMORANDUM FOR 757 AS/DO

FROM: 757 AS/DOS

SUBJECT: Swath width characterization, logistics development and range orientation for future Barry Goldwater range/Luke AFB herbicide application mission.

1. Purpose:

2. Participants:

Aircrew:

1. Pilots: LTC (b) (6), MAJ (b) (6), CAPT (b) (6)
2. Navigators: LTC (b) (6)
3. Flight Engineers: TSGT (b) (6)
4. Spray Operators: SMSGT (b) (6), MSGT (b) (6)

Maintenance:

1. Spray Maintenance: TSGT (b) (6), TSGT (b) (6), TSGT (b) (6)
2. Avionics: TSGT (b) (6)
3. Crew Chiefs: TSGT (b) (6), SRA (b) (6)

Entomologists:

1. MAJ (b) (6), LTC (b) (6)

3. Spray Configuration:

Mass-SP2G

Aircraft Number: 99108

Mission Identifier: QZNRKA9901039

4. Spray Parameters:

Booms—Fuselage only.

Nozzles—RainDrop nozzles.

Number of Nozzles—27 total

Airspeed—200 knots ground speed.

Altitude—100' AGL.

Wind—Headwind application.

5. Aerial Spray Flight Data:

- |                            |                      |                   |
|----------------------------|----------------------|-------------------|
| a. 8 Feb 11: Ferry         | KYNG-KLUF 1745-0025Z | Flight Hours: 6.7 |
| b. 9 Feb 11: Spray Sortie  | KLUF-KLUF 1425-1625Z | Flight Hours: 2.0 |
| c. 10 Feb 11: Spray Sortie | KLUF-KLUF 1425-1625Z | Flight Hours: 2.0 |
| d. 11 Feb 11: Ferry        | KLUF-KYNG 1400-1705Z | Flight Hours: 5.1 |

**6. Methods & Results:** Swath characterization tests were conducted at Aux field 6 on the Barry Goldwater range. Aux 6 is an assault landing zone with 3 runways oriented 120 degrees from each other. Twenty-one water sensitive cards were placed in a straight line oriented as much as possible perpendicularly to the prevailing wind. The water sensitive cards were spaced 15 feet apart. The aircraft flew with the wind, flying over the card in the center of the card line dispensing water. Each test consisted of one pass. Following each pass, the water dispensed from the aircraft was allowed to settle, and the water sensitive cards were collected and bagged for future analysis. A total of 4 tests were conducted over 2 consecutive days. Cards were later analyzed using a SwathKit deposition image analyzer. Drop size, deposition rates and optimal lane separation lane separation were computed. Optimal lane separation was determined when coverage at the extreme edges of the swath exceeded a coefficient of variation of 0.20 of the swath mean. This figure is an industry standard when determining swath overlap.

February 9: Two swath characterizations were conducted. Water was applied in a direct headwind. Winds were approximately 4 knots. The temperature at the time of the first application was 52 degrees F. Application rate was 400 Gallons per minute.

February 10: Two Swath characterizations were conducted. Water was applied with an approximately 10 degree crosswind component. Winds were approximately 6 knots. The temperature at the time of the first application was 50 degrees F. Application rate was 400 Gallons per minutes.

**7. Conclusions:** Results from the 4 trials are shown in attachment 1, figures 1-4. The graph on the left shows the deposition characteristics, and the graph on the right indicates the approximate effective swath width. All 4 tests were consistent, and the effective swath width seems to be between 90 and 100 feet wide. At the flow rates shown (400 GPM) a 100 foot nominal swath results in a deposition rate of approximately 8.6 gallons per acre, which is reasonably close to the targeted deposition rate of 10.0 gallons per acre.

**8. Recommendations:** Accept the indicated swath width an application rate for herbicide application operations on the Barry Goldwater Range or retest using wing booms and increased flow rates in an attempt to achieve a wider swath width.

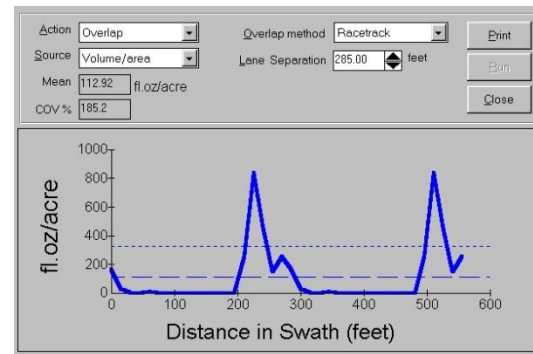
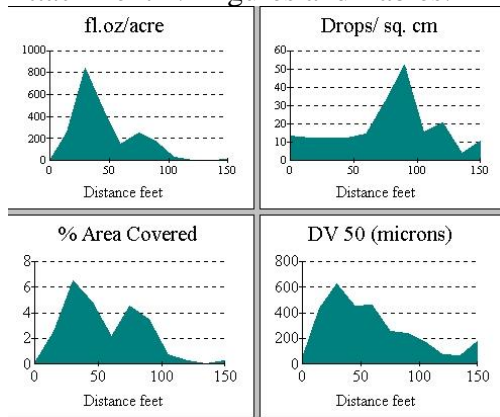
**9. Acknowledgements:** Many thanks to (b) (6) for his invaluable assistance in making this mission possible.

//signed//

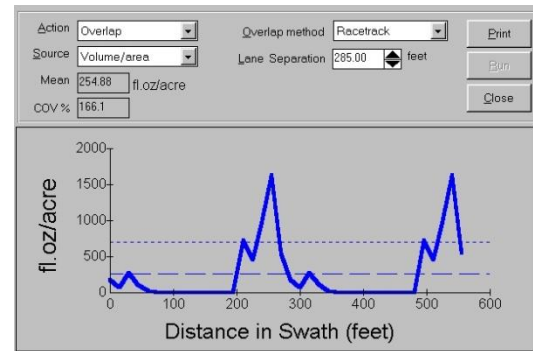
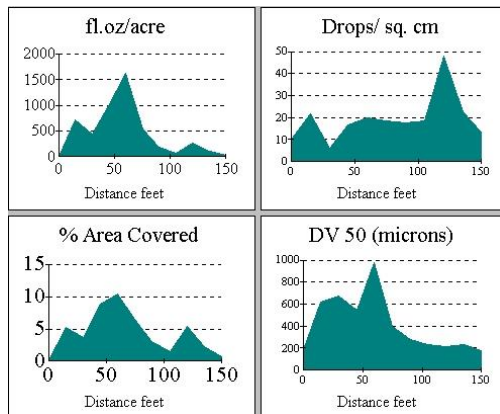
(b) (6) (b) (6) Maj, PhD, USAFR  
Research Entomologist



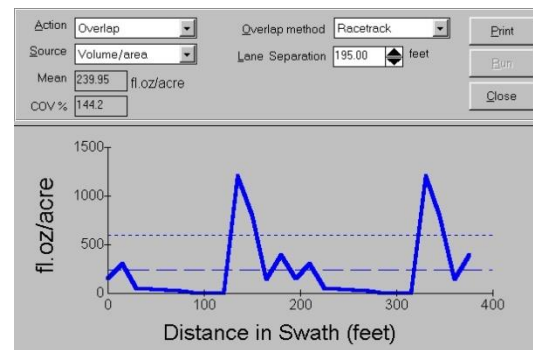
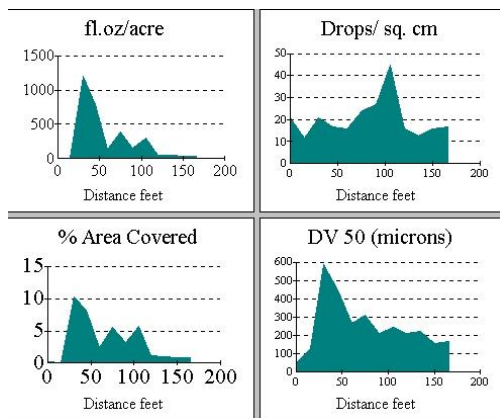
## Attachment 1. Figures and Tables.



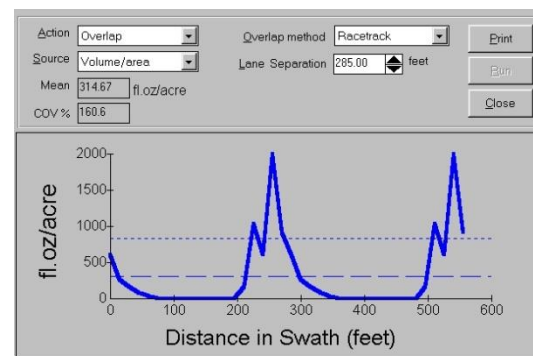
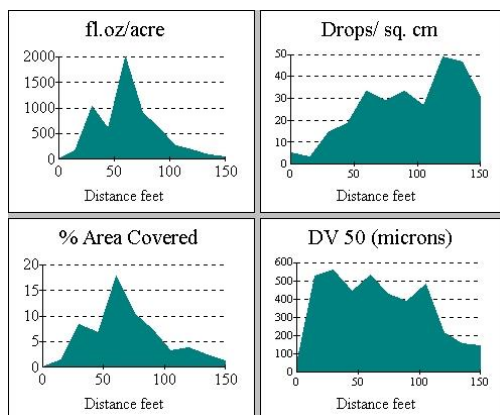
Trial 1, 9 February



Trial 2, 9 February



Trial 3, 10 February



Trial 4, 10 February



# AERIAL SPRAY OPERATIONAL SCHEDULE

## Luke AFB

### 8-11 Feb 11

**PURPOSE/OBJECTIVE/BENEFIT:** Continuation and initial training for aircrew in conjunction with Goldwater range familiarization for future herbicide spray missions.

**1. 910 AW PARTICIPANTS:**

a. **Aircrew:**

1. Pilots: LTC (b) (6), Maj (b) (6) (b) (6) Capt (b) (6)
2. Navigators: LTC (b) (6)
3. Flight Engineers: TSgt (b) (6)
4. Spray Operators: SMSgt (b) (6) (b) (6) MSgt (b) (6)

b. **Maintenance:**

1. Spray Maintenance: TSgt (b) (6), TSgt (b) (6), TSgt (b) (6)
2. Avionics: MSgt (b) (6)
3. Crew Chiefs: TSgt (b) (6), SrA (b) (6)

c. **Entomologist/Ground Support:** LTC (b) (6) (b) (6) Maj (b) (6) (b) (6)

**2. SCHEDULE: (All time Local) All times and sequence of events are subject to change depending upon the needs of the testing and training.**

- a. 8 February (Tuesday) LUF PPR 08-01KA  
1000 Show KYNG  
1200 Depart KYNG  
1500 Land KLUF
- b. 9-10 February (Wednesday-Thursday) Range: 9<sup>th</sup> N & S Tac 0730-0900 Aux-6 0830-1000  
10<sup>th</sup> N & S Tac 0730-0820 Aux-6 0820-1000  
  
0715 Depart KLUF  
1045 Land KLUF
- c. 11 February (Friday)  
0800 Show KLUF  
1000 Depart KLUF  
1300 Land KYNG

**3. ITEMS TO TAKE:**

- a. **Navigator:** Maps with "No-Spray" Areas Marked

**4. AIR TO GROUND FREQUENCIES:**

- a. **Spray: Primary 123.45**, Secondary 122.9
- b. **Luke:** TWR119.1/379.9; GND133.175/335.8; CMD POST (Raymond 18) 349.4;  
PTD 372.2; WX Shop 267.4; ATIS 134.925/269.9
- c. **Barry Goldwater Range: Call sign Snakeye 264.125**  
**N Tac 371.4**  
**S Tac 284.475**  
**Range One 298.6**  
**Gila Bend AFAF TWR 257.65**
- d. Luke App/Dep Control 118.15/363.125;
- e. Albuquerque Center 125.25/307.3

**5. SPRAY CONFIGURATION:**

- a. MASS – SP2G
- b. Aircraft Number: 90-9108
- c. Nozzle Tips/Orientation: UHV booms
- d. Mission Identifier: QZNRK9901039

**6. MISSION PROTOCOLS:**

- a. **Altitude:** 100' AGL,
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** None, water only
- d. **Application Rate:** 10 gallons/acre
- e. **Flow Rate:** 550 GPM
- f. **Acreage:** Card line test
- g. **Swath Width:** 120 ft nominal (to be confirmed)
- h. **Nozzles:** 27 Raindrop (R-20)

**7. CONTACTS:**

- a. **Quarters:**  
**Luke AFB Billeting:** Com 623-856-3941/DSN 896-3941/Fax DSN 896-3332  
**POC:** Dan Quinto change dates to the 8<sup>th</sup>-11<sup>th</sup>
- b. **Transportation:**  
**Luke AFB Trans:** Com 623-856-6866/DSN 896-6866  
4 Vans reserved
- c. **Luke AFB:** DSN prefix 896; Com (623) 856-xxxx
  - 1. Base Operator: 896-1110
  - 2. Airfield Manager: 896-9636
  - 3. Base Ops: 896-7131/32 Fax 896-4131
  - 4. Command Post: 896-5600
  - 5. T.A.: 896-6204
  - 6. Weather: 896-6805 UHF 267.4
  - 7. ASOS: 896-4361
  - 8. Range Scheduling: Com 623-856-3185/DSN 896-3185 POC: (b) (6)
  - 9. Range Environmental POC: (b) (6) Com (b) (6)
  - 10. Fire Dept: Com 623-856-6641/DSN 896-6641
- g. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext
  - 1. 910 AW/CC: Col (b) (6)
  - 2. 910 AW Command Post: Ext 1315; FAX 1161
  - 3. 910 AW/PA: Maj (b) (6) FAX 1022
  - 4. 910 OG/CC: Col (b) (6)
  - 5. 910 OG: Airfield Manager, Ext 1186/1526
  - 6. 757 AS/DO: Maj (b) (6)
  - 7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
  - 8. 757 AS/DOO: Ops Admin: TSgt (b) (6) (b) (6) ; FAX 1657
  - 9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) FAX 1616
  - 10. 910 LG/CC: Ext 1225
  - 11. 910 LG/LGM: Ext 1352
  - 12. Maintenance Control: Ext 1327
  - 13. 910 LG/LGMS: Spray Maintenance, MSgt (b) (6)
  - 14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
  - 15. Cellular Spray Phones:
    - Mission Commander: (b) (6)
    - Entomologist: (b) (6) ((b) (6) (b) (6) ((b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 8-12 Aug 2011

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks, Grand Forks AFB and Williston, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) Pilots: LTC (b) (6), Maj (b) (6), Capt (b) (6)
- 2) Navigators: LTC (b) (6), LTC (b) (6)
- 3) Flight Engineers: TSgt (b) (6)
- 4) Spray Operators: MSgt (b) (6), MSgt (b) (6) SSgt (b) (6) SSgt (b) (6)
- 5) Mission Commander: LTC (b) (6)

##### b. Maintenance:

- 1) Spray Maintenance: TSgt (b) (6), TSgt (b) (6), TSgt (b) (6), SSgt (b) (6)
- 2) Crew Chief(s): MSgt (b) (6), TSgt (b) (6)
- 3) Avionics: MSgt (b) (6)

##### c. Entomologist: LTC (b) (6) (b) (6) Capt (b) (6) (In Place)

#### 2. SCHEDULE: (All Local Times)

- a. 8 Aug (Monday)  
1300L Show KYNG  
1500L Depart KYNG  
1700L Land KRDR
- b. 9 Aug (Tuesday)  
1500 Installation Brief  
1700L Show KRDR  
1900L Depart KRDR  
2100L Land KRDR
- c. 10 Aug (Wednesday)  
1700L Show KRDR  
1900L Depart KRDR  
2100L Land KRDR
- d. 11 Aug (Thursday)  
1700L Show KRDR  
1900L Depart KRDR  
2100L Land KRDR
- e. 12 Aug (Friday)  
1000 Show KRDR  
1200 Depart KRDR  
1600 Land KYNG

#### 3. ITEMS TO TAKE

- a. **Mission Commander:** Cell Phone, Mission Folder, FFT
- b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder,  
1 VHF Radio, Water Sensitive Cards, Card Holders with  
Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors,  
Project Notebook, Entomologist's Tool Kit
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

#### 4. PPR: 08-01-MI

5. **RADIO FREQUENCIES:** Air To Ground Primary VHF 123.45 KRDR Tower 124.9 V; Grand Forks International 118.4 V

6. **CONFIGURATION: SP2G**

a. **System:** 2-Module System/Stainless Steel ULV Fuselage Booms

b. **Nozzle Tips/Orientation:** ULV (adulticide): 8005 (Grand Forks) and 8003 (Williston) Tee Jet oriented straight down

c. **Number:** ULV: 18 8005's total (9 each side) and 16 8003's total (8 each side)

e. **Aircraft:** 89-9105

f. **Mission Identifier:** QZNRK9901220

7. **SPRAY PARAMETERS:**

a. **Adulticide**

(1) **Area to be treated:** 11,518 acres (Grand Forks AFB), 18,346 (Grand Forks) and 877 (Grand Forks Intl) 32,214 (Williston)

(2) **Altitude:** 150' for Adulticide application

(3) **Swath Width.** 2000 feet

(4) **Flow Rate.** 7.26 gallons/minute (Grand Forks) and 4.4 gallons/minute (Williston)

(5) **Application Rate.** 1.0 oz/acre Trumpet (Grand Forks) and .32 oz/acre Zenivex (Williston)

(6) **Ground Speed:** 200 Knots

(7) **Flush:** With water (Trumpet) or BVA (Zenivex), triple rinse, then air purge

8. **SPRAY MIXING AND LOADING:** The amount of Trumpet and Zenivex to load will be determined on site

9. **TRANSPORTATION:** Transportation provided by base (DSN362-3976): One 15 pax van (MX), three 6 pax trucks (MC, OPS), one 1.5 ton truck (spray MX). Vehicles at Base Ops with the exception of Trumpet loaded truck

10. **LODGING:** Hilton Garden 701-775-6000 Directions and non-A's are in the spray folder.  
RDR Billeting: DSN362-7200 or 701-594-8431, FAX 362-3069 Prime Knight DSN362-3844 or 701-747-3844

11. **CONTACTS:**

a. **319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**

(1) **Base Operations:** Airfield Manager DSN 362-4409

-- DSN 362-xxxx or (701) 747-xxxx20

(2) **Pest Management:** MSgt (b) (6) or TSgt (b) (6) DSN (b) (6)-(b) (6) FAX 3432

(3) **Base Civil Engineer:** Lt Col (b) (6)

(4) **Environmental Officer:** (b) (6) (b) (6) DSN (b) (6)-(b) (6) FAX 6155,4907

(5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)

(6) **Weather:** DSN 362-4396

(7) **Billeting:** DSN 362-3070/6189/7200 or (701) 594-8431, FAX 362-3069

-- Prime Knight DSN 362-3844 or (701) 747-3844

(8) **Fargo FSDO: POC** Verl Addison (701) 492-5800 Fax (701) 492-5828

b. **910 AW, Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX, Toll Free 1-800-278-7046,+2 + Ext

(1) 910 AW/CC: Col (b) (6)

(2) 910 AW Command Post: Ext 1315; FAX 1161

(3) 910 AW/PA: Ext 1236; FAX 1022

(4) 910 OG/CC: Col (b) (6)

(5) 910 Base Ops: Airfield Manager: Ext 1182

- Assistant Air Field Manager (ACAM), Ext 1181

(6) 757 AS/DO: Maj (b) (6)

(7) 757 AS/DOO: Ops Admin: MSgt (b) (6) ; FAX 1657

(8) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) ; FAX 1616

(9) 910 LG/CC: Ext 1225

(10) 910 LG/LGM: Ext 1352

(11) Maintenance Control: Ext 1348

(12) LG/LGMS: Spray Maintenance: MSgt (b) (6) Cell: (b) (6)

(13) 910 LG/LGL: Ext 1137

(14) Omega/SATO Travel: Ext 1772; (800) 285-6342

(15) Supervisor of Flight Desk: 1069, FAX: 1371

(16) Cellular Spray Phones:

- Entomologist:

- Mission Commander:

- Spray Maintenance

(b) (6)



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

18 April 11

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations Oil Spill Exercise

1. One C-130 will be available 10-13 May 11 for a multi agency oil spill exercise to include the United States Coast Guard and the Marine Spill Response Corporation. The aircraft will operate from North Island NAS, CA.

2. Concept of Operations:

- a. 10 May (Tuesday)  
1000 Show KYNG  
1200 Depart KYNG  
1330 Land KNZY
- b. 11 May (Wednesday)  
0600 Show KNZY  
1100 Depart KNZY  
1300 Land KNZY  
1400 Depart KNZY  
1600 Land KNZY
- c. 12 May (Thursday)  
Flight crew to observe Command Center and Coast Guard operations
- d. 13 May (Friday)  
0530 Show KNZY  
0730 Depart KNZY  
1700 Land KYNG

3. 11 May flight schedule is subject to change based on exercise development.

4. Maj (b) (6) will act as the Mission Commander.

5. LTC (b) (6) will act as the Aircraft Commander.
6. Support required at North Island NAS, FL has been completed.

(b) (6), Capt, USAFR  
757AS Aerial Spray

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **Oil Spill Exercise**

### **10-13 May 2011**

**OBJECTIVE/PURPOSE AND BENEFIT:** Multi agency oil spill exercise to include the United States Coast Guard and the Marine Spill Response Corporation. The aircraft will operate from North Island NAS, CA.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Pilots: LTC (b) (6) , LTC (b) (6) , Maj (b) (6) , Capt (b) (6)
- (2) Navigators: LTC (b) (6) , Maj (b) (6)
- (3) Flight Engineers: SSgt (b) (6)
- (4) Spray Operators: SMSgt (b) (6) (b) (6) MSgt (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6)
- (2) Crew Chiefs: MSgt (b) (6) (b) (6) SrA (b) (6)
- (3) Public Affairs: MSgt (b) (6) and (b) (6)

#### **2. PPR REQUIREMENTS: 130-01**

**3. PLANNED SEQUENCE OF EVENTS:** (All times local) Times may vary from schedule depending upon weather and exercise needs. All changes to the planned itinerary will be coordinated through the mission commander.

- a. 10 May (Tuesday)  
0800 Show KYNG  
1000 Depart KYNG  
1330 Land KNZY
- b. 11 May (Wednesday)  
0800 Show KNZY  
1030 Depart KNZY  
1130 Land KNZY
- c. 12 May (Thursday)  
0800 Show KNZY  
1030 Depart KNZY  
1130 Land KNZY
- d. 13 May (Friday)  
0530 Show KNZY  
0730 Depart KNZY  
1700 Land KYNG

#### **4. SPRAY CONFIGURATION: SP2G**

- a. Mass: 2-Module System
- b. Nozzles: Raindrop oriented straight back, 6 on each fuselage boom
- c. Differential GPS: Wingman Installed
- d. Aircraft: 90-9107
- e. Mission Identifier: QZNRK9902130

#### **5. SPRAY PARAMETERS:**

- a. Airspeed: 160KTS



- b. Altitude: 100 feet above water.
- c. Application Rate: 5 Gal/Acre
- d. Flow Rate: 186 Gal/Min
- e. Spray: Water only.
- f. Pressure: 40 psi
- g. Swath Width: 100'

**6. PARKING PLAN:** North Island NAS, CA

**7. RADIO FREQUENCIES:**

North Island Ops	355.5	Tower	135.1/336.4
Metro	342.35	CLNC DEL	128.4/288.25
Ground	118.0/336.4	Spray Ops:	??
ATIS	317.8		

**8. TRANSPORTATION:**

1 van and 5 cars reserved at Hertz located in the NEX (619) 437-8508. They will be dropped off at Base Ops  
 (b) (6) (van), (b) (6) (b) (6) (b) (6) (b) (6) (b) (6)

**9. QUARTERS:**

The Sophia Hotel, 150 W Broadway, San Diego, CA 92101 16 rooms reserved  
 619-234-9200 Fax 619-544-9879

**10. CONTACTS:**

**a. North Island NAS, CA:** DSN: 735-XXXX; COM (619) 545-XXXX

- 1. Airfield Manager: 735-8243
- 2. Base Ops: 735-8233 Fax: 735-8265
- 3. KNZY TWR: 735-8233
- 4. Billeting: 735-9551
- 5. Transient Alert: 735-9530
- 6. Fire Dept: 735-6678 POC Capt (b) (6)

**b. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- 1. 910 AW/CC: Col (b) (6)
- 2. 910 AW Command Post: Ext 1315; FAX 1161
- 3. 910 AW/PA: Maj (b) (6) FAX 1022
- 4. 910 OG/CC: Col (b) (6)
- 5. 910 OG: Airfield Manager, Ext 1186/1526
- 6. 757 AS/DO: Maj (b) (6)
- 7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- 8. 757 AS/DOO: Ops Admin: TSgt (b) (6) ; FAX 1657
- 9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) FAX 1616
- 10. 910 LG/CC: Ext 1225
- 11. 910 LG/LGM: Ext 1352
- 12. Maintenance Control: Ext 1327
- 13. 910 LG/LGMS: Spray Maintenance, MSgt (b) (6)
- 14. Omega/SATO Travel: Ext 1772; 1-800-285-6342

# AERIAL SPRAY OPERATIONAL SCHEDULE

## MOUNTAIN HOME AFB RANGE, ID

### 12-23 SEPTEMBER 2011

**PURPOSE/BENEFITS/OBJECTIVES.** To prevent fire hazards, inhibit annual re-growth of cheatgrass on Saylor Creek Range and allow native vegetation to establish and be competitive.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) Pilots: Capt (b) (6) (12-16), Capt (b) (6) (12-16), Maj (b) (6) (b) (6) (18-23),  
Maj (b) (6) (16-23)
- 2) Navigator: Capt (b) (6)
- 3) Flight Engineer: SSgt (b) (6)
- 4) Spray Operators: MSgt (b) (6), MSgt (b) (6) (12-16), SSgt (b) (6) (b) (6) MSgt  
(b) (6) (b) (6) (16-23), SSgt (b) (6) (16-23)

##### b. Maintenance:

- 1) Spray MX: TSgt (b) (6), TSgt (b) (6), TSgt (b) (6), TSgt (b) (6)  
(b) (6) SSgt (b) (6)
- 2) Crew Chiefs: TSgt (b) (6), SrA (b) (6)
- 3) Hyd/Prop/EE/GAC/Com-Nav: MSgt (b) (6), TSgt (b) (6), TSgt (b) (6),  
SSgt (b) (6), TSgt (b) (6)
- c. Entomologists: Lt Col (b) (6) (12-18 Sept), Maj (b) (6) (12-19 Sept), Capt (b) (6)  
(b) (6) Maj (b) (6) (b) (6) (18-23 Sept)

#### 2. SCHEDULE: (Local times; total of 13 lifts required, 1-3 lifts per day)

**\*\* If no delays are encountered, the mission will return to YNG after completion of last flush sortie and cleaning of system.**

##### a. 12 September (Monday)

0900 Show KYNG

1100 Spray aircraft depart KYNG Mission # QZNRK9901255 PPR 21411400SS

1115 Support aircraft depart KYNG Mission # QDNRK9901255 PPR 2141401SS

1430 Spray aircraft land KMUO

1445 Support aircraft land KMUO

1600 Installation briefing

##### b. 13-16 September (Tuesday-Friday) \*dawn to 1000L range times

0500 Show KMUO

0700 Depart KMUO

##### c. 17-18 September (Saturday-Sunday)

Static Display for Mountain Home AFB Airshow

##### d. 19-22 September (Monday-Thursday) \*dawn to 1000L range times

0500 Show KMUO

0700 Depart MUO

e. 22 September (Thursday) Support      Mission #      QDNRK9901265      PPR2141402SS  
0900 Show KYNG  
1100 Depart KYNG      \*Army Helo on the Range from 0830-1000\*  
1430 Land KMUO

f. 23 September (Friday)  
0700 Show KMUO  
0900 Spray aircraft depart KMUO  
0905 Support aircraft depart KMUO  
1630 Spray aircraft land KYNG  
1635 Support aircraft land KYNG

### 3. ITEMS TO TAKE:

- a. **Mission Commander:** 1 Cellular Phone, FFT
- b. **Entomologist:** Cardholders, Water Sensitive Cards, Tool Kit, VHF Radio, Cell Phone, Laptop Computer
- c. **Navigator:** Maps/Map Bag, Validation Map,
- d. **Spray Operator:** Safety Gear, computer
- e. **Spray Maintenance:** Mobility Kit, MASS Spares, Spill Kit, Pesticide Safety Binder, Safety Equipment and Tool and other equipment

### 4. NOTIFICATION NECESSARY FOR THIS MISSION: N/A

### 5. PARKING PLAN: Transient Ramp in front of Base Operations

### 6. RADIO FREQUENCIES:

- a. **Air To Ground:** Entomologists: 123.45 VHF; 292.2 (range); Maintenance 384.7
- b. **Mt Home:** PTD: 372.2/138.9, ACC CP (Raymond 27): 381.3, ATIS: 273.5, TWR: 133.85 / 253.5, GND: 120.5 / 275.8, RAPCON: 259.1, Salt Lake Center: 387.15/363.0
- c. **Range:** Saylor Creek Range (Cowboy Control): 236.05pri/381.3sec/134.1tertiary  
If Cowboy Control isn't up, contact MUO APP on 371.2  
Sagebrush Control: 251.2, Paradise MOA: 272.7/236.05/225.55  
Owyhee MOA: 392.2/266.35, Bruneau/Sheep Creek MOA: 251.875

### 7. IN-BRIEFING: 1600 Airfield Management Office

8. **Billeting:** Sleep Inn 208-587-9743 1180 US 20, Mountain Home, ID  
Billeting: Sagebrush Hotel DSN 728-5152, FAX 4797  
12-13 Sep Support 8 rooms on base  
12-23 Sep 22 rooms off base  
22-23 Sep Support 8 rooms on base

9. **Vehicles:** Thrifty Car Rental 208-580-1600 Fax 208-587-1300 POC: Trudy  
Six full size cars reserved at \$377 each including taxes and fees  
MUO will supply one 15 PAX van for the drop off and pick up support crew  
Confirm #'s are 18921065 (12&13) and 18921116 (22&23)  
MUO Trans will supply a ride to Thrifty for rental pick up give them ETA

## **10. SPRAY CONFIGURATION:**

- a. System:** SP-3G
- b. Nozzle Tips/Orientation:** Raindrop/Straight Back
- c. Number:** Fuselage – 17 nozzles (8 left side: 9 right side)
- d. Booms:** Fuselage
- e. Aircraft:** 90-9107
- f. Profile:** Planned HV Profile

## **11. SPRAY PARAMETERS:**

- a. Altitude:** 100' AGL (we are treating at 46.5 acres/minute)
- b. Swath Width.** 100 feet
- c. Flow Rate.** 326 gal/min
- d. Application Rate.** 7 gal/acre; approximately 3,200 acres to be treated for cheatgrass
- e. Ground Speed:** 200 Knots

## **12. SPRAY MIXING AND LOADING:**

### **a. Composition of Each Gallon:**

- (1) 0.57 ounces of Panoramic SL® (we want 4oz in 7 gallons per acre)
- (2) 1 ounce of Sta-put® or Control Drift Retardant
- (3) 126.4 ounces of water

### **b. First Load (4 Tanks of 450 gallons each + sump of 75 gallons)**

- (1) Fill to 450 gal water/tank using the pump on the water tanker truck. This is done by putting the filler hose into the rear tank with all tanks open to the common sump. Total water in tanks = 1,800 gal.
  - (2) 75 gal/water in sump
  - (3) Total water added = 1,800 gallons
  - (4) Upload 8.03 gal (30.4L)/Panoramic; add 14 gal Sta-put (or Control) while agitating approximately 5-7 min
- Total quantity mix 1822 gallons

## **13. SPRAY MONITORING OR TESTING: Performed by the CPMPs**

## 14. CONTACTS:

### a. Mountain Home AFB, ID:

- (1) Base Ops: DSN: 728-2222; COMM: (208)-828-2222 TSgt (b) (6) .
- (2) Transit Alert: (b) (6) DSN (b) (6)
- (3) OG Col (b) (6) : DSN (b) (6)
- (4) Conservation Chief/Spray Project POC, (b) (6) : DSN (b) (6) ; Cell (b) (6)
- (5) Entomology: TSgt (b) (6) , SSgt (b) (6) , (b) (6) : DSN (b) (6)
- (6) Weather Superintendent, Sgt (b) (6) or Weather NCOIC, TSgt (b) (6) : DSN (b) (6)
- (7) Weather: Lt (b) (6) DSN (b) (6) , Maj (b) (6) : DSN (b) (6)
- (8) Billeting: Sagebrush Hotel DSN 728-5151, FAX: 4797
- (9) Transportation: SSgt (b) (6) (b) (6) FAX: 1619
- (10) Weather to be provided:
  - Davis Mothan AFB, DSN 228-6590
  - Mountain Home AFB, Lt (b) (6) DSN (b) (6) , Maj (b) (6) , DSN (b) (6)
- (11) Fire Dept (CEF): Chief (b) (6) , (b) (6) , TSgt (b) (6) DSN 728-6292 dispatch
- (12) Visiting Unit Coordinator: MSgt (b) (6) DSN (b) (6)

### b. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046, 2, + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Maj (b) (6) ; FAX 1022
- (1) 910 OG/CC: Col (b) (6)
- 910 OSF/OSA, Airfield Manager: (b) (6)
- (2) 910 OG/SOF (Operations Supervisor Desk): Ext 1069; FAX 1371
- (3) 757 AS/DO: LTC (b) (6)
- (4) 757 AS/DOO, Ops Admin: MSgt (b) (6) ; FAX 1657
- (5) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) Ext 1503  
(b) (6) , FAX 1616
- (6) 910 LG/CC:, Ext 1225  
910 MA: Maintenance Officer, Ext 1144
- (7) 910 LG/LGM:, Ext 1352
- (8) Maintenance Control: Ext 1348
- (9) 910 LG/LGMS: Spray Maintenance: SMSgt (b) (6)
- (10) 910 LG/LGL: CMS (b) (6)
- (11) Omega/SATO Travel: Ext 1772; 1 (800) 285 – 6342
- (12) Cellular Phones: Mission Commander: (b) (6)  
PMP/Entomologist/Ground Support:  
(b) (6) ((b) (6) (b) (6) ((b) (6)  
Spray Maintenance: (b) (6)



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

1 Aug 11

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Mountain Home AFB, ID

1. Aerial Spray flight proficiency training will be accomplished at Saylor Creek Bombing Range near Mountain Home AFB, ID. Spray will aid their fire prevention program treating an invasive grass species (Cheat grass) that creates a fire hazard and has overtaken many of the areas on the bombing range. The operation applies herbicides targeting Cheat grass but allowing native fire resistant vegetation (sagebrush) to re-establish and become competitive.

2. Concept of Operations:

- a. 12 September (Monday)
  - 0900 Show KYNG
  - 1100 Spray aircraft depart KYNG
  - 1105 Support aircraft depart KYNG
  - 1430 Spray aircraft land KMUO
  - 1435 Support aircraft land KMUO
  - 1600 Installation briefing
- b. 13-16 September (Tuesday-Friday)
  - Spray aircraft:
  - 0500 Show KMUO
  - 0700 Depart KMUO
  - 0815 Land MUO
  - 0900 Depart KMUO
  - 1015 Land KMUO
- c. 17-18 September (Saturday-Sunday)
  - Static Display for Mountain Home AFB Airshow
- d. 19-22 September (Monday-Thursday)
  - 0500 Show KMUO

0700 Depart MUO  
0815 Land MUO  
0900 Depart KMUO  
1015 Land KMUO

e. 22 September (Thursday) Support aircraft  
0900 Show KYNG  
1100 Depart KYNG  
1430 Land KMUO

f. 23 September (Friday)  
0700 Show KMUO  
0900 Spray aircraft depart KMUO  
0905 Support aircraft depart KMUO  
1630 Spray aircraft land KYNG  
1635 Support aircraft land KYNG

3. Maj (b) (6) (b) (6) will act as Mission Commander.

4. Capt (b) (6) will act as Aircraft Commander.

5. Support required at Mountain Home AFB and Saylor Creek has been completed.

(b) (6), Capt, USAFR  
757AS Aerial Spray





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

15 Apr 11

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Kings Bay NSB, GA

1. One C-130 will be available 13-15 May 11 for the requested spray aerial insecticide mission to control nuisance and vector mosquitoes and thus reducing the negative impact on outdoor duty.

2. Concept of Operations:

- a. 13 May (Friday)  
1500 Show KYNG  
1700 Depart KYNG  
1930 Land KNIP
- b. 14 May (Saturday)  
1645 Show KNIP  
1815 Depart KNIP  
2015 Land KNIP
- c. 15 May (Sunday)  
1200 Show KNIP  
1400 Depart KNIP  
1630 Land KYNG

3. Maj (b) (6) (b) (6) will act as Mission Commander.

4. Support required at Kings Bay NSB, GA and Jacksonville NAS, FL has been completed.

(b) (6), Capt, USAFR  
757AS Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## NSB, KINGS BAY, GA

### 13-15 May 2011

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at NSB, Kings Bay, GA.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: : Maj (b) (6) (b) (6) LtCol (b) (6) , Maj (b) (6)
- (2) Navigators: IN??, LtCol (b) (6)
- (3) Flight Engineers: Tsgt (b) (6)
- (4) Spray Operators: MSgt (b) (6) (b) (6) , MSgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , SrA (b) (6)
- (2) Crew Chiefs: TSgt (b) (6) , SrA (b) (6)
- (3) Avionics: TSgt (b) (6)

##### c. Entomologist: MC Maj (b) (6) (b) (6)

##### d. Mission Commander: Maj (b) (6) (b) (6)

#### 2. PPR REQUIREMENTS: 041501

**3. PLANNED SEQUENCE OF EVENTS:** (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

##### a. 15 Apr (Friday)

1500 Show KYNG  
1700 Depart KYNG  
1930 Land KNIP

##### b. 16 Apr (Saturday)

1630 Show KNIP  
1800 Depart KNIP  
2000 Land KNIP

##### c. 17 Apr (Sunday)

1630 Show KNIP  
1800 Depart KNIP  
2000 Land KNIP

##### d. 18 Apr (Monday)

1200 Show KNIP  
1400 Depart KNIP  
1630 Land KYNG

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

- (1) Mission Commander Cell Phone use (b) (6)
- (2) Blue Force Tracker

##### b. Entomologist:

- (1) Wind Gauge & Compass
- (2) VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder

##### c. Navigators:

- (1) Maps
- (2) Templates

##### d. Sprav Maintenance:

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

#### 5. SPRAY CONFIGURATION: SP-2G

- a. Mass: 2-Module System
- b. Booms: Stainless Steel ULV Fuselage Booms
- c. Nozzles: size = 8005; 18 open for 7.3 flow rate; oriented straight down.
- d. Differential GPS: Wingman Installed
- e. Aircraft: 89-9106
- f. Mission Identifier: QZNRK9902133

#### 6. Adult mosquito control spray Parameters: (Kings Bay)

- a. Pesticide:
  - Dibromt® (AI naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Water
- b. Application: 1.0 oz/acre
- c. Spray Altitude: 150 Feet
- d. Swath Width: 2,000 Feet
- e. Ground Speed: 200 Knots (338 Feet/Second)
- f. Acreage: 15,000 Acres
- g. Spray-On Time: 16 minutes
- h. Flow Rate: 7.3 gallons/minute

#### 7. AMOUNT OF SPRAY MATERIAL AVAILABLE: Plan on loading 4 drums of Trumpet for Kings Bay.

#### 8. PARKING PLAN: NAS Jacksonville, FL

#### 9. AIR TO GROUND RADIO FREQUENCIES:

Navy Jax Ops-	310.2	Tower	120.0/340.2
Ground	128.6/336.4	Spray Ground:	123.45 VHF
ATIS	281.0		

#### 10. TRANSPORTATION:

Enterprise Car Rental: 904-772-7007

5 FS Cars (b) (6) (b) (6) (b) (6) (b) (6) (b) (6) \$42/day+5gov policy

#### 11. SPRAY MONITORING/TESTING: Ground monitoring by CPMP and by NSB Kings Bay pest control.

#### 12. Quarters:

Navy Lodge 6099 Mustin Rd. Jacksonville FL 32212 Contact is Ms. (b) (6) at (b) (6)

#### 13. CONTACTS:

- a. Naval Submarine Base Kings Bay, GA (Com: (912) 573-xxxx; DSN 573-xxxx)
  - (1) Spray Coordinator: (b) (6) (b) (6)
  - (2) Strategic Weapons Facility Atlantic (SWFLANT) x0551
- b. Naval Air Station Jacksonville, FL (NAS JAX)
  - (1) For requesting PPR: DSN 942-2511
  - (2) Transient line office, DSN 942-3843
  - (3) Weather ??

(4) Tower – 942-2516

c. **FAA JAX Center.** Mr. (b) (6), Mission Specialist (b) (6)

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Maj (b) (6) FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6); FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, Msg (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander (b) (6) (b) (6)



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

17 Mar 11

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Kings Bay NSB, GA

1. One C-130 will be available 15-18 Apr 11 for the requested spray aerial insecticide mission to control nuisance and vector mosquitoes and thus reducing the negative impact on outdoor duty.

2. Concept of Operations:

- a. 15 Apr (Friday)  
1400 Show KYNG  
1600 Depart KYNG  
1830 Land KNIP
- b. 16-17 Apr (Saturday-Sunday)  
1630 Show KNIP  
1800 Depart KNIP  
2000 Land KNIP
- c. 18 Apr (Monday)  
1200 Show KNIP  
1400 Depart KNIP  
1630 Land KYNG

3. Maj (b) (6) (b) (6) will act as Mission Commander.

4. Support required at Kings Bay NSB, GA and Jacksonville NAS, FL has been completed.

(b) (6) (b) (6) Maj, USAFR  
757AS Chief of Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## NSB, KINGS BAY, GA

### 15-17 April 2011

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at NSB, Kings Bay, GA.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

(1) Pilots: : Maj (b) (6) (b) (6) LtCol (b) (6) , Maj (b) (6)

(2) Navigators: IN??, LtCol (b) (6)

(3) Flight Engineers: Tsgt (b) (6)

(4) Spray Operators: MSgt (b) (6) , MSgt (b) (6)

##### b. Maintenance:

(1) Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , SrA (b) (6)

(2) Crew Chiefs: TSgt (b) (6) , SrA (b) (6)

(3) Avionics: TSgt (b) (6)

##### c. Entomologist: MC Maj (b) (6) (b) (6)

##### d. Mission Commander: Maj (b) (6) (b) (6)

#### 2. PPR REQUIREMENTS: 041501

**3. PLANNED SEQUENCE OF EVENTS:** (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

- a. 15 Apr (Friday)  
1500 Show KYNG  
1700 Depart KYNG  
1930 Land KNIP
- b. 16 Apr (Saturday)  
1630 Show KNIP  
1800 Depart KNIP  
2000 Land KNIP
- c. 17 Apr (Sunday)  
1630 Show KNIP  
1800 Depart KNIP  
2000 Land KNIP
- d. 18 Apr (Monday)  
1200 Show KNIP  
1400 Depart KNIP  
1630 Land KYNG

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

- (1) Mission Commander Cell Phone use 330.233 2149
- (2) Blue Force Tracker

##### b. Entomologist:

- (1) Wind Gauge & Compass
- (2) VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder

##### c. Navigators:

- (1) Maps
- (2) Templates

- d. **Spray Maintenance:**
- (1) Spill Kit
  - (2) Safety Equipment
  - (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** size = 8005; 18 open for 7.3 flow rate; oriented straight down.
- d. **Differential GPS:** Wingman Installed
- e. **Aircraft:** 89-9106
- f. **Mission Identifier:** QZNRKA020727

**6. Adult mosquito control spray Parameters: (Kings Bay)**

- a. **Pesticide:**
  - Dibromt® (AI naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: Water
- b. **Application:** 1.0 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 2,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 15,000 Acres
- g. **Spray-On Time:** 16 minutes
- h. **Flow Rate:** 7.3 gallons/minute

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading 4 drums of Trumpet for Kings Bay.

**8. PARKING PLAN: NAS Jacksonville, FL**

**9. AIR TO GROUND RADIO FREQUENCIES:**

Navy Jax Ops-	310.2	Tower	120.0/340.2
Ground	128.6/336.4	<b>Spray Ground:</b>	<b>123.45 VHF</b>
ATIS	281.0		

**10. TRANSPORTATION:**

Enterprise Car Rental: 904-772-7007

5 FS Cars (b) (6) (b) (6) (b) (6) (b) (6) (b) (6) \$42/day+5gov policy

**11. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP and by NSB Kings Bay pest control.

**12. Quarters:**

Navy Lodge 6099 Mustin Rd. Jacksonville FL 32212 Contact is Ms. Bush at 904-772-6000 ext 2

**13. CONTACTS:**

- a. **Naval Submarine Base Kings Bay, GA (Com: (912) 573-xxxx; DSN 573-xxxx)**
  - (1) **Spray Coordinator:** (b) (6)
  - (2) Strategic Weapons Facility Atlantic (SWFLANT) x0551



**b. Naval Air Station Jacksonville, FL (NAS JAX)**

- (1) For requesting PPR: DSN 942-2511
- (2) Transient line office, DSN 942-3843
- (3) Weather ??
- (4) Tower – 942-2516

**c. FAA JAX Center.** Mr. (b) (6), Mission Specialist (b) (6)

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Maj (b) (6); FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMS (b) (6); FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, Msg (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander (b) (6) (b) (6)



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

15 April 11

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Parris Island MCRD, SC

1. Aerial spray mission controlling biting midges and mosquitoes with insecticide to reduce the negative impact on outdoor training at Parris Island MCRD, SC.

2. Concept of Operations:

- a. 16 May (Monday)  
1500 Depart KYNG  
1700 Land KNBC
- b. 17 May (Tuesday)  
1400 Installation Brief  
1815 Depart KNBC  
2015 Land KNBC
- c. 18 May (Wednesday)  
1815 Depart KNBC (Training Sortie)  
2015 Land KNBC
- d. 19 May (Thursday)  
1000 Depart KNBC  
1200 Land KYNG

3. Maj (b) (6) (b) (6) will act as Mission Commander. Maj (b) (6) will be the Aircraft Commander. Support at Parris Island MCRD and Beaufort MCAS has been completed.

(b) (6) , Capt, USAFR  
757AS Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## MCRD, PARRIS ISLAND, SC

### 16-19 May 2011

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: Maj (b) (6) (b) (6) LtCol (b) (6)
- (2) Navigators: LtCol (b) (6)
- (3) Flight Engineers: MSgt (b) (6)
- (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: MSgt (b) (6) SSgt (b) (6) , SrA (b) (6) (b) (6)
- (2) Crew Chiefs: TSgt (b) (6) , SrA (b) (6)
- (3) Avionics: SSgt (b) (6)

##### c. Entomologist: Maj (b) (6) (b) (6) (MC), Capt (b) (6)

#### 2. PPR REQUIREMENTS: 136-01

#### 3. PLANNED SEQUENCE OF EVENTS: (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

##### 16 May (Monday)

1300: Show  
1500: Depart KYNG  
1700: Land KNBC  
1800: Safety Brief

##### 17 May (Tuesday)

TBD Installation Brief  
1600: Show  
1630: WX Decision and Load Chemical  
1800: Depart KNBC  
2000: Land KNBC  
Sunset: 2015

##### 18 May (Wednesday) WX Backup or Training

1600: Show (Earlier if Training)  
1630: WX Decision and Load Chemical  
1800: Depart KNBC  
2000: Land KNBC  
Sunset: 2016

##### 19 May (Thursday) **\*\*Departure time may slip depending upon Wednesday evening completion time.**

1000: Show  
1200: Depart KNBC  
1400: Land KYNG

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

- (1) Mission Commander Cell Phone
- (2) Friendly Force Tracker

- b. **Entomologist:**
  - (1) Wind Gauge & Compass
  - (2) VHF Radios and Cellular Phone
  - (3) Pesticide Safety Binder
- c. **Navigators:**
  - (1) Maps
  - (2) Templates
- d. **Spray Maintenance:**
  - (1) Spill Kit
  - (2) Safety Equipment
  - (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** size = 8003; 14 open If rate goes to 1oz/acre then we will need 18 sites open
- d. **Differential GPS:** Wingman Installed
- e. **Aircraft:** 89-9106
- f. **Mission Identifier:** QZNRK9901136

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom® Concentrate (naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Antidote: Atropine, 2-PAM
  - Flushing Agent: BVA
- b. **Application:** 0.75 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 15:45 Minutes
- h. **Flow Rate:** 2.7 gallons/Minute

**9. PARKING PLAN:** NAS Beaufort, SC. Please limit number of vehicles and trips on the flight line

**10. AIR TO GROUND RADIO FREQUENCIES:**

Beaufort Tower:	119.05/340.2 MCAS TWR
Beaufort Approach	123.7
Hilton Head Arpt:	118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)
Beaufort Co Arpt:	122.7 UNI
Spray Ground:	123.4

**11. TRANSPORTATION:** Parris Island will provide 3 vehicles for transportation to and from quarters and for messing. Vehicles will be at Base Operations.

**12. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP &Parris Island MCRD Project Coordinator.

**12. CONTACTS:**

- a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX
  - (1) Environmental Coordinator (Spray Coordinator):

(b) (6) DSN (b) (6) , Cell (b) (6) . HazWaste: (b) (6) DSN (b) (6) - (b) (6) Cell (b) (6)  
, Cell (b) (6) (b) (6) , DSN (b) (6) ; Cell (b) (6)

- FAX (843) 228-2616; NREAO, (b) (6) , DSN (b) (6)  
(2) Assistant Chief of Staff I & L: Col (b) (6) , DSN (b) (6) ; Deputy AC/S (b) (6)  
(3) Pest Control Foreman: (b) (6) DSN (b) (6)  
(4) P.I. Motor Pool: (b) (6) , DSN (b) (6)  
(5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)  
(6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)  
(7) P.I. Rifle Range: DSN: 335-3183/3624

**b. Beaufort MCAS SC:** (Commercial (843) 228-XXXX)

- (1) Beaufort MCAS Environmental: (b) (6) , DSN (b) (6) ; (b) (6) , DSN (b) (6)  
(2) Fuels: DSN: 335-7049/7448/7168  
(3) MCAS Beaufort Airfield MGR: Lt Col (b) (6) (Ops Officer) Airfield manager (b) (6)  
DSN: (b) (6) . Base Ops is ext 7301/2/3  
(Airfield Manager is (b) (6) , DSN: (b) (6) ) approves after hrs requests  
(4) Trans Alert/VAL: DSN: 335-7110  
(5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)

**c. Beaufort County Mosquito Control:** (b) (6)

**d. Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) DSN: (b) (6)

**e. Quarters:** Holiday Inn 2225 Boundary St, Beaufort, SC \$127/night (843) 379-3100 Fax (843) 379-3101

14 Rooms reserved, need names

Comfort Inn and Suites	(843) 379-9400
Ramada Inn	(843) 524-2144/Fax 1704
Hampton Inn	(843) 986-0600 (FAX 0494)
Sleep Inn	(843) 522-3361 FAX (843) 522-9929
Parris Island Billeting	DSN: 335-2744 (FAX: 3815); (843) 228-3960
Comfort Inn	(843) 525-9366 (FAX 1529)
Best Western (Sea Island Motel)	(843) 524- 4121
Port Royal Days Inn	(843) 524-1551

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- 910 AW/CC: Col (b) (6)
- 910 AW Command Post: Ext 1315; FAX 1161
- 910 AW/PA: Maj (b) (6) FAX 1022
- 910 OG/CC: Col (b) (6)
- 910 OG: Airfield Manager, Ext 1186/1526
- 757 AS/DO: Maj (b) (6)
- 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- 757 AS/DOO: Ops Admin: TSgt (b) (6) ; FAX 1657
- 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) FAX 1616
- 910 LG/CC: Ext 1225
- 910 LG/LGM: Ext 1352
- Maintenance Control: Ext 1327
- 910 LG/LGMS: Spray Maintenance, MSG (b) (6)
- Omega/SATO Travel: Ext 1772; 1-800-285-6342
- Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) ((b) (6) (b) (6) (b) (6)

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**PARRIS ISLAND MCRD, SC 18-21 October 2010**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 18-21 Oct 2010
- c. Purpose of Application: Biting midge control; testing effects of the mosquito adulticide Duet
- d. Application Date: 19 October 2010
- e. Time/s of Application (Local): 1735-1920 hrs
- f. Acres Treated: 8,258
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6)  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 19 October 2010
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 19 Oct; Deputy AC/S (b) (6) ; briefed by Lt Col (b) (6) Lt Col (b) (6) and Maj (b) (6)
- k. Mission Identifier: QZNRK9901291

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6) (b) (6)
- b. Aircrew:
  - (1) Pilots: Maj (b) (6) , Maj (b) (6) , Capt (b) (6)
  - (2) Navigators: Lt Col (b) (6) , Lt Col (b) (6)
  - (3) Flight Engineers: SMSgt (b) (6) , MSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6) (b) (6) SMSgt (b) (6) , MSgt (b) (6)
- c. Maintenance:
  - (1) Spray Maintenance: MSgt (b) (6) , TSgt (b) (6) MSgt (b) (6) , Sra (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6) , Sra (b) (6)
  - (3) Avionics: SSgt (b) (6)
- d. Entomologists: Lt Col (b) (6) (b) (6) (b) (6) and (b) (6) , Clarke Mosquito Control
- f. Flying Data:
  - (1) Spray Sorties/Hours: 1/1.7 + 1 training sortie 1.0 hrs
  - (2) Ferry Sorties/Hours: 2/4.3

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Duet®
- b. EPA Registration Number: 1021-1795-8329
- c. Formulation Sprayed: Prallithrin (1%); Sumithrin (5%); Piperonyl Butoxide (5%)
- d. Gallons Pesticide Loaded: 80 gal
- e. Gallons Pesticide Applied: 80 gal
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 10 gal/BVA oil
- h. Other Additives Used: None
- i. Application Rate: 1.24 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99107
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 15 oriented straight down
- f. Pressure: 46 p.s.i.
- g. Flow Rate: 4.5 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 180-220°/3.0-5.0 knots
  - (2) Release Altitude: 176-243/9-17 knots
- b. Temperature (Degrees Fahrenheit): 77-73° F
- c. Relative Humidity: 40-65%
- d. Cloud Cover: mostly clear
- e. Source: Ground observations at the MCRD Golf Course and on the aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: glass microscope slides; caged mosquitoes; landing rates
  - (2) Results: coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito and midge numbers were determined prior to and after spraying using CO<sub>2</sub>-baited traps and landing rates.
  - (2) Results: Over all reductions did not reach threshold that would be considered successful for pest control at the MCRD.

**8. REMARKS:** This was the third replication aimed at evaluating Duet at Parris Island with the primary purpose to evaluate how well this mosquito adulticide performs against biting midges. This insecticide boasts a low mammalian toxicity and contains an insect irritant that, in theory, will excite biting flies to take to the wing where contact with the active ingredient component is more likely. Once again, considerable effort was input into this trial from the Marine Corps, Air Force, Beaufort County Mosquito Control, and Clarke (the manufacturer) in regard to pre- and post-analysis of the spray. Researchers arrived prior to the spray aircraft and sampled locations on the Depot as well as a control site off the Depot that would not be affected by the application. The flight of the spray aircraft is shown in Attachment 1. Mosquitoes and midge numbers were closely monitored and identified to species. During the testing period, biting midges were present only in low to medium densities, while mosquito numbers were very high. Field-collected caged mosquitoes were favorably impacted by the sprays at two locations with an average mortality of 95% and poorly impacted at 2 locations (30% mortality) (Attachment 2). Overall, wild mosquitoes and biting midge numbers were not effectively reduced following the sprays, relative to expected reduction thresholds on the MCRD (Attachment 3).



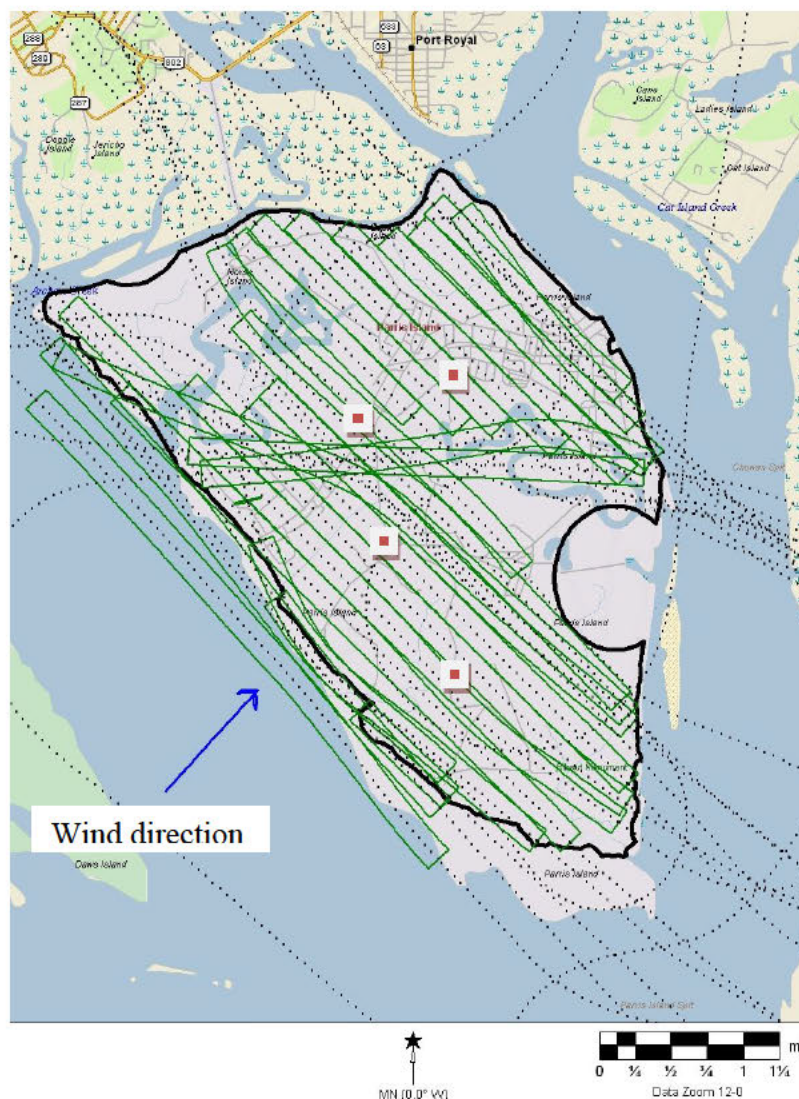
A follow up on the previous Duet application and potentially contaminated drum from the previous spray (see PMP report 12-15 April): Manufacturer did not find any sandy material and did not note any problem with the material when tested.

The next opportunity for Parris Island MCRD to receive military aerial sprays is scheduled for 25-28 April 2010. No further Duet tests are scheduled. A very special thanks to Beaufort Co. Mosquito Control for use of their excellent facilities and to (b) (6) for tabulating the data and determining the droplet densities.

//signed//

(b) (6) (b) (6) Lt Col, PhD, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

Attachment 1. Image showing track of the spray aircraft for 19 October 2010. Black outlines are block edges. Partial circles represent bald eagle nesting areas that were avoided as no spray/no fly areas. Green rectangles represent the spray swath, black dots are the path of the aircraft. Small red squares were trapping locations for midges and mosquitoes; landing rates were made at these locations as well. The blue arrow shows the average wind direction.



Attachment 2. Mortality of caged mosquitoes serving as bioassays and droplet densities collected on glass microscope slides.

Efficacy and Droplet Count				%			
	KD (Down)	24 Hrs (Down)	Total Mosquitoes	2 HR KD	24 HR Mort	VMD	Density (Droplets/cm2)
Golf	4	4	23	17.4%	17.4%	48.4	23.5
Golf	3	6	22	13.6%	27.3%	46.3	50.3
RV	11	11	25	44.0%	44.0%	39.3	98.4
RV	7	7	22	31.8%	31.8%	38.5	85
Wake	24	24	25	96.0%	96.0%	32.7	212.5
Wake	22	22	23	95.7%	95.7%	33.6	256.9
Vet	20	20	22	90.9%	90.9%	35.5	143.4
Vet	22	22	23	95.7%	95.7%	34.9	119.5
Control	1	2	26	3.8%	7.7%	N/A	N/A
Control	0	2	25	0%	8.0%	N/A	N/A

Attachment 3. Mosquitoes and midges collected using ABC traps with carbon dioxide.

Total Count from ABC Light Traps								
<b>GOLF</b>								
	48 Hrs Pre	24 Hrs Pre	Pre-Spray	Spray Time	1 Hr post Spray	12 hrs Post Spray	24 Post	48 Hrs Post
TOTAL Mosquitoes	366	4328	548	1164	1268	2760	3152	4064
Total Midges	43	208	140	136	156	83	336	2112
<b>WEAPONS 48 PRE - RV 24 - 48</b>								
	48 Hrs Pre	24 Hrs Pre	Pre-Spray	Spray Time	1 Hr post Spray	12 hrs Post Spray	24 Post	48 Hrs Post
TOTAL Mosquitoes	1428	1128	228	892	63	198	1088	2880
Total Midges	190	2936	316	1372	92	240	664	3312
<b>VET</b>								
	48 Hrs Pre	24 Hrs Pre	Pre-Spray	Spray Time	1 Hr post Spray	12 hrs Post Spray	24 Post	48 Hrs Post
TOTAL Mosquitoes	1548	2472				1648	772	904
Total Midges	5	8				40	68	536
<b>WAKE</b>								
	48 Hrs Pre	24 Hrs Pre	Pre-Spray	Spray Time	1 Hr post Spray	12 hrs Post Spray	24 Post	48 Hrs Post
TOTAL Mosquitoes	2316	1240				130	1512	2032
Total Midges	70	260				25	144	752
<b>CONTROL (SHELL)</b>								
	48 Hrs Pre	24 Hrs Pre	Pre-Spray	Spray Time	1 Hr post Spray	12 hrs Post Spray	24 Post	48 Hrs Post
TOTAL Mosquitoes	113	43	21	56	25	111	184	282
Total Midges	23	41	14	12	7	47	73	132

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **PARRIS ISLAND MCRD, SC**

### **18-21 OCT 10**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Pilots: Maj(b) (6) , Maj(b) (6) , Capt(b) (6)
- (2) Navigators: Lt Col (b) (6) , Lt Col (b) (6)
- (3) Flight Engineers: CMSGT (b) (6) , SMSGT (b) (6)
- (4) Spray Operators: SMSGT (b) (6) (b) (6) SMSGT (b) (6) , MSGT (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: MSGT (b) (6) , TSgt (b) (6) , MSGT (b) (6) , SRA (b) (6)
- (2) Crew Chiefs: TSgt (b) (6) , SRA (b) (6)
- (3) Avionics: SSGT (b) (6)

##### **c. Pest Management Professionals/Entomologist:** Maj (b) (6) (b) (6) (MC)

##### **d. Public Affairs:** N/A

#### **2. PPR REQUIREMENTS: 291-01**

#### **3. PLANNED SEQUENCE OF EVENTS:** (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

##### **18 OCT (Monday): Deploy to KNBC**

1500: Show Time  
1700: Takeoff KYNG  
1900: Land KNBC  
1915: Safety Briefing/vehicle assignments

##### **19 OCT (Tuesday): Adulticide Spray**

TBD Installation Brief  
1530: Show Time/WX Decision  
1530: Load Chemical  
1700: Takeoff KNBC  
1845: Sunset

##### **20 OCT (Wednesday): WX Backup**

1530: Show Time/WX Decision  
1530: Load Chemical  
1700: Takeoff KNBC  
1843: Sunset

##### **21 OCT (Thursday): Return Homestation**

1000: Show Time  
1200 Takeoff KNBC  
1400 Land YNG

#### **4. ITEMS TO TAKE/NOTES:**

##### **a. Mission Commander:**

- (1) Mission Commander Cell Phone
- (2) Blue Force Tracker

##### **b. Entomologist/CPMP:**

- (1) New and Improved Wind Gauge & Compass
- (2) VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder

**c. Navigators:**

- (1) Maps
- (2) Templates

**d. Spray Maintenance:**

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System (PI)
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** 15 open for 8003's oriented straight down
- d. **Differential GPS:** Installed
- e. **Aircraft:** 89-910
- f. **Mission Identifier:** QZNRK9901291

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Duet -- Prallithrin (1%); Sumithrin (5%); Piperonyl Butoxide (5%)
  - Signal Word: Caution
  - Flushing Agent: BVA oil
- b. **Application:** 1.24 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 4.5 gallons/Minute

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading 2.5 drums of Duet

**8. PARKING PLAN:** Beaufort MCAS Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

Air Traffic Control: 119.05 Beaufort MCAS TWR  
 Hilton Head Arpt: 118.8 CTAF  
 Beaufort Co Arpt: 122.7 UNI  
**Spray Ground: Primary 123.45 Secondary 130.30**

**10. TRANSPORTATION:** Parris Island will provide two vans and staff car for transportation to and from quarters and for messing. (1 Van for MX, 1 Van for Aircrew E's, Staff Car for O's)

**11. SPRAY MONITORING/TESTING:** This is an evaluation test of Duet for control of mosquitoes and biting midges. Please see Entomologist for application parameters. There will be caged mosquitoes and droplet collection devices used. (b) (6) and (b) (6) of Clarke Mosquito Control will be participating.

**12. CONTACTS:**

- a. **Parris Island MCRD SC:** (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX

- (1) Environmental Coordinator (Spray Coordinator):  
(b) (6) , DSN (b) (6) Cell (b) (6) . HazWaste: (b) (6) , DSN (b) (6) ; Cell (b) (6)  
(b) (6) Cell (b) (6) , DSN (b) (6) Cell (b) (6)
- FAX (843) 228-2616; NREAO, (b) (6) DSN (b) (6)
- (2) Assistant Chief of Staff I & L: Col (b) (6) , DSN (b) (6) ; Deputy AC/S (b) (6)  
(b) (6), DSN (b) (6)
- (3) Pest Control Foreman: DSN 335-3663
- (4) P.I. Motor Pool: (b) (6) , DSN (b) (6)
- (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
- (6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)
- (7) P.I. Rifle Range: DSN: 335-3183/3624

**b. Beaufort MCAS SC:** (Commercial (843) 228-XXXX)

- (1) Beaufort MCAS Environmental: (b) (6) , DSN (b) (6) ; (b) (6) , DSN (b) (6)
- (2) Fuels: DSN: 335-7049/7448/7168
- (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6) (Ops Officer) Airfield manager (b) (6)  
DSN: (b) (6) . Base Ops is ext 7301/2/3  
(Airfield Manager is (b) (6) , DSN: (b) (6) ) approves after hrs requests
- (4) Trans Alert/VAL: DSN: 335-7110
- (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)

**c. Beaufort County Mosquito Control:** (b) (6)

**d. Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) , DSN: (b) (6)

**e. Quarters:**

**Holiday Inn and Suites, 17 Rooms Holiday Inn and Suites**

**\$105/night (843) 379-3100 FAX (843) 379-3101 contact (b) (6) (b) (6)**

Ramada Inn	(843) 524-2144/Fax 1704
Hampton Inn	(843) 986-0600 (FAX 0494)
Sleep Inn	(843) 522-3361 FAX (843) 522-9929
Parris Island Billeting	DSN: 335-2744 (FAX: 3815); (843) 228-3960
Comfort Inn	(843) 525-9366 (FAX 1529)
Best Western (Sea Island Motel)	(843) 524- 4121
Port Royal Days Inn	(843) 524-1551
Best Western Pt South (I-95)	(843) 726-8101

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1-800-278-7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Maj (b) (6) ; FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, (b) (6)
6. 757 AS/DO: Maj (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: Ext 1239; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, Msgt (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6) cell phone (b) (6)





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

8 April 11

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for USDA Aerial Spray Test

1. One C-130 will be available 18-22 Apr 11 for a spray aerial insecticide efficacy test in partnership with the USDA using Aqua Leure 2020 in various vegetation canopies on government property. The aircraft will operate from NAS Jacksonville, FL.

2. Concept of Operations:

- a. 18 Apr (Monday)  
1400 Show KYNG  
1600 Depart KYNG  
1830 Land KNIP
- b. 19-21 Apr (Tuesday-Thursday)  
1200 Show KNIP  
1400 Depart KNIP  
1900 Land KNIP
- c. 22 Apr (Monday)  
1000 Show KNIP  
1200 Depart KNIP  
1430 Land KYNG

3. LTC (b) (6) (b) (6) will act as Mission Commander.

4. Support required at Jacksonville NAS, FL has been completed.

(b) (6), Capt, USAFR  
757AS Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## NASJAX/CAMP BLANDING

### 18-22 April 2011

**OBJECTIVE/PURPOSE AND BENEFIT:** Aerial insecticide efficacy test in partnership with USDA and US Navy using Aqualuer 20-20 in various vegetation canopies on Camp Blanding.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: Maj (b) (6), Maj (b) (6), Capt (b) (6)
- (2) Navigators: Lt Col (b) (6)
- (3) Flight Engineers: TSgt (b) (6)
- (4) Spray Operators: SMSgt (b) (6) (b) (6) MSgt (b) (6), TSgt (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSgt (b) (6), MSgt (b) (6); TSgt (b) (6)
- (2) Crew Chiefs: MSgt (b) (6), TSgt (b) (6)
- (3) Avionics: TSgt (b) (6)

##### c. Entomologists: Lt Col (b) (6) (b) (6) Lt Col (b) (6)

##### d. Mission Commander: Maj (b) (6) (b) (6)

#### 2. PPR REQUIREMENTS: 041801

#### 3. PLANNED SEQUENCE OF EVENTS: (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

- a. 18 Apr (Monday)  
1400 Show KYNG  
1600 Depart KYNG  
1830 Land KNIP
- b. 19-21 Apr (Tue - Thurs)  
1300 Show KNIP  
1500 Depart KNIP  
1954 Sunset  
2030 Land KNIP  
\*\*Expect multiple sorties. Expect to obtain updates and changes to flying plan from the MC as the mission progresses. All flights will be determined based on desired testing criteria.
- c. 22 Apr (Friday)  
0800 Show KNIP  
1000 Depart KNIP  
1230 Land KYNG

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

- (1) Mission Commander Cell Phone use (b) (6)
- (2) Blue Force Tracker

##### b. Entomologist:

- (1) Wind Gauge & Compass
- (2) VHF Radios and Cellular Phone
- (3) Pesticide Safety Binder

##### c. Navigators:

- (1) Maps
- (2) Templates

##### d. Spray Maintenance:

- (1) Spill Kit
- (2) Safety Equipment
- (3) Loading and Clean-up Equipment and Supplies



**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** size = 8003; 6 open; 8008; 3 open; oriented straight down.
- d. **Differential GPS:** Wingman Installed
- e. **Aircraft:** 90-9107
- f. **Mission Identifier:** QZNRK9901108

**6. Spray Parameters:**

- a. **Pesticide:**
  - Aqualuer® 20+20 (AI Permethrin) specific gravity = 0.84
  - Pyrethroid Insecticide
  - Signal Word: Caution
  - Flushing Agent: BVA 13
- b. **Application:** 0.512 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** single pass sprays
- g. **Spray-On Time:** approx 30 sec passes
- h. **Flow Rate:** 1.82 gallons/minute

**7. AMOUNT OF SPRAY MATERIAL AVAILABLE:** Plan on loading 1 drums of Aqualuer and 60 gallons of BVA.

**8. PARKING PLAN: NAS Jacksonville, FL**

**9. AIR TO GROUND RADIO FREQUENCIES:**

Navy Jax Ops-	310.2/134.775	Tower	120.0/340.2
Ground	128.6/336.4	<b>Spray Ground:</b>	<b>123.45 VHF</b>
ATIS	281.0	Range Control 134.100 VHF, POC is Sgt Ground 904-682-3824	

**Camp Blanding Range PPR: 103-72**

**Pilot Note:** 5-6 miles out contact Range Control, ask for range brief (to determine which ranges are hot). Squawk 4000. The radio room personnel are not ATC trained. Range Control will call the ground units to put them in a check fire status. After each range is in a check fire status, Pilot will receive check fire status call for planned 20 minutes. If we don't use duration of the 20 minutes, give it back to the range once clear. Further details will be available for review during mission planning.

**10. TRANSPORTATION:**

Enterprise Car Rental: 904-772-7007  
5 FS Cars (b) (6) (b) (6) (b) (6) (b) (6) (b) (6)

**11. SPRAY MONITORING/TESTING:** USDA, NECE, and AF scientists

**12. Quarters:**

Navy Lodge 6099 Mustin Rd. Jacksonville FL 32212 Contact is (b) (6) at (b) (6)

**13. CONTACTS:**

- a. **Naval Air Station Jacksonville, FL (NAS JAX)**
  - (1) For requesting PPR: DSN 942-2511
  - (2) Transient line office, DSN 942-3843
  - (3) Tower – 942-2516

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

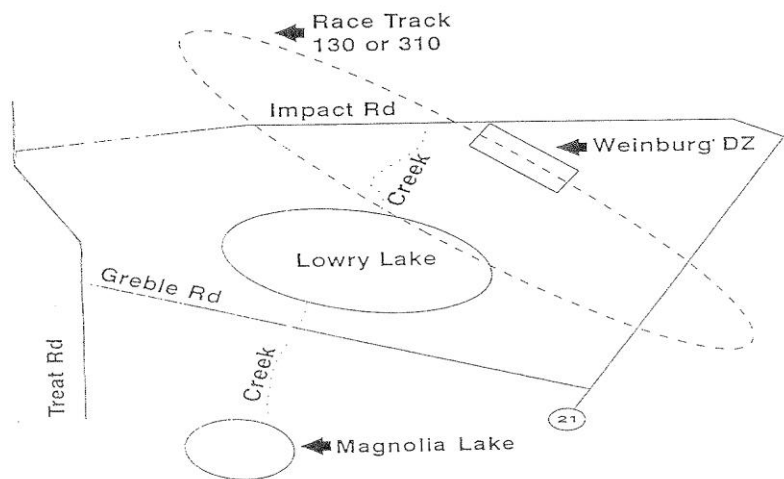
Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Maj (b) (6) ; FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: TSgt (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, MSgt (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
  - Cellular Spray Phones: (b) (6) (b) (6)

CBJTC SOP 95-1

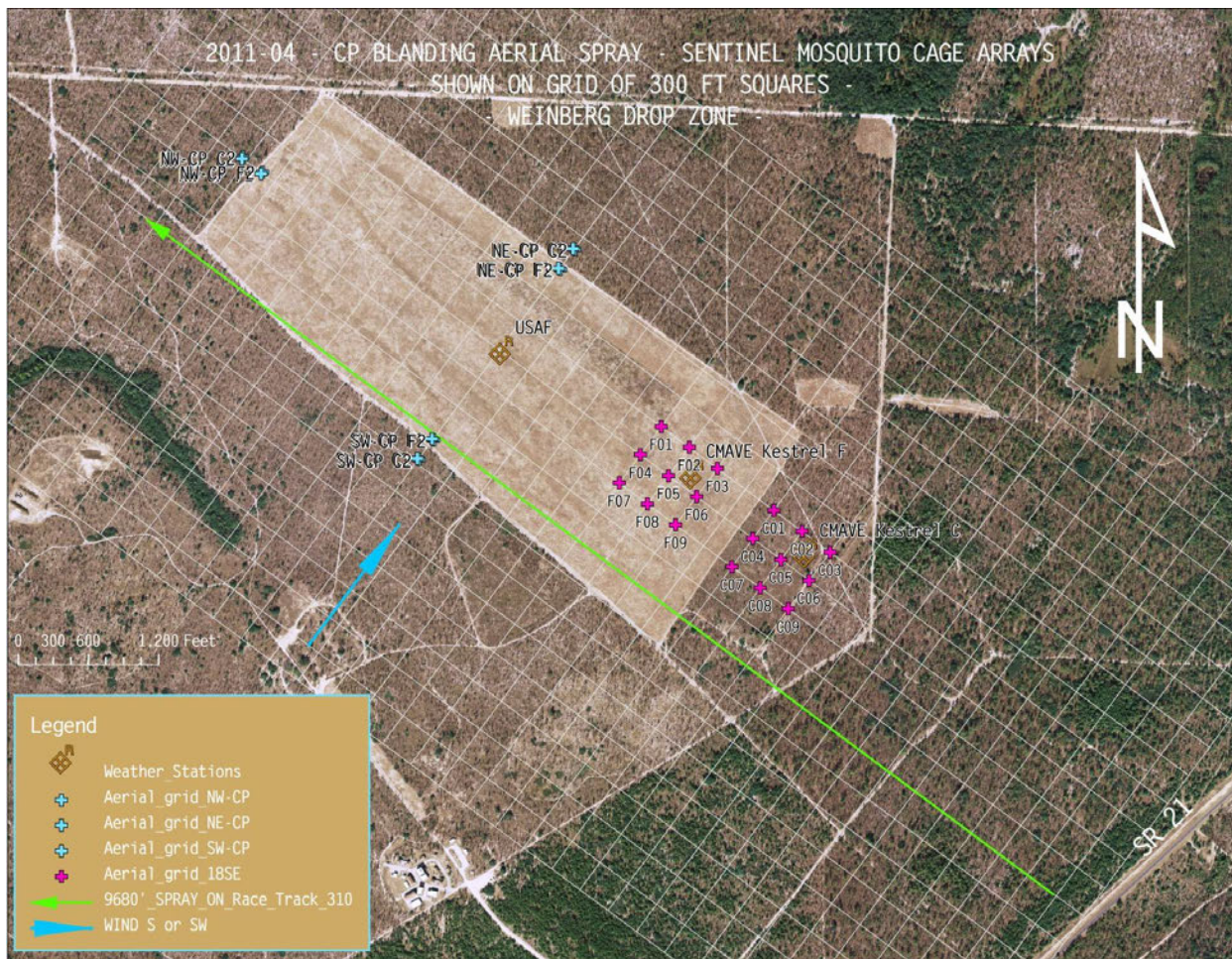
DRAFT 10 June 2010

**APPENDIX 13 WEINBURG FLIGHT PATTERN**



CBJTC SOP 95-1

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DEPARTMENT OF THE AIR FORCE  
757 Airlift Squadron – Aerial Spray Operations  
3976 King Graves Rd Unit 24  
Vienna OH 44473-5924

**910 AW AERIAL SPRAY UNIT -- POST-MISSION REPORT  
MINOT AFB ADULT MOSQUITO CONTROL & ARMY CORPS  
OF ENGINEERS PROPERTY NEAR WILLISTON 18-22 JUL 2011**

**1. MISSION BASICS:**

- a. Installation Sprayed: Minot AFB, North Dakota and Army Corps of Engineers Property near Williston, ND.
- b. Mission Duration: 18-22 July 2011
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date/s: 19 & 21 July 2011
- e. Time/s of Application (Local): 1926-2136 (19 Jul) & 1928-2233 (21 Jul)
- f. Acres Treated: 13,949 (19 Jul) & 32,214 (21 Jul) = 46,163 acres
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6), Pest control supervisor/spray coordinator, DSN (b) (6), (b) (6), Land Manager, (b) (6)
- h. Date Spray Map Last Approved: 13, 19 July 2011
- i. Date of Waste Generation Letter: 17 July 2006
- j. Installation In-Briefing: (When/Where/Briefer/s): 16 Jul; 5 CES Conference Room; Lt Col (b) (6) (Mission Commander) and 5CES Deputy Civil Engineer, Ms. (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Certified PMP/Entomologists (Category 11): Lt Col (b) (6), (b) (6) Capt (b) (6) (safety briefer)
- c. Aircrew:
  - (1) Pilots: Maj (b) (6), Maj (b) (6)
  - (2) Navigators: Lt Col (b) (6)
  - (3) Flight Engineers: MSgt (b) (6)
  - (4) Spray Operators: MSgt (b) (6), (b) (6), TSgt (b) (6), SSgt (b) (6), (b) (6) SrA (b) (6)
- d. Maintenance:

Spray Maintenance: TSgt (b) (6), TSgt (b) (6), SSgt (b) (6), (b) (6)

Crew Chiefs: MSgt (b) (6), SrA (b) (6)

Avionics: MSgt (b) (6)

**Flying Data:**

  - (1) Spray Sorties/Hours: 2 sorties (2.2 + 3.1) = 5.3
  - (2) Ferry Sorties/Hours: 2 sorties (4.3 + 4.0) = 8.3

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet<sup>®</sup> EC Concentrate (78% naled); Zenivex (20% etofenprox)
- b. EPA Registration Number: 59639-90-5481 Trumpet; 2724-791 Zenivex
- c. Formulation Sprayed: Emulsified Concentrate (Trumpet); E20 (Zenivex)
- d. Gallons Pesticide Loaded: 90 gal Trumpet (19 Jul); 80 gal Zenivex (21 Jul)
- e. Gallons Pesticide Applied: 90 gal (19 Jul) & 80 gal (21 Jul)
- f. Gallons and Name Diluent Used: 80 gal BVA-13 with Zenivex
- g. Gallons and Name of Flush Used: 150 gal (water); 10 gal (BVA)
- h. Other Additives Used: None
- i. Application Rate: 0.82oz/acre (19 Jul); 0.32 oz/acre (21 Jul);

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99108
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet<sup>®</sup> 8005 Flat Fan (19 Jul); TeeJet<sup>®</sup> 8003 Flat Fan (21 Jul)
- e. Nozzle Orientation & Number Used: 16-8005s total (19 Jul) and 16-8003's (21 Jul) oriented straight down
- f. Pressure: 35-42 psi
- g. Flow Rate: 6.5 gallons per minute (19 Jul); 4.4 gallons per minute (21 Jul)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray offset: 2000' (20 Jul); 2000' (21 Jul)
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 4-6 knots @ 140° (19 Jul) & 2.5-3 knots @ 346° (21 Jul)
  - (2) Release Altitude: 12-18 knots @ 140° (19 Jul) & 6-12 knots @ 346 (21 Jul)
- b. Temperature (Degrees Fahrenheit): 89-85° (19 Jul) & 81° (21 Jul)
- c. Relative humidity: 75-85% (19 Jul) & 53% (21 Jul)
- d. Cloud Cover: Scattered clouds
- e. Source: Ground observations and aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Monitoring in Williston was done with New Jersey light traps. The night after the spray mosquito numbers dropped 90-95%.
- b. Minot AFB Pest Control Shop (5 CES/CEOUE) collected 340 mosquitoes per trap the night prior to the application and 145 mosquitoes per trap the night following the application.

No data was reported from the city of Minot, but judging the excellent environmental conditions and results at the AFB, we expect significant reduction in mosquito activity.

**8. REMARKS AND RECOMMENDATIONS:** This was the 3rd year of spray operations conducted from Minot AFB in which sprays of the areas surrounding the Army Corps of Engineers' property near Williston ND were included. The rising waters of the Souris and the subsequent flooding of the City of Minot were major news events this year and the confluence of the Missouri and Yellowstone rivers reached the highest level ever recorded. The tremendous amount of precipitation and flooding may have altered the biting fly fauna around Williston and Minot. For example, water levels normally fluctuate with snow melt, but this year they remained high and have only recently receded. It is possible that the high waters suppressed the egg hatch of certain floodwater mosquito species (i.e., *Aedes vexans*), since they normally hatch after the river rises but then falls. Additionally, this year an abnormal number of gnats were seen, both non-biting eye gnats (*Hippolates spp.*) and black flies (Diptera: Simuliidae). Black flies are generally found in clean cold and fast moving water and are normally only a minor nuisance around Williston. Mosquitoes and gnats were targeted during all sprays which began 2 hours prior to sunset. Attachments 1 & 2 show the path of the aircraft during the applications. The sprays are reported to have significantly reduced gnats but they had returned to nuisance levels on the third night following the spray.

8a. Lt Col (b) (6) and Dr. (b) (6) from the Armed Forces Pest Management Board were present and made ground observations during the application at Minot AFB, City of Minot, and Williston. Of particular interest were their observations of dead insects which were found in a white truck bed and on the hoods of cars at Minot AFB. There were both flies and mosquitoes seen but also some medium-sized dragonflies. Like the gnats, this year has seen an incredible surge in dragonfly numbers. It is unusual to see mortality in these relatively large insects and it is unknown if the high temperatures and humidity may have played a role or whether their particular behavior (darting about) exposed this species to a greater extent than other insects. The following day, however, there was no noticeable decrease in the overall number of dragonflies seen on base. Nonetheless, an application after dark would decrease the exposure to dragonflies since they do not fly after dark and night operations should be considered for next year.

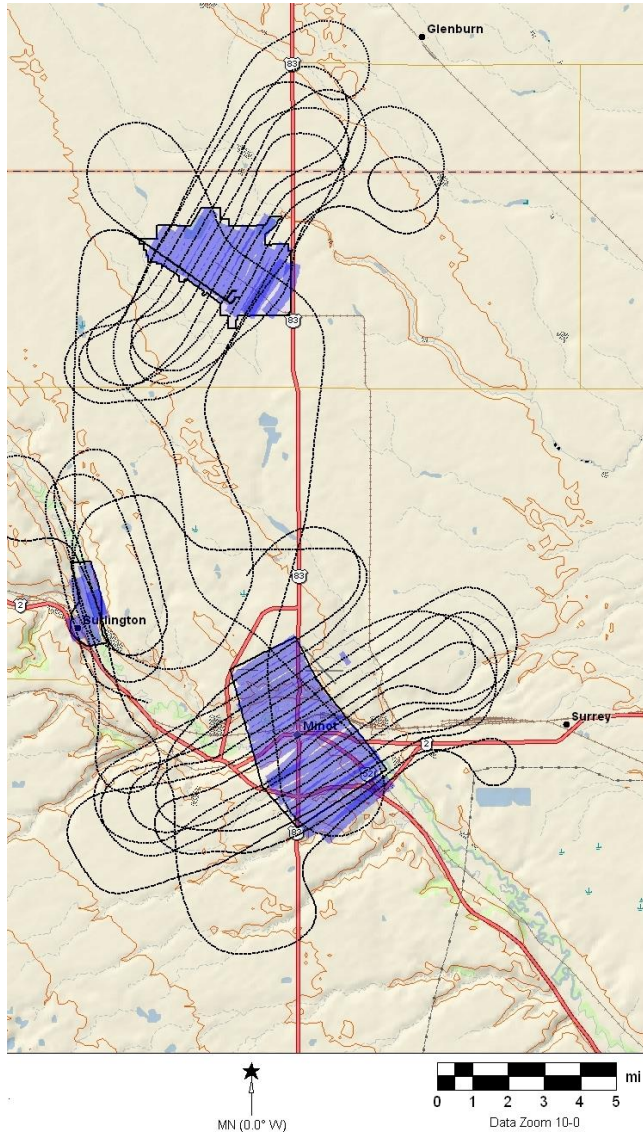
Once again the 5<sup>th</sup> CES at Minot AFB provided outstanding support for our operation. We appreciate the insights and participation of Lt Col (b) (6) and Dr. (b) (6) during this mission.

//signed//

(b) (6) (b) (6) Lt Col, USAFR  
Entomologist and DoD Certified Applicator

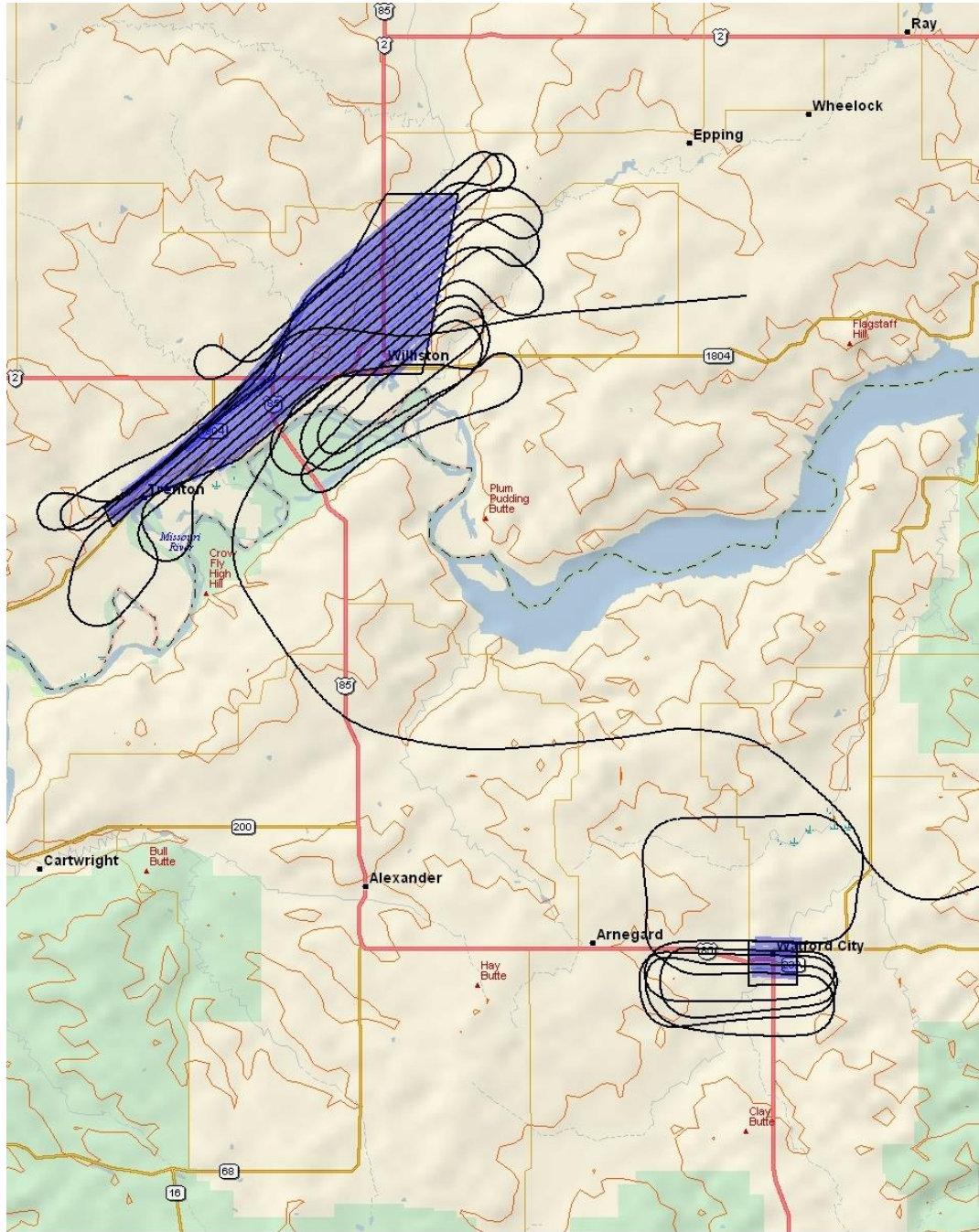
Attachment 1. Shows the areas treated on 19 and 21 July. The two larger areas are Minot AFB (northern block) and City of Minot (southern block). These were sprayed on 19 July. The smaller spray block is the town of Burlington which was sprayed on 21 July. The black dots are the track of the aircraft and the blue

lines are the track of the aircraft while spraying. Some areas flown outside the spray block were treated so that the pesticide would drift back into the target area with the prevailing wind direction.





Attachment 2. Shows areas treated on 21 July 2001 in and near Williston ND. The black outline represents the proposed treatment area. The black dots are the track of the aircraft and the blue lines are the track of the aircraft while spraying. Some areas flown outside the spray block were treated so that the pesticide would drift back into the target area with the prevailing wind direction



Data use subject to license.  
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 www.delorme.com

★  
 ↑  
 MN (0.0° W)

0 2 4 6 8 10 mi  
 Data Zoom 9-2

# AERIAL SPRAY OPERATIONAL SCHEDULE

## Minot AFB, ND and Williston ACE, ND

### 18-22 July 2011

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Minot AFB, ND and the developed areas surrounding the Army Corp of Engineers property near Williston, ND.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: LTC (b) (6), Maj (b) (6), Maj (b) (6)
- (2) Navigators: LTC (b) (6)
- (3) Flight Engineers: MSgt (b) (6)
- (4) Spray Operators: MSgt (b) (6), TSgt (b) (6), SSgt (b) (6), SrA (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSgt (b) (6), TSgt (b) (6), TSgt (b) (6)
- (2) Crew Chief(s): MSgt (b) (6), SrA (b) (6)
- (3) Avionics: MSgt (b) (6)

##### c. Entomologists: LTC (b) (6) (b) (6) (lodged at Williston), Capt (b) (6) (b) (6) (In place – driving POV)

#### 2. SCHEDULE: (All Local Times)

- a. 18 Jul (Monday)
  - 1300L Show KYNG
  - 1500L Depart KYNG
  - 1735L Land KMIB
- b. 19 Jul (Tuesday) Spray Minot AFB and Minot
  - Installation Brief 1500
  - 1730L Show KMIB
  - 1930L Depart KMIB
  - 2130L Land KMIB
- c. 20 Jul (Wednesday) Spray Williston
  - 1730L Show KMIB
  - 1930L Depart KMIB
  - 2130L Land KMIB
- d. 21 Jul (Thursday) WX backup
  - 1730L Show KMIB
  - 1930L Depart KMIB
  - 2130L Land KMIB
- e. 22 Jul (Friday)
  - 1130L Show KMIB
  - 1330L Depart KMIB
  - 1805L Land KYNG

#### 3. ITEMS TO TAKE

- a. **Mission Commander:** Cellular Phone, Mission Folder, FFT
- b. **Entomologist:** Cell Phone, Wind Gauge, Compass, Pest Safety Binder,  
1 VHF radio Project Notebook
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment

#### 4. PPR: 1802WX

**5. RADIO FREQUENCIES: Air To Ground Primary VHF 123.45**

Minot AFB Tower 120.65 V, 236.6, 253.5; Minot International 118.2 V or Unicom 122.95

**6. CONFIGURATION: SP2G**

**a. System:** 2-Module System/Stainless Steel ULV Fuselage Booms

**b. Nozzle Tips/Orientation:** ULV (adulticide): 8005 Tee Jet oriented straight down

**c. Number:** ULV: 16 8003s total (8 each side) for 1000' swaths and 32 8003's (16 each side) for 2000' swaths at Williston 14 8003s (7 each side)

**d. Aircraft:** 90-9108

**e. Mission Identifier:** QZNRK9901199

**7. SPRAY PARAMETERS:**

**a. Adulticide (Minot AFB- Trumpet)**

(1) **Area to be treated:** 26,800 acres

(2) **Altitude:** 150' for Adulticide application

(3) **Swath Width.** 1000 feet for AFB; 2000' City of Minot or as determined by the PMP

(4) **Flow Rate.** 3.6 gallons/minute for 1000' swaths; 7.2 gal/min for 2000' swaths

(5) **Application Rate.** 1.0 oz/acre Trumpet, ULV

(6) **Ground Speed:** 200 Knots (338 Feet/Second)

(7) **Flush:** With water, triple rinse, then air purge

**b. Adulticide (Williston ACE - Zenivex)**

(1) **Area to be treated:** ~23,573 acres

(2) **Altitude:** 150' for Adulticide application

(3) **Swath Width.** 2000' City of Williston or as determined by the PMP

(4) **Flow Rate.** 4.4 gal/minute (1:1 dilute solution)

(5) **Application Rate.** 0.035 lbs/acre A.I. Zenivex, ULV (0.30 oz/acre neat, 0.60 oz/acre 1:1 dilution)

(6) **Ground Speed:** 200 Knots (338 Feet/Second)

(7) **Flush:** With BVA, triple rinse, then air purge

**8. SPRAY MIXING AND LOADING:** See Ento; A good flush with water after Trumpet sprays; flush with BVA after Zenivex spray

**9. TRANSPORTATION:** One 8 pax van, Three 6 PAX, will be available at MIB transpo

**10. LODGING:** **Grand International 1505 North Broadway (701) 852-3161**

Holiday Inn Express. 300 37<sup>th</sup> Ave SW (701) 837-3140

Best Western Kelly Inn 1510 26th Avenue SW (710) 852-4300

Billeting POC: Sgt Tomkins DSN 453-6161

MC will provide Non-A's

**11. CONTACTS:**

**a. Minot AFB ND: DSN prefix: 453- Commercial area code and prefix (701) 723 -**

**1. Base Operations:** x2347 (SSgt (b) (6) Airfield Manager: TSgt (b) (6) /TSgt (b) (6) FAX: 3637

**2. Environmental Officer:** (b) (6)

**3. Base Civil Engineer:** Lt Col (b) (6)

**4. Pest Management:** (b) (6) (cell: (b) (6) )

**5. Public Affairs:** Capt Bresendorff x6212

**6. Weather:** TSgt (b) (6) (b) (6) Capt (b) (6)

**7. Billeting:** SSgt (b) (6) , TSgt (b) (6) (if you have problems w/this number use (b) (6)

**8. Fire Dept:** x2461

**9. Transient Alert:** x3153, closes at 1730L

**10. Minot AFB Twr** x3330

**11. Minot Int'l Twr (Magic City Twr)** (b) (6)

**b. Williston**

**1. Vector control district:** (b) (6)

**2. Army Corps of Engineers:** (b) (6) , office; (b) (6) , cell

**3. Williston ADS** 125.925

**c. 910 AW, Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX Toll Free 1 - 800 - 278 - 7046,+2 + Ext

**1. 910 AW/CC:** Col (b) (6)

**2. 910 AW Command Post:** Ext 1315; FAX 1161

- 3. 910 AW/PA: Ext 1236; FAX 1022
- 4. 910 OG/CC: Col (b) (6)
- 5. 910 Base Ops: Airfield Manager: Ext 1182
  - Assistant Air Field Manager (ACAM), Ext 1181
- 6. 757 AS/DO: Maj (b) (6)
- 7. 757 AS/DOO: Ops Admin: MSgt (b) (6) ; FAX 1657
- 8. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) or 1111 FAX 1616
- 9. 910 LG/CC: Ext 1225
- 10. 910 LG/LGM: Ext 1352
- 11. Maintenance Control: Ext 1348
- 12. LG/LGMS: Spray Maintenance: MSgt (b) (6) Cell: (b) (6)
- 13. 910 LG/LGL: Ext 1137
- 14. Omega/SATO Travel: Ext 1772; (800) 285-6342
- 15. Supervisor of Flight Desk: 1069, FAX: 1371
- 16. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Spray Maintenance: (b) (6)
  - (b) (6) cell (b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 20-24 JUNE 11

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes at LFI and the surrounding communities.

**1. 910 AW PARTICIPANTS:**

**a. Aircrew:**

- (1) Pilots: LTC (b) (6) , Maj (b) (6) (b) (6) Capt (b) (6)
- (2) Navigator: LTC (b) (6)
- (3) Flight Engineers: SMSgt (b) (6)
- (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6) , SSgt (b) (6)

**b. Maintenance:**

- 1. Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6)
- 2. Crew Chiefs: TSgt (b) (6) , SrA (b) (6)
- 3. Avionics: TSgt (b) (6)
- 4. MX Officer: Capt (b) (6)

**c. Entomologist:** Maj (b) (6) (b) (6)

**2. Vehicles:** Langley will supply us with 2x9pax vans and 2 cars

- **MC / Entomologist:** One Car
- **Ops:** One van (9 pax), One car
- **Mx:** One Van (9 pax)

**3. Billeting:** **Hampton Inn** 12251 Jefferson Avenue, Newport News, VA 23602 (757) 249-0001  
Confirmation # 83592300  
LFI Billeting DSN 574-4667 or Comm (757) 764-4667 FAX DSN 574-3038

**4. PPR:** 0620MT01

**5. SCHEDULE: (All times local) THIS MISSION MAY RETURN EARLY IF ABLE**

- a. 20 June (Monday)  
1400L Show KYNG  
1600L Depart KYNG  
1715L Land KLFI

- b. 21-23 June (Tuesday-Thursday)  
1600L Show KLFI  
1815L Depart KLFI  
2045L Land KLFI

- c. 24 June (Friday)  
1030L Show KLFI  
1230L Depart KLFI  
1350L Land KYNG

**6. ITEMS TO TAKE:**

- a. **Mission Commander:** Friendly Force Tracker, Cell Phone
- b. **Entomologist:** Kestrel Weather Monitor, Compass, PCM Card, Pest Safety Binder, VHF Radios, Laptop Computer
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit/Supply Kit

7. **NOTIFICATION NECESSARY FOR THIS MISSION:**
  - a. **Langley Tower:** DSN 574-5326
  - b. **Langley Base Ops:** DSN 574-250/4770
  - c. **Camp Perry:** (757) 229-2121 ext 2263
  - d. **Consideration calls:**
    - i. Newport News
    - ii. Ft Eustis/Felker AAF Tower
    - iii. Norfolk NS/Chambers Tower
8. **PARKING PLAN:** Taxiway Foxtrot with the North Ramp as an alternate
9. **RADIO FREQUENCIES:**
  - a. **Felker AAF Tower (Ft Eustis): 126.3, 269.25, 248.2, 241.0**
    - (1) Ops phone DSN 826-3588/2584 Com 757-878-3588/2584
    - (2) Tower phone DSN 826-2058 Com 757-878-2058
    - (3) Flight Service 122.2
  - b. **Newport News-Williamsburg Int: CTAF – 118.7 or 257.9(Operating Hours 1000Z-0200Z)**
    - (1) Ground – **121.9** or 348.6 (phone 877-0221 ops)
    - (2) Tower – **118.7** (phone 757-875-5080) voice mail 7-2962
    - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
  - c. **Langley AFB:** Tower DSN 574-5326/7999
    - (1) Tower - 125.0 or 253.5
    - (2) Ground - 121.7 or 275.8
    - (3) Clearance – 118.85 or 257.625
    - (4) Metro - 239.8
    - (5) ATIS – 270.1
  - d. **Norfolk NAS (Chambers Fld): TWR 124.3, 379.15, TWR DSN 564-2442, Base Ops DSN 262-3419**
  - e. **Norfolk Approach: 118.9 or 353.7**
  - f. **Spray Ground: 123.4**
10. **IN-BRIEFING:** 1400 hrs on Tuesday in the CE Conference Room
11. **SPRAY CONFIGURATION:**
  - a. **System:** SP2G - MASS ULV; Fuselage booms
  - b. **Nozzle Tips/Orientation:** 10 8005 nozzles -- straight down (5 left - 5 right)
  - c. **Aircraft:** 90-9108
  - d. **Mission Identifier:** QZNRK9901171
12. **SPRAY PARAMETERS:**
  - a. **Altitude:** 150' AGL
  - b. **Ground Speed:** 200 KNOTS
  - c. **Pesticide:** Dibrom<sup>®</sup> Concentrate
  - d. **Application Rate:** 0.5 oz/acre
  - e. **Flow Rate:** 3.6 Gallons/Minute
  - f. **Acreage:** Potentially 125,000 acres on the peninsula but final acreage TBD
  - g. **Swath Width:** 2000 foot
13. **PESTICIDE LOADING:**
  - a. **How Much Pesticide:** see entomologist
  - b. **Where:** Taxi Way F Aero Club Ramp or North Ramp
  - c. **When:** 1630 hrs each day pending weather and heat index.\*\*Calibration performed unless otherwise directed by the Entomologist or Mission Commander
  - d. **Furnished by Installation:**
    - (1) Pesticide
    - (2) Loading Equipment/Crew
    - (3) Hazardous Waste Disposal
    - (4) Two B-5 or B-1 Stands



**14. CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**

**a. LANGLEY AFB VA:**

Wing Commander: DSN 574-5321  
Mission Support Group Commander: DSN 574-7995  
Civil Engineer: DSN 574-2025  
Deputy Chief/Civil Engineer: Ms. (b) (6)  
Environmental Coordinator: DSN 574-3987; FAX 3503  
Base Operations: DSN 574-2504  
Langley Control Tower: DSN 574-7999  
Weather: Langley AFB, DSN 574-5907  
Ft Eustis: DSN 297-5300/3343  
Command Post: DSN 574-5411  
Pest Control Foreman: (b) (6) , DSN (b) (6) , cell phone (b) (6)  
Pest Control NCOIC to TSgt (b) (6)  
Public Affairs: DSN 574-2018/2010/2019  
Fuels: DSN 574-4312/3623/4224  
Motor Pool: 574-7514/5712 (2 vans and 1 staff vehicle were requested)  
ACC PMP: (b) (6) DSN (b) (6) <sup>(b)</sup>  
Fire Department Comm: 757-764-2222

**a. FT EUSTIS VA:** Environmental Coordinator: DSN 927- 4152/2375

**b. Hampton Mosquito Control:** 757 850-3305

**c. York County Mosquito Control:** (757)-890-3780

**d. Poquoson:** Jerry Cagle (757) 868-3590

**e. City of Portsmouth Biologist:** (757) 393-8666

**f. Newport News Mosq. Control:** (757) 269-2750

**g. Camp Peary:** (757) 229-2121 Ext 2263, (b) (6) or (b) (6)

**h. Ft Monroe: ?**

**i. Newport News/Williamsburg Int.:**

- (1) Fixed Base Operator: Flight Int 877-6401
- (2) Flight Service: 877-0209
- (3) Tower: (757) 875-5085
- (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

**j. Norfolk NAS, VA:** DSN 564-2442/7598 or COM (757)-444-2442/7598

- (1) Weather: DSN 565-2500

**k. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Maj (b) (6) ; FAX 1022
- (4) 910 OG/CC: Col (b) (6)
- (5) 910 OS/OSA: Airfield Manager, (b) (6)
- (6) 757 AS/DO: Maj (b) (6)
- (7) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (8) 757 AS/DOO: Ops Admin: MSgt (b) (6) ; FAX 1657
- (9) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) , Capt (b) (6) FAX 1616
- (10) 910 LG/CC: Ext 1225
- (11) 910 LG/LGM: Ext 1352
- (12) Maintenance Control: Ext 1327
- (13) 910 LG/LGMS: Spray Maintenance, Ext 1132
- (14) 910 LG/LGL, Ext 1137
- (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) ((b) (6) cell)



**910 AW AERIAL SPRAY UNIT  
CERTIFIED PEST MANAGEMENT PROFESSIONAL'S  
POST-MISSION REPORT LANGLEY AFB, VA 20-25 JUNE  
2011**

**1. MISSION BASICS:**

- a. Installation Sprayed: Langley AFB, VA and surrounding communities.
- b. Mission Duration: 20-25 June 2011
- c. Purpose of Application: Adult mosquito control
- d. Application Dates: 21, 22, and 23 June
- e. Times of Application (Zulu): 2245 (21 June); 2215 (22 June); 2230 (23 June)
- f. Acres Treated: 49,156 total: 26,880 (21 June); 3,600 (22 June); 18,676 (23 June)
- g. Project Coordinator (Name, Phone #): (b) (6)
- h. Date Spray Map Last Approved: 21 June 2011
- i. Date of Waste Generation Letter: 4 April 1996
- j. Installation In-Briefing: 1 CE Conference Room, Langley AFB; 21 June; Lt Col (b) (6), Maj (b) (6) Maj (b) (6) Lt Col (b) (6)
- k. Mission identifier: QZNRK9901171

**2. OPERATIONAL:**

**910 AW PARTICIPANTS:**

**a. Aircrew:**

- (1) Mission Commander: Maj (b) (6) (b) (6)
- (2) Pilots: Lt Col (b) (6), Capt (b) (6)
- (3) Navigator: Lt Col (b) (6)
- (4) Flight Engineers: MSgt (b) (6)
- (5) Spray Operators: SSgt (b) (6), MSgt (b) (6), MSgt (b) (6)  
(b) (6)

**b. Maintenance:**

- 1. Spray Maintenance: TSgt (b) (6), TSgt (b) (6), TSgt (b) (6)  
(b) (6)
- 2. Crew Chiefs: SrA (b) (6), TSgt (b) (6)
- 3. Avionics: TSgt (b) (6)

**c. Entomologist: Maj (b) (6) (b) (6)**

**d. Flying Data:**

- (1) Spray Sorties/Hours: 3/4.4 [1.4 (21 June); 1.5(22 June); 1.5 (23 June)]
- (2) Ferry Sorties/Hours: 2/2.7

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 210 total
- e. Gallons Pesticide Applied: 196 total; 105 (21 June); 14 (22 June); 77 (23 June);
- f. Gallons and Name Diluent Used: none
- g. Gallons and Name of Flush Used: 10 Gallons BVA Oil
- h. Other Additives Used: n/a
- i. Application Rate: 0.50 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 90-9108
- b. Spray System (Modules Used) and System ID #: SP2G MASS ULV
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: TeeJet 8005 flat fan nozzles
- e. Nozzle Orientation & Number Used: 10 straight down
- f. Pressure (PSI): 40-50
- g. Flow Rate: 3.6 gpm

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 feet
- b. Spray Off Set: 2000 feet
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed in knots): 220-170/4-11 (21 June) Langley Peninsula; 040-110°/7-11 (22 June) Craney Island, 060-080°/4 ground and 090-100 aircraft (23 June) western portion of peninsula
- b. Temperature (°F): 82-80 (21 June) 75 (22 June); 73-71 (23 June)
- c. Cloud Cover: mostly sunny 21-23 June
- d. Source: Observations at altitude during spray sorties

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) n/a
- b. Effectiveness:
  - (1) Technique/s Used: carbon dioxide-baited traps were used to monitor mosquito densities pre- and post-treatment by the various community and Base mosquito control professionals.

(2) Results: Langley pest management reported a 60% reduction post-spray; York Co. reported no mosquitoes flying the day after the application. No data was available from Portsmouth at time of publication.

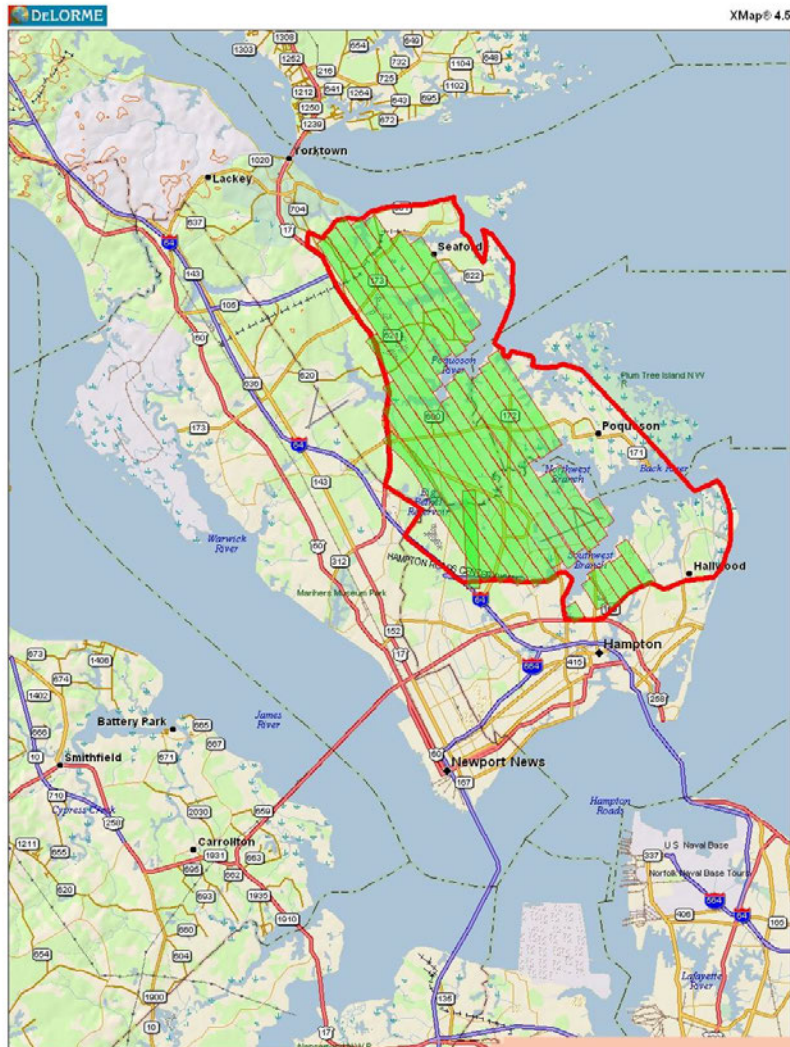
8. **REMARKS:** Rainfall has produced significant mosquito problems along the Atlantic coast this year. On this mission significant problems were encountered with the filter screens clogging with debris, limiting the areas sprayed. Typically, less than 20 minutes of spray-on time was accomplished before system pressures were unsustainable. At these times, the aircraft landed and the filter systems were cleaned or replaced. This resulted in approximately half the planned area being completed. It appears the problem was that 3 drums of older stock Dibrom were used and the precipitates were clogging the system. In future only newer stock Dibrom should be used so as to avoid these problems. Less than ideal control was observed around the Langley area as reported by pest management undoubtedly because winds shifted up to 90 degrees between the northern part of the spray block and the southern part of the spray block. Thus, around the Langley AFB area there was essentially a headwind/tailwind during application. This would produce significant gaps in the treatment because of a lack of crosswind component to effectively disperse the spray material. Many thanks to (b) (6) and his staff for facilitating this mission's activities.

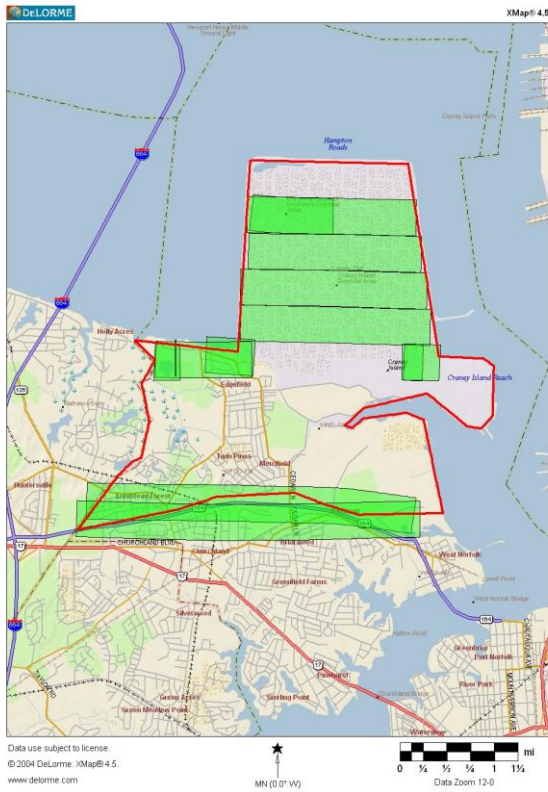
//Signed//

(b) (6) (b) (6) **Maj, USAFR**  
**Entomologist and Certified Applicator**

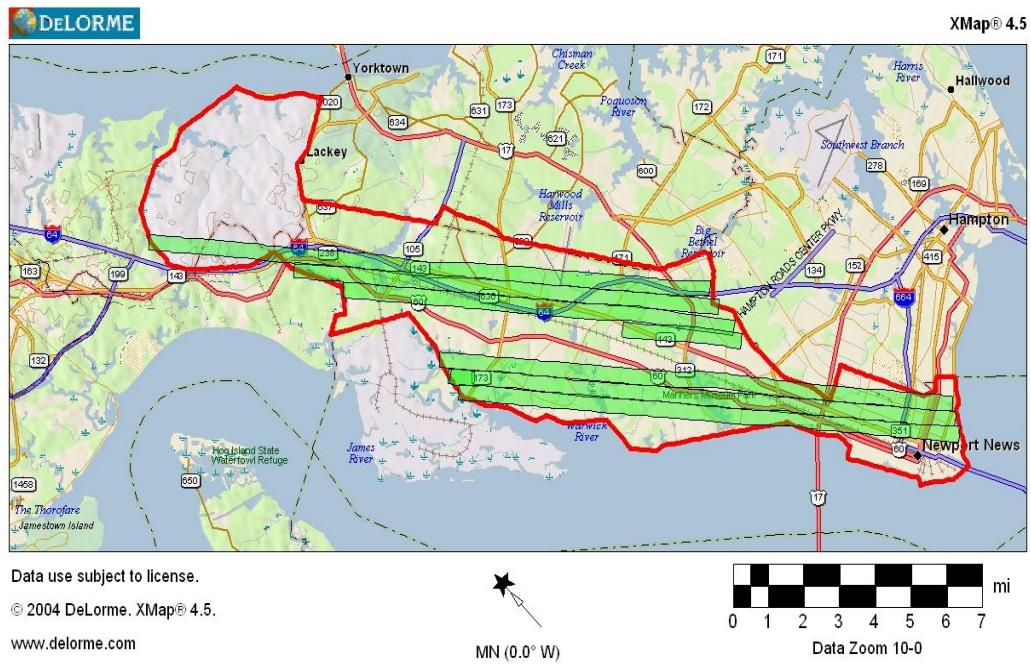
**Attachment 1. Maps depicting sprayed areas over Langley AFB and surrounding communities, 21-23 June 2011.**

**21 June**





22 June



23 June

# AERIAL SPRAY OPERATIONAL SCHEDULE

## LANGLEY AFB, VA

### 22-26 AUG 11

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control the populations of nuisance and disease carrying mosquitoes at LFI and the surrounding communities.

**1. 910 AW PARTICIPANTS:**

**a. Aircrew:**

1. Pilots: Capt (b) (6), Maj (b) (6), Maj (b) (6) (b) (6) (MC)
2. Navigator: Maj (b) (6)
3. Flight Engineers: MSgt (b) (6) (b) (6) MSgt (b) (6)
4. Spray Operators: MSgt (b) (6), MSgt (b) (6), TSgt (b) (6) (b) (6)  
TSgt Francesangeli

**b. Maintenance:**

1. Spray Maintenance: TSgt (b) (6), TSgt (b) (6), SSgt (b) (6), SrA (b) (6)
2. Crew Chiefs: TSgt (b) (6), SSgt (b) (6)
3. Avionics: SSgt (b) (6)

**c. Entomologist:** LTC (b) (6) (b) (6)

**2. Vehicles:** Langley will supply us with 2x9pax vans and 2 cars

- **MC/Entomologist:** One Car
- **Ops:** One van (9 pax), One car
- **Mx:** One Van (9 pax)

**3. Billeting: Hampton Inn** 12251 Jefferson Avenue, Newport News, VA 23602 (757) 249-0001  
Confirmations# 85173072 18 rooms reserved, update names if needed, non-A's  
LFI Billeting DSN 574-4667 or Comm (757) 764-4667 FAX DSN 574-3038  
POC; MSgt (b) (6) (b) (6)

**4. PPR:** 0822AW01

**5. SCHEDULE: (All times local) THIS MISSION MAY RETURN EARLY IF ABLE**

- a. 22 Aug (Monday)  
1300L Show KYNG  
1500L Depart KYNG  
1615L Land KLFI
- b. 23-25 Aug (Tuesday-Thursday)  
1545L Show KLFI  
1745L Depart KLFI  
1945L Land KLFI
- c. 26 Aug (Friday)  
1030L Show KLFI  
1230L Depart KLFI  
1350L Land KYNG

**6. ITEMS TO TAKE:**

- a. **Mission Commander:** Friendly Force Tracker, Cell Phone
- b. **Entomologist:** Kestrel Weather Monitor, Compass, PCM Card, Pest Safety Binder, VHF Radios, Laptop Computer
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit/Supply Kit



7. **NOTIFICATION NECESSARY FOR THIS MISSION:**
  - a. **Langley Tower:** DSN 574-5326
  - b. **Langley Base Ops:** DSN 574-250/4770
  - c. **Camp Perry:** (757) 229-2121 ext 2263
  - d. **Consideration calls:**
    - i. Newport News
    - ii. Ft Eustis/Felker AAF Tower
    - iii. Norfolk NS/Chambers Tower
8. **PARKING PLAN:** Taxiway Foxtrot with the North Ramp as an alternate
9. **RADIO FREQUENCIES:**
  - a. **Felker AAF Tower (Ft Eustis): 126.3, 269.25, 248.2, 241.0**
    - (1) Ops phone DSN 826-3588/2584 Com 757-878-3588/2584
    - (2) Tower phone DSN 826-2058 Com 757-878-2058
    - (3) Flight Service 122.2
  - b. **Newport News-Williamsburg Int: CTAF – 118.7 or 257.9(Operating Hours 1000Z-0200Z)**
    - (1) Ground – 121.9 or 348.6 (phone 877-0221 ops)
    - (2) Tower – 118.7 (phone 757-875-5080) voice mail 7-2962
    - (3) FSS – 122.1R, 122.2, 122.65, OR 124.9
  - c. **Langley AFB: Tower DSN 574-5326/7999**
    - (1) Tower - 125.0 or 253.5
    - (2) Ground - 121.7 or 275.8
    - (3) Clearance – 118.85 or 257.625
    - (4) Metro - 239.8
    - (5) ATIS – 270.1
  - d. **Norfolk NAS (Chambers Fld): TWR 124.3, 379.15, TWR DSN 564-2442, Base Ops DSN 262-3419**
  - e. **Norfolk Approach: 118.9 or 353.7**
  - f. **Spray Ground: 123.4**
10. **IN-BRIEFING:** 1400 hrs on Tuesday in the CE Conference Room
11. **SPRAY CONFIGURATION:**
  - a. **System:** SP2G - MASS ULV; Fuselage booms
  - b. **Nozzle Tips/Orientation:** 10 8005 nozzles -- straight down (5 left - 5 right)
  - c. **Aircraft:** 90-9106
  - d. **Mission Identifier:** QZNRK9901234
12. **SPRAY PARAMETERS:**
  - a. **Altitude:** 150' AGL
  - b. **Ground Speed:** 200 KNOTS
  - c. **Pesticide:** Dibrom® Concentrate
  - d. **Application Rate:** 0.5 oz/acre
  - e. **Flow Rate:** 3.6 Gallons/Minute
  - f. **Acreage:** Potentially 125,000 acres on the peninsula but final acreage TBD
  - g. **Swath Width:** 2000 foot
13. **PESTICIDE LOADING:**
  - a. **How Much Pesticide:** see entomologist
  - b. **Where:** Taxi Way F Aero Club Ramp or North Ramp
  - c. **When:** 1630 hrs each day pending weather and heat index.\*\*Calibration performed unless otherwise directed by the Entomologist or Mission Commander
  - d. **Furnished by Installation:**
    - (1) Pesticide
    - (2) Loading Equipment/Crew
    - (3) Hazardous Waste Disposal
    - (4) Two B-5 or B-1 Stands



**14. CONTACTS: LANGLEY (757)-764-XXXX & FT EUSTIS (757)-878-XXXX**

**a. LANGLEY AFB VA:**

Wing Commander: DSN 574-5321  
Mission Support Group Commander: DSN 574-7995  
Civil Engineer: DSN 574-2025  
Deputy Chief/Civil Engineer: Ms. (b) (6)  
Environmental Coordinator: DSN 574-3987; FAX 3503  
Base Operations: DSN 574-2504  
Langley Control Tower: DSN 574-7999  
Weather: Langley AFB, DSN 574-5907  
Ft Eustis: DSN 297-5300/3343  
Command Post: DSN 574-5411  
Pest Control Foreman: (b) (6) , DSN (b) (6) cell phone (b) (6)  
Pest Control NCOIC to TSgt (b) (6)  
Public Affairs: DSN 574-2018/2010/2019  
Fuels: DSN 574-4312/3623/4224  
Motor Pool: 574-7514/5712  
ACC PMP: (b) (6) , DSN (b) (6)  
Fire Department Comm: 757-764-2222

**a. FT Eustis VA:** Environmental Coordinator: DSN 927- 4152/2375

**b. Hampton Mosquito Control:** 757 850-3305

**c. York County Mosquito Control:** (757)-890-3780

**d. Poquoson:** (b) (6)

**e. City of Portsmouth Biologist:** (757) 393-8666

**f. Newport News Mosq. Control:** (757) 269-2750

**g. Camp Peary:** (757) 229-2121 Ext 2263, (b) (6)

**h. Ft Monroe: ?**

**i. Newport News/Williamsburg Int.:**

- (1) Fixed Base Operator: Flight Int 877-6401
- (2) Flight Service: 877-0209
- (3) Tower: (757) 875-5085
- (4) Rental Car: Avis 1-800-331-1212 at Newport News/Williamsburg Int. Airport

**j. Norfolk NAS, VA:** DSN 564-2442/7598 or COM (757)-444-2442/7598

- (1) Weather: DSN 565-2500

**k. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Maj (b) (6) FAX 1022
- (4) 910 OG/CC: Col (b) (6)
- (5) 910 OS/OSA: Airfield Manager, (b) (6)
- (6) 757 AS/DO: Maj (b) (6)
- (7) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (8) 757 AS/DOO: Ops Admin: MSgt (b) (6) ; FAX 1657
- (9) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) , Capt (b) (6) ; FAX 1616
- (10) 910 LG/CC: Ext 1225
- (11) 910 LG/LGM: Ext 1352
- (12) Maintenance Control: Ext 1327
- (13) 910 LG/LGMS: Spray Maintenance, Ext 1132
- (14) 910 LG/LGL, Ext 1137
- (15) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) ((b) (6) cell)

**910 AW AERIAL SPRAY UNIT  
CERTIFIED PEST MANAGEMENT PROFESSIONAL'S  
POST-MISSION REPORT LANGLEY AFB, VA 22-26 AUG 2011**

**1. MISSION BASICS:**

- a. Installation Sprayed: Langley AFB, VA and surrounding communities.
- b. Mission Duration: 22-26 Aug 2011
- c. Purpose of Application: Adult mosquito control
- d. Application Dates: 23 and 24 Aug
- e. Times of Application (local): 1905-1955 (23 Aug); 1830-2030 (24 Aug)
- f. Acres Treated: 17,498 total: 9,299 (23 Aug); 8,199 (24 Aug)
- g. Project Coordinator (Name, Phone #): (b) (6)
- h. Date Spray Map Last Approved: 23 Aug 2011
- i. Date of Waste Generation Letter: 4 April 1996
- j. Installation In-Briefing: 1 CE Conference Room, Langley AFB; 23 Aug;  
Lt Col (b) (6) Maj (b) (6)
- k. Mission identifier: QZNRK9901234

**2. OPERATIONAL:**

**910 AW PARTICIPANTS:**

**a. Aircrew:**

- (1) Mission Commander: Maj (b) (6) (b) (6)
- (2) Pilots: Maj (b) (6) , Capt (b) (6)
- (3) Navigator: Maj (b) (6)
- (4) Flight Engineers: MSgt (b) (6) , MSgt (b) (6)
- (5) Spray Operators: MSgt (b) (6) , MSgt (b) (6) , TSgt  
(b) (6) (b) (6) TSgt (b) (6)

**b. Maintenance:**

- 1. Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6)  
(b) (6) SSgt (b) (6)
- 2. Crew Chiefs: TSgt (b) (6) , SSgt (b) (6)
- 3. Avionics: SSgt (b) (6)

**c. Entomologist: Lt Col (b) (6) (b) (6)**

**d. Flying Data:**

- (1) Spray Sorties/Hours: 2/3.1 [1.6 (23 Aug); 1.5 (24 Aug)]
- (2) Ferry Sorties/Hours: 2/3.0

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 5481-480
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 90 total
- e. Gallons Pesticide Applied: 73 total; 38 (23 Aug); 35 (24 Aug)

- f. Gallons and Name Diluent Used: none
- g. Gallons and Name of Flush Used: none
- h. Other Additives Used: n/a
- i. Application Rate: 0.52 oz/acre (23 Aug); 0.55 oz/acre (24 Aug)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 90-9106
- b. Spray System (Modules Used) and System ID #: SP2G MASS ULV
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: TeeJet 8005 flat fan nozzles
- e. Nozzle Orientation & Number Used: 10 straight down
- f. Pressure (PSI): 40-55
- g. Flow Rate: 3.6 gpm

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 feet
- b. Spray Off Set: 2000-4000 feet
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed in knots): 060/6 (23 Aug) York Co; 145°/7-9 ground 185/10 aircraft (Langley) and 151@8 aircraft over Craney Island (24 Aug)
- b. Temperature (°F): 77-74 (23 Aug) 82-80 (24 Aug)
- c. Cloud Cover: mostly sunny 23-24 Aug
- d. Source: Observations at altitude and on the ground during spray sorties

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) n/a
- b. Effectiveness:
  - (1) Technique/s Used: carbon dioxide-baited traps were used to monitor mosquito densities pre- and post-treatment by the various community and Base mosquito control professionals.
  - (2) Results: The following are comments from the biologists in the treatment areas and indicated a successful application. Some post application surveillance was not possible because of preparations for the arrival of Hurricane Irene. CRANEY ISLAND: The spray application was successful on the Craney Island facility. We had a very large number of

adult mosquitoes prior to flight; no adults apparent the days following spray. LANGLEY: Trap numbers are very low. Went from low 100's per night to 7 in last night's trap (*Anopheles*). Great results. PORTMOUTH: A decent kill with a few skips. YORK COUNTY: The aerial spray greatly reduced our mosquito annoyance.

8. **REMARKS:** This was a standard adult mosquito control spray mission for Langley AFB and the surrounding areas. Some communities decided not to participate in this spray. Unfortunately, this decision negatively impacts the overall effectiveness of the operation by leaving large areas where mosquitoes breed untreated and thus allowing these mosquitoes to move quickly into treated areas. The large spray block planned for Newport News was not sprayed because of high winds on the day of the application. Areas sprayed are shown in Attachment 1. Hurricane Irene dumped over 8 inches of rain on Langley AFB a few days after the spray and they also experienced tidal surges. It is likely that there will be a tremendous surge in saltwater nuisance mosquitoes in approximately 3 weeks. There are no scheduled aircraft for that timeframe but an out of cycle request could be made for the Spray Flight's return.

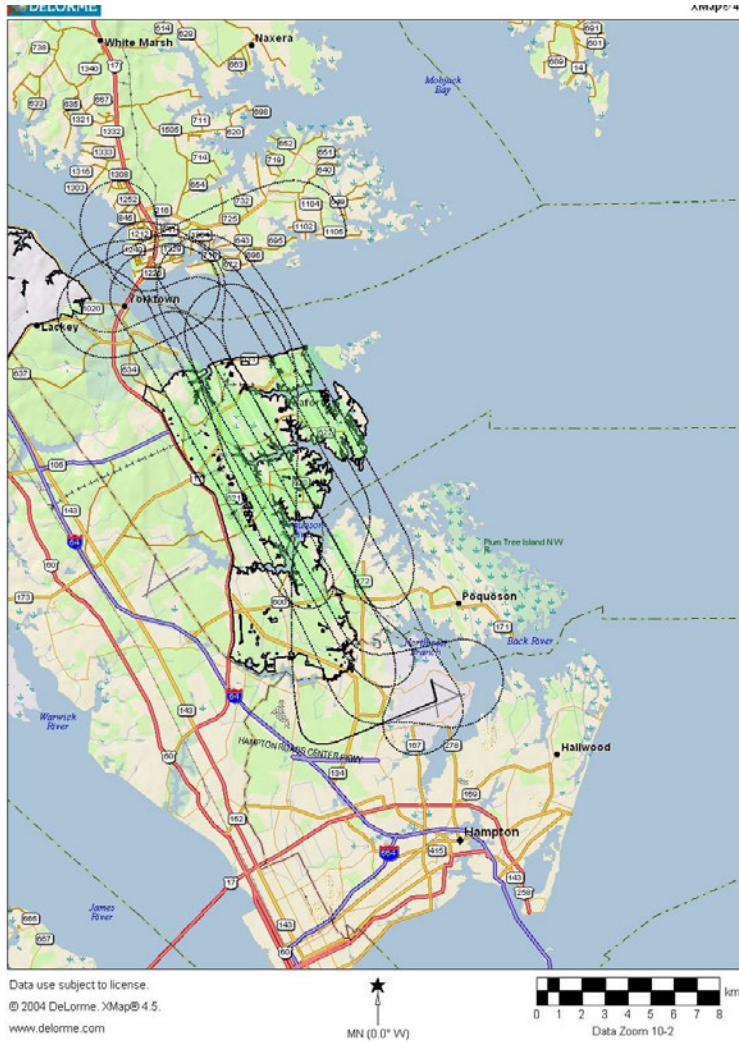
//Signed//

(b) (6) (b) (6)

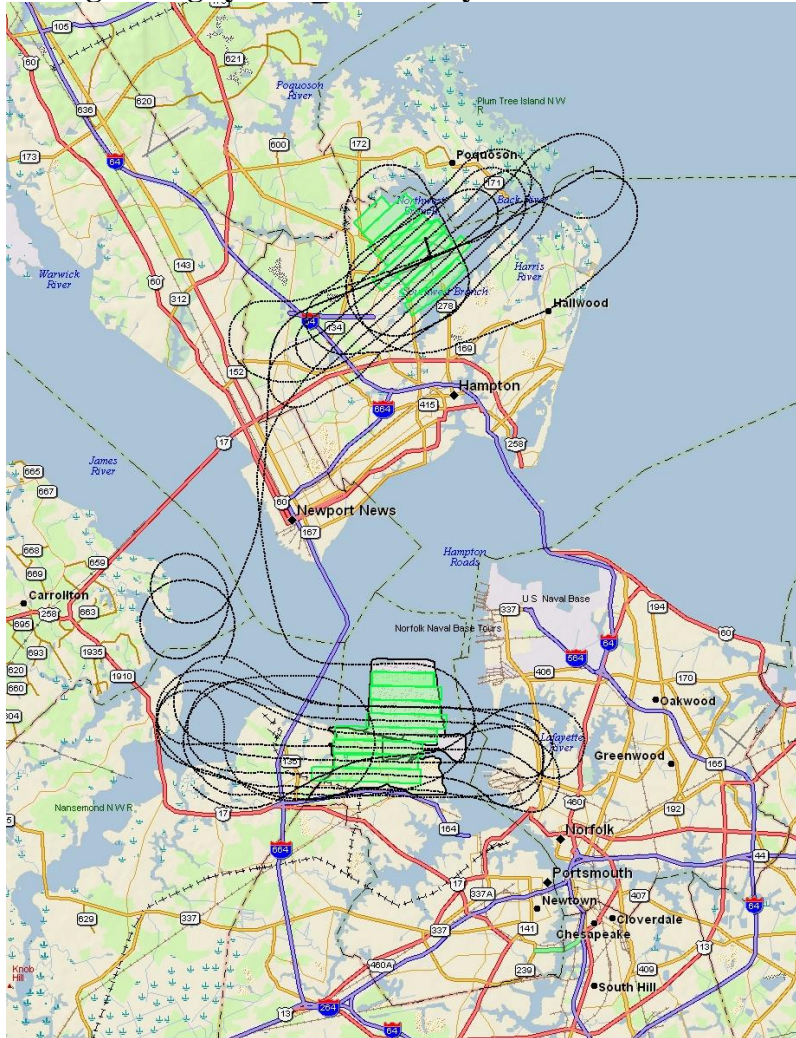
**Lt Col, USAFR  
Entomologist and Certified Applicator**

**Attachment 1. Maps depicting sprayed areas over Langley AFB and surrounding communities, 23-24 Aug 2011.**

**23 Aug**



## 24 Aug – Langley AFB and Craney Island and Portsmouth



i use subject to license.  
104 DeLorme XMap® 4.5.  
v.delorme.com

★  
↑  
MN (0.0° W)

0 1 2 3 4 5 6 7 8 9 km  
Data Zoom 10-0





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

15 April 2011

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Grand Forks AFB, ND

1. One C-130 will be available 23-27 May 11 for the requested spray larvacide mission helping to control nuisance and vector species of mosquitoes reducing the negative impact these organisms generate on outdoor activities.

2. Concept of Operations:

- a. 23 May (Monday)  
1000 Show KYNG  
1200 Depart KYNG  
1300 Land KRDR
- b. 24-26 May (Tuesday-Thursday)  
0430 Show KRDR  
0600 Depart KRDR  
0900 Land KRDR
- c. 27 May (Friday)  
0700 Show KRDR  
0900 Depart KRDR  
1500 Land KYNG

3. Maj (b) (6) (b) (6) is the MC and Maj (b) (6) (b) (6) is the AC.

5. Support required at Grand Forks AFB, ND has been coordinated.

(b) (6), Capt, USAFR  
757<sup>th</sup> AS Aerial Spray



# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 23-27 May 2011

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes and thereby improving working conditions and lower mosquito-borne illness for members operating at Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) Pilots: LtCol (b) (6) , Maj (b) (6)
- 2) Navigators: LtCol (b) (6)
- 3) Flight Engineers: TSgt (b) (6)
- 4) Spray Operators: MSgt (b) (6) , SSgt (b) (6)

##### b. Maintenance:

- 1) Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6) , SrA (b) (6)
- 2) Crew Chiefs: SSgt (b) (6) , SrA (b) (6)
- 3) Avionics: MSgt (b) (6)

##### c. Entomologist: Maj (b) (6) (b) (6) (MC), Capt (b) (6) (Driving)

#### 2. SCHEDULE: (All Local Times) PPR: 23-05-1/DM

- a. 23 May (Monday)  
0900 Show KYNG  
1100 Depart KYNG  
1300 Land KRDR  
1430 Installation Briefing
- b. 24-26 May (Tuesday-Thursday)  
0430 Show KRDR  
0600 Depart KRDR  
0900 Land KRDR
- c. 27 May (Friday)  
0700 Show KRDR  
0900 Depart KRDR  
1500 Land KYNG

#### 3. ITEMS TO TAKE

- a. **Mission Commander:** Cell Phone, Mission Folder, Friendly Force Tracker
- b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder, 1 UHF Radio, Water Sensitive Cards, Card Holders with Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors, Project Notebook, Entomologist's Tool Kit
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment

#### 4. PPR: 23-05-1/DM

#### 5. RADIO FREQUENCIES: Air To Ground Primary VHF 123.45; secondary UHF 392.2; KRDR Tower 124.9 V; Grand Forks International 118.4 V

## **6. CONFIGURATION: SP2G**

- a. System:** 2-Module System/ Fuselage Booms
- b. Nozzle Tips/Orientation:** Larvicide: Raindrop nozzles straight back
- c. Number:** Larvicide: fuselage only, 12 total (6 each side) straight back
- d. Booms:** Fuselage
- e. Aircraft:** 90-9107
- f. Mission Identifier:** QZNRK9901143

## **7. SPRAY PARAMETERS:**

- a. Larvicide**
  - (1) **Area to be treated:** approx. 1,636 acres
  - (2) **Altitude:** 100' for Larvicide application
  - (3) **Swath Width.** 200 feet
  - (4) **Flow Rate.** 186 gallons/minute
- b. Application Rate.** 2 gallons/acre (water with 0.75 oz of Altosid®)
- c. Ground Speed:** 200 Knots

## **8. SPRAY MIXING AND LOADING: (For Larvicide Spray Sorties)**

- a. Composition of each Gallon:**
  - (1) 0.375 ounces of Altosid® 20
  - (2) 0.64 ounces of AirexDC™ drift retardant
  - (3) Water
- b. Typical load:** (2 tanks of 450 gallons each)
  - (1) Fill with 450 gallons of water/tank. Total water in tanks = 900 gal.
  - (2) Total water added = 900 gallons
  - (3) Add 1.33 (1 1/3) gallons of Altosid® per tank (2 2/3 gallons total).
  - (4) 2.5 gal AirexDC per tank (5 Gal total) while agitating approximately 15 min
  - (5) Total quantity mix. 908 gallons
- c. Final Load for complete flush**
  - (1) Fill tanks with the amount of water necessary for a proper system flush
- d. Mixing Instructions:**

SHAKE WELL BEFORE USING. Altosid® may separate on standing and must be thoroughly agitated prior to dilution.

PRECAUTIONARY STATEMENT: Spray solution should be used within 48 hours; always agitate before spraying.

## **9. TRANSPORTATION:** One 13 PAX van, Three 6 PAX trucks, One stake bed truck

## **10. LODGING: On Base Billeting:** DSN 362-7200 or (701) 594-8431, FAX 362-3069 -- Prime Knight DSN 362-3844 or (701) 747-3844

## 11. CONTACTS:

### a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205

- (1) **Base Operations:** Airfield Manager DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx
- (2) **Environmental Officer:** (b) (6), DSN (b) (6), FAX 6155
- (3) **Base Civil Engineer:** Lt Col (b) (6)
- (4) **Pest Management:** TSgt (b) (6) or SSGT (b) (6) DSN (b) (6), FAX 3432
- (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
- (6) **Weather:** DSN 362-4396
- (7) **Billeting:** DSN 362-3070/6189/7200 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844
- (8) **Transportation:** DSN 362-3976

### b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Ext 1257 / 1179
- (5) 910 Base Ops: Airfield Manager, Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6)
- (7) 757 AS/DOO: Ops Admin: MSgt (b) (6); FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Ext 1503 or 1531, FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: Ext 1132/1586
- (13) 910 LG/LGL:Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist cell phone (b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## MCRD, PARRIS ISLAND, SC

### 25-28 April 2011

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC. Conduct trial with Duet for efficacy evaluation against biting midges.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Pilots: LtCol (b) (6) , LtCol (b) (6) , LtCol (b) (6)
- (2) Navigators: Capt (b) (6)
- (3) Flight Engineers: SSgt (b) (6)
- (4) Spray Operators: SMSgt (b) (6) (b) (6) MSgt (b) (6) (b) (6)

##### b. Maintenance:

- (1) Spray Maintenance: TSgt (b) (6) , SSgt (b) (6) , SrA (b) (6)
- (2) Crew Chiefs: TSgt (b) (6) , SrA (b) (6)
- (3) Avionics: TSgt (b) (6)

##### c. Entomologist: Maj (b) (6) (b) (6) Maj (b) (6) (b) (6) (MC)

#### 2. PPR REQUIREMENTS: 102-01 SPRAY07

#### 3. PLANNED SEQUENCE OF EVENTS: (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

##### 25 APR (Monday)

1400: Show  
1600: Depart KYNG  
1800: Land KNBC  
1830: Safety Brief

##### 26 APR (Tuesday) Fly training sortie prior to actual application; Start application at calculated time based on sunset.

TBD Installation Brief  
1600: Show  
1630: WX Decision and Load Chemical  
1800: Depart KNBC  
2000: Land KNBC  
Sunset: 1959

##### 27 APR (Wednesday) WX Backup or Training

1600: Show (Earlier if Training)  
1630: WX Decision and Load Chemical  
1800: Depart KNBC  
2000: Land KNBC  
Sunset: 1959

##### 28 APR (Thursday) \*\*Departure time may slip depending upon Wednesday evening completion time.

1000: Show  
1200: Depart KNBC  
1400: Land KYNG

#### 4. ITEMS TO TAKE/NOTES:

##### a. Mission Commander:

- (1) Mission Commander Cell Phone
- b. **Entomologist:**
  - (1) Wind Gauge & Compass
  - (2) VHF Radios and Cellular Phone
  - (3) Pesticide Safety Binder
- c. **Navigators:**
  - (1) Maps
  - (2) Templates
- d. **Spray Maintenance:**
  - (1) Spill Kit
  - (2) Safety Equipment
  - (3) Loading and Clean-up Equipment and Supplies

## 5. SPRAY CONFIGURATION: SP-2G

- a. **Mass:** 2-Module System
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** size = 8003; 13 open
- d. **Differential GPS:** Wingman Installed
- e. **Aircraft:** 90-9107
- f. **Mission Identifier:** QZNRKA902102

## 6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)

- a. **Pesticide:**
  - Duet—Prallithring (1%); Sumithrin (5%); Piperonyl Butoxide (5%)
  - Signal Word: Caution
  - Flushing Agent: BVA Oil
- b. **Application:** 1.24 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 4.7 gallons/Minute

## 9. PARKING PLAN: NAS Beaufort, SC. Please limit number of vehicles and trips on the flight line

## 10. AIR TO GROUND RADIO FREQUENCIES:

Beaufort Tower: 119.05/340.2 MCAS TWR  
 Beaufort Approach 123.7  
 Hilton Head Arpt: 118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)  
 Beaufort Co Arpt: 122.7 UNI  
 Spray Ground: 123.4

## 11. TRANSPORTATION: Parris Island will provide 3 vehicles for transportation to and from quarters and for messing. Vehicles will be at Base Operations.

## 12. SPRAY MONITORING/TESTING: Ground monitoring by CPMP & Parris Island MCRD Project Coordinator.

## 12. CONTACTS:

- a. **Parris Island MCRD SC: (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX**
  - (1) Environmental Coordinator (Spray Coordinator):  
 (b) (6) DSN (b) (6), Cell (b) (6) HazWaste: (b) (6) DSN (b) (6); Cell (b) (6)  
 (b) (6) Cell (b) (6); (b) (6), DSN (b) (6); Cell (b) (6)
  - (2) FAX (843) 228-2616; NREAO (b) (6), DSN (b) (6)  
Assistant Chief of Staff I & L: Col (b) (6), DSN (b) (6) Deputy AC/S (b) (6)  
 (b) (6) DSN (b) (6)

- (3) Pest Control Foreman: DSN 335-3663
- (4) P.I. Motor Pool: (b) (6) , DSN (b) (6)
- (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
- (6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)
- (7) P.I. Rifle Range: DSN: 335-3183/3624

**b. Beaufort MCAS SC:** (Commercial (843) 228-XXXX)

- (1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6) (b) (6) , DSN (b) (6)
- (2) Fuels: DSN: 335-7049/7448/7168
- (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6) (Ops Officer) Airfield manager (b) (6)  
DSN: (b) (6) . Base Ops is ext 7301/2/3  
(Airfield Manager is (b) (6) , DSN: (b) (6) ) approves after hrs requests
- (4) Trans Alert/VAL: DSN: 335-7110
- (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)

**c. Beaufort County Mosquito Control:** (b) (6)

**d. Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) DSN: (b) (6)

**e. Quarters: 18 Rooms at the Holiday Inn \$127/night (843) 379-3100**  
**2225 Boundary St Beaufort, SC**

Comfort Inn and Suites	(843) 379-9400
Ramada Inn	(843) 524-2144/Fax 1704
Hampton Inn	(843) 986-0600 (FAX 0494)
Sleep Inn	(843) 522-3361 FAX (843) 522-9929
Parris Island Billeting	DSN: 335-2744 (FAX: 3815); (843) 228-3960
Comfort Inn	(843) 525-9366 (FAX 1529)
Best Western (Sea Island Motel)	(843) 524- 4121
Port Royal Days Inn	(843) 524-1551

**f. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Maj (b) (6) FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: TSgt (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) 1503 FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, MSG (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) ((b) (6) (b) (6) ((b) (6)



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

17 March 11

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Parris Island MCRD, SC

1. Aerial spray mission controlling biting midges and mosquitoes with insecticide to reduce the negative impact on outdoor training at Parris Island MCRD, SC.

2. Concept of Operations:

- a. 25 April (Monday)  
1600 Depart KYNG  
1800 Land KNBC
- b. 26 April (Tuesday)  
1400 Installation Brief  
1800 Depart KNBC  
2000 Land KNBC
- c. 27 April (Wednesday)  
1800 Depart KNBC (Training Sortie)  
2000 Land KNBC
- d. 28 April (Thursday)  
1000 Depart KNBC  
1200 Land KYNG

3. Maj (b) (6) (b) (6) will act as Mission Commander. LtCol (b) (6) will be the Aircraft Commander. Support at Parris Island MCRD and Beaufort MCAS has been completed.

(b) (6) (b) (6) Major, USAFR  
757AS Chief of Aerial Spray





**DEPARTMENT OF THE AIR FORCE**  
**757 Airlift Squadron – Aerial Spray Operations**  
**3976 King Graves Rd Unit 24**  
**Vienna OH 44473-5924**

**PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**HOMESTEAD ARB, FL ADULT MOSQUITO CONTROL 25-29 July 2011**

**1. MISSION BASICS:**

- a. Installation Sprayed: Homestead ARB, FL.
- b. Mission Duration: 25-29 July 2011
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date/s: 26-28 July 2011
- e. Flying Data:
  - i. Spray Sorties/hours: 3 sorties (2.2 + 2.5 + 1.4 + 0.6) = 6.7
  - ii. Ferry Sorties/hours: 2 sorties (3.7 + 3.7) = 7.4
- f. Time/s of Application (Local): 1800-2015 (26 July), 1800-2015 (27 July), & 1800-2010 (28 July)
- g. Acres Treated: 35,941 (26 July), 35,925 (27 July), 24,983 (28 July) = 96,850 acres
- h. Project Coordinator/s (Name/Rank, Title, Phone #): Lt Col (b) (6), Wing Safety Officer/spray coordinator, DSN (b) (6)
- i. Date Spray Map Last Approved: 25 July 2011
- j. Date of Waste Generation Letter: 5 Sept 2009
- k. Installation In-Briefing: (When/Where/Briefer/s): 26 July; 482 FW/CC Conference Room; Maj (b) (6) (Mission Commander), Maj (b) (6), LTC (b) (6), CAPT (b) (6)
- l. Mission identifier: QZNRK9901206

**2. OPERATIONAL:**

- a. Mission Commander: Maj (b) (6)
- b. Certified PMP/Entomologists (Category 11): Maj (b) (6) (safety briefer),
- c. Aircrew:
  - (1) Pilots: Capt (b) (6), Capt (b) (6)
  - (2) Navigators: LTC (b) (6)
  - (3) Flight Engineers: CMSGT (b) (6), SMSgt (b) (6)
  - (4) Spray Operators: MSgt (b) (6), MSgt (b) (6), MSgt (b) (6), SSgt Bull Luchkiw
- d. Maintenance:
  - (1) Spray Maintenance: TSgt (b) (6), TSgt (b) (6), SSgt (b) (6), SrA (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6), SRA (b) (6)
  - (3) Avionics: TSgt (b) (6)

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 210 gal (26 July); 120 gal (27 July); 30 gal (28 July)
- e. Gallons Pesticide Applied: 135 gal (26 July), 135 gal (27 July), & 90 gal (28 July); 360 total
- f. Gallons and Name Diluent Used: none
- g. Gallons of Flush Used: 5 gallon BVA oil
- h. Other Additives Used: None
- i. Application Rate: 0.5 oz/acre

#### **4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 10-8005s oriented straight down
- f. Pressure: 45-90 psi
- g. Flow Rate: 3.5 gallons per minute

#### **5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray offset: 1000-2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

#### **6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 2 knots @ 250° (2 Sept), 2 knots @ 050° (3 Sept), & 2 knots @ 040° (4 Sept)
  - (2) Release Altitude: 5 knots @ 250° (2 Sept), 4 knots @ 050° (3 Sept), & 8 knots @ 040° (4 Sept)
- b. Temperature (Degrees Fahrenheit): 82-80° (2 Sept), 78° (3 Sept), & 75° (4 Sept)
- c. Relative humidity: 81-88% (2 Sept), 86% (3 Sept), & 89-91% (4 Sept)
- d. Cloud Cover: Scattered clouds, mostly cloudy, thunderstorms
- e. Source: Ground observations and aircraft

#### **7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Monitoring was done by Miami Dade Mosquito Control using landing counts and carbon dioxide-baited traps.
- b. Monitoring data showed that mosquito landing counts dropped measurably in areas treated with decreases between 90-100% (Attachment 1). In addition, the primary target pest (*Aedes taeniorhynchus*) populations were decreased by 85-95%, while populations in areas not sprayed remained at largely at pre-spray levels.

#### **8. REMARKS:**

a. Homestead AFB received aerial applications for mosquito control for years until Hurricane Andrew devastated the area in 1992. This application marked the return of the Air Force Aerial Spray Flight to this base. Lt Col (b) (6) initiated the process and Dr. (b) (6) wrote the environmental assessment. Miami Dade Co. Mosquito Control Division of Public Works, offered technical expertise and pesticide for areas of Miami Dade County which were treated. This follows a model of training and function that has been a mutually beneficial for the Spray Unit and various host installations around the country.

b. A wet summer season left south Florida with several hatches of salt marsh mosquitoes and trap numbers easily met the prescribed minimum to trigger the potential for adult mosquito control. Since this was the first application in recent memory, a thorough discussion was performed at the in-brief for all partners/collaborators prior to flying. We received excellent support from all sections including 482<sup>nd</sup> PA, CES, and the TA folks. Thunderstorms prompted a weather cancellation on 2 Sept and delayed take-off times on other days. A small amount of pesticide dripped from an internal section of the MASS onto absorbent but was sufficient to force a shortened sortie for safety reasons on 3 Sept. The problem was quickly fixed by Spray Maintenance. The Mission Commander coordinated with all parties for an extended spray period and the entire crew agreed to stay over on Friday evening to complete the spray area. The Spray Unit has done well controlling this species of salt marsh mosquito and this application was no exception. The County Mosquito Control personnel reported mosquito numbers dropped by 85-95% in all treated areas while counts remained stable in un-sprayed areas. Areas sprayed are shown in Attachment 2.

c. Special thanks are given to Miami Dade County for providing outstanding support in the form of mosquito surveillance data both pre- and post-spray. This was the last application for the year in which we had an aircraft scheduled at Homestead ARB. However, depending on mosquito levels and

aircraft/personnel availability, an additional application may be possible. We hope that Homestead finds the application effective and will request dates for next year's program.

//signed//

(b) (6) (b) (6) MAJ, USAFR  
Entomologist and DoD Certified Applicator

Attachment 1. Mosquito numbers measured by landing rate and collected in traps within Miami Dade County, FL 31 Aug – 4 Sept 2009 before and after adult mosquito control operations by the Air Force Aerial Spray Unit.

Attachment 2. Homestead ARB area spray blocks. The green blocks are the proposed treatment areas. The red blocks are the actual spray areas. The black dotted lines are the track of the aircraft while spraying.







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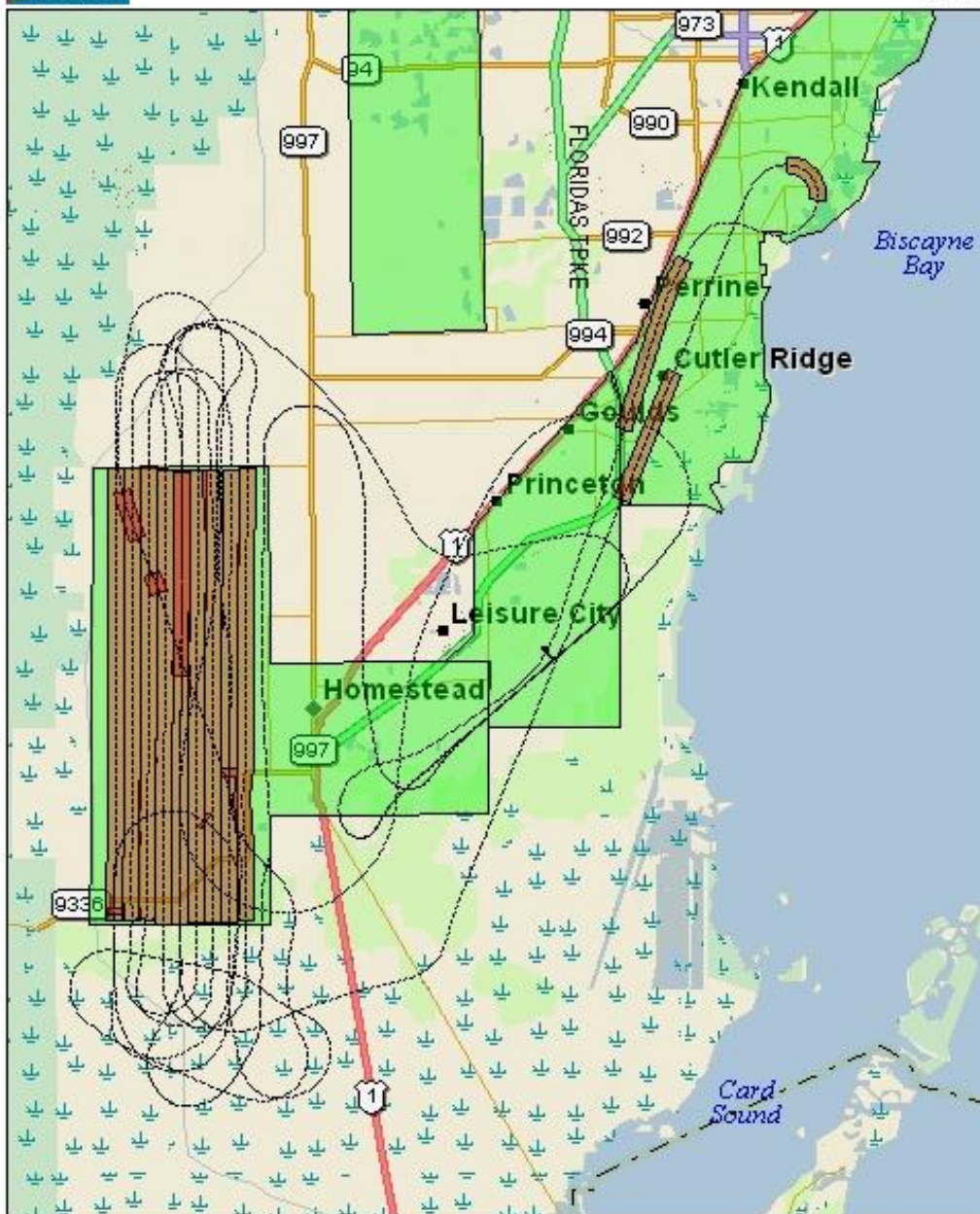
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# AERIAL SPRAY OPERATIONAL SCHEDULE

## HOMESTEAD ARB, FL

### 25-30 Jul 11

**OBJECTIVE/PURPOSE AND BENEFIT:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Homestead ARB, FL and surrounding communities.

**1. 910 AW PARTICIPANTS:**

**a. Aircrew:**

- (1) Pilots: Maj (b) (6) (b) (6) Capt (b) (6) , Capt (b) (6)
- (2) Navigators: LTC (b) (6)
- (3) Flight Engineers: CMSgt (b) (6) , SMSgt (b) (6)
- (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6) , MSgt (b) (6) , SSgt (b) (6)

**b. Maintenance:**

- (1) Spray Maintenance: TSgt (b) (6) TSgt (b) (6) , SSgt (b) (6) , SrA (b) (6)
- (2) Crew Chiefs: TSgt (b) (6) , SrA (b) (6)
- (3) Avionics: TSgt (b) (6)

**c. Entomologist:** Maj (b) (6) (b) (6)

**2. PPR REQUIREMENTS: 20601AJ**

**3. PLANNED SEQUENCE OF EVENTS:** All times are local. Early return is most definitely authorized

- a. 25 Jul (Monday)  
1300 Show KYNG  
1500 Depart KYNG  
1830 Land KHST
- b. 26-29 Jul (Tuesday-Friday) Spray Sorties  
1100 In brief  
1600 Show KHST  
1800 Depart KHST  
2030 Land KHST
- c. 30 Jul (Saturday)  
1000 Show KHST  
1200 Depart KHST  
1530 Land KYNG

**4. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System
- b. **Nozzle Tips/Orientation:** 9 8005 nozzles -- straight down (4 left - 5 right)
- c. **Differential GPS:** Wingman Installed
- d. **Aircraft:** 89-9105
- e. **Mission Identifier:** QZNRK9901206

**5. SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 KNOTS
- c. **Pesticide:** Dibrom® Concentrate
- d. **Application Rate:** 0.5 oz/acre or as determined by entomologist
- e. **Flow Rate:** 3.6 Gallons/Minute
- f. **Acreage:** Potentially 107,663 acres but final acreage TBD
- g. **Swath Width:** 2000 foot



**6. RADIO FREQUENCIES AND AIRFIELD PHONE NUMBERS**

- a. Homestead ARB (KHST): GND 121.75/275.8 TWR 133.45/279.55 APP&DEP 125.5/354.1  
Command Post (Reef Control) 252.1 **Wing Common Freq not being used 238.3 (Spray GND)**
- a. Kendall Tamiami Executive (KTMB): Class D TWR 118.9 CTAF 125.5/354.1 APP&DEP 125.5/354.1  
Airfield Manager (305) 869-1700 TWR 305-256-7628
- b. Opa Locka Executive (KOPF): Class D TWR 118.6/360.8 CTAF 120.7 APP&DEP 128.6/306.975  
Coast Guard Base Ops 800-253-3851
- c. Homestead General (KX51): Class E CTAF 122.8 Airfield Manager (305) 869-1701/(305) 247-4883
- d. Miami International (KMIA): Class B TWR 118.3/256.9 APP&DEP 124.85/322.3  
Miami TWR 305-869-5400/ Fax 305-869-5499. Plans & Procedures 305-869-5403. Fax a chart with the spray area and a description of the spray operation the day prior. Morning of spray call around 1130 to clarify any special procedures needed for operating in class B airspace near runway ends.  
TWR OPS POC email: (b) (6)  
Plans and Procedures POC email: (b) (6)

**7. BILLETING:** 18 Rooms Reserved at Hampton Inn, maps are in the spray folder

**8. TRANSPORTATION:** 2 FS cars & 2 Minivans from Enterprise, 305-246-2056, delivered to B OPS Confirm # 102NSY

**9. CONTACTS:**

- a. **Homestead ARB, FL:** Commercial (305) 224-XXXX; DSN 791-xxxx
  - 1. Spray Coordinator (Base Safety Officer): Lt Col (b) (6) ; cell (b) (6)
  - 2. Natural Resources Program Manager: Dr. (b) (6)
  - 3. HST TWR: (305) 224-6524
  - 4. Airfield Manager: x7072
  - 5. Base Ops: x7516/7071 Fax 7512
  - 6. Weather: x7511
  - 7. Billeting: x7198 Fax 7290
  - 8. Transportation: x7456
  - 9. Command Post: x7068
  - 10. Base Operator: x7000
- b. **Miami-Dade County Mosquito Control:** (b) (6)
- c. **South Florida FSDO** 954-641-6000 Fax 954-641-6040
- d. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
Toll Free 1 - 800 - 278 - 7046,+2 + Ext
  - 1. 910 AW/CC: Col (b) (6)
  - 2. 910 AW Command Post: Ext 1315; FAX 1161
  - 3. 910 AW/PA: Maj (b) (6) ; FAX 1022
  - 4. 910 OG/CC: Col (b) (6)
  - 5. 910 OG: Airfield Manager, Ext 1186/1526
  - 6. 757 AS/DO: Maj (b) (6) (b) (6)
  - 7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
  - 8. 757 AS/DOO: Ops Admin: TSgt (b) (6) ; FAX 1657
  - 9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) FAX 1616
  - 10. 910 LG/CC: Ext 1225
  - 11. 910 LG/LGM: Ext 1352
  - 12. Maintenance Control: Ext 1327
  - 13. 910 LG/LGMS: Spray Maintenance, SMSgt (b) (6)
  - 14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
  - 15. Cellular Spray Phones:
    - Mission Commander: (b) (6) , (b) (6) cell (b) (6) (b) (6)

# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 27 Jun – 1 Jul 2011

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks and Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) Pilots: Maj (b) (6), Maj (b) (6)
- 2) Navigators: LTC (b) (6)
- 3) Flight Engineers: MSgt (b) (6)
- 4) Spray Operators: SMSgt (b) (6) (b) (6) MSgt (b) (6), SrA (b) (6)
- 5) Mission Commander: Maj (b) (6) (b) (6)

##### b. Maintenance:

- 1) Spray Maintenance: MSgt (b) (6), TSgt (b) (6), TSgt (b) (6)
- 2) Crew Chief: TSgt (b) (6), SrA (b) (6)
- 3) Avionics: MSgt (b) (6)

##### c. Entomologists/Ground Support: LTC (b) (6) Maj (b) (6) (in place), Capt, (b) (6) (in place)

#### 2. SCHEDULE: (All Local Times)

- a. 27 Jun (Monday)
  - 1030L Show KYNG
  - 1230L Depart KYNG
  - 1430L Land KRDR
  - 1545L Installation Brief CE Conference RM Bldg 410
  - 1800L Show KRDR
  - 2000L Depart KRDR
  - 2130L Land KRDR
- b. 28 Jun (Tuesday)
  - 1700L Show KRDR
  - 1930L Depart KRDR
  - 2130L Land KRDR
- c. 29 Jun (Wednesday) If Grand Forks spray blocks are complete, the mission will continue with Minot AFB spray blocks
  - 1700L Show KRDR
  - 1930L Depart KRDR
  - 2130L Land KRDR
- d. 30 Jun (Thursday)
  - 1700L Show KRDR
  - 1930L Depart KRDR
  - 2130L Land KRDR
- e. 1 Jul (Friday)
  - 1130 Show KRDR
  - 1330 Depart KRDR
  - 1730 Land KYNG

### 3. ITEMS TO TAKE

- a. **Mission Commander:** Cellular Phone, Mission Folder, FFT
- b. **Entomologist:** Cell Phone, Wind Gauge, 2 Compasses, Pest Safety Binder, 1 VHF Radio, Water Sensitive Cards, Card Holders with Index Cards, 2 Spotlights, 1 Measuring wheel, 2 Signal Mirrors, Project Notebook, Entomologist's Tool Kit
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment, Control®

### 4. PPR: 27-06-1/DM

### 5. RADIO FREQUENCIES: Air To Ground Primary VHF 123.45 KRDR Tower 124.9 V; Grand Forks International 118.4 V

### 6. CONFIGURATION: SP2G

- a. **System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. **Nozzle Tips/Orientation:** ULV (adulticide): 8005 Tee Jet oriented straight down
- c. **Number:** ULV: 18 8005s total (9 each side)
- e. **Aircraft:** 89-9106
- f. **Mission Identifier:** QZNRK9901178

### 7. SPRAY PARAMETERS:

- a. **Adulticide**
  - (1) **Area to be treated:** 11,518 acres (Grand Forks AFB), 18,346 (Grand Forks) and 877 (Grand Forks Intl)
  - (2) **Altitude:** 150' for Adulticide application
  - (3) **Swath Width.** 2000 feet
  - (4) **Flow Rate.** 7.26 gallons/minute ULV
  - (5) **Application Rate.** 1.0 oz/acre Trumpet, ULV
  - (6) **Ground Speed:** 200 Knots
  - (7) **Flush:** With water, triple rinse, then air purge

### 8. SPRAY MIXING AND LOADING: The amount of Trumpet to load will be determined on site

### 9. TRANSPORTATION: Transportation provided by base (DSN362-3976): One 15 pax van (OPS), three 6 pax trucks (MC, OPS, MX), one 1.5 ton truck (spray MX). Vehicles at base ops with the exception of Trumpet loaded truck

### 10. LODGING: Onbase Billeting : DSN 362-7200 or (701) 594-8431, FAX 362-3069 -- Prime Knight DSN 362-3844 or (701) 747-3844

## 11. CONTACTS:

### a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205

- (1) **Base Operations:** Airfield Manager DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx20
- (2) **Pest Management:** TSgt (b) (6) DSN (b) (6) , FAX 3432)
- (3) **Base Civil Engineer:** Lt Col (b) (6)
- (4) **Environmental Officer:** (b) (6) , DSN (b) (6) FAX 6155, TSgt (b) (6) DSN (b) (6)
- (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
- (6) **Weather:** DSN 362-4396
- (7) **Billeting:** DSN 362-3070/6189/7200 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844
- (8) **Fargo FSDO: POC** (b) (6) (b) (6) Fax (701) 492-5828

### b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Col (b) (6)
- (5) 910 Base Ops: Airfield Manager: Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181
- (6) 757 AS/DO: Maj (b) (6)
- (7) 757 AS/DOO: Ops Admin: TSgt (b) (6) ; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) or 1652; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: MSgt (b) (6) Cell (b) (6)
- (13) 910 LG/LGL: Ext 1137
- (14) Omega/SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371
- (16) Cellular Spray Phones:
  - Entomologist: (b) (6)
  - Mission Commander: (b) (6)
  - Spray Maintenance: (b) (6)

**910 AW AERIAL SPRAY UNIT POST-MISSION REPORT  
GRAND FORKS AFB/MINOT AFB – ADULT MOSQUITO CONTROL  
27-30 June 2011**

**1. MISSION BASICS:**

- a. Installations Sprayed: Grand Forks AFB; Minot AFB
- b. Mission Duration: 27-30 June 2011
- c. Purpose of Application: Control adult nuisance mosquitoes
- d. Application Dates: 28 and 29 June 2011
- e. Times of Application (Local): 1938-2122 hrs 28 June; 1830-2200 hrs 29 June 2011
- f. Acres Treated: 11,518 acres Grand Forks AFB; 12,000 acres Minot AFB and City of Minot
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6), NCOIC Grand Forks  
Pest Management Shop, DSN(b) (6); (b) (6), Supervisor, Minot Pest  
Management Shop, DSN(b) (6)
- h. Date Spray Map Last Approved: 27 June 2011
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): GFAFB CE Conference Room, Maj (b) (6)  
(b) (6) Maj Cathy Miller; Lt Col Eric Bishop; Lt Col (b) (6); Lt Col (b) (6)  
(b) (6) Maj (b) (6); Capt (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Maj (b) (6) (b) (6)
- b. Entomologists (Category 11): Lt Col (b) (6), Maj (b) (6); Capt (b) (6)  
(b) (6)
- c. Aircrew:
  - 1) Pilots: Maj (b) (6); Lt Col (b) (6)
  - 2) Navigators: Lt Col (b) (6)
  - 3) Flight Engineers: MSgt(b) (6)
  - 4) Spray Operators: SMSgt (b) (6) (b) (6) MSgt(b) (6); SrA (b) (6)
- d. Maintenance:
  - 1) Spray Maintenance: MSgt (b) (6); TSgt (b) (6); TSgt (b) (6)
  - 2) Crew Chief(s): TSgt (b) (6); SrA (b) (6)
  - 3) Avionics: MSgt (b) (6)
- e. Flying Data:
  - (1) Spray Sorties/Hours: 2/5.2
  - (2) Ferry Sorties/Hours: 2/6.8
  - (3) Mission ID: QZNRK9901178

**3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 120 gal Trumpet® (28 June); 60 gal Trumpet® (29 June)
- d. Gallons Pesticide Applied: 84 gal Trumpet® (28 June); 96 gal Trumpet® (29 June)
- e. Gallons and Name of Flush Used: 10 gal water
- f. Other Additives Used: none
- g. Application Rate: 1.0 oz/acre Trumpet®

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8005 Flat Fan
- e. Nozzle Orientation & Number Used: 18 straight down
- f. Pressure (PSI): 40 PSI
- g. Flow Rate: 7.26 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off Set: 2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): Grand Forks 180° @ 3-6 knots (ground observation)  
Minot 140°-180° @ 5-8 knots (ground observation)
- b. Temperature (Degrees Fahrenheit): Grand Forks 73°F (28 June); Minot 87°F (29 June)
- c. Relative Humidity: Grand Forks 69% (28 June); Minot 67% (29 June)
- d. Cloud Cover: Clear
- e. Source: Ground observations and National Weather Service

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. The 319 MDG/ADS and 5 MDG/ADS conducts adult mosquito trapping to monitor mosquito densities on base.
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito traps and landing counts
  - (2) Results: Trap data pending from 319 MDG/ADS; 5 CES reported landing rate counts reduced from 5/min to only 1 in 30 min

**8. REMARKS:** The 5th Bomb Wing and 91st Missile Wing Commanders issued a stop movement order of personnel to Minot AFB due to flooding of the Souris River in the City of Minot from snow melting in Canada. Significant flood damage is expected to remain through the summer and produce high populations of mosquitoes. Aerial spraying began 2.0 hrs before sunset over Minot AFB before spraying the City of Minot to maximize the efficiency of our spray effort during peak mosquito activity. The control of adult mosquitoes will benefit displaced persons and emergency relief personnel. Excellent control of mosquitoes was reported from Minot AFB.

Heavy rains and standing water prompted GFAFB Public Hhealth to make the decision to spray the base with Trumpet EC. Historically, mosquito populations peak just prior to July 4<sup>th</sup> following spring rains and snowmelt. The application began 2.0 hrs before sunset to maximize the efficiency of our spray effort during peak mosquito activity. The City of Grand Forks did not require spraying.

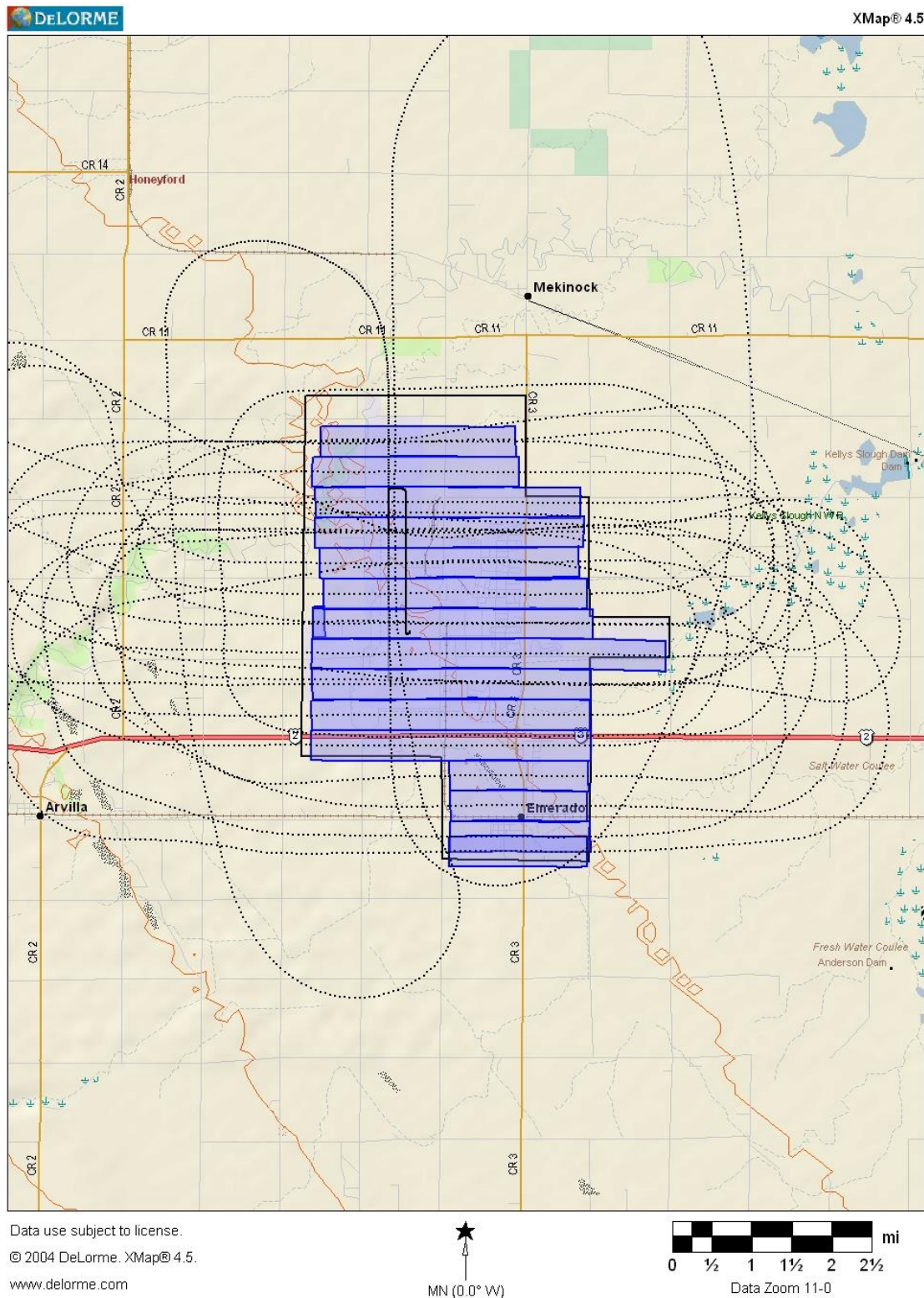
Many thanks to TSgt (b) (6) (GFAFB pest control NCOIC) and (b) (6) (MAFB pest control supervisor) for coordinating this mission and providing great logistical support.

//signed//

(b) (6) Lt Col, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

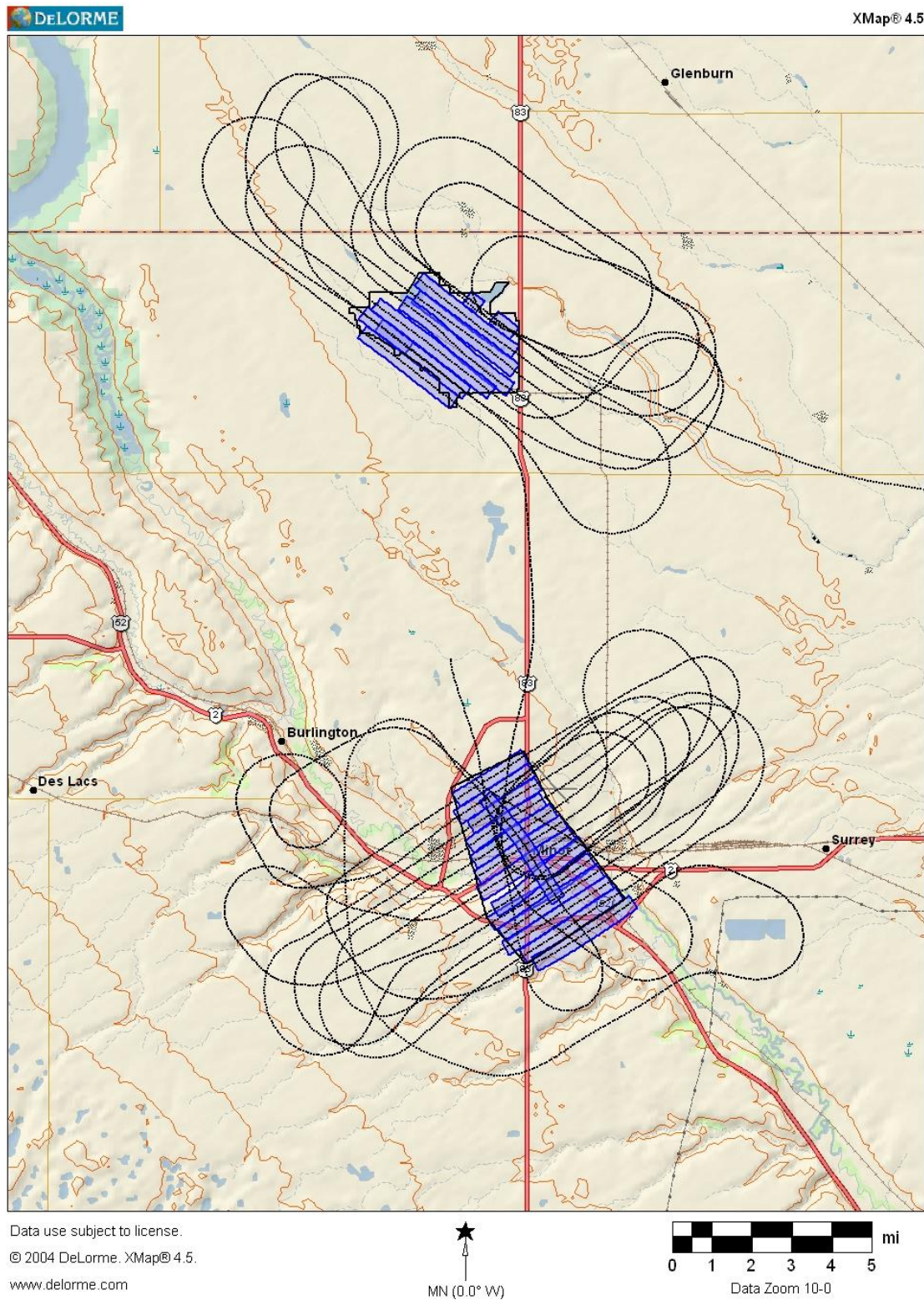


**Attachment 1. Image shows Grand Forks AFB and pesticide application swaths (blue) during application on 28 Jun 2011. A 2000' offset was used to compensate for southern winds.**





**Attachment 2. Image shows Minot AFB (top) and the City of Minot (bottom). Pesticide application swaths (blue) during application on 29 Jun 2011. Wind direction changed from 180°-160° over Minot AFB and from 160°-140° over the City of Minot. A 2000' offset was used to compensate for winds.**



# SPRAY OPERATIONAL SCHEDULE

## UTAH TEST AND TRAINING RANGE MISSION

### 28 Mar – 8 APR 2011

**PURPOSE/BENEFIT/OBJECTIVE:** Aerial spray herbicide mission controlling Halogeton on Targets 21 and 24 at the Utah Test and Training Range (UTTR) aiding vegetation control for bombing mission test evaluations and unexploded ordnance recovery.

#### 1. AIRCREW1: -CALL SIGN: SPRAY 05

- a. **Pilots:** MAJ (b) (6), Maj (b) (6), Maj (b) (6)
- b. **Navigators:** LTC (b) (6) (R2); Maj (b) (6) (R1)
- c. **Flight Engineers:** Msg (b) (6)
- d. **Spray Operators:** Msg (b) (6), Msg (b) (6), Smsgt (b) (6)
- e. **Crew Chiefs:** Ssg (b) (6), Tsg (b) (6)

#### AIRCREW 2:- CALL SIGN: SPRAY 08

- f. **Pilots:** Capt (b) (6) (R2), Lt Col (b) (6), Maj (b) (6) (R1)
- g. **Navigators:** LtCol (b) (6)
- h. **Flight Engineers:** Tsgt (b) (6)
- i. **Spray Operators:** Msg (b) (6), Tsg (b) (6), Sra (b) (6)
- j. **Crew Chiefs:** Msg (b) (6), Sra (b) (6)

#### 2. MISSION SUPPORT:

- a. **Mission Commander:** Maj (b) (6) (b) (6)
  - 1. Makes final decision on all changes to the schedule
  - 2. Confirm all hotel information is correct upon check in
  - 3. Report flight data to AFRC daily (See contact info on reporting sheet)
  - 4. Coordinate any range schedule conflicts/changes
- b. **Entomologists:** LTC (b) (6) (b) (6) Maj (b) (6) (b) (6)
- c. **ARMS:** Msg (b) (6) (R1), Tsg (b) (6) (R2)
- d. **Public Affairs:** Msg (b) (6) (inplace), Tsg (b) (6) (in place)

#### 3. UTTR GROUND PARTY:

- a. **Entomologist/Pest Management Professional(s):** Maj (b) (6) (b) (6) will direct ground sprays as certified applicator;  
Additional Range support personnel:
  - 28 Mar – 1 Apr (b) (6) (b) (6) (b) (6) (b) (6)
  - 3 Apr- 7 Apr (b) (6) (b) (6) (b) (6) (b) (6)

#### 4. MAINTENANCE:

- a. **910 MX Supervisor:** Msg (b) (6) (b) (6)
- b. **910 Spray MX:** Msg (b) (6), Tsg (b) (6), Tsg (b) (6), Tsg (b) (6), Tsg (b) (6),  
Ssg (b) (6)
- c. **Instruments/Avionics:** Tsg (b) (6), Msg (b) (6)
- d. **Hydraulics/Electrician:** Msg (b) (6), Tsg (b) (6)
- e. **Engine:** Msg (b) (6)
- f. **Mx Officer:** MAJ(b) (6)

#### 5. COMM: None

#### 6. IN-BRIEFING: (UTTR Staff)

- a. **When/Time:** ASAP upon arrival
- b. **Who:** EVERYONE!! Do Not leave area until cleared out by the MC.
- c. **Where:** Forestry ramp -Safety brief all personnel  
Base Operations – Flight line drivers only
- d. **Briefing Plan**
  - a. Vehicles- See item 16 h below
  - b. Schedule of events
  - c. Billeting- See item 16.g below
  - d. Weather call
  - e. Cellular Phone numbers for all personnel (Provide info to MC)
  - f. FLT Line Driving (1500 or as soon as possible after landing)

#### 7. PLANNED SEQUENCE OF EVENTS: Hill AFB Tower Control and Runway Hours 24/7

NOTES:

1. Scheduling reflects no weather or maintenance delays. In the event of weather or maintenance delays, the missions will be adjusted as required. ALL TIMES SUBJECT TO ADJUSTMENT BY MISSION COMMANDER
2. DUTY DAY FOR CIVILIANS WILL BE AS REQUIRED WITHIN CREW REST CONSTRAINTS.
3. Tower Control, Runway & Airfield hours 24/7, M-F
4. UTTR RANGE TIMES: 1400-1900Z
5. ALL MX & A/C PERSONNEL WILL REMAIN ON DUTY UNTIL AIRCRAFT IS PRE-FLIGHT COMPLETE AND RELEASED BY THE MISSION COMMANDER.

**a. 28 March (Monday)**

**Vader21**

**MI: QDNRK0201087**

**PPR: TM2801**

0900 Show KYNG

1100 Depart KYNG with extra crew, maintenance, and support equipment

1430 Land KHIF drop off extra crew, maintenance, and support equipment

Time TBD: MC, Maint, and extra crew members work out logistics of buildings, access cards, vehicles, and obtain billeting information

**b. 29 March (Tuesday)**

0700 Show KYNG

0900 Depart KYNG Spray05 MI: QZNRK9901088

PPR: TM2901

0905 Depart KYNG Spray 08 MI: QZNRK9902088

PPR: TM2902

1230 Land KHIF

Briefing: MC, arriving MX, and crew members: safety briefing, access cards, vehicles, and obtain billeting information prior to leaving the ramp area.

**c. 30 March – 1 APR (Wednesday-Friday)**

**2 sorties as wx permits each day.**

0500 Show KHIF Spray 05 crew 1; 0545 Spray 08 Crew 2 (Alternating daily)

0530 Weather call and mixing begin

0700 Depart KHIF

1300 Land KHIF

**\*\*Weekend flying is currently unavailable. If significantly wx or Mx delayed, then weekend operations will be considered as a last resort per Hill AFB.**

**d. 4 Apr -7 Apr (Monday-Thursday) 2 sorties as wx permits each day.**

0500 Show KHIF

0530 Weather call and mixing begin

0700 Depart KHIF

1300 Land KHIF

**7 Apr Support Aircraft**

**VaderXX**

**MI: QDNRK0201097**

**PPR: TM0701**

0800 Show KYNG

1000 Depart KYNG

1330 Arrive KHIF

**e. 8 April (Friday) All personnel**

0730 Checked out of billeting

0800 Return Rental vehicles

1000/1005/1010 Depart KHIF

1600/1605/1610 Land KYNG

**\*\*If completed early, the aircrews and airframes may return early. TBD by the mission commander.**

**8. ITEMS TO TAKE:**

**a. PMP:**

- (1) Project Notebook with Recording Sheets and Maps
- (2) Laptop Computer and Batteries
- (3) 2 Compasses and Stop Watch
- (4) 2 Signal Mirrors and 2 Spot Lights
- (5) Measuring Wheels and Tape

- (6) Entomologists' Tool Kit
- (7) UHF/VHF Radios and VHF Radios
- (8) Cellular Phone
- b. **Mission Commander:** Mission Folder, Cellular Phone
- c. **Navigator:** Maps
- d. **Spray Maintenance:**
  - (1) MASS Spares and Spill Kit
  - (2) Tools and Other Equipment
  - (3) Herbicide Safety Binder
  - (4) Safety Equipment
- e. **Maintenance:** Applicable Equipment

**9. SPRAY CONFIGURATION: SP3G**

- a. Two Aircraft and Systems
- b. MASS Modules 1, 2 and 3
- c. UHV Fuselage booms oriented straight back

**10. PPR REQUIREMENTS:** All required, see Form 33 setup sheets for aircraft and above itinerary

**11. PARKING PLAN:** Forestry Ramp and Building requested

**12. RADIO FREQUENCIES:**

- **Clover Range Control:** UHF 285.65, 275.9, 361.4 (p)
- **Eagle Tower:** UHF 351.0; Mawk 4 ((b) (6) (b) (6))
- **Diddle Knoll & Spray Ops Freq:** UHF 398.1 (Primary), 383.2 (Back-up); VHF 134.1, 118.45
- **Spray Inter plane:** UHF 237.05 / VHF 138.375
- **Spray Ground to Spray Maintenance:** See Iridium Phones
- **Base OPS:** 139.3
- **HF Operations:** Designated by Comm. See attached list.
- **Communications Ground Freq:** LMR nets are trunked at Hill.

- **IRIDIUM PHONES - Numbers TBD Upon issue**

**13. SPRAY PARAMETERS:**

- a. **Herbicide:** Krovar 1DF®
- b. **Application Rate:** 22.5 gal/acre (10 lbs of Krovar in 22.4 gal of water)
- c. **Acreage:** 1,283 Acres (Targets 21, 24 and a couple passes on Nord LZ)
- d. **Ground Speed:** 200 Knots (337.55 ft/sec)
- e. **Spray Altitude:** 100 Feet AGL
- f. **Swath Width:** 35 Feet
- g. **Flow Rate:** 366.1 Gallons/Minute

**14. HERBICIDE LOADING: (For Partial Loads Use Table on Last Page)**

- a. **Sequence for Loading 1,000 Gallon Mixing Tank:**
  - (1) Fill with water up to 750 Gallon Mark, then add:
    - (a) 450 Pounds of Krovar 1DF® (9 bags, 50 # each)
    - (b) 4.0 Gallons (15,140 ml) of StaPut®
    - (c) 64 Ounces (1,892 ml) of Foam Fighter F®
    - (d) 200 Ounces (5,913 ml) Hi-Light® Dye
    - (e) Add Water to 1,000 Gallon Mark and Agitate for 30 Minutes
- b. **When:** Start at 0500 Hours on first full day of spraying and adjust as necessary through end of the daily mission as called by Mission Commander.
- c. **Items to be furnished by installation:**
  - (1) Krovar 1 DF® (12,660 pounds)
  - (2) Foam Fighter F® (15 gallons)
  - (3) StaPut® Additive (114 gallons)
  - (4) Hi-Light® Dye (45 gallons)
  - (5) Remove Nutra-Sol Tank Cleaner
  - (6) Loading Personnel and All Loading Equipment
  - (7) All Necessary Cleanup and Hazardous Waste Disposal
  - (8) Aircraft Support Equipment and TA Support
  - (9) Wash Rack and Fuel Priority

**15. SPRAY MONITORING AND TESTING.** By CPMP & ground support personnel

**16. CONTACTS:** Commercial prefix (801) 777-XXXX; DSN 777-xxxx

**a. 388<sup>th</sup> RANS/RSO, Range Control Officer/Installation Spray Coordinator:**

(b) (6) : 6066 Cedar Lane, Bldg 1274S; 777-5345; FAX: 9205  
Cell Phone # (b) (6)

- (b) (6)
- **Hill Range Control:** 7-9386, Current OPS; 7-9385
- **Range Scheduler:** 7-9386
- **Eagle Tower:** 7-1515/6
- **Clover Operations:** 7-7575
- **Clover DO: 586-3103**
- **388<sup>th</sup> RANS/RSL Radio Freq Monitor:** 7-6715
- **388<sup>th</sup> RANS/RSR Resource Monitor:** 5-4257

**b. Environmental Coordinator:** Charles Sanford 775-6904

**c. OASIS RANGE SUPPORT DIRECTORATE:**

Oasis Chief: 75 CEG/CEU (b) (6)  
Oasis Civil Engineering: (b) (6)  
North Range Security: 7-1521/2/4

**d. Hill AFB Base OPS:** 7-1861

**e. Entomology:** (b) (6)

**f. Weather:** Hill AFB: 7-2018; UTTR: 7-1516/63  
ASOS at Eagle Range 6-1765/1795  
Need Dash1 daily at 0600

**f. Billeting: Billeting Office Mountain View Inn, DSN 777-0802/1844, FAX 775-2014**

**Best Western 801-2927666**

**Hampton Inn Woods Cross 801-296-1211**

**h. Car Contact:**

**1. Hertz Rental Car (b) (6) at BX 801-825-7300**

**11 SUVs, 1 Car (Requested)**

MC/Entomologists/ARMS- (b) (6)

Spray Crew1 – (b) (6) (b) (6)

Spray Crew2 – (b) (6)

Spray MX– (b) (6)

MX Specialists – (b) (6)

Crew Chiefs – (b) (6)

Mx Super – (b) (6)

**Range: (b) (6) (b) (6)**

**2. Hill Motor Pool: 75 LRS/Dispatch DSN 777-1843 No UDRIVES**

**i. Hill AFB: 75<sup>th</sup> Air Base Commander: Col Patrick Higby**

Airfield Manager: (b) (6)

Base Operations: (b) (6) ; FAX: 7-2221

Sponsor: Msgt (b) (6) 514FLT (b) (6)

Weather: 7-2018

Transit Alert: 7-3886

C-130 Maintenance Contact: 7-2478

Fuels: 7-7423/7-7311 available 0900-1800 daily after hours contact CP

Billeting: 7-1844

Chow Hall: 7-3428 Breakfast M-F 0530-0730, S-S 0700-1900

Golf Course: 7-1108

Public Affairs: 7-5201

Supply: 7-5391 (922 OE)



**j. Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Maj (b) (6) ; FAX 1022
- (4) 910 OG/CC: Col (b) (6)
- (4) 910 OS/OSA: Airfield Manager, Ext 1186/1526
- (5) 757 AS/DO: Maj (b) (6)
- (6) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (7) 757 AS/DOO: Ops Admin: Ext 1239; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office: Maj (b) (6) (b) (6) Ext 1503; Capt (b) (6)  
; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1327
- (12) 910 LG/LGMS: Spray Maintenance, Ext 1132
- (13) 910 LG/LGL, Ext 1137
- (14) Omega/SATO Travel: Ext 1772; 1-800-285-6342
- (15) Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) cell (b) (6) (b) (6) cell: (b) (6)

**17. SEQUENCING:**

**a.** Target sequencing is determined by UTTR personnel based upon EOD clearance schedule and airspace scheduling.

**b.** Spray ops aircraft must stay south of Base Leg Knoll during turns on north run on Target 21. Coordination with range control is essential to assure that this portion of the range is released for air operations.

**c.** When winds blow directly from one side of the target to the middle of the target or during early morning when wind speed is low, ground monitors will direct the “dress up” of the target edges.

**d. Spraying Priorities:**

- (1) Target 21
- (2) Target 24

**a. Multiple-Target Alignments for Possible Future Operations.**

Whenever possible, multiple in line targets will be treated on the same pass to facilitate aircraft line-up and turning efficiency (in which case two separate ground-monitoring and marking parties will be required).

- (1) The west edges of Targets 21 & 24 are contiguous and can be treated on the same pass with a spray-off gap between targets.

**18. GENERAL TARGET INFORMATION:**

**a. Target 21:**

- (1) Dimensions: 4,980' X 7,770'
- (2) Acreage: 888
- (3) Acres Sprayed in 2004: 888
- (4) Aircraft Loads: 18,869 Gal
- (5) Sorties: 17
- (6) Passes (35' Swath): 157
- (7) Spray-On Time/Pass: 23 Seconds
- (8) Spray Heading: 00/180

**b. Target 24:**

- (1) Dimensions: 1,600' X 6,080'
- (2) Acreage: 223
- (3) Acres Sprayed in 2004: 223
- (4) Aircraft Loads: 5,263 Gal
- (5) Sorties: 7
- (6) Passes (35' Swath): 47
- (7) Spray-On Time/Pass: 18 Seconds
- (8) Spray Heading: 00/180

**c. WildCat**

Box coordinates:

NW Corner:	N402650.85	W1131629.59
NE Corner:	N402647.49	W1131621.76
SE Corner:	N402539.63	W1131711.16

SW Corner:      N402543.14      W1131719.00

### **UTTR GEOGRAPHIC LOCATION**

Target areas on UTTR are geographically located in northwestern Utah, directly west of the Great Salt Lake and Hill Air Force Base. The complex is positioned between 40 and 41 degrees north latitude and close to 113 degrees ten minutes west longitude. The targets are within range 12 west and Township two and three north, Salt Lake Baseline Meridian.





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

18 Feb 11

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Hill AFB/UTTR, UT

1. Aerial Spray flight proficiency training will be accomplished on targets 21, 24, and Wildcat at the Utah Test and Training Range(UTTR) applying Krovar controlling vegetation (i.e Halogenton) growth to aid bombing mission test evaluations and unexploded ordnance recovery. Two Spray configured C-130's will be available 29 Mar – 8 Apr 11 for the requested spray mission. One Support C-130 will be used for position and deposition of spray ground personnel and maintenance equipment.

**2. Concept of Operations:**

- a. 28 March (Monday)
  - 0900 Show KYNG
  - 1100 Support aircraft depart KYNG
  - 1430 Land KHIF
  - \* Support aircraft returns to KYNG at 1800 on 29 March
- b. 29 March (Tuesday)
  - 0700 Show KYNG
  - 0900 1<sup>st</sup> Spray aircraft depart KYNG
  - 0915 2<sup>nd</sup> Spray aircraft depart KYNG
  - 1230 1<sup>st</sup> Spray aircraft land KHIF
  - 1245 2<sup>nd</sup> Spray aircraft land KHIF
- c. 30 March – 1 April (Wednesday-Friday)
  - 0500 Show KHIF
  - 0700 Depart KHIF
  - 1200 Land KHIF
  - \* 2 spray sorties planned each day per aircraft

d. 4 – 7 April (Monday-Thursday)

0500 Show KHIF

0700 Depart KHIF

1200 Land KHIF

\* 2 sorties planned each day per aircraft

e. 7 April (Thursday)

0800 Show KYNG

1000 Support aircraft depart KYNG

1330 Land KHIF

f. 8 April (Friday)

0800 Show KHIF

1000 1<sup>st</sup> Spray aircraft depart KHIF

1005 2<sup>nd</sup> Spray aircraft depart KHIF

1010 Support aircraft depart KHIF

1600 1<sup>st</sup> Spray aircraft land KYNG

1605 2<sup>nd</sup> Spray aircraft land KYNG

1610 Support aircraft land KYNG

3. Maj (b) (6) (b) (6) is the Mission Commander.

4. LTC (b) (6) and Maj (b) (6) are the Aircraft Commanders

5. Support required at Hill AFB and the UTTR has been completed.

(b) (6), Capt, USAFR  
757<sup>TH</sup> Aerial Spray



DEPARTMENT OF THE AIR FORCE  
YOUNGSTOWN AIR RESERVE STATION  
757AS/AERIAL SPRAY UNIT  
VIENNA OH 44473-5924

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT**  
**UTAH TEST AND TRAINING RANGE, 28 MAR – 8 APR 2011**

**1. MISSION BASICS:**

- a. Installation Sprayed: Utah Test and Training Range (UTTR)
- b. Mission Duration: 28 Mar – 8 Apr 2011
- c. Purpose of Application: Weed control on UTTR Targets 21, 23 and 24, facilitate UXO recovery
- d. Application Dates: 30 MAR, 31 MAR, 1 APR, 4 APR, 5 2011
- e. Times of Application (Local): 0700-1400
- f. Acres Treated: 881 on Target 21; 263 on Target 24; 28 on Target 23: Total = 1172.
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) Range Specialist/DSN (b) (6)  
Environmental Coordinator, (b) (6) DSN (b) (6)
- h. Date Spray Map Last Approved: 29 MAR 2011
- j. Installation In-Briefing: (When/Where/Briefer/s): Maj (b) (6) Maj (b) (6) Maj (b) (6) SMS (b) (6)

**2. OPERATIONAL:**

- a. **Mission Commander:** MAJ (b) (6) (b) (6)
- b. **Aircrew:**
  - (1) **Pilots:** MAJ (b) (6) MAJ (b) (6) MAJ (b) (6) CPT (b) (6)  
LTC (b) (6) MAJ (b) (6)
  - (2) **Navigators:** MAJ (b) (6) MAJ (b) (6) LTC (b) (6)
  - (3) **Flight Engineers:** TSGT (b) (6) MSGT (b) (6)
  - (4) **Spray Operators:** MSGT (b) (6) SMSGT (b) (6) MSGT (b) (6) TSGT (b) (6)  
SrA (b) (6) MSGT (b) (6)
- b. **Maintenance:**
  - (1) **Spray Maintenance:** MSGT (b) (6) TSG (b) (6) TSG (b) (6) TSGT (b) (6)  
(b) (6) SSgt (b) (6)
  - (2) **Crew Chiefs:** SSGT (b) (6) TSGT (b) (6) MSGT (b) (6) SrA (b) (6) Tris
  - (3) **Avionics:** TSGT (b) (6) MSGT (b) (6)
  - (4) **Engine/Propulsion:** MSGT (b) (6)
  - (5) **Hydraulics/Electrician:** MSGT (b) (6) (b) (6) TSgt (b) (6)
  - (6) **MX Officer:** (b) (6)
  - (7) **ARMS:** MSGT (b) (6) TSGT (b) (6)
- c. **Entomologists:** MAJ (b) (6) (b) (6) application supervision, Cat 11 (UTTR), LTC (b) (6) (b) (6) pesticide mixing and loading Cat 11, safety briefer (Hill AFB)
- d. **Ground Support:** SMSgt (b) (6) (UTTR), TSGT (b) (6)
- e. **Flying Data:**
  - (1) 3 Spray Sorties on 30 MAR –108
  - (2) 3 Spray Sorties on 31 MAR –108
  - (3) 4 Spray Sorties on 1 APR – 3 108; 1 105.
  - (4) 3 Spray Sorties on 4 APR – 1 108; 2 105.
  - (5) 3 Spray Sorties on 5 APR – 2 108; 1 105
  - (6) Ferry Sorties/Hours: 4/19.5
  - (7) Spray sorties/hours: 16/21.8

**3. PESTICIDE:**

- a. Trade Name: Krovar® IDF
- b. EPA Registration Number: 352-505
- c. Formulation Sprayed: 10 lbs Krovar® per 22.5 gallons formulation.
- d. Gallons Pesticide Mix Loaded: 25733
- e. Gallons Pesticide Mix Applied: 25733
- f. Formulation Used: 450 lbs Krovar®, 4.0 gal StaPut®, ½ gal Foam Fighter®, 200 ounces Hi-Light® Dye, remainder water per 1000 gal of spray mix.
- g. Gallons and Name of Flush Used: 900 gal water
- h. Other Additives Used: 102 gal StaPut®; 40.6 gal Hi-Light® dye; 12.7 gal No-foam
- i. Application Rate: 22.5 gal/acre

#### **4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99105, 99108
- b. Spray System (Modules Used) and System ID #: 3 and 5.
- c. Spray System Configuration: 3-Module System/ UHV Fuselage Booms
- d. Nozzle Type/Size: UHV Fuselage
- e. Nozzle Orientation & Number Used: 2 oriented straight back.
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 366 gallons per minute.

#### **5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 35'
- b. Spray Off-set: None
- c. Spray Release Altitude: 100' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

#### **6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) 30 MAR – beginning 229° at 5 knots; ending 220° at 8 knots
  - (2) 31 MAR – beginning calm; ending 117° at 4 knots.
  - (3) 1 APR – beginning light & variable; ending 220° at 6 knots.
  - (4) 4 APR – beginning 170° at 7 knots; ending 160° at 9 knots.
  - (5) 5 APR – beginning calm; ending 220 at 8 knots.
- b. Temperature (Degrees Fahrenheit):
  - (1) 30 MAR – 39° F - 66° F.
  - (2) 31 MAR – 45° F - 75° F.
  - (3) 1 APR – 39° - 69° F.
  - (4) 4 APR – 32° - 55° F
  - (5) 5 APR - 35° - 64° F
- c. Relative Humidity:
  - (1) 30 MAR – 42 % - 37 %.
  - (2) 31 MAR – 52 % - 43 %.
  - (3) 1 APR – 42 %.
  - (4) 4 APR – 36 %.
  - (5) 5 APR – 26 %
- d. Cloud Cover: Variable from 0 % to 100 % over the duration of the project; but mostly low cloud cover while spraying.
- e. Source: Ground observations at UTTR Target 21 and 24.

#### **7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique Used: blue dye pattern on targets and observations from ground markers.

- (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Techniques Used: monitoring of weed emergence in spring.
  - (2) Results: will be determined this spring by range personnel.
- 8. **REMARKS:** No spraying was conducted on 2 and 3 April because the airfield was closed for the weekend. The spray for Target 24 was completed on March 31, 2011 and the spray for Target 21 was completed on April 5, 2011. The Aerial Spray Squadron used 26,094 gallons of herbicide mix for the spray (Specific data is shown in Attachment 1). Aircraft 105 was non-functional early in the mission, but contributed later on. Outside of this, there were no major limiting factors for this mission and the spray application was completed within the allowed time parameters. UTTR personnel are considering expanding the scope of this mission to include additional targets next year. The herbicide appears to remain highly effective.

//signed//

(b) (6) (b) (6) MAJ, USAFR  
DoD Certified Pest Management Professional

## Attachment 1: Summary Spray Chart

**30 March – 5 April, 2011****SPRAY OPERATIONS SUMMARY FOR UTAH TEST AND TRAINING RANGE**

<b>DATE</b> <b>March</b>	<b>SORTIE #</b>	<b>AIRCRAFT #</b>	<b>SPRAY ON TIME (min)</b>	<b>TARGET</b>	<b>PASSES</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>FLYING HOURS</b>
30	1	108	5.3	21,24	8	65	1705	1.3
30	2	108	5.0	21,24	8	83	1725	1.2
31	3	108	5.0	21,24	8	81	1728	1.3
31	4	108	5.0	24,21	8	81	1689	1.2
31	5	108	5.0	24,21	9	80	1738	1.4
Apr 1	6	108	5.0	21	13	81	1885	1.2
Apr 1	7	108	4.8	21	12	76	1800	1.2
Apr 1	8	108	4.9	21	13	79	1800	1.5
Apr 1	9	105	4.1	21	12	68	1646	1.3
Apr 4	10	105	5.1	21	13	84	1802	1.3
Apr 4	11	108	5.1	21	14	84	1800	1.7
Apr 4	12	105	5.0	21	13	81	1795	1.3
Apr 5	13	108	4.5	21	12	75	1585	1.5
Apr 5	14	105	4.7	21, 23	14	77	1751	1.7
Apr 5	15	108	4.6	23	15	77	1645	1.8
		Totals	72.4		172	1,172	26,094	20.9





DEPARTMENT OF THE AIR FORCE  
757 Airlift Squadron – Aerial Spray Operations  
3976 King Graves Rd Unit 24  
Vienna OH 44473-5924

**910 AW AERIAL SPRAY**  
**Army Corps of Engineers Williston, ND 31 May -10 Jun 2011**  
**PMP'S POST-MISSION REPORT**

**1. MISSION BASICS:**

- a. Installation Sprayed: Army Corps of Engineers property near Williston
- b. Mission Duration: 31 May – 10 Jun 2011
- c. Purpose of Application: Control nuisance and vector mosquitoes (larval stages)
- d. Application Dates: 1-3; 6,8-9 Jun 2011
- e. Times of Application: see attachment 1.
- f. Acres Treated: 8,248
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6)
- h. Date Spray Map Last Approved: 26 May 2011 (electronically delivered)
- i. Date of Waste Generation Letter: 26 May 2009
- j. Installation In-Briefing: (When/Where/Briefer/s): 31 May, 2011; Williston ACE Conference Room, Maj (b) (6)

**2. OPERATIONAL:**

- a. **Mission Commander:** Maj (b) (6) (b) (6)
- b. **Certified PMP/Entomologists** (Category 11): Maj (b) (6) (b) (6) (safety briefer), Lt Col (b) (6) (3-10) (b) (6) (safety briefer), Capt (b) (6) (6-10)
- c. **Administration:** SMSgt (b) (6)
- d. **Aircrew**
  - Spray 06: MI: QZNRK9901151
    - (1) Pilots: LtCol (b) (6), LtCol (b) (6), Capt (b) (6)
    - (2) Navigators: Capt (b) (6) (31-3), LtCol (b) (6) (3-10)
    - (3) Flight Engineers: MSgt (b) (6) (31-3), TSgt (b) (6) (3-10)
    - (4) Spray Operators: MSgt (b) (6), TSgt (b) (6)
  - Spray 08: MI: QZNRK9902151
    - (1) Pilots: Maj (b) (6) (31-3), Maj (b) (6) (31-3), Maj (b) (6) (b) (6) (MC), Maj (b) (6) (31-3)
    - (2) Navigators: Capt (b) (6) (31-3), Maj (b) (6) (3-10), LtCol (b) (6) (3-10)
    - (3) Flight Engineers: MSgt (b) (6)
    - (4) Spray Operators: MSgt (b) (6), SSgt (b) (6)
- e. **Spray Maintenance:**
  - (1) MSgt Paul Tatar, TSgt (b) (6), TSgt (b) (6), TSgt (b) (6), TSgt (b) (6), SrA (b) (6)
  - (2) Crew Chief(s): MSgt (b) (6), TSgt (b) (6), SrA (b) (6) (b) (6), SrA (b) (6)
  - (3) Avionics: MSgt (b) (6)
  - (4) Engines: TSgt (b) (6)
  - (5) Hydraulics: TSgt (b) (6)



- (6) ELEN: TSgt (b) (6)
- (7) MX Officer: Capt (b) (6)

**f. Flying Data:**

- (1) Spray Sorties/Hours: 19 + 2 flush/36.3
- (2) Ferry Sorties/Hours: 4/14.7

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Vectobac 12AS (1200 ITU/mg)
- b. EPA Registration Number: 73049-38
- c. Gallons Pesticide Loaded: 1,547
- d. Pesticide Applied: 1,547 gal
- e. Diluent: 31,474 gallons water and 1,000 gallons of water rinse and flush
- f. Other Additives Used: Sta-Put and Airex-DC® drift reduction agents
- g. Application Rate: 24 oz/acre Vectobac 12AS®

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 9106, 9108
- b. Spray System (Modules Used) and System ID #: 3
- c. Spray System Configuration: SP3-Module System/Fuselage Booms
- d. Nozzle Type/Size: Raindrop nozzles
- e. Nozzle Orientation & Number Used: 24- straight back
- f. Pressure (PSI): 59-60
- g. Flow Rate: 372 gpm

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 200'
- b. Spray Offset: none
- c. Spray Release Altitude: 100'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): variable conditions at speeds varying from calm to 15 kts. Sprays were conducted into the wind.
- b. Temperature (Degrees Fahrenheit): 48-72° F
- c. Relative Humidity: 35-93%
- d. Cloud Cover: varied between cloudy to clear
- e. Source: Ground observations/aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Areas were sampled using standard larval surveillance techniques to determine pest densities. Larval density ranged between 9-150 larvae per dip depending on location
- b. Effectiveness:
  - (1) Technique/s Used: Larval dip samples
  - (2) Results: Post application monitoring was done by Williston Vector Control (see attachment 2.

8. **REMARKS:** This is the third application at the Williston Army Corps of Engineers (ACE) property and associated areas near Williston ND. This year's mission was challenging as the Missouri River reached historic flood levels on 9 June. The extensive flooding made surveillance and targeting of mosquito development areas difficult. In addition, rainy and windy weather forced the cancellation of several sorties. These adverse factors contributed to fewer acres sprayed than last year. Attachment 3 shows the portion of the proposed spray blocks actually treated by the Air Force. Portions of the spray blocks were left for smaller aircraft and priorities were determined daily by Williston Vector Control. Post-application sampling was also difficult as water levels were constantly fluctuating, nonetheless, spot checks showed high larval mortality. We appreciate the support of all the agencies involved, but specifically Minot AFB 5CES. Adult mosquito control may occur at Williston during the 18-22 July 2011 mission to Minot AFB, if this can be coordinated.

//Signed//

**Major (b) (6) (b) (6) PhD, USAFR**  
**Certified Pest Management Professional**

//Signed//

**Lt Col (b) (6) (b) (6) PhD, USAFR**  
**Certified Pest Management Professional**

4 attachments

## Attachment 1: Summary Spray Chart

**1-9 June 2011****SPRAY OPERATIONS SUMMARY FOR WILLISTON ACE**

<b>DATE Jun</b>	<b>SORTIE #</b>	<b>TIME OF APPLICATION</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>FLYING HOURS</b>
1	1	0920-1055	420	1681	1.6
1	2	1015-1230	444	1774	2.3
2	3	0600-0750	421	1684	1.8
3	4	0600-0752	438	1752	1.9
3	5	0700-0830	421	1684	1.5
3	6	0925-1125	429	1716	2.0
3	7	1035-1220	443	1772	1.8
6	8	0605-0753	428	1710	1.8
6	9	0720-0918	445	1778	2.0
6	10	0900-1115	413	1650	2.3
6	11	1035-1220	433	1772	1.8
8	12	0615-0755	462	1880	1.7
8	13	0640-0840	415	1656	2.0
8	14	0850-1036	456	1801	1.8
8	15	0945-1115	425	1698	1.7
8	16	1200-1340	453	1810	1.7
8	17	1240-1440	422	1686	2.0
9	18	0605-0745	438	1751	1.7
9	19	0832-1005	442	1766	1.6
8	flush	1500-1545	n/a	n/a	0.7
9	flush	1215-1250	n/a	n/a	0.6
<b>Totals</b>			<b>8,248</b>	<b>33,021</b>	<b>36.3</b>

Attachment 2. Pre & Post Samples for the USAF Spray Mission over Missouri River near Williston, ND 1-9 Jun 11. Numbers represent the number of mosquito larvae collected in a standard “dip”.

Trenton

Pre- 25

Post- no late instars

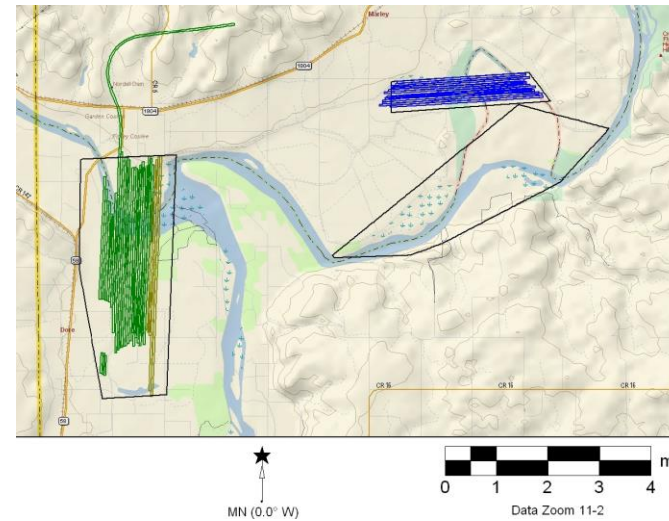
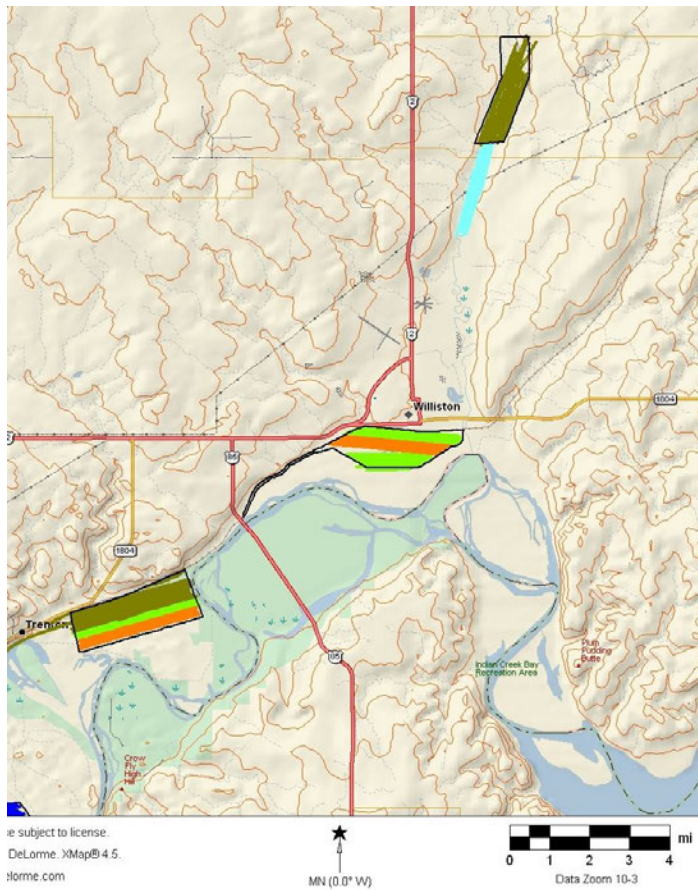
Confluence Spray Block

Pre- 4

Post- 0

\*Pre-sampling occurred 1-8 Jun 11. Post-sampling was done from 8-16 Jun 11.

Attachment 3. Maps of larvicide spray locations on Army Corps of Engineers property near Williston ND. Colored lines indicate sprays on various days. Priority of spray blocks was dictated by the Williston Vector Control and weather conditions.





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

11 Nov 10

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray Training Avon Park, FL

1. One C-130 aerial spray equipped aircraft will be available 6-10 Dec 10 to proceed from Youngstown ARS, OH and stage at MacDill AFB, FL. The mission purpose is to conduct winter aerial spray semi-annual currency and proficiency training over Avon Park Bombing Range, FL and coastal waters. Additionally, 757AS entomologists will be conducting ground collection and analysis of ULV real swath width data for determining the control of aerial spray materials from 100' AGL and higher altitude applications.

2. Concept of Operations:

- a. 6 December (Monday)  
1100 Show KYNG  
1300 Depart KYNG  
1600 Land KAGR
- b. 7-9 December (Tuesday-Thursday) Range: 0900-1300  
0700 Show KAGR  
0900 Depart KAGR  
1300 Land KAGR
- c. 10 December (Friday)  
0800 Show KAGR  
1000 Depart KAGR  
1300 Land KYNG

3. Spray Configuration:

- a. MASS – SP2G
- b. MI: QZNRK9901340
- c. Parameters –100' AGL and above
- d. Chemical – BVA Oil to analyze swath width and droplet spectrum on slides

4. Maj (b) (6) (b) (6) will serve as Mission Commander.

5. Support required at Avon Park Bombing Range and LZ has been arranged.

(b) (6) (b) (6) Maj, USAFR  
Chief of Aerial Spray



[illegible][illegible]



[illegible]



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

19 Jul 11

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Grand Forks and Grand Forks AFB, ND.

1. One C-130 will be available 8-12 Aug 11 for the requested adulticide spray mission. Aerial spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel stationed at Grand Forks AFB, ND.

2. Concept of Operations:

- a. 8 Aug (Monday)  
1300L Show KYNG  
1500L Depart KYNG  
1700L Land KRDR
- b. 9 Aug (Tuesday)  
1700L Show KRDR  
1900L Depart KRDR  
2100L Land KRDR
- c. 10 Aug (Wednesday)  
1700L Show KRDR  
1900L Depart KRDR  
2100L Land KRDR
- d. 11 Aug (Thursday)  
1700L Show KRDR  
1900L Depart KRDR  
2100L Land KRDR

- e. 12 Aug (Friday)  
1000 Show KRDR  
1200 Depart KRDR  
1600 Land KYNG

3. Aerial Spray Operation:

- a. Chemical: Trumpet
- b. Altitude: 150 AGL
- c. Application rates: 7.26 gal/min (1.0 oz/acre)
- d. Area: Approximately 29,900 acres

4. Maj (b) (6) (b) (6) will act as Mission Commander.

5. Maj (b) (6) will act as Aircraft Commander.

6. Support required at Grand Forks AFB, ND has been completed.

(b) (6) , Capt, USAFR  
757AS Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

18 May 11

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Grand Forks and Grand Forks AFB, ND.

1. One C-130 will be available 27 June – 1 July for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel stationed at Grand Forks AFB, ND.

2. Concept of Operations:

- a. 27 Jun (Monday)  
1400L Show KYNG  
1600L Depart KYNG  
1800L Land KRDR
- b. 28 Jun (Tuesday)  
1700L Show KRDR  
1930L Depart KRDR  
2130L Land KRDR
- c. 29 Jun (Wednesday)  
1700L Show KRDR  
1930L Depart KRDR  
2130L Land KRDR
- d. 30 Jun (Thursday)  
1700L Show KRDR  
1930L Depart KRDR  
2130L Land KRDR

- e. 1 Jul (Friday)  
1130 Show KRDR  
1330 Depart KRDR  
1730 Land KYNG

3. Aerial Spray Operation:

- a. Chemical: Trumpet
- b. Altitude: 150 AGL
- c. Application rates: 7.26 gal/min (1.0 oz/acre)
- d. Area: Approximately 29,900 acres

- 4. LtCol (b) (6) (b) (6) will act as Mission Commander.
- 5. Maj (b) (6) will act as Aircraft Commander.
- 6. Support required at Grand Forks AFB, ND has been completed.

(b) (6)  
757<sup>th</sup> AS

, Capt, USAFR





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

19 Jul 11

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Homestead ARB, FL

1. One C-130 will be available 25-30 Jul 2011 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations effecting the health and welfare of the citizens of Homestead ARB and surrounding Miami-Dade County. Operations will be conducted out of Homestead ARB, FL.

2. Concept of Operations:

- a. 25 Jul (Monday)  
1300 Show KYNG  
1500 Depart KYNG  
1830 Land KHST
- b. 26-29 Jul (Tuesday-Friday) Spray Sorties  
1600 Show KHST  
1800 Depart KHST  
2030 Land KHST
- c. 30 Jul (Sunday)  
1000 Show KHST  
1200 Depart KHST  
1530 Land KYNG

3. Aerial Spray Operation:

- a. Chemical: Dibrom
- b. Altitude: 150 AGL
- c. Application rates: 3.6 gal/min (0.5 oz/acre)
- d. Area: Approximately 30,000-80,000 acres TBD

4. Maj (b) (6)(b) (6) will act as Mission Commander.

5. Capt (b) (6) will act as Aircraft Commander.
6. Support required at Homestead ARB, FL has been coordinated.

(b) (6), Capt, USAFR  
757AS Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

15 Aug 11

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Langley AFB, VA.

1. One C-130 will be available 22-26 Aug 11 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel stationed at Langley AFB, VA and surrounding communities.

2. Concept of Operations:

- a. 22 Aug (Monday)  
1300L Show KYNG  
1500L Depart KYNG  
1615L Land KLFI
- b. 23 Aug (Tuesday)  
1545L Show KLFI  
1745L Depart KLFI  
1945L Land KLFI
- c. 24 Aug (Wednesday)  
1545L Show KLFI  
1745L Depart KLFI  
1945L Land KLFI
- d. 25 Aug (Thursday)  
1545L Show KLFI  
1745L Depart KLFI  
1945L Land KLFI
- e. 26 Aug (Friday)  
1030L Show KLFI

1230L Depart KLFI  
1350L Land KYNG

3. Aerial Spray Operation:
  - a. Chemical: Dibrom
  - b. Altitude: 150 AGL
  - c. Application rates: 3.6 gal/min (.50-.75 oz/acre)
  - d. Area: Approximately 125,000 acres but final acreage TBD
4. Maj (b) (6) (b) (6) will act as Mission Commander.
5. Capt (b) (6) will act as Aircraft Commander.
6. Support required at Langley AFB, VA has been arranged.

(b) (6) (b) (6) Maj, USAFR  
757AS Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

7 June 11

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Langley AFB, VA.

1. One C-130 will be available 20-25 June 11 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel stationed at Langley AFB, VA and surrounding communities.

2. Concept of Operations:

- a. 20 June (Monday)  
1400L Show KYNG  
1600L Depart KYNG  
1715L Land KLFI
- b. 21 June (Tuesday)  
1600L Show KLFI  
1815L Depart KLFI  
2045L Land KLFI
- c. 22 June (Wednesday)  
1600L Show KLFI  
1815L Depart KLFI  
2045L Land KLFI
- d. 23 June (Thursday)  
1600L Show KLFI  
1815L Depart KLFI  
2045L Land KLFI

- e. 24 June (Friday)
    - 1600L Show KLFI
    - 1815L Depart KLFI
    - 2045L Land KLFI
  - f. 25 June (Saturday)
    - 1030L Show KLFI
    - 1230L Depart KLFI
    - 1350L Land KYNG
3. Aerial Spray Operation:
- a. Chemical: Dibrom
  - b. Altitude: 150 AGL
  - c. Application rates: 3.6 gal/min (.50-.75 oz/acre)
  - d. Area: Approximately 125,000 acres but final acreage TBD
4. Maj (b) (6) (b) (6) will act as Mission Commander.
5. Maj (b) (6) will act as Aircraft Commander.
6. Support required at Langley AFB, VA has been arranged.

(b) (6) , Capt, USAFR  
757AS Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

19 Jan 11

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray Training at Luke AFB

1. One C-130 aerial spray equipped aircraft will be available 7-11 February 11 to proceed from Youngstown ARS, OH and stage at Luke AFB, AZ. The mission purpose is to conduct winter aerial spray semi-annual currency events, proficiency training and Barry Goldwater Range familiarization for future spray operations.

2. Concept of Operations:

- a. 7 February (Monday)  
1000 Show KYNG  
1200 Depart KYNG  
1540 Land KLUF
- b. 8-10 February (Tuesday-Thursday) Range: 0700-1000  
0500 Show KLUF  
0700 Depart KLUF  
1000 Land KLUF
- c. 11 February (Friday)  
0700 Show KLUF  
0900 Depart KLUF  
1640 Land KYNG

3. Spray Configuration:

- a. MASS – SP2G
- b. MI: QZNRK9901038
- c. Parameters –100' AGL and above
- d. Chemical – NONE, dispensing water only

4. Maj (b) (6) (b) (6) will serve as Mission Commander.



5. Support required at Luke AFB and Barry Goldwater range has been coordinated.

(b) (6)  
757<sup>th</sup> Aerial Spray, Capt, USAFR

#### MASS Accomplishments for FY11:

The 910 AW conducted 18 operational and testing missions at various DOD installations around the country. We also participated in a joint USCG and AF oil spill operation on the west coast. As part of our mission, we performed a joint test in the development of a newer, more environmentally sensitive material for pest control with the USDA. Our operational season was reduced this year below our normally scheduled missions. Several installation cancellations occurred this year due to a dryer season than normal resulting in lower pest populations.

#### Operational Mission Data:

81 operational sorties dispensing active chemical

117 flying hours dispensing more than 60,000 gallons of pesticides and herbicides

Treated approximately 340,000 acres

#### Total times including all training, operational sorties, and Ferry data:

158 sorties

361 flying hours

# 910 AW AERIAL SPRAY UNIT POST-MISSION REPORT

## GRAND FORKS AFB – LARVAL MOSQUITO CONTROL 23-27 May 2011

### 1. MISSION BASICS:

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 23-27 May 2011
- c. Purpose of Application: Control nuisance and vector mosquitoes
- d. Application Date: 24-26 May
- e. Time of Application (Local): 0600 May 24-26
- f. Acres Treated: 1425
- g. Project Coordinator/s (Name/Rank, Title, Phone #): TSG (b) (6) , NCOIC Pest Management Shop, DSN (b) (6)
- h. Date Spray Map Last Approved: 23 May 2011
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): GFAFB CE, MAJ (b) (6) (b) (6) LTC (b) (6) , LTC (b) (6) , MAJ (b) (6) (b) (6) , CAPT (b) (6)

### 2. OPERATIONAL:

- a. Mission Commander: MAJ (b) (6) (b) (6)
- b. Certified PMP/s (Category 11): MAJ (b) (6) (b) (6) CAPT (b) (6)
- c. Aircrew:
  - 1) Pilots: LTC (b) (6) , MAJ (b) (6)
  - 2) Navigators: LTC (b) (6)
  - 3) Flight Engineers: TSGT (b) (6)
  - 4) Spray Operators: MSGT (b) (6) , SSGT (b) (6)
- d. Safety Briefer: MAJ (b) (6) (b) (6)
- e. Spray Maintenance: TSGT (b) (6) , TSGT (b) (6) , TSGT (b) (6) , SRA Kaylin Celedonia
- f. Spray Ground Monitors: MAJ (b) (6) (b) (6)
- g. Crew Chief: SSGT (b) (6) , SRA (b) (6)
- h. Avionics: SMSGT (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 6/5.6
  - (2) Ferry Sorties/Hours: 2/6.5

### 3. PESTICIDES:

- a. Trade Name (% Active Ingredient): Altosid Liquid Larvicide Concentrate (20% methoprene)
- b. EPA Registration Number: Altosid Liquid Larvicide Concentrate 272446
- c. Gallons Pesticide Loaded: 2.6 (24 May); 7.8 (25 May); 1.3 (26 May)
- d. Gallons Pesticide Applied: 42 Gal tank mix (24 May); 2535 Gal tank mix (25 May); 274 Gal tank mix (26 May)
- e. Gallons and Name of Flush Used: 450 gallons of water flush
- f. Other Additives Used: AirexDC® drift reduction agent (1.28 oz/acre; 14.25 gal total)
- g. Application Rate: 0.75 oz/acre Altosid®

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99107
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: R-20 Raindrop
- e. Nozzle Orientation & Number Used: 12 Straight back
- f. Pressure (PSI): 38 PSI
- g. Flow Rate: 186 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 200'
- b. Spray Off Set: None
- c. Spray Release Altitude: 100'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 028° @ 12 knots (aerial observation) (24 May); 009° @ 11 (25 May); 348° @ 8 (26 May)
- b. Temperature (Degrees Fahrenheit): 50-60 °F (24-26 May)
- c. Relative Humidity: 50-60%
- d. Cloud Cover: Clear/Scattered
- e. Source: Ground observations and National Weather Service

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

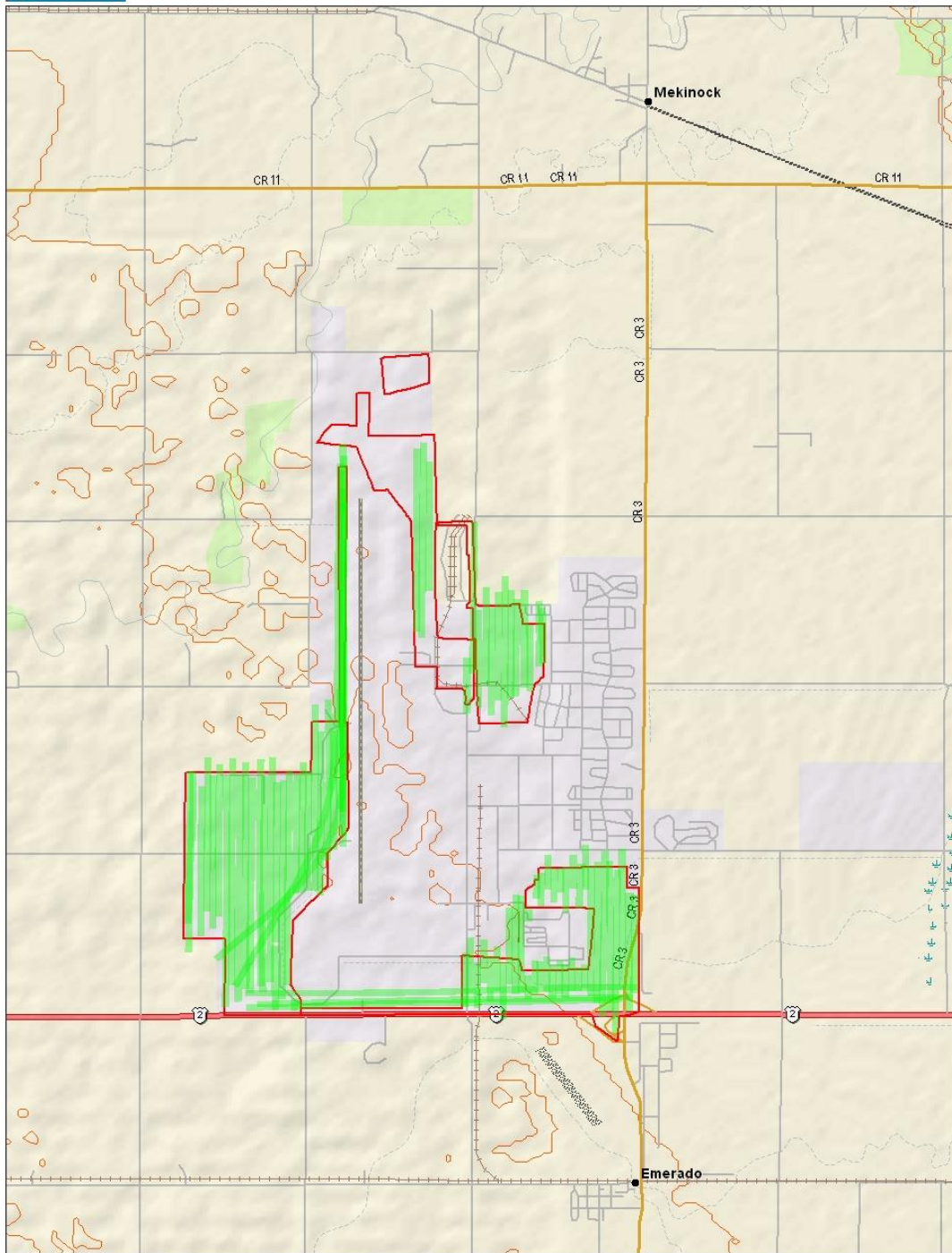
- a. The 319 MDG/ADS conducts larval mosquito sampling to monitor mosquito densities on base.
- b. Effectiveness:
  - (1) Technique/s Used: Larval dips
  - (2) Results: Post application data pending from 319 MDG/ADS

**8. REMARKS:** The threat of West Nile Virus prompted AF public health to make the decision to spray mosquito breeding sites for larval control. The applications were made early in the day to take advantage of relatively low wind speed in order to minimize drift. Many thanks to TSGT (b) (6) SSGT (b) (6) of the GFAFB pest control shop for their outstanding assistance.

//signed//

(b) (6) (b) (6) Maj, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

**Attachment 1.** Image shows Grand Forks AFB spray blocks (red) and pesticide application swaths (green) during application on 24-26 May.



Data use subject to license.  
 © 2004 DeLorme, XMap® 4.5.  
[www.delorme.com](http://www.delorme.com)

★  
 MN (0.0° W)

0 1/4 1/2 3/4 1 1 1/4 mi  
 Data Zoom 12.0



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

19 May 11

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Minot and Williston, ND.

1. One C-130 will be available 18-22 July 11 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel stationed at Minot AFB and Williston, ND.

2. Concept of Operations:

- a. 18 Jul (Monday)  
1000L Show KYNG  
1200L Depart KYNG  
1435L Land KMIB
- b. 19 Jul (Tuesday) Spray Minot AFB  
1730L Show KMIB  
1930L Depart KMIB  
2130L Land KMIB
- c. 20 Jul (Wednesday) Spray Minot  
1730L Show KMIB  
1930L Depart KMIB  
2130L Land KMIB
- d. 21 Jul (Thursday) Spray Williston  
1730L Show KMIB  
1930L Depart KMIB  
2130L Land KMIB

- e. 22 Jul (Friday)  
1130L Show KMIB  
1330L Depart KMIB  
1805L Land KYNG

3. Aerial Spray Operation:

- a. Chemical: Trumpet (Minot) & Zenivex (Williston)
- b. Altitude: 150 AGL
- c. Application rates: 7.4 gal/min (.6 - .75 oz/acre)
- d. Area: Approximately 14,000 acres (Minot) & 8,000 acres (Williston)

4. Maj (b) (6) (b) (6) will act as Mission Commander.

5. Lt Col (b) (6) will act as Aircraft Commander.

6. Support required at Minot AFB, ND has been completed.

(b) (6) , Capt, USAFR  
757<sup>th</sup> AS Aerial Spray





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

8 Oct 10

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Parris Island MCRD, SC.

1. One C-130 will be available 18-21 October 10 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito and biting midge populations effecting the health and welfare of the personnel stationed at Parris Island MCRD, SC.

2. Concept of Operations:

- a. 18 Oct (Monday)  
1500L Show KYNG  
1700L Depart KYNG  
1900L Land KNBC
- b. 19 Oct (Tuesday)  
1530L Show KNBC  
1700L Depart KNBC  
1900L Land KNBC
- c. 20 Oct (Wednesday)  
1530L Show KNBC  
1700L Depart KNBC  
1900L Land KNBC
- d. 21 Oct (Thursday)  
1000L Show KNBC  
1200L Depart KNBC  
1400L Land KYNG

3. Aerial Spray Operation:
  - a. Chemical: Duet
  - b. Altitude: 150 AGL
  - c. Application rates: Approximately 3.6 gal/min (0.5 oz/acre)
  - d. Area: Approximately 8,000 acres
4. Maj (b) (6) (b) (6) will act as Mission Commander.
5. Maj (b) (6) will act as Aircraft Commander.
6. Support required at Beaufort MCAS and Parris Island MCRD has been coordinated.

(b) (6) (b) (6) MAJOR, USAFR  
757AS Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

12 MAY 11

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Williston Army Corps, ND

1. Two C-130's will be available 31 May – 10 Jun 2011 for the requested larvicide spray mission. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations effecting the health and welfare of the citizens of Williston. Operations will be conducted out of Minot AFB, ND since no suitable airfield is in the vicinity of Williston.

2. Concept of Operations:

- a. 31 May (Tuesday)  
Spray aircraft:  
1000 Show KYNG  
1200 and 1205 Depart KYNG  
1530 and 1535 Land KMIB
- b. 1-3 Jun (Wednesday-Friday)  
0400 Show KMIB  
0545 and 0630 T/O KMIB  
\*Multiple 1.5 hr sorties each day depending upon weather
- c. 6-9 Jun (Monday-Thursday)  
0400 Show KMIB  
0545 and 0630 T/O KMIB  
\*Multiple 1.5 hr sorties each day depending upon weather
- d. 10 Jun (Friday)  
0800 Show KMIB  
1000 and 1005 T/O KMIB  
1430 and 1435 Land KYNG

3. Aerial Spray Operation:

- a. Chemical: Vectobac

- b. Altitude: 100 AGL for Larvicide application
- c. Application rates: 4 gal/acre
- d. Area: Maximum available 24,000 acres

- 4. Maj (b) (6) (b) (6) will act as Mission Commander.
- 5. Lt Col (b) (6) and Maj (b) (6) will act as Aircraft Commanders
- 6. Support required at Minot AFB and Williston Army Corps has been completed.

(b) (6) (b) (6) Maj, USAFR  
757AS Chief of Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## WILLISTON ARMY CORPS OF ENGINEERS, WILLISTON, ND

### 31May – 10 Jun 2011

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes, with larvicide, in order to improve working conditions and lower risk of vector-borne illness to individuals working and living in and around the City of Williston.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew Spray 06: MI: QZNRK9901151

- (1) Pilots: LtCol Tim Austin, LtCol (b) (6), Capt (b) (6) (3-10)
- (2) Navigators: Capt (b) (6) (31-3), (b) (6) (3-10)
- (3) Flight Engineers: MSgt (b) (6) (31-3), TSgt (b) (6) (3-10)
- (4) Spray Operators: MSgt (b) (6), TSgt (b) (6), MSgt (b) (6) (31-3), MSgt (b) (6) (3-10)

##### Aircrew Spray 08: MI: QZNRK9902151

- (1) Pilots: Maj (b) (6) (31-3), Maj (b) (6) (31-3), Maj (b) (6) (31-3), Capt (b) (6) (3-10)
- (2) Navigators: Capt (b) (6) (31-3), Maj (b) (6) (3-10), LtCol (b) (6) (3-10)
- (3) Flight Engineers: MSgt (b) (6)
- (4) Spray Operators: SSgt (b) (6), MSgt (b) (6) (31-3), MSgt (b) (6) (3-10)
- (5) Mission Commander: Maj (b) (6) (b) (6)

##### Vader 05: MI: QDNRK9901151

##### b. Maintenance:

- (1) Spray Maintenance: MSgt (b) (6), TSgt (b) (6), TSgt (b) (6), TSgt (b) (6), TSgt (b) (6)  
(b) (6) SrA (b) (6)
- (2) Crew Chief(s): MSgt (b) (6), TSgt (b) (6), SrA (b) (6), SrA (b) (6)
- (3) Avionics: MSgt (b) (6)
- (4) Engines: TSgt (b) (6)
- (5) Hydraulics: TSgt (b) (6)
- (6) ELEN: TSgt (b) (6)
- (6) MX Officer: Capt (b) (6)

##### c. Entomologist: Maj (b) (6) (b) (6) LTC (b) (6) (b) (6) (3-10); Capt (b) (6) (6-10)

##### d. Admin: SMSgt (b) (6)

#### 2. SCHEDULE: (All Local Times)

##### 31 May (Monday):

- 1000 Show time
- 1200 Spray 06 depart KYNG PPR 1901DL
- 1215 Spray 08 depart KYNG PPR 1903DL
- 1230 Support Aircraft depart KYNG PPR 1902DL
- 1530 Land KMIB
- 1545 Safety brief, and mission plan coordination briefings. Depart to get vehicles, hotels, etc
- 1800 Installation in-Brief via teleconference

##### 1-3 Jun (Wed-Fri): \*As many sorties as wx permits each day

- 0400 Show time/WX Decision
- 0430 Load water & Vectobac
- 0545 06Takeoff KMIB (Larvicide Spray Sortie) at Williston ACE property (near KISN).
- 0630 08 Takeoff KMIB
- 0555 Sunrise

##### 3 Jun (Friday) PPR 1904DL MI: QDNRK9902154

- 0700 Show KYNG
- 0900 Depart KYNG
- 1200 Land KMIB
- 1400 Depart KMIB
- 1830 Land KYNG

##### 6-9 Jun (Mon-Thur) : As many sorties as wx permits each day

- 0400 Show time/WX Decision
- 0430 Load water & Vectobac
- 0545 08Takeoff KMIB (larvicide Spray Sortie) at Williston ACE property (near KISN).
- 0630 06 Takeoff KMIB
- 0555 Sunrise

**9 Jun (Thursday) PPR 1905DL MI: QDNRK9901160**

0800 Show KYNG  
1000 Depart KYNG  
1300 Land KMIB

**10 Jun (Friday)**

0800 Show KMIB  
1000 Spray 06 depart KMIB  
1005 Spray 08 depart KMIB  
1010 Support aircraft depart KMIB  
1430 Land KYNG

**3. ITEMS TO TAKE**

- a. **Mission Commander:** Cellular Phone, Mission Folder
- b. **Entomologist:** Cell Phone, Wind Gauge, Compass, Pest Safety Binder,  
1 VHF radio Project Notebook
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables
- e. **Spray Maintenance:** Deployment Kit, Support Equipment

**4. KMIB PPR: See in itinerary**

**5. RADIO FREQUENCIES: Air To Ground Primary UHF 392.2; VHF 123.45**

Minot AFB Tower 120.65 V, 236.6, 253.5; Minot International 118.2 V, 393.1 or Unicom 122.95

**6. CONFIGURATION: SP3G**

- a. **System:** 3-Module System/Fuselage Booms
- b. **Nozzle Tips/Orientation:**  
Larvicide: Raindrop nozzles straight back
- c. **Number:**  
Larvicide: fuselage only, 24 total (12 each side) straight back
- d. **Booms:** Fuselage
- e. **Aircraft:** 899106, 909108
- f. **Mission Identifier:** See in itinerary

**7. SPRAY PARAMETERS:**

- a. **Larvicide**
  - (1) **Area to be treated:** approx. 24,000 acres (plan on 52 sorties as able)
  - (2) **Altitude:** 100' for Larvicide application
  - (3) **Swath Width.** 200 feet
  - (4) **Flow Rate.** 372 gallons/minute \*\*Please spray out entire volume on each sortie!
- b. **Application Rate.** 4 gallons/acre (water with 1.5 pints of Vectobac®)
- c. **Ground Speed:** 200 Knots

**8. SPRAY MIXING AND LOADING:** Plan to load 1800 gallons of water per lift.

Full load will consist of 1800 gallons of water + 85 gallons of Vectobac AS + 4 gallons of Staput

Subsequent loads can be calculated by the following formulas:

Determine the volume remaining in MASS. Add water to give 1800 gallons total. Then add Vectobac at 0.05 gallons per gallon of water added; Staput is added at 0.00023 gallons per gallon of water added.

**9. TRANSPORTATION:** \*\*9Pax van from Minot Trans

Enterprise Rent a Car  
1825 S Broadway  
Minot ND 58701  
(701)838-3800 Office  
(701)838-4255 Fax

(b) (6) , (b) (6) (b) (6) – FS Car  
(b) (6) (b) (6) - Minivan

**10. LODGING:** Vegas Motel  
2315 North Broadway

Minot, ND 58703  
(701) 839-3000

## 11. CONTACTS:

### a. Minot AFB ND: DSN prefix: **453-** Commercial area code and prefix **(701) 723 -**

1. **Base Operations:** x2347 (SSgt (b) (6) Airfield Manager: TSgt (b) (6) (b) (6) /TSgt (b) (6) FAX: 3637
2. **Environmental Officer:** (b) (6) (b) (6)
3. **Base Civil Engineer:** Lt Col (b) (6)
4. **Pest Management:** (b) (6) (cell: (b) (6)
5. **Public Affairs:** Capt (b) (6)
6. **Weather:** TSgt (b) (6) /Capt (b) (6)
7. **Billeting:** SSgt (b) (6) TSgt (b) (6) (if you have problems w/this number use (b) (6)
8. **Fire Dept:** x2461
9. **Transient Alert:** x3153, closes at 1730L
10. **Minot AFB Twr** – x3330
11. **Minot Int'l Twr (Magic City Twr)** (b) (6)

### b. Williston

1. **Vector control district:** (b) (6)
2. **Army Corps of Engineers:** (b) (6) , office; (b) (6) cell
3. **Williston ADS** 125.925

### b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Ext 1236; FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 Base Ops: Airfield Manager: Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181
6. 757 AS/DO: Maj (b) (6)
7. 757 AS/DOO: Ops Admin: Ext 1239; FAX 1657
8. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) (b) (6) or Capt (b) (6) ; FAX 1616
9. 910 LG/CC: Ext 1225
10. 910 LG/LGM: Ext 1352
11. Maintenance Control: Ext 1348
12. LG/LGMS: Spray Maintenance: Msgt (b) (6) Cell: (b) (6)
13. 910 LG/LGL: Ext 1137
14. Omega/SATO Travel: Ext 1772; (800) 285-6342
15. Supervisor of Flight Desk: 1069, FAX: 1371
16. Cellular Spray Phones:
  - Mission Commander: (b) (6) ((b) (6) cell – (b) (6) )
  - Spray Maintenance (b) (6)
  - Ento phone (b) (6) (b) (6)



**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**PARRIS ISLAND MCRD, SC 1-4 October 2012**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 1-4 October 2012
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date: 3 Oct 2012
- e. Time/s of Application (Local): 1730-1837; 1858-1928
- f. Acres Treated: 4,410
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) ,  
Environmental/Spray Coordinator, DSN(b) (6)
- h. Date Spray Map Last Approved: 1 Oct 2012
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 1 Oct 12 with (b) (6) and Lt Col  
(b) (6) at NREAO
- k. Mission Identifier: QZNRK9901275

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6) (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) (b) (6) Maj (b) (6) , Maj (b) (6)
  - (2) Navigators: Lt Col (b) (6)
  - (3) Flight Engineers: SMSgt (b) (6) , MSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6) , MSgt (b) (6) , MSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) (b) (6) MSgt (b) (6) TSgt (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6) , SrA (b) (6)
  - (3) Avionics: TSgt (b) (6)
- d. **Entomologist:** Lt Col (b) (6) (b) (6) (safety briefer)
- e. **Flying Data:**
  - (1) Spray Sorties/Hours: 2/1.6
  - (2) Ferry Sorties/Hours: 2/4.1

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 40 gal
- e. Gallons Pesticide Applied: 26 gal
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 10 gal/BVA oil
- h. Other Additives Used: None
- i. Application Rate: 0.75 oz/acre

#### **4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 89-9105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 15, oriented straight down
- f. Pressure: 42-62 p.s.i.
- g. Flow Rate: 2.7 gallons per minute

#### **5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 1000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

#### **6. WEATHER OBSERVATIONS (25 Oct):**

- a. Winds (Direction/Speed):
  - (1) Ground: 180°/1-2 Knots
  - (2) Release Altitude: 180° /5 Knots
- b. Temperature (Degrees Fahrenheit): 80-77° F
- c. Relative Humidity: 70-84%
- d. Cloud Cover: Overcast
- e. Source: Aircraft/ground measurements

#### **7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: visual observation of aircraft course (GPS)
  - (2) Results: Good coverage throughout spray area; some areas were not treated (see remarks and attachment 1)
- b. Effectiveness:
  - (1) Technique/s Used: Biting midge numbers were determined prior to spraying using light traps (2 Oct) and CO<sub>2</sub> traps (3 Oct). Post-spray monitoring was carried out by Pest Management personnel.
  - (2) Results: Biting midge numbers were significantly reduced at the following locations following the application (e.g., 4 Oct):

	Date		
	2-Oct	3-Oct	4-Oct
Location			
Elliot Beach	110	400	2
Page Field	780	400	15
Outdoor Pool	700	800	2
Horse Island	300	125	15

#### **8. OPERATIONS TRAINING:**

The first spray of FY 13 provided some good training opportunities for 910 OG members. Along with several crewmembers accomplishing spray currency events, three crewmembers gained valuable experience towards completion of their aerial spray certification. By participating in the installation brief, Maj J George completed upgrade to aerial spray aircraft commander. Also this mission allowed MSgt C Rilling, his first opportunity to fly an actual pesticide sortie. His FE spray certification should be completed in the local area in the near future. Unfortunately for MSgt Soles, an upgrade spray operator candidate, problems with the system (discussed in Remarks section) prohibited his ability to complete his upgrade

training. His ULV certification completion date will be dictated by his availability to participate in scheduled future ULV spray trips.

**9. MX TRAINING:**

No significant training events noted.

**10. REMARKS:** This was the first application of FY2013 at Parris Island and midges were present in moderate numbers based on trap counts and personal experience via landing counts. On 2 Oct, a spray sortie was cancelled due to thunderstorms. A calibration was carried out that day and during the process, nozzle clogging occurred at several sites. The nozzles were cleared by Spray Maintenance personnel and on 3 Oct an actual spray sortie went forward. During the sortie the ULV nozzles again clogged and the aircraft was forced to land and shut down engines. Spray Maintenance again cleared the nozzles and the aircraft returned to Parris Island to complete the spray. However, once again, several nozzles clogged and the sortie had to be truncated. Decreasing visibility as civil twilight approached negated any further work. At this time we have not specifically identified the cause of the clogging. We are examining both the pesticide and the processes currently used to load and clean the MASS; this includes a consultation with a representative from the manufacturer (AMVAC). About 2/3 of the total prescribed area was sprayed and trap results indicated good control in those areas and in areas where the spray cloud drifted (See Attachment 1). We used a 1,000 ft offset during the spray based on wind speed and direction. The next spray mission to Parris Island is scheduled for 15-19 Oct.

//signed//

(b) (6) (b) (6)

**Lt Col, USAFR**

**DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

Attachment 1. Flight path of aircraft while applying Dibrom, 3 Oct 2012. Blue indicates spray boundaries. Blue circles at the NW and SE edges of the block are locations of bald eagle nests. Green blocks are the spray-on areas. Grey dots are path of the aircraft. Wind was from the south.





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

9 Sept 12

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Parris Island MCRD, SC

1. Aerial spray mission controlling biting midges and mosquitoes with insecticide to reduce the negative impact on outdoor training at Parris Island MCRD, SC.

2. Concept of Operations:

a. 1 October (Monday)  
1700 Depart KYNG  
1900 Land KNBC

b. 2-3 October (Tuesday, Wednesday)  
1400 Installation Brief  
1700 Depart KNBC  
1930 Land KNBC

c. 4 October (Thursday)  
1700 Depart KNBC (training or weather backup sortie)  
1930 Land KNBC

d. 5 October (Friday)  
0800 Show KNBC  
0930 Depart KNBC  
1130 Land KYNG

3. LtCol (b) (6) (b) (6) will be the Mission Commander. LtCol (b) (6) (b) (6) will be the Aircraft Commander. Support at Parris Island MCRD and Beaufort MCAS has been completed.

(b) (6), MSgt, USAFR  
757AS Aerial Spray

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**JB CHARLESTON, SC 3-6 September 2013**

**1. MISSION BASICS:**

- a. Installation Sprayed: JB Charleston, South Carolina
- b. Mission Duration: 3-6 September 2013
- c. Purpose of Application: Contingency vector and nuisance control of salt marsh mosquitoes on the Naval Weapons Station area of JB Charleston
- d. Application Date: 5 September 2013
- e. Times of Application: 2135- 0015 Zulu
- f. Acres Treated: 17,860
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) ,  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 4 Sept 2013
- i. Date of Waste Generation acceptance: 6 July 2012
- j. Installation In-Briefing: (When/Where/Briefer/s): Lt Col (b) (6) Lt Col (b) (6) Lt Col (b) (6) Lt Col (b) (6) Capt (b) (6) MSgt (b) (6) Tony (b) (6) and the  
628 CES, 1000 5 September 2013
- k. Mission Identifier: QENRK3501246

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6) (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) , Capt (b) (6)
  - (2) Navigator: Lt Col (b) (6)
  - (3) Flight Engineer: MSgt (b) (6)
  - (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , SSgt (b) (6) ,  
TSgt (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6) , TSgt (b) (6)
  - (3) Avionics: SSgt (b) (6)
- d. **Entomologist:** Lt Col (b) (6) (b) (6) Lt Col (b) (6) (b) (6)
- e. **Flying Data:**
  - (1) Training Sorties/Hours: 1/ 2.7
  - (2) Ferry Sorties/Hours: 2/4.4

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 120 gallons
- d. Gallons Pesticide Applied: 120 gallons
- e. Gallons and Name Diluent Used: N/A
- f. Gallons and Name of Flush Used: 10 Gallons HAN
- g. Other Additives Used: None
- h. Application Rate: 0.86 oz/acre



## **APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99104
- b. Spray System (Modules Used) and System ID #: 1
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: 3003
- e. Nozzle Orientation & Number Used: 28 Total; 14 left, 14 right
- f. Pressure: 45 p.s.i.
- g. Flow Rate: 6.0 gallons/minute

## **5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: 1000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 KTS

## **6. WEATHER OBSERVATIONS:** Wind; 350 at 10 knots (average) on aircraft; Ground observation were 2-4 knots from same direction. Temp; 83 degrees F; Humidity 76 percent.

## **7. SPRAY MONITORING:** Pre and Post spray mosquito collections were taken at 5 locations using CO<sub>2</sub>-baited CDC mosquito traps.

Trap 1: (DTP)	912 females (30 Aug); 52 females (9 Sept) 94 % reduction
Trap 2: SPAWAR:	944 females (30 Aug); 149 females (9 Sept) 84 % reduction
Trap 3: (Golf Course)	1014 females (30 Aug); 164 females (9 Sept) 83% reduction
Trap 4: (NPTU)	884 females (30 Aug); 168 females (9 Sept) 81% reduction
Trap 5: Wharf A	1288 females (30 Aug) 42 Female (9 Sept) 96 % reduction

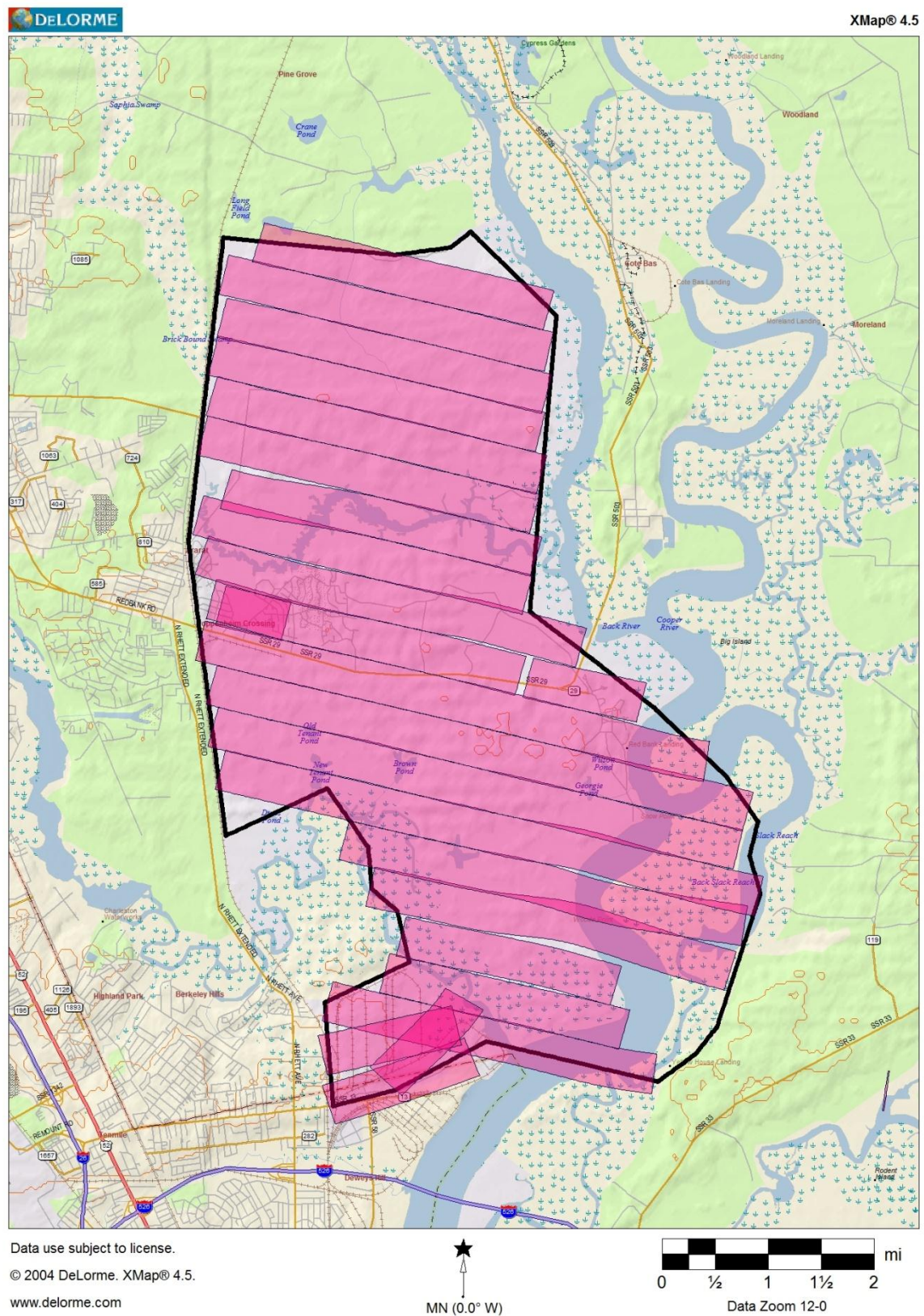
**8. REMARKS:** This application is the second adulticide application conducted at the Naval Weapons Station at JB Charleston for FY 13. No significant problems were encountered during this application, and results appear to be excellent. Because of the large dredge spoil and marshlands associated with the Naval Weapons Station, future larvicide operations are being considered. While we appreciate the sincere support we encountered from ALL sections at JB Charleston, special thanks goes to (b) (6) for his thorough coordination at all levels.

//signed//

Lt Col (b) (6)(b) (6) Ph.D.  
Pest Management Professional



Attachment 1. Application to Naval Weapons Station, JB Charleston September 5, 2013. Magenta blocks indicate application locations.





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

22 August 13

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Joint Base Charleston, SC.

1. One C-130 will be available 3-6 Sept. 2013 in response to a requested aerial spray to control adult mosquitoes for Joint Base Charleston. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel of JB Charleston. Operations will be conducted out of JB Charleston.

2. Concept of Operations:

**SCHEDULE: (All times local)**

**a. 3 Sept. (Tuesday)**

1400L Show KYNG  
1600L Depart KYNG  
1800L Land KCHS

**4-5 Sept. (Wednesday- Thursday)**

Sunset: 1940-1939

1630L Show KCHS  
1800L Depart KCHS (Spray JB Charleston)  
2030L Land KCHS

**6 Sept. (Friday)**

0930L Show KCHS  
1130L Depart KCHS  
1330L Land KYNG

**3. SPRAY PARAMETERS:**

- a. Altitude:** 150' AGL
- b. Ground Speed:** 200 knots
- c. Pesticide:** Trumpet EC®
- d. Application Rate:** 1.0-1.2 oz/acre
- e. Flow Rate:** 7.3 – 8.7 Gallons/Minute
- f. Acreage:** Approximately 20,000 acres

**g. Swath Width:** 2000 foot

4. Lt Col (b) (6) (b) (6) will act as Mission Commander.
5. Lt Col (b) (6) will act as Aircraft Commander.
6. Support required at JB Charleston has been completed.

(b) (6), TSgt, USAFR  
757AS Aerial Spray Flight Engineer



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

2 February 2012

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray Application at Luke AFB

1. One C-130 aerial spray equipped aircraft will be available 5-15 March to proceed from Youngstown ARS, OH and stage at Luke AFB, AZ. The mission purpose is the control of invasive weed species by aerial spray application on Barry Goldwater Range, semi-annual currency events, and proficiency training.

**2. Concept of Operations:**

a. 5 March (Monday)  
0800 Show KYNG  
1000 Depart KYNG  
1340 Land KLUF

b. 6-14 March (Tuesday-Wednesday) Range: 0620-0800  
0400 Show KLUF  
0600 Depart KLUF  
0830 Land KLUF

c. 15 March (Thursday)  
0600 Show KLUF  
0800 Depart KLUF  
1540 Land KYNG

**3. Spray Configuration:**

- a. MASS – SP3G
- b. MI: QZNRK9901065
- c. Parameters –100' AGL and above
- d. Chemical – Glyphosate (Roundup)

4. Maj (b) (6)(b) (6) will serve as Mission Commander.

5. Support required at Luke AFB and Barry Goldwater range has been coordinated.

(b) (6)  
757<sup>th</sup> Aerial Spray, MSgt, USAFR





DEPARTMENT OF THE AIR FORCE  
757 Airlift Squadron – Aerial Spray Operations  
3976 King Graves Rd Unit 24  
Vienna OH 44473-5924

**910 AW AERIAL SPRAY UNIT – PEST MANAGEMENT's POST-  
MISSION REPORT FOR GRAND FORKS AFB ADULT  
MOSQUITO CONTROL  
5-8 August 2013**

**1. MISSION BASICS:**

- a. Installation Sprayed: Grand Forks AFB North Dakota
- b. Mission Duration: 5-7 August 2013
- c. Purpose of Application: Control adult nuisance and vector mosquitoes
- d. Application Date 6 August 2013
- e. Time of Application (Local): 2000 -2045
- f. Acres Treated: 9,100 (6 August)
- g. Project Coordinator/s (Name/Rank, Title, Phone #): MSgt (b) (6) NCOIC Pest Management Shop, DSN (b) (6)
- h. Date Spray Map Last Approved: 6 August 2013
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): 6 August; GFAFB CE Conference Room, Lt Col (b) (6) Lt Col (b) (6) Maj (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Maj. (b) (6)
- b. Entomologist (Category 11): (b) (6) Lt Col (b) (6)
- c. Aircrew:
  - 1) Pilots: Lt Col (b) (6) Lt Col (b) (6) Maj (b) (6)
  - 2) Navigators: Lt Col (b) (6)
  - 3) Flight Engineer: MSgt (b) (6)
  - 4) Spray Operators: TSgt (b) (6) TSgt (b) (6) SSgt (b) (6)
- d. Maintenance:
  - 1) Spray Maintenance: MSgt (b) (6) TSgt (b) (6) TSgt (b) (6) SSgt (b) (6) Crew Chief(s): MSgt (b) (6) SrA (b) (6)
  - 2) Avionics: TSgt (b) (6)
- e. Flying Data:
  - (1) Spray Sorties/Hours: 1/1.6 on 6 August; total 1.6
  - (2) Ferry Sorties/Hours: 2/6
  - (3) Mission ID: QENRK3501217

**3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 73 gal Trumpet®
- d. Gallons sprayed: 71
- e. Gallons and Name of Flush Used: 10 gal HAN
- f. Other Additives Used: none
- g. Application Rate: 1.0 oz/acre Trumpet®

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99107
- b. Spray System (Modules Used) and System ID #: 3
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 30 straight down
- f. Pressure (PSI): 41-52 PSI
- g. Flow Rate: 7.25 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off Set: 750'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 340-350° @ 9 knots (aerial); 330-10° @ 4-7 knots (ground)
- b. Temperature (Degrees Fahrenheit): 63.5 °F
- c. Relative Humidity: 60-75%
- d. Cloud Cover: scattered clouds
- e. Source: Ground observations and onboard aircraft readings

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. The 319 CES pest management conducts adult mosquito trapping to monitor mosquito densities on base.
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito Magnet traps. See Attachment 1 for Magnet trap locations.
  - (2) Results: GFAFB pest management reported an average of:

133 average per trap on August 5, 2013

14 average per trap on August 7

12 average per trap on August 12

Overall reduction of 90% of mosquitoes following spray of 6 August.

**8. REMARKS:** A trap average of 133 and a collection of a West Nile virus-positive bird on GFAFB prompted GFAFB to make the decision to make an aerial spray application. Spray operations were conducted on the evening of August 6, 2013. Spraying was delayed for 30 minutes until wind speeds were below 9 knots. Spraying commenced smoothly and effectively on August 6 (See Attachment 2). Subsequent trap collections demonstrated an effective reduction of 90%. Magnet collections the following week demonstrated a long-term effectiveness of the August 6 spray mission.

The City of Grand Forks declined to have their town included in the spray mission because their primary target is the night-flying vector of West Nile virus (*Culex tarsalis*) and Air Force spraying does not currently include operations after sunset.

Special thanks to MSgt (b) (6) and the staff of the GFAFB pest control shop.

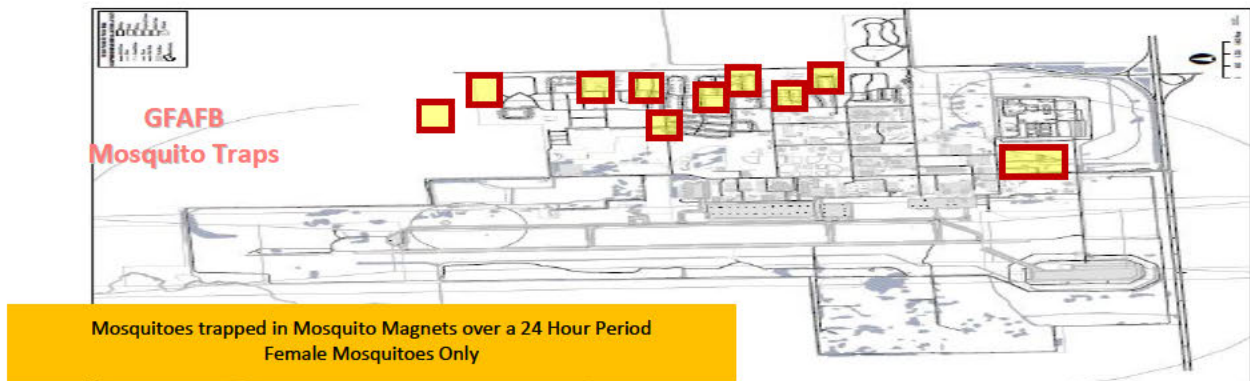
//signed//

(b) (6)

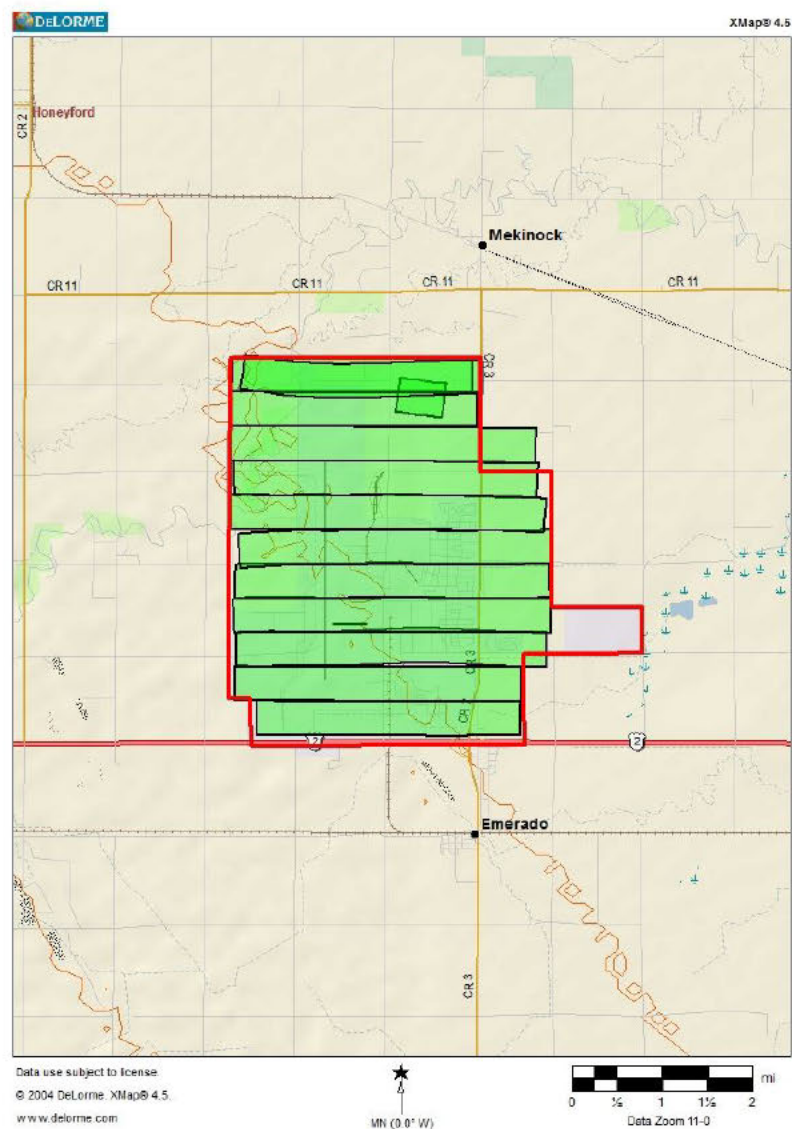
, Lt Col, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL



**Attachment 1. Mosquito Magnet Location, GFAFB.**



**Attachment 2. Image shows Grand Forks AFB, pesticide application swaths during the application on 6 August 2013.**



**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**PARRIS ISLAND MCRD, SC 8-12 April 2013**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 8-12 April 2013
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control/Testing
- d. Application Date: 9, 10 April 2013
- e. Time/s of Application (Local): 1730-1837; 1858-1928
- f. Acres Treated: 463 (testing); 6145 Actual
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6)  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 9 April 2013
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 9 April 2013 with (b) (6), (b) (6)  
(b) (6) Lt Col (b) (6) and Maj (b) (6) at NREAO
- k. Mission Identifier: QZNRK9901098

**2. OPERATIONAL:**

- a. **Mission Commander:** Maj (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6), Lt Col (b) (6)
  - (2) Navigators: Lt Col (b) (6), Maj (b) (6)
  - (3) Flight Engineers: SMSgt (b) (6), MSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6), MSgt (b) (6), TSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6), TSgt (b) (6), TSgt (b) (6)  
(b) (6)
  - (2) Crew Chiefs: MSgt (b) (6), SrA (b) (6)
  - (3) Avionics: MSgt (b) (6)
- d. **Entomologists:** Lt Col (b) (6) Lt Col (b) (6) (safety briefer)
- e. **Flying Data:**
  - (1) Spray Sorties/Hours: 3/4.5
  - (2) Ferry Sorties/Hours: 2/4.0

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 45 gal
- e. Gallons Pesticide Applied: 36 gal (3 testing, 33 actual)
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 5 gal/HAN
- h. Other Additives Used: None
- i. Application Rate: 0.75 oz/acre (testing); 0.69 oz/acre (actual)

#### **4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 89-9107
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 14, oriented straight down
- f. Pressure: 42-62 p.s.i.
- g. Flow Rate: 2.7 gallons per minute(testing), 2.5 gallons per minute (actual)

#### **5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 1000'
- c. Spray Release Altitude: 300' (testing), 150' (actual)
- d. Ground Speed: 200 Knots (338 Feet/Second)

#### **6. WEATHER OBSERVATIONS (25 Oct):**

- a. Winds (Direction/Speed):
  - (1) Ground: 160-210°/3-8 Knots (testing), 180° @ 4-7 Knots (actual)
  - (2) Release Altitude: 190° /10 Knots
- b. Temperature (Degrees Fahrenheit): 76-80° F (testing); 79° F (actual)
- c. Relative Humidity: 64-67%
- d. Cloud Cover: Overcast
- e. Source: Aircraft/ground measurements

#### **7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: visual observation of aircraft course (GPS)
  - (2) Results: Good coverage throughout spray area (see Attachment 1)
- b. Effectiveness:
  - (1) Technique/s Used: Biting midge numbers were determined prior to spraying using light traps (2 Oct) and CO<sub>2</sub> traps (3 Oct). Post-spray monitoring was carried out by Pest Management personnel.
  - (2) Results: Light trap data pending. No adverse effects of spraying noticed. Midge activity prior to spray was significant. Low biting counts and little midge/mosquito activity noted after spray.

#### **8. Testing:**

A collaborative testing effort has been ongoing between the USAFR aerial spray group and the USDA Center for Medical and Veterinary Entomology (CMAVE). Objectives of the test carried out at Parris Island was to further validate the efficacy of applications of pesticides at 300' AGL, an altitude which could be used for night application of pesticides using NVG's. For the tests, transects of caged mosquitoes were placed along Wake Blvd (Attachment 2) and the Causeway (Attachment 3). Pesticide was aerially applied at 300' AGL in a flight line upwind and perpendicular to the transect of caged mosquitoes. Winds were largely unfavorable for the Wake Blvd test as the prevailing wind was within 30 degrees of being parallel to the line of flight, thereby limiting downwind drift of pesticide, and as a result, little mortality was seen distant from the line of flight. Winds from the Causeway test were much more favorable to downwind drift. Wind direction was approximately 45 degrees from the line of flight. Mortality of caged mosquitoes was complete over a majority of the causeway. These results indicate that a 300' AGL spray altitude is viable for control of mosquitoes, and that the effective swath width under ideal conditions may be wider than anticipated. We hope to continue these collaborative efforts with the USDA in future.

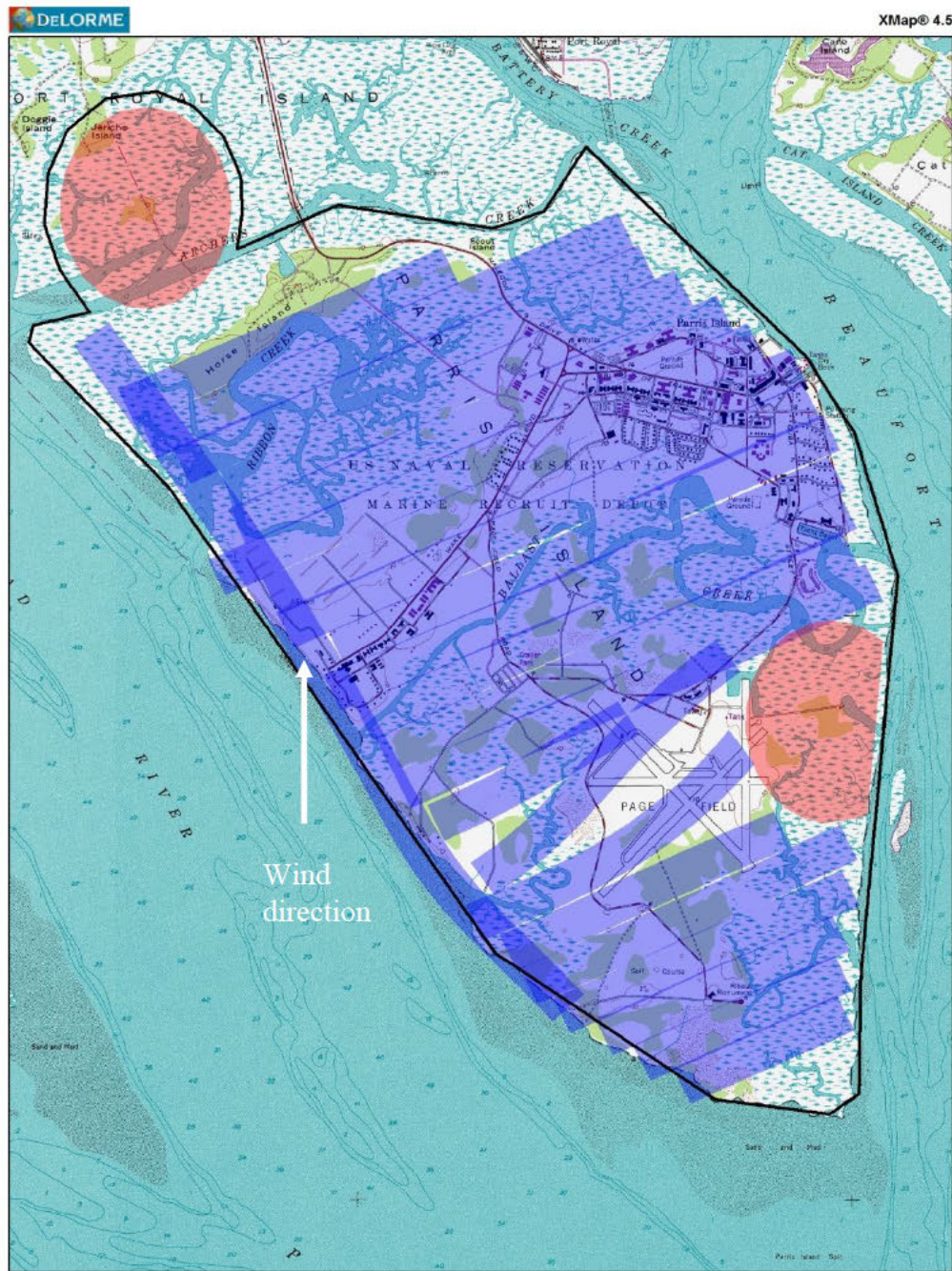
9. **REMARKS:** This was the first application of calendar year 2013 at Parris Island. Midges were present in significant numbers based on trap counts and personal experience via landing counts. After treatment, base personnel reported very little midge or mosquito activity throughout the island. No technical issues were encountered during the operational aspects of this mission.

//signed//

(b) (6)(b) (6) **Lt Col, USAFR**  
**DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL**



Attachment 1. Spray deposition of Dibrom, 19 April 2013. Red circles indicate no-fly, no-spray exclusion areas for bald eagle nesting sites. Blue areas indicate deposition locations.



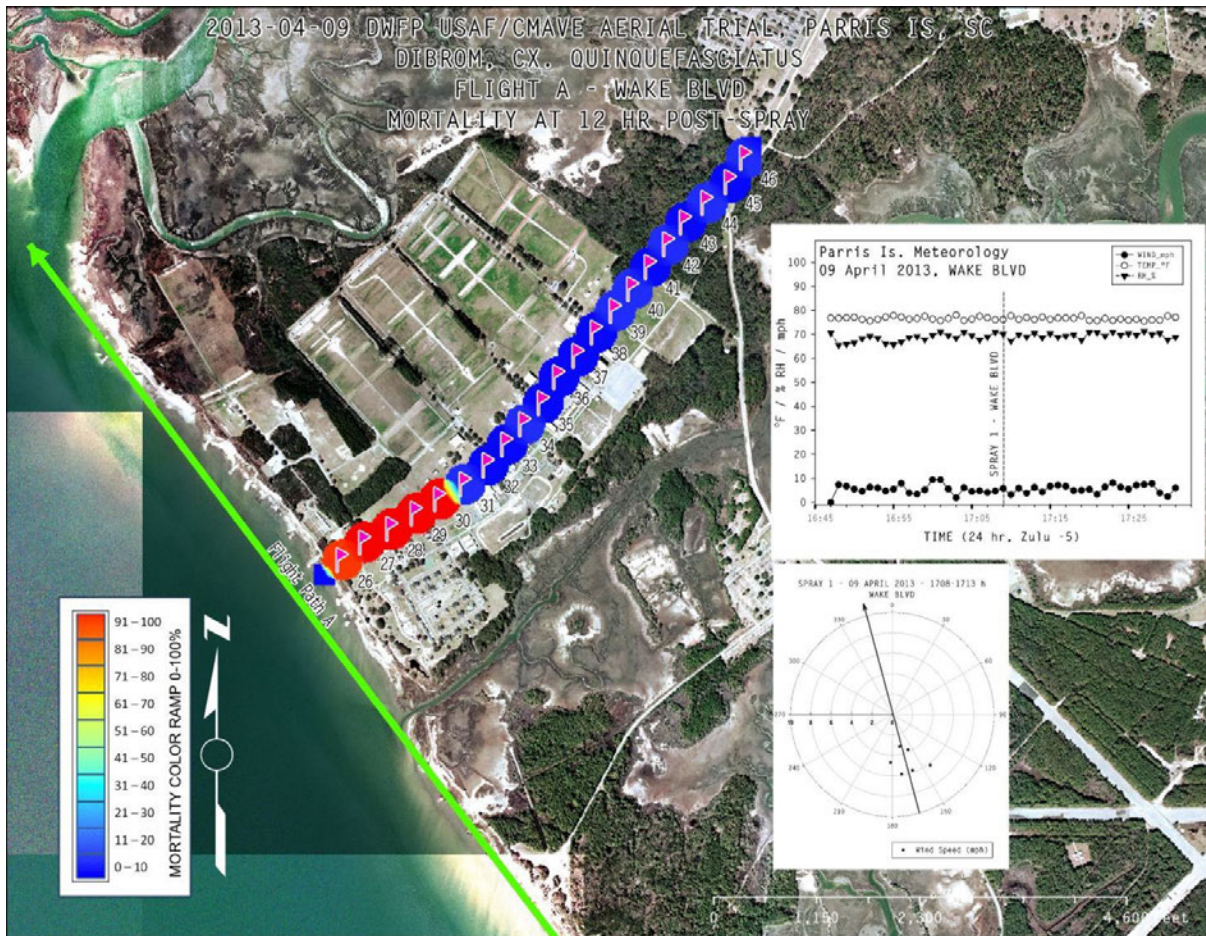
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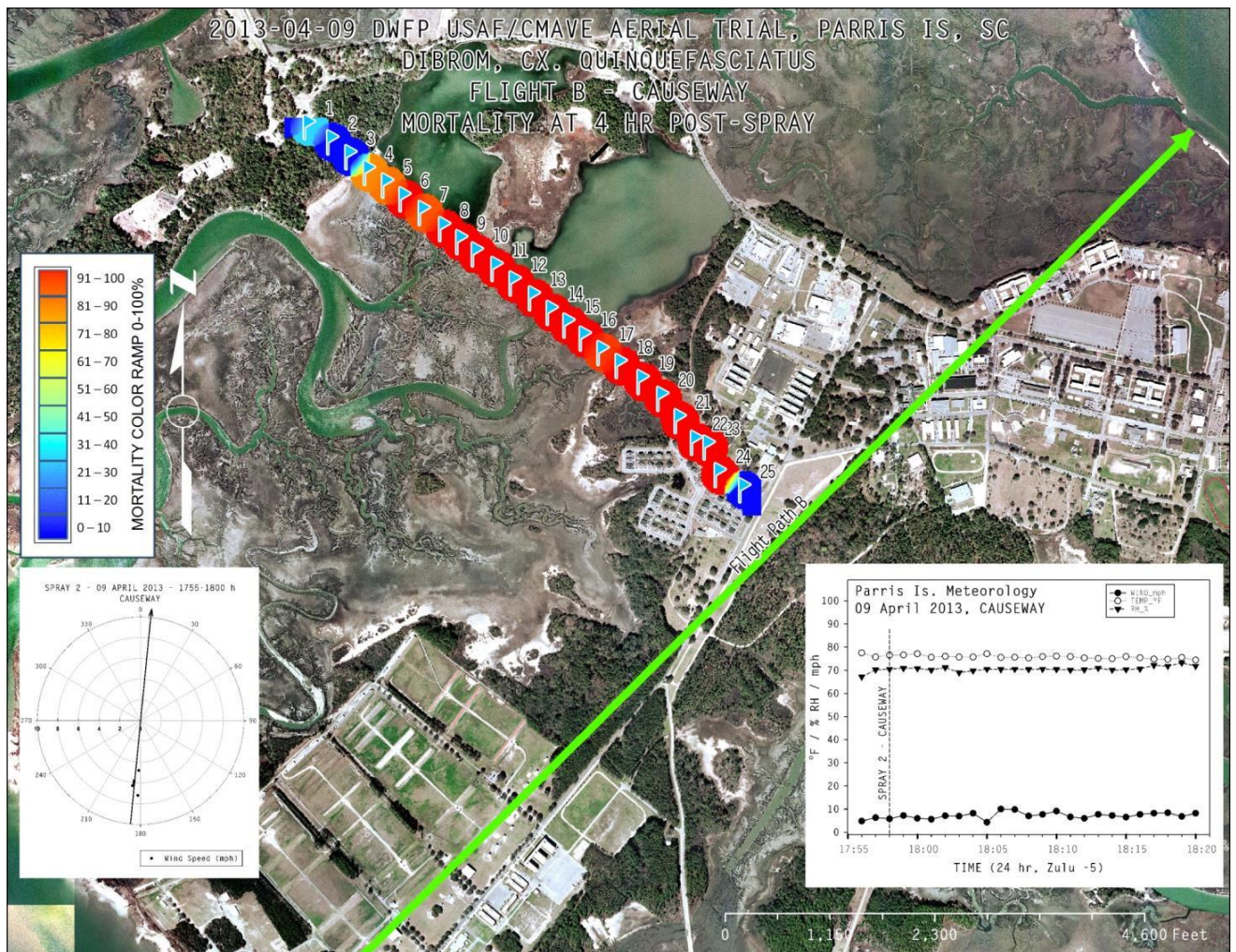


Attachment 2. Mortality of caged mosquitoes placed along Wake Blvd with meteorological data from time of application.





Attachment 3. Mortality of caged mosquitos placed along the Causeway on Parris island with meteorological data from time of application.







**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

28 March 13

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Parris Island MCRD, SC

1. Aerial spray training mission controlling biting midges and mosquitoes with insecticide to reduce the negative impact on outdoor training at Parris Island MCRD, SC.

2. Concept of Operations:

- a. 8 April (Monday)  
1700 Depart KYNG  
1900 Land KNBC
- b. 9 April (Tuesday)  
1300 Installation Brief  
1730 Depart KNBC  
2000 Land KNBC
- c. 10-11 April (Wednesday-Thursday)  
1730 Depart KNBC  
2000 Land KNBC
- d. 12 April (Friday)  
0900 Show KNBC  
1030 Depart KNBC  
1230 Land KYNG

**3. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**  
Dibrom-Naled Organophosphate insecticide  
Signal Word: Danger  
Flushing Agent: None
- b. **Application:** 0.75 oz/acre
- c. **Spray Altitude:** 150 Feet (300 feet for some applications)
- d. **Swath Width:** 1,000 Feet

- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 2.7 GPM

4. Maj. (b) (6) will be the Mission Commander. LtCol (b) (6) will be the Aircraft Commander. Support at Parris Island MCRD and Beaufort MCAS has been completed.

(b) (6), TSgt, USAFR  
757<sup>th</sup> Aerial Spray Flight Engineer



**DEPARTMENT OF THE AIR FORCE**  
**757 Airlift Squadron – Aerial Spray Operations**  
**3976 King Graves Rd Unit 24**  
**Vienna OH 44473-5924**

**910 AW AERIAL SPRAY UNIT -- POST-MISSION REPORT FOR  
GRAND FORKS AFB ADULT MOSQUITO CONTROL 8-12 July 2013**

**1. MISSION BASICS:**

- a. Installation Sprayed: Grand Forks AFB North Dakota
- b. Mission Duration: 8-12 July 2013
- c. Purpose of Application: Control adult nuisance and vector mosquitoes
- d. Application Date 10 July 2013
- e. Time of Application (Local): 1955 -2130 (10 July)
- f. Acres Treated: 11,518 (10 July)
- g. Project Coordinator/s (Name/Rank, Title, Phone #): MSgt (b) (6) NCOIC Pest Management Shop, DSN (b) (6)
- h. Date Spray Map Last Approved: 8 July 2013
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): GFAFB CE Conference Room, LtCol (b) (6) LtCol (b) (6) Major (b) (6) Capt (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Maj. (b) (6)
- b. Entomologist (Category 11): Major (b) (6)
- c. Aircrew:
  - 1) Pilots: Lt Col (b) (6) (b) (6) Capt (b) (6)
  - 2) Navigators: Lt Col (b) (6)
  - 3) Flight Engineer: MSgt (b) (6)
  - 4) Spray Operators: SMSgt (b) (6) TSgt (b) (6)
- b. Maintenance:
  - 1) Spray Maintenance: TSgt (b) (6) (Lead), TSgt (b) (6) SSgt (b) (6)
  - Crew Chief(s): MSgt (b) (6) SrA (b) (6)
  - 2) Avionics: TSgt (b) (6)

**Flying Data:**

- (1) Spray Sorties/Hours: 1/1.6
- (2) Ferry Sorties/Hours: 2/7.1
- (3) Mission ID: QZNRK9902189

**3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 90 gal Trumpet®
- d. Gallons and Name of Flush Used: 8 gal aromatic naptha
- e. Other Additives Used: none
- f. Application Rate: 1.0 oz/acre Trumpet®

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99103
- b. Spray System (Modules Used) and System ID #: 3

- c. Spray System Configuration: 2-Module System/Stainless Steel ULV fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 30 straight down
- f. Pressure (PSI): 41-52 PSI
- g. Flow Rate: 7.26 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off Set: 2000-4000' depending on wind speed
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 330-340° @ 10 knots (aerial); 2-4 knots (ground)
- b. Temperature (Degrees Fahrenheit): 78 °F
- c. Relative Humidity: 55-80%
- d. Cloud Cover: scattered clouds
- e. Source: Ground observations and onboard aircraft readings

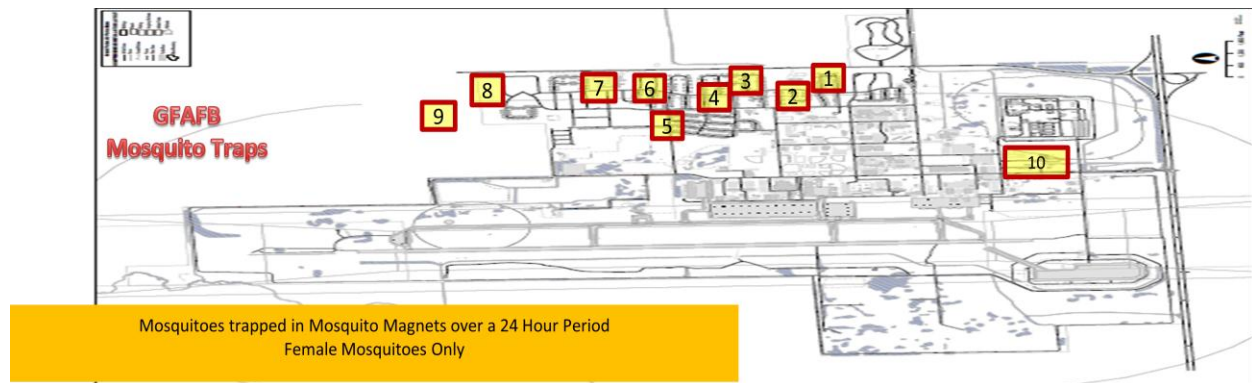
**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. The 319 CES pest management conducts adult mosquito trapping to monitor mosquito densities on base.
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito magnet traps
  - (2) Results: GFAFB pest management reported an overall reduction of 65% of all mosquitoes the day after sprays

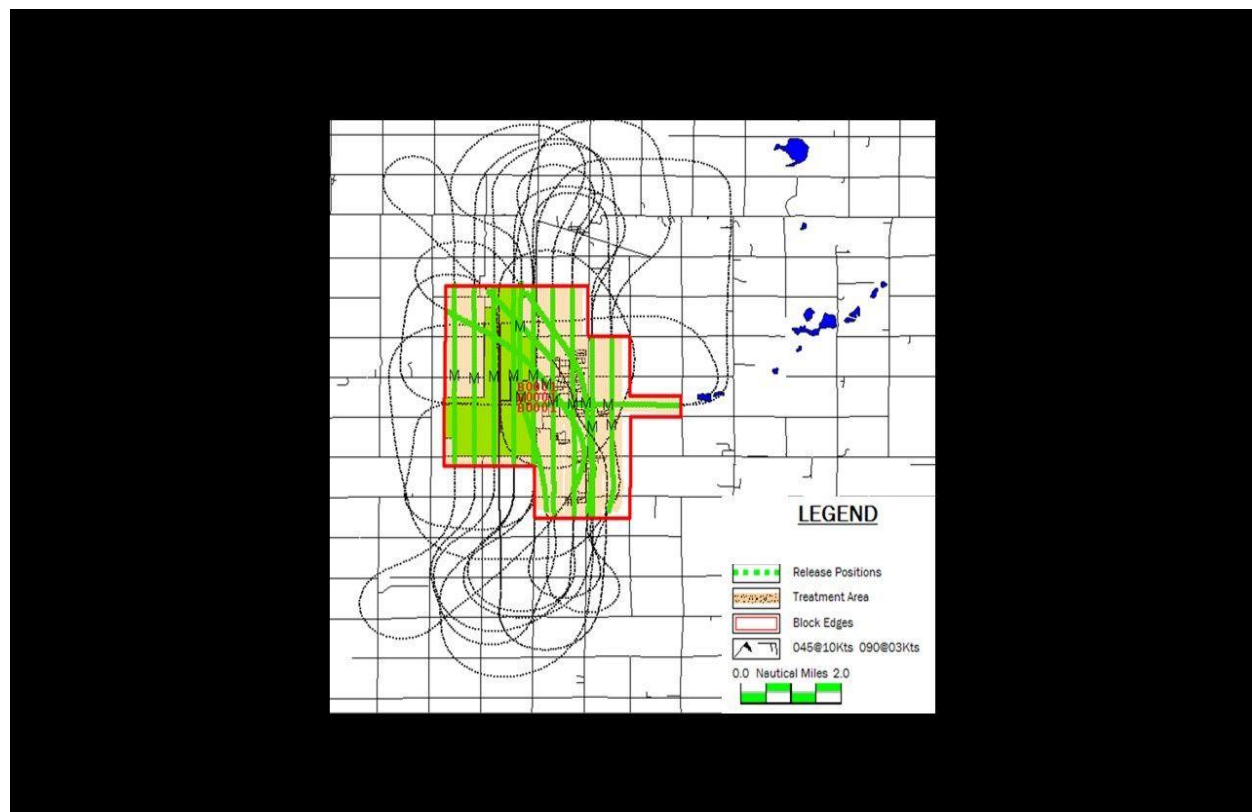
**8. REMARKS:** Continued moderate numbers (134 average) of mosquitoes prompted GFAFB to make the decision to make an aerial spray application. Spray operations for the evening of 9 July were delayed for 24 hours due to marginal weather conditions in addition to weather forecasts predicting higher temps and lighter winds for 10 July 2013. Post-spray trap count data showed acceptable mosquito reductions (65%, 47 average) following the application. Special thanks to MSgt (b) (6) and the staff of the GFAFB pest control shop.

//signed//

(b) (6), Maj, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL



Attachment 2. Image shows Grand Forks AFB, pesticide application swaths during the application on 10 July 2013.





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

18 April 2013

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Kings Bay NSB, GA

1. One C-130 will be available 9-12 May 2013 for the requested aerial spray insecticide mission to control nuisance and vector borne mosquitos. Aerial spray deployment to NAS Jacksonville will provide training for aerial spray aircrew, pest management personnel, and maintenance members in control of mosquito's which negatively impact outdoor training activities and create health hazards to naval personnel at Kings Bay Naval Submarine Base.

2. Concept of Operations:

- a. 9 May (Thursday)  
1445 Show KYNG  
1700 Depart KYNG  
1930 Land KNIP
- b. 10 May (Friday) & 11 May (Saturday)  
1530 Show KNIP  
1800 Depart KNIP  
2000 Land KNIP
- c. 12 May (Sunday)  
1000 Show KNIP  
1200 Depart KNIP  
1430 Land KYNG

**Adult mosquito control spray Parameters: (Kings Bay)**

**a. Pesticide:**

Dibrom® Concentrate  
Organophosphate Insecticide  
Signal Word: Danger  
Antidote: Atropine, 2-PAM  
Flushing Agent: BVA

**b. Application:** 0.7 oz/acre

**c. Spray Altitude:** 150 Feet

**d. Swath Width:** 2,000 Feet

**e. Ground Speed:** 200 Knots (338 Feet/Second)

**f. Acreage:** 15,000 Acres

**g. Spray-On Time:** 16 minutes

**h. Flow Rate:** 5.1 gallons/minute

3. LtCol (b) (6) will be the Aircraft Commander and Maj (b) (6) will be the Mission Commander.

4. Support required at Kings Bay NSB, GA and Jacksonville NAS, FL has been completed.

(b) (6), TSgt, USAFR  
757AS Aerial Spray





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

7 Jan 2010

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for NAS Jacksonville, FL Static Display

1. One Aerial Spray equipped C-130 will be available 8-9 Feb 2010 to provide a static display for the attendees of the Tri-Services pest Management Convention. The personnel attending are DoD members serving the Air Force, Army and Navy installations. The 757AS was invited to provide this static display and give presentations regarding the Aerial Spray Mission.

2. Concept of Operations:

- a. 8 Feb (Monday)  
1500 Show KYNG  
1700 Depart KYNG  
2000 Land KNIP
- b. 9 Feb (Tuesday)  
1330-1700 Static Display KNIP  
1900 Depart KNIP  
2130 Land KYNG

3. Aircraft will be SP2G configured with ULV booms.

5. Maj (b) (6) will act as Aircraft Commander.

6. Support required at Jacksonville NAS, FL has been completed.

(b) (6)  
757 Aerial Spray

, Capt, USAFR



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

4 Feb 13

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Hill AFB/UTTR, UT

1. Aerial Spray flight proficiency training will be accomplished on targets 21, 24, Nord LZ, and Wildcat at the Utah Test and Training Range(UTTR) applying Krovar controlling vegetation (i.e Halogenton) growth to aid bombing mission test evaluations and unexploded ordnance recovery. Two Spray configured C-130's will be available 11 Mar – 22 Mar 13 for the requested spray mission. One Support C-130 will be used for position and deposition of spray ground personnel and maintenance equipment.

2. Concept of Operations:

- a. 11 March (Monday)
  - 0800 Show KYNG
  - 1000 1<sup>st</sup> Spray aircraft depart KYNG
  - 1015 2<sup>nd</sup> Spray aircraft depart KYNG
  - 1030 Support aircraft depart KYNG
  - 1300 1<sup>st</sup> Spray aircraft land KHIF
  - 1315 2<sup>nd</sup> Spray aircraft land KHIF
  - 1330 Support aircraft Land KHIF
  - \* Support aircraft returns to KYNG at 1705 on 12 March
- b. 12 March -15 March (Tuesday-Friday)
  - 0500 Show KHIF
  - 0700-0730 Both spray aircraft depart KHIF
  - 1000 Support aircraft depart KHIF
  - 1230-1300 Both spray aircraft land KHIF
  - 1705 Support aircraft land KYNG
  - \*2 sorties planned each day per aircraft
- c. 16 March
  - 0800 Show KYNG Support aircraft
  - 1030 Depart KYNG
  - 1335 Land KHIF

- d. 17 March  
0600 Show KHIF  
0800 Support aircraft Depart KHIF  
1505 Support aircraft Land KYNG
- e. 18 March -21 March (Monday-Thursday)  
0500 Show KHIF  
0700-0730 Both spray aircraft depart KHIF  
1230-1300 Both spray aircraft Land KHIF  
\*2 sorties planned each day per aircraft
- f. 21 March (Thursday)  
0830 Support Crew show KYNG  
1030 Support aircraft KYNG  
1335 Support aircraft land KHIF
- g. 22 March (Friday)  
0730 Show KHIF  
0930-1000 Both Spray aircraft and Support aircraft depart KHIF  
1630-1705 Both Spray aircraft and Support aircraft land KYNG

3. SPRAY PARAMETERS:

Herbicide: Krovar 1DF®  
Application Rate: 22.5 gal/acre (10 lbs of Krovar in 22.4 gal of water)  
Acreage: 1,800 Acres  
Ground Speed: 200 Knots (337.55 ft/sec)  
Spray Altitude: 100 Feet AGL  
Swath Width: 35 Feet  
Flow Rate: 366.1 Gallons/Minute

4. LTC (b) (6) (11 March-16 March) & Maj (b) (6) (17 March-22 March) are the Mission Commanders.

5. LTC (b) (6) and Maj (b) (6) are the Aircraft Commanders 11 March-16 March  
and Maj (b) (6) and Maj (b) (6) are the Aircraft Commanders 17 March – 22 March.

6. Support required at Hill AFB and the UTTR has been completed.

(b) (6), TSgt, USAFR  
757<sup>TH</sup> Aerial Spray Flight Engineer



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

4 Feb 13

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Hill AFB/UTTR, UT

1. Aerial Spray flight proficiency training will be accomplished on targets 21, 24, Nord LZ, and Wildcat at the Utah Test and Training Range(UTTR) applying Krovar controlling vegetation (i.e Halogenton) growth to aid bombing mission test evaluations and unexploded ordnance recovery. Two Spray configured C-130's will be available 11 Mar – 22 Mar 13 for the requested spray mission. One Support C-130 will be used for position and deposition of spray ground personnel and maintenance equipment.

2. Concept of Operations:

- a. 11 March (Monday)
  - 0800 Show KYNG
  - 1000 1<sup>st</sup> Spray aircraft depart KYNG
  - 1015 2<sup>nd</sup> Spray aircraft depart KYNG
  - 1030 Support aircraft depart KYNG
  - 1300 1<sup>st</sup> Spray aircraft land KHIF
  - 1315 2<sup>nd</sup> Spray aircraft land KHIF
  - 1330 Support aircraft Land KHIF
  - \* Support aircraft returns to KYNG at 1705 on 12 March
- b. 12 March -15 March (Tuesday-Friday)
  - 0500 Show KHIF
  - 0700-0730 Both spray aircraft depart KHIF
  - 1000 Support aircraft depart KHIF
  - 1230-1300 Both spray aircraft land KHIF
  - 1705 Support aircraft land KYNG
  - \*2 sorties planned each day per aircraft
- c. 16 March
  - 0800 Show KYNG Support aircraft
  - 1030 Depart KYNG
  - 1335 Land KHIF

- d. 17 March  
0600 Show KHIF  
0800 Support aircraft Depart KHIF  
1505 Support aircraft Land KYNG
- e. 18 March -21 March (Monday-Thursday)  
0500 Show KHIF  
0700-0730 Both spray aircraft depart KHIF  
1230-1300 Both spray aircraft Land KHIF  
\*2 sorties planned each day per aircraft
- f. 21 March (Thursday)  
0830 Support Crew show KYNG  
1030 Support aircraft KYNG  
1335 Support aircraft land KHIF
- g. 22 March (Friday)  
0730 Show KHIF  
0930-1000 Both Spray aircraft and Support aircraft depart KHIF  
1630-1705 Both Spray aircraft and Support aircraft land KYNG

3. SPRAY PARAMETERS:

Herbicide: Krovar 1DF®  
Application Rate: 22.5 gal/acre (10 lbs of Krovar in 22.4 gal of water)  
Acreage: 1,800 Acres  
Ground Speed: 200 Knots (337.55 ft/sec)  
Spray Altitude: 100 Feet AGL  
Swath Width: 35 Feet  
Flow Rate: 366.1 Gallons/Minute

4. LTC (b) (6) (11 March-16 March) & Maj (b) (6) (17 March-22 March) are the Mission Commanders.

5. LTC (b) (6) and Maj (b) (6) are the Aircraft Commanders 11 March-16 March  
and Maj (b) (6) and Maj (b) (6) are the Aircraft Commanders 17 March – 22 March.

6. Support required at Hill AFB and the UTTR has been completed.

(b) (6), TSgt, USAFR  
757<sup>TH</sup> Aerial Spray Flight Engineer



DEPARTMENT OF THE AIR FORCE  
YOUNGSTOWN AIR RESERVE STATION  
757AS/AERIAL SPRAY UNIT  
VIENNA OH 44473-5924

CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
UTAH TEST AND TRAINING RANGE, 11-22 MAR 2013

1. MISSION BASICS:

- a. Installation Sprayed: Utah Test and Training Range (UTTR)
- b. Mission Duration: 11-22 Mar 2013
- c. Purpose of Application: Weed control on UTTR Targets 21, 23 and 24, facilitate UXO recovery
- d. Application Dates: 12-15, 18 Mar 2013
- e. Times of Application (Local): see attachment 1
- f. Acres Treated: 1,094
- g. Ferry Sorties/hours: 4/19.5 + 6/30.8 support sorties
- h. Spray sorties/hours: 14/19.3 + 6/11.7 flush sorties
- i. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) Range Specialist/DSN (b) (6)  
(b) (6) Environmental Coordinator (b) (6) DSN (b) (6)
- j. Date Spray Map Last Approved: 8 Mar 2013
- k. Installation In-Briefing: (When/Where/Briefer/s): Maj (b) (6) Lt Col (b) (6)

2. OPERATIONAL:

- a. Mission Commanders: Lt Col (b) (6) (11-17 Mar); Maj (b) (6) (18-22 Mar)

- b. Aircrew  
1st HALF AIRCREW (11-17 Mar)

AIRCREW 1: CALL SIGN: SPRAY 05

Pilots: Lt Col (b) (6) Maj (b) (6)

Navigators: Lt Col (b) (6)

Flight Engineers: TSgt (b) (6)

Spray Operators: SMSgt (b) (6) TSgt (b) (6) SrA (b) (6)

Crew Chiefs: TSgt (b) (6) SrA (b) (6)

AIRCREW 2: CALL SIGN: SPRAY 06

Pilots: Maj (b) (6) Maj (b) (6)

Navigators: Lt Col (b) (6)

Flight Engineers: MSgt (b) (6)

Spray Operators: MSgt (b) (6) SMSgt (b) (6) TSgt (b) (6)

Crew Chiefs: MSgt (b) (6) SrA (b) (6)

2nd HALF AIRCREW (18-22)

AIRCREW 1: CALL SIGN: SPRAY 05

Pilots: Maj (b) (6) Capt (b) (6)

Navigators: Lt Col (b) (6)

Flight Engineers: SMSgt (b) (6)

Spray Operators: CMSgt (b) (6) SMSgt (b) (6) MSgt (b) (6)  
Crew Chiefs: TSgt (b) (6) SrA (b) (6)

AIRCREW 2: CALL SIGN: SPRAY 06

Pilots: Maj (b) (6) Maj (b) (6) Capt (b) (6)

Navigators: Lt Col (b) (6)

Flight Engineers: SMSgt (b) (6) MSgt (b) (6)

Spray Operators: SMSgt (b) (6) MSgt (b) (6) MSgt (b) (6)

Crew Chiefs: MSgt (b) (6) SrA (b) (6)

- c. Entomologists: Lt Col (b) (6) application supervision, Cat 11 (UTTR, 11-17 Mar), Lt Col (b) (6) pesticide mixing and loading Cat 11 (Hill AFB, 11-17 Mar), safety briefer, onboard application supervision (18 Mar)
- d. ARMS: SMSgt (b) (6)
- e. Range: Lt Col (b) (6) Maj (b) (6) and Capt (b) (6)

### 3. PESTICIDE:

- a. Trade Name: Krovar<sup>®</sup> IDF
- b. EPA Registration Number: 352-505
- c. Formulation Sprayed: 10 lbs Krovar<sup>®</sup> per 22.5 gallons formulation.
- d. Gallons Pesticide Mix Loaded: 24,621
- e. Gallons Pesticide Mix Applied: 24,621
- f. Formulation Used: 450 lbs Krovar<sup>®</sup>, 4.0 gal StaPut<sup>®</sup>, ½ gal Foam Fighter<sup>®</sup>, 200 ounces Hi-Light<sup>®</sup> Dye, remainder water per 1000 gal of spray mix.
- g. Gallons and Name of Flush Used: 900 gal water
- h. Other Additives Used: 102 gal StaPut<sup>®</sup>; 40.6 gal Hi-Light<sup>®</sup> dye; 12.7 gal No-foam
- i. Application Rate: 22.5 gal/acre

### 4. APPLICATION EQUIPMENT:

- a. Aircraft Tail Number: 99105, 99106
- b. Spray System (Modules Used) and System ID #: 3 and 5.
- c. Spray System Configuration: 3-Module System/ UHV Fuselage Booms
- d. Nozzle Type/Size: UHV Fuselage
- e. Nozzle Orientation & Number Used: 2 oriented straight back.
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 366 gallons per minute.

### 5. APPLICATION PARAMETERS:

- a. Swath Width Flown: 35'
- b. Spray Off-set: None
- c. Spray Release Altitude: 100' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

### 6. WEATHER OBSERVATIONS:

- a. Winds (Direction/Speed):
  - (1) 12 Mar– beginning calm; ending 300° at 5 knots
  - (2) 13 Mar – beginning 190° at 9; ending 205° at 11 knots
  - (3) 14 Mar– beginning light & variable; ending 170° at 6 knots
  - (4) 15 Mar– 220° at 5 knots
  - (5) 18 Mar– beginning 130 at 7; ending 220° at 6 knots



- b. Temperature (Degrees Fahrenheit):
  - (1) 12 Mar – 41°-60° F
  - (2) 13 Mar – 37° - 59° F
  - (3) 14 Mar– 39° - 61° F
  - (4) 15 Mar– 32° - 55° F
- c. Relative Humidity:
  - (1) 12 Mar – 53- 31 %
  - (2) 13 Mar – 51- 37 %
  - (3) 14 Mar– 56-37%
  - (4) 15 Mar– 47-26%
- d. Cloud Cover: Variable from 0 % to 100 % over the duration of the project; but mostly sky clear while spraying
- e. Source: Ground observations at UTTR Target 21 and 24

7. **SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique Used: blue dye pattern on targets and observations from personnel on the range (
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Techniques Used: monitoring of weed emergence in spring
  - (2) Results: will be determined this spring by range personnel

8. **REMARKS:** Deep snow on the targets the week prior to this application prevented EOD from surveying and clearing the targets (21, 23-24) and consequently no personnel were admitted onto the targets. Therefore, this year's application is unique in that all of the spraying was conducted using the DGPS agricultural spraying system (Wingman) for proper placement of aircraft. In the past, it was felt that it would not be practical for pilots to maintain the plane within a few feet of the swath line using only the light bar. However, after reviewing the track/path of the aircraft while spraying we found that nearly all passes over the target were maintained within the 35 foot swath width. Therefore, it is our opinion that ground personnel on the target using trucks as spotting landmarks for the spray aircraft may not be necessary (pending actual efficacy results of this year's spray). We do maintain that at least one person should be located on each target to observe and provide confirmation/feedback to the aircraft on the uniformity of the application. No spraying was conducted on 16-17 March as the UTTR was not open. UTTR staff have expressed an interest in adopting new target areas and cooperating with the 75CES to treat cheat grass for fire suppression during the same early-spring timeframe. A DoD approved active ingredient (herbicide) is available (imazapic ammonium salt) and is effective against cheat grass as well as halogeton. An updated EA should be completed by UTTR and 75CES staff at least 90 days prior to an application in 2014. Because of an increased swath width and smaller application rate, it is possible that all areas can be sprayed in a similar amount of time (2 weeks). Specific spray data for the mission is shown in Attachment 1.

//signed//  
 (b) (6) Lt Col, USAFR  
 DoD Certified Pest Management Professional

//signed//  
 (b) (6) Lt Col, USAFR  
 DoD Certified Pest Management Professional

11-22 March 2013

## SPRAY OPERATIONS SUMMARY FOR UTAH TEST AND TRAINING RANGE

DATE March	SORTIE #	AIRCRAFT #	TAKE OFF/LANDING (local)	TARGET	PASSES	ACRES	GALLONS SPRAYED	FLYING HOURS
12	1	105	0910-1020	23,24	6	72	1623	1.2
12	2	108	1050-1240	21	14	82	1850	1.7
12	3	105	1145-1230	23,24	6	78	1754	1.4
13	4	105	0814-0925	23,24	6	78	1760	1.2
13	5	106	0900-1010	21	14	76	1709	1.2
13	6	105	1025-1146	23,24	6	79	1774	1.4
13	7	106	1115-1235	21	15	83	1866	1.3
14	8	105	0814-0920	23,24	6	73	1645	1.1
14	9	106	0855-1015	21	12	74	1664	1.3
14	10	105	1020-1130	23,24	6	78	1744	1.2
14	11	106	1145-1305	21	15	81	1831	1.3
15	12	106	0915-1040	21	13	81	1825	1.4
18	13	105	0900-1050	21	15	81	1831	1.8
18	14	106	1120-1310	21	14	78	1745	1.8
19,20	Flush sorties	105,106		21, NORDLZ				11.7
		Totals			148	1,094	24,621	31.0



**DEPARTMENT OF THE AIR FORCE**  
**AIR EDUCATION AND TRAINING COMMAND**

9 Jan 13

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Revised Capability and Concept of Operations for Aerial Spray Training Avon Park, FL (Original Concept of Operations 20 Dec 2012)

1. Due to budgetary constraints, the previously planned week long C-130 aerial spray refresher at Avon Park, FL during 13-18 Jan 2013 has been cancelled. Instead only one C-130 aerial spray equipped aircraft will be sent and the mission duration has been shortened by one day. This aircraft will conduct aerial spray training to prepare aircrew and maintenance personnel for the upcoming spray season, while supporting unit entomologists teaching the DoD Aerial Application Pest Control Course (AAP-001) at Ft Meyers, FL (KFMY). Training will take place over Avon Park Bombing Range, FL and coastal waters.
2. Concept of Operations:
  - a. 13 Jan (Sunday)  
Aircraft will depart KYNG and land at KFMY to drop off entomologists and LZSO. The aircraft will RON at MacDill AFB.
  - b. 14 Jan (Monday)  
Aircraft will arrive at Avon Park, configure for spray operations and fly a training sortie.
  - c. 15 Jan (Tuesday)  
Aircraft will depart Avon Park to fly overwater training sortie then land at KFMY to assist in DoD Aerial Application Pest Control Course (AAP-001).
  - d. 16 Jan (Wednesday)  
Aircraft will fly training mission at Avon Park.
  - e. 17 Jan (Thursday)  
Aircraft will fly training mission at Avon Park, deconfigure spray equipment, fly to KFMY to pick up personnel and return to KYNG.
3. Spray Configuration:
  - a. MASS – SP2G

- b. Parameters –100' AGL and above
  - c. Chemical – Water
4. Maj (b) (6) will now serve as Mission Commander.
  5. Support required at MacDill AFB and Avon Park Bombing Range has been arranged.
  6. The majority of the planned aerial spray refresher (ground and flight training) will be conducted at KYNG 14-16 Jan 13.

//SIGNED//

(b) (6), Lt Col, USAFR  
757AS Assistant Director of Operations



**DEPARTMENT OF THE AIR FORCE**  
**AIR EDUCATION AND TRAINING COMMAND**

20 Dec 12

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray Training Avon Park, FL

1. Two C-130 aerial spray equipped aircraft will proceed from Youngstown ARS, OH to Avon Park, FL during 13-18 Jan 18. The mission purpose is to conduct aerial spray training to prepare all aircrew positions and maintenance personnel for the upcoming spray season. This training will take place over Avon Park Bombing Range, FL and coastal waters. In addition, assets will support unit entomologists teaching the DoD Aerial Application Pest Control Course (AAP-001) at Ft Meyers, FL. ADVON aircraft will depart on 13 Jan, while the main body will depart YNG on 14 Jan.
2. Concept of Operations: (All times in local)
  - a. **13 Jan (Sunday) Aircraft #1 (ADVON)**  
0900 Show KYNG  
1100 Depart KYNG  
1415 Land KFMY (drop off entomologists & LZSO)  
1430 Depart KFMY  
1455 Land KMCF
  - b. **14 Jan (Monday) Aircraft #1 (ADVON)**  
0930 Show KMCF  
1130 Depart KMCF  
1150 Land KAGR
  - c. **14 Jan (Monday) Aircraft #2 (Main body)**  
0800 Show KYNG  
1000 Depart KYNG  
1300 Land KMCF
  - d. **15 Jan (Tuesday)**  
0800-1600 Gnd Refresher Training (Ops and MX)  
  
**Aircraft #1**  
1400 Show KAGR  
1430 Depart KAGR

1450 Land KFMY (Static display)  
1700 Depart KFMY  
1720 Land KAGR

e. **16 Jan (Weds) Training Missions**

**Aircraft #1**

0820 Show KAGR  
0920 Depart KAGR  
1150 Land KAGR

**Aircraft #2**

1000 Show KAGR  
1100 Depart KAGR  
1330 Land KAGR

**Aircraft #1**

1300 Depart KAGR  
1530 Land KAGR

**Aircraft #2 (ERCC)**

1400 Depart KAGR  
1630 Land KAGR

f. **17 Jan (Thurs) Training Missions**

**Aircraft #1**

0800 Show KAGR  
0900 Depart KAGR (Reload Training)  
1300 Final Land KAGR

**Aircraft #2**

0830 Show KAGR  
0930 Depart KAGR  
1330 Final Land KAGR

g. **18 Jan (Friday)**

**Aircraft #2 (Mainbody)**

0700 Show KAGR  
0800 Depart KAGR  
1100 Land KYNG

h. **Aircraft #1**

0730 Show KAGR  
0830 Depart KAGR  
0850 Land KFMY (pick up entomologists & LZSO)  
1100 Depart KFMY

1415 Land KYNG

3. Spray Configuration:
  - a. MASS – SP1G & SP3G
  - b. Parameters –100' AGL and above
  - d. Chemical – Water
4. Lt Col (b) (6) will serve as Mission Commander.
5. Support required at McDill AFB and Avon Park Bombing Range has been arranged.

//SIGNED//

(b) (6), Lt Col, USAFR  
757AS Assistant Director of Operations



**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**JB CHARLESTON, SC 14-16 June 2013**

**1. MISSION BASICS:**

- a. Installation Sprayed: JB Charleston, South Carolina
- b. Mission Duration: 14-16 June 2013
- c. Purpose of Application: Contingency vector and nuisance control of salt marsh mosquitoes on the Naval Weapons Station area of JB Charleston
- d. Application Date: 15 June 2013
- e. Times of Application: 1855- 2050
- f. Acres Treated: 17,670
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) ,  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 14 June 2013
- i. Date of Waste Generation acceptance: 6 July 2012
- j. Installation In-Briefing: (When/Where/Briefer/s): Lt Col (b) (6) Lt Col (b) (6) Lt Col (b) (6) Lt Col (b) (6) and the 628 CES
- k. Mission Identifier: QZNRK9901165

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) Capt (b) (6)
  - (2) Navigator: Lt Col (b) (6)(b) (6)
  - (3) Flight Engineer: MSgt (b) (6)
  - (4) Spray Operators: MSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: SMSgt (b) (6) , MSgt (b) (6) , TSgt (b) (6)  
(b) (6) SrA (b) (6) , TSgt (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6) , SSgt (b) (6)
  - (3) Avionics: MSgt (b) (6)
  - (4) BioEnvironmental: TSgt (b) (6)
- d. **Entomologist:** Lt Col (b) (6)(b) (6)
- e. **Flying Data:**
  - (1) Training Sorties/Hours: 1/1.9
  - (2) Ferry Sorties/Hours: 2/3.9

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 150 gallons
- d. Gallons Pesticide Applied: 150 gallons
- e. Gallons and Name Diluent Used: N/A
- f. Gallons and Name of Flush Used: 7 Gallons HAN
- g. Other Additives Used: None
- h. Application Rate: 1.1 oz/acre

## **APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99107
- b. Spray System (Modules Used) and System ID #: 1
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: 3003
- e. Nozzle Orientation & Number Used: 30 Total; 15 left, 15 right
- f. Pressure: 45 p.s.i.
- g. Flow Rate: 7.9-8.0 gallons/minute (1.1 oz/acre)

## **5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: 500'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 KTS

## **6. WEATHER OBSERVATIONS:** Wind; 130 at 6 knots (average) on aircraft; Ground observation were 2-4 knots from same direction. Temp; 79 degrees F; Humidity 65-63 percent.

## **7. SPRAY MONITORING:** Pre and Post spray mosquito collections were taken at 3 locations using CO<sub>2</sub>-baited CDC mosquito traps and 1 location using New Jersey Light trap

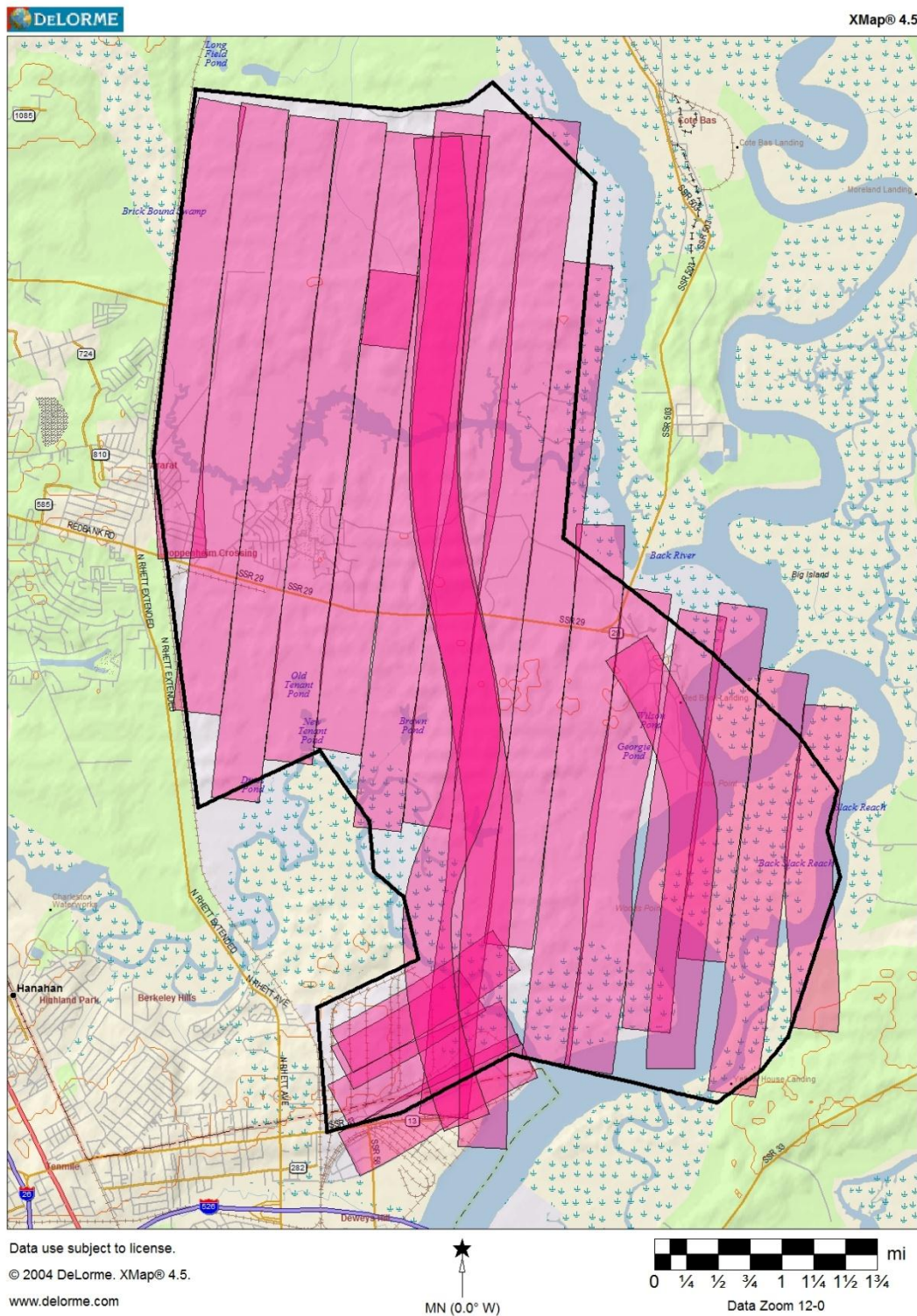
Trap 1: (DTP) 400 females (13 June); 79 females (20 June) 80 % reduction  
Trap 2: (Golf Course) 1760 females (13 June); 112 females (20 June) 94% reduction  
Trap 3: (NPTU) 1216 females (13 June); 135 females (20 June) 89% reduction  
Goose Creek NJ Light : 171 Females (June 14) 1 Female (June 18) 99.5 % kill

**8. REMARKS:** This application is the second adulticide application conducted at the Naval Weapons Station at JB Charleston. Last year, a contingency spray was initiated to combat historically high mosquito counts. This year, JB Charleston completed all NEPA documentation to continue routine aerial applications for nuisance and disease carrying mosquitos. No significant problems were encountered during this application, and results appear to be excellent despite the fact that the post application CDC mosquito traps were not deployed until almost 1 week post spray due to inclement weather conditions. Because of the large dredge spoil and marshlands associated with the Naval Weapons Station, future larvicide operations are being considered. While we appreciate the sincere support we encountered from ALL sections at JB Charleston, special thanks goes to (b) (6) (b) (6) for his thorough coordination at all levels.

//signed//

Lt Col (b) (6) (b) (6) Ph.D.  
Pest Management Professional

Attachment 1. Application to Naval Weapons Station, JB Charleston June 15, 2013. Magenta blocks indicate application locations.





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

4 JUN 13

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Joint Base Charleston, SC.

1. One C-130 will be available 14-17 June 2013 in response to a requested aerial spray to control adult mosquitoes for Joint Base Charleston. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel of JB Charleston. Operations will be conducted out of JB Charleston.

2. Concept of Operations:

**SCHEDULE: (All times local)**

**a. 14 June (Friday)**

0900L Show KYNG  
1100L Depart KYNG  
1300L Land KCHS

**15-16 July (Saturday- Sunday)                      Sunset: 2030**

1630L Show KCHS  
1830L Depart KCHS (spray JB Charleston)  
2100L Land KCHS

**17 June (Monday)**

0930L Show KCHS  
1130L Depart KCHS  
1330L Land KYNG

**3. SPRAY PARAMETERS:**

- a.     Altitude:** 150' AGL
- b.     Ground Speed:** 200 knots
- c.     Pesticide:** Trumpet EC®
- d.     Application Rate:** 1.0-1.2 oz/acre
- e.     Flow Rate:** 7.3 – 8.7 Gallons/Minute
- f.     Acreage:** Approximately 20,000 acres

**g. Swath Width: 2000 foot**

4. Lt Col (b) (6) will act as Mission Commander.
5. Maj (b) (6) will act as Aircraft Commander.
6. Support required at JB Charleston has been completed.

(b) (6), TSgt, USAFR  
757AS Aerial Spray Flight Engineer



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

25 September 13

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Parris Island MCRD, SC

1. Aerial spray mission controlling biting midges and mosquitoes with insecticide to reduce the negative impact on outdoor training at Parris Island MCRD, SC.

2. Concept of Operations:

a. 15 October (Monday)  
1700 Depart KYNG  
1900 Land KNBC

b. 16-18 October (Tuesday, Wednesday, Thursday)  
1400 Installation Brief  
1645 Depart KNBC  
1915 Land KNBC

c. 19 October (Friday)  
0800 Show KNBC  
0930 Depart KNBC  
1130 Land KYNG

3. Maj. (b) (6) will be the Mission Commander. LtCol (b) (6) (b) (6) will be the Aircraft Commander. Support at Parris Island MCRD and Beaufort MCAS has been completed.

(b) (6), TSgt, USAFR  
757AS Aerial Spray



**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**PARRIS ISLAND MCRD, SC 15-19 October 2012**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 15-19 October 2012
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date: 17 Oct 2012
- e. Time/s of Application (Local): 1610-1831
- f. Acres Treated: 7,922
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6)  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 1 Oct 2012
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 16 Oct 12 with (b) (6) and Lt  
Col (b) (6) at NREAO
- k. Mission Identifier: QZNRK3401289

**2. OPERATIONAL:**

- a. **Mission Commander:** Maj (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6), Lt Col (b) (6) Maj (b) (6)
  - (2) Navigators: Lt Col (b) (6)
  - (3) Flight Engineers: TSgt (b) (6)
  - (4) Spray Operators: CMSgt (b) (6), SMSgt (b) (6) MSgt (b) (6)  
MSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6), TSgt (b) (6) TSgt (b) (6)  
(b) (6) TSgt (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6) SrA (b) (6)
  - (3) Avionics: TSgt (b) (6)
- d. **Entomologist:** Lt Col (b) (6) (b) (6) (safety briefer), Lt Col (b) (6) (b) (6) Lt Col  
(b) (6)
- e. **Flying Data:**
  - (1) Spray Sorties/Hours: 2/3.4 (including 1 training sortie for 1.0 hrs)
  - (2) Ferry Sorties/Hours: 2/3.8

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 54 gal
- e. Gallons Pesticide Applied: 54 gal
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 10 gal/BVA oil
- h. Other Additives Used: None
- i. Application Rate: 0.87 oz/acre



#### 4. APPLICATION EQUIPMENT:

- a. Aircraft Tail Number: 89-9104
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 18, oriented straight down
- f. Pressure: 42-62 p.s.i.
- g. Flow Rate: 3.3 gallons per minute (calibrated on-site)

#### 5. APPLICATION PARAMETERS:

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 1000'
- c. Spray Release Altitude: 150' (300 ft for bioassay spray passes)
- d. Ground Speed: 200 Knots (338 Feet/Second)

#### 6. WEATHER OBSERVATIONS (17 Oct):

- a. Winds (Direction/Speed):
  - (1) Ground: 050°/1-5 Knots
  - (2) Release Altitude: 050°/5 Knots
- b. Temperature (Degrees Fahrenheit): 73 dropping to 72° F
- c. Relative Humidity: 61 increasing to 68%
- d. Cloud Cover: Mostly cloudy-clear
- e. Source: Aircraft/ground measurements

#### 7. SPRAY MONITORING (Pre- and Post-Treatment):

- a. Deposition Pattern:
  - (1) Technique/s Used: visual observation of aircraft course (GPS)
  - (2) Results: good coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: Biting midge numbers were determined prior to spraying using light traps (16 Oct). Post-spray monitoring was carried out by Pest Management personnel with light traps (19 Oct).
  - (2) Results: Biting midge numbers were significantly reduced at the following locations following the application. The reduction was spectacular at the Page Field sampling location:

	Date		
	16-Oct	17-Oct	19-Oct
Location			
Elliot Beach	690	250	20
Page Field	4,000	20,000	100
Outdoor Pool	240	400	50
Horse Island	261	1,242	20

8. **REMARKS:** The primary purpose of this application was to lower the number of biting midges on the Depot because the bites of these insects can become infected and result in dermatitis and, ultimately, lost training, the latter which can directly impact the Parris Island MCRD (PIMCRD) mission. In addition, two single-pass replications from 300 ft above ground level were carried out to verify this altitude as functional for night operations (previously work without active ingredient has been done from this height and other altitudes since 2003). Night operations are needed to maximize the effect of sprays against night flying mosquito species including the primary vectors of West Nile virus. High numbers of midges were present on the PIMCRD (see 7.b) with one location collecting more than 20,000 midges in a single night. Following

the application, midge numbers were reduced significantly (overall reduction was 94%, considering all sampling locations shown in 7.b). The treatment map is shown in Attachment 1.

a. Prior to the application on 17 Oct, two bioassays were conducted with caged mosquitoes using the same application parameters but with a 300 ft release height. The results of the bioassays were clear with both replications reflecting similar results (Attachment 2). Graphs show 100% mortality began 500-750ft downwind from the release point and continued downwind 500 to 750ft when mortality began to decrease. The second release results agreed with the first and also had a second 100% mortality peak beginning downwind at 2,500ft. It is unknown if the short waiting period between the first and second pass allowed for some drifting pesticide from the first pass to impact mosquitoes used during the second pass or if this was exclusively drift from the second pass. Mosquitoes in the control cages were placed 500ft upwind from the release point and had 0% mortality after the first pass and 3% mortality after the second. We consider the above information, in conjunction with previous work carried out at Avon Park (contact POC for technical reports), to indicate that a 300ft release height is an appropriate and functional altitude for aerial sprays when safety concerns related to night operations necessitate a higher release height. Special thanks to USDA-ARS Center for Medical and Veterinary Entomology for providing the mosquitoes used in the bioassays and to Peter Connelly (AMVAC) for technical support.

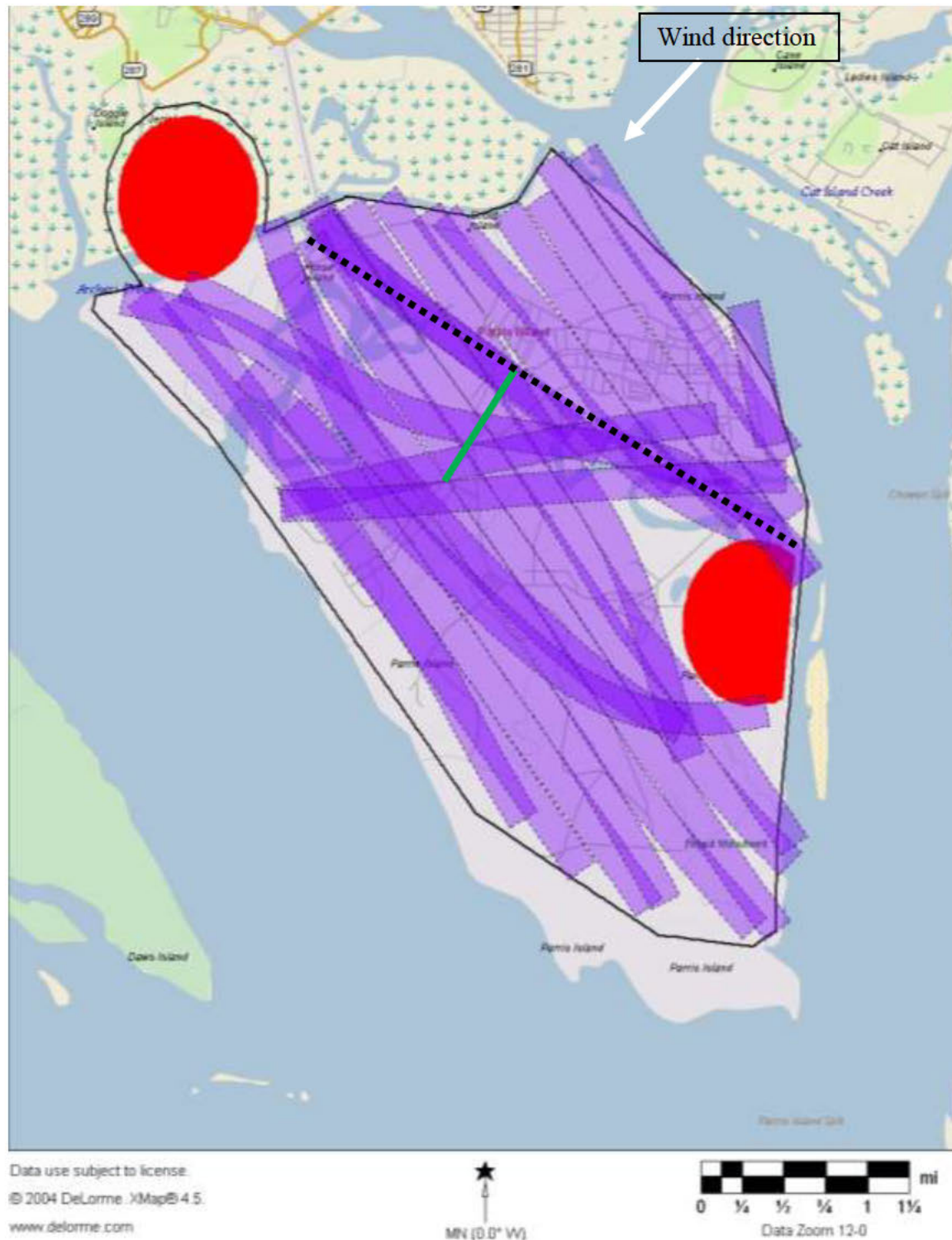
//signed//

(b) (6) (b) (6) **Lt Col, USAFR**  
**DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

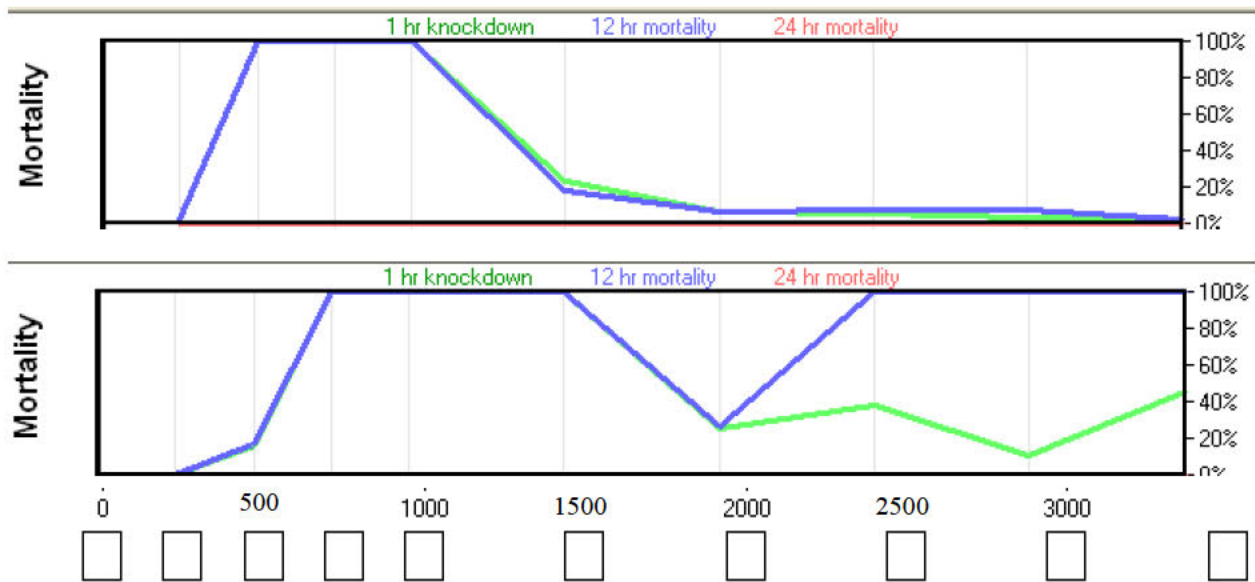
(b) (6) (b) (6) **Lt Col, USAFR**  
**DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

(b) (6) **, Lt Col, USAFR**  
**DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

Attachment 1. Coverage of Dibrom application over Parris Island MCRD, SC 17 Oct 2012. Purple indicates a 1,000ft swath. We used a 1000ft offset. Red circles at the NW and SE edges of the block are no spray areas indicating locations of bald eagle nests. White arrow gives wind direction (050 @ 8-11 knots at altitude). Green line is the transect where mosquito bioassay cages were placed. Dotted black line is track of aircraft during 300 ft release. White arrow indicates wind direction.



Attachment 2. Bioassay results from 300ft release passes. Blue and green lines track insect mortality; bottom scale is in linear feet from the spray release point, boxes represent locations where bioassay cages were placed. Top graph is trial 1, bottom graph is trial 2. Graphs show 100% mortality began 500-750ft downwind from release point and continued downwind for 500 to 750ft when mortality began to decrease. The second release results agreed with the first and also had a second 100% mortality peak beginning downwind at 2,500ft. It is unknown if the short waiting period between the first and second pass allowed for some drifting pesticide from the first pass to impact mosquitoes used during the second pass or if this was exclusively drift from the second pass. Mosquitoes in the control cages were placed 500ft upwind from the release point and had 0% mortality after the first pass and 3% mortality after the second. We consider the above information, in conjunction with previous work carried out at Avon Park (contact POC for technical reports), to indicate that a 300ft release height is an appropriate and functional altitude for aerial sprays when safety concerns related to night operations necessitate a higher release height.







**DEPARTMENT OF THE AIR FORCE**  
**757 Airlift Squadron – Aerial Spray Operations**  
**3976 King Graves Rd Unit 24**  
**Vienna OH 44473-5924**

**910 AW AERIAL SPRAY UNIT -- POST-MISSION REPORT ADULT  
MOSQUITO CONTROL AT MINOT AFB, CITY OF MINOT AND CITY OF  
WILLISTON, ND 15-19 JULY 2013**

**1. MISSION BASICS:**

- a. Installation Sprayed: Williston, Minot, and Minot AFB, North Dakota.
- b. Mission Duration: 15-19 July 2013
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date/s: No Application Made (See remarks)
- e. Time/s of Application N/A
- f. Acres Treated: 0
- g. Project Coordinator/s (Name/Rank, Title, Phone #): SrA (b) (6) Pest control spray coordinator, DSN (b) (6) (b) (6), Williston Vector Control, (b) (6) (b) (6), City of Minot Public Works
- h. Date Spray Map Last Approved: 15 July 2013
- i. Date of Waste Generation Letter: 17 July 2006
- j. Installation In-Briefing: (When/Where/Briefer/s): MAJ (b) (6) CE Headquarters

**2. OPERATIONAL:**

- a. **Mission Commander:** MAJ (b) (6) snacht
- b. **Certified PMP/Entomologists (Category 11):** LTC (b) (6) (b) (6) (safety briefer), MAJ (b) (6)
- c. **Aircrew:**  
Pilots: Lt Col (b) (6), Capt (b) (6)  
Navigators: Lt Col (b) (6)  
Flight Engineers: TSgt (b) (6)  
Spray Operators: TSGT (b) (6), TSGT (b) (6), SSgt (b) (6)
- d. **Maintenance:**  
Spray Maintenance: MSGT (b) (6), TSgt (b) (6), TSGT (b) (6)  
TSGT (b) (6), SrA (b) (6)  
Crew Chief(s): TSGT (b) (6), SrA (b) (6)  
Avionics: TSGT (b) (6)

**Flying Data:**

- (1) Spray Sorties/Hours: 0
- (2) Ferry Sorties/Hours: 2 sorties (3.8 + 3.2) = 7.0

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet/Permanone 30-30
- b. EPA Registration Number: 423-1235 (Permanone); 5481-481(Trumpet)
- c. Formulation Sprayed: NA
- d. Gallons Pesticide Loaded: None loaded
- e. Gallons Pesticide Applied: None applied
- f. Gallons and Name Diluent Used: N/A
- g. Gallons and Name of Flush Used: N/A
- h. Other Additives Used: None
- i. Application Rate: N/A

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99107
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: N/A
- f. Pressure: N/A
- g. Flow Rate: N/A

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: N/A
- b. Spray offset: N/A
- c. Spray Release Altitude: N/A
- d. Ground Speed: N/A

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): N/A
- b. Temperature (Degrees Fahrenheit): N/A
- c. Relative humidity: N/A
- d. Cloud Cover: N/A
- e. Source: N/A

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Pre-treatment monitoring warranted spray application.

**8. REMARKS:** The aircraft developed a bleed air problem prior to onset of any spraying activity, and remained broken until the crew was scheduled to return on 19 July. Attempts will be made to complete this mission at a later date.

//signed//

(b) (6) (b) (6) Lt Col, USAFR  
Entomologist and DoD Certified Applicator



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

30 Aug 13

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Mountain Home AFB, ID

1. Aerial Spray flight proficiency training will be accomplished at Saylor Creek Bombing Range near Mountain Home AFB, ID. Spray will aid their fire prevention program treating an invasive grass species (Cheat grass) that creates a fire hazard and has overtaken many of the areas on the bombing range. The operation applies herbicides targeting Cheat grass but allowing native fire resistant vegetation (sagebrush) to re-establish and become competitive. This mission will also provide real-world training for aerial spray entomologists and maintenance personnel.

2. Concept of Operations:

- a. 16 September (Monday)
  - 0900 Show KYNG
  - 1115 Spray aircraft depart KYNG
  - 1120 Support aircraft depart KYNG
  - 1450 Spray aircraft land KMUO
  - 1455 Support aircraft land KMUO
  - 1600 Installation briefing
- b. 17-19 September (Tuesday-Thursday)
  - Spray aircraft:
    - 0500 Show KMUO
    - 0700 Depart KMUO
    - 0815 Land MUO
    - 0900 Depart KMUO
    - 1030 Land KMUO



c. 20 September (Friday) Swapout aircraft  
0600 Show KYNG  
0800 Depart KYNG  
1135 Land KMUO  
1230 Depart KYNG  
2005 Land KMUO

d. 23-27 September (Monday-Friday)  
0700 Show KMUO  
0830 Spray aircraft depart KMUO  
0835 Support aircraft depart KMUO  
1605 Spray aircraft land KYNG  
1610 Support aircraft land KYNG

**SPRAY PARAMETERS:**

- a. **Altitude:** 100' AGL (we are treating at 46.5 acres/minute)
- b. **Swath Width.** 100 feet
- c. **Flow Rate.** 326 gal/min
- d. **Application Rate.** 7 gal/acre; approximately 3,200 acres to be treated for cheatgrass
- e. **Ground Speed:** 200 Knots

3. LtCol (b) (6) will act as Mission Commander.

4. Maj. (b) (6) will act as Aircraft Commander.

5. Support required at Mountain Home AFB and Saylor Creek has been completed.

(b) (6), TSgt, USAFR  
757AS Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR EDUCATION AND TRAINING COMMAND**

18 Oct 2013

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Parris Island MCRD, SC

1. One C-130 will be available 22-25 October 13 for the requested adulticide spray mission. This aerial spray training mission will be controlling biting midges and mosquitoes with insecticide to reduce the negative impact on outdoor training at Parris Island MCRD, SC. This mission will also provide real-world training for aerial spray entomologists and maintenance personnel. Mission subject to change due to fiscal constraints.

2. Concept of Operations:

- a. 22 October (Tuesday)  
1700 Depart KYNG  
1900 Land KNBC
- b. 23-24 October (Wednesday and Thursday)  
1400 Installation Brief (Wednesday only)  
1700 Depart KNBC  
1845 Land KNBC
- c. 25 October (Friday)  
0800 Show KNBC  
0930 Depart KNBC  
1130 Land KYNG

3. Lt Col (b) (6) (b) (6) will be the Mission Commander.

4. Support at both Parris Island MCRD and Beaufort MCAS has been completed.

(b) (6) , TSgt, USAFR  
757AS Aerial Spray Flight Engineer

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **MCRD, PARRIS ISLAND, SC**

### **22-25 October 2013**

### **QENRK3501295**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD SC.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Pilots: Lt Col (b) (6) (b) (6) Capt. (b) (6) ,
- (2) Navigators: Lt Col (b) (6)
- (3) Flight Engineers: MSgt (b) (6)
- (4) Spray Operators: SMSgt (b) (6) , TSgt (b) (6)
- (5) Mission Commander: Lt Col (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: MSgt (b) (6) MSgt (b) (6) , TSgt (b) (6) ,  
SSgt (b) (6)
- (2) Crew Chiefs: SSgt (b) (6) (b) (6)
- (3) Avionics: MSgt (b) (6)

##### **c. Entomologist:** Lt Col (b) (6) (b) (6)

#### **2. PPR REQUIREMENTS: 295-01**

**3. PLANNED SEQUENCE OF EVENTS:** (All times local) Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated through the mission commander.

- a. 22 Oct (Tuesday)  
1500 Show KYNG  
1700 Depart KYNG  
1900 Land KNBC (Safety Brief Immediately Upon Landing)
- b. 23 Oct (Wednesday) \*Sunset 1842  
1000 Installation Brief  
1500 Show/WX Decision  
1700 Depart KNBC  
1930 Land KNBC
- c. 24 Oct (Thursday) \*Sunset 1841  
1500 Show/WX Decision  
1700 Depart KNBC (training or weather backup sortie)  
1930 Land KNBC
- d. 25 Oct (Friday)  
0800 Show KNBC  
0930 Depart KNBC  
1130 Land KYNG

#### **4. ITEMS TO TAKE/NOTES:**

- a. **Mission Commander:**
  - (1) Mission Commander Cell Phone
  - (2) FFT
- b. **Entomologist:**
  - (1) Wind Gauge & Compass
  - (2) VHF Radios and Cellular Phone
  - (3) Pesticide Safety Binder
- c. **Navigators:**
  - (1) Maps
  - (2) Templates
- d. **Spray Maintenance:**
  - (1) Spill Kit
  - (2) Safety Equipment
  - (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** Size = 8003; 14 open
- d. **Differential GPS:** Wingman Installed
- e. **Aircraft:** 89-9104
- f. **Mission Identifier:** QENRK3501295

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**
  - Dibrom-Naled Organophosphate insecticide
  - Signal Word: Danger
  - Flushing Agent: None
- b. **Application:** 0.75 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 2.7 GPM

**7. PARKING PLAN:** NAS Beaufort, SC. Please limit number of vehicles and trips on the flight line

**8. AIR TO GROUND RADIO FREQUENCIES:**

Beaufort Tower:	119.05/340.2 MCAS TWR
Beaufort Approach	123.7
Hilton Head Arpt:	118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)
Beaufort Co Arpt:	122.7 UNI
Spray Ground:	335.875

**9. TRANSPORTATION:** Parris Island will provide 3 vehicles for transportation to and from quarters and for messing. Vehicles will be at Base Operations.

**10. SPRAY MONITORING/TESTING:** Ground monitoring by CPMP &Parris Island MCRD Project Coordinator.

**11. CONTACTS:**

- a. Parris Island MCRD SC: (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX**
- (1) Environmental Coordinator (Spray Coordinator):  
 (b) (6) , DSN (b) (6) , Cell (b) (6) HazWaste: (b) (6) DSN (b) (6) ; Cell  
 (b) (6) ; (b) (6) Cell (b) (6) ,  
 DSN (b) (6) Cell (b) (6)  
 FAX (843) 228-2616; NREAO, (b) (6) , DSN (b) (6)
  - (2) Assistant Chief of Staff I & L: Col (b) (6) , DSN (b) (6) ;  
 Deputy AC/S (b) (6) , DSN (b) (6)
  - (3) Pest Control Foreman: DSN 335-3663
  - (4) P.I. Motor Pool: (b) (6) , DSN (b) (6)
  - (5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)
  - (6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)
  - (7) P.I. Rifle Range: DSN: 335-3183/3624
- b. Beaufort MCAS SC:** (Commercial (843) 228-XXXX)
- (1) Beaufort MCAS Environmental: (b) (6) , DSN (b) (6)  
 (b) (6) DSN (b) (6)
  - (2) Fuels: DSN: 335-7049/7448/7168
  - (3) MCAS Beaufort Airfield MGR: Lt Col (b) (6) (Ops Officer)  
 Airfield manager (b) (6)  
 DSN: (b) (6) Base Ops is ext 7301/2/3  
 (Airfield Manager is (b) (6) , DSN: (b) (6) ) approves after hrs requests
  - (4) Trans Alert/VAL: DSN: 335-7110
  - (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)
- c. Beaufort County Mosquito Control:** (b) (6) , Director (b) (6)
- d. Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) , DSN: (b) (6) ,  
 ext 5509
- e. Quarters: 16 Rooms at the Candlewood Suites Bluffton-Hilton Head**  
**\$87/night (843) 705-9600 Confirmation # 61372275**  
**5 Young Clyde Ct, Bluffton, SC Confirmation# 61373022**
- |                                 |   |
|---------------------------------|---|
| Comfort Inn and Suites          | (843) 379-9400                            |
| Quality Inn                     | (843) 524-2144/Fax 1704                   |
| Hampton Inn                     | (843) 986-0600 (FAX 0494)                 |
| Sleep Inn                       | (843) 522-3361 FAX (843) 522-9929         |
| Parris Island Billeting         | DSN: 335-2744 (FAX: 3815); (843) 228-3960 |
| Econo Lodge                     | (843) 525-9366 (FAX 1529)                 |
| Best Western (Sea Island Motel) | (843) 522- 2090                           |
| Port Royal Days Inn             | (843) 524-1551                            |
| Holiday Inn                     | (843) 379-3100                            |
- f. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**  
 Toll Free 1 - 800 - 278 - 7046,+2 + Ext
1. 910 AW/CC: Col (b) (6)
  2. 910 AW Command Post: Ext 1315; FAX 1161
  3. 910 AW/PA: Maj (b) (6) ; FAX 1022
  4. 910 OG/CC: Col (b) (6)
  5. 910 OG: Airfield Manager, Ext 1186/1526
  6. 757 AS/DO: LtCol (b) (6) (b) (6) (b) (6)
  7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
  8. 757 AS/DOO: Ops Admin: MSgt (b) (6) ; FAX 1657
  9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) FAX 1616
  10. 910 LG/CC: Ext 1225

11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMSgt (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: (b) (6)
  - Entomologist: (b) (6) ((b) (6))

Mission Commander will obtain the pay status of all Ops personnel through mission entirety.



DEPARTMENT OF THE AIR FORCE  
757 Airlift Squadron – Aerial Spray Operations  
3976 King Graves Rd Unit 24  
Vienna OH 44473-5924

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT LANGLEY AFB, VA 22-26 JULY 2013**

**1. MISSION BASICS:**

- a. Installation Sprayed: Langley AFB, VA and Craney Island ACE, VA.
- b. Mission Duration: 22-26 July 2013
- c. Purpose of Application: Adult mosquito control
- d. Application Dates: 25 July
- e. Time of Application (local): 1800-2000
- f. Acres Treated: 7,600
- g. Project Coordinator (Name, Phone #): MSgt (b) (6); (b) (6)  
(Langley); (b) (6); (b) (6) (Craney Island/Portsmouth)
- h. Date Spray Map Last Approved: 22 July 2013
- i. Date of Waste Generation Letter: n/a
- j. Installation In-Briefing: 633rd CE Conference Room, Langley AFB; 22 July; Lt  
Cols (b) (6) and (b) (6); 633CES/CC Lt Col (b) (6)
- k. Mission identifier: QENRK3501203

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6) lati
- b. **Entomologist:** Lt Col (b) (6) (b) (6)
- c. **Aircrew**
  - (1) Pilots: Lt Col (b) (6), Capt (b) (6)
  - (2) Navigator: Lt Col (b) (6)
  - (3) Flight Engineers: SMSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6), MSgt (b) (6), SrA  
(b) (6)
- b. **Maintenance:**
  - (1) Spray Maintenance: MSgt (b) (6), TSgt (b) (6), TSgt  
(b) (6), TSgt (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6), SrA (b) (6)
  - (3) Avionics: TSgt (b) (6)
- c. **Flying Data:**
  - (1) Spray Sorties/Hours: 1/2.0
  - (2) Ferry Sorties/Hours: 2/3.0



**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 30 total
- e. Gallons Pesticide Applied: 30
- f. Gallons and Name Diluent Used: none
- g. Gallons and Name of Flush Used: 10 aromatic naptha
- h. Other Additives Used: n/a
- i. Application Rate: 0.50 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 90-9105
- b. Spray System (Modules Used) and System ID #: SP2G MASS ULV
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: TeeJet 8003 flat fan nozzles
- e. Nozzle Orientation & Number Used: 18 straight down
- f. Pressure (PSI): 40-60
- g. Flow Rate: 3.6 gpm

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 feet
- b. Spray Off Set: 2000-3000 feet
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed in knots): 330°/7-8 knots (Langley AFB); 330°/8-9 knots (Craney Island)
- b. Temperature (°F) and relative humidity: 75 and 78%
- c. Cloud Cover: mostly cloudy
- d. Source: Observations at altitude during spray sorties

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:  
(1) n/a

- b. Effectiveness:
- (1) Technique/s Used: carbon dioxide-baited traps were used to monitor mosquito densities pre- and post-treatment by Portsmouth Mosquito Control and Base mosquito control professionals.
  - (2) Results: Langley Pest Management was not able to set traps for post spray monitoring immediately because the following day was a furlough day. Three days later, when trapping was done, a decrease of about 50% was reported (see Attachment 1A). Portsmouth Mosquito Control reported an 82% reduction post-spray of the target species *Aedes sollicitans* (Attachment 1B). Neither agency was able to provide data from collections outside of the spray area (control area).

8. **REMARKS:** Moderate numbers of mosquitoes on the Langley peninsula left our innovative readiness training partners with the tough decision not to participate in this spray. Mosquito counts were high on Craney Island and increasing at Langley to prompt those entities to request an application. Post-spray recording was impacted by the furlough as the application occurred on a Thursday evening and the furlough was on Friday which pushed the next trapping opportunity to Monday night. Waiting that long to trap skews the impact results of the spray by letting adults from outside the area return as well as new insects emerging from the treated marshes. Therefore, the spray efficacy at Langley was probably at least a bit better than the reported value. We received great support from Langley AFB, especially the 633CES and an aircraft is scheduled for a spray opportunity including IRT partners for 26-30 Aug.

//Signed//

(b) (6) (b) (6) **Lt Col, PhD, USAFR**  
**Entomologist and Certified Applicator**

**Attachment 1. A.** Mosquito collections of adult female mosquitoes made by 633<sup>rd</sup> CES/Pest Management on 25 July (pre-spray) and 30 July (post-spray) on Langley AFB. **B.** Pre and post-spray data for mosquito collections made adjacent to the Craney Island ACE property in Portsmouth.

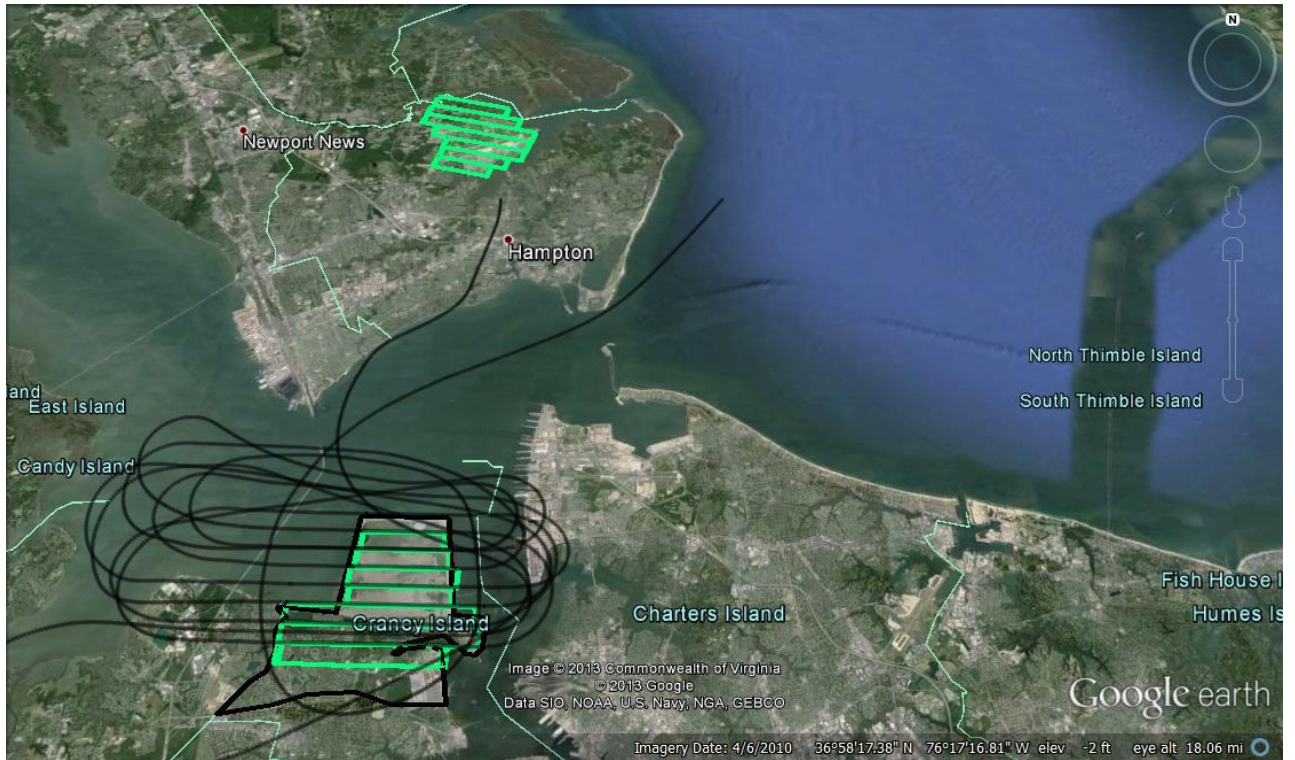
**A.**

<b>25-Jul-13</b>  stormy 70's humid	Horse Stables	<b>100</b>
	B-52	<b>63</b>
	Pest Shop	<b>250</b>
	WSA	<b>1133</b>
	WSA 2	<b>0</b>
<b>30-Jul-13</b>  clear 60's	Horse Stables	<b>103</b>
	B-52	<b>37</b>
	Pest Shop	<b>217</b>
	WSA	<b>475</b>
	WSA 2	<b>0</b>

**B.**

	Pre Spray 7/23/201	Post Spray 7/26/201	Pre Spray 7/23/201	Post Spray 7/26/201
	3	3	3	3
Landfill			High School	
<i>Ae. sollicitans</i>	556	99	10	1
<i>Ae. vexans</i>	1	19	1	10
<i>Ae. taeniorhynchus</i>	7	5	3	1
<i>Ps. Columbiae</i>	18	7	0	0
<i>Ps. ferox</i>	0	0	2	0
<i>Cx. Spp</i>	56	47	6	9
<i>An. Spp</i>	1	2	1	3
<i>Ae. albopictus</i>	0	0	0	3

**Attachment 2.** Areas sprayed to control adult mosquitoes on 25 July 2013, namely Langley AFB and Craney Island ACE and buffer area in the City of Portsmouth (Langley is the northern treatment area visible in this image).





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

12 February 2013

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray Application at Luke AFB

1. One C-130 aerial spray equipped aircraft will be available 25 Feb – 1 Mar 2013 to proceed from Youngstown ARS, OH and stage at Luke AFB, AZ. The mission purpose is the control of invasive weed species by aerial spray application on Barry Goldwater Range, semi-annual currency events, and proficiency training. The range roadways will be sprayed to control the growth of Saharan Mustard on the range. This will be a small area test application to ensure the application technique and chemical combination will properly manage the pest.

2. Concept of Operations:

- a. 25 February (Monday)  
0800 Show KYNG  
1000 Depart KYNG  
1340 Land KLUF
- b. 26 -28 February (Tuesday-Thursday) Range: 0730-0930  
0530 Show KLUF  
0715 Depart KLUF  
0945 Land KLUF
- c. 1 March (Friday)  
0600 Show KLUF  
0800 Depart KLUF  
1540 Land KYNG

3. Spray Configuration:

- a. MASS – SP2G
- b. Parameters –100' AGL and above
- c. Chemical – Glyphosate (Roundup)
- d. Rate – 440 GPM (10 Gal/Acre finished rate)

4. Maj (b) (6) will serve as Mission Commander.

5. Support required at Luke AFB and Barry Goldwater range has been coordinated. Please contact the aerial spray office if you have any concerns at DSN: (b) (6)

(b) (6), Maj, USAFR  
757<sup>th</sup> Chief of Aerial Spray



DEPARTMENT OF THE AIR FORCE  
757 AERIAL SPRAY SQUADRON  
Youngstown Air Reserve Station  
Vienna OH 44473-5926

5 March 2013

MEMORANDUM FOR 757 AS/DO

FROM: 757 AS/DOS

SUBJECT: Mission Report for 25 February to 1 March 2013 Luke AFB/Barry M. Goldwater Range.

**1. Purpose:** Herbicide application of Ranger Pro® (Glyphosate) to Sahara Mustard, and invasive noxious weed present in spoil areas of Barry M. Goldwater Bombing Range, Arizona.

**2. Participants:**

**Aircrew:**

1. **Mission Commander:** Major (b) (6)
2. **Pilots:** Lt Col (b) (6), (b) (6) Major (b) (6)
3. **Navigators:** Captain (b) (6)
4. **Flight Engineers:** MSgt (b) (6)
5. **Spray Operators:** SMSgt (b) (6), SMSgt (b) (6), SSgt (b) (6), Sra (b) (6)

**Maintenance:**

1. **Spray Maintenance:** MSgt (b) (6), TSGT (b) (6), TSgt (b) (6) (MX lead)
2. **Avionics:** SSgt (b) (6)
3. **Crew Chiefs:** SSgt (b) (6), SRA (b) (6)

**Entomologist/Ground Support:** Lt Col (b) (6), (b) (6)

**3. Spray Configuration:**

Mass-SP2G  
Aircraft Number: 99103  
Mission Identifier: QZNRK9901056

**4. Spray Parameters:**

Booms—Fuselage  
Nozzles—RainDrop nozzles.  
Number of Nozzles— 28 total  
Airspeed—200 knots ground speed.  
Altitude—100' AGL.

**5. Aerial Spray Flight Data:**



a. 25 Feb 13: Ferry	KYNG-KLUF 1623-2223Z	Flight Hours: 6.0
b. 26 Feb 13: Spray Sortie	KLUF-KLUF 1500-1638Z	Flight Hours: 1.6
c. 27 Feb 13: Spray Sortie	KLUF-KLUF 1453-1604Z	Flight Hours: 1.4
d. 28 Feb 13: Rinse Sortie	KLUF-KLUF 1439-1548Z	Flight Hours: 0.8
e. 1 Mar 13: Ferry	KLUF-KYNG 1500-2100Z	Flight Hours: 6.0

**7. Conclusions:** Results from the 3 trials are shown in attachment 1, figures 1-3. The graph on the left shows the deposition characteristics, and the graph on the right indicates the approximate effective swath width. All 3 tests were fairly consistent, and the effective swath width appears to be between 125 to 150 feet wide. At the flow rates shown (500-530) a 125 foot nominal swath results in a deposition rate of approximately 8.9 gallons per acre, which is reasonably close to the targeted deposition rate of 10.0 gallons per acre. However, it should be noted that deposition rates in the center of the swath are approximately 3 times the deposition rates on the edges of the swath. While these deposition rates would presumably be effective, the purpose of increasing the swath width with the addition of wing booms is to facilitate a one-pass operation in treating the roads on the Barry M. Goldwater range. In this circumstance, if the aircraft was flown directly down the road while applying herbicide, a majority of the herbicide mix (assuming light or no wind), would be deposited directly on the road, which itself is devoid of weeds. Since the targets are the weeds on the side of the road, using a smaller swath using only the fuselage booms with a 2 pass scenario would result in less wastage of material. When considering the treatment of targets with herbicide, the situation may be slightly different. In that case, an increased swath width using the wing booms in addition to the fuselage booms would result in approximately 30 percent greater application efficiency.

**9. Acknowledgements:** Many thanks to (b) (6) for his invaluable assistance in making this mission possible.

//signed//

(b) (6)(b) (6) Maj, PhD, USAFR  
Research Entomologist

Attachment 1. Figures and Tables.

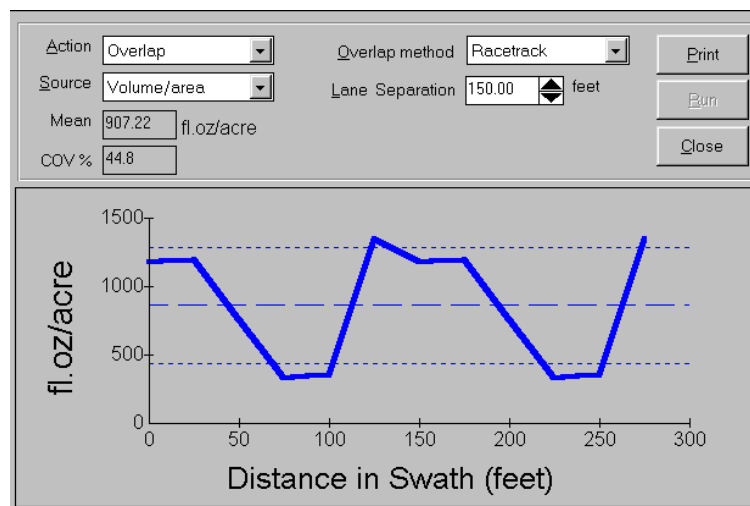
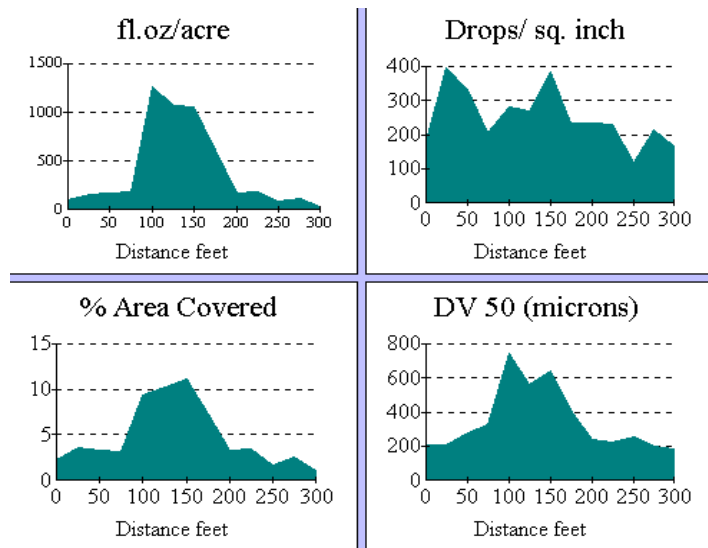
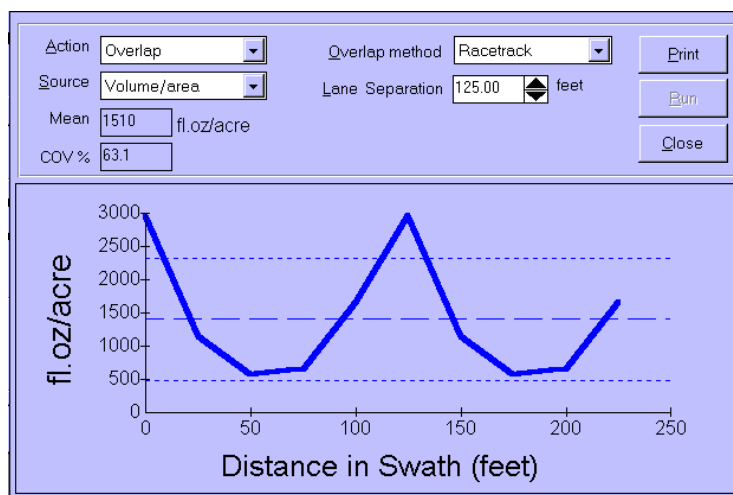
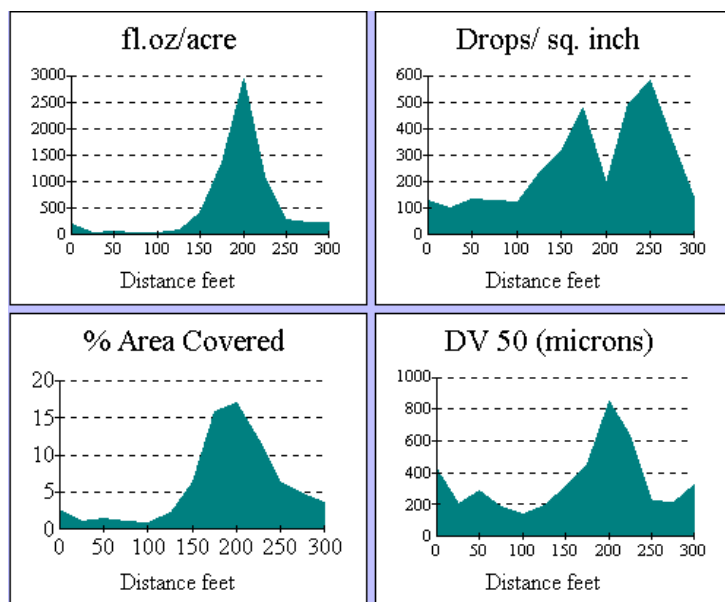
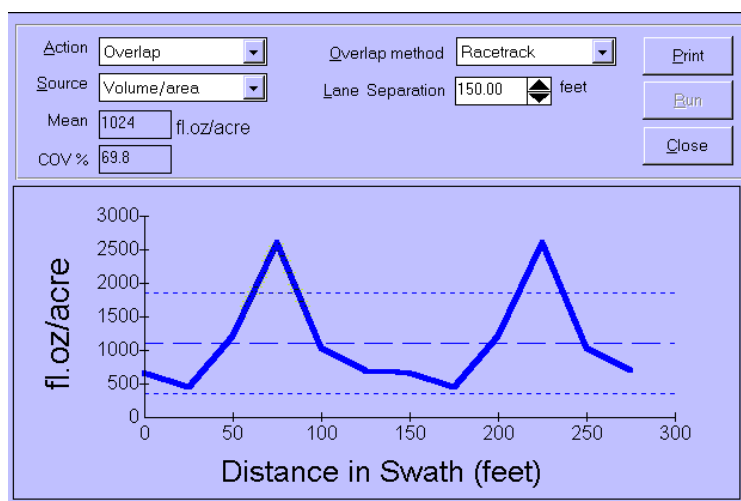
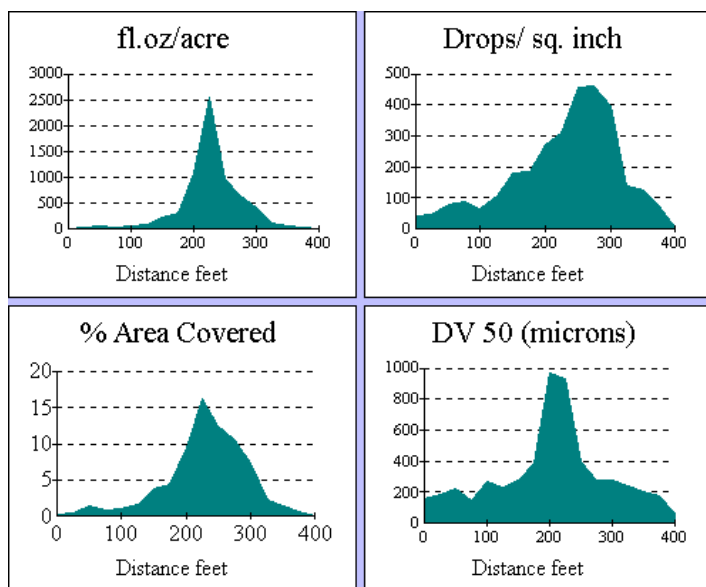


Figure 1. Replication 1. Swath characteristics and nominal swath width. Test conducted 15 December 2011, 0910 MST.



Replication 2. Swath characteristics and nominal swath width. Test conducted 15 December 2011, 0930 MST.



Replication 3. Swath characteristics and nominal swath width. Test conducted 15 December 2011, 0946 MST.

Attachment 2. High-volume deposition application using fuselage and wing booms. Note significant entrainment of material sprayed from the wing booms into the wingtip vortices.



Photo: (b) (6)



**DEPARTMENT OF THE AIR FORCE**  
**757 Airlift Squadron – Aerial Spray Operations**  
**3976 King Graves Rd Unit 24**  
**Vienna OH 44473-5924**

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT LANGLEY AFB, VA 26-30 AUGUST 2013**

**1. MISSION BASICS:**

- a. Installation Sprayed: Langley AFB, VA and Craney Island ACE, VA.
- b. Mission Duration: 26-30 August 2013
- c. Purpose of Application: Adult mosquito control
- d. Application Dates: 27, 29 August
- e. Time of Application (local): 1740-1920 (27 Aug); 1835-1947 (29 Aug)
- f. Acres Treated: 22,528 (27 Aug); 8,415 (29 Aug). Total 30,943 acres
- g. Project Coordinator (Name, Phone #): MSgt (b) (6); (b) (6)  
(Langley); (b) (6); (b) (6) (Craney Island/Portsmouth)
- h. Date Spray Map Last Approved: 27 August 2013
- i. Date of Waste Generation Letter: n/a
- j. Installation In-Briefing: 633rd CE Conference Room, Langley AFB; 27 August;  
Maj (b) (6) and Lt Col (b) (6)
- k. Mission identifier: QENRK3501238

**2. OPERATIONAL:**

- a. **Mission Commander:** Maj (b) (6)
- b. **Entomologist:** Lt Col (b) (6) (b) (6)
- c. **Aircrew**
  - (1) Pilots: Lt Col (b) (6), Capt (b) (6)
  - (2) Navigator: Maj (b) (6)
  - (3) Flight Engineers: SMSgt (b) (6), MSgt (b) (6)
  - (4) Spray Operators: MSgt (b) (6), MSgt (b) (6)
- b. **Maintenance:**
  - (1) Spray Maintenance: SMSgt (b) (6), MSgt (b) (6), TSgt (b) (6), TSgt (b) (6), TSgt (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6), SrA (b) (6)
  - (3) Avionics: SMSgt (b) (6)
- c. **Flying Data:**
  - (1) Spray Sorties/Hours: 3/1.7 (27 Aug); 0.3 (28 Aug no spray release); 1.2 (29 Aug); total 3.2 hrs
  - (2) Ferry Sorties/Hours: 2/3.0

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 5481-480
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 90 gal (27 Aug); 50 gal (28 Aug); 140 total
- e. Gallons Pesticide Applied: 88 gal (27 Aug); 49 gal (29 Aug); 137 total
- f. Gallons and Name Diluent Used: none
- g. Gallons and Name of Flush Used: 10 gal aromatic naptha
- h. Other Additives Used: n/a
- i. Application Rate: 0.50 oz/acre (27 Aug); 0.75oz/acre (29 Aug)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 90-9103
- b. Spray System (Modules Used) and System ID #: SP2G MASS ULV
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: TeeJet 8003 flat fan nozzles
- e. Nozzle Orientation & Number Used: 18 straight down (27 Aug); 22 straight down (29 Aug)
- f. Pressure (PSI): 35-55
- g. Flow Rate: 3.6 gpm (27 Aug); 5.4 gpm (28 Aug);

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 feet
- b. Spray Off Set: 2000 feet
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed in knots): 230-260°/6-10 knots (release altitude), 235-260°/4-5.2 knots (ground observations) (27 Aug); 50-60°/15 knots (at altitude, Craney Island), 50-60°/6-8 knots (ground observation) (29 Aug)
- b. Temperature (°F) and relative humidity: 70-71°F and 58-71% RH (27 Aug); 77-76°F and 79-82% RH (28 Aug);
- c. Cloud Cover: mostly cloudy to cloudy both days
- d. Source: Observations at altitude and on the ground during spray sorties



**7. SPRAY MONITORING (Pre- and Post-Treatment):**

a. Deposition Pattern:

(1) n/a

b. Effectiveness:

(1) Technique/s Used: carbon dioxide-baited traps were used to monitor mosquito densities pre- and post-treatment by Portsmouth Mosquito Control and Base mosquito control professionals.

(2) Results: Langley Pest Management was not able to set traps for post spray monitoring immediately but will trap early next week. York County trap volunteers reported no mosquitoes in traps. Highest pre- spray count was 2,490 mosquitoes for a 1 week period. Portsmouth Mosquito Control will report post spray numbers next week. This report will be updated when post spray numbers become available.

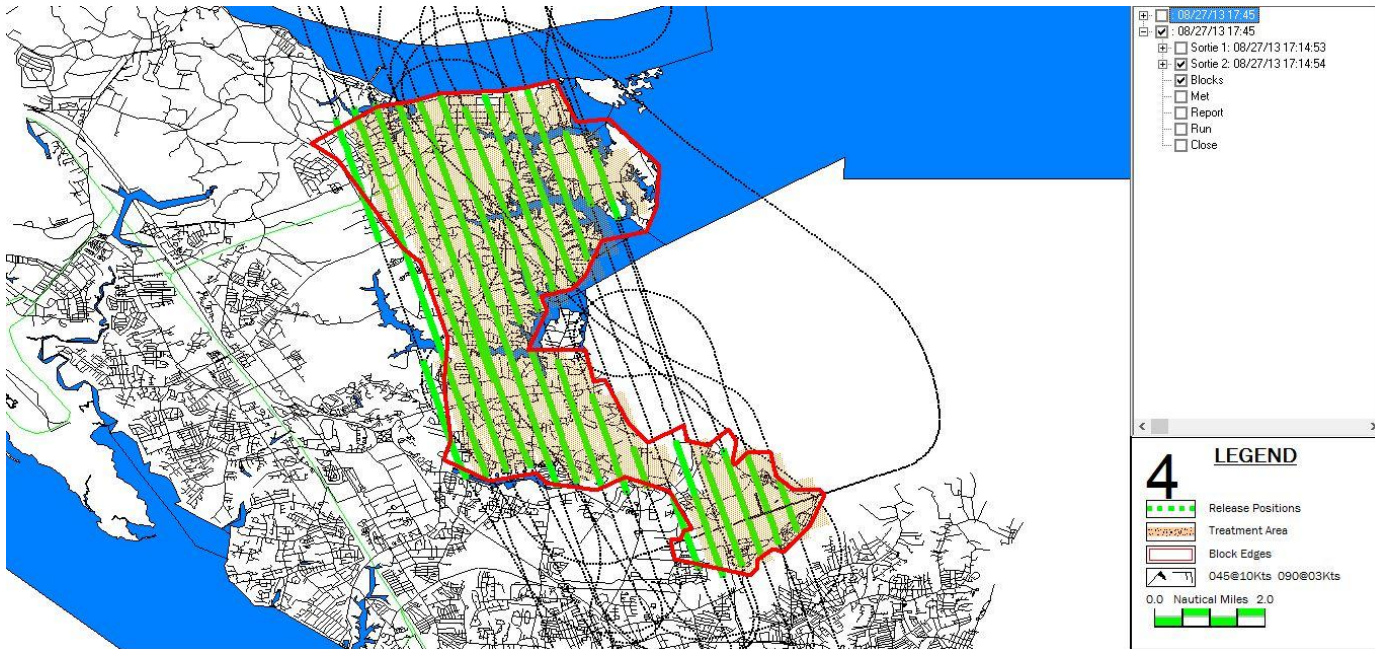
- 8. REMARKS:** High numbers of mosquitoes on the Langley peninsula brought a request for a spray from our innovative readiness training partner York Co. Additionally, mosquito counts were high on Langley AFB. Aerial mosquito control has become a hotly debated topic on the peninsula with individuals arguing for and against (see <http://www.dailypress.com/news/york-county/dp-nws-york-mosquito-spraying-folo-20130823,0,6078824.story> as well as <http://www.dailypress.com/news/york-county/dp-nws-york-mosquito-spraying-again-20130822,0,5961521.story>). The local public health authorities request and approve these sprays and provide options for those who are concerned (such as covering bee hives). There does not appear to be any contention to this historically welcomed operation in the Portsmouth Community directly surrounding Craney Island. Mr. (b) (6) from the VA Department of Agriculture and Consumer Services Office of Pesticide Services was invited to conduct an inspection of the aerial spray operation and he monitored both applications. We again received great support from Langley AFB, especially the 633CES and this is the last aircraft scheduled for spray operations for FY13.

//Signed//

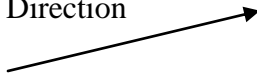
(b) (6) (b) (6)

**Lt Col, PhD, USAFR  
Entomologist and Certified Applicator**

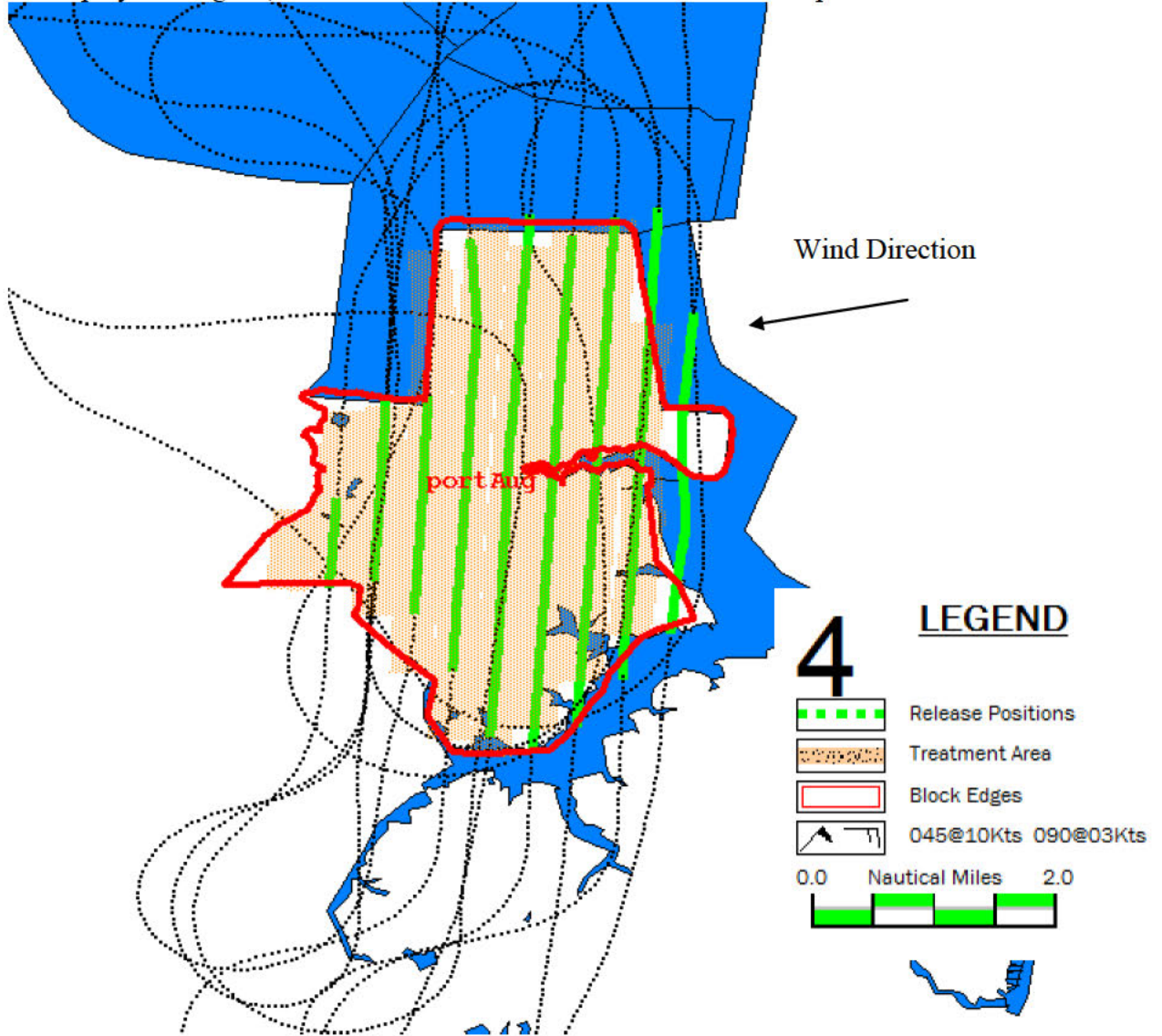
**Attachment 1.** Areas sprayed to control adult mosquitoes on 27 August 2013, namely York Co and Langley AFB. Areas outside the spray boundary were sprayed using a 2,000 ft offset to account for wind direction and speed.



Wind Direction



**Attachment 2.** Areas of Craney Island ACE and buffer area in the City of Portsmouth sprayed to control adult mosquitoes on 29 August 2013. Areas outside the spray boundary were sprayed using a 2,000 ft offset to account for wind direction and speed.







DEPARTMENT OF THE AIR FORCE  
757 Airlift Squadron – Aerial Spray Operations  
3976 King Graves Rd Unit 24  
Vienna OH 44473-5924

**910 AW AERIAL SPRAY UNIT – PEST MANAGEMENT  
PROFESSIONAL'S POST-MISSION REPORT ADULT MOSQUITO  
CONTROL AT MINOT AFB, CITY OF MINOT AND CITY OF  
WILLISTON, ND 29 JUL - 2 AUG 2013**

**1. MISSION BASICS:**

- a. Installation Sprayed: Williston, Minot, and Minot AFB, North Dakota.
- b. Mission Duration: 29 Jul – 2 Aug 2013
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date/s: 30 Jul – Minot AFB  
31 Jul – City of Minot  
1 Aug – Cities of Williston and Watford City
- e. Time/s of Application: 30 Jul 2015 - 2050  
31 Jul 2020 – 2120  
1 Aug 1935 - 2130
- f. Acres Treated: 46,391
- g. Project Coordinator/s: SrA (b) (6) Minot AFB Pest Management Spray Coordinator, DSN (b) (6) (b) (6) Williston Vector Control (b) (6) (b) (6) City of Minot Public Works, IRT Coordinator (b) (6)
- h. Date Spray Map Last Approved: 29 Jul, 1 Jul 2013
- i. Date of Waste Generation Letter: 28 Jul 2013
- j. Installation In-Briefing: (When/Where/Briefer/s): LtCol (b) (6) (b) (6) (Mission Commander), LtCol (b) (6) (b) (6) Maj (b) (6) 5 CES Deputy Civil Engineer, Ms. (b) (6)

**2. OPERATIONAL:**

- a. **Mission Commander:** LtCol (b) (6)
- b. **Certified PMP/Entomologists (Category 11):** LtCol (b) (6) (b) (6) (safety briefer), Maj (b) (6)
- c. **Aircrew:**  
Pilots: Maj (b) (6) Maj (b) (6)  
Navigators: LtCol (b) (6)  
Flight Engineers: CMSgt (b) (6)  
Spray Operators: MSgt (b) (6) MSgt (b) (6)
- d. **Maintenance:**  
Spray Maintenance: TSgt (b) (6) TSgt (b) (6) TSgt (b) (6) SSgt (b) (6)  
Crew Chief(s): SSgt (b) (6) SSgt (b) (6)  
Avionics: TSgt (b) (6)

**Flying Data:**

- (1) Spray Sorties/Hours: 5.5 (see attachments 1-2)
- (2) Ferry Sorties/Hours: 3 sorties (3.8 + 3.1) = 6.9

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet EC (78% naled); Permanone 30-30 (30% permethrin and 30% piperonyl butoxide)
- b. EPA Registration Number: 5481-481(Trumpet); 423-1235 (Permanone 30-30)
- c. Formulation Sprayed: Emulsified Concentrate (Trumpet); Liquid Concentrate (Permanone 30+30)
- d. Gallons Pesticide Loaded: 90 gal Trumpet (30 Jul); 50 gal Permanone 30+30 (1 Aug)
- e. Gallons Pesticide Applied: 90 gal Trumpet (30-31 Jul); 50 gal Permanone 30+30 (1 Aug)
- f. Gallons and Name Diluent Used: None (30-31 Jul); 50 gal BVA oil (1 Aug)
- g. Gallons and Name of Flush Used: 20 gal BVA oil (1 Aug)
- h. Other Additives Used: None
- i. Application Rate: 0.85 oz/acre Trumpet; 0.36 oz/acre (1:1 Permanone + BVA)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99106
- b. Spray System (Modules Used) and System ID #: 1
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 30-8003's (30-31 Jul); 8-8003's (1 Aug); straight down
- f. Pressure: 40 psi
- g. Flow Rate: 7.9 gal/min (Trumpet); 2.6 gal/min (1:1 Permanone + BVA)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 ft
- b. Spray offset: 1000 ft (30-31 Jul); 2000 ft (1 Aug)
- c. Spray Release Altitude: 150 ft AGL
- d. Ground Speed: 200 knots (338 feet/second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 270°/5 (30 Jul); 320°/7 (31 Jul); 020°/9 (1 Aug)
- b. Temperature (Degrees Fahrenheit): 69°F (30 Jul); 71°F (31 Jul); 73°F (1 Aug)
- c. Relative humidity: 44% (30 Jul); 61% (31 Jul); 41% (31 Jul);
- d. Cloud Cover: Scattered
- e. Source: Minot AFB Weather Flight/Ground observations

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Mosquito activity was high the week prior to aerial spraying in the City of Minot (as reported during the State Fair). No light trap data for pre- or post- spraying was provided by the City of Minot. Local accounts post-spray indicated a significantly reduced mosquito population.
- b. Minot AFB Public Health provided pre-treatment mosquito counts of 127 per night. The Mosquito Magnet used for trapping mosquitoes was damaged and no post-treatment collections were made. Observations of mosquito activity was greatly reduced following the aerial spraying.
- c. Williston Vector Control monitors mosquitoes with 8 New Jersey traps positioned throughout their spray area. Pre-spray mosquito collections ranged from 1-31 per night. Following the spray, Williston reported an overall reduction in trap collections of 70%. (Attachment 3).

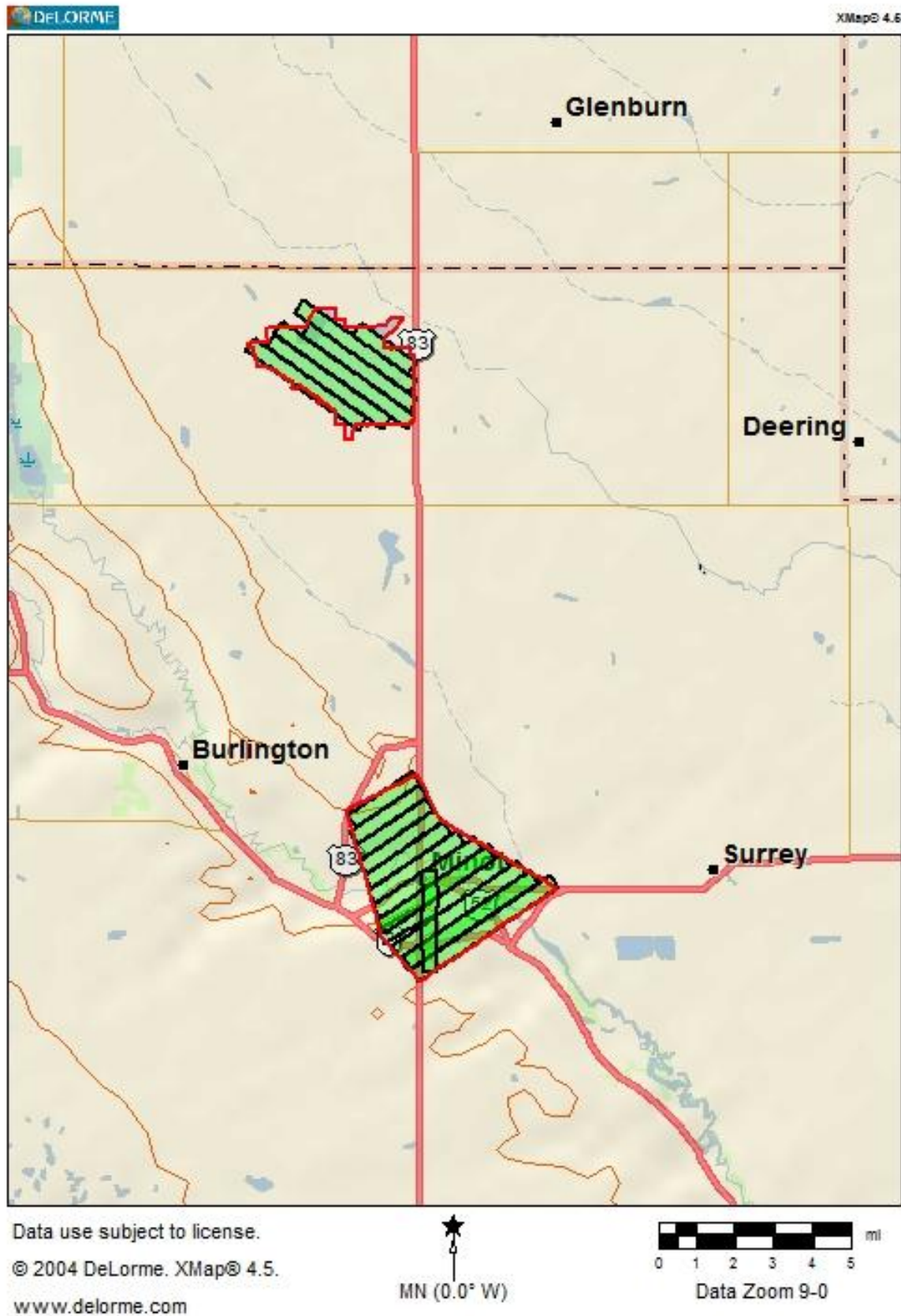
**8. REMARKS:** Several dead birds in North Dakota have tested positive for West Nile Virus (WNV). This zoonotic disease is transmitted to humans and horses by *Culex tarsalis* mosquitoes in North Dakota. Application of mosquito larvicides earlier in June coupled with adulticide applications in early and late July should help suppress biting activity and disease transmission in areas treated.

This is the second application of adulticides for mosquito control for the Cities of Minot and Williston by the Air Force Spray Flight under the recently approved Innovative Readiness Training (IRT) program. Under the IRT, the Air Force works directly with representatives of the communities of City of Minot and Williston to provide vector control (mosquito control) via aerial applications while simultaneously accomplishing military training. North Dakota has received significant rainfall this year and floodwater mosquito numbers have been well above levels seen during the relatively dry year in 2012. Favorable weather and hard work allowed for the three separate areas to be treated on three separate nights. The mission was also complicated because Williston Vector Control uses a different pesticide than Minot AFB and City of Minot. However, the different pesticide provides the spray team with additional training opportunities for maintenance personnel performing system calibration. Mosquito counts were reduced significantly following applications.

//signed//

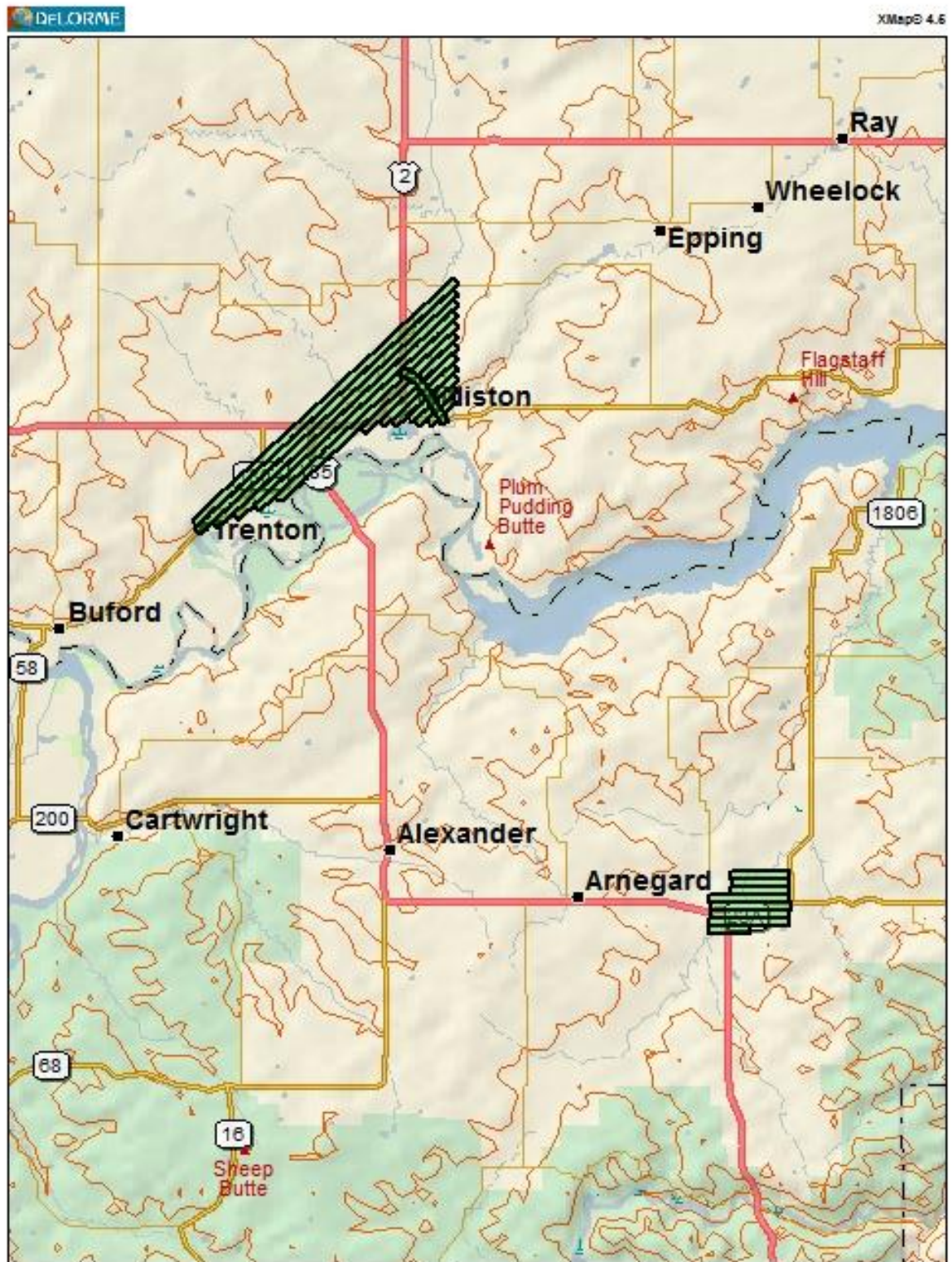
(b) (6) (b) (6) Lt Col, USAFR  
Entomologist and DoD Certified Applicator

**Attachment 1. Areas treated 30 Jul over Minot AFB. City of Minot was sprayed on 31 Jul 2013. The light green lines are the track of the aircraft while spraying.**





Attachment 2. Areas treated on 1 Aug 2013 in Williston ND including Trenton and Watford City. The green lines are the track of the aircraft while spraying.



Data use subject to license.

© 2004 DeLorme. XMap® 4.5.

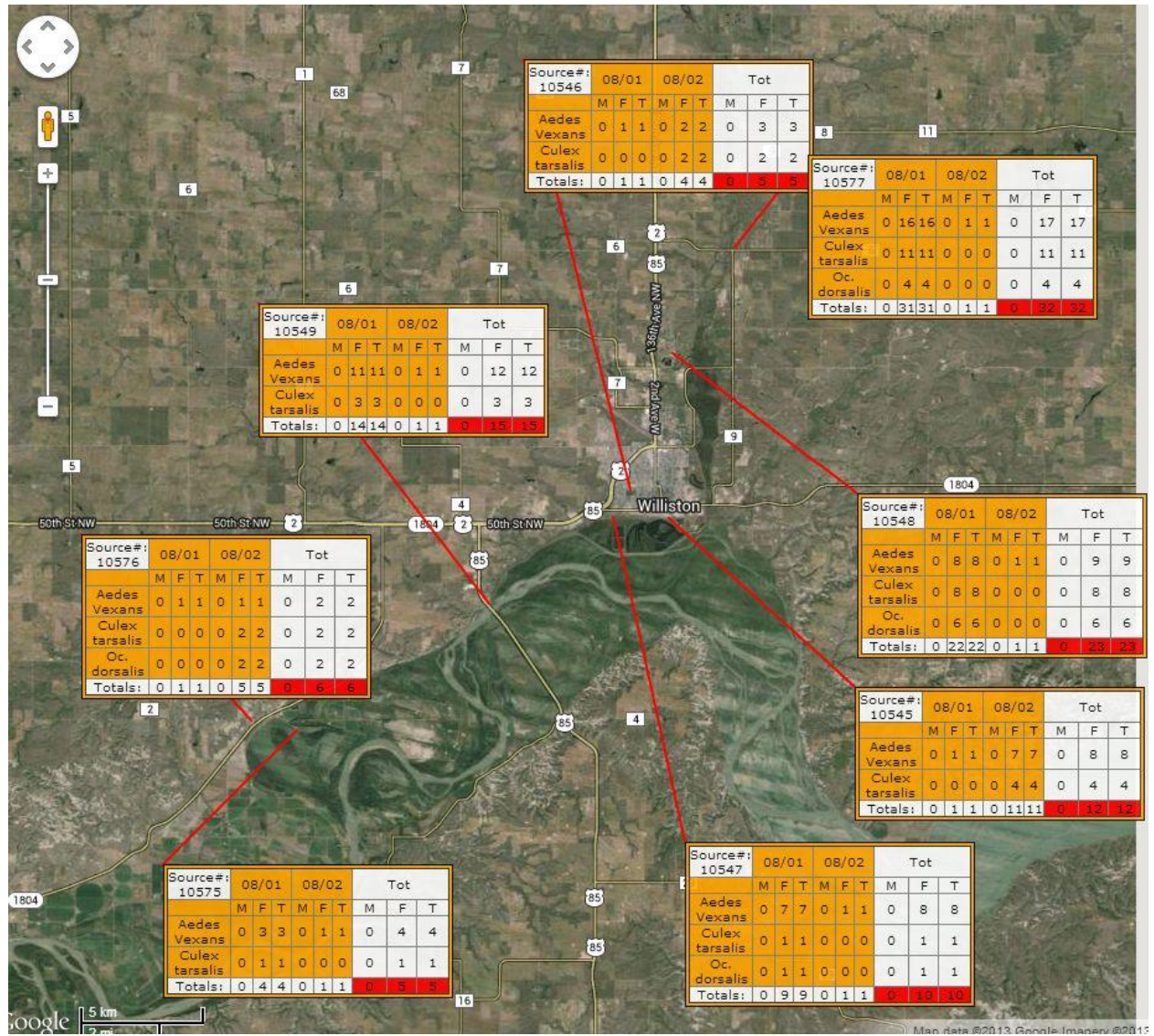
[www.delorme.com](http://www.delorme.com)

★  
MN (0.0° W)

0 2 4 6 8 10 mi  
Data Zoom 8-0



### Attachment 3. Williston Vector Control Mosquito Trap Counts.





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

23 July 2013

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for USDA Aerial Spray Test

1. One C-130 will be available 29 July – 2 August 2013 for a spray aerial insecticide efficacy test in partnership with the USDA using Dibrom in arid high temperatures on government property. The aircraft will operate from NAF, El Centro, CA. This mission will also provide real-world training for aerial spray entomologists and maintenance personnel.

2. Concept of Operations:

- a. 29 July (Monday)  
0600 Show KYNG  
1000 Depart KYNG  
1315 Land KNJK
- b. 30 July -1 Aug. (Tuesday-Thursday)  
1200 Show KNJK  
1400 Depart KNJK  
1700 Land KNJK
- c. 2 Aug. (Friday)  
1000 Show KNJK  
1030 Depart KNJK  
1945 Land KYNG

3. LTC (b) (6) (b) (6) will act as Mission Commander.

4. Support required at El Centro NAF, CA has been completed.

(b) (6), TSgt, USAFR  
757AS Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

22 October 2012

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Smoky Hill ANG Range, Salina, KS.

1. Control musk thistle at the Smoky Hill ANGR, to improve grazing areas, to eliminate the Range as a source of infestation to neighboring farms from wind-blown musk thistle seeds and to support state and local noxious weed control efforts.

2. Concept of Operations:

- a. 29 October (Monday)  
1100 Depart KYNG  
1300 Land KSLN  
1400 Installation Brief
- b. 30 October – 3 November (Tuesday - Saturday)  
0715 Depart KSLN  
1115 Land KSLN
- c. 4-8 November (Sunday - Thursday)  
0630 Depart KSLN  
1030 Land KSLN
- d. 9 November (Friday)  
0700 Show Time KSLN  
0900 Depart KSLN  
1300 Land KYNG

3. Maj. (b) (6) will be the Mission Commander. LtCol (b) (6) will be the Aircraft Commander. Support at Smoky Hill and Salina has been completed.

(b) (6), MSgt, USAFR  
757AS Aerial Spray

**910 AW AERIAL SPRAY  
PMP'S POST-MISSION REPORT  
SMOKY HILL ANGR, KS 29 Oct-9Nov 2012**

**1. MISSION BASICS:**

- a. **Installation Sprayed:** Smoky Hill ANGR, Salina KS
- b. **Mission Duration:** 29 Oct – 9 November 2012
- c. **Purpose of Application:** Control of Musk Thistle (*Cardus nutans*) on Smoky Hill, ANGR.
- d. **Application Date/s:** 30 October-7 November 2012  
**Time/s of Application (Local):** See attachment 2
- e. **Acres Treated:** 3926
- f. **Project Coordinator/s (Name/Rank, Title, Phone #):** (b) (6) , Aerial Spray Coordinator, Smoky Hill ANGR, DSN (b) (6)
- g. **Date Spray Map Last Approved:** 29 November 2012
- h. **Date of Waste Generation Letter:** N/A

**2. OPERATIONAL:**

- a. **Mission Commander:** Maj (b) (6) (1<sup>st</sup> half), Maj (b) (6) (2<sup>nd</sup> half)
- b. **Certified PMP (Category 11):** Lt Col (b) (6) Lt Col (b) (6)(b) (6) (1<sup>st</sup> half), Lt Col (b) (6)(b) (6) (2<sup>nd</sup> half)
- c. **Aircrew:**
  - (1) Aircraft Pilots: Maj (b) (6) , Lt Col (b) (6) (1<sup>st</sup> half), Maj (b) (6) (2<sup>nd</sup> half), Capt (b) (6) (2<sup>nd</sup> half)
  - (2) Navigators: Lt Col (b) (6) (1<sup>st</sup> half), Lt Col (b) (6) (2<sup>nd</sup> half)
  - (3) Flight Engineer(s): MSG (b) (6) (1<sup>st</sup> half), MSG (b) (6) (1<sup>st</sup> half), SMSG (b) (6) (2<sup>nd</sup> half)
  - (4) Spray Operators: MSG (b) (6) , MSG (b) (6) (1<sup>st</sup> half), MSG (b) (6) (b) (6) MSG (b) (6) (2<sup>nd</sup> half)
- d. **Safety Briefer:** Lt Col (b) (6)(b) (6)
- e. **Spray Maintenance/Pesticide Loaders:** SMSG (b) (6)(b) (6) MSG (b) (6) (b) (6) TSG Michael Lamantia, TSG (b) (6) , TSG (b) (6) , TSG (b) (6)
- f. **Spray Ground Monitors:** Lt Col (b) (6)(b) (6) Lt Col (b) (6) Lt Col (b) (6) (b) (6)
- g. **Crew Chief(s):** TSG (b) (6) Sra (b) (6)
- h. **Avionics:** MSG (b) (6)
- i. **Flying Data:**
  - 1. Spray Sorties/Hours: 21/21.6 Total; 17 Actual, 4 Flush Sorties

**3. PESTICIDE:**

- a. **Trade Name (% Active Ingredient):** Milestone®
- b. **EPA Registration Number:** 62719-6
- c. **Formulation Sprayed:** Milestone® mixed with water and AirexDC® Drift Control
- d. **Gallons Pesticide Loaded:** 150 Gallons Milestone Concentrate/ 75 Gallons AirexDC®
- e. **Gallons Pesticide Applied:** 150 Gallons Milestone Concentrate
- f. **Gallons and Name Diluent Used:** Approx. 26,200 gallons water
- g. **Gallons and Name of Flush Used:** Approx 7,200 gallons water
- h. **Other Additives Used:** 5 gallons of AirexDC® per load
- i. **Application Rate:** 7 gallons finish spray/acre

**4. APPLICATION EQUIPMENT:**

- a. **Aircraft Type (Tail Number):** 909105
- b. **Spray System (Modules Used) and System ID #:** 3-Module system
- c. **Spray System Configuration:** Fuselage Booms
- d. **Nozzle Type/Size:** R-20 Raindrop Nozzles
- e. **Nozzle Orientation & Number Used:** 17 Total, straight back
- f. **Pressure:** 36-52
- g. **Flow Rate:** 320-340 GPM

**5. APPLICATION PARAMETERS:**

- a. **Swath Width Flown:** 100'
- b. **Spray Off Set:** N/A
- c. **Spray Release Altitude:** 100' AGL
- d. **Ground Speed:** 200 Knots

**6. WEATHER OBSERVATIONS:**

- a. **Winds (Direction/Speed):**  
Ground: 245@4 (30 Oct), 254@4 (31 Oct), 250@8 (1 Nov), 130@10 (2 Nov), 330@5 (3 Nov), 220@5 (4 Nov), 340@15 (5 Nov), 350@12 (6 Nov), 280@5 (7 Nov)
- b. **Temperature Range During Application (°F):** 56°- 77°
- c. **Source:** Ground observations

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. **Deposition Pattern:**  
(1) Monitors observed/confirmed swath width from ground positions
- b. **Effectiveness:**  
(1) Technique/s Used: Visual field observations will be carried out in the spring by the Smoky Hill Staff. Good control is expected due to excellent coverage and application timing

**8. OPERATIONS TRAINING:**

The trip to Salina Kansas provided an excellent training opportunity for the aerial spray operations personnel. The unit had not sprayed there since 2006. For many aircrew members and one entomologist this was their first experience in the Smokey Hill range. Exposure to any new spray area provides excellent training for spray personnel. This location provided an opportunity for MSgt (b) (6) to continue his LV/HV spray operator upgrade. Also in addition to accomplishing continuation training several aircrew members were able to complete their annual SP 30 Actual Sortie requirement.

**9. MX TRAINING:**

Like the operations section, the trip to Salina Kansas was an excellent training opportunity for the 910 AW Aerial Spray Maintenance section. During the past 6 years, the maintenance section has acquired many new technicians, with only 2 personnel having experience and knowledge of the operations there. Valuable training was accomplished to include: safety practices, general maintenance practices, MASS configuring, coordinating load times, MASS preflight, water delivery procedures, water loading procedures, chemical loading procedures, chemical mixing procedures, MASS servicing procedures, aircrew debriefing, MASS troubleshooting, clean up procedures and MASS deconfiguring f which are specific to the Smokey Hill mission.



**10. REMARKS:** Yearly aerial applications for the control of musk thistle were discontinued in 2006 as headquarters ANG natural resources personnel allocated monies for the purchase of tractors to ground apply pesticides. Not taken into consideration was the roughness of the terrain, which severely impacted the efficiency and effectiveness of ground applications. By 2010 certain parts of the range were completely overwhelmed with musk thistle to the point that infestations were considered uncontrollable by ground application techniques. In light of this, the ANG natural resources office instigated the draft of a new environmental assessment (EA) concerning the aerial application of pesticides on range property. In this EA, provisions were made for application of a variety of more environmental friendly and effective pesticides than had been used previously. In 2012 aerial applications were resumed. Good results are expected as the product is highly effective against musk thistle, and the coverage was exceptional. Attachment 1 shows some of the designated areas covered on this mission. Unfortunately, a problem with the recording function of the GPS prevented complete data logging. However, all of the designated blocks were completed with the exception of a small portion of the block located in the NE corner of the range. If musk thistle continues to be a problem on other parts of the range, this mission will be continued in following years and areas will be treated on a rotational basis. Many thanks to Smoky Hill ANGR personnel for making this mission an operational success.

//Signed//

(b) (6) (b) (6) Lt Col, USAFR  
Certified Pest Management Professional

(b) (6) (b) (6) Lt Col, USAFR  
Certified Pest Management Professional

**Attachment 1.** Map depicting range and designated spray areas. Magenta color indicates deposition data for first 5 days of application. Deposition data for subsequent sorties was lost due to GPS malfunction. However, all areas save for a portion of the NW block were completely covered.





**SPRAY OPERATIONS SUMMARY FOR SMOKY HILL ANG RANGE**  
**30 October - 8 November 2012**

<b>DATE</b> Oct/Nov	<b>SORTIE #</b>	<b>LOCAL TIME OF APPLICATION</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>FLYING HOURS</b>
30	1	0820-0855	47	322	0.6
30	2	0910-0953	202	1356	0.7
31	3	0745-0832	244	1664	0.8
31	4	0924-1000	254	1713	0.6
1	5	0747-0833	249	1739	0.8
1	6	0908-1008	259	1807	1.0
2	7	0745-0830	261	1800	0.7
2	8	0927-1032	260	1804	0.8
2	9	1100-1200	256	1767	1.0
3	10	0655-0747	258	1756	0.9
4	11	0740-0920	297	1849	1.7
4	12	1025-1200	235	1549	1.6
5	13	0700-0850	269	1868	1.8
5	14	0940-1130	170	1171	1.8
6	15	0655-0830	272	1894	1.6
6	16	0910-1030	219	1527	1.3
7	17	0900-0955	174	1013	0.9
7	FLUSH	1030-1120	-	-	0.8
8	FLUSH	0710-0740	-	-	0.5
8	FLUSH	0910-0956	-	-	0.8
8	FLUSH	1025-1120	-	-	0.9
Totals	17		3,926	26,599	21.6



**DEPARTMENT OF THE AIR FORCE**  
**757 Airlift Squadron – Aerial Spray Operations**  
**3976 King Graves Rd Unit 24**  
**Vienna OH 44473-5924**

**910 AW AERIAL SPRAY UNIT – Pest Management Professional's**  
**Post-mission Report Minot AFB, City of Minot, Williston Vector**  
**Control – Adult Mosquito Control 30 Jun – 3 Jul 2013**

**1. MISSION BASICS:**

- a. Installation/Community Sprayed: Minot AFB, City of Minot, Watford City, Williston and surrounding areas, North Dakota
- b. Mission Duration: 30 June – 3 July 2013
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date/s: 30 June, 1&2 July 2013
- e. Time/s of Application (Local): 1925-2100 (30 Jun); 1925-2015 (1 Jul); 1909-2126 (2 Jul)
- f. Acres Treated: 4,510 (30 Jun); 9,578 (1 Jul); 26,311 (2 Jul) = 40,399 acres
- g. Project Coordinator/s (Name/Rank, Title, Phone #): SrA (b) (6) (Minot AFB); (b) (6) (City of Minot); (b) (6) (Williston Vector)
- h. Date Spray Map Last Approved: 27 Jun, 1 July 2013
- i. Date of Waste Generation Letter: 28 July 2013
- j. Installation In-Briefing: (When/Where/Briefer/s): 28 Jul, via telephone with LtCol (b) (6) (b) (6) (Mission Commander) and 5CES Deputy Civil Engineer, Ms. (b) (6) 1 Jul with (b) (6) at Minot Public Works Office

**2. OPERATIONAL:**

- a. Mission Commander: LtCol (b) (6)
- b. Certified PMP/Entomologists (Category 11): LtCol (b) (6) (b) (6) (safety briefer), Maj (b) (6)
- c. Aircrew:
  - (1) Pilots: LtCol (b) (6), Capt (b) (6)
  - (2) Navigators: LtCol (b) (6)
  - (3) Flight Engineers: TSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6), MSgt (b) (6), TSgt (b) (6), SSgt (b) (6)
- d. Maintenance:
  - (1) Spray Maintenance: TSgt (b) (6), TSgt (b) (6), MSgt (b) (6), (b) (6), SrA (b) (6)
  - (2) Crew Chiefs: SSgt (b) (6), SrA (b) (6)
  - (3) Avionics: SSgt (b) (6)
- e. Flying Data:
  - (1) Spray Sorties/Hours: 3 sorties (1.7 + 1.8 + 3.4) = 6.9 hrs (see Attachments 1-3)
  - (2) Ferry Sorties/Hours: 2 sorties (3.5 + 3.5) = 7.0 hrs



**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet<sup>®</sup> EC Concentrate (78% naled); Permanone 30+30 (30% Permethrin and 30% piperonyl butoxide)
- b. EPA Registration Number: 59639-90-5481 Trumpet; 432-1235 Permanone 30+30
- c. Formulation Sprayed: Emulsified Concentrate (Trumpet); 30+30 (Permanone 30+30)
- d. Gallons Pesticide Loaded: 120 gal Trumpet (30 Jun); 50 gal Permanone 30+30 (2 Jul)
- e. Gallons Pesticide Applied: 90 gal (19 Jul) & 50 gal (2 Jul); 37 gal Permanone (2 Jul)
- f. Gallons and Name Diluent Used: 35 gal BVA with Permanone 30+30
- g. Gallons and Name of Flush Used: 20 gal aromatic naptha
- h. Other Additives Used: None
- i. Application Rate: 1.1oz/acre (30 Jun, 1 Jul); 0.18 oz/acre (2 Jul)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99103
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet<sup>®</sup> 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 16-8003s total (30 Jun) and 32-8003's (1 Jul), 9-8003s (2 Jul); oriented straight down
- f. Pressure: 35-42 psi
- g. Flow Rate: 4.0 gallons per minute (30 Jun); 8.0 gallons per minute (1 Jul); 2.6 gallons per minute (2 Jul)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1,000 ft (30 Jun); 2000 ft (1-2 Jul)
- b. Spray offset: 1000 ft (30 Jun); 2000 ft (1-2 Jul)
- c. Spray Release Altitude: 150 ft'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 4-6 kts @ 070° (30 Jun) 4-6 kts @ 180° (1 Jul) 5kts @ 120° (2 Jul)
  - (2) Release Altitude: 6 kts @ 070° (30 Jun) 8 kts @ 180° (1 Jul) 8kts @ 120° (2 Jul)
- b. Temperature (Degrees Fahrenheit): 80-83° (30 Jun-2 Jul)
- c. Relative humidity: 75-85% (19 Jul) & 53% (21 Jul)
- d. Cloud Cover: Scattered clouds
- e. Source: Ground observations and aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Monitoring is done with New Jersey light traps in the City of Minot. Pre-application mosquito counts on 24 June averaged at 104/night (City of Minot); No post spray information was provided by the City of Minot at the time of this writing. Local accounts were that mosquitoes were significantly reduced.
- b. No pre or post mosquito counts were provided by Minot AFB Public Health. This may be a result of the weekend application and rapid departure of the spray team. Local personal accounts were that mosquito numbers were significantly reduced following the spray.
- c. Williston Vector monitors mosquitoes with 9 New Jersey traps positioned throughout their spray area. Pre-spray collections ranged from 1-833/per night. Following the spray, Williston reported a 50-80% reduction in trap collections with an overall 76% reduction.

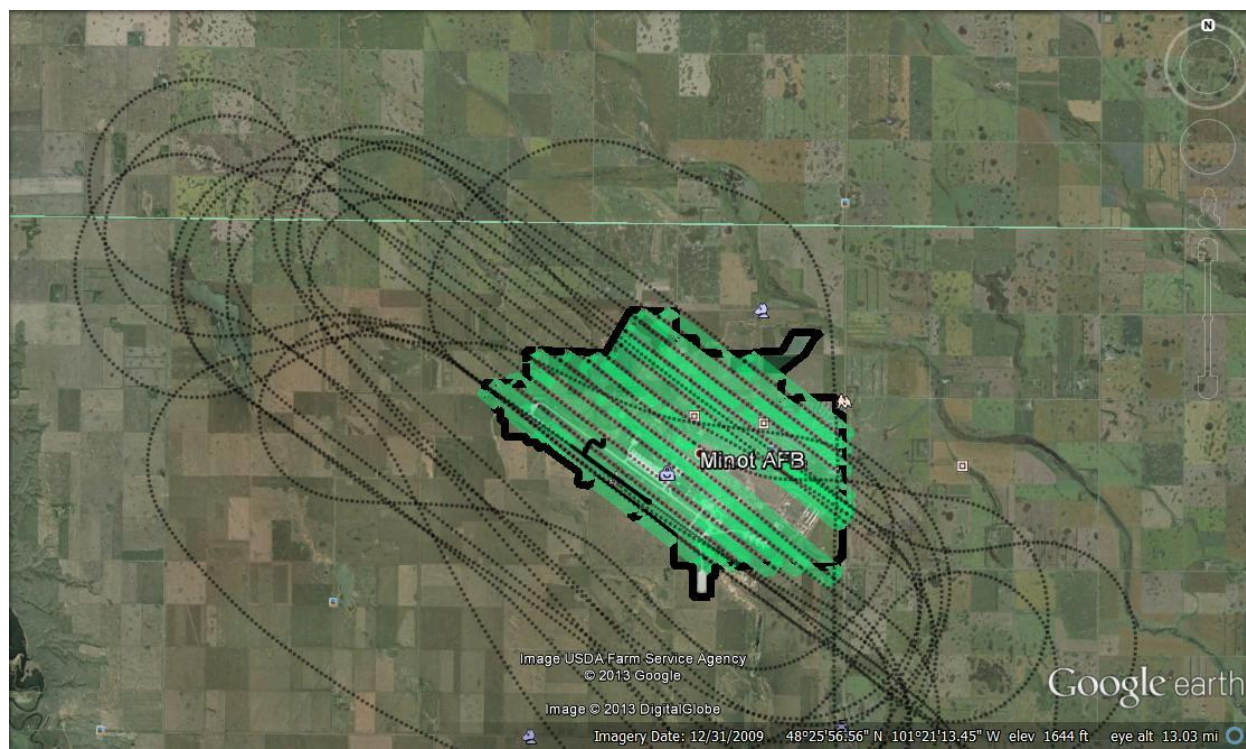
**8. REMARKS AND RECOMMENDATIONS:** These applications mark the return of the Air Force Spray Flight to North Dakota under the recently approved Innovative Readiness Training (IRT) program. Under the IRT, the Air Force works directly with representatives of the communities of City of Minot and Williston to provide vector control (mosquito control) via aerial applications while simultaneously accomplishing military training. North Dakota has received significant rainfall this year and floodwater mosquito numbers have been well above levels seen during the relatively dry year in 2012. Favorable weather and hard work allowed for the three separate areas to be treated on three separate nights, including an application in the same evening that the spray plane arrived. The mission was also complicated because Williston Vector uses a different pesticide than the AFB and City of Minot. However, the different pesticide provides the spray team with additional training opportunities and experience. Mosquito counts were reduced significantly following applications. However, it was readily observed, by even the layperson, what science has clearly indicated: *Aedes vexans* (the primary target for this spray) has a primary activity period near and past sunset. Mosquitoes began biting aggressively about the time the spray plane returned (sunset) in contrast to a relatively mosquito free period during the application (personal observations at Minot AFB). Recommend that the Air Force move quickly to develop a night operation for North Dakota spray projects for night flying vectors. This will improve the efficacy of the pesticide application and reduce non-target impacts (as suggested in the caption on the front page of the Minot newspaper - Attachment 4).

- a. Ms. (b) (6), who had coordinated these spray events for several years has recently accepted a position at JB Elmendorf and we appreciate all the work she has done in the past to build this program into the successful mosquito control instrument that it is. In her place, SrA (b) (6) (5CES/ CEOUE) worked diligently to make these series of spray flights possible. The 5<sup>th</sup> CES Pest Management Shop accepts and transfers pesticides from the IRT participants which facilitates this partnership. We would also like to extend our appreciation to the various directorates at the Air Force Reserve Command (A1/A3/A7/JA) who used professionalism, knowledge, and expediency to make this IRT possible. Special mention goes to Maj (b) (6) for her skillful management of the packages and to Mr. (b) (6) and Maj (b) (6) for their legal insight.

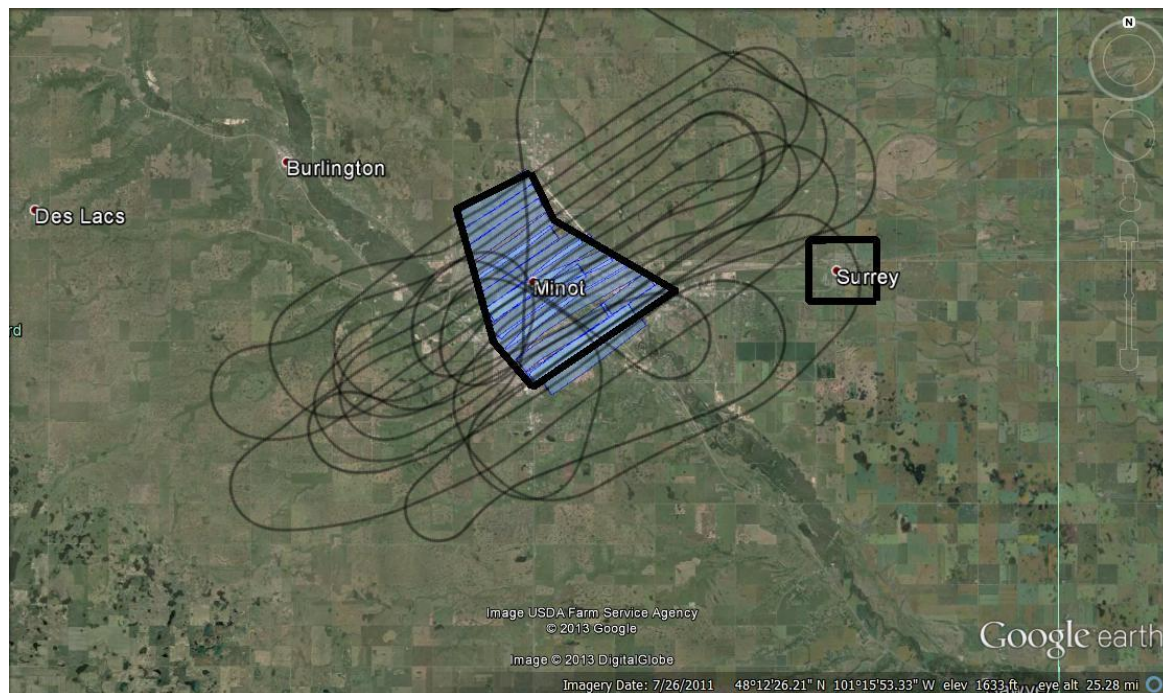
//signed//

(b) (6) (b) (6) Lt Col, USAFR  
Entomologist/DoD Certified Applicator

Attachment 1. Shows the areas treated 30 June over Minot AFB. The black dots are the track of the aircraft and the light green lines are the track of the aircraft while spraying. Some areas flown outside the spray block were treated so that the pesticide would drift back into the target area with the prevailing wind direction.

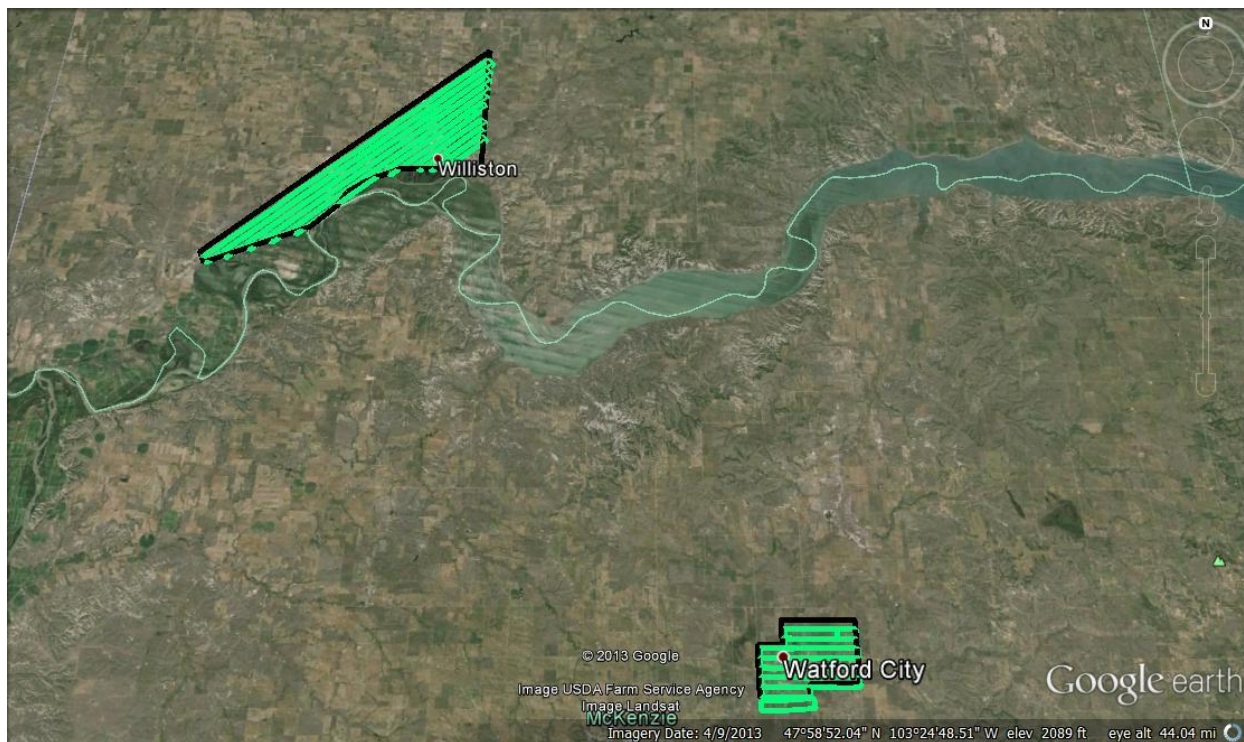


Attachment 2. City of Minot was sprayed on 1 July.





Attachment 3. Shows areas treated on 2 July 2013 in and near Williston ND including Trenton and Watford City. The black outline represents the proposed treatment area. The track of the aircraft while spraying is not displayed to reduce clutter but green lines are the track of the aircraft while spraying. Some areas flown outside the spray block were treated so that the pesticide would drift back into the target area with the prevailing wind direction



Attachment 4. Front page of the Minot Daily News, 2 July 2013. No story accompanied the photo and caption.





**DEPARTMENT OF THE AIR FORCE**

**910<sup>th</sup> Operations Group**

3976 King Graves Road Unit 24

Vienna OH 44473-5924

17 Jan 13

**MEMORANDUM FOR RECORD**

**FROM:** 757AS/DOS

**SUBJECT:** Aerial Spray Refresher Recap

1. The 757 AS Aerial Spray Refresher was scheduled to occur in Avon Park, FL from 13-18 Jan 2013. Sixty seven operations and maintenance personnel were scheduled to attend this training to prepare for the upcoming spray season. Training was to take place over the Avon Park Bombing Range, FL and coastal waters. In addition, personnel planned to support unit entomologists teaching the DoD Aerial Application Pest Control Course (AAP-001) at Ft. Meyers, FL.

2. On 9 Jan, due to budgetary constraints, 757AS leadership decided to cancel the flyaway portion of the planned refresher. One aircraft and crew was allocated to support the DoD Aerial Application Pest Control Course (AAP-001) at Ft. Meyers, FL, while operating out of Avon Park, FL. Details of the specific training accomplished during the trip will be outlined in the Avon Park Post Mission Report.

3. A modified Aerial Spray Refresher training schedule was created for operations personnel and training was conducted at home station (YNG) from 14-16 Jan. All positions were provided opportunities for ground and flight training. The first two days ground training centered on topics applicable to all crew positions. Flight training consisted of a sortie over the Ravenna Arsenal and an additional sortie (overwater oil spill scenario) over Lake Erie. Due to inability to spray water (winter), spray operators conducted simulated sprays on the training MASS located in the spray hangar. The training plan is included as Attachment 1.

4. Although this training was not mandatory, a total of 37 personnel attended the some portion of the training. Five sorties totaling 7 hours were flown over the 3 days. In general, feedback from operations personnel regarding both the ground training and the oil spill scenario was very positive, with some minor suggestions to improve the course content. Ground training sessions were greatly enhanced and crosstalk between sections initiated as individuals shared past spray experiences.

5. The loss, of the flyaway portion, however did negatively affect the original intent and scope of the planned training. The spray operators lost valuable training sorties for a number of personnel and did not have an opportunity to experience the planned hot reload training scheduled on Day 4 at Avon Park. Most importantly, with the training being held at home station, several ARTs, unfortunately burdened with their civilian

duties throughout each day were unable to attend all training opportunities.

6. Lastly, MSgt (b) (6), MSgt (b) (6), and TSgt (b) (6) should be commended for a great job developing and organizing their specific sections' training during the week.

(b) (6), Lt Col, USAFR  
757 AS/ADO

## Aerial Spray Refresher @ YNG 14-16 Jan 2013

Below is the proposed replacement home station training to replace the flyaway which was cancelled due to budget restraints. The goal is to maximize refresher training to all crew positions.

Each training day will consist of ground and flight training. There will be 2 hours of ground training in the morning and flying each afternoon. Ground training on the first two days is designed for all crew positions. Weds ground training will be crew position specific.

Those planning to fly will be divided into two crews: A & B. Each crew will experience 1 overwater oil spill scenario on one day and a spray sortie over the Ravenna Arsenal on the opposite day. The third flying day will be utilized for those crewmembers requiring additional practice and the scenario will be determined by training needs. Only one sortie will fly over Ravenna on a given day to reduce the possibility of noise complaints.

Due to cool weather in the local area, no water will be sprayed over during the flight training. To accomplish this training, spray operators will perform simulated spray sorties in the spray hangar.

Depicted below is the actual refresher schedule presented during 14-16 Jan.

### MONDAY 14 JAN

<b>0830-1030 GND TRNG</b>	Intro and Spray Program Brief General Principles /Techniques	Aircrew briefing rm
<b>1030-1200</b>	Preflight / Msn Planning	Crew A
<b>1200-1330</b>	Overwater Scenario Flight	Crew A
<b>1200-1330</b>	Preflight / Msn Planning	Crew B
<b>1330</b>	ERCC	Crews A & B
<b>1400-1530</b>	Arsenal Flight	Crew B

### TUESDAY 15 JAN

<b>0830-1030 GND TRNG</b>	Public Affairs / Legal Oil Spill	Aircrew briefing rm
<b>1030-1200</b>	Preflight / Msn Planning	Crew B
<b>1200-1330</b>	Overwater Scenario Flight	Crew B
<b>1200-1330</b>	Preflight / Msn Planning	Crew A
<b>1330</b>	ERCC	Crews A & B
<b>1400-1530</b>	Arsenal Flight	Crew A

**WEDS 16 JAN**

<b>0830-1030</b> <b>GND TRNG</b>	Spray Math Mission Commander	Aircrew briefing rm
		Aircrew briefing rm
	FE systems	FE room
	Spray Operators	Spray Hangar
<b>1030-1200</b>	Preflight / Msn Planning	
<b>1300-1430</b>	Arsenal / Overwater Flight	

Note: Spray Operators completed simulated sprays on water only MASS each day in hangar.

Front end crewmembers given the ability to witness simulated spray on Weds.

Only one sortie flown on Weds due to low ceilings. Instead second sortie consisted of flights over both the arsenal and Lake Erie to provide both training opportunities for all crewmembers who were unable to fly earlier in the week.



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

22 Aug 13

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Cancellation of Aerial Spray Operations at Barksdale AFB, LA

1. Planned 9-13 September Aerial Spray operations at Barksdale AFB, LA have been cancelled due to a lack of required legal documentation from the customer to spray the target area.
2. There will be no substitute off station Aerial Spray missions planned to replace this scheduled training.

(b) (6)  
757AS/DOS

, Lt Col, USAFR



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

7 Aug 13

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Cancellation of Aerial Spray Operations at Homestead ARB, FL

1. The planned Aerial Spray operations at Homestead ARB and surrounding Miami-Dade County planned for 12-16 Aug has been cancelled due to a lack of target pests.
2. There will be no substitute off station Aerial Spray missions planned to replace this scheduled training.

(b) (6)  
757AS/DOS

, Lt Col, USAFR



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

24 June 13

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Grand Forks AFB, ND.

1. One C-130 will be available 8 July – 12 July for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel stationed at Grand Forks AFB, ND. This mission will also provide real-world training for aerial spray entomologists and maintenance personnel.

2. Concept of Operations:

- a. 8 July (Monday)  
1000L Show KYNG  
1200L Depart KYNG  
1400L Land KRDR
- b. 9 July (Tuesday)  
1700L Show KRDR  
1930L Depart KRDR  
2130L Land KRDR
- c. 10 July (Wednesday)  
1700L Show KRDR  
1930L Depart KRDR  
2130L Land KRDR
- d. 11 July (Thursday)  
1700L Show KRDR  
1930L Depart KRDR  
2130L Land KRDR



- e. 12 Jul (Friday)  
1130 Show KRDR  
1330 Depart KRDR  
1730 Land KYNG

3. Aerial Spray Operation:

- a. Chemical: Trumpet
- b. Altitude: 150 AGL
- c. Application rates: 7.26 gal/min (1.0 oz/acre)
- d. Area: Approximately 12,000 acres

4. Lt Col (b) (6) will act as Mission Commander.

5. Lt Col (b) (6) (b) (6) will act as Aircraft Commander.

6. Support required at Grand Forks AFB, ND has been completed.

(b) (6), TSgt, USAFR  
757<sup>th</sup> AS Flight Engineer



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

30 July 13

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Grand Forks and Grand Forks AFB, ND.

1. One C-130 will be available 5 -9 August for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel stationed at Grand Forks AFB, ND. This mission will also provide real-world training for aerial spray entomologists and maintenance personnel.

2. Concept of Operations:

- a. 5 Jun (Monday)  
0900L Show KYNG  
1100L Depart KYNG  
1300L Land KRDR
- b. 6-8 Aug (Tues-Thurs.)  
1700L Show KRDR  
1900L Depart KRDR  
2100L Land KRDR
- c. 9 Aug. (Friday)  
1130 Show KRDR  
1330 Depart KRDR  
1730 Land KYNG

3. Aerial Spray Operation:

- a. Chemical: Trumpet
- b. Altitude: 150 AGL
- c. Application rates: 7.26 gal/min (1.0 oz/acre)
- d. Area: Approximately 29,900 acres

4. Maj (b) (6) will act as Mission Commander.
5. Lt Col (b) (6) will act as Aircraft Commander.
6. Support required at Grand Forks AFB, ND has been completed.

(b) (6), TSgt, USAFR  
757<sup>th</sup> AS Flight Engineer



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

31 July 13

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Homestead ARB, FL

1. One C-130 will be available 12-16 Aug 2013 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations effecting the health and welfare of the citizens of Homestead ARB and surrounding Miami-Dade County. This mission will also provide real-world training for aerial spray entomologists and maintenance personnel. Operations will be conducted out of Homestead ARB, FL.

2. Concept of Operations:

- a. 12 Aug. (Monday)  
1200 Show KYNG  
1400 Depart KYNG  
1730 Land KHST
- b. 13-15 Aug (Tuesday-Thursday) Spray Sorties  
1500 Show KHST  
1700 Depart KHST  
1930 Land KHST
- c. 16 Aug (Friday)  
0900 Show KHST  
1100 Depart KHST  
1430 Land KYNG

3. Aerial Spray Operation:

- a. Chemical: Dibrom
- b. Altitude: 150 AGL
- c. Application rates: 3.6 gal/min (0.5 oz/acre)
- d. Area: Approximately 30,000-80,000 acres TBD

4. Maj. (b) (6) will act as Mission Commander.
5. Maj (b) (6) will act as Aircraft Commander.
6. Support required at Homestead ARB, FL has been coordinated.

(b) (6), TSgt, USAFR  
757AS Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

13 Aug. 13

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Langley AFB, VA.

1. One C-130 will be available 26-30 Aug. 13 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel stationed at Langley AFB, VA and surrounding communities. This mission will also provide real-world training for aerial spray entomologists and maintenance personnel.

2. Concept of Operations:

- a. 26 August (Monday)  
1400L Show KYNG  
1600L Depart KYNG  
1715L Land KLFI
- b. 27-29 August (Tues.-Thurs.)  
1600L Show KLFI  
1800L Depart KLFI  
2045L Land KLFI
- c. 30 August (Friday)  
1000L Show KLFI  
1130L Depart KLFI  
1245L Land KYNG

3. Aerial Spray Operation:

- a. Chemical: Dibrom
- b. Altitude: 150 AGL
- c. Application rates: 3.6 gal/min (.50-.75 oz/acre)
- d. Area: Approximately 125,000 acres but final acreage TBD

4. Lt. Col (b) (6) will act as Mission Commander.
5. Lt. Col (b) (6) will act as Aircraft Commander.
6. Support required at Langley AFB, VA has been arranged.

(b) (6), TSgt, USAFR  
757AS Aerial Spray Flight Engineer





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

8 July 13

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Langley AFB, VA.

1. One C-130 will be available 22-26 July 13 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations effecting the health and welfare of the personnel stationed at Langley AFB, VA and surrounding communities. This mission will also provide real-world training for aerial spray entomologists and maintenance personnel.

2. Concept of Operations:

- a. 22 July (Monday)  
0900L Show KYNG  
1100L Depart KYNG  
1215L Land KLFI
- b. 23-25 July (Tues.-Thurs.)  
1600L Show KLFI  
1800L Depart KLFI  
2045L Land KLFI
- c. 26 July (Friday)  
1000L Show KLFI  
1130L Depart KLFI  
1245L Land KYNG

3. Aerial Spray Operation:

- a. Chemical: Dibrom
- b. Altitude: 150 AGL
- c. Application rates: 3.6 gal/min (.50-.75 oz/acre)
- d. Area: Approximately 125,000 acres but final acreage TBD

4. Lt. Col (b) (6) will act as Mission Commander.
5. Lt. Col (b) (6) will act as Aircraft Commander.
6. Support required at Langley AFB, VA has been arranged.

(b) (6), TSgt, USAFR  
757AS Aerial Spray Flight Engineer



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

5 June 13

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Minot AFB, ND.

1. One C-130 will be available 30 June - 3 July 13 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel stationed at Minot AFB, ND, surrounding communities, and the city of Williston at the request of the Army Corps of Engineers, ND. This mission will also provide real-world training for aerial spray entomologists and maintenance personnel.

2. Concept of Operations:

- a. 30 June (Sunday)
  - 1200L Show KYNG
  - 1400L Depart KYNG
  - 1635L Land KMIB
  - 2030L Depart KMIB
  - 2210L Land KMIB
- b. 1-2 July (Monday-Tuesday)
  - 1730L Show KMIB
  - 1930L Depart KMIB
  - 2200L Land KMIB
- c. 3 July (Wednesday)
  - 1030L Show KMIB
  - 1230L Depart KMIB
  - 1705L Land KYNG

3. Aerial Spray Operation:
  - a. Chemical: Trumpet.(Minot AFB, ND); Zenivex (Williston, ND)
  - b. Altitude: 150 AGL
  - c. Application rates: 7.4 gal/min (.6 - .75 oz/acre)
  - d. Area: Approximately 125,000 acres but final acreage TBD
4. Lt Col (b) (6) will act as Mission Commander.
5. Lt Col (b) (6) will act as Aircraft Commander.
6. Support required at Minot AFB, ND has been arranged.

(b) (6), TSgt, USAFR  
757AS Aerial Spray Flight Engineer



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

27 July 13

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Minot AFB, ND.

1. One C-130 will be available 15-19 July 13 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished in addition to providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel stationed at Minot AFB, ND, surrounding communities, and the city of Williston at the request of the Army Corps of Engineers, ND. This mission will also provide real-world training for aerial spray entomologists and maintenance personnel.

2. Concept of Operations:

- a. 15 July (Monday)  
1000L Show KYNG  
1100L Depart KYNG  
1335L Land KMIB
- b. 16-18 July (Tuesday-Thursday)  
1730L Show KMIB  
1930L Depart KMIB  
2200L Land KMIB
- c. 19 July (Friday)  
1030L Show KMIB  
1230L Depart KMIB  
1705L Land KYNG

3. Aerial Spray Operation:
  - a. Chemical: Trumpet.(Minot AFB, ND); Zenivex (Williston, ND)
  - b. Altitude: 150 AGL
  - c. Application rates: 7.4 gal/min (.6 - .75 oz/acre)
  - d. Area: Approximately 125,000 acres but final acreage TBD
4. Maj. (b) (6) will act as Mission Commander.
5. Lt Col (b) (6) will act as Aircraft Commander.
6. Support required at Minot AFB, ND has been arranged.

(b) (6), TSgt, USAFR  
757AS Aerial Spray Flight Engineer

**910 AW AERIAL SPRAY UNIT**  
**PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**Mountain Home AFB, Saylor Creek Range, ID 16-27 Sep 2013**

**1. MISSION BASICS:**

- a. Installation Sprayed: Mountain Home AFB, Saylor Creek Range, ID
- b. Mission Duration: 16-27 Sep 2013
- c. Purpose of Application: Herbicide application to control cheat grass to suppress range fires and promote healthy native flora.
- d. Application Date(s) and time(s) (Local): see attachment 1.
- e. Acres Treated: 3,063
- f. Flying Data:
  - (1) Spray Sorties/Hours: 13 sorties/8.6 hours
  - (2) Ferry Sorties/Hours:
    - (a) Spray aircraft 99105: 2 ferries; 10.8 hours
    - (b) Support aircraft: 4 ferries/28.3 hours
- g. Project Coordinator (Name/Rank/Title/Phone #): Mr. (b) (6) Natural Resource Manager, (b) (6)
- h. Date Spray Map Last Approved: 8Sep 2013, delivered via email from Mr. (b) (6)
- i. Installation In-Briefing: (When/Where/Briefer/s): 16 Sep 13, Mountain Home AFB, Mr. (b) (6) (b) (6) and Maj (b) (6)
- j. Mission identifier: QENRK3501259

**2. OPERATIONAL:**

- a. **Aircrew:**
  - 1) Mission Commander: Maj (b) (6) (16-20); Lt Col (b) (6) (20-27)
  - 2) Pilots: LtCol (b) (6), Maj (b) (6) (16-20), Capt (b) (6) (16-20), Lt Col (b) (6) (b) (6) (20-27), Maj (b) (6) (20-27), Capt (b) (6) (20-27)
  - 3) Navigator: Capt (b) (6) (16-20), Lt Col (b) (6) (20-27)
  - 4) Flight Engineer: TSgt (b) (6) (16-20), MSgt (b) (6) (20-27)
  - 5) Spray Operators: MSgt (b) (6), SMSgt (b) (6) (16-20), SSgt (b) (6) (16-20), MSgt (b) (6) (20-27), (b) (6) (20-27)
- b. **Maintenance:**
  - 1) Spray MX: SMSgt (b) (6) MSgt (b) (6) TSgt (b) (6), TSgt (b) (6) TSgt (b) (6)
  - 2) Crew Chief: TSgt (b) (6) (16-20), SSgt (b) (6) (16-20), TSgt (b) (6) (20-27), SSgt (b) (6) (20-27)
  - 3) Hyd/Prop/EE/Avi/Com: TSgt (b) (6), TSgt (b) (6), MSgt (b) (6), SSgt (b) (6), MSgt (b) (6)
  - 4) MX Supervisor: SMSgt (b) (6)
- c. **Entomologists:** Lt Col (b) (6) (b) (6) Maj (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Plateau®/ Panoramic 2SL
- b. EPA Registration Number: 241-365 (Plateau); 66222-141-81927 (Panoramic 2SL)
- c. Formulation Sprayed: Liquid herbicide with active ingredient (AI) = ammonium salt of imazapic (Plateau 23.6% AI; Panoramic 2SL 23.3% AI)
- d. Gallons Pesticide Loaded: total 104 gal (17-19 Sep - 56 gal Plateau; 24-26 Sep 48 gal Panoramic); 16 (17 Sep); 16 (18 Sep); 24 (19 Sep); 24 (23 Sep); 16 (24 Sep); 8 (26 Sep)
- e. Gallons Pesticide Applied: total 104 gal (17-19 Sep - 56 gal Plateau; 24-26 Sep 48 gal



- Panoramic); 16 (17 Sep); 16 (18 Sep); 24 (19 Sep); 24 (23 Sep); 16 (24 Sep); 8 (26 Sep)
- f. Gallons and Name Diluent Used: 1,800 gallons water per lift (23,400 total)
- g. Gallons and Name of Flush Used: 200 gal of water final flush (24 Sep)
- h. Other Additives Used: 5 gallons of Control<sup>®</sup> and 1 gallon of Prevent.
- i. Application Rate: 7 Gal/Acre (4.35 oz/acre Plateau<sup>®</sup>)

#### **4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): C-130H2 (89-9103)
- b. Spray System (Modules Used) and System ID #: SP-3G
- c. Spray System Configuration: fuselage booms
- d. Nozzle Type/Size: Raindrop nozzles
- e. Nozzle Orientation & Number Used: Fuselage; Straight Back; 18 total)
- f. Pressure: 40 psi
- g. Flow Rate: 326 gpm

#### **5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 100 Ft
- b. Spray Offset: weather dependant. No offset when flown into the wind.
- c. Spray Release Altitude: 100 Ft AGL
- d. Ground Speed: 200 knots

**6. WEATHER OBSERVATIONS:** Environmental conditions were monitored on the spray aircraft at altitude and by ground monitoring personnel using handheld equipment. Wind speeds were between 3 and 8 mph each day and the direction was generally between 210 and 310°. On a few occasions, wind shifts required an offset (generally of 100-200 feet) these were visually measured by ground personnel who were well-positioned to observe deposition on the range (see attachment 3).

#### **7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: GPS on aircraft and visual observations from ground personnel on the range (see attachments 2&3)
  - (2) Results: See remarks
- b. Effectiveness:
  - (1) Technique/s Used: Vegetation measurements
  - (2) Results: Will be determined in the spring of 2014

#### **8. REMARKS:**

This mission continues the mitigation of the invasive weed, cheat grass, in order to suppress range fires and promote the reestablishment of healthy native flora, in particular, native bunch grasses and sagebrush. Results from the 2.0 oz/acre treatment last season, showed this treatment tended to slow the growth of cheat grass rather prevent germination. Therefore, it was decided to use 4.0 oz/acre this year, which is still a mid-level rate of application. Mr. (b) (6) (366 CES/CEIEC) was successful in installing a range weather station which records environmental conditions hourly. We found this system to be extremely helpful in giving mission planning members early morning feedback of weather conditions at the target location as the station measurements can be accessed remotely. Furthermore, Mr. (b) (6) analyzed data from the weather station over the past year and used his data to orient the spray block to align with the prevailing wind pattern. His forward thinking played out very well as the majority of the sorties were flown with a

headwind or tailwind and less than a 45% crosswind component, thus promoting the integrity of the projected 100 foot swath width. All applications were observed from the target by ground personnel. Efficacy of the 2013 application will be determined by Mountain Home AFB, Office of Natural Resources during the spring season 2014.

We would like to thank Mountain Home AFB personnel for excellent mission support, in particular: airfield operations, fire department, POL, RAPCON, and TA was outstanding during the entire mission.

//signed//  
 (b) (6) (b) (6) LtCol, USAFR  
**DOD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

**Attachment 1. Summary Spray Chart**

**SPRAY OPERATIONS SUMMARY FOR SAYLOR CREEK RANGE  
 17-24 September 2013**

<b>DATE Sep</b>	<b>SORTIE #</b>	<b>TIME OF APPLICATION</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>FLYING HOURS</b>
17	1	0730-0830	247	1678	1.0
17	2	0910-0945	242	1673	0.6
18	3	0745-0835	237	1600	0.8
18	4	0920-0955	242	1684	0.6
19	5	0740-0758	237	1661	0.6
19	6	0840-0910	242	1695	0.5
19	7	1000-1035	242	1647	0.6
23	8	0800-0840	242	1730	0.7
23	9	0914-0946	236	1599	0.5
23	10	1015-1055	236	1678	0.7
24	11	0755-0835	236	1565	0.7
24	12	0925-1000	236	1667	0.6
26	13	1155-1240	188	1313	0.7
Totals			3,063	21,190	8.6

**Attachment 2. Map of application on Saylor Creek Range, ID 16-27 September 2013. The blue box is the spray block; green lines are individual application swaths. Grey dots are the path of the aircraft.**



**Attachment 3. Example of herbicide application at Saylor Creek Range in September 2013 to control cheat grass. Cheat grass is the yellow-brown dry material in the foreground while native sagebrush is the darker olive color and is an example of a native plant which resists fire relative to cheat grass. The photo shows how the ground observers can provide feedback to the aircraft, confirming the swath width as environmental conditions change.**





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

25 July 13

**MEMORANDUM FOR HQ AFRC/DOOM**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Revised Concept of Operations for Aerial Spray at Homestead ARB, Minot AFB, and Minot/Williston ND.

1. Originally one C-130 was scheduled 29 Jul - 2 Aug 2013 for the requested Innovative Readiness Training (IRT) adulticide spray mission at Homestead ARB and surrounding areas. At present, the IRT package has not been signed by the SAF. Additionally due to an aircraft maintenance problem, the 15-19 Jul IRT adulticide mission to Minot AFB and communities in ND was unable to be accomplished. In light of these facts, the best Aerial Spray flight proficiency training will be accomplished in ND while providing a beneficial reduction in mosquito populations affecting the health and welfare of the base populous and state's citizens. This mission will also provide real-world training for aerial spray entomologists and maintenance personnel. Operations will be conducted out of Minot AFB, ND.

2. Concept of Operations:

- a. 29 Jul (Monday)
  - 1200 Show KYNG
  - 1400 Depart KYNG
  - 1730 Land KMIB
- b. 30 Jul-1 Aug (Tuesday-Thursday) Spray Sorties
  - 1700 Show KMIB
  - 1900 Depart KMIB
  - 2100 Land KMIB
- c. 2 Aug (Friday)
  - 1100 Show KMIB
  - 1300 Depart KMIB
  - 1630 Land KYNG

3. Aerial Spray Operation:

- a. Chemical: Trumpet (KMIB and Minot City) Permanone (Williston, ND)
- b. Altitude: 150 AGL

- c. Application rates: .75 oz/acre (Trumpet) 2.62gal/min (Permanone)
- d. Area: 5160 acres (KMIB) 35500 acres (communities)

- 4. Lt Col (b) (6) will act as Mission Commander.
- 5. Maj (b) (6) will act as Aircraft Commander.
- 6. Support required at Minot AFB, ND has been coordinated.

(b) (6), Lt Col, USAFR  
757AS Aerial Spray

**910 AW AERIAL SPRAY  
PMP'S POST-MISSION REPORT  
SMOKY HILL ANGR, KS 4-15 Nov 2013**

**1. MISSION BASICS:**

- a. **Installation Sprayed:** Smoky Hill ANGR, Salina KS
- b. **Mission Duration:** 4-15 November 2013
- c. **Purpose of Application:** Control of Musk Thistle (*Cardus nutans*) on Smoky Hill, ANGR.
- d. **Application Date/s:** 6 – 14 November 2013  
**Time/s of Application (Local):** 1315-2300 Z
- e. **Acres Treated:** 3415
- f. **Project Coordinator/s (Name/Rank, Title, Phone #):** (b) (6) Aerial Spray  
Coordinator, Smoky Hill ANGR, DSN (b) (6)
- g. **Date Spray Map Last Approved:** 4 November 2013
- h. **Date of Waste Generation Letter:** N/A

**2. OPERATIONAL:**

- a. **Mission Commander:** Maj (b) (6) (1<sup>st</sup> half), Lt Col (b) (6) (2<sup>nd</sup> half)
- b. **Certified PMP (Category 11):** Lt Col (b) (6), Maj (b) (6) (1<sup>st</sup> half), Lt Col (b) (6) (2<sup>nd</sup> half)
- c. **Aircrew:**
  - (1) Aircraft Pilots: Maj (b) (6), Lt Col (b) (6) (1<sup>st</sup> half), Lt Col (b) (6) (2<sup>nd</sup> half) Capt (b) (6)
  - (2) Navigators: Lt Col (b) (6)
  - (3) Flight Engineer(s): MSG (b) (6) (1<sup>st</sup> half), MSG (b) (6) (2<sup>nd</sup> half)
  - (4) Spray Operators: SMSG (b) (6), , MSG (b) (6), TSGT (b) (6)
- d. **Safety Briefer:** Maj (b) (6)
- e. **Spray Maintenance/Pesticide Loaders:** SMSG (b) (6), TSGT (b) (6), TSGT (b) (6), SrA (b) (6)
- f. **Spray Ground Monitors:** Lt Col (b) (6), Lt Col (b) (6) Maj (b) (6)
- g. **Crew Chief(s):** TSGT (b) (6), TSGT (b) (6)
- h. **Avionics:** TSGT (b) (6), SrA (b) (6)
- i. **Flying Data:**
  - 1. Spray Sorties/Hours: 16/18.6 Total; 15 Actual, 1 Flush Sorties

**3. PESTICIDE:**

- a. **Trade Name (% Active Ingredient):** Milestone<sup>®</sup>
- b. **EPA Registration Number:** 62719-6
- c. **Formulation Sprayed:** Milestone<sup>®</sup> mixed with water and AirexDC<sup>®</sup> Drift Control
- d. **Gallons Pesticide Loaded:** 151 Gallons Milestone Concentrate/ 35 Gallons AirexDC<sup>®</sup>
- e. **Gallons Pesticide Applied:** 151 Gallons Milestone Concentrate
- f. **Gallons and Name Diluent Used:** Approx. 23,500 gallons water
- g. **Gallons and Name of Flush Used:** Approx 1,700 gallons water
- h. **Other Additives Used:** approx 2.5 gallons of AirexDC<sup>®</sup> per load
- i. **Application Rate:** 7 gallons finish spray/acre

**4. APPLICATION EQUIPMENT:**

- a. **Aircraft Type (Tail Number):** 909106



- b. **Spray System (Modules Used) and System ID #:** 3-Module system
- c. **Spray System Configuration:** Fuselage Booms
- d. **Nozzle Type/Size:** R-20 Raindrop Nozzles
- e. **Nozzle Orientation & Number Used:** 17 Total, straight back
- f. **Pressure:** 36-52
- g. **Flow Rate:** 320-340 GPM

**5. APPLICATION PARAMETERS:**

- a. **Swath Width Flown:** 100'
- b. **Spray Off Set:** N/A
- c. **Spray Release Altitude:** 100' AGL
- d. **Ground Speed:** 200 Knots

**6. WEATHER OBSERVATIONS:**

- a. **Winds (Direction/Speed):**  
Ground: 320@12 (6 Nov), 328-355@8 (7 Nov), 055-063@3-5 (9 Nov), 083-110@8 (10 Nov), 001-020@3 (12 Nov), 198-208@8 (14 Nov)
- b. **Temperature Range During Application (°F):** 56°- 67°
- c. **Source:** Airborne observations

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

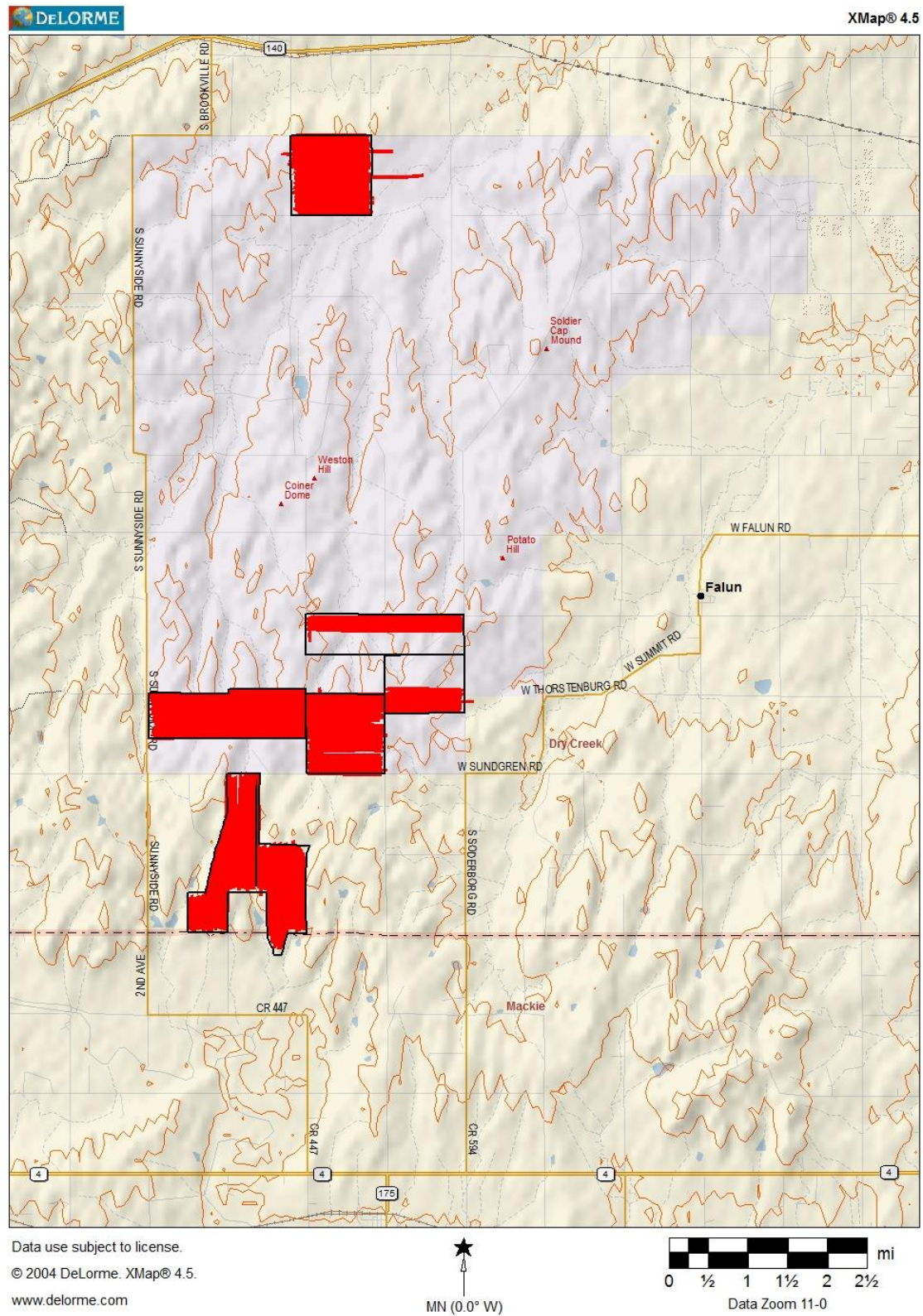
- a. **Deposition Pattern:**  
(1) Monitors observed/confirmed swath width from ground positions
- b. **Effectiveness:**  
(1) Technique/s Used: Visual field observations will be carried out in the spring by the Smoky Hill Staff. Good control was achieved in areas similarly treated in 2012.

**10. REMARKS:** Yearly aerial applications for the control of musk thistle were discontinued in 2006 as headquarters ANG natural resources personnel allocated monies for the purchase of tractors to ground apply pesticides. Not taken into consideration was the roughness of the terrain, which severely impacted the efficiency and effectiveness of ground applications. By 2010 certain parts of the range were completely overwhelmed with musk thistle to the point that infestations were considered uncontrollable by ground application techniques. In light of this, the ANG natural resources office instigated the draft of a new environmental assessment (EA) concerning the aerial application of pesticides on range property. In this EA, provisions were made for application of a variety of more environmental friendly and effective pesticides than had been used previously. In 2012 aerial applications were resumed. Good results were achieved on last year's application areas (b) (6), pers com) and the product is highly effective against musk thistle. Attachment 1 shows some of the designated areas covered on this mission. If musk thistle continues to be a problem on other parts of the range, this mission will be continued in following years and areas will be treated on a rotational basis. Many thanks to Smoky Hill ANGR personnel for making this mission an operational success.

//Signed//

(b) (6) (b) (6) Lt Col, USAFR  
Certified Pest Management Professional

**Attachment 1.** Map depicting range and designated spray areas.





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

23 October 2013

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Smoky Hill ANG Range, Salina, KS.

1. Control musk thistle at the Smoky Hill ANGR, to improve grazing areas, to eliminate the Range as a source of infestation to neighboring farms from wind-blown musk thistle seeds and to support state and local noxious weed control efforts. This mission will also provide real-world training for aerial spray entomologists and maintenance personnel.

2. Concept of Operations:

- a. 4 November (Monday)  
1300 Depart KYNG  
1500 Land KSLN  
1600 Installation Brief
- b. 4-9 November (Tuesday - Saturday)  
0645 Depart KSLN  
1030 Land KSLN
- c. 9-14 November (Sunday - Thursday)  
0630 Depart KSLN  
1030 Land KSLN
- d. 15 November (Friday)  
0800 Show Time KSLN  
1000 Depart KSLN  
1400 Land KYNG

3. Maj (b) (6) will be the Mission Commander (4-9 Nov.) Lt Col (b) (6) (b) (6) (9-15 Nov).

4. Lt Col (b) (6) will be the Aircraft Commander (4-9 Nov) Lt Col (b) (6) (9-15 Nov).

5. Support at Smoky Hill and Salina has been completed.

(b) (6), TSgt, USAFR  
757AS Aerial Spray

# AERIAL SPRAY OPERATIONAL SCHEDULE

## SMOKY HILL ANG RANGE, KS

### 4-15 Nov 2013

### QENRK3502308

**PURPOSE/OBJECTIVE/BENEFIT:** Control musk thistle at the Smoky Hill ANGR, to improve grazing areas, to eliminate the Range as a source of infestation to neighboring farms from wind-blown musk thistle seeds and to support state and local noxious weed control efforts.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- (1) Mission Commander: Maj (b) (6) (1<sup>st</sup> half), Lt Col (b) (6) (2<sup>nd</sup> half)
- (2) Pilots: Maj (b) (6) (1<sup>st</sup> half), Lt Col (b) (6) (1<sup>st</sup> half), Lt Col (b) (6) (2<sup>nd</sup> half), Capt (b) (6) (2<sup>nd</sup> half)
- (3) Navigators: LtCol (b) (6)
- (4) Flight Engineers: MSgt (b) (6) (1<sup>st</sup> half), MSgt (b) (6) (2<sup>nd</sup> half)
- (5) Spray Operators: SMSgt (b) (6), MSgt (b) (6), and TSgt (b) (6)

##### b. Maintenance:

- (1) Spray MX: SMSgt (b) (6), TSgt, TSgt (b) (6), TSgt (b) (6), SrA (b) (6),
- (2) Crew Chiefs: TSgt (b) (6), TSgt (b) (6)
- (3) Avionics: TSgt (b) (6), SrA (b) (6)

- c. Entos: LtCol (b) (6) (In Place), Maj (b) (6) (1<sup>st</sup> half), LtCol (b) (6) (2<sup>nd</sup> half)

#### 2. SCHEDULE: (All Local) Times

##### 4 Nov (Monday)

0900: Show at KYNG  
1300: Depart KYNG  
1300: Support Depart KYNG  
1500: Land KSLN/Safety Briefing  
1600: Support Depart KSLN  
2000: Support Land KYNG

##### 5-9 Nov (Tuesday-Saturday): Sunrise 0702 + 1 min daily

0500: Show time \*As needed

0645: Take Off KSLN \*\*\*Multiple Sorties\*\*\*5 Nov Range time 0740 –1100L\*\*\*

**8 Nov-** 1000: Swap out/ Support Depart KYNG

1000: Land KSLN

1200: Support Land KSLN

1330: Support Depart KSLN

1730: Support Land KYNG

**9-14 Nov (Sunday-Thursday):** Sunrise 0707 + 1 min daily

0500: Show time

0645: Take Off KSLN

1000: Land KSLN

**15 Nov (Friday)**

0800: Show time

1000: Take Off KSLN

1000: Support Plane Take Off KYNG

1200: Support Land KSLN

1300: Support Take Off KSLN

1400: Land KYNG

1730: Support Land 1730

### **3. ITEMS TO TAKE:**

**a. Mission Commander:** 1 Cellular Phone

**b. Entomologist:** 1 Cellular Phone, Wind Gauge, Compass  
Pest Safety Binder, Signal Mirrors, Validation Map,

**c. Navigator:** Maps/Map Bag,

**d. Spray Operator:** Safety Gear, Spray Computer

**e. Spray Maintenance:** Deployment Kit, Stake Bed Truck, Support Equipment

**f. Avionics:** Wingman unit cards, Air to ground radios

**4. NOTIFICATION NECESSARY FOR THIS MISSION:** None Required.

**5. PARKING PLAN:** North Ramp (same as last time) Highway Patrol Ramp (by the Civil Air Patrol Hangar). A10s will be using same ramp area.

### **6. RADIO FREQUENCIES:**

**a. Air To Ground:** Primary 392.2

**b. Salina:** CTAF: 119.3, UNICOM: 122.95, ATIS: 120.15, TWR: 119.3 / 257.7, GND:  
121.9 /

397.9, NG OPS: 49.95 / 304.6

**c. Smoky Hill:** Primary 316.9, Secondary 304.9; Victor Freq: 139.7 Smoky Hill  
departure. Expect IFR clearance from KCC on 363.2 UHF 134.9 VHF. Advise them  
you are departing R3601

**7. IN-BRIEFING:** Upon Arrival.

**8. SPRAY CONFIGURATION:** (Note: File support a/c Chap 3 to AFJI 24-204)

- a. System:** SP-3G
- b. Nozzle Tips/Orientation:** Raindrop Nozzles; Pointed Back (R-20)
- c. Number:** Fuselage. 17 Total (8 left 9 right)
- d. Booms:** Fuselage Booms.
- e. Aircraft:** 90-9106
- f. Mission Identifier:** QENRK3502308

**9. SPRAY PARAMETERS:**

**Altitude:** 100' AGL

**Swath Width.** 100 feet.

**Flow Rate.** 326 Gallons/Minute

**Application Rate.** 7 Gal finish spray/Acre (water with 0.35 Oz of AirexDC® & 0.71 Oz of Milestone®/gallon)

**Ground Speed:** 200 Knots

**10. SPRAY MIXING AND LOADING:**

**a. Composition of Each Gallon:**

- (1) 0.71 Ounces of Milestone®
- (2) 0.35 Ounces of AirexDC® Drift Retardant
- (3) 126.9 Ounces of Water

**b. First Load (4 Tanks of 425 Gallons Each + Sump of 75 Gallons)**

- (1) Fill to 425 Gal Water/Tank using the pump on the water tanker truck.
- (2) 75 Gal/Water in Sump
- (3) Total Water Added = 1,800 Gallons
- (4) Upload 2.5 Gal/Milestone® per tank (10 Gallons Total for 4 Tanks + sump)
- (5) Add 1.25 GalAirexDC® per tank (5 Gallons Total for 4 Tanks + sump)
- (6) Total Quantity Mix. 1815 Gallons

**c. Mixing Time/Load.** Agitate by recirculating each mix for approximately 15 minutes.

**d. It is important to empty ALL the tanks each sortie.**

**11. SPRAY MONITORING OR TESTING: Performed by the CPMPs**

**NOTES:**

Ideal to have westerly wind to spray west boundary.

Ideal to have easterly wind to spray east boundary.

(November winds expected to be predominately from the north)

**12. CONTACTS:**

**Quarters: Nickell Barracks Training Center,  
2930 Scanlan Avenue, Salina KS  
(785) 822-1198**



Holiday Inn, 785-823-5606/8574 fax  
Fairfield Inn, 785- 823-6900 FAX (785) 823-0996)  
Comfort Inn, 785 -826-1711  
Ramada inn, 785- 825-8211  
Hampton Inn, 785- 823-9800  
Red Coach Inn, 785- 825-2111

**Transportation:** Hertz Rental Agency (785)-827-7237; Fax (785)-827-3160  
Vehicles will be at America Jet FBO.

**OPS** 1- Full Size – (b) (6) (conf # G0103530750)  
1- 8 pax van – (U-Drive)

**MX** 1- Minivan – (b) (6) (conf # G01031370E3)  
1- 6 pax truck – (U-Drive)

**c. Smoky Hill Range, Salina, KS (DSN 743- Com 785)**

- RANGE COMMANDER, LTC (b) (6) : DSN (b) (6) ext 140; COM  
(b) (6) ext (b) (6)

- Scheduling DSN 743-7600 ext (b) (6) or (b) (6) Tsgt. (b) (6)

**(1) HQ ANGRC/CEVP:**

- (b) (6) : DSN (b) (6)

**(2) NATURAL RESOURCES MGR/ SPRAY COORDINATOR:**

(b) (6) : DSN (b) (6)

- (b) (6) : DSN (b) (6) ext (b) (6) COM 785-827-XXXX

**(3) SALINA AIRPORT: SALINA AIRPORT AUTHORITY: (785) 827-8077**

- (b) (6) and (b) (6) -Operations Manager will supply  
gate security cards to MX/OPS/SF enter the north ramp. Parking will be  
on North Ramp by big Hanger, same as previous missions.

**(4) ARMY NATL GUARD HELO UNIT:**

- OPS OFFICER, CW4 (b) (6) : DSN (b) (6) ; COM (b) (6)

**(5) FBO: AMERICA JET, (b) (6) (b) (6) File Flight Plans  
and fuel**

**(6) STATE WILDLIFE REP:**

- (b) (6) (DIST FISHERY BIOLOGIST), (b) (6)

**(7) DOW ELANCO REP: (b) (6)**

**SALINE COUNTY FARM/ NOXIOUS WEED DIR:**

- (b) (6) ; FAX (913) 826-6534

**d. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Maj (b) (6) ; FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Lt Col (b) (6) (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: MSgt (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) 1503 FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMSgt (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342
15. Cellular Spray Phones:
  - Mission Commander: Maj (b) (6) (1<sup>st</sup> half) (b) (6)  
Lt Col (b) (6) (2<sup>nd</sup> half) (b) (6)
  - Entomologist:

Mission Commander will obtain the pay status of all personnel through mission entirety

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **PARRIS ISLAND MCRD, SC & KINGS BAY NSB, GA**

### **5-8 May 2014**

### **QENRK3591125**

**OBJECTIVE/PURPOSE AND BENEFIT:** Control nuisance biting midges and mosquitoes with aerial spray insecticide applications to reduce negative impact of insect bites on outdoor training at Parris Island MCRD, SC and Kings Bay NSB, GA.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Pilots: Lt Col (b) (6) , Capt (b) (6)
- (2) Navigators: Lt Col (b) (6)
- (3) Flight Engineers: MSgt (b) (6)
- (4) Spray Operators: SMSgt (b) (6) , MSgt (b) (6) . MSgt (b) (6)
- (5) Mission Commander: Lt Col (b) (6)

##### **b. Maintenance:**

- (1) Spray Maintenance: MSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6) , SSgt (b) (6)
- (2) Crew Chiefs: TSgt (b) (6) , SrA (b) (6)
- (3) Avionics: SSgt (b) (6)

##### **c. Entomologists:** Lt Col (b) (6) (b) (6) Lt Col (b) (6) (b) (6) Maj (b) (6)

#### **2. PPR REQUIREMENTS: 125-01**

**3. PLANNED SEQUENCE OF EVENTS:** (All times are local) Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

##### **a. 5 May (Monday)**

1700 Depart KYNG (MC and safety brief prior to T/O)  
1900 Land KNBC

##### **b. 6 May (Tuesday) \*Sunset at both locations for the week 2007L-2009L**

1030 Parris Island MCRD Installation Brief  
1700 WX decision (Calibration to follow after chemical loading)  
1900 Depart KNBC  
Spray Parris Island MCRD  
2015 Land KNBC

##### **c. 7 May (Wednesday)**

1630 WX decision  
1830 Depart KNBC  
Spray Kings Bay NSB  
2045 Land KNBC

##### **d. 8 May (Thursday) WX backup**

Times are req'd

- e. 9 May (Friday)  
1100 Depart KNBC  
1300 Land KYNG

**4. ITEMS TO TAKE/NOTES:**

- a. **Mission Commander:**
  - (1) Computer
- b. **Entomologist:**
  - (1) Wind Gauge & Compass
  - (2) VHF Radios (provided by avionics)
  - (3) Pesticide Safety Binder
- c. **Navigators:**
  - (1) Maps
  - (2) Templates (if needed)
- d. **Avionics:**
  - (1) Air to ground handheld radios (2 units)
  - (2) Wingman unit cards
- e. **Spray Maintenance:**
  - (1) Spill Kit
  - (2) Safety Equipment
  - (3) Loading and Clean-up Equipment and Supplies

**5. SPRAY CONFIGURATION: SP-2G**

- a. **Mass:** 2-Module System
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** Size = 8003; 14 open (PI) and 28 for Kings Bay; subject to change: see PMP
- d. **Differential GPS:** Wingman Installed
- e. **Aircraft:** TBD
- f. **Mission Identifier:** QENRK3591125

**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

- a. **Pesticide:**  
Dibrom-Naled Organophosphate insecticide
- b. **Application:** 0.75 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 1,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 7,500 Acres
- g. **Spray-On Time:** 16 Minutes
- h. **Flow Rate:** 2.7 GPM

**SPRAY PARAMETERS: (KINGS BAY NSB, GA)**

- a. **Pesticide:** Dibrom-Naled Organophosphate insecticide
- b. **Application:** 0.75 oz/acre
- c. **Spray Altitude:** 150 Feet
- d. **Swath Width:** 2,000 Feet
- e. **Ground Speed:** 200 Knots (338 Feet/Second)
- f. **Acreage:** 13,700 Acres

g. **Spray-On Time:** 15 Minutes

h. **Flow Rate:** 5.4 GPM

7. **PARKING PLAN:** NAS Beaufort, SC. Please limit number of vehicles and trips on the flight line.  
Radio with tower permission is required to drive to aircraft

8. **AIR TO GROUND RADIO FREQUENCIES:**

Beaufort Tower: 119.05/340.2 MCAS TWR

Beaufort Approach 123.7

Hilton Head Arpt: 118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)

Beaufort Co Arpt: 122.7 UNI

Spray Ground: 335.875

9. **TRANSPORTATION:** Parris Island will provide 2 vehicles for transportation to and from quarters and for messing. Vehicles will be at Base Operations.

10. **QUARTERS:** 17 rooms on base at Beaufort MCAS SC \$30/night

Bachelor Officer Qtrs Irby's Inn (843) 228-7676 DSN 335-7676 Fax (843) 228-7674

(b) (6)

BOQrequests@gmail.com

11. **CHOW HALL HOURS: (Have Orders on Person)**

Breakfast 0600-0730

Lunch 1100-1245

Dinner 1600-1800

Have orders on person

12. **SPRAY MONITORING/TESTING:** Ground monitoring by CPMP & Parris Island MCRD Project Coordinator.

13. **CONTACTS:**

- a. **Parris Island MCRD SC: (MCRD/MCAS Com: (843) 228-XXXX); Off Station Com: (843) 525-XXXX**

(1) Environmental Coordinator (Spray Coordinator\*):

(b) (6), DSN (b) (6) Cell (b) (6). HazWaste: (b) (6), DSN (b) (6) Cell

(b) (6), Cell (b) (6)

DSN (b) (6); Cell (b) (6) FAX (843) 228-2616; NREAO, (b) (6), Chief,

DSN (b) (6)

(2) Assistant Chief of Staff I & L: Col (b) (6) DSN (b) (6)

Deputy AC/S (b) (6), DSN (b) (6)

(3) Pest Control: DSN (b) (6); (b) (6)

(4) P.I. Motor Pool: (b) (6) DSN (b) (6)

(5) Billeting: DSN: 335-2744, (843) 228-3960 (FAX: 3815)

(6) Enterprise Rental Agency: (843) 524-0194; FAX 9627; (b) (6)

(7) P.I. Rifle Range: DSN: 335-3183/3624

- b. **Beaufort MCAS SC: (Com (843) 228-XXXX)**

(1) Beaufort MCAS Environmental: (b) (6) DSN (b) (6)

(b) (6) DSN (b) (6)

(2) Fuels: DSN: 335-7049/7448/7168

(3) MCAS Beaufort Airfield MGR: Lt Col (b) (6) (Ops Officer)

Airfield manager (b) (6)

- DSN: (b) (6) . Base Ops ext 7301/2/3  
 (Airfield Manager is (b) (6) , DSN: (b) (6) ) approves after hrs requests  
 (4) Trans Alert/VAL: DSN: 335-7110  
 (5) Weather: DSN 335-7001/7926/7/9 (www.beaufort.usmc.mil)
- c. **Beaufort County Mosquito Control:** (b) (6) , Director (b) (6)
- d. **Naval Occupational Health/Preventive Medicine:** Lt Cdr (b) (6) , DSN: (b) (6) ,  
 ext 5509
- e. **Naval Submarine Base Kings Bay, GA** (Com: (912) 573-xxxx; DSN 573-xxxx  
 (1) Spray Coordinator: (b) (6)  
 (2) Strategic Weapons Facility Atlantic (SWFLANT) x0551, Security Operations  
 Officer (Scott Coil)
- f. **FAA JAX Center** Mr. (b) (6) , Mission Specialist (b) (6)  
 (b) (6)
- g. **Quarters:**  
**NBC BOQ** (843) 228-7676 DSN 335-7676 F(843)228-7674  
[lisa.m.farrell@usmc.mil](mailto:lisa.m.farrell@usmc.mil)  
 Comfort Inn and Suites (843) 379-9400  
 Ramada Inn (843) 524-2144/Fax 1704  
 Hampton Inn (843) 986-0600 (FAX 0494)  
 Sleep Inn (843) 522-3361 FAX (843) 522-9929  
 Parris Island Billeting DSN: 335-2744 (FAX: 3815); (843) 228-3960  
 Comfort Inn (843) 525-9366 (FAX 1529)  
 Best Western (Sea Island Motel) (843) 524- 4121  
 Port Royal Days Inn (843) 524-1551
- h. **Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX  
 Toll Free 1 - 800 - 278 - 7046,+2 + Ext  
 910 AW/CC: Col (b) (6)  
 910 AW Command Post: Ext 1315; FAX 1161  
 910 AW/PA: Maj (b) (6) ; FAX 1022  
 910 OG/CC: Col (b) (6)  
 910 OG: Airfield Manager, Ext 1186/1526  
 757 AS/DO: Lt Col (b) (6)  
 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371  
 757 AS/DOO: Ops Admin: MSgt (b) (6) ; FAX 1657  
 757 AS/DOS: Aerial Spray Office, Maj (b) (6) (b) (6) FAX 1616  
 910 LG/CC: Ext 1225  
 910 LG/LGM: Ext 1352  
 Maintenance Control: Ext 1327  
 910 LG/LGMS: Spray Maintenance, SMSgt (b) (6)  
 Omega/SATO Travel: Ext 1772; 1-800-285-6342  
 Cellular Spray Phones:  
 Entomologist: (b) (6) ((b) (6) (b) (6) ((b) (6)

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**PARRIS ISLAND MCRD, SC 05 – 09 May 2014**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 05 – 09 May 2014
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 07 May 2014
- e. Time/s of Application (Zulu): 2230 Takeoff
- f. Acres Treated: 7,500
- g. Project Coordinator: (b) (6) , Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 1 Apr 2014
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: None
- k. Mission Identifier: QENRK3591125

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6) (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) , Capt (b) (6)
  - (2) Navigator: Lt Col (b) (6)
  - (3) Flight Engineer: MSgt (b) (6) ce
  - (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6) , MSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: MSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6) , SSgt (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6) , SrA (b) (6)
  - (3) Avionics: SSgt (b) (6)
- d. **Entomologist:** Lt Col (b) (6) (b) (6) Lt Col (b) (6) (b) (6) Maj (b) (6)
- e. **Flying Data:**
  - (1) Application Sorties/Hours: 1/1.9
  - (2) Training Sorties/Hours: 0
  - (3) Ferry Sorties/Hours: 2/4.0

**3. PESTICIDE:**

- a. Trade Name: Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 60 Gallons
- e. Gallons Pesticide Applied: 47 Gallons
- f. Gallons and Name Diluent Used: N/A
- g. Gallons and Name of Flush Used: None/Air purge
- h. Other Additives Used: None
- i. Application Rate: 3.1 Gallons per Minute (0.85 oz/acre per calculating 47 gal/7,068 acres)



**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 90-9105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: 8003
- e. Nozzle Orientation & Number Used: 13 Total; 6 left, 7 right
- f. Pressure: 40 - 52 PSI
- g. Flow Rate: 3.1 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 1000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 KTS

**6. WEATHER OBSERVATIONS:** Wind; 170 at 5.5 kts (average) Ground observation.  
Temp; 81 degrees F. Humidity; 46 percent.

**7. SPRAY MONITORING:** Pre and post spray mosquito collections were taken at 6 locations using light traps. Results indicate a 98.6% reduction in target mosquito population. Additionally, landing counts showed that biting midges were absent from the area following the spray. During application, the treatment site was monitored on the ground. There was no evidence of adverse effects of application on non-target species.

**8. REMARKS:** Two eagles' nests on the island were active, and as usual a ½ mile no-spray/no-fly buffer was maintained around the nests. A computer glitch prevented us from projecting the flight pattern on a background map. The next projected opportunity of an application at the Parris Island MCRD will be in October.

//signed//

(b) (6) Lt Col, USAFR  
DoD Certified Pest Management Professional

//signed//

(b) (6) Lt Col, USAFR  
DoD Certified Pest Management Professional

**Attachment 1. Spray application of Parris Island 07 May 2014. Red circular objects indicate No-Fly zones for eagles' nests. Orange areas are pesticide dispersion swaths.**

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**JB CHARLESTON, SC 6-8 SEP 2014**

**1. MISSION BASICS:**

- a. Installation Sprayed: JB Charleston, South Carolina
- b. Mission Duration: 6-8 Sep 2014
- c. Purpose of Application: Control vector and nuisance control of salt marsh mosquitoes on the Naval Weapons Station area of JB Charleston
- d. Application Date: 6 Sep 2014
- e. Times of Application: 1815-1930 local
- f. Acres Treated: 17,980
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) ,  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 25 June 2014
- i. Date of Waste Generation acceptance: 6 July 2012
- j. Installation In-Briefing: (When/Where/Briefer/s): Lt Col (b) (6) Maj (b) (6) (b) (6)  
and the 628 CES @ 1400 hrs (by phone 5 Sep 2014)
- k. Mission Identifier: QENRK3531249

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) , Col (b) (6)
  - (2) Navigator: Capt (b) (6)
  - (3) Flight Engineer: MSgt (b) (6)
  - (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6) , MSgt (b) (6)  
(b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) , SSgt (b) (6) , MSgt (b) (6)  
TSgt (b) (6) , SrA (b) (6)
  - (2) Crew Chiefs: SSgt (b) (6) A1C (b) (6)
  - (3) Avionics: TSgt (b) (6)
- d. **Entomologists:** Lt Col (b) (6) Maj (b) (6)
- e. **Flying Data:**
  - (1) Training Sorties/Hours: 1/1.7
  - (2) Ferry Sorties/Hours: 2/4.0

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 120 gallons
- d. Gallons Pesticide Applied: 120 gallons
- e. Gallons and Name Diluent Used: N/A
- f. Gallons and Name of Flush Used: 6 Gallons aromatic naphtha
- g. Other Additives Used: None
- h. Application Rate: 0.85 oz/acre

## **APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99103
- b. Spray System (Modules Used) and System ID #: SP2G
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: 8003
- e. Nozzle Orientation & Number Used: 26 Total; 12 left, 14 right
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 6.5 gallons/minute

## **5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: 2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 KTS

## **6. WEATHER OBSERVATIONS:** Wind; 230° at 3.5 knots (average) ground observation. Temp; 81°F; Humidity 89 percent.

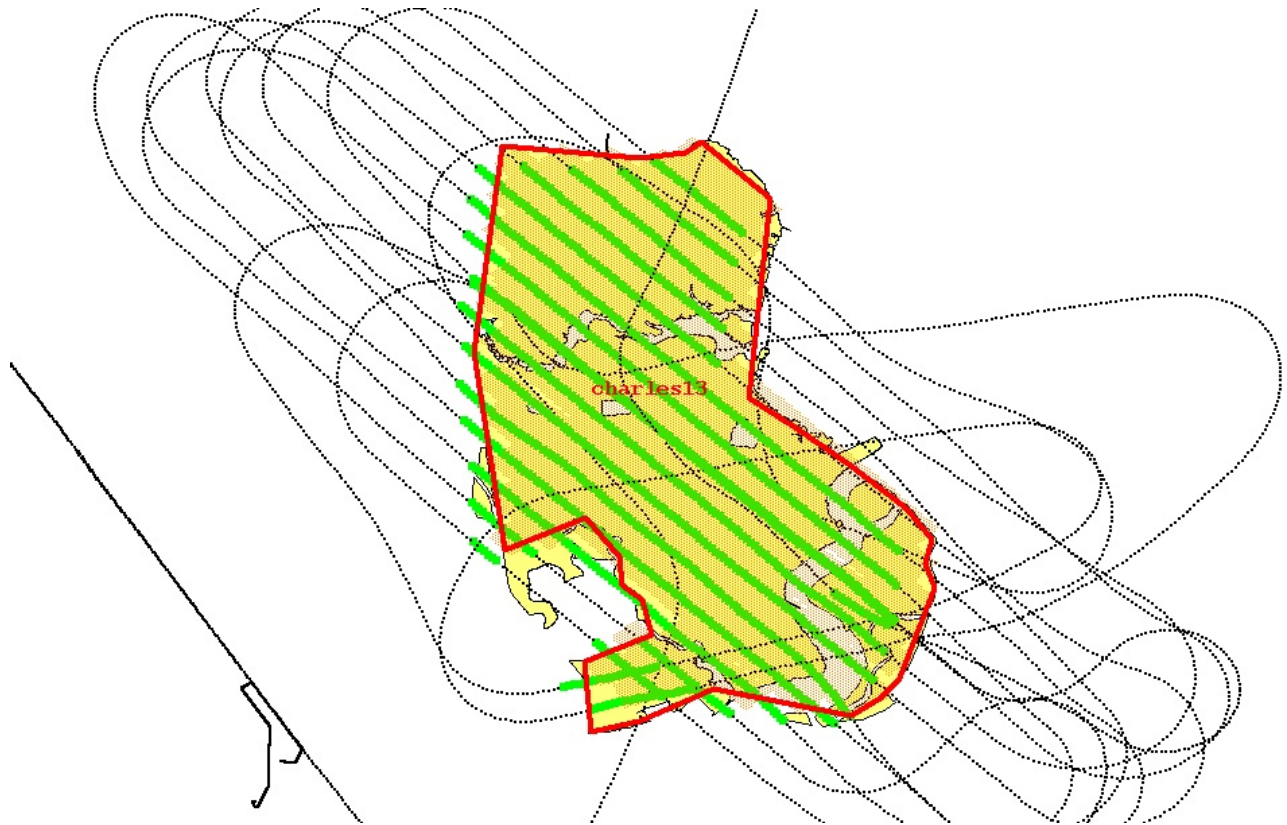
**7. SPRAY MONITORING:** Pre- and post-spray mosquito collections were taken at 5 locations, including one control location, using CO<sub>2</sub>-baited CDC mosquito traps. Landing rates were used to monitor populations at the spoil site and a New Jersey trap was used to monitor populations at GC bridge.

Trap 1: DTP	Average 74 females (1 Sep, 3 Sep); 11 females (9 Sep) 85% reduction
Trap 2: SPAWAR:	Average 25 females (1 Sep, 3 Sep); 16 females (9 Sep) 36% reduction
Trap 3: Golf Course	Average 1,054 females (1 Sep, 3 Sep); 12 females (9 Sep) 99% reduction
Trap 4: Wharf A	Average 127.5 females (1 Sep, 3 Sep); 6 females (9 Sep) 95% reduction
Landing count at:	
Spoil site (per minute)	Average 9 females (1 Sep, 3 Sep); Average 0.3 (7 Sep, 8 Sep, 9 Sep) 97% reduction
New Jersey Trap at:	
GC Bridge	Average 51.5 females (1 Sep, 3 Sep); Average 0 females (8 Sep, 9 Sep) 100% reduction
Control Site-NPTU	Average 186 females (1 Sep, 3 Sep); 26 females (9 Sep) 86% reduction (No Spray Area)

**8. REMARKS:** This application is the second adulticide application conducted for FY 14. No significant problems were encountered during this application, and results appear to be good. Because of the large dredge spoil and marshlands associated with the Naval Weapons Station, future larvicide operations are being considered. Berkeley County, with dredge spoil areas adjacent to JB Charleston, is interested in participating in the JB Charleston spray program and JA and Environmental sections are looking into spraying acreage outside the boundaries of the Weapons Station. This would greatly reduce mosquitoes flying in from adjacent wetlands. We appreciate the support we received from ALL sections at JB Charleston, with special thanks going to (b) (6) for his thorough coordination at all levels.

//signed//  
(b) (6) (b) (6) Lt Col, USAFR  
DoD Certified Pest Management Professional

Attachment 1. Application to Naval Weapons Station, JB Charleston 6 Sep 2014. Spraying positions are in green while the swath is slightly shaded. In order to account for pesticide drift, some spraying occurs outside of the area and the pesticide drifts back inside the spray zone. Dotted black line is the path of the aircraft. A 2,000 ft offset was utilized to compensate for crosswind deposition.





DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

26 Aug 2014

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Capability and Concept of Operations for Aerial Spray at Joint Base Charleston, SC.

1. Aerial spray deployment of one C-130 during 6-8 Sept 2014 in response to a requested aerial spray to control adult mosquitoes for JB Charleston, SC. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of JB Charleston. Operations will be conducted from JB Charleston.

2. Concept of Operations (All times are local)

- a. 6 Sept (Sat)  
1300 Depart KYNG  
1500 Land KCHS
- b. 7 Sept (Sun)  
1800 Depart KCHS  
2000 Land KCHS
- c. 8 Sept (Mon)  
1100 Depart KCHS  
1300 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: approx. 20,000 acres
- b. Altitude: 150 ft for adulticide application
- c. Swath Width: 2000ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 1.0-1.2 oz/acre of Trumpet EC

4. Lt Col (b) (6) ] will serve as the Mission Commander. Lt Col (b) (6) ] will be the Aircraft Commander. Required support at JB Charleston has been coordinated.

\\Signed\\

(b) (6)

Chief of Aerial Spray

, Lt Col, USAFR



**AERIAL SPRAY OPERATIONAL SCHEDULE**  
**JOINT BASE CHARLESTON, SC**  
**6-8 SEPTEMBER 2014**  
**QENRK3531249**  
**V2**

**Purpose/Objectives/Benefits:** Aerial spray deployment of one C-130 during 6-8 Sept 2014 in response to a requested aerial spray to control adult mosquitoes for Joint Base Charleston, SC. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of JB Charleston. Operations will be conducted out of JB Charleston.

**1. 910 AW PARTICIPANTS:**

Msn Commander:	Maj (b) (6)	(b) (6)	cell
Entomologist:	Lt Col (b) (6)	(b) (6)	
Entomologist:	Maj (b) (6)		
Pilots:	Lt Col (b) (6)	, Col (b) (6)	(in place)
Navigators:	Maj (b) (6)		
Flight Engineer:	MSgt (b) (6)		
Spray Operators:	MSgt (b) (6)	, MSgt (b) (6)	, MSgt (b) (6)
Spray Maintenance:	SSgt (b) (6)	(Lead), MSgt (b) (6)	, TSgt (b) (6), TSgt (b) (6), SrA (b) (6)
Crew Chiefs:	SSgt (b) (6)	, A1C (b) (6)	
Avionics:	TSgt (b) (6)		

**2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, PCM Card, Pest Safety Binder, VHF Radios, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, Calibration Tables/Laptop and or Spray datasheet, O2 hose extensions
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand held radios; Wingman system cards

**3. SCHEDULE: (All Local Times)**

**5 September (Friday):**

1400 Inbrief (via telephone with user)

**6 September (Saturday): PPR: N/A PER BASE OPS CHS (MSN IS LOADED IN G2) Sunset 1938L**

0845 Show KYNG

1100 Depart KYNG

1300 Land KCHS

1530 Loading/calibration/Weather call

1800 Depart KCHS

2000 Land KCHS

**7 September (Sunday): WX backup Sunset 1938L**

1530 Show KCHS

1630 Loading/Weather call

1800 Depart KCHS

2000 Land KCHS

**8 September (Monday)**

0900 Check out /Vehicle Return

0930 Show KCHS

1100 Depart KCHS

1300 Land KYNG

**3. AIRCRAFT & SPRAY CONFIGURATION:**

Aircraft: AF89-9103 SPARE: AF89-9105

System: MASS: #1 SP2G (2-Module System) with Fuselage Booms

Nozzle/Orientation: ULV 8003 Tee Jet oriented straight down

Number of Nozzles: (12 left - 12right) 24

**4. SPRAY LOADING:**

Entomologist will determine quantity to load and work with the local pest managers to determine the application rate. System will be calibrated after the chemical is loaded. Please see entomologist for final flow spray parameters as these numbers are subject to change depending on user requirements.

**How Much Pesticide:** see entomologist

**Where:** Spot 34 near taxiway D

**When:** 1530 and 1630 hrs pending weather and heat index.\*\*Calibration performed unless otherwise directed by the Entomologist or Mission Commander

**Furnished by Installation:**

Pesticide

Hazardous Waste Disposal

**5. SPRAY PARAMETERS:**

Location: All prescribed areas

Chemical: Trumpet EC

Area to be treated: 20,000 acres; final acreage TBD

Swath Width: 2,000'

Flow Rate: 7.2-8.7

Application Rate: 1.0-1.2 oz/acre or as determined by entomologist

Altitude: 150'

Ground Speed: 200 Knots

Flush: H.A.N. (Highly Aromatic Naphtha), flush and air purge

**6. RADIO FREQUENCIES:**

**Charleston AFB:** Tower - 843-414-2808

Tower - 126.0 or 239.0

Ground - 121.9 or 348.6

Clearance - 127.325 or 291.65

ATIS - 124.75

Palmetto Ops - 134.1 or 349.4

**Charleston Approach:** - 135.8 or 379.925

**Mt Pleasant Regional:** - CTAF 122.8

**Charleston Executive:** - CTAF 122.8

7. **TRANSPORTATION:**

**POC TRANSPORTATION SQ:** SSgt (b) (6) - Charleston U-Drive Vehicles 843-963-4238

Charleston JB will supply us with (1)- minivan, (1)-15 pax or 8 pax  
Confirmation#: 23538234

**POC RENTAL VEHICLES:** Enterprise Number @ CHS international airport: 843-767-1109

MC: (1) Rental vehicle (Maj (b) (6) )

AC: (1) Rental vehicle (Lt Col (b) (6) )

OPS: (1) U Drive from transportation squadron Minivan (MSgt (b) (6) )

MX: (1) U Drive from transportation squadron 8 Pax van (SSgt (b) (6) )

8. **LODGING:**

Charleston JB Lodging (OFF BASE) Non A's in folder and emailed to  
Lt Col (b) (6) and SMSgt (b) (6)

POC: Mrs. (b) (6) DSN 673-8000 x8102 Comm 843-963-4667

FAX DSN 673-3963.

Contract Hotel information: Group listed under "910<sup>th</sup> Aerial Spray Team"

Crown Plaza North Charleston, SC

charvey@peachtreehotelgroup.com

9. **CONTACTS:**

**JB CHARLESTON** (843)-963-XXXX, DSN 673-XXXX

**Charleston AFB SC:**

Wing Commander: x3418

MSG Commander: x2200

Civil Engineer: x4956

Deputy Chief/Civil Engineer: x4954

Environmental Coordinator: x2711

Base Operations: x3026

Charleston Control Tower: (843) 414-2808

Weather: x3016

Pest Control Foreman: x5266, (b) (6) cell (b) (6)

Pest Control NCOIC: x5266, TSgt (b) (6)

Public Affairs: x1110

Fuels: x5079

Transportation: x4236

Fire Department: x3777

**910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

910 AW/CC:	x1243	
Command Post	x1315	FAX x1161
PA:	x1236	FAX x1022
OG/CC:	x1257/1179	
Safety	x1391	
Base Ops:	x1182	
SOF Desk:	x1069	FAX: x1371
757 AS/DO:	x1793	
757 AS Admin:	x1239	FAX x1657
757 AS Spray Office:	x1638/1111	FAX x1616
910 MXG/CC:	x1225	
910 LG/LGM:	x1352	
Maintenance Control:	x1348	
Spray Maintenance:	x1132/1586	
910 LG/LGL:	x1137	

**10. NOTIFICATION NECESSARY FOR THIS MISSION:**

**Charleston Tower:** POC: (b) (6) : COMM (b) (6)

**Charleston Base Ops:** DSN 673-3026

**FSDO:** (b) (6)

**Air Field Manager:** MSgt (b) (6) DSN (b) (6)



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

26 Sept 2014

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Parris Island MCRD, SC

1. Aerial spray deployment to Beaufort MCAS, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at Parris Island MCRD. Additionally, 910 AW personnel will partner with USDA scientists to conduct efficacy and droplet pattern tests from 300' AGL.

2. Concept of Operations (All times are local):

- a. 6 October (Mon)  
1600 Depart KYNG  
1800 Land KNBC
- b. 7 October (Tues)  
TBD Installation Brief  
Calibration of MASS  
300' AGL Test Prep
- c. 8 October (Weds) Spray  
1715 Depart KNBC  
1915 Land KNBC
- d. 9 October (Thurs) Spray WX backup  
1715 Depart KNBC  
1915 Land KNBC
- d. 10 October (Fri)  
1200 Depart KNBC  
1400 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 7500 acres
  - b. Altitude: 150' AGL (300' AGL for test)
  - c. Swath Width: 1000ft
  - d. Groundspeed: 200 KIAS
  - e. Application Rate: 0.75 oz/acre of Dibrom-Naled Organophosphate insecticide
4. Lt Col (b) (6) will serve as the mission commander with Maj (b) (6) as the aircraft commander. Support at Parris Island MCRD and Beaufort MCAS has been completed.

//SIGNED//

(b) (6), Lt Col, USAFR  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND**

25 Nov 2014

**MEMORANDUM FOR HQ AFRC/A300**

**FROM:** 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

**SUBJECT:** Concept of Operations for Aerial Spray at Jacksonville NAS, FL

1. Aerial spray deployment to Jacksonville NAS, FL to provide an aerial spray platform for USDA to evaluate the control of *Aedes aegypti* inside two distinct urban settings (North American and Middle Eastern). The trials will be conducted at Camp Blanding, an Army National Guard facility located near Jacksonville, FL. In addition, NVG aerial spray cadre training will take place at Avon Park Bombing Range, FL.

2. Concept of Operations (All times are local):

- a. 8 December (Mon)  
1100 Depart KYNG  
1400 Land KNIP
- b. 9 December (Tues)  
1430 Depart KNIP  
1930 Land KNIP
- c. 10 December (Weds)  
1430 Depart KNIP  
1930 Land KNIP
- d. 11 December (Thurs)  
1100 Depart KNIP  
1400 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Altitude: 150' AGL (test) 300' AGL (NVG)



- b. Swath Width: 1000 ft
  - c. Groundspeed: 200 KIAS
  - d. Application Rate: 0.60 oz/acre of Zenivex insecticide
4. Lt Col (b) (6) will serve as the mission commander with Maj (b) (6) (b) (6) as the aircraft commander. Support at Jacksonville NAS, Camp Blanding, and Avon Park has been completed.

//SIGNED//  
(b) (6), Lt Col, USAFR  
Chief of Aerial Spray

# SPRAY OPERATIONAL SCHEDULE

## UTAH TEST AND TRAINING RANGE MISSION

### 10 Mar – 21 MAR 2014

**PURPOSE/BENEFIT/OBJECTIVE:** Aerial spray herbicide mission controlling Halogeton on Targets 21, 24, and areas specified by range pest controllers at the Utah Test and Training Range (UTTR) aiding vegetation control for bombing mission test evaluations and unexploded ordnance recovery.

#### 1. 1<sup>st</sup> HALF AIRCREW (10-15)

##### AIRCREW 1: CALL SIGN: SPRAY 06 Range Time: 0800-1300L

- a. Pilots: Lt Col (b) (6) , Lt Col (b) (6) , Maj (b) (6)
- b. Navigators: Lt Col (b) (6)
- c. Flight Engineers: MSgt (b) (6)
- d. Spray Operators: SMSgt (b) (6) , TSgt (b) (6)
- f. Crew Chiefs: TSgt (b) (6) , SrA (b) (6)

##### AIRCREW 2: CALL SIGN: SPRAY 08

- e. Pilots: Maj (b) (6) Capt. (b) (6) , Maj (b) (6) , Maj (b) (6) , Maj. (b) (6)
- f. Navigators: Lt Col (b) (6)
- g. Flight Engineers: SMSgt (b) (6)
- h. Spray Operators: SMSgt (b) (6) , MSgt (b) (6)
- i. Crew Chiefs: MSgt (b) (6) , TSgt (b) (6)

#### 2<sup>nd</sup> HALF AIRCREW (15-21)

##### AIRCREW 1: CALL SIGN: SPRAY 05

- j. Pilots: Lt Col (b) (6) , Lt Col (b) (6) (in-place)
- k. Navigators: Lt Col (b) (6)
- l. Flight Engineers: SMSgt (b) (6)
- m. Spray Operators: MSgt (b) (6) , SSgt (b) (6)
- n. Crew Chiefs: TSgt (b) (6) , SrA (b) (6)

##### AIRCREW 2: CALL SIGN: SPRAY 06

- o. Pilots: Maj (b) (6) , Capt. (b) (6)
- p. Navigators: Lt Col (b) (6)
- q. Flight Engineers: MSgt (b) (6)
- r. Spray Operators: MSgt (b) (6) , TSgt (b) (6)
- Crew Chiefs: MSgt (b) (6) , TSgt (b) (6)

#### 2. MISSION SUPPORT:

- a. Mission Commander: Maj (b) (6) (b) (6)
  - 1. Makes final decision on all changes to the schedule
  - 2. Confirm all hotel information is correct upon check in
  - 3. Report flight data to AFRC daily (See contact info on reporting sheet)
  - 4. Coordinate any range schedule conflicts/changes
- b. Entomologists: Lt Col (b) (6) (b) (6) @ Hill AFB mixing (10-21), Lt Col (b) (6) (b) (6) (1<sup>st</sup> half-Range – In place), Lt Col (b) (6) (b) (6) (2<sup>nd</sup> half -range)
- c. ARMS: SMSgt (b) (6) (1<sup>st</sup> half), SrA (b) (6)
- d. Range: Lt Col (b) (6) (1<sup>st</sup> half), Lt Col (b) (6) (2<sup>nd</sup> half), Maj. (b) (6) , Maj (b) (6) and Maj. (b) (6) ,

#### 3. UTTR GROUND PARTY:

- a. **Entomologist/Pest Management Professional(s):** Lt Col (b) (6) (b) (6) will be at Hill AFB and direct product mixing. Lt Col (b) (6) will be the certified applicator on the range (11-14 Mar) and Lt Col (b) (6) (17-20) k

**4. MAINTENANCE:**

- a. **910 MX Supervisor:** SMSgt (b) (6)  
**910 Spray MX** TSgt (b) (6) (lead), MSgt (b) (6), TSgt (b) (6), SSgt (b) (6)  
(b) (6) TSgt (b) (6), TSgt (b) (6), SrA (b) (6) (b) (6)  
b. **Instruments/Avionics:** TSgt (b) (6), MSgt (b) (6)  
c. **Hydraulics/Electrician:** SrA (b) (6), MSgt (b) (6)  
d. **Engine:** MSgt (b) (6)  
e. **Crew Chiefs:** MSgt (b) (6), SrA (b) (6), MSgt (b) (6),  
TSgt (b) (6)

5. **COMM:** Capt. (b) (6) (2<sup>nd</sup> half Commercial), SMSgt (b) (6), TSgt (b) (6), SSgt  
(b) (6) SSgt (b) (6), SSgt (b) (6), SrA (b) (6), SrA (b) (6)

**6. IN-BRIEFING:** (UTTR Staff)

- a. **When/Time:** ASAP upon arrival  
b. **Who:** **EVERYONE!! Do not leave area until cleared out by the MC.**  
c. **Where:** Forestry ramp -Safety brief all personnel  
Base Operations – (As required)  
d. **Briefing Plan**  
a. Vehicles- See item **16.h** below  
b. Schedule of events  
c. Billeting- See item **16.g** below (On Base)  
d. Weather call  
e. Cellular Phone numbers for all personnel (Provide info to MC)  
f. FLT Line Driving (1430 or as required after landing)

**\*Note: Will have to supply toilet paper and paper towels. Forestry building will be kept clean. In short, CLEAN UP AFTER YOURSELVES.**

**7. PLANNED SEQUENCE OF EVENTS:** Hill AFB Tower Control and Runway Hours

Opr 1500Z-0700Z Mon-Sat, 1600Z-0000Z Sat-Sun

**NOTES:**

1. Scheduling reflects no weather or maintenance delays. In the event of weather or maintenance delays, the missions will be adjusted as required. ALL TIMES SUBJECT TO ADJUSTMENT BY MISSION COMMANDER
2. DUTY DAY FOR CIVILIANS WILL BE AS REQUIRED WITHIN CREW REST CONSTRAINTS.
3. ALL MX & A/C PERSONNEL WILL REMAIN ON DUTY UNTIL AIRCRAFT IS PRE-FLIGHT COMPLETE AND RELEASED BY THE MISSION COMMANDER.

**a. 10 March (Monday)**

0800 Show KYNG

1000 Depart KYNG

**Vader 06 MI: QENRK3501069**

**PPR: MM1001**

1015 Depart KYNG

**Vader 08 MI: QENRK3502069**

**PPR: MM1002**

1305 Land KHIF

Briefing: MC, arriving MX, and crew members: safety briefing, access cards, vehicles, and obtain billeting information prior to leaving the ramp area.

**b. 11 March – 15March (Tuesday-Friday)**

**2 sorties as WX permits each day.**

0600 Show KHIF Spray 06 crew 1; 0630 Spray 08 Crew 2 (Alternating daily)

0630 Weather call and mixing begin

0800 Depart KHIF

1300 Land KHIF

**\*\*Weekend flying is currently unavailable. If significantly wx or Mx delayed, then weekend operations will be considered as a last resort per Hill AFB.**

**c. 15 March (Saturday Swap out)**

**Vader 22**

**MI: QENRK3531074**

**PPR: MM-15-01**

0600 Swap Out Crew show KYNG

0800 Depart KYNG

1105 Land KHIF

1230 Depart KHIF

1935 Land KYNG

**d. 16 Mar. - 21 Mar. (Monday-Friday) 2 sorties as WX permits each day.**

0600 /0630 Show KHIF

0630 Weather call and mixing begin

0800 Depart KHIF

1300 Land KHIF

**e. 21 Mar. (Friday) All personnel**

0700 Checked out of billeting

0730 Return Rental vehicles

0930/0945/ Depart KHIF

1635/1640/ Land KYNG

**\*\*If completed early, the aircrews and airframes may return early. TBD by the Mission Commander.**

**8. ITEMS TO TAKE:**

**a. PMP:**

(1) Project Notebook with Recording Sheets and Maps

(2) Laptop Computer and Batteries

(3) 2 Compasses and Stop Watch

(4) 2 Signal Mirrors

(5) Entomologists' Tool Kit

(6) UHF/VHF Radios and VHF Radios

**b. Mission Commander: Mission Folder**

**c. Navigator: Maps**

**d. Spray Maintenance:**

(1) MASS Spares and Spill Kit

(2) Tools and Other Equipment

(3) Herbicide Safety Binder

(4) Safety Equipment

**e. Maintenance: Applicable Equipment**

**9. SPRAY CONFIGURATION: SP3G**

**a.** Two Aircraft and Systems

**b.** MASS Modules 1, 2 and 3

**c.** UHV Fuselage booms oriented straight back

**10. PPR REQUIREMENTS:** All required, see Form 33 setup sheets for aircraft and above itinerary

**11. PARKING PLAN:** Forestry Ramp and Building

**12. RADIO FREQUENCIES:**

- **Clover Range Control:** UHF 285.65, 275.9, 361.4 (p)

- **Eagle Tower:** UHF 351.0; Mawk 2 ((b) (6))

- **Diddle Knoll & Spray Ops Freq:** UHF 398.1 (Primary), 383.2 (Back-up); VHF 134.1, 118.45
- **Spray Inter plane:** UHF 237.05 / VHF 138.375
- **Spray Ground to Spray Maintenance:** See Iridium Phones
- **Base OPS:** 139.3
- **Communications Ground Freq:** LMR nets are trunked at Hill.

### 13. SPRAY PARAMETERS:

- a. **Herbicide:** Krovar 1DF®
- b. **Application Rate:** 22.5 gal/acre (10 lbs of Krovar in 22.4 gal of water)
- c. **Acreage:** 1,283 Acres (Targets 21, 23, 24)
- d. **Ground Speed:** 200 Knots (337.55 ft/sec)
- e. **Spray Altitude:** 100 Feet AGL
- f. **Swath Width:** 35 Feet
- g. **Flow Rate:** 366.1 Gallons/Minute

### 14. HERBICIDE LOADING: \*\*\*NOTE THAT SOME OF THESE AMOUNTS HAVE CHANGED\*\*\*

- a. **Sequence for Loading 1,000 Gallon Mixing Tank:**
  - (1) Fill with water up to 750 Gallon Mark, then add:
    - (a) 450 Pounds of Krovar 1DF® (18 bags, 25 # each)
    - (b) 4.0 Gallons (15,140 ml) of StaPut®
    - (c) 15 oz of FTF Defomer®
    - (d) 400 Ounces Hi-Light® Dye
    - (e) Add Water to 1,000 Gallon Mark and Agitate for 30 Minutes
- b. **When:** Start at 0500 Hours on first full day of spraying and adjust as necessary through end of the daily mission as called by Mission Commander.

### 15. SPRAY MONITORING AND TESTING. By CPMP & ground support personnel

### 16. CONTACTS: Commercial prefix (801) 777-XXXX; DSN 777-xxxx

#### a. 388<sup>th</sup> RANS/RSO, Range Control Officer/Installation Spray Coordinator:

(b) (6) 6066 Cedar Lane, Bldg 1274S; 777-5345; FAX: 9205  
Cell Phone # (b) (6)

(b) (6)

- **Hill Range Control:** 777-9386, Current OPS; 777-9385
- **Range Scheduler:** 777-9386
- **Eagle Tower:** 777-1515/6
- **Clover Operations:** 777-7575
- **Clover DO:** 586-3103
- **HQ UTTR/DOO Radio Freq Monitor:** 777-6715
- **HQ UTTR/DOO Resource Monitor:** 775-4257

#### b. Environmental Coordinator:

#### c. OASIS RANGE SUPPORT DIRECTORATE:

Oasis Chief: 75 CEG/CEU (b) (6)  
North Range Security: 777-1521/2/4

#### d. Hill AFB Base OPS: 777-1861

#### e. Entomology: (b) (6)

#### f. Weather: Hill AFB: 7-2018; UTTR: 7-1516/63 ASOS at Eagle Range 6-1765/1795 Need Dash1 daily at 0600

#### g. Billeting: Billeting Office Mountain View Inn, DSN 777-0802/1844, FAX 775-2014

**Best Western Plus Layton Park 801-896-0271  
798 W 1425 N  
Layton UT 84041**

**h. Car Contact:**

**1. Hertz Rental Car (b) (6) ) at BX 801-825-7300**

**6 Full size sedans, 4 Minivans, 2 4wd**

Entomologist/Range – (b) (6) (4wd)

MC – (b) (6) (4wd)

Comm – (b) (6) (b) (6)

Spray Crew1 – (b) (6) (b) (6) (b) (6)

Spray Crew2 – (b) (6) (b) (6)

Spray MX – (b) (6)

MX Specialists – (b) (6) (b) (6)

Crew Chiefs – (b) (6)

**2. Hill Motor Pool: 75 LRS/Dispatch DSN 777-1843 No UDRIVES**

**f. Hill AFB: 75<sup>th</sup> Air Base Wing Commander**

**Commercial Area Code for Hill is 801. Numbers beginning with 777 correspond to both commercial and DSN prefixes**

Airfield Manager: (b) (6)

Base Operations: (b) (6) (b) (6) ; FAX: 777-2221

Sponsor: MSgt (b) (6) , 514FLT, (b) (6)

Weather: 777-2018

Transit Alert: 777-3886

C-130 Maintenance Contact: 777-2478

Fuels: 777-7423 / 777-7311 available 0900-1800 daily after hours contact CP

Billeting: 777-1844

Chow Hall: 777-3428 Breakfast Mon-Fri 0600-0800 Sat-Sun 0900-1300

Lunch Mon-Fri 1100-1300 Sat-Sun 1030-1300

Dinner Mon-Fri 1700-1900 Sat-Sun 1730-1900

Golf Course: 777-1108

Public Affairs: 777-5201

Supply: 777-5391 (922 OE)

**j. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX Toll Free 1 - 800 - 278 - 7046**

(1) 910 AW/CC: Col (b) (6)

(2) 910 AW Command Post: Ext 1315; FAX 1161

(3) 910 AW/PA: Maj (b) (6) ; FAX 1022

(4) 910 OG/CC: Col (b) (6)

(4) 910 OS/OSA: Airfield Manager, Ext 1186/1526

(5) 757 AS/DO: Lt Col (b) (6)

(6) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371

(7) 757 AS/DOO: Ops Admin: Ext 1239; FAX 1657

(8) 757 AS/DOS: Aerial Spray Office: Maj (b) (6) (b) (6) (b) (6) ; Capt (b) (6)  
(b) (6) ; FAX 1616

(9) 910 LG/CC: Ext 1225

(10) 910 LG/LGM: Ext 1352

(11) Maintenance Control: Ext 1327

(12) 910 LG/LGMS: Spray Maintenance, Ext 1132

(13) 910 LG/LGL, Ext 1137

(14) Omega/SATO Travel: Ext 1772; 1-800-285-6342

(15) Cellular Spray Phones:

- Entomologist: (b) (6) cell (b) (6) (b) (6) cell: (b) (6)

**17. SEQUENCING:**

- a. Target sequencing is determined by UTTR personnel based upon EOD clearance schedule and airspace scheduling.
- b. Spray ops aircraft must stay south of Base Leg Knoll during turns on north run on Target 21. Coordination with range control is essential to assure that this portion of the range is released for air operations.
- c. When winds blow directly from one side of the target to the middle of the target or during early morning when wind speed is low, ground monitors will direct the “dress up” of the target edges.
- d. **Spraying Priorities:**
  - (1) Target 21
  - (2) Target modified target 23/24

**a. Multiple-Target Alignments for Possible Future Operations.**

Whenever possible, multiple in line targets will be treated on the same pass to facilitate aircraft line-up and turning efficiency (in which case two separate ground-monitoring and marking parties will be required).

- (1) The west edges of Targets 21 & 24 are contiguous and can be treated on the same pass with a spray-off gap between targets.

**18. GENERAL TARGET INFORMATION:**

**a. Target 21:**

- (1) Dimensions: 4,980' X 7,770'
- (2) Acreage: 888
- (3) Acres Sprayed in 2004: 888
- (4) Aircraft Loads: 18,869 Gal
- (5) Sorties: 17
- (6) Passes (35' Swath): 157
- (7) Spray-On Time/Pass: 23 Seconds
- (8) Spray Heading: 00/180

**b. Target 23 / 24:**

- (1) Dimensions: 16,675' X 1,657'
- (2) Acreage: 580
- (3) Acres Sprayed in 2004: 223
- (4) Aircraft Loads: 13050 Gal
- (5) Sorties: 7
- (6) Passes (35' Swath): 47
- (7) Spray-On Time/Pass: 49 Seconds
- (8) Spray Heading: 004/184

**c. WildCat**

Box coordinates:

NW Corner:	N402650.85	W1131629.59
NE Corner:	N402647.49	W1131621.76
SE Corner:	N402539.63	W1131711.16
SW Corner:	N402543.14	W1131719.00

**UTTR GEOGRAPHIC LOCATION**

Target areas on UTTR are geographically located in northwestern Utah, directly west of the Great Salt Lake and Hill Air Force Base. The complex is positioned between 40 and 41 degrees north latitude and close to 113 degrees ten minutes west longitude. The targets are within range 12 west and Township two and three north, Salt Lake Baseline Meridian.





DEPARTMENT OF THE AIR FORCE  
YOUNGSTOWN AIR RESERVE STATION  
757AS/AERIAL SPRAY UNIT  
VIENNA OH 44473-5924

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT**  
**UTAH TEST AND TRAINING RANGE, 10-21 MAR 2014**

**1. MISSION BASICS:**

- a. Installation Sprayed: Utah Test and Training Range (UTTR)
- b. Mission Duration: 10-21 Mar 2014
- c. Purpose of Application: Weed control on UTTR Targets 21, 23 and 24, facilitate UXO recovery
- d. Application Dates: 12-14, 18-19 Mar 2014
- e. Times of Application (Local): see attachment 1
- f. Acres Treated: 1,396
- g. Ferry Sorties/hours: 4/19.9
- h. Spray sorties/hours: see attachment 1
- i. Project Coordinator: (b) (6) Range Specialist/DSN (b) (6), Environmental Coordinator, (b) (6) DSN (b) (6)
- j. Date Spray Map Last Approved: 8 Mar 2014
- k. Installation In-Briefing: Maj (b) (6) Lt Col (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Maj (b) (6) (b) (6)
- b. Aircrew  
1st HALF AIRCREW (10-15 Mar)

AIRCREW 1: CALL SIGN: SPRAY 06

Pilots: Lt Col (b) (6) Lt Col (b) (6) Maj (b) (6)  
Navigators: Lt Col (b) (6)  
Flight Engineers: SMSgt (b) (6)  
Spray Operators: SMSgt (b) (6) MSgt (b) (6)  
Crew Chiefs: TSgt (b) (6) SrA (b) (6)

AIRCREW 2: CALL SIGN: SPRAY 08

Pilots: Maj (b) (6) Maj (b) (6) Maj (b) (6) Maj (b) (6) (b) (6)  
Navigators: Lt Col (b) (6)  
Flight Engineers: MSgt (b) (6)  
Spray Operators: SMSgt (b) (6) TSgt (b) (6)  
Crew Chiefs: MSgt (b) (6) TSgt (b) (6)

2nd HALF AIRCREW (15-21 Mar)

AIRCREW 1: CALL SIGN: SPRAY 06

Pilots: Lt Col (b) (6) Lt Col (b) (6)  
Navigators: Lt Col (b) (6)  
Flight Engineers: SMSgt (b) (6)  
Spray Operators: MSgt (b) (6) SSgt (b) (6)  
Crew Chiefs: TSgt (b) (6) SrA (b) (6)

**AIRCREW 2: CALL SIGN: SPRAY 08**

Pilots: Maj (b) (6), Maj (b) (6), Capt (b) (6)

Navigators: Lt Col (b) (6)

Flight Engineers: MSgt (b) (6)

Spray Operators: MSgt (b) (6), TSgt (b) (6)

Crew Chiefs: MSgt (b) (6), SrA (b) (6)

- c. Entomologists: application supervision (Cat 11- UTTR): Lt Col (b) (6) (b) (6) (10-14 Mar), Lt Col (b) (6) (b) (6) (17-19 Mar), Lt Col (b) (6) (b) (6) pesticide mixing and loading, safety briefer (Cat 11-Hill AFB)
- d. ARMS: SMSgt (b) (6) (1<sup>st</sup> half); SrA (b) (6) (2<sup>nd</sup> half)
- e. Range: Lt Col (b) (6) (1<sup>st</sup> half), Lt Col (b) (6) (2<sup>n</sup> half), Maj. (b) (6), Maj. (b) (6) Maj. (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Krovar<sup>®</sup> IDF
- b. EPA Registration Number: 352-505
- c. Formulation Sprayed: 10 lbs Krovar<sup>®</sup> per 22.5 gallons formulation.
- d. Gallons Pesticide Mix Loaded: 29,250
- e. Gallons Pesticide Mix Applied: 29,250
- f. Formulation Used per 1,000 gallons of finished mix: 450 lbs Krovar<sup>®</sup>, 4.0 gal StaPut<sup>®</sup>, ½ gal Foam Fighter<sup>®</sup>, 200 ounces Hi-Light<sup>®</sup> Dye, remainder water.
- g. Gallons and Name of Flush Used: 900 gal water
- h. Other Additives Used: 102 gal StaPut<sup>®</sup>; 40.6 gal Hi-Light<sup>®</sup> dye; 12.7 gal No-foam
- i. Application Rate: 22.5 gal/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99106, 99108
- b. Spray System (Modules Used) and System ID #: 3 and 5.
- c. Spray System Configuration: 3-Module System/ UHV Fuselage Booms
- d. Nozzle Type/Size: UHV Fuselage
- e. Nozzle Orientation & Number Used: 2 oriented straight back.
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 366 gallons per minute.

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 35'
- b. Spray Off-set: None
- c. Spray Release Altitude: 100' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) 12 Mar– beginning 010° @ 12; ending 355° at 9 knots
  - (2) 13 Mar – beginning 190° @ 6; ending 195° at 8 knots
  - (3) 14 Mar– beginning 181° @ 11; ending 180° at 8 knots
  - (4) 18 Mar– beginning 065° @ 3; ending light & variable
  - (5) 19 Mar– beginning 180 @ 5; ending 200° at 6 knots
- b. Temperature (Degrees Fahrenheit):
  - (1) 12 Mar – 32° - 37° F
  - (2) 13 Mar – 35° - 39° F
  - (3) 14 Mar– 34° - 37° F

- (4) 18 Mar– 27° - 29° F
  - (5) 19 Mar– 30° F
- c. Relative Humidity:
  - (1) 12 Mar – 78- 67 %
  - (2) 13 Mar – 48- 45 %
  - (3) 14 Mar– 59-56%
  - (4) 18 Mar– 59-54%
  - (5) 19 Mar– 46%
- d. Cloud Cover: Variable from 0 % to 100 % over the duration of the project
- e. Source: Aircraft observations over UTTR Targets 21 and 24 and Diddle Knoll weather station.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique Used: blue dye pattern on targets and observations from personnel on the range.
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Techniques Used: monitoring of weed emergence in spring
  - (2) Results: will be determined this spring by range personnel

- 8. REMARKS:** This year we continued the newly adopted practice of spraying UTTR targets (21, 23-24) using the DGPS agricultural spraying system (Wingman) for proper placement of the aircraft rather than ground personnel. Additional marker dye was used to highlight the treatment areas to determine coverage. The spray area was increased by 28% this year, despite 2 inclement weather day cancellations. Specific spray data for this project is shown in Attachment 1. An update of the current environmental assessment is in progress. This update will include the control of cheat grass for fire suppression. It is proposed that sprays to control cheat grass on the HAG/GAT be made in the fall timeframe (i.e., October).

//signed//

(b) (6) (b) (6) Lt Col, USAFR  
DoD Certified Pest Management Professional

## Attachment 1: Summary Spray Chart

**12-20 March 2014****SPRAY OPERATIONS SUMMARY FOR UTAH TEST AND TRAINING RANGE**

<b>DATE March</b>	<b>SORTIE #</b>	<b>AIRCRAFT #</b>	<b>TAKE OFF/LANDING (local)</b>	<b>TARGET</b>	<b>PASSES</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>FLYING HOURS</b>
12	1	106	0910-1030	21	6	75	1595	1.3
12	2	108	1030-1230	24	14	82	1742	2.0
12	3	106	1130-1250	21	6	85	1843	1.3
13	4	108	0835-0950	23,24	10	81	1687	1.3
13	5	106	0910-1015	21	6	79	1752	1.1
13	6	108	1040-1150	23,24	10	89	1894	1.2
13	7	106	1120-1235	21	-	81	1799	1.3
14	8	106	0820-0935	21	-	68	1554	1.3
14	9	108	0915-1015	23,24	7	86	1851	1.0
14	10	106	1020-1205	21	-	87	1876	1.7
14	11	108	1350-1455	23,24	7	85	1810	1.1
18	12	106	1050-1230	21	-	89	1804	1.6
18	13	108	1208-1345	21	16	97	1792	1.6
19	14	106	0850-1015	21	-	96	1773	1.4
19	15	108	0935-1108	21,24	19	93	1796	1.5
19	16	106	1045-1235	21	-	81	1716	1.8
19	17	108	1158-1315	21,24	5	44	966	1.3
20	Flush sorties	Spray 106	-	-	-	-	-	1.5
		Spray 108	-	-	-	-	-	1.1
		Totals				1,396	29,250	26.4



DEPARTMENT OF THE AIR FORCE  
757 Airlift Squadron – Aerial Spray Operations  
3976 King Graves Rd Unit 24  
Vienna OH 44473-5924

**910 AW AERIAL SPRAY UNIT – POST-MISSION REPORT FOR  
Minot AFB, Minot, Burlington, Surrey, Watford City, & Williston ND  
Adult Mosquito Control 14-18 July 2014**

**1. MISSION BASICS:**

- a. Installation Sprayed: Minot AFB and the cities of Minot, Burlington, Surrey, Williston and Watford City, North Dakota
- b. Mission Duration: 14-18 July 2014
- c. Purpose of Application: Control adult nuisance and vector mosquitoes
- d. Application Date: 15, 16, and 17 July 2014
- e. Time of Application (Local): 1955 -2130
- f. Acres Treated: 22,600 (Minot/Burlington/Surrey), 5,000 (Minot AFB), 32,000 Williston/Watford City
- g. Project Coordinator/s (Name/Rank, Title, Phone #): Mr. (b) (6) Supervisor - Pest Management Shop, DSN (b) (6) Williston Vector Control, (b) (6), ((b) (6) Minot City, (b) (6) ((b) (6)
- h. Date Spray Map Last Approved: 17 June 2014
- i. Date of Waste Generation Letter: 28 July 2013
- j. Installation In-Briefing: (When/Where/Briefer/s): Minot AFB CE Conference Room, Lt Col (b) (6) and Maj (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: LtCol (b) (6)
- b. Entomologist (Category 8 & 11): Maj (b) (6)
- c. Aircrew:
  - 1) Pilots: Maj (b) (6) Maj (b) (6)
  - 2) Navigators: Lt Col (b) (6)
  - 3) Flight Engineer: MSgt (b) (6)
  - 4) Spray Operators: SMSgt (b) (6), MSgt (b) (6), MSgt (b) (6)
- b. Maintenance:
  - 1) Spray Maintenance: TSgt (b) (6) (Lead), SMSgt (b) (6), TSgt (b) (6), TSgt (b) (6), TSgt (b) (6), SrA (b) (6), (b) (6)
  - Crew Chief(s): MSgt (b) (6), SrA (b) (6)
  - 2) Avionics: TSgt (b) (6)

**Flying Data:**

- (1) Spray Sorties/Hours: 3/6.2
- (2) Ferry Sorties/Hours: 2/7.1
- (3) Mission ID: QENRK3531195

**3. PESTICIDES:**

**Minot et al.**

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 200 gal Trumpet®
- d. Gallons and Name of Flush Used: 15 gal Water
- e. Other Additives Used: none
- f. Application Rate: 0.9 oz/acre Trumpet®



**Williston et al.**

- g. Trade Name: Zenivex E20
- h. EPA Registration Number: 2724-791
- i. Gallons Pesticide Loaded: 80 gal Zenivex 80 gal BVA
- j. Gallons and Name of Flush Used: 8 gal aromatic naptha
- k. Other Additives Used: none
- l. Application Rate: 0.0037 lbs/acre A.I. Etofenprox (0.32 oz/acre), (0.64 oz/acre 1:1 dilution)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 89106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 24 straight down for Minot & 13 for Williston
- f. Pressure (PSI): 41-52 PSI
- g. Flow Rate: 7.00 GPM for Minot and 4.65 GPM for Williston

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off Set: 2000-4000' depending on wind speed
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 15 July 330-340° @ 10 knots (aerial); 2 knots (ground)  
16 July 230-260° @ 10 knots (aerial); 2 knots (ground)  
17 July 160-190° @ 12 knots (aerial); 4 knots (ground)
- b. Temperature (Degrees Fahrenheit): 75 +or - 2 °F
- c. Relative Humidity: 65% + or - 8%
- d. Cloud Cover: clear to scattered clouds
- e. Source: Ground observations and onboard aircraft readings

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. The Minot AFB CES pest management and Williston Mosquito control conducts adult mosquito trapping to monitor mosquito densities on base.
- b. Effectiveness:
  - (1) Technique/s Used: CDC light traps
  - (2) Results: Mosquitoes counts pre and post spray for the Williston area are in Attachment
  - (3) Public Health for Minot AFB did not report trap counts.

**8. REMARKS:** Continued high numbers of mosquitoes in both the Minot and Williston ND areas along with Minot AFB prompted each location to make the decision to have an aerial spray application. Spray operations were conducted on the evenings of 15, 16, and 17 July. Weather conditions were superb with both temperature and winds being excellent for an effective application. Minor malfunctions in the pressure indicator of the spray system was the only interruption of spray operations, however, these were quickly corrected, calibrations were verified, and spray operations continued without incident for the remainder of the mission. A seamless transition and flawless calibrations were made when changing chemicals from the Minot to the Williston portion of the mission, much to the credit of the spray maintenance personnel. Sortie information can be found in Attachments 2-5.

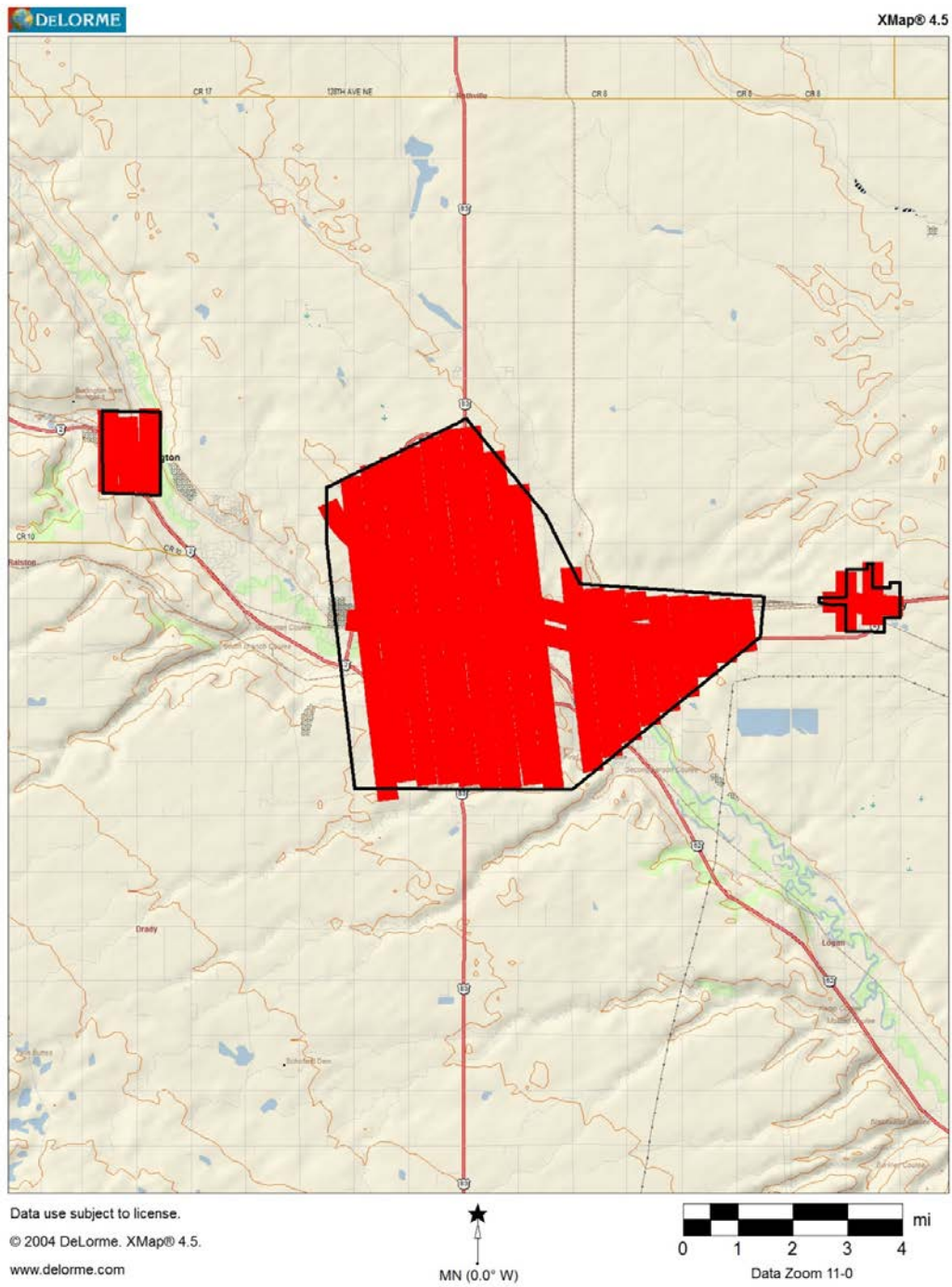
//signed//  
(b) (6)(b) (6) Maj, USAFR  
DoD Certified Pest Management Professional

# Attachment 1. Williston Pre and Post application data.

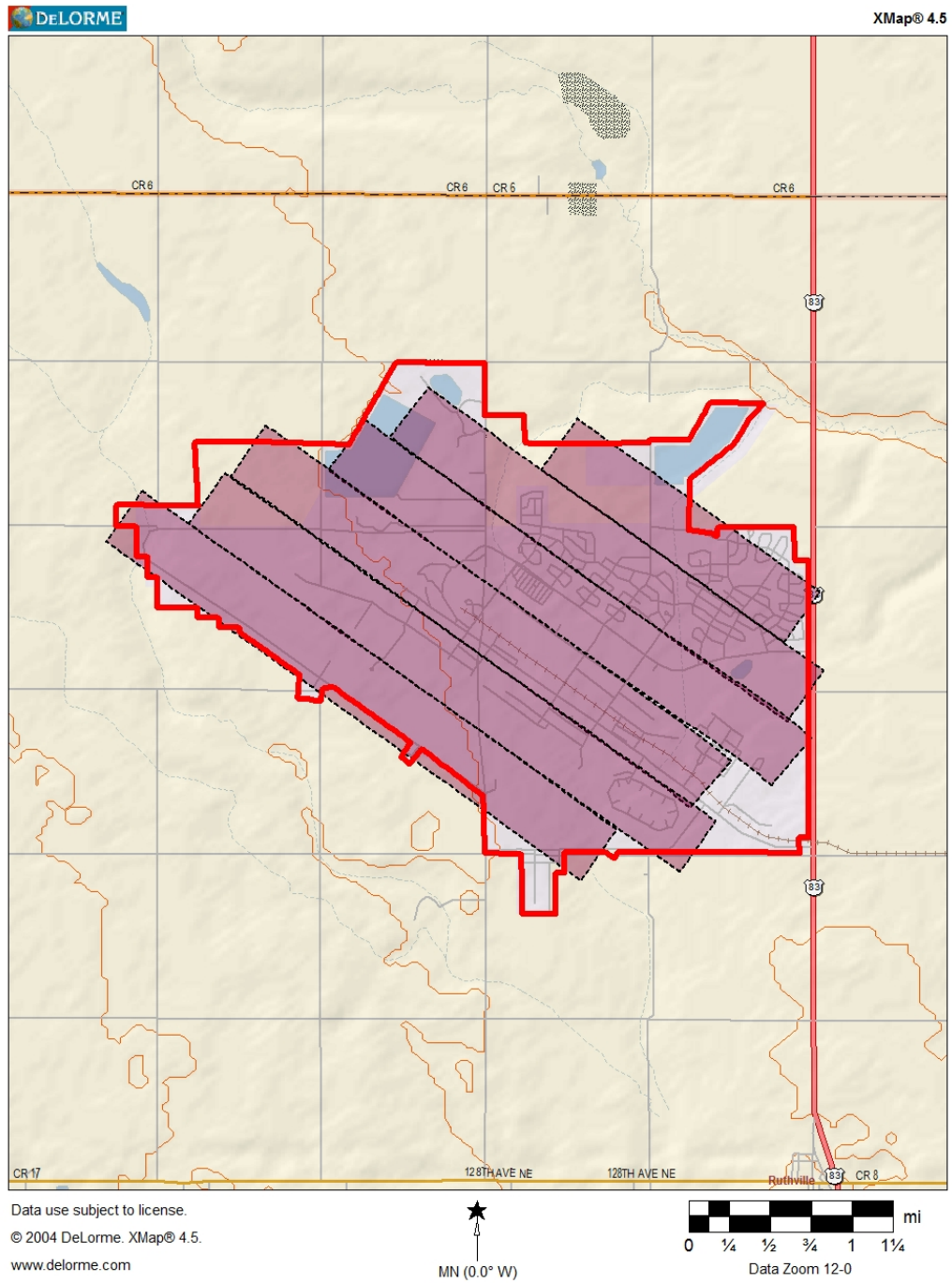
Trap #	Thur 17 Jul 14				Fri 18 Jul 14			
	A vexans	C inornata	O dorsalis	C tarsalis	A. vexans	C inornata	O dorsalis	C tarsalis
1	106	1	1	9	267	5	10	
2	546	7	2	300	17			
3	97	4	90	2				
4	-----							
	-----							
5	66	5	771	12	3			
6	69	5	9	127	1	5	57	
7	15	1	4	34	1	5	2	
8	2	4	----- malfunction -----					
9	165	10	4	406	3			



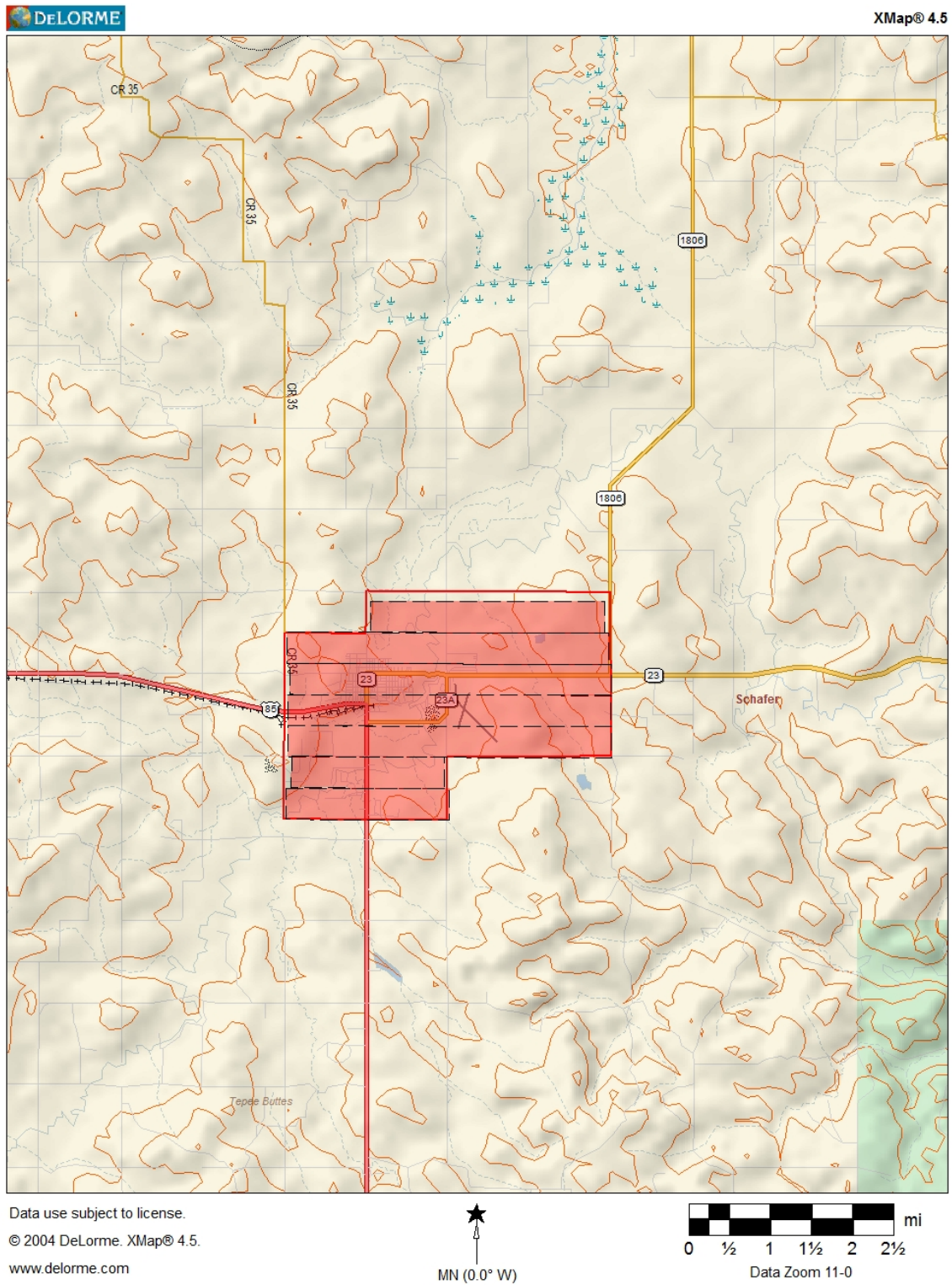
## Attachment 2. Minot Sortie



### Attachment 3. Minot AFB Sortie

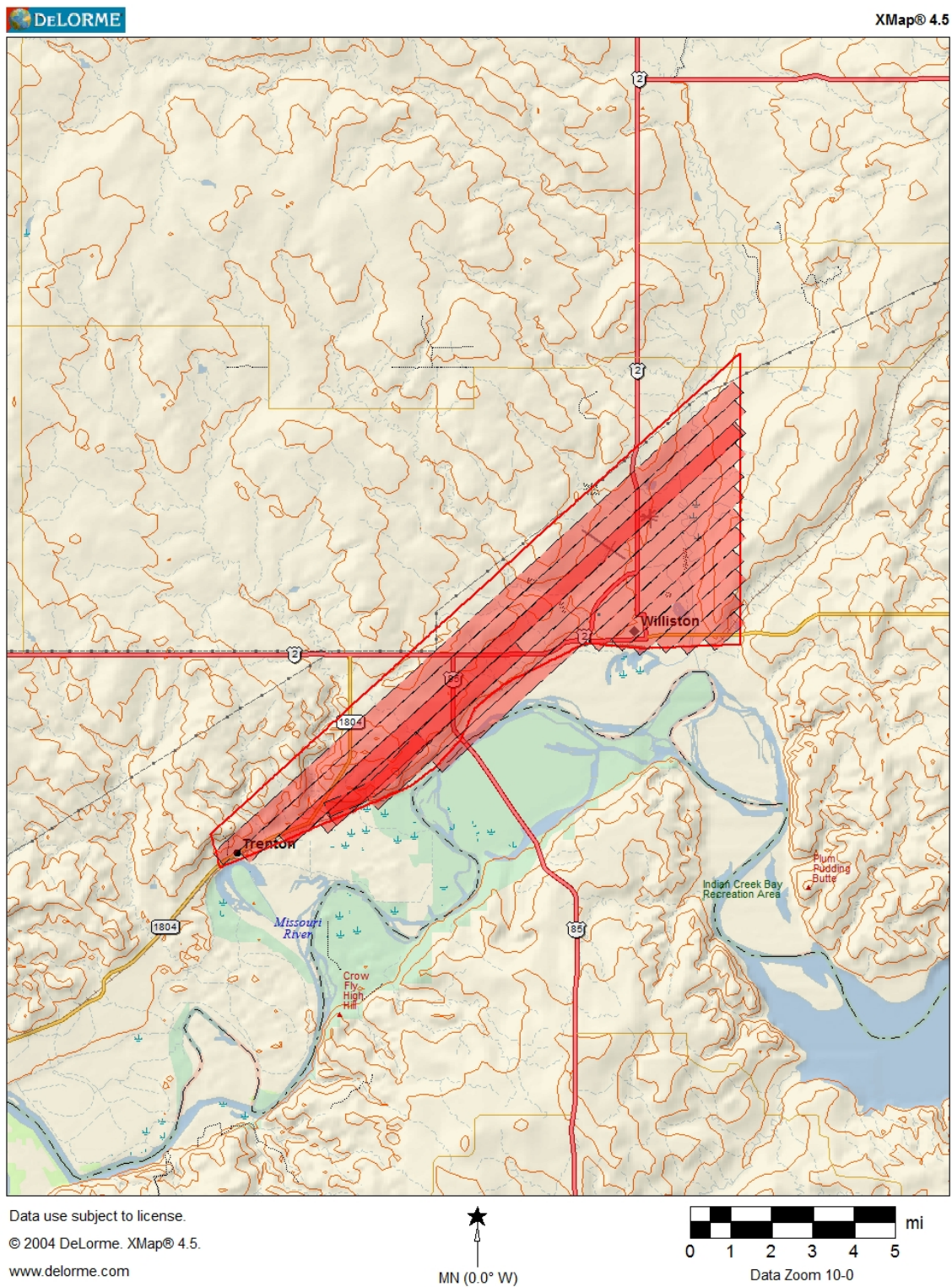


#### Attachment 4. Watford City, ND Sortie





## Attachment 5. Williston ND Sortie



**AERIAL SPRAY OPERATIONAL SCHEDULE**  
**Minot, MAFB, & Williston, ND**  
**14-18 July 2014**  
**V4**  
**MI: QENRK3531195**  
**AFRC IRT#:14-08-MASS1**

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions and lower risk of vector-borne illness to individuals working and living in and around Minot AFB and the cities of Minot and Williston ND. Aerial Spraying of the cities of Minot and Williston will be in accordance with the IRT program.

**1. 910 AW PARTICIPANTS:**

Msn Commander:	Lt Col (b) (6)	(b) (6)
Entomologist:	Maj (b) (6)	(in place) (b) (6)
Pilots:	Maj (b) (6)	, Maj (b) ((b) (6)
Navigator:	Lt Col (b) (6)	
Flight Engineer:	MSgt (b) (6)	
Spray Operators:	SMSgt (b) (6)	, MSgt (b) (6) , MSgt (b) (6)
Spray Maintenance:	MSgt (b) (6)	Lead) (b) (6)
	SMSgt (b) (6)	, TSgt (b) (6) , TSgt (b) (6)
	TSgt (b) (6)	, SrA (b) (6)
Crew Chiefs:	MSgt (b) (6)	, SrA (b) (6)
Avionics:	MSgt (b) (6)	

**2. REQUIRED ITEMS:**

Msn Commander:	Mission Folder, Laptop
Entomologist:	Wind Gauge, Compass, Pest Safety Binder, Project Notebook
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, Calibration Tables/Laptop and or Spray datasheet, O2 hose extensions
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand held radios

**3. SCHEDULE: (All Local Times)**

**14 July (Monday): PPR: N/A (KMOT Minot International)**

0900: Show KYNG  
1100: Depart KYNG  
1335: Land KMOT

**15-17 July (Tues-Thurs): Spray sorties Sunset 2147 (Minot) 2155 (Williston)**

1000: In brief (Tues @ KMIB CE SQ)  
1700: Showtime/WX decision  
1730: Load  
1930: Takeoff KMOT (subject to change dependent upon location)  
2200: Land

**18 July (Friday)**

1030: Crew show

1230: Depart KMOT  
1630: Land KYNG

**3. AIRCRAFT & SPRAY CONFIGURATION:**

Aircraft: 89-9106  
System: SP2G (2-Module System) with Fuselage Booms  
Nozzle/Orientation: ULV 8003 Tee Jet oriented straight down  
Number of Nozzles: Trumpet: 26 (13 per side for 2000' swath @ Minot & MAFB)  
Zenivex: 16 (2000' swaths @ Williston)

**4. SPRAY MIXING AND LOADING:**

Entomologist will determine quantity to load and work with the local pest managers to determine the application rate. 160 gal of Trumpet is needed for Minot City and 40 for MAFB. Williston will use approximately 160 gal (80 Zenivex and 80 BVA). System will be calibrated after the Zenivex load. Please see entomologist for final flow spray parameters as these numbers are subject to change depending on user requirements.

**5. SPRAY PARAMETERS:**

**Location: Minot AFB & City of Minot**

Chemical: Trumpet  
Area to be treated: Minot City (22,600 acres) MAFB (5,000 acres)  
Swath Width: 2,000'  
Flow Rate: 7.0 gal/min for 2,000' swath (Trumpet @ EC Concentrate - 78% naled)  
Application Rate: 0.9 oz/acre Trumpet  
Altitude: 150'  
Ground Speed: 200 Knots  
Flush:

**Location: Williston**

Chemical: Zenivex  
Area to be treated: 32,000 acres  
Swath Width: 2,000'  
Flow Rate: 4.65 gal/minute (1:1 BVA:Zenivex E20)  
Application Rate: 0.0037 lbs/acre A.I. Etofenprox (0.32 oz/acre), (0.64 oz /acre 1:1 dilution)  
Altitude: 150'  
Ground Speed: 200 Knots  
Flush: With aromatic naptha, triple rinse, then air purge

**6. RADIO FREQUENCIES:**

MAFB Twr: 120.65, 236.6, 253.5;  
Minot Intr'l: 118.2, 251.125 or Unicom 122.95  
Williston: 122.8 CTAF/UNICOM  
Spray Gnd: VHF 123.45 UHF 392.2

**7. TRANSPORTATION:**

Minot Vehicle Ops: 701-723-3176 / DSN 453-3121  
2 six pax trucks and 2 eight pax vans Confirmation # 23195723  
2 additional vehicles from ND Guard

**8. LODGING:**

Sleep Inn in Minot, ND

2400 10th St SW, Minot, ND 58701  
(701) 837-3100  
Non- A's to be emailed to aerial spray shop

## 9. CONTACTS:

### **Minot AFB (KMIB) DSN prefix: 453- Commercial area code and prefix (701) 723 -**

Command Post	x3101	
Safety	x3468	
Base Operations:	x2347	
Airfield Manager:	x3377	FAX: 3637
Environmental Officer:	x4871	
Base Civil Engineer:	x2434	
Pest Management:	x2393	(b) (6) cell: (b) (6)
Public Affairs:	x6212	
Weather:	x6385	
Billeting:	x6161	(b) (6)
Fire Dept:	x2461	
Transient Alert:	x3153	
Minot AFB Twr	x3330	
AGE Flight Chief:	MSgt	(b) (6)

### **910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

910 AW/CC:	x1243	Col (b) (6)
Command Post	x1315	FAX x1161
PA:	x1236	FAX x1022
OG/CC:	x1257/1179	
Safety	x1391	
Base Ops:	x1182	
SOF Desk:	x1069	FAX: x1371
757 AS/DO:	x1793	
757 AS Admin:	x1239	FAX x1657
757 AS Spray Office:	x1638/1111	FAX x1616
910 MXG/CC:	x1225	
910 LG/LGM:	x1352	
Maintenance Control:	x 1348	
Spray Maintenance:	x1132/1586	
910 LG/LGL:	x1137	

### **Minot International Airport (KMOT)**

Magic City Twr:	(b) (6)	(b) (6)
Afld Director:	(b) (6)	(b) (6)
Asst Director/Security:	(b) (6)	(b) (6)

### **National Guard at Minot International**

Capt (b) (6)	(b) (6)	Blackberry: (b) (6)
(b) (6)	(b) (6)	(b) (6)

### **Williston Vector Control District:**

Fran Bosch (701)577-4563

### **City of Minot Publicworks/IRT decision maker:**

(b) (6)





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

8 Sept 2015

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Capability and Concept of Operations for Aerial Spray at Mountain Home AFB and Saylor Creek Bombing Range, ID

1. Aerial spray deployment of one C-130 from 14-25 Sept 2015 in response to an aerial spray request to aid fire prevention on Saylor Creek Bombing Range located near Mountain Home AFB, ID. A herbicide will be applied to target cheat grass while allowing native fire resistant vegetation (sagebrush) to re-establish and become competitive. During the operation aerial spray flight proficiency training will be accomplished while providing real-world training for aerial spray entomologists and maintenance personnel.

2. Concept of Operations (All times are local)

- a. 14 Sep (Mon)  
1100 Support Spray aircraft depart KYNG  
1200 Aircraft depart KYNG  
1500 Spray aircraft land KMUO  
1510 Support aircraft land KMUO
- b. 15-18 Sep (Tues - Fri) Spray Sorties  
0700 Depart KMUO  
1115 Land KMUO  
TBD Support aircraft return to YNG
- c. 21-24 Sep (Mon-Thur)  
0700 Depart KMUO  
1115 Land KMUO  
TBD Support aircraft return to YNG
- d. 25 Sept (Fri) Redeployment  
0900 Spray aircraft depart KMUO  
0910 Support aircraft depart KMUO  
1600 Spray aircraft land KYNG  
1610 Support aircraft land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: approx. 3200 acres
- b. Altitude: 100' AGL for herbicide application
- c. Swath Width: 100ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 0.57 ounces of Panoramic 2SL in 7 gal water per acre

4. Lt Col (b) (6) will serve as the Mission Commander. Lt Col (b) (6) will be the Aircraft Commander. Required support at both Mountain Home AFB and Saylor Creek has been coordinated.

//SIGNED//

(b) (6), Lt Col, USAFR  
Chief, Aerial Spray

**AERIAL SPRAY OPERATIONAL SCHEDULE V1**  
**SAYLOR CREEK RANGE / MT HOME AFB, ID**  
**14-25 SEPT 2015**  
**QENRK3531258**

**Purpose/Objectives/Benefits:** One C-130 will deploy to Mt Home, IID from 14-25 Sep, 2015. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in to prevent fire hazards, inhibit annual re-growth of cheatgrass on Saylor Creek Bombing Range, ID and allow native vegetation to establish and be competitive.

**1. 910 AW PARTICIPANTS:**

Msn Commander:	Lt Col (b) (6)	(15-19)	(b) (6)
	Lt Col (b) (6)	(21-26)	(b) (6)
Entomologists:	Lt Col (b) (6) (b) (6)	(15-20)	(b) (6)
	Lt Col (b) (6) (b) (6)	(21-26)	(b) (6)
	Maj (b) (6)		(b) (6)
Admin Support:	SMSgt (b) (6)		
Pilots:	Lt Col (b) (6)		
	Maj (b) (6)	(15-19)	
	Maj (b) (6)	(21-26)	
Navigator:	Capt (b) (6)		
Flight Engineer:	SMSgt (b) (6)		
Spray Operators:	CMSgt (b) (6)	(15-22)	
	MSgt (b) (6)		
	MSgt (b) (6)		
	MSgt (b) (6)	(15-19)	
	MSgt (b) (6) (b) (6)	(21-26)	
Spray MX:	SMSgt (b) (6)		(b) (6)
	MSgt (b) (6)		
	TSgt (b) (6)	(Lead)	(b) (6)
	TSgt (b) (6)		
	TSgt (b) (6)		
Crew Chiefs:	MSgt (b) (6)		
	A1C (b) (6) (b) (6)		
MX package:	MSgt (b) (6)		
	MSgt (b) (6)		
	MSgt (b) (6)		
	SrA (b) (6)		
	SrA (b) (6)		

## **2. REQUIRED ITEMS**

Msn Commander:	Computer
Entomologist:	Cardholders, Water Sensitive Cards, Tool Kit, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map,
Spray Operator:	PPE, Calibration Tables/Laptop and or Spray datasheets, 02 Hoses
Spray Maintenance:	Mobility Kit, MASS Spares, Spill Kit, Pesticide Safety Binder, Safety Equipment and Tool and other equipment

## **3. SCHEDULE: (Local Times)**

### **15 Sept (Mon) Deploy to MOU**

0900 Show KYNG  
1100 Spray aircraft depart KYNG   **Mission # QENRK3531258**  
1110 Support aircraft depart KYNG   **Mission # QENRK0232258**  
1500 Spray aircraft land KMUO   **PPR: EA-247-01**  
1510 Support aircraft land KMUO   **PPR: EA-247-02**

### **16-18 Sept (Tues-Thur) Spray Sorties   Range: 0700L - 1100L**

0500 Show KMUO/WX decision/load  
0700 Depart KMUO  
1115 Land KMUO

### **19-21 Sept (Fri-Sun)**

No Flying –Participate in Airshow

### **22 Sept (Mon) Spray Sorties Range: 0700 - 1100L**

The post-airshow Wing FOD-walk will be from 0700-0900 Monday the 22nd. We can't take off until they are done. If we need LOX we will fly to KBOI.

0700 Show KMUO  
0900 Depart KMUO/KBOI  
1115 Land KMUO

### **23-25 Sept (Tues-Thurs) Spray Sorties   Range: 0700L - 1100L**

0500 Show KMUO/WX decision/load  
0700 Depart KMUO  
1115 Land KMUO

### **25 Sept (Thurs) Support**

0800 Show KYNG  
1000 Depart KYNG   **Mission # QENRKXXXXX**  
1400 Land KMUO   **PPR: EA-247-03**

### **26 Sept (Fri)   Redeploy to YNG**

0700 Show KMUO  
0900 Spray aircraft depart KMUO  
0910 Support aircraft depart KMUO  
1600 Spray aircraft land KMUO  
1610 Support aircraft land KYNG

## **4. AIRCRAFT & SPRAY CONFIGURATION:**

Aircraft:	89-9108
System:	SP-3G MASS: 3
Nozzle /Orientation:	Raindrop/Straight Back

Number of nozzles:

Fuselage – 18 nozzles

## **5. SPRAY MIXING AND LOADING:**

### **a. In each gallon of mix:**

0.57 ounces of Plateau herbicide (0.44 gallons in 100 gallons of water)

0.32 ounces of Control AMS DR (2 pints in 100 gallons)

0.0058 ounces of Prevent (0.5 oz in 100 gallons)

127.1 ounces of water

### **b. First Load (4 Tanks of 450 gallons each + sump of 75 gallons)**

Fill to 450 gal water/tank using the pump on the water tanker truck. This is done by putting the filler hose into the rear tank with all tanks open to the common sump.

Total water in tanks = 1,800 gal.

75 gal/water in sump

Total water added = 1,875 gallons

Load 8.3 gallons of Plateau; add 4.7 gallons of Control AMS, and 9 oz of Prevent while agitating approximately 5-7 min

Total quantity mix 1888 gallons

### **c. Subsequent Loads**

Fill with water for a total of 1800 gallons; use “per 100 gallons of water” measurements given above. When the MASS is returned empty load 1800 gallons of water and add: 8.1 gallons of Plateau; 4.5 gal of Control, and 9 oz of Prevent

## **6. SPRAY PARAMETERS:**

Chemical: Plateau Herbicide (active ingredient: 23.6% Ammonium salt of imazapic)

Area to be treated: 3,216 acres

Swath Width: 100 feet

Flow Rate: 326 gal/min (we are treating at 46.5 acres/minute)

Application Rate: 7 gal/acre (4 oz of Plateau per acre)

Altitude: 100’ AGL

Ground Speed: 200 Knots

Flush: Water

## **7. SPRAY MONITORING OR TESTING**

Water sensitive cards may be used to verify swath width by the CPMPs

## **8. PARKING PLAN:**

Transient Ramp in front of Base Operations

## **9. RADIO FREQUENCIES:**

**Mt Home:**

PTD: 372.2/138.9

ACC CP (Raymond 27): 381.3

ATIS: 273.5

TWR: 133.85 / 253.5

GND: 120.5 / 275.8

RAPCON: 259.1  
Salt Lake Center: 387.15/363.0

**Saylor Creek Range:**(Cowboy Control): 236.05pri/381.3sec/134.1tertiary  
If Cowboy Control isn't up, contact MUO APP on 371.2  
Sagebrush Control: 251.2, Paradise MOA: 272.7/236.05/225.55  
Owyhee MOA: 392.2/266.35, Bruneau/Sheep Creek MOA: 251.875

**Air to Ground:** Entomologists: 123.45 VHF 292.2 UHF

## 10. **TRANSPORTATION:**

MUO will supply:

- (2) 6 PAX TRUCKS: (1) Spray MX / (1) MX Specialists
- (4) 3 PAX TRUCKS: (1) Officers fliers (2) Enlisted fliers (1) Crew Chiefs
- (1) 1 RENTAL: Maj Jennifer Remmers

Vehicles will be inspected by MUO personnel upon return

Fuel will not be provided by MUO

Use fuel cards (MC and SMSgt Aliberti) to fill with gas at the shoppette

Contact @ MUO Vehicle OPS: TSgt Dan Hanson 208-828-2215

## 11. **BILLETING:**

**Best Western:** 1080 Highway 20 Mountain Home, ID

Phone: 208/587-8477 Fax: 208/587-5774

**Mountain Home Inn:** 1180 Highway 20, Mountain Home, ID

## 12. **CONTACTS:**

**Mountain Home AFB, ID:** DSN: 728-XXXX ; Com (208) 828-XXXX

Base Ops:	x2222 or x6926	
Transit Alert:	x2252 (b) (6)	
Range Operations:	x2985 Mr. (b) (6)	
NR Mgr/Spray Project POC	x1785 (b) (6)	Cell (b) (6)
Entomology:	x6300 Mr. (b) (6)	
Billeting:	x5151	FAX x4797
Transportation:	x2215 208-828-2215	FAXx1619
Weather:	x6303	
Fire Dept:	x6292	
Visiting Unit Coordinator:	x1449	
XP:	x4049	
Gunfighter Skies (airshow):	x8477	

**Youngstown ARS OH:** DSN: 346-XXXX; COM (330) 609-XXXX

910 AW/CC:	x1243	
Command Post	x1315	FAX x1161
PA:	x1236	FAX x1022
OG/CC:	x1257/1179	
Safety	x1391	
Base Ops:	x1182	
SOF Desk:	x1069	FAX: x1371
757 AS/DO:	x1793	

757 AS Admin:	x1239	FAX x1657
757 AS Spray Office:	x1638/1111	FAX x1616
910 MXG/CC:	x1225	
910 LG/LGM:	x1352	
Maintenance Control:	x1348	
Spray Maintenance:	x1132/1586	
910 LG/LGL:	x1137	



# AERIAL SPRAY OPERATIONAL SCHEDULE

## MINOT AFB/Williston, ND

### 16 – 20 June 2014

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes, with adulticide, in order to improve working conditions and lower risk of vector-borne illness to individuals working and living in and around Minot AFB, the cities of Minot and Williston ND. Aerial Spraying of the cities of Minot and Williston will be in accordance with the IRT program.

**1. 910 AW PARTICIPANTS: Aircrew Spray 04: MI: QENRK3531167**

- (1) Pilot: Maj (b) (6)
- (2) Copilot: Capt (b) (6) in
- (3) Navigators: Lt Col (b) (6)
- (4) Flight Engineer: MSgt (b) (6)
- (5) Spray Operators: MSgt (b) (6), MSgt (b) (6)
- (6) Mission Commander: Lt Col (b) (6)(b) (6) (b) (6)
- (7) DV/WING CC: Col (b) (6) (will return commercial air)
- (8) Entomologist: Lt Col (b) (6) (b) (6), Maj (b) (6) (in place)

**2. Maintenance:**

- (1) Spray Maintenance: MSgt (b) (6) TSgt (b) (6) (LEAD), TSgt (b) (6), TSgt (b) (6)  
(b) (6) SrA (b) (6) (b) (6)
- (2) Crew Chiefs: TSgt (b) (6), MSgt (b) (6)
- (3) Avionics: TSgt (b) (6)

**3. SCHEDULE: (All Local Times)**

**16 June (Monday):**

0900: Show KYNG  
1100: Depart KYNG  
1335: Land KMOT

**17-19 June (Tues-Thurs.): \* as wx permits each day.\* PPR: N/A (KMOT Minot International)**

1000: Inbrief @ MIB (Civil Engineer SQ)  
1700: Show time/WX Decision  
1730: Load  
1930: Takeoff KMOT  
2147: Sunset (2155 for Williston)  
2200: Land

**20 June (Friday)**

1030: Show; return vehicles  
1230: Depart KMOT  
1630: Land KYNG

**3. ITEMS TO TAKE**

- a. **Mission Commander:** Mission Folder, Laptop
- b. **Entomologist:** Cell Phone, Wind Gauge, Compass, Pest Safety Binder,  
1 VHF radio Project Notebook
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables/Laptop and or Spray data sheet
- e. **Spray Maintenance:** Deployment Kit, Support Equipment

**4. KMIB PPR: N/A (Operations out of Minot International)**

**5. RADIO FREQUENCIES:**

Air to Ground Primary UHF 392.2; VHF 123.45  
Minot AFB Tower 120.65, 236.6, 253.5;  
Minot International 118.2, 251.125 or Unicom 122.95  
Williston: 122.8 CTAF/UNICOM

## 6. CONFIGURATION: SP2G

a. **System:** 2-Module System/Fuselage Booms

b. **Nozzle Tips/Orientation:**

ULV (adulicide): 8003 Tee Jet oriented straight down

c. **Number:** ULV: Trumpet: 16 (8 per side for 1,000' swath); 32 (16 per side for 2000' swaths); Zenivex: 16

d. **Booms:** Fuselage

e. **Aircraft:** 89-9104

## 7. SPRAY PARAMETERS:

### A. Adulicide (Minot AFB/ City of Minot- Trumpet)

(1) **Area to be treated:** Minot AFB: 5,000 acres; City of Minot 22,000 acres

(2) **Altitude:** 150' for Adulicide application

(3) **Swath Width:** 1,000 feet for AFB; 2,000' City of Minot or as determined by the PMP

(4) **Flow Rate.** 7.3 gal/min for 2,000' swaths (Trumpet ® EC Concentrate - 78% naled)

(5) **Application Rate.** 1.0 oz/acre Trumpet, ULV

(6) **Ground Speed:** 200 Knots

### B. Adulicide (Williston City – Zenivex)

(1) **Area to be treated:** ~32,000 acres

(2) **Altitude:** 150' for Adulicide application

(3) **Swath Width.** 2,000' City of Williston or as determined by the PMP

(4) **Flow Rate.** 4.65 gal/minute (1:1 BVA:Zenivex E20)

(5) **Application Rate.** 0.0037 lbs/acre A.I. Etofenprox (0.32 oz/acre), (0.64 oz /acre 1:1 dilution)

(6) **Ground Speed:** 200 Knots (338 Feet/Second)

(7) **Flush:** With BVA, triple rinse, then air purge

8. **SPRAY MIXING AND LOADING:** Entomologist will determine quantity to load. Approximately 110 gal Trumpet needed for Minot City and AFB. Williston will use approximately 160 gal (80 Zenivex and 80 BVA). These numbers are subject to change depending on user requirements.

9. **TRANSPORTATION:** Minot Vehicle Ops: 701-723-3176 / DSN 453-3121

(2) 6 pax trucks and (2) 8 pax vans **Confirmation #** 23195723

2 additional vehicles from ND Guard

## 10. LODGING: Mainstay Suites in Minot, ND

1212 31<sup>st</sup> Avenue, SW, Minot, ND 58701

## 11. CONTACTS: (MINOT AFB Quick Phonebook Attached)

### a. Minot AFB ND: DSN prefix: 453- Commercial area code and prefix (701) 723 -

1. **Base Operations:** x2347 (SSgt (b) (6) Airfield Manager: TSgt (b) (6) (b) (6) /TSgt (b) (6) (b) (6) FAX: 3637

2. **Environmental Officer:** (b) (6) (b) (6) (b) (6)

3. **Base Civil Engineer:** Lt Col (b) (6) (b) (6) (b) (6)

4. **Pest Management:** Mr. (b) (6) cell: (b) (6)

5. **Public Affairs:** Capt (b) (6)

6. **Weather:** TSgt (b) (6) /Capt (b) (6)

7. **Billeting:** SSgt (b) (6) , TSgt (b) (6) (if you have problems w/this number use (b) (6)

8. **Fire Dept:** x2461

9. **Transient Alert:** x3153, closes at 1730L

10. **Minot AFB Twr** – x3330

11. **AGE Flight Chief:** MSgt (b) (6)

### b. Minot International Airport (KMOT)

1. **Minot Int'l Twr (Magic City Twr)** (b) (6)

2. **Minot Int'l Airfield Director:** (b) (6)

3. **Minot Int'l Assistant Director/Security:** (b) (6)

### c. National Guard at Minot International

1. Capt (b) (6) Office: (b) (6) Blackberry: (b) (6)

2 (b) (6) (b) (6)

### d. Williston

1. **Vector control district:** (b) (6)

2. Army Corps of Engineers: (b) (6) , office; (b) (6) , cell
3. Williston ADS 125.925

**e. City of Minot**

1. Public works/IRT decision maker: (b) (6) or (b) (6)

**f. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Ext 1236; FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 Base Ops: Airfield Manager: Ext 1182
  - Assistant Air Field Manager (ACAM), Ext 1181
6. 757 AS/DO: Lt Col (b) (6)
7. 757 AS/DOO: Ops Admin: Ext 1239; FAX 1657
8. 757 AS/DOS: Aerial Spray Office, Lt Col (b) (6) or Capt (b) (6) ;  
FAX number x1616
9. 910 MXG/CC: Ext 1225
10. 910 LG/LGM: Ext 1352
11. Maintenance Control: Ext 1348
12. Spray Maintenance: SMSgt (b) (6) Cell: (b) (6)
13. 910 LG/LGL: Ext 1137
14. Omega/SATO Travel: Ext 1772; (800) 285-6342
15. Supervisor of Flight Desk: 1069, FAX: 1371
16. Cellular Spray Phones:
  - Mission Commander: (Lt Col (b) (6) cell – (b) (6) )
  - Spray Maintenance (b) (6)
  - Entomologist (Lt Col (b) (6) cell – 3(b) (6) )



**DEPARTMENT OF THE AIR FORCE**  
**Aerial Spray Unit**  
**Youngstown ARS, Ohio**

**Pest Management Professional's Post-mission Report**  
**Minot, ND Adult Mosquito Control 16-20 June 2014**

**1. MISSION BASICS:**

- a. Community Sprayed: Minot, North Dakota
- b. Mission Duration: 16-20 June 2014
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date/s: 17 June 2014
- e. Time/s of Application (Local): 2035-2145
- f. Acres Treated: 5,813
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6) (Minot Public Works)
- h. Date Spray Map Last Approved: 17 June 2014
- i. Date of Waste Generation Letter: 28 July 2013
- j. Installation In-Briefing: (When/Where/Briefer/s): Col (b) (6), Lt Cols (b) (6), (b) (6), (b) (6) with Mr. (b) (6) and 5CES Deputy Civil Engineer, Ms. (b) (6), (b) (6) at 5CES Conference room

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Certified PMP/Entomologists (Category 11): Lt Col (b) (6), (b) (6) (safety briefer), Maj (b) (6) (certified applicator for North Dakota)
- c. Aircrew:
  - (1) Pilots: Maj (b) (6), Maj (b) (6)
  - (2) Navigators: Lt Col (b) (6)
  - (3) Flight Engineers: MSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6), MSgt (b) (6)
  - (5) DV/Wing CC: Col (b) (6)
- d. Maintenance:
  - (1) Spray Maintenance: MSgt (b) (6), TSgt (b) (6), TSgt (b) (6), (b) (6) SrA (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6), TSgt (b) (6), (b) (6)
  - (3) Avionics: TSgt (b) (6)
- e. Flying Data:
  - (1) Spray Sorties/Hours: 1 sortie = 1.2
  - (2) Ferry Sorties/Hours: 2 sorties (3.8 + 3.1) = 6.9

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet® EC Concentrate (78% naled)
- b. EPA Registration Number: 59639-90-5481 Trumpet
- c. Formulation Sprayed: Emulsified Concentrate (Trumpet)
- d. Gallons Pesticide Loaded: 148 gal (17 Jun) 90 gal (19 Jun)
- e. Gallons Pesticide Applied: 41 gal (19 Jul); 197 gallons downloaded 19 Jun (see remarks)
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 5 gal aromatic naphtha
- h. Other Additives Used: None
- i. Application Rate: 0.9 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99103
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 20-8003s total (17 Jun)
- f. Pressure: 55-65 psi
- g. Flow Rate: 6.54 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2,000 ft
- b. Spray offset: 2,000 ft
- c. Spray Release Altitude: 150 ft
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 4-6 knots @ 045°
  - (2) Release Altitude: 12-18 knots @ 045°
- b. Temperature (Degrees Fahrenheit): 73° F
- c. Relative humidity: 85%
- d. Cloud Cover: Overcast
- e. Source: Ground observations and aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Monitoring is done with New Jersey light traps in the city of Minot. Mosquito Magnets are used as traps by Minot AFB Public Health. Pre-application mosquito counts on 17 June were over 110 female mosquitoes at the single location sampled on Minot AFB. No after spray counts were received from Minot. Little control should be expected from the truncated spray sortie on 17 June (see attachment 1 for flight image).

**8. REMARKS AND RECOMMENDATIONS:**

- a. This mission was planned with the intention of spraying Minot, Minot AFB, and Williston (and Watford City) to control adult mosquitoes. However, a system leak a third of the way through the sortie brought the Minot spray to an early end on 17 June and subsequent weather and technical issues later in the week, prevented other areas from being sprayed. The leak was the result of a seal failure on the ULV line under tank 2. When the leak was discovered, the system was shut down and the crew donned oxygen and landed. None of the members reported any adverse effects from potential exposure issues. The following day, 18 June, was rainy and windy during the acceptable spray timeframe and so no spraying was attempted. On 19 June, some small amounts of residual pesticide were discovered on the aircraft floor under the spray system during the pre-flight inspection. The spray system had to be removed to inspect the extent of the pesticide contamination. Once the system had been downloaded, the crew was able to determine that no additional pesticide contamination had occurred on the plane. Unfortunately, removing the spray system was a protracted process and could not be accomplished before the window of opportunity for spraying closed. Thus, no spraying was conducted on 19 June and the crew redeployed on Friday 20 June as scheduled.
- b. One item worth noting was the unusual occurrence of “crystallization” encountered in the bottom of the Trumpet drums. Beyond the obvious frustration with finding anything but high quality product in the drum, an additional concern regarding the precipitation of

material in drums is the highly technical question of which component of the pesticide actually gels? If it is the active ingredient naled, then the result is potentially a significant loss of efficacy. The technical representative for the manufacturer (Mr. (b) (6) – AMVAC) is investigating the incidence of this peculiarity and plans to physically travel to Minot and take samples of the precipitant in the drums. There were no noticeable negative effects encountered when spraying the loaded Trumpet. It appears that any of the precipitant making it into the tanks was able to dissolve back into solution as no nozzle clogging was seen.

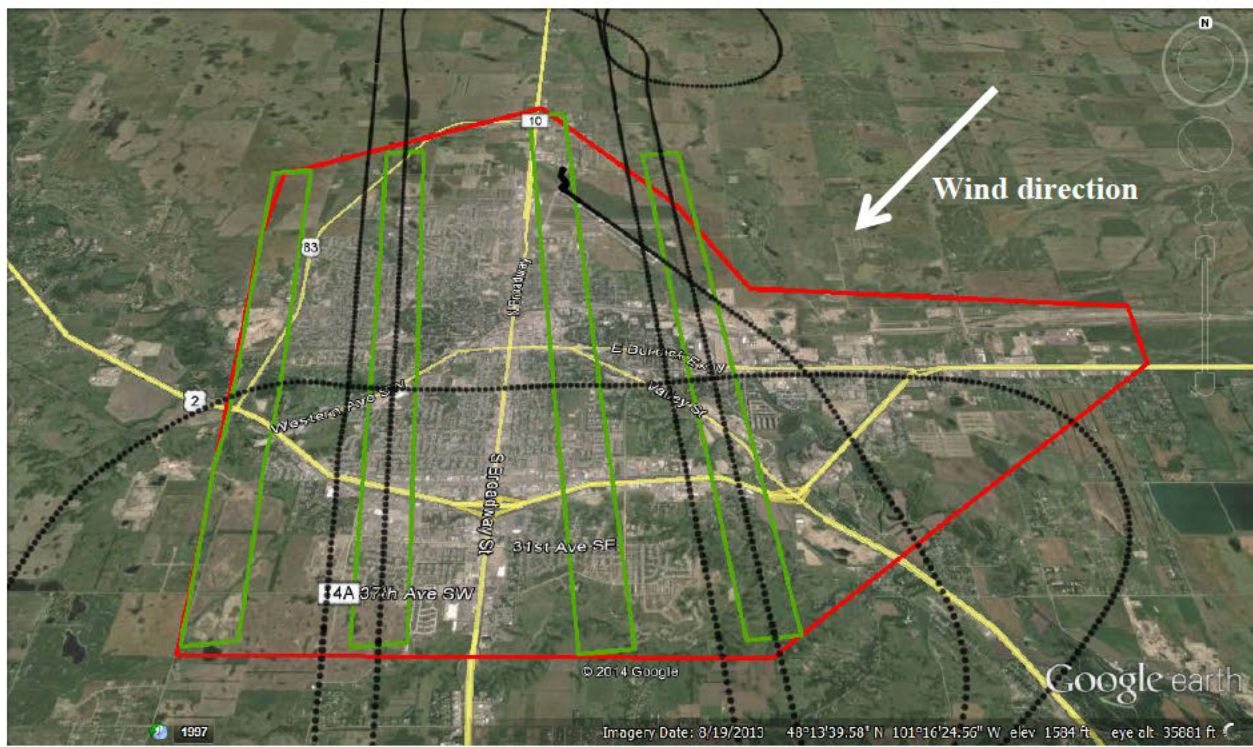
- c. Mr. (b) (6) (formally MSgt (b) (6) of Grand Forks AFB Pest Management) is now the Minot AFB Pesticide Shop Supervisor, replacing Ms. (b) (6). We look forward to working with Mr. (b) (6) in his new role as he brings a lot of aerial spray experience with him from Grand Forks AFB.

//signed//

(b) (6) (b) (6) Lt Col, USAFR  
Entomologist/DoD Certified Applicator



Attachment 1. Shows the areas treated 17 June over Minot, ND. The red outline is the designated spray area. The black dots are the track of the aircraft and the light green lines are the 2,000 ft swath treated while spraying. Some areas show an offset. In this case, the green blocks shows the area where the pesticide drifted. Wind was from the northeast.





**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**PARRIS ISLAND MCRD, SC 15-19 October 2012**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 22-25 October 2013
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date: 24 Oct 2013
- e. Time/s of Application (Local): 2120-2312 Zulu
- f. Acres Treated: 6534
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6)  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 22 Oct 2013
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): 16 Oct 12 with (b) (6), (b) (6)  
(b) (6) Lt Col (b) (6) Lt Col (b) (6) and Lt Col (b) (6) at NREAO
- k. Mission Identifier: QENRK3501295

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6), Capt (b) (6)
  - (2) Navigators: Lt Col (b) (6)
  - (3) Flight Engineers: MSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6), TSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6)(b) (6), MSgt (b) (6), TSgt (b) (6), SSgt (b) (6)
  - (2) Crew Chiefs: SSgt (b) (6)
  - (3) Avionics: MSgt (b) (6)
- d. **Entomologist:** Lt Col (b) (6) (b) (6) (safety briefer)
- e. **Flying Data:**
  - (1) Spray Sorties/Hours: 1/1.9
  - (2) Ferry Sorties/Hours: 3/4.8 (one qualification sortie prior to departure)

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 40 gal
- e. Gallons Pesticide Applied: 40 gal
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 5 gal HAN
- h. Other Additives Used: None
- i. Application Rate: 0.78 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 89-9104
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 14, oriented straight down
- f. Pressure: 42-62 p.s.i.
- g. Flow Rate: 2.7 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: none
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS (17 Oct):**

- a. Winds (Direction/Speed):
  - (1) Ground: 160°/3 Knots
  - (2) Release Altitude: 165° /8 Knots
- b. Temperature (Degrees Fahrenheit): 70° F
- c. Relative Humidity: 58%
- d. Cloud Cover: Clear
- e. Source: Aircraft/ground measurements

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: visual observation of aircraft course (GPS)
  - (2) Results: good coverage throughout spray area
- b. Effectiveness:
  - (1) Technique/s Used: Biting midge numbers were determined prior to spraying using light traps. Post-spray monitoring was carried out by Pest Management personnel with light traps(28 Oct).

Location	Pre Spray	Post Spray
Horse Island	12	2
Rifle Range	33	4
Elliot's Beach	15	0
Page Field	29	0
ODP	14	0

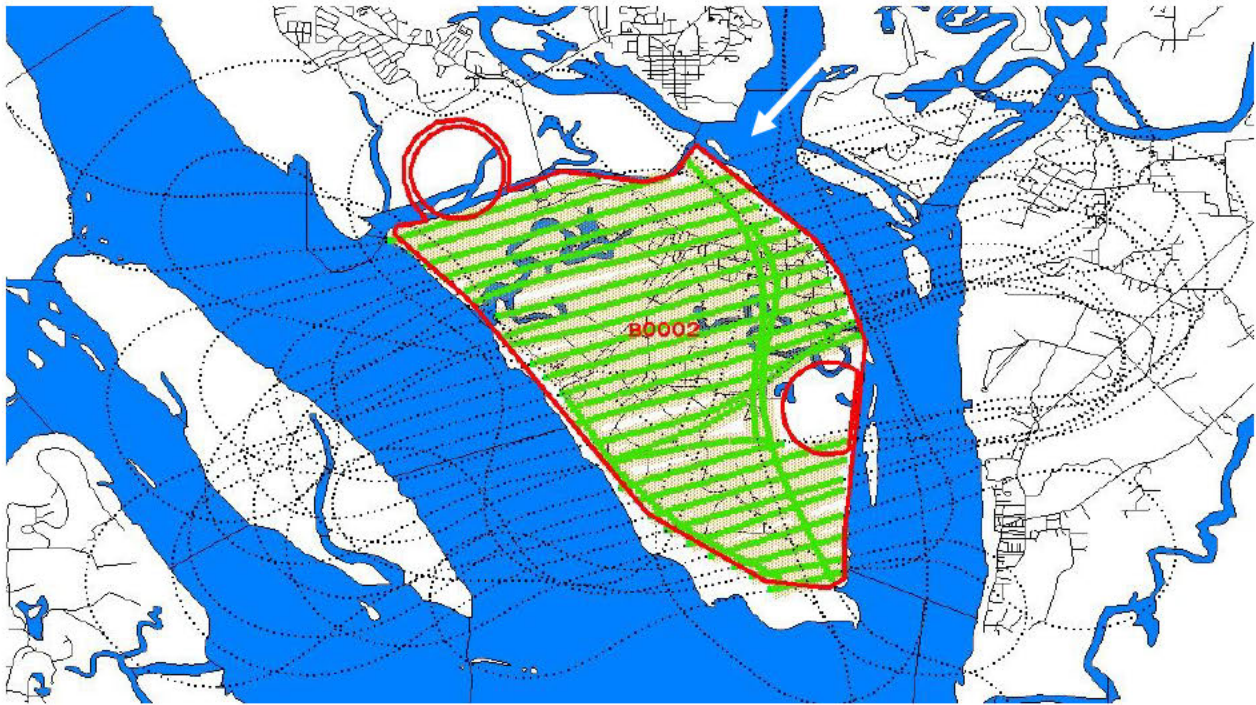
**10. REMARKS:**

Despite the relatively low insect populations, this mission was initiated as a prophylactic response to a suspected human case of Eastern Equine Encephalitis of a Parris Island recruit, as well as several seropositive pools detected in local mosquito populations. The mission proceeded with no notable problems encountered.

//signed//

(b) (6) (b) (6) Lt Col, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

Attachment 1. Map depicting spray blocks and deposition during sortie conducted 24 October, 2013.





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

11 June 2014

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Capability and Concept of Operations for Aerial Spray at Joint Base Charleston, SC.

1. Aerial spray deployment of one C-130 during 24-27 June 2014 in response to a requested aerial spray to control adult mosquitoes for JB Charleston, SC. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of JB Charleston. Operations will be conducted from JB Charleston.

2. Concept of Operations (All times are local)

- a. 24 June (Tues)  
1700 Depart KYNG  
1900 Land KCHS
- b. 25-26 June (Weds-Thurs)  
TBD Inbrief with user (Weds)  
1830 Depart KCHS  
2100 Land KCHS
- c. 27 June (Fri)  
1100 Depart KCHS  
1300 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: approx. 20,000 acres
- b. Altitude: 150 ft for adulticide application
- c. Swath Width: 2000ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 1.0-1.2 oz/acre of Trumpet EC

4. Lt Col (b) (6) will serve as the Mission Commander. Lt Col (b) (6) will be the Aircraft Commander. Required support at JB Charleston has been coordinated.

\\SIGNED\\

(b) (6), Lt Col, USAFR  
Chief of Aerial Spray

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**JB CHARLESTON, SC 24-27 June 2014**

**1. MISSION BASICS:**

- a. Installation Sprayed: JB Charleston, South Carolina
- b. Mission Duration: 24-27 June 2014
- c. Purpose of Application: Control vector and nuisance control of salt marsh mosquitoes on the Naval Weapons Station area of JB Charleston
- d. Application Date: 25 June 2014
- e. Times of Application: 1915-2030 local
- f. Acres Treated: 17,980
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6)  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 25 June 2014
- i. Date of Waste Generation acceptance: 6 July 2012
- j. Installation In-Briefing: (When/Where/Briefer/s): Lt Col (b) (6) Lt Col (b) (6) Lt Col (b) (6)  
Lt Col (b) (6) Maj (b) (6) (b) (6) and the 628 CES @ 1430 hrs; 25 Jun 2014
- k. Mission Identifier: Q Z N R K 9 9 3 1 1 7 5

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) , Capt (b) (6)
  - (2) Navigator: Lt Col (b) (6)
  - (3) Flight Engineer: SMSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6) , MSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: SMSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6) ,  
SSgt (b) (6) , MSgt (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6) , SrA (b) (6)
  - (3) Avionics: MSgt (b) (6)
- d. **Entomologists:** Lt Col (b) (6) (b) (6) Maj (b) (6)
- e. **Flying Data:**
  - (1) Training Sorties/Hours: 1/1.3
  - (2) Ferry Sorties/Hours: 2/3.9

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 120 gallons
- d. Gallons Pesticide Applied: 120 gallons
- e. Gallons and Name Diluent Used: N/A
- f. Gallons and Name of Flush Used: 10 Gallons aromatic naptha
- g. Other Additives Used: None
- h. Application Rate: 0.85 oz/acre



**APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99108
- b. Spray System (Modules Used) and System ID #: SP2G
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: 8003
- e. Nozzle Orientation & Number Used: 28 Total; 14 left, 14 right
- f. Pressure: 45 p.s.i.
- g. Flow Rate: 6.5 gallons/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: 2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 KTS

**6. WEATHER OBSERVATIONS:** Wind; 210° at 7.5 knots (average) ground observation. Temp; 86 degrees F; Humidity 70 percent.

**7. SPRAY MONITORING:** Pre- and post-spray mosquito collections were taken at 6 locations (1 location was outside the spray area) using CO<sub>2</sub>-baited CDC mosquito traps and landing rates were monitor at the spoil site.

Trap 1: DTP	Trap Malfunction – no data
Trap 2: SPAWAR:	3 females (24 Jun); 0 females (26 Jun) 100% reduction
Trap 3: Golf Course	80 females (24 Jun); 0 females (26 Jun) 100% reduction
Trap 4: Wharf A	60 females (24 Jun); 5 females (26 Jun) 92% reduction
Trap 5: GC Bridge	89 females (24 Jun); 1 females (26 Jun) 99% reduction
Landing count at	
Spoil site (per minute)	17 (24 Jun); 0 (26 Jun) 100% reduction

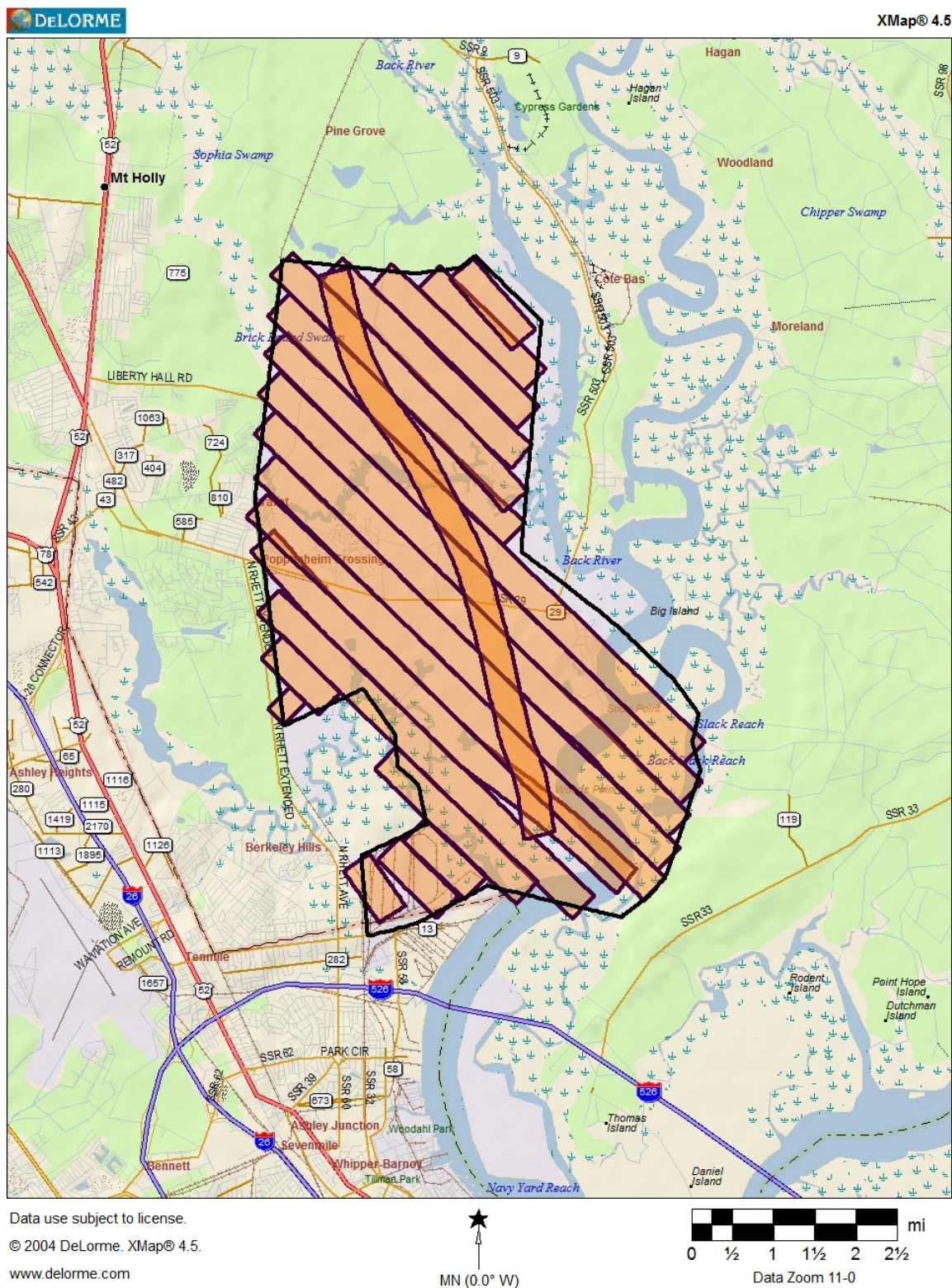
Control Site-NPTU 60 females (24 Jun); 16 females (26 Jun) 73% reduction (No Spray Area)

**8. REMARKS:** Cases of West Nile virus are being detected near the Naval Weapons Station at JB Charleston. This application is the first adulticide application conducted for FY 14. No significant problems were encountered during this application, and results appear to be excellent. Because of the large dredge spoil and marshlands associated with the Naval Weapons Station, future larvicide operations are being considered. It appears that Berkeley County, with dredge spoil areas adjacent to JB Charleston, is interested in participating in an IRT program to spray acreage outside the boundaries of the Weapons Station. This would greatly reduce mosquitoes flying in from adjacent wetlands. We appreciate the support we received from ALL sections at JB Charleston, special thanks goes to (b) (6) for his thorough coordination at all levels.

//signed//  
(b) (6) (b) (6) Lt Col, USAFR  
DoD Certified Pest Management Professional



Attachment 1. Application to Naval Weapons Station, JB Charleston 25 June 2014. Orange blocks indicate application locations.



# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **Joint Base Charleston, SC**

### **24-27 June 2014**

**Purpose/Objectives/Benefits:** Aerial spray deployment of one C-130 during 24-27 June 2014 in response to a requested aerial spray to control adult mosquitoes for Joint Base Charleston, SC. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of JB Charleston. Operations will be conducted out of JB Charleston.

#### **1. 910 AW PARTICIPANTS:**

##### **a. Aircrew:**

- (1) Pilots: Lt Col (b) (6), Capt (b) (6)
- (2) Navigator: Lt Col (b) (6)
- (3) Flight Engineers: SMSgt (b) (6)
- (4) Spray Operators: SMSgt (b) (6), MSgt (b) (6)

##### **b. Maintenance:**

Spray Maintenance: SMSgt (b) (6), TSgt (b) (6) TSgt (b) (6),  
SSgt (b) (6), MSgt (b) (6)  
Crew Chiefs: MSgt (b) (6), SrA (b) (6)  
Avionics: MSgt (b) (6)

**c. Entomologists:** Lt Col (b) (6) (b) (6) (in place); Maj (b) (6) (in place)

**d. MC :** Lt Col (b) (6)

#### **2. Transportation Provided by Tony Mincey Vehicles:**

- Ops: (1) Minivan (SMS (b) (6))
  - Mx: (1) 8 pax van (TSgt (b) (6))
  - MC: Lt Col (b) (6) (1) Rental Car
  - AC: Lt Col (b) (6) (1) Rental Car
- Charleston U-Drive Vehicles Confirmation # 23277185: 843-963-4238  
Enterprise Number @ CHS international airport: 843-767-1109

**3. Charleston Billeting: ON BASE.** POC: Mrs. (b) (6) DSN 673-8000 x8102 Comm  
843-963-4667 FAX DSN 673-3963.

**4. PPR: NOT REQUIRED PER BASE OPS CHS (MSN IS LOADED INTO GDSS2)**

#### **5. SCHEDULE: (All times local)**

##### **24 June (Tuesday)**

1500: Show KYNG  
1700: Depart KYNG  
1900: Land KCHS / Safety Brief after post flight duties

##### **25-26 June (Wednesday- Thursday)**

1430: (Wednesday) Installation Brief  
1600: Show KCHS  
1630: Pesticide Loading  
1800: Depart KCHS (Sunset: 2032L)  
2030: Land KCHS

**27 June (Friday)**

0830-0900: Check out /Vehicle Return

0930: Show KCHS

1130: Depart KCHS

1330: Land KYNG

**6. ITEMS TO TAKE:**

- a. **Mission Commander:** Friendly Force Tracker, Laptop
- b. **Entomologist:** Kestrel Weather Monitor, Compass, Pest Safety Binder, VHF Radios, Laptop Computer
- c. **Navigator:** Maps/Map Bag, Validation Map
- d. **Spray Operator:** Safety Gear, Calibration Tables, Spray Operator laptop/data sheets
- e. **Spray Maintenance:** Deployment Kit/Supply Kit
- f. **Avionics:** Wingman card, laptop computer, VHF/UHF radios (2)

**7. NOTIFICATION NECESSARY FOR THIS MISSION:**

- a. **Charleston Tower:** 843-414-2808 POC: (b) (6)
- b. **Charleston Base Ops:** DSN 673-3026
- c. **FSDO:** (b) (6) / Air Field Manager: Sgt (b) (6)

**8. PARKING PLAN: Spot 34 near D taxiway**

**9. RADIO FREQUENCIES:**

- a. **Charleston AFB:** Tower 843-414-2808
  - (1) Tower - 126.0 or 239.0
  - (2) Ground - 121.9 or 348.6
  - (3) Clearance – 127.325 or 291.65
  - (4) ATIS – 124.75
  - (5) Palmetto Ops 134.1 or 349.4
- b. **Charleston Approach: 135.8 or 379.925**
- c. **Mt Pleasant Regional: CTAF 122.8**
- d. **Charleston Executive: CTAF 122.8**

**10. IN-BRIEFING: 1430 hrs. On Wednesday**

**11. SPRAY CONFIGURATION:**

- a. **System:** SP2G - MASS ULV; Fuselage booms
- b. **Nozzle Tips/Orientation:** 24 8003 nozzles -- straight down (12 left - 12 right)
- b. **Aircraft:** 89-9103
- c. **Mission Identifier:** QZNRK9931175

**12. SPRAY PARAMETERS:**

- a. **Altitude:** 150' AGL
- b. **Ground Speed:** 200 knots
- c. **Pesticide:** Trumpet EC®

- d. **Application Rate:** 0.9 oz/acre
- e. **Flow Rate:** 7.9 Gallons/Minute
- f. **Acreage:** Approximately 18,000 acres
- g. **Swath Width:** 2000 foot

**13. PESTICIDE LOADING:**

- a. **How Much Pesticide:** 4 drums
- b. **Where:** Spot 34 near taxiway D
- c. **When:** 1630 hrs each day pending weather and heat index.\*\*Calibration performed unless otherwise directed by the Entomologist or Mission Commander
- d. **Furnished by Installation:**
  - (1) Pesticide
  - (3) Hazardous Waste Disposal

**14. CONTACTS: JB CHARLESTON (843)-963-XXXX, DSN 673-XXXX**

- a. **Charleston AFB SC:**
  - Wing Commander: x3418
  - Mission Support Group Commander: x2200
  - Civil Engineer: x4956
  - Deputy Chief/Civil Engineer: x4954
  - Environmental Coordinator: x2711
  - Base Operations: DSN 673-3026
  - Charleston Control Tower: (843) 414-2808
  - Weather: Charleston AFB, DSN 673-3016
  - Pest Control Foreman: x5266, (b) (6) ; cell is (b) (6)
  - Pest Control NCOIC: x5266, TSgt (b) (6) SSgt (b) (6) SSgt (b) (6)
  - Public Affairs: x1110
  - Fuels: x5079
  - Transportation: DSN: 673-4236
  - Fire Department: x3777, Fire Chief

**a. Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046, + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Maj (b) (6) ; FAX 1022
- (4) 910 OG/CC: Col (b) (6)
- (4) 910 OS/OSA: Airfield Manager, (b) (6)
- (5) 757 AS/DO: Lt Col (b) (6)
- (6) 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
- (7) 757 AS/DOO: Ops Admin: MSgt (b) (6) ; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Lt Col (b) (6) , FAX 1616
- (9) Maintenance Control: Ext 1327
- (10) 910 LG/LGMS: Spray Maintenance, Ext 1132
- (11) 910 LG/LGL, Ext 1137
- (12) Cellular Spray Phones:
  - Mission Commander Lt Col (b) (6)





DEPARTMENT OF THE AIR FORCE  
757 Airlift Squadron – Aerial Spray Operations  
Youngstown ARS, OH 44473-5924

**PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**MIAMI-DADE COUNTY INNOVATIVE READINESS TRAINING**  
**ADULT MOSQUITO CONTROL**  
**HOMESTEAD ARB, FL 25-29 August 2014**

**1. MISSION BASICS:**

- a. Location Sprayed: Miami-Dade County/Homestead ARB, FL.
- b. Mission Duration: 25-29 August 2014
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date/s: 26-27 Aug 2014
- e. Flying Data:
  - i. Spray Sorties/hours: 2 sorties (2.4 + 2.9 + 0.6 [flush] = 5.9
  - ii. Ferry Sorties/hours: 2 sorties (3.7 + 3.5) = 7.2
- f. Time/s of Application (local) 1705-1945 (26 Aug), 1850-2001 (27 August)
- g. Acres Treated: 13,548 (26 Aug), 13,354 (27 August) = 26,902 acres
- h. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6) Miami-Dade Mosquito Control; (b) (6); (b) (6) Physical Scientist; DSN (b) (6)
- i. Date Spray Map Last Approved: 26 Aug 2014
- j. Date of Waste Generation Letter: 5 Sept 2012
- k. Installation In-Briefing: 26 Aug: 482 CES/CC Conference Room; Lt Col (b) (6) (b) (6) Lt Col (b) (6) Maj (b) (6) Mr. (b) (6) (Miami-Dade Co.), Lt Col (b) (6) (482 CES/CC), Dr. (b) (6) (482CES)
- l. Safety Briefer: Lt Col (b) (6) (b) (6)
- m. Mission identifier: QZNRK3531237

**2. OPERATIONAL:**

- a. Mission Commander: Maj (b) (6)
- b. Certified PMP/Entomologists (Category 11): Lt Col (b) (6) (b) (6) Lt Col (b) (6) (b) (6)
- c. Aircrew:
  - (1) Pilots: Col (b) (6) Lt Col (b) (6) Lt Col (b) (6)
  - (2) Navigators: Lt Col (b) (6)
  - (3) Flight Engineers: MSgt (b) (6) MSgt (b) (6)
  - (4) Spray Operators: CMSgt (b) (6) MSgt (b) (6) MSgt (b) (6) (b) (6)
- d. Maintenance:
  - (1) Spray Maintenance: TSgt (b) (6) MSgt (b) (6) MSgt (b) (6) SSgt (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6) (b) (6) Avionics: TSgt (b) (6)

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)

- d. Gallons Pesticide Loaded: 60 gal (26 Aug); 60 gal (27 Aug);
- e. Gallons Pesticide Applied: 45 gal (26 Aug), 42 gal (27 Aug) = 87 total
- f. Gallons and Name Diluent Used: none
- g. Gallons of Flush Used: 7 gallon HAN
- h. Other Additives Used: None
- i. Application Rate: 0.40 oz/acre (26 Aug), 0.43 oz/acre (27 Aug)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99108
- b. Spray System (Modules Used) and System ID #: 4
- c. Spray System Configuration: 2-Module System/Stainless Steel, ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 18-8003 oriented straight down (26 Aug); 16-8003 (27 Aug)
- f. Pressure: 22-35 psi
- g. Flow Rate: 3.12 gal/min (26 Aug), 2.91 gal/min (27 Aug)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 ft
- b. Spray offset: 3000 ft
- c. Spray Release Altitude: 150 ft
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed in knots):
  - i. Release altitude: 069°@11 (26 Aug), 085°@15 (27Aug)
  - ii. Ground: 045°@7 (26 Aug), 045°@3-6 (27 Aug)
- b. Temperature (Degrees Fahrenheit): 88-86°F (26 Aug), 88-86°F (27 Aug)
- c. Relative humidity: 64-66% (26 Aug), 63-66% (27 Aug)
- d. Cloud Cover: Scattered clouds, mostly cloudy, thunderstorms
- e. Source: Ground observations and aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Monitoring was done by Miami Dade Mosquito Control using carbon dioxide-baited traps.
- b. Monitoring trap data showed that mosquito populations dropped measurably in areas treated with decreases between 85-99% (Attachment 1), with a majority of the traps demonstrating decreases in excess of 95%.

**8. REMARKS:**

a. This was the second spray of the year conducted at Homestead ARB/Miami Dade County under the Innovative Readiness Training Program, which allows the military to work with communities in order to provide effective training for the military component, as well as being beneficial the participant community. Three pest controllers from 382 CES received aerial spray training: they observed pesticide loading including the use of personal protection equipment, instruction on how the MASS functions including calibration and flow rates. These members also went into the field and took wind measurements, mosquito counts, and served as monitors of the spray process. Recommend they participate in the Aerial Application of Pesticide Course for further competency in the subject and certification in EPA category 11.

b. The application went forward without incident and while wind speeds were near the maximum allowed on 26 Aug, they were also consistent. The results of the 3,000 ft offset to compensate for wind speed speak for themselves: post-spray counts dropped to zero and light trap data corroborated these findings (See Attachment 1). On the second evening (27 Aug), the remaining spray areas were treated. Treated spray areas are shown in Attachment 2.

c. Once again the technical support from Miami Dade County was critical for mission success this application by providing outstanding support in the form of mosquito surveillance data both pre- and post-

spray. We also thank the HARB CES personnel for coordinating the inbrief and 382 PA for covering the aerial spray activities on their social media sites.

//signed//  
(b) (6)(b) (6) Lt Col, USAFR  
DoD and State of Florida Certified Applicator

//signed//  
(b) (6) , Lt Col, USAFR  
DoD Certified Applicator

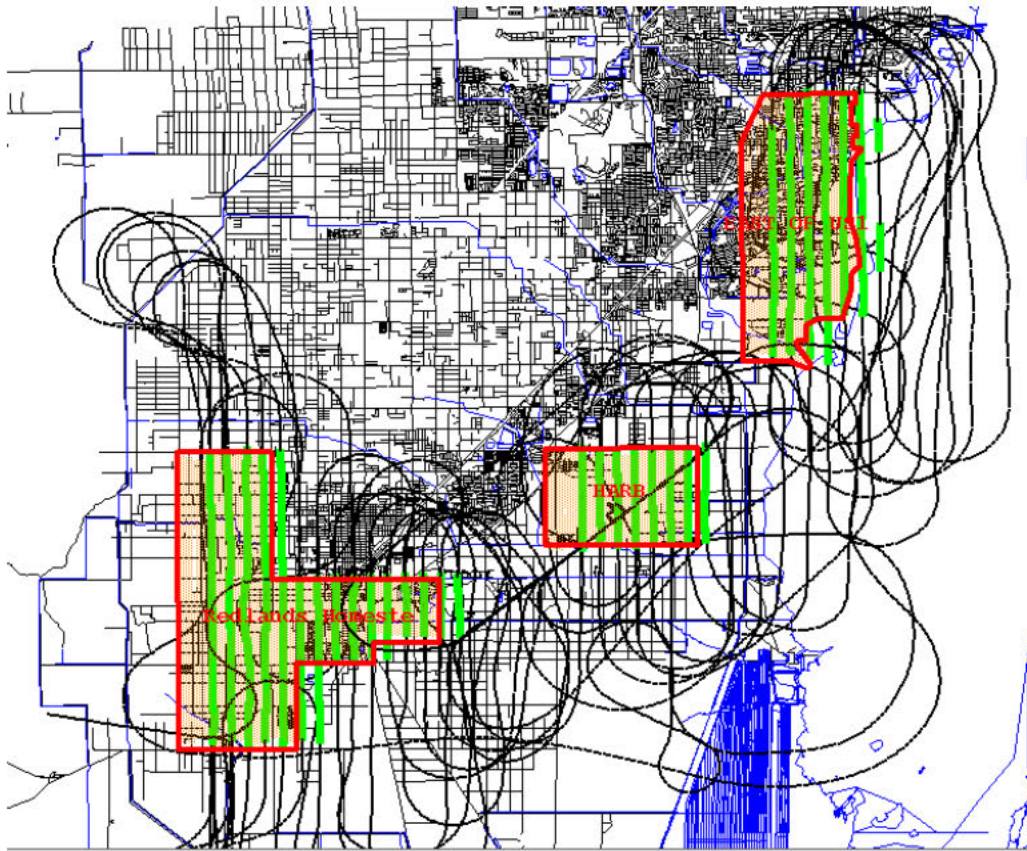


Attachment 1. Mosquito numbers measured by landing rate and collected in traps within Miami Dade County, FL 26-29 August 2014 before and after adult mosquito control operations by the Air Force Aerial Spray Unit. Untreated controls are shown in the last block of data.

Miami Dade Mosquito Control  
Number of *Aedes taeniorhynchus* Collected by CDC CO<sub>2</sub> Baited Light Trap  
Before and After USAF Aerial Spray Missions  
August 26 - August 29, 2014

HARB			
Target species ⇨	Aedes taeniorhynchus		
Treatment Date 8/27/14	No. Pre Spray	No. Post Spray	Reduction
Trapping Site⇩	25-Aug-14	28-Aug-14	
HF1	27	4	-85%
Homestead / Florida City/Redlands			
Target species ⇨	Aedes taeniorhynchus		
Treatment Date - 8/26/14	No. Pre Spray	No. Post Spray	Reduction
Trapping Site⇩	25-Aug-14	27-Aug-14	
HF2	76	4	-95%
HF3	96	11	-89%
R4	34	3	-91%
R5	186	1	-99%
R6	124	5	-96%
East of US1			
Target species ⇨	Aedes taeniorhynchus		
Treatment Date 8/27/14	No. Pre Spray	No. Post Spray	Reduction
Trapping Site⇩	25-Aug-14	28-Aug-14	
E5	48	2	-96%
E6	82	11	-87%
E8	66	3	-95%
Controls			
Target species ⇨	Aedes taeniorhynchus		
Treatment Date - 01-August-14	No. Pre Spray	No. Post Spray	Reduction
Trapping Site⇩	25-Aug-14	27-Aug-14	
Homestead / F. City/Redlands	71	28	-61%
	25-Aug-14	28-Aug-14	
HARB	36	11	-69%
East of US1	5	1	-80%

Attachment 2. Spray blocks treated in Miami-Dade County including Homestead ARB. Red outline is the spray block, black dots or lines are the path of the aircraft. Green lines indicate when the aircraft was spraying. A 3,000 ft offset to the east was used on both days to compensate for the wind speed and direction. Therefore, intentional spraying occurred outside of the blocks in order to allow the insecticide to drift back through the intended target area.



**910 AW AERIAL SPRAY UNIT POST-MISSION REPORT**  
**WILLISTON ACE– LARVAL MOSQUITO CONTROL 27 May – 3 June**  
**2014**

**1. MISSION BASICS:**

- a. Installation Sprayed: Army Corps of Engineers, Williston, ND
- b. Mission Duration: 27 May – 6 June 2014
- c. Purpose of Application: Control of larval stage mosquitos
- d. Application Date: 28 May – 5 June 2014
- e. Time of Application (Local): Variable depending on WX conditions
- f. Acres Treated: 4184
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6) , ACE supervisor, Williston ND, (b) (6)
- h. Date Spray Map Last Approved: 27 May 2014
- i. Date of Waste Generation Letter: 26 May 2009
- j. Installation In-Briefing: (When/Where/Briefer/s): 27 May 2014 Williston, Maj (b) (6) in place

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6) ; Lt Col (b) (6) (2<sup>nd</sup> half)
- b. Certified PMP/s (Category 11): Lt Col (b) (6) (b) (6) Maj (b) (6) (on site)
- c. Aircrew:
  - 1) Pilots: Lt Col (b) (6) , MAJ (b) (6) Lt Col (b) (6) (2<sup>nd</sup> half)
  - 2) Navigators: Lt Col (b) (6) ; Lt Col (b) (6) (2<sup>nd</sup> half)
  - 3) Flight Engineers: MSGT (b) (6) , SMSGT (b) (6) (2<sup>nd</sup> half)
  - 4) Spray Operators: TSGT (b) (6) , SSGT (b) (6) , CMSGT (b) (6) (2<sup>nd</sup> half)
- d. Safety Briefer: Lt Col (b) (6) (b) (6)
- e. Spray Maintenance: SSGT (b) (6) , TSGT (b) (6) (b) (6) TSGT (b) (6) (b) (6) TSGT (b) (6) , SSGT (b) (6)
- f. Spray Ground Monitors: SSGT (b) (6)
- g. Crew Chief: MSGT (b) (6) , SrA (b) (6)
- h. Avionics: MSGT (b) (6) ; SSGT (b) (6)
- i. Engine: TSGT (b) (6) wall
- j. Hydraulics: SSGT (b) (6) SSGT (b) (6)
- k. Flying Data:
  - (1) Spray Sorties/Hours: 12/20.4
  - (2) Ferry Sorties/Hours: 2/7.0

**3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Vectobac 12AS (1200 ITU/mg)
- b. EPA Registration Number: 73049-38
- c. Area applied: 4184 Acres
- d. Gallons Pesticide Loaded: 935 gallons total over 11 active sorties
- e. Gallons Finished Tank Mix Applied: 20357 (Total)
- f. Gallons and Name of Flush Used: 1800 gallons of water flush
- g. Other Additives Used: PolyControl drift reduction agent (6.2 Gallons total over 11 sorties)
- h. Application Rate: 5 gal per acre of water mixed with 24 oz/acre Vectobac 12AS®

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 3-Module System/Fuselage Booms
- d. Nozzle Type/Size: R-20 Raindrop
- e. Nozzle Orientation & Number Used: 12 Straight back
- f. Pressure (PSI): 40 PSI
- g. Flow Rate: 232 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 100'
- b. Spray Off Set: None
- c. Spray Release Altitude: 100'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): Variable
- b. Temperature (Degrees Fahrenheit): Variable
- c. Relative Humidity: Greater than 60%
- d. Cloud Cover: Variable
- e. Source: Ground and aerial observations

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Three locations/populations were sampled pre and post treatment with following results:

Location	# dips	Pre-application	Post-application
ACE levy	5	150+ per dip	0 per dip
ACE ponds	5	50+ per dip	0 per dip
City levy	5	25+ per dip	0 per dip

**8. REMARKS:** The mission operated out of Minot International airport, as the runway at Minot AFB was closed for repair. Normally, this mission employs 2 spray aircraft, however recent deployments have limited our resources and we managed to cover approximately half the area we would have liked to treat. Nevertheless, there were no major problems encountered save for a few days of poor weather. The results from the mission are quite encouraging; as it appears complete control may have been achieved in areas that were sprayed. We and the Williston ACE pest management professionals believe that this application will have significant impacts in what is shaping up to be a trying mosquito season. Many thanks to the City of Minot and the Minot Airport Authority for facilitating our operations

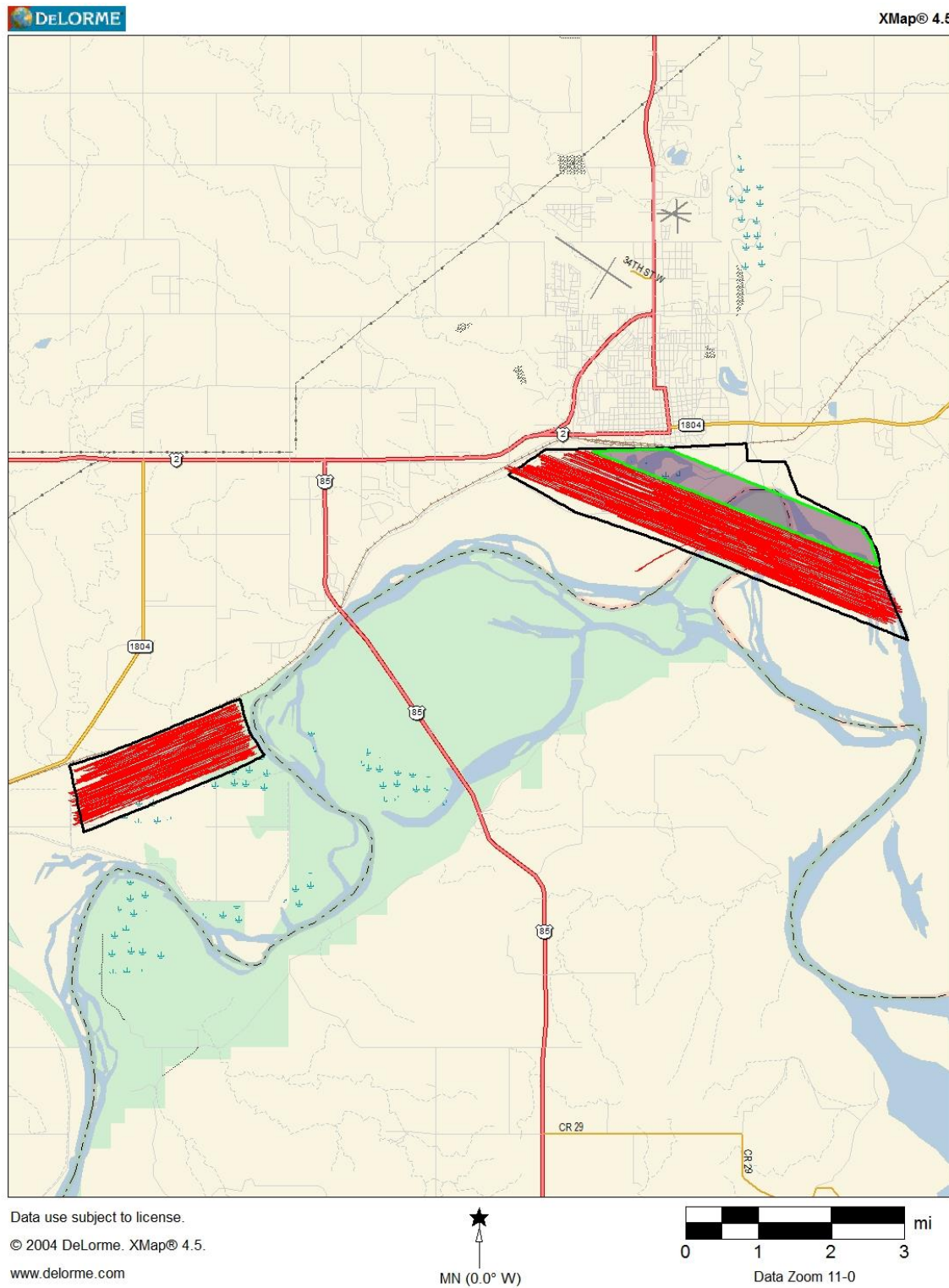
**//signed//**

(b) (6) (b) (6) **Lt Col, USAFR**  
**DoD certified pest management professional**

(b) (6) **, Maj, USAFR**  
**DoD certified pest management professional**



**Attachment 1. Image shows Williston ACE spray blocks (black) and pesticide application swaths (red) during application on 1 June. Part of the block with the green border and grey interior indicates spray locations where the GPS data was lost.**





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

14 January 2014

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray Application at Luke AFB

1. One C-130 aircraft will be available 27-31 January 2014 to proceed from Youngstown ARS, OH and stage out of Luke AFB, AZ. The mission purpose is the control of invasive weed species by aerial spray application on Barry Goldwater Range. Semi-annual events and proficiency training will be accomplished by all crew positions. The range roadways will be sprayed to control the growth of Saharan Mustard on the range. This mission will also provide real world training for aerial spray entomologists and maintenance personnel.

2. Concept of Operations:

- a. 27 January (Monday)  
0800 Show KYNG  
1000 Depart KYNG  
1340 Land KLUF
- b. 28-30 January (Tuesday-Thursday) Range: 0730-0930  
0530 Show KLUF  
0715 Depart KLUF  
0945 Land KLUF
- c. 31 January (Friday)  
0600 Show KLUF  
0800 Depart KLUF  
1540 Land KYNG

3. Spray Configuration:

- a. MASS – SP2G
- b. Parameters –100' AGL and above
- c. Chemical – Glyphosate (Roundup)
- d. Rate – 440 GPM (10 Gal/Acre finished rate)

4. Lt Col (b) (6) will serve as Mission Commander.

5. Lt Col (b) (6) will serve as Aircraft Commander

6. Support required at Luke AFB and Barry Goldwater range has been coordinated. Please contact the aerial spray office if you have any concerns at DSN: (b) (6)

(b) (6), TSgt, USAFR  
757<sup>th</sup> Aerial Spray Flight Engineer





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

21 Oct 2014

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Parris Island MCRD, SC

1. Aerial spray deployment to Beaufort MCAS, SC (KNBC) to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at Parris Island MCRD, SC.

2. Concept of Operations (All times are local):

- a. 27 October (Mon)  
1600 Depart KYNG  
1800 Land KNBC
- b. 28 October (Tues)  
TBD Installation Brief  
Calibration of MASS
- c. 29 October (Weds) Spray  
1715 Depart KNBC  
1915 Land KNBC
- d. 30 October (Thurs) Spray WX backup  
1715 Depart KNBC  
1915 Land KNBC
- d. 31 October (Fri)  
1200 Depart KNBC  
1400 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 7500 acres
- b. Altitude: 150' AGL
- c. Swath Width: 1000 ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 0.75 oz/acre of Dibrom-Naled Organophosphate insecticide

4. Maj (b) (6) will serve as the mission commander with Lt Col (b) (6) as the aircraft commander. Support at Parris Island MCRD and Beaufort MCAS has been completed.

//SIGNED//

(b) (6), Lt Col, USAFR  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

28 October 2013

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for NAS Jacksonville, FL Static Display

1. One C-130 will be available 28 Oct. – 1 November 2013 for a spray aerial insecticide efficacy test in partnership with the USDA using Dibrom in arid high temperatures on government property at Camp Blanding. The aircraft will operate from NAS Jacksonville, FL. This mission will also provide real-world training for aerial spray entomologists and maintenance personnel.

2. Concept of Operations:

- a. 28 Oct. (Monday)
  - 1500 Show KYNG
  - 1700 Depart KYNG
  - 2000 Land KNIP
- b. 29-31 Oct. (Tues-Thurs.)
  - 1000 Depart KNIP
  - 1230 Land KNIP
  - 1330 Depart KNIP
  - 1530 Land KNIP
- c. 1 November (Friday)
  - 0900 Show KNIP
  - 1130 Depart KNIP
  - 1400 Land KYNG

3. Aircraft will be SP2G configured with ULV booms.
4. Maj. (b) (6) will serve as mission commander.
5. Maj (b) (6) will act as aircraft commander.
6. Support required at Jacksonville NAS, FL has been completed.

(b) (6), TSgt, USAFR  
757 Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**757 Airlift Squadron – Aerial Spray Operations**  
**3976 King Graves Rd Unit 24**  
**Vienna OH 44473-5924**

**PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**HOMESTEAD ARB, FL ADULT MOSQUITO CONTROL 28 July – 2 August 2014**

**1. MISSION BASICS:**

- a. Installation Sprayed: Homestead ARB, FL.
- b. Mission Duration: 28 July-2 August 2014
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date/s: 29 July 2014; 01 August 2014
- e. Flying Data:
  - i. Spray Sorties/hours: 2 sorties (1.4 + 1.9) = 4.3
  - ii. Ferry Sorties/hours: 2 sorties (3.7 + 3.5) = 7.2
- f. Time/s of Application (Zulu): 2305-0030 (29 July), 2221-0015 (01 August)
- g. Acres Treated: 8,500 (29 July), 21,500 (1 August) = 30,000 acres
- h. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6) Physical Scientist;  
DSN (b) (6); (b) (6) (b) (6) Miami-Dade Mosquito Control; (b) (6)
- i. Date Spray Map Last Approved: 29 July 2014
- j. Date of Waste Generation Letter: 5 Sept 2009
- k. Installation In-Briefing: (When/Where/Briefer/s): 29 July: 482 FW/CC Conference Room;  
Lt Col (b) (6) Lt Col (b) (6) (b) (6) Lt Col (b) (6) SMSgt (b) (6)
- l. Mission identifier: QENRK3531209

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Certified PMP/Entomologists (Category 11): Lt Col (b) (6) (b) (6) (safety briefer),
- c. Aircrew:
  - (1) Pilots: Maj (b) (6) Lt Col (b) (6)
  - (2) Navigators: Lt Col (b) (6)
  - (3) Flight Engineers: MSgt (b) (6) TSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6) MSgt (b) (6) MSgt (b) (6)
- d. Maintenance:
  - (1) Spray Maintenance: TSgt (b) (6) TSgt (b) (6) MSgt (b) (6)  
TSgt Dave Robataille
  - (2) Crew Chiefs: MSgt (b) (6) SRA (b) (6)
  - (3) Avionics: MSgt (b) (6)

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (87.4% Naled)
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Dibrom<sup>®</sup> Concentrate (neat)
- d. Gallons Pesticide Loaded: 90 gal (29 July); 30 gal (01 August);
- e. Gallons Pesticide Applied: 32 gal (29 July), 88 gal (01 Aug)= 120 total
- f. Gallons and Name Diluent Used: none
- g. Gallons of Flush Used: 7 gallon HAN
- h. Other Additives Used: None
- i. Application Rate: 0.5 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99108
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 18-8003s oriented straight down
- f. Pressure: 30-50 psi
- g. Flow Rate: 3.65 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray offset: 1000-2000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 6 knots @ 270° (29 July), 2 knots @ 270-010° (1 Aug)
- b. Temperature (Degrees Fahrenheit): 92° (27 July), 83° (1 Aug)
- c. Relative humidity: 81-88% (29 July), 86% (1 Aug)
- d. Cloud Cover: Scattered clouds, mostly cloudy, thunderstorms
- e. Source: Ground observations and aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Monitoring was done by Miami Dade Mosquito Control using carbon dioxide-baited traps.
- b. Monitoring trap data showed that mosquito populations dropped measurably in areas treated with decreases between 55-100% (Attachment 1), with a majority of the traps demonstrating decreases in excess of 92% . It appeared the spray was quite effective at controlling adult mosquito populations.

**8. REMARKS:**

a. This is the first spray conducted at Homestead ARB/Miami Dade county under the innovative readiness program, which allows the military to work with communities in order to provide effective training for the military component, as well as being beneficial the participant community.

b. A relatively wet summer season and prevailing westerly winds left south Florida with several hatches of salt marsh mosquitoes and trap numbers easily met the prescribed minimum to trigger the potential for adult mosquito control. Miami Dade Mosquito control identified approximately 40,000 acres which they felt would benefit from an aerial spray. Thunderstorms prompted a weather cancellation on 30 and 31 July. Additional mechanical problems (aircraft bleed air system) caused the mission to be extended by one day. The Mission Commander coordinated with all parties for an extended spray period and the entire crew agreed to stay over on Friday evening to attempt to complete the spray area. As a result, 30,000 acres was sprayed out of the intended 40,000 acres. The Spray Unit has done well controlling this species of salt marsh mosquito and this application was no exception. The County Mosquito Control personnel reported mosquito numbers dropped in most cases by greater than 92% in all treated areas while counts remained stable in un-sprayed areas. USDA personnel at HARB reported that the spray had the additional benefit of significantly reducing the presence of birds in the area of the airfield, as mosquitoes are a major food source for the resident majority species. Areas sprayed are shown in Attachment 2.

c. Special thanks are given to Miami Dade County for providing outstanding support in the form of mosquito surveillance data both pre- and post-spray, as well as HARB CE personnel for coordinating the inbrief and the media event covering the aerial spray activities.

//signed//

(b) (6) (b) (6) Lt Col, USAFR

Entomologist and DoD Certified Applicator



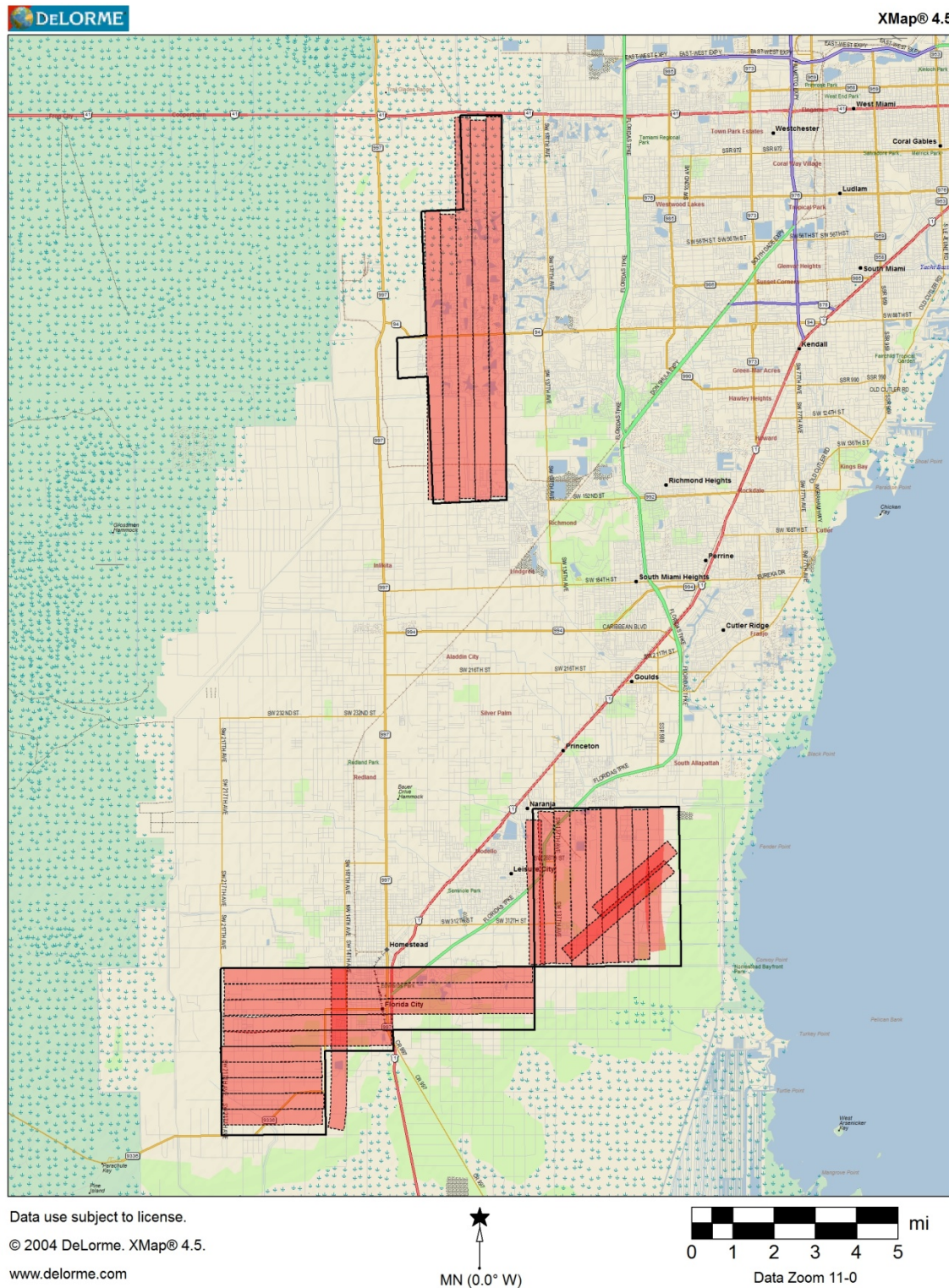
Attachment 1. Mosquito numbers measured by landing rate and collected in traps within Miami Dade County, FL 28 July-02 August 2014 before and after adult mosquito control operations by the Air Force Aerial Spray Unit. Untreated controls are shown in the last block of data.

Miami Dade Mosquito Control  
Number of *Aedes taeniorhynchus* Collected by CDC CO2 Baited Ligh Trap  
Before and After USAF Aerial Spray Missions  
July 28 - August 01, 2014

HARB			
Target species ⇨	Aedes taeniorhynchus		
Treatment Date 29-July-14	No. Pre Spray	No. Post Spray	Reduction
Trapping Site⇩	28-Jul-14	30-Jul-14	
HF1	185	15	-92%
Homestead / Florida City/Redlands			
Target species ⇨	Aedes taeniorhynchus		
Treatment Date - 01-August-14	No. Pre Spray	No. Post Spray	Reduction
Trapping Site⇩	28-Jul-14	2-Aug-14	
HF2	280	125	-55%
HF3	384	12	-97%
R3	96	25	-74%
R5	320	6	-98%
West Kendall			
Target species ⇨	Aedes taeniorhynchus		
Treatment Date - 01-August-14	No. Pre Spray	No. Post Spray	Reduction
Trapping Site⇩	28-Jul-14	2-Aug-14	
SW2	1,280	75	-94%
SW4	368	15	-96%
SW5	102	0	-100%
SW6	148	0	-100%
Controls			
Target species ⇨	Aedes taeniorhynchus		
Treatment Date - 01-August-14	No. Pre Spray	No. Post Spray	Reduction
Trapping Site⇩	28-Jul-14	2-Aug-14	
HARB	256	215	-16%
Homestead / F. City/Redlands	457	297	-35%
West Kendall	225	186	-17%



Attachment 2. Homestead ARB and local area spray blocks and actual application locations. Red shading indicates aircraft track while aircraft was dispensing chemical.



# AERIAL SPRAY OPERATIONAL SCHEDULE

## GRAND FORKS AFB, ND

### 30 June - 3 July 14

#### V1

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions for members operating at Grand Forks and Grand Forks AFB, North Dakota.

#### 1. 910 AW PARTICIPANTS:

##### a. Aircrew:

- 1) Pilots: Maj (b) (6), Maj (b) (6)
- 2) Navigators: Maj (b) (6)
- 3) Flight Engineers: SMSgt (b) (6)
- 4) Spray Operators: CMSgt (b) (6), MSgt (b) (6)
- 5) Mission Commander: Lt Col (b) (6)

##### b. Maintenance:

- 1) Spray Maintenance: SSgt (b) (6) (LEAD), TSgt (b) (6), TSgt (b) (6), MSgt (b) (6)
- 2) Crew Chief: MSgt (b) (6), SrA (b) (6)
- 3) Avionics: TSgt (b) (6)

##### c. Entomologists/Ground Support: Maj (b) (6) (in place)

#### 2. SCHEDULE: (All Local Times)

- a. 30 June (Monday)
  - 0845L Show KYNG
  - 1100L Depart KYNG
  - 1300L Land KRDR
- b. 1-2 July (Tues-Weds.)
  - 1030L Installation Brief CE Conference RM Bldg 410
  - 1700L Show KRDR
  - 1930L Depart KRDR
  - 2130L Sunset
  - 2145L land KRDR
- c. 3 July (Thurs.)
  - 1130 Show KRDR
  - 1330 Depart KRDR
  - 1730 Land KYNG

#### 3. ITEMS TO TAKE

- a. **Mission Commander:** Laptop, Mission Folder, FFT
- b. **Entomologist:** Wind Gauge, compass, Pest Safety Binder
- c. **Navigator:** Validation Map, charts
- d. **Spray Operator:** Safety Gear, laptop/data sheets
- e. **Spray Maintenance:** Deployment Kit, Support Equipment
- f. **Avionics:** AG GPS card for Wingman system

#### 4. PPR: 3001-JS

**5. RADIO FREQUENCIES:** Air to Ground Primary VHF 123.45 KRDR Red River Tower 124.9;  
Grand Forks International 118.4

**6. CONFIGURATION: SP2G**

- a. System:** 2-Module System/Stainless Steel ULV Fuselage Booms
- b. Nozzle Tips/Orientation:** ULV (adulticide): 8003 Tee Jet oriented straight down
- c. Number:** ULV: 30 total (15 each side) 8003s
- e. Aircraft:** 89-9106
- f. Mission Identifier:** QZNRK9931181

**7. SPRAY PARAMETERS:**

**a. Adulticide**

- (1) **Area to be treated:** 11,518 acres (Grand Forks AFB)
- (2) **Altitude:** 150' for Adulticide application
- (3) **Swath Width.** 2000 feet
- (4) **Flow Rate.** 7.26 gallons/minute ULV
- (5) **Application Rate.** 1.0 oz/acre Trumpet, ULV
- (6) **Ground Speed:** 200 knots
- (7) **Flush:** aromatic naptha, then air purge

**8. SPRAY MIXING AND LOADING:** Plan to load 90 gallons of Trumpet

**9. TRANSPORTATION:** Transportation provided by base (DSN362-3976): One 15 pax van (OPS), three 6 pax trucks (MC, OPS, MX), one 1.5 ton truck (spray MX). Vehicles at base ops with the exception of Trumpet loaded truck

**10. LODGING:** On base Billeting: (POC) (b) (6)

--DSN 362-7200 or (701) 594-8431, FAX 362-3069

-- Prime Knight DSN 362-3844 or (701) 747-3844

**11. CONTACTS:**

**a. 319 CES/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**

- (1) **Base Operations:** Airfield Manager DSN 362-4409  
-- DSN 362-xxxx or (701) 747-xxxx
- (2) **Pest Management:** SSgt Emilie Rook DSN 362-4907, FAX 3432)
- (3) **Civil Engineer Squadron Commander:** Maj (b) (6)
- (4) **Environmental Officer:** (b) (6) DSN(b) (6)
- (5) **Public Affairs:** DSN 362-5608/5023 (off duty CP ext 6711)
- (6) **Weather:** DSN 362-4396
- (7) **Billeting:** DSN 362-3070/6189/7200 or (701) 594-8431, FAX 362-3069  
-- Prime Knight DSN 362-3844 or (701) 747-3844
- (8) **Fargo FSDO:** POC (b) (6) Fax (701) 492-5828
- (9) (b) (6) (UAV Scheduler): DSN (b) (6) / Cell: (b) (6)

**b. 910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

- (1) 910 AW/CC: Col (b) (6)
- (2) 910 AW Command Post: Ext 1315; FAX 1161
- (3) 910 AW/PA: Ext 1236; FAX 1022
- (4) 910 OG/CC: Col (b) (6)
- (5) 910 Base Ops: Airfield Manager: Ext 1182  
- Assistant Air Field Manager (ACAM), Ext 1181

- (6) 757 AS/DO: Lt Col (b) (6)
- (7) 757 AS/DOO: Ops Admin: SMSgt (b) (6) ; FAX 1657
- (8) 757 AS/DOS: Aerial Spray Office, Lt Col (b) (6) ; FAX 1616
- (9) 910 LG/CC: Ext 1225
- (10) 910 LG/LGM: Ext 1352
- (11) Maintenance Control: Ext 1348
- (12) LG/LGMS: Spray Maintenance: SMSgt (b) (6) Cell: (b) (6)
- (13) 910 LG/LGL: Ext 1137
- (14) SATO Travel: Ext 1772; (800) 285-6342
- (15) Supervisor of Flight Desk: 1069, FAX: 1371





DEPARTMENT OF THE AIR FORCE  
757 Airlift Squadron – Aerial Spray Operations  
3976 King Graves Rd Unit 24  
Vienna OH 44473-5924

**910 AW AERIAL SPRAY UNIT -- POST-MISSION REPORT FOR  
GRAND FORKS AFB ADULT MOSQUITO  
CONTROL 30 Jun – 3 July 2014**

**1. MISSION BASICS:**

- a. Installation Sprayed: Grand Forks AFB North Dakota
- b. Mission Duration: 30 June - 3 July 2014
- c. Purpose of Application: Control adult nuisance and vector mosquitoes
- d. Application Date 2 July 2014
- e. Time of Application (Local): 1955 -2130 (2 July)
- f. Acres Treated: 11,518 (2 July)
- g. Project Coordinator/s (Name/Rank, Title, Phone #): SSgt (b) (6) , NCOIC Pest Management Shop, DSN (b) (6)
- h. Date Spray Map Last Approved: 8 July 2013
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): GFAFB CE Conference Room, Lt Col (b) (6) and Maj (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Entomologist (Category 8 & 11): Major (b) (6)
- c. Aircrew:
  - (1) Pilots: Major (b) (6) , Maj (b) (6)
  - (2) Navigators: Maj (b) (6)
  - (3) Flight Engineer: SMSgt (b) (6)
  - (4) Spray Operators: CMSgt (b) (6) , MSgt (b) (6)
- c. Maintenance:
  - (1) Spray Maintenance: SSgt (b) (6) (Lead), TSgt (b) (6) , TSgt (b) (6) , MSgt (b) (6) , Crew Chief(s): MSgt (b) (6) , SrA (b) (6)
  - (2) Avionics: TSgt (b) (6)
- d. Flying Data:
  - (1) Spray Sorties/Hours: 1/1.3
  - (2) Ferry Sorties/Hours: 2/5.9
  - (3) Mission ID: QZNRK9931181

**3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 90 gal Trumpet®
- d. Gallons and Name of Flush Used: 8 gal aromatic naphtha
- e. Other Additives Used: none
- f. Application Rate: 1.0 oz/acre Trumpet®

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 89-9106
- b. Spray System (Modules Used) and System ID #: 3
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV fuselage Booms

- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 24 straight down
- f. Pressure (PSI): 41-52 PSI
- g. Flow Rate: 7.26 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off Set: 2000-4000' depending on wind speed
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 330-340° @ 12 knots (aerial); 1-3 knots (ground)
- b. Temperature (Degrees Fahrenheit): 78 °F
- c. Relative Humidity: 57-70%
- d. Cloud Cover: scattered clouds
- e. Source: Ground observations and onboard aircraft readings

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

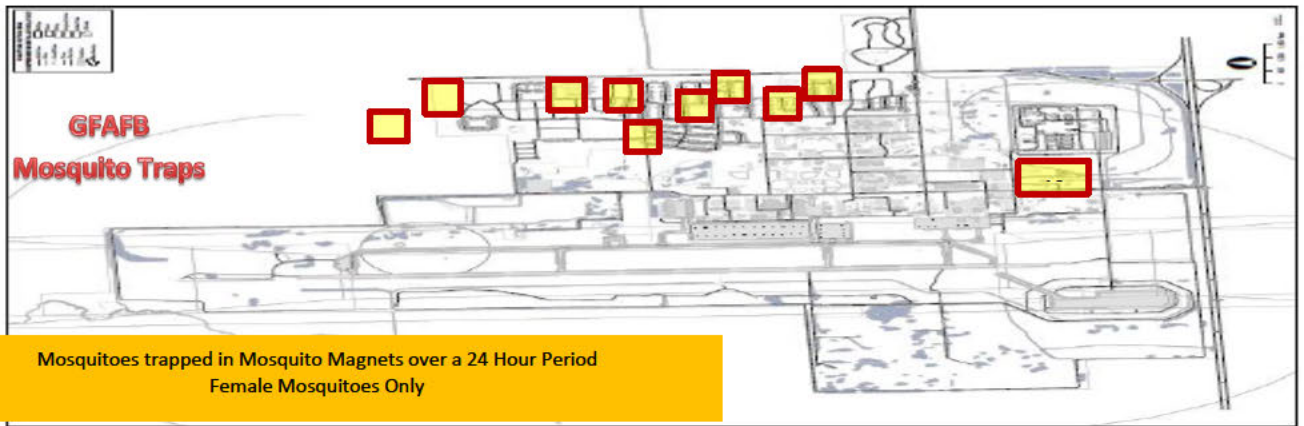
- a. The 319 CES pest management conducts adult mosquito trapping to monitor mosquito densities on base.
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito magnet traps
  - (2) Results: See Attachment 1 and 2

**8. REMARKS:** Continued high numbers of mosquitoes prompted GFAFB to approve an aerial spray application. Spray operations for the evening of 1 July were delayed for 24 hours due to marginal weather conditions. Weather conditions were forecast to be close to optimal for 2 July. A successful aerial application was made on 2 July in excellent application conditions (See Attachment 3). Observations of mosquito activity made immediately after application indicated a complete lack of insect activity within the area of application. Post-spray trap count data collections revealed some equipment malfunctions, but a week post application, indicated acceptable mosquito reductions following the application (See Attachment 1 and 2). Special thanks to SSgt (b) (6) and the staff of the GFAFB pest control shop.

//signed//

(b) (6)

**Maj, USAFR**  
**DoD Certified Pest Management Professional**

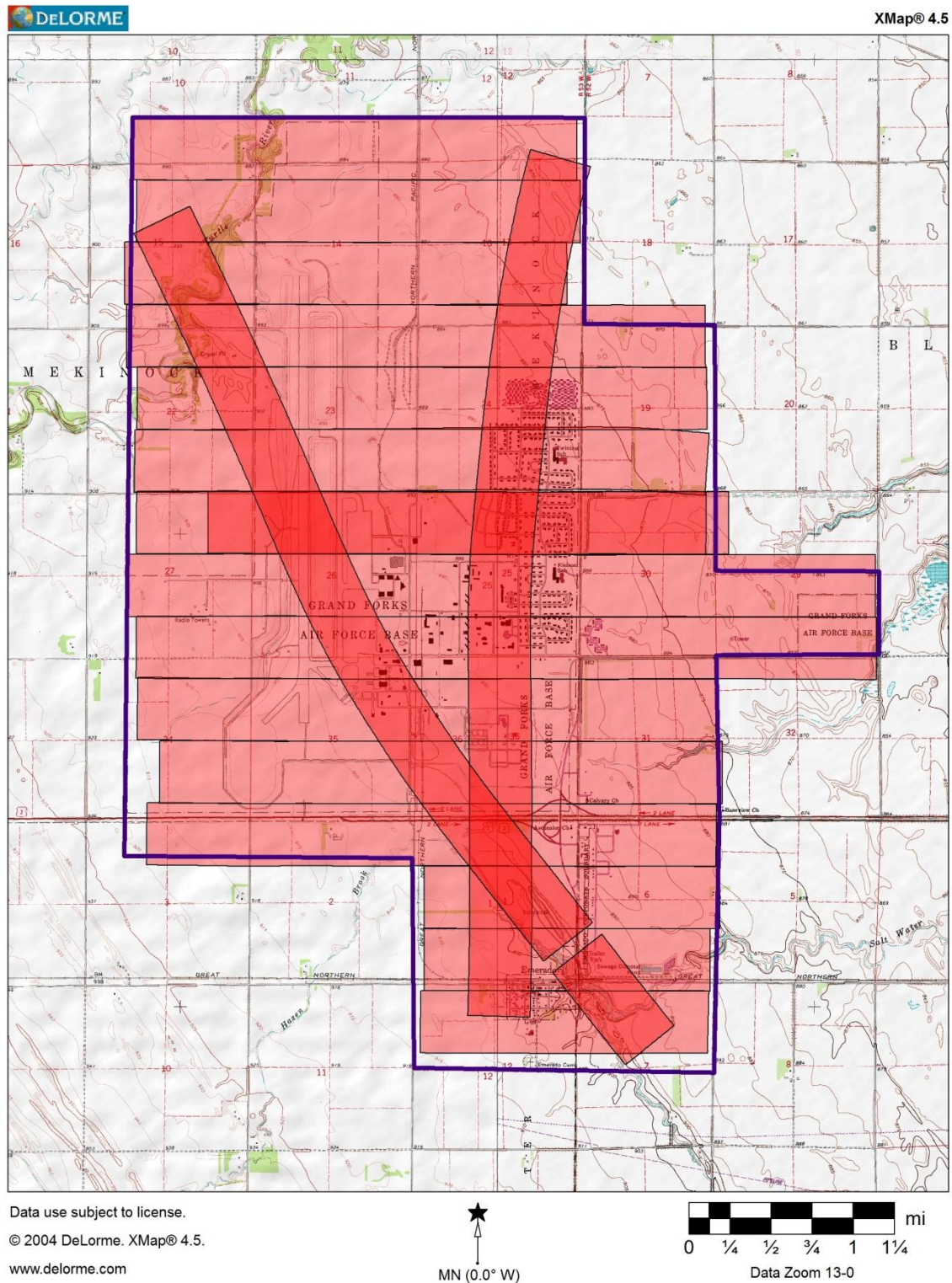


**Attachment 2. GFAFB Mosquito Counts Pre and Post Application. Application occurred 2 July.**

Adult Mosquito Numbers 2014								
Date	Gate 1	Gate 2	Wing King	Langley	Beech	Dogwood	5K Trail (PH)	Total
29-May-14	1750	2500	870	55	800	1900		7875
2-Jun-14	3100	1850	3200	250	500	3600		12500
3-Jun-14	1800	900	700	600	500	1900		6400
6-Jun-14							1000	1000
9-Jun-14	650	60	100	50	200	130		1190
16-Jun-14	575	50	250	100	300	60		1335
23-Jun-14	550	350	300	470	450	400		2520
2-Jul-14	1200		1500	60	1000	400		4160
10-Jul-14	500	425	500	500	500	500		2925



**Attachment 3. Image shows Grand Forks AFB, pesticide application swaths during the application on 2 July 2014.**



**910 AW AERIAL SPRAY UNIT POST-MISSION REPORT**  
**GRAND FORKS AFB- ADULTICIDE MOSQUITO CONTROL**  
**30 June-3 July 2014**

**1. MISSION BASICS:**

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 30 June-3 July 2014
- c. Purpose of Application: Control nuisance and vector mosquitoes
- d. Application Date: 1-2 July 2014
- e. Time of Application (Local): 1030
- f. Acres Treated: 912
- g. Project Coordinator/s (Name/Rank, Title, Phone #): SSgt (b) (6) NCOIC Pest Management Shop, DSN 3 (b) (6)
- h. Date Spray Map Last Approved: 28 May 2014
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): GFAFB CE, LTC (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Certified PMP/s (Category 11): Maj (b) (6) (b) (6)
- c. Aircrew:
  - 1) Pilots: Maj (b) (6) , Maj (b) (6)
  - 2) Navigators: Maj (b) (6)
  - 3) Flight Engineers: SMSgt (b) (6)
  - 4) Spray Operators: CMSgt (b) (6) , MSgt (b) (6)
- d. Safety Briefer: Maj (b) (6)
- e. Spray Maintenance: SSgt (b) (6) (LEAD), TSgt (b) (6) , TSgt (b) (6) (b) (6) MSgt (b) (6)
- f. Spray Ground Monitors:
- g. Crew Chief: MSgt (b) (6) , SrA (b) (6)
- h. Avionics: TSgt (b) (6)
- i. Engine:
- j. Hydraulics:
- k. Flying Data:
  - (1) Spray Sorties/Hours: 1/2.0
  - (2) Ferry Sorties/Hours: 1/1.5

**3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Altosid Liquid Larvicide Concentrate (20% methoprene)
- b. EPA Registration Number: Altosid Liquid Larvicide Concentrate 272446
- c. Area applied: 912 Acres
- d. Gallons Pesticide Loaded: 5.0 (1 June)
- e. Gallons Pesticide Applied: 1845 Gallons Tank Mix
- f. Gallons and Name of Flush Used: 200 gallons of water flush
- g. Other Additives Used: AirexDC® drift reduction agent (5.0 Gallons)
- h. Application Rate: 0.71 oz/acre Altosid®

#### **4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 3-Module System/Fuselage Booms
- d. Nozzle Type/Size: R-20 Raindrop
- e. Nozzle Orientation & Number Used: 10 Straight back
- f. Pressure (PSI): 40 PSI
- g. Flow Rate: 186 GPM

#### **5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 200'
- b. Spray Off Set: None (E/W); 200' (N/S)
- c. Spray Release Altitude: 100'
- d. Ground Speed: 200 Knots (338 Feet/Second)

#### **6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 7 @ 030°
- b. Temperature (Degrees Fahrenheit): 70 °F
- c. Relative Humidity: 95%
- d. Cloud Cover: Scattered
- e. Source: Ground observations and National Weather Service

#### **7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. The 319 MDG/ADS conducts larval mosquito sampling to monitor mosquito densities on base.
- b. Effectiveness:
  - (1) Technique/s Used: Larval dips
  - (2) Results: Pre Application dips: 159 Larvae collected from 20 sites within treatment area. Post Application dips: 0 Larvae collected from same sites previously sampled 3 days following application.

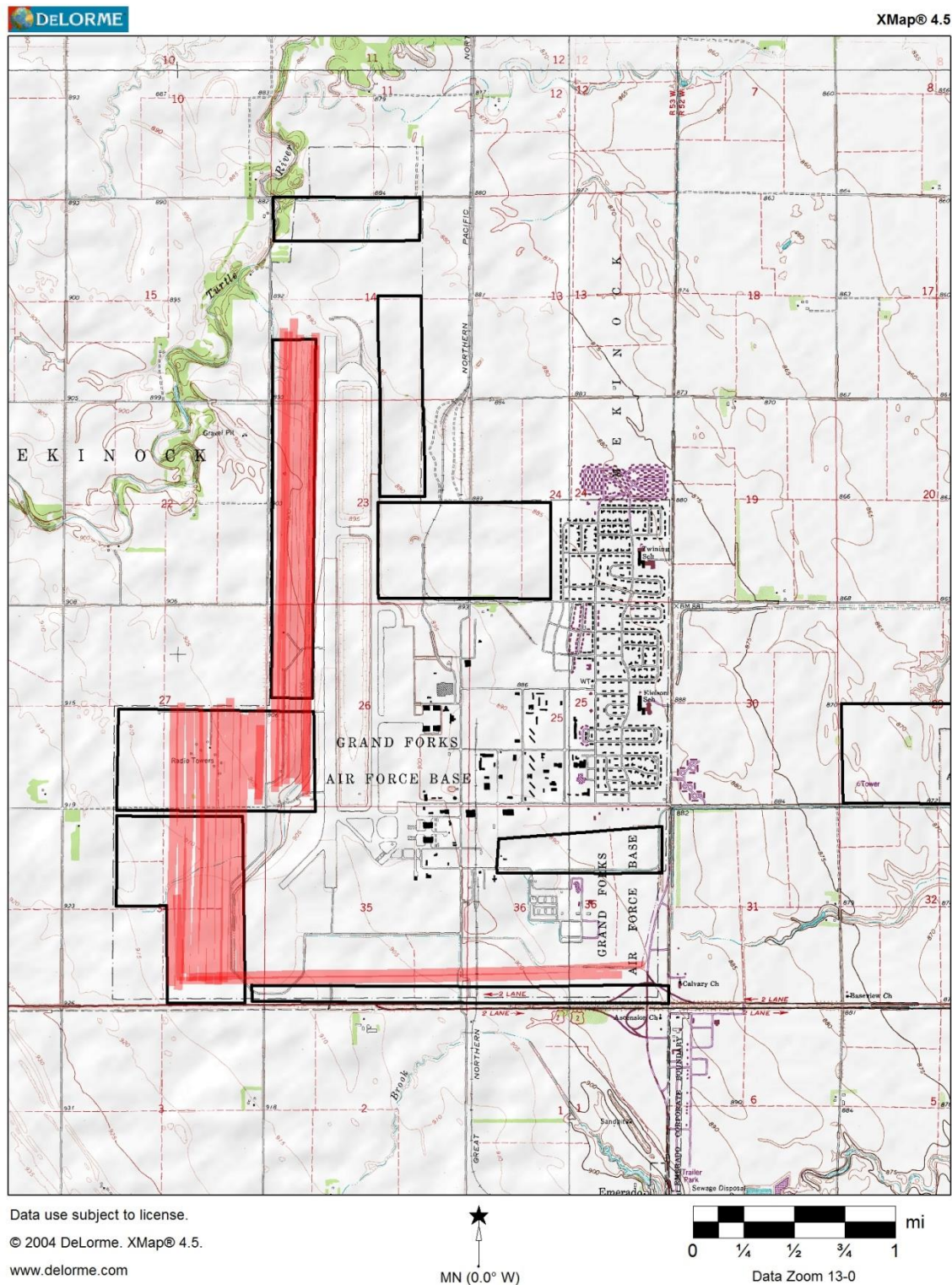
**8. REMARKS:** The threat of West Nile Virus being vectored by large mosquito populations prompted GFAFB public health to make the decision to spray mosquito breeding sites for larval control. The application at Grand Forks was conducted on one day in conjunction with a larvicide operation at Williston ACE. The mission operated out of Minot International airport, as the runway at Minot AFB was closed for repair. Mission Commander Lt Col (b) (6) (b) (6) and PMP Lt Col Karl (b) (6) traveled to Grand Forks AFB the previous week to conduct a formal inbrief with base personnel and to pick up the material to be sprayed. Good post-spray results were reported by the Grand Forks AFB pest control supervisor, SSGT (b) (6). Thanks go to the Pest Control Shop and Airfield Management at GFAFB for excellent pre and post spray population monitoring, and for facilitating the mission in non-standard circumstances.

//signed//

(b) (6) (b) (6) Lt Col, USAFR  
DoD certified pest management professional



**Attachment 1. Image shows Grand Forks AFB spray blocks (black) and pesticide application swaths (red) during application on 1 June. Other spray blocks depicted on the map were not treated because they either did not have enough mosquito larvae present to justify treatment, or they were adequately treated by ground application.**





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

17 Aug 2015

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Langley AFB and Craney Island Army Corps of Engineers, VA.

1. Aerial spray deployment of one C-130 to Langley AFB, VA. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of Langley AFB. Operations will be conducted out of Langley AFB, VA.

2. Concept of Operations: All times local

- a. 31 Aug (Monday)  
1600 Depart KYNG  
1700 Land KLF I
- b. 1-3 Sep (Tuesday-Thursday)  
1800 Depart KLF I  
2030 Land KLF I
- c. 4 Sep (Friday)  
1300 Depart KLF I  
1400 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Location: Langley AFB and Craney Island, VA
- b. Altitude: 150 ft for adulticide application
- c. Swath Width: 2,000 feet
- d. Airspeed: 200 KGS
- e. Application Rate: 1.0 oz/acre Trumpet

4. Lt Col (b) (6) will serve as the Mission Commander. Support required at Langley AFB, VA is completed.

\\SIGNED\\

(b) (6)

Chief, Aerial Spray

, Lt Col, USAFR



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

23 October 2013

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Smoky Hill ANG Range, Salina, KS.

1. Control musk thistle at the Smoky Hill ANGR, to improve grazing areas, to eliminate the Range as a source of infestation to neighboring farms from wind-blown musk thistle seeds and to support state and local noxious weed control efforts. This mission will also provide real-world training for aerial spray entomologists and maintenance personnel.

2. Concept of Operations:

- a. 4 November (Monday)  
1300 Depart KYNG  
1500 Land KSLN  
1600 Installation Brief
- b. 4-9 November (Tuesday - Saturday)  
0645 Depart KSLN  
1030 Land KSLN
- c. 9-14 November (Sunday - Thursday)  
0630 Depart KSLN  
1030 Land KSLN
- d. 15 November (Friday)  
0800 Show Time KSLN  
1000 Depart KSLN  
1400 Land KYNG

3. Maj (b) (6) will be the Mission Commander (4-9 Nov.) Lt Col (b) (6) (9-15 Nov).



4. Lt Col (b) (6) will be the Aircraft Commander (4-9 Nov) Lt Col (b) (6) (9-15 Nov).

5. Support at Smoky Hill and Salina has been completed.

(b) (6), TSgt, USAFR  
757AS Aerial Spray



DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

18 Mar 2014

MEMORANDUM FOR HQ AFRC/A30

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Parris Island MCRD, SC

1. Aerial spray deployment to Beaufort MCAS, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at Parris Island MCRD.

2. Concept of Operations:

- a. 31 March (Monday)  
1600 Depart KYNG  
1800 Land KNBC
- b. 1 April (Tuesday)  
1300 Installation Brief  
1900 Depart KNBC  
2015 Land KNBC
- c. 2 April (Wednesday) WX backup  
1900 Depart KNBC  
2015 Land KNBC
- d. 3 April (Thursday)  
1200 Depart KNBC  
1230 Land KYNG

3. Maj (b) (6) will be the Mission Commander. Lt Col (b) (6) will be the Aircraft Commander. Support at Parris Island MCRD and Beaufort MCAS has been completed.

(b) (6)

Lt Col, USAFR

## MT Home AFB 2014

15 September – 26 September

TSGT (b) (6) was the lead for spray MXS, Coordination with LTCOL (b) (6) was made two weeks prior to the trip. System strapping points were double checked with all tanks on MASS 3, to ensure QTY system was working properly. (b) (6) shared his concerns about trying to calibrate LV / HV system. Chemical load was discussed and corrections were made for the amount of plateau, control, and prevent. Coordination and communication was established between both parties and had a great impact on the success of this mission.

System was loaded on aircraft prior to the flight engineers -1 being complied with. Was instructed by (b) (6), and (b) (6) go ahead and load.

Day one mission commander LTCOL (b) (6), LTCOL (b) (6) (b) (6) SMSGT (b) (6), and TSGT (b) (6) established a plan for the first spray day on Tuesday Sept 16<sup>th</sup>. Spray MXS configured the aircraft. First load of H2O from fire dept was loaded. We loaded 1800 gals of H2O, discussed chemical to load next day. Loaded 8.0 gals of plateau, (2 gals per tank), 4 gals of control AMS (1 gal per tank) and approx 9 oz of prevent (dash in each tank). After the first flight they sprayed 1740. They came back with 60 gals. Total load was 1815. Only did one spray the first day due to quiet time on the range.

- Note we loaded H2O through the bazooka tube.

The rest of the trip we loaded approx 1880 gals of H2O, according to qty gauge and our loads were 8.5 gals of plateau, 5 gals of control, and same 9 oz of prevent. We did a total of 11 chemical spray sorties, totaling in 20,720 gals of chemical loaded and sprayed. We flushed Thursday 200 gals of H2O after the last spray of the day due to the air show. We purged at the end of every day. The last day we flushed after spray 200 gals of H2O with 1 gal of removed in flush tank. The next and last spray was strictly a flush sortie 1800 gals of H2O with 3 gals of remove added between the 4 main tanks and loaded 200 gals of H2O in flush tank to be flushed after the remove was sprayed out.

- Note was only able to spray 2 sorties each day due to the range times and unable to get the third lift off because we would have to fuel the plane, take too much time. Average take off time was 07:30 and return after second sortie was 10:25. Range time for us was till 11:00. Got extended range time the last day to do two spray sorties and one flush. The flush spray was from 12:30 to 13:00.

We had some aircraft maintenance issues with the cargo air conditioning (bleed air) and #3 GCU. On Wednesday September 24<sup>th</sup> we lost the two spray sorties due to these issues. We made them up Thursday with the extended range time.

AWMAS 3 had no problems at all. Everything sprayed, loaded, mixed, and everything worked properly with no issues. We only had to service the pneumatic bottles two times the whole trip. The communication from mission commanders both (LTCOL (b) (6) LTCOL (b) (6) the MXS Pro Sup

(SMSGT (b) (6) Entomologists (LT Col (b) (6)  
(b) (6) was outstanding.

Maj (b) (6) & the Spray MXS Lead (TSGT



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON – AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION, OH 44473

4 November 2013

MEMORANDUM FOR 757 AS/DO

FROM: 757 AS/DOS

**SUBJECT:** Post-mission report Military Operations in Urban Terrain (MOUT)  
Collective Training Facility/Dengue Spray Trials with USDA-ARS (CMAVE) 28 Oct - 1  
Nov 2013.

**1. Purpose:** Aerial pesticide efficacy evaluation in partnership with USDA and the U.S. Navy using Dibrom<sup>®</sup> at Camp Blanding, Florida.

**2. Participants:**

**a. Aircrew:**

- (1) Pilots: Maj (b) (6), Lt Col (b) (6)
- (2) Navigators: Lt Col (b) (6)
- (3) Flight Engineers: TSgt (b) (6)
- (4) Spray Operators: TSgt (b) (6), SSgt (b) (6)

**b. Maintenance:**

- (1) Spray Maintenance: MSgt (b) (6), TSgt (b) (6), TSgt (b) (6)
- (2) Crew Chiefs: MSgt (b) (6)
- (3) Avionics: MSgt (b) (6)

**c. Entomologists:** Lt Col (b) (6), (b) (6), Maj (b) (6)

**d. Mission Commander:** Maj (b) (6)

**3. Spray Configuration:**

- a. Mass:** 2-Module System SP-2G
- b. Booms:** Stainless Steel ULV Fuselage Booms
- c. Nozzles:** size = 8001; 24 open; 8003; 8 open; oriented straight down.
- d. Differential GPS:** Wingman Installed
- e. Aircraft:** 90-9106
- f. Mission Identifier:** QENRK3501301

**4. Spray Parameters:**

**a. Pesticide:**

Dibrom<sup>®</sup> (Naled)  
Organophosphate Pesticide  
Signal Word: Danger  
Flushing Agent: Aromatic Naptha

**b. Application:** 1.0 oz per acre target rate

**c. Spray Altitude:** 150 feet

- d. **Swath Width:** 500 feet
- e. **Ground Speed:** 200 knots
- f. **Acreage:** single pass sprays
- g. **Spray-On Time:** approx 20 sec passes
- h. **Flow Rate:** 1.82 gallons/minute

**5. Sequence of events:**

- a. 28 Oct (Monday)  
0900 Show KYNG  
1112 Depart KYNG  
1340 Land KNIP
- b. 29 Oct (Tuesday)  
0700 Show KNIP  
0800 Load Dibrom; Calibrated flow rate with 8001 nozzles  
1225 Depart KNIP  
1355 Land KNIP
- c. 30 Oct (Wednesday)  
0700 Show KNIP  
0800 Calibrated flow rate with 8003 nozzles  
0935 Depart KNIP  
1100 Land KNIP  
1335 Depart KNIP - flush sortie  
1421 Land KNIP
- d. 31 Oct (Thursday)  
Data processing all day by staff entomologists
- e. 1 Nov (Friday)  
0730 Show KNIP  
0900 Depart KNIP (Land @ KWRB to drop off personnel)  
1220 Land KYNG

**6. Operational Details:**

- a. **Flying Data:**
  - (1) Spray Sorties/hours: 3/3.7
  - (2) Ferry Sorties/hours: 3/5.3
- b. **Pesticide Applied:**
  - (1) 5.9 gal (29 Oct) covering 911 acres
  - (2) 7.0 gal (30 Oct) covering 890 acres
  - (3) Applications conformed to label; maximum label rate was not exceeded.

**7. Comments:** These tests seek to determine the feasibility of using a MASS equipped C-130 to control adult *Aedes aegypti* mosquitoes in a mock urban setting. This important mosquito is the primary vector of yellow fever and dengue fever in tropical/sub-tropical

regions worldwide. Dengue reemerged in South Florida in 2010 and could represent a significant public health threat to the warfighter depending on location and local conditions.

Attempts to reduce adult populations of this species using aerial applications during the dengue outbreak in San Juan Puerto Rico (1987) were reported to have mixed or low success. It is generally accepted that insects flying during aerial applications are more susceptible to the pesticide application than those resting. This species is known to enter homes and rest there, effectively protected from the pesticide. New technologies such as GPS, computer modeling of droplet fate, and new nozzles have become available in recent years and may allow for delivery of pesticide into structures that are not firmly sealed (i.e, window and doors open). Using part of the Florida National Guard's Military Operations in Urban Terrain (MOUT) Collective Training Facility, test mosquitoes were held in cages in multiple areas with varying degrees of direct or indirect exposure to a pesticide. Devices capable of collecting drifting pesticide drops were deployed throughout the study area, and will be analyzed to determine the size and density of droplets that moved through a given area. Additionally, environmental conditions were monitored on the ground and on the aircraft during the application. The pesticide studied during this experiment (Dibrom®) is the most commonly used mosquito adulticide sprayed from the air by the Air Force and Mosquito Control Districts in Florida. Additional pesticides may be examined in future evaluations.

Excellent spray conditions were present on both test days and provided mostly unidirectional winds (Attachment 1). The smaller 8001 nozzle size was used on 28 Oct and 8003 nozzles capable of spraying 3 times the volume and producing a larger average droplet size were employed 29 Oct (Attachment 1). Both tests involved a predetermined flyover starting point for pesticide dispersal followed by 5 additional passes with a 500 ft offset for each pass (Attachment 2).

Preliminary results are encouraging. While a full analysis of the findings will be developed and eventually published, these initial results show a high rate of mosquito mortality was found outside of the buildings. This was an expected outcome, but mortality was also recorded from mosquitoes inside of the buildings, even from those that were further placed in boxes (Attachment 3). This indoor mortality suggests aerial application may potentially be effective against indoor resting mosquitoes.

These results represent collaborative efforts between the USDA-ARS (CMAVE), Navy Entomology Center of Excellence (NECE), Florida National Guard, Manatee County Mosquito Control, and the Air Force Aerial Spray Unit. This evaluation was a continuation of a series of studies investigating the droplet fate of pesticide sprays under adverse conditions. Special thanks are extended to the staff at the Camp Blanding Joint Training Center, especially to (b) (6) (b) (6). In addition, the uniformed and civilian members representing NECE facilitated many behind-the-scenes issues and made the two-site test configuration possible. We hope this is the beginning of a series of further studies at this site, ultimately promoting health benefits for our deployed troops by furthering scientific understanding of ultra low volume pesticide applications for *Aedes aegypti* control.

//signed//

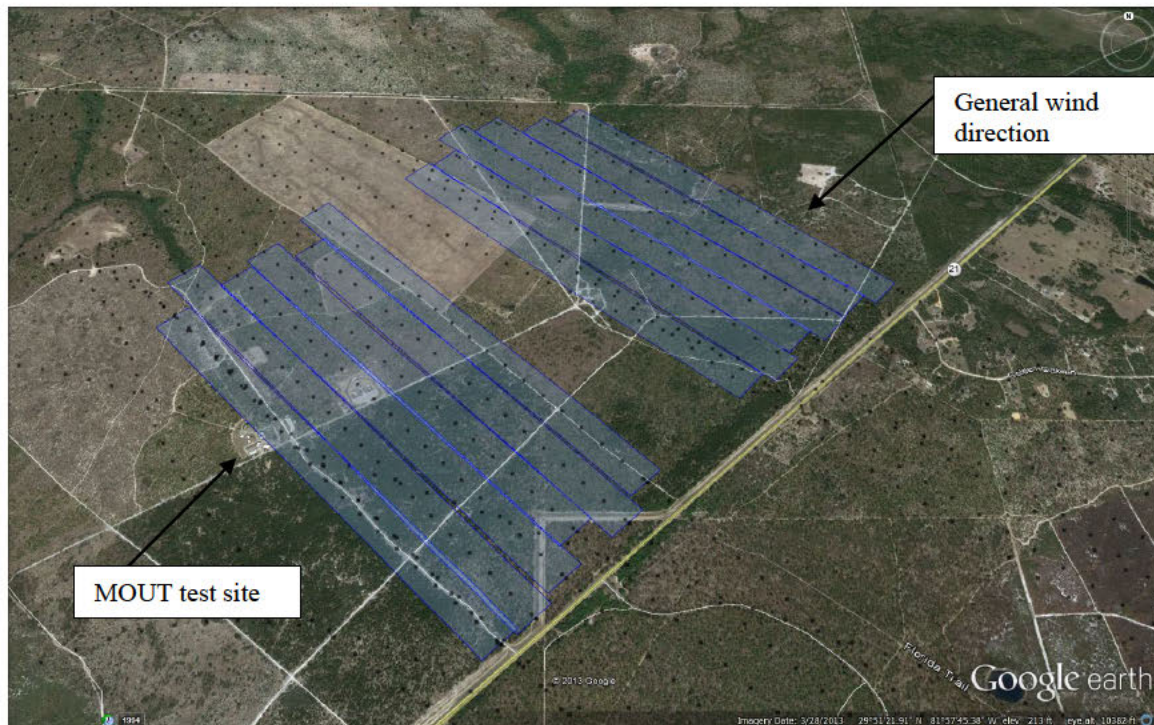
(b) (6) (b) (6) Lt Col, PhD, USAFR  
Research Entomologist



Attachment 1. Data recorded during the evaluations from the spray aircraft (28-29 October 2013).

29-Oct-13			24-8001 nozzles		target flow rate = 1.81 gal/min (1.0 oz/acre)		Release height = 150 ft above ground level				
			total spray-on time 3:55		actual flow rate= 1.50 (0.84 oz)						
			total volume 5.9 gallons								
			acreage = 911 acres								
Mount site					Mosque site						
pass #		wind direction/speed (knots)	spray on time (sec)		pass #	wind direction/speed (knots)	spray on time (sec)				
1		064/6	20		1	060-070/8-9	20				
2		062/6	21		2	062-070/6	18				
3		059/6	20		3	063-075/7	20				
4		055-077/7	19		4	075/7	20				
5		080/7	20		5	063-080/7	19				
6		065/6-8	20		6	068/7	18				
30-Oct-13			8-8003 nozzles		target flow rate = 1.81 gal/min (1.0 oz/acre)		Release height = 150 ft above ground level				
			total spray-on time 3:50		actual flow rate= 1.81 (1.0 oz)						
			total volume 7.0 gal								
			acreage = 890 acres								
Mount site					Mosque site						
pass #	time	wind direction/speed (knots)	spray on time (sec)		pass #	time	wind direction/speed (knots)	spray on time (sec)			
1	954	045/9-10	21		1	1025	054-8/5	18			
2	958	053/7	21		2	1028	060/4	20			
3	1002	055/7	18		3	1031	057-064/3	19			
4	1006	054/7	21		4	1035	054/6	18			
5	1009	050-055/8-11	20		5	1038	054/6	14			
6	1013	046-051/9-10	21		6	1042	054/6	16			

Attachment 2. Flight patterns recorded on 29 Oct 13. Blue rectangles represent a 500 ft swath while spraying occurred. Black dots are the path of the aircraft.



Attachment 3. General area of MOUT site. Note presence of shutters. These could be opened or closed depending on test requirements. Second photo shows a droplet collector spinning, an example bioassay cage and a box for placing caged mosquitoes to determine droplet penetration of the various buildings.





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

13 Nov 14

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

SUBJECT: Cancellation of NVG Aerial Spray Operations at Avon Park Bombing Range, FL.

1. The planned NVG Aerial Spray training at Avon Park Bombing Range, FL during 17-21 Nov has been cancelled due to limited range time and budgetary constraints.
2. There will be no substitute off station Aerial Spray mission planned to replace this scheduled training.

// SIGNED//  
(b) (6), Lt Col, USAFR  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

6 February 2014

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

SUBJECT: Capability and Concept of Operations for Aerial Spray at Hill AFB/UTTR, UT

1. Aerial Spray flight proficiency training will be accomplished on targets 21, 24, Nord LZ, and Wildcat at the Utah Test and Training Range (UTTR). Spray sorties will be applying Krovar controlling vegetation (i.e Halogenton) growth to aid bombing mission test evaluations and unexploded ordnance recovery. Two Spray configured C-130's will be available 10 Mar – 21 Mar 14 for the requested spray mission. One Support C-130 will be used to swap crew positions and maintenance personnel to maximize training.

2. Concept of Operations:

- a. 10 March (Monday)
  - 0800 Show KYNG
  - 1000 1<sup>st</sup> Spray aircraft depart KYNG
  - 1015 2<sup>nd</sup> Spray aircraft depart KYNG
  - 1300 1<sup>st</sup> Spray aircraft land KHIF
  - 1315 2<sup>nd</sup> Spray aircraft land KHIF
- b. 11 March -14 March (Tuesday-Friday)
  - 0600 Show KHIF
  - 0800-0830 Both spray aircraft depart KHIF
  - 1230-1300 Both spray aircraft land KHIF
  - \*2 sorties planned each day per aircraft
- c. 15 March
  - 0800 Show KYNG Support aircraft
  - 1030 Depart KYNG
  - 1335 Land KHIF



- d. 16 March  
0600 Show KHIF  
0800 Support aircraft Depart KHIF  
1505 Support aircraft Land KYNG
- e. 17 March -20 March (Monday-Thursday)  
0600 Show KHIF  
0800-0830 Both spray aircraft depart KHIF  
1230-1300 Both spray aircraft Land KHIF  
\*2 sorties planned each day per aircraft
- f. 21 March (Friday)  
0730 Show KHIF  
0930-1000 Both Spray aircraft  
1630-1705 Both Spray aircraft

3. SPRAY PARAMETERS:

Herbicide: Krovar 1DF®  
Application Rate: 22.5 gal/acre (10 lbs of Krovar in 22.4 gal of water)  
Acreage: 1,800 Acres  
Ground Speed: 200 Knots (337.55 ft/sec)  
Spray Altitude: 100 Feet AGL  
Swath Width: 35 Feet  
Flow Rate: 366.1 Gallons/Minute

- 4. Maj (b) (6) will be the Mission Commanders.
- 5. LTC (b) (6) and LTC (b) (6) are the Aircraft Commanders 10 March-16 March and Maj (b) (6) and Maj (b) (6) are the Aircraft Commanders 17 March – 21 March.
- 6. Support required at Hill AFB and the UTTR has been completed.

(b) (6)

(b) (6)

1Sgt, USAFR  
757<sup>TH</sup> Aerial Spray Flight Engineer



DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

22 July 2014

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Homestead AFB and surrounding Miami-Dade County

1. Aerial spray deployment of one C-130 from 28 Jul -1 Aug 2014 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the citizens of Homestead ARB and surrounding Miami-Dade County. Aerial spraying performed off DOD installation property will be conducted IAW Innovative Readiness Training (IRT) Program criteria. This mission will also provide real-world training for aerial spray entomologists and maintenance personnel. Operations will be conducted out of Homestead ARB, FL.

2. Concept of Operations (All times are local)

- a. 28 July (Monday)  
1600 Depart KYNG  
1930 Land KHST
- b. 29-31 July (Tues-Thurs)  
1930 Depart KHST  
2100 Land KHST
- c. 1 Aug (Friday)  
1230 Depart KHST  
1600 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 10,000 -110,000 acres; final acreage TBD
- b. Altitude: 150 ft for adulticide application
- c. Swath Width: 2000 ft
- d. Groundspeed: 200 Kts



- e. Chemical: Dibrom<sup>®</sup> Concentrate
- f. Application Rate: 0.5 oz/acre or as determined by entomologist

4. Lt Col (b) (6) will serve as the mission commander (MC). Maj (b) (6) will be the aircraft commander. Required support at Homestead AFB, FL has been completed.

(b) (6)

Lt Col, USAFR



DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

11 August 2014

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Homestead AFB and surrounding Miami-Dade County

1. Aerial spray deployment of one C-130 from 25-29 Aug 2014 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the citizens of Homestead ARB and surrounding Miami-Dade County. Aerial spraying performed off DOD installation property will be conducted IAW Innovative Readiness Training (IRT) Program criteria. This mission will also provide real-world training for aerial spray entomologists and maintenance personnel. Operations will be conducted out of Homestead ARB, FL.

2. Concept of Operations (All times are local)

- a. 25 Aug (Monday)  
1600 Depart KYNG  
1930 Land KHST
- b. 26-28 Aug (Tues-Thurs)  
1930 Depart KHST  
2100 Land KHST
- c. 29 Aug (Friday)  
1200 Depart KHST  
1530 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 10,000 -110,000 acres; final acreage TBD
- b. Altitude: 150 ft for adulticide application
- c. Swath Width: 2000 ft
- d. Groundspeed: 200 Kts

e. Chemical: Dibrom<sup>®</sup> Concentrate

f. Application Rate: 0.5 oz/acre or as determined by entomologist

4. Maj (b) (6) will serve as the mission commander. Lt Col (b) (6) will be the aircraft commander. Required support at Homestead AFB, FL has been completed.

(b) (6)

Lt Col, USAFR



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

25 Aug 2014

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

**SUBJECT:** Concept of Operations for Aerial Spray in Virginia

1. Aerial spray deployment of one C-130 from 2-4 Sept 2014 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished while controlling populations of adult nuisance and disease carrying mosquitoes at Langley AFB, Craney Island Army Corps of Engineers, and York County. Aerial spraying performed off DoD installation property will be conducted IAW Innovative Readiness Training (IRT) Program criteria. This mission will also provide real-world training for aerial spray entomologists and maintenance personnel. Operations will be conducted out of Langley AFB, VA.

2. Concept of Operations (All times are local)

- a. 2 Sept (Tues)  
1200 Depart KYNG  
1315 Land KLFI  
1730 Depart KLFI  
1950 Land KLFI
- b. 3 Sept (Weds)  
1730 Depart KLFI  
1950 Land KLFI
- c. 4 Sept (Thurs)  
1130 Depart KLFI  
1245 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: minimum of 7500 acres; final acreage TBD
- b. Altitude: 150 ft for adulticide application
- c. Swath Width: 2000 ft
- d. Groundspeed: 200 Kts
- e. Chemical: Dibrom<sup>®</sup> Concentrate
- f. Application Rate: 0.5 oz/acre or as determined by entomologist

4. Maj (b) (6) will serve as the mission commander. Lt Col (b) (6) will be the aircraft commander. Required support at Langley AFB, VA has been completed.

//Signed//

(b) (6), Lt Col, USAFR  
Chief of Aerial Spray

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**PARRIS ISLAND MCRD, SC 31 March - 2 April 2014**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 31 Mar – 2 Apr 2014
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 1 Apr 2014
- e. Time/s of Application (Zulu): 2220 Takeoff
- f. Acres Treated: N/A: 6800
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) ,  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 1 Apr 2014
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): Maj (b) (6)  
LtCol Karl (b) (6) Maj (b) (6)
- k. Mission Identifier: QENRK3501090

**2. OPERATIONAL:**

- a. **Mission Commander:** Maj (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) , Maj (b) (6)
  - (2) Navigator: Lt Col (b) (6)
  - (3) Flight Engineer: MSgt (b) (6)
  - (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6) (trng), SSgt (b) (6)  
(b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: MSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6)  
(b) (6)
  - (2) Crew Chiefs: SSgt (b) (6) , SrA (b) (6)
  - (3) Avionics: SSgt (b) (6)
- d. **Entomologist:** Lt Col (b) (6) (b) (6) Maj (b) (6)
- e. **Flying Data:**
  - (1) Application Sorties/Hours: 1 / 1.8
  - (2) Training Sorties/Hours: 0
  - (3) Ferry Sorties/Hours: 2 / 3.9

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 40 Gallons
- e. Gallons Pesticide Applied: 40 Gallons
- f. Gallons and Name Diluent Used: N/A
- g. Gallons and Name of Flush Used: 5 gallons HAN
- h. Other Additives Used: None
- i. Application Rate: 2.8 Gallons per Minute (0.75 oz/acre per calculating 40 gal/6800 acres)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 90-9103
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: 8003
- e. Nozzle Orientation & Number Used: 15 Total; 7 left, 8 right
- f. Pressure: 40-52 PSI
- g. Flow Rate: 2.8 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 1000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 KTS

**6. WEATHER OBSERVATIONS:** Wind; 200 at 4.2 KTS (average) Ground observation.  
Temp; 70 degrees F. Humidity; 49 percent.

**7. SPRAY MONITORING:** Pre and post spray biting midge/mosquito collections were taken at 6 locations using light traps. Post mission collections demonstrated 75- 90% reduction in biting midge and mosquito populations at 4 of the 6 trap sites. During application, the treatment site was monitored on the ground. There was no evidence of adverse effects of application on non-target species.

**8. REMARKS:** Two eagles' nests on the island were active, and as usual a ½ mile no-spray/no-fly buffer was maintained around the nests (See attachment 1). All loaded pesticide was applied prior to completion of the mission resulting in 1.5 swaths being left untreated. Despite this, the spray appeared to be highly effective, significantly reducing nuisance pest populations which in turn improved the morale and productivity of base personnel.

//signed//

(b) (6) , Maj, USAFR  
**DoD PEST MANAGEMENT PROFESSIONAL**

(b) (6) (b) (6) Lt Col, USAFR  
**DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL**



**Attachment 1. Spray application of Parris Island 1 April 2014. Red circular objects indicate No-Fly zones for eagles' nests. Orange areas are pesticide dispersion swaths.**





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

8 June 2014

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Minot AFB and the Communities of Minot and Williston, ND

1. Aerial spray deployment of one C-130 to Minot, ND to train aerial spray aircrew, pest management personnel, and maintenance members in the control of nuisance and vector mosquitoes, with adulticide in order to improve working conditions and lower the risk of vector-borne illness to individuals working and living on Minot AFB and the communities of Minot and Williston, ND. Aerial spraying performed off DOD installation property will be conducted IAW Innovative Readiness Training (IRT) Program criteria. The closure of Minot AFB runway has compelled operations to be conducted out of Minot International Airport.

2. Concept of Operations (All times are local)

- a. 16 June (Monday)  
1100 Depart KYNG  
1330 Land KMOT
- b. 17-19 June (Tues-Thurs) Application area TBD by weather  
1930 Depart KMOT  
2100 Land KMOT
- c. 6 June (Friday)  
1230 Depart KMOT  
1630 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: MAFB (5169 acres); Minot (9032 acres); Williston (26500 acres)
- b. Altitude: 150 ft for adulticide application
- c. Swath Width: MAFB (1000ft); Minot and Williston (2000ft)
- d. Groundspeed: 200 KIAS

- e. Application Rate: MAFB & Minot (1.1 oz/acre Trumpet); Williston (.18oz/acre Permanone 30 +30)

4. Lt Col (b) (6) will serve as the Mission Commander. Maj (b) (6) will be the Aircraft Commander. Required support at Minot AFB, ND Army National Guard, and Minot International Airport has been completed.

\\SIGNED\\  
(b) (6), Lt Col, USAFR  
Chief of Aerial Spray



**910 AW AERIAL SPRAY UNIT**  
**PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**Mountain Home AFB, Saylor Creek Range, ID 15-26 Sep 2014**

**1. MISSION BASICS:**

- a. Installation Sprayed: Mountain Home AFB, Saylor Creek Range, ID
- b. Mission Duration: 15-26 Sep 2014
- c. Purpose of Application: Herbicide application to control cheat grass to suppress range fires and promote native flora.
- d. Application Date(s) and time(s) (Local): see attachment 1.
- e. Acres Treated: 2,929
- f. Flying Data:
  - (1) Spray Sorties/Hours: 11 sorties + 1 flush sortie; 10.2 hours total
  - (2) Ferry Sorties/Hours:
    - (a) Spray aircraft 99108: 2 ferries; 11.9 hours
    - (b) Support aircraft 4 ferries; 22.4 hours
- g. Project Coordinator (Name/Rank/Title/Phone #): (b) (6), Natural Resource Manager, (b) (6)
- h. Date Spray Map Last Approved: 25 Aug 2014, delivered via email from Mr. (b) (6)
- i. Installation In-Briefing: (When/Where/Briefer/s): 12 Sep 14, via telephone, Mr. (b) (6) and Lt Col (b) (6) /Lt Col (b) (6) (b) (6)
- j. Mission identifier: QENRK3531258

**2. OPERATIONAL:**

- a. **Aircrew:**
  - 1) Mission Commander: Lt Col (b) (6) (15-19), Lt Col (b) (6) (21-26)
  - 2) Pilots: Lt Col (b) (6) Maj (b) (6) (15-19), Maj (b) (6) (21-26)
  - 3) Navigator: Maj (b) (6)
  - 4) Flight Engineer: SMSgt (b) (6) rkins)
  - 5) Spray Operators: CMSgt (b) (6) (15-22), MSgt (b) (6), MSgt (b) (6), MSgt (b) (6) (15-19), MSgt (b) (6) (21-26)
- b. **Maintenance:**
  - 1) Spray MX: SMSgt (b) (6), MSgt (b) (6), TSgt (b) (6) (Lead), TSgt (b) (6), TSgt (b) (6)
  - 2) Crew Chief: MSgt (b) (6), A1C (b) (6)
  - 3) Hyd/Prop/EE/Avi/Com: MSgt (b) (6), MSgt (b) (6), MSgt (b) (6), SrA (b) (6), SrA (b) (6)
- c. **Entomologists:**, Lt Col (b) (6) (b) (6) (15-20), Lt Col (b) (6) (b) (6) (21-26), Maj (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Plateau®
- b. EPA Registration Number: 241-365 (Plateau)
- c. Formulation Sprayed: Liquid herbicide with active ingredient (AI) = ammonium salt of imazapic (Plateau 23.6% AI)
- d. Gallons Pesticide Loaded: See attachment 1
- e. Gallons Pesticide Applied: See attachment 1
- f. Gallons and Name Diluent Used: See attachment 1
- g. Gallons and Name of Flush Used: 200 gal (18 Sep) + 2,000 gal (25 Sep)
- h. Other Additives Used: 25.5 gallons of Control® (14-20 Sep), 30 gallons of Control® (21-25)

- i. Sep); 0.69 gal of Prevent; 4 gal of Remove  
Application Rate: 7 gal/acre finished spray (4 oz/acre Plateau®)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): C-130H2 (89-9108)
- b. Spray System (Modules Used) and System ID #: SP-3G
- c. Spray System Configuration: fuselage booms
- d. Nozzle Type/Size: Raindrop nozzles
- e. Nozzle Orientation & Number Used: Fuselage; Straight Back; 18 total
- f. Pressure: 50 psi
- g. Flow Rate: 326 gpm

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 100 Ft
- b. Spray Offset: weather dependent. No offset when flown into the wind.
- c. Spray Release Altitude: 100 Ft AGL
- d. Ground Speed: 200 knots

**6. WEATHER OBSERVATIONS: See Attachment 3.**

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Visual observation from PMP on range; water sensitive cards used on range confirmed 100 ft swath on 18 Sep
  - (2) Results: See remarks
- b. Effectiveness:
  - (1) Technique/s Used: Vegetation measurements, visual observations
  - (2) Results: Will be determined in the spring of 2015

**8. REMARKS:**

Plateau treatments on the Saylor Creek Range continue to be highly successful in the promotion of a diverse native plant community and in the reduction of cheat grass. An independent assessment of this management strategy was completed in spring of 2013 and the findings were favorable. In short, average cheat grass cover in areas sprayed was lower than in areas unsprayed, even if those sprays had been in previous years. The report recommended continued control of cheat grass to reduce fire frequency. A local assessment of this application's efficacy will be completed in spring 2015.

The Aerial Spray Unit participated in Mountain Home AFB's Gunfighter Skies Airshow (20-21 Sept), providing a static display while the airfield was closed. This was a good opportunity for community outreach and to discuss our mission. Nearly everyone that spoke with Spray Unit personnel was aware of the fire danger associated with cheat grass, underscoring the importance of these types of applications. MUO Airfield operations, Fire department, POL, RAPCON, and TA support was outstanding during the entire mission.

//Signed//

**(b) (6)**, Maj, USAFR  
DoD Certified Pest Management Professional

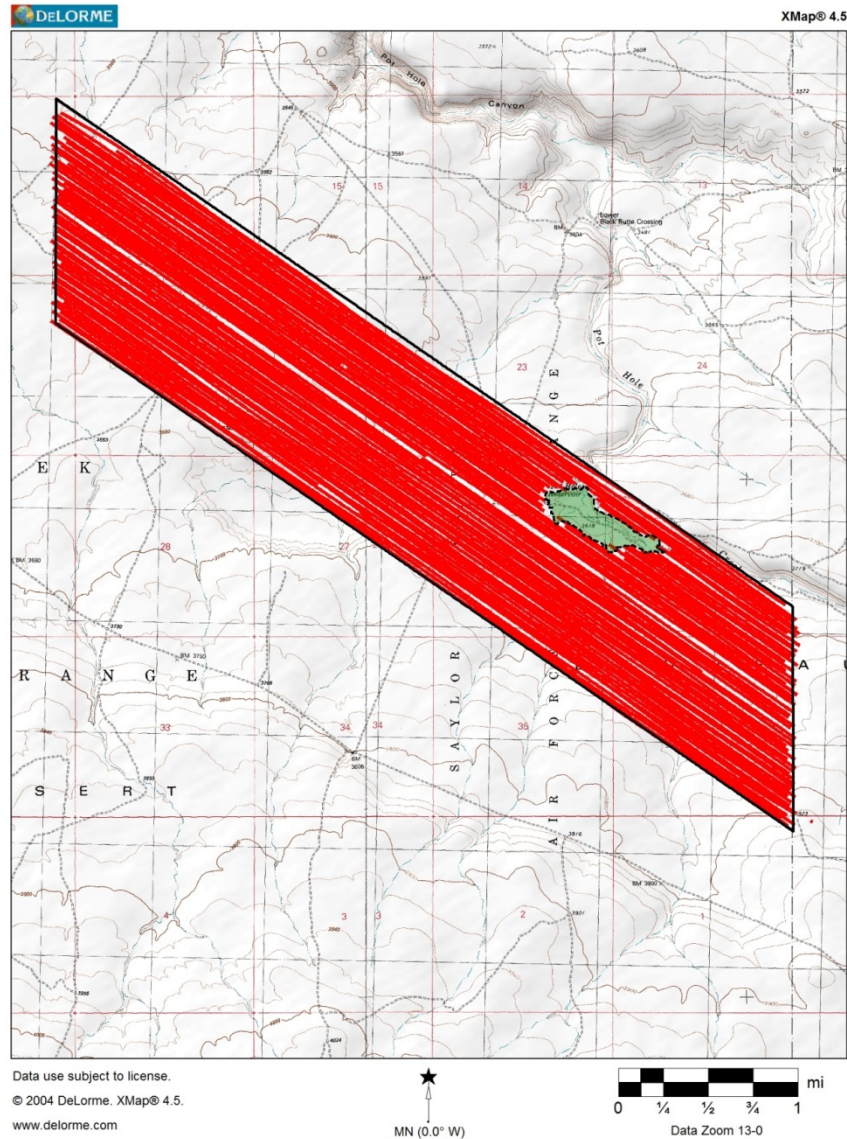
**Attachment 1. Summary Spray Chart**

**SPRAY OPERATIONS SUMMARY FOR SAYLOR CREEK RANGE  
16-25 September 2014**

<b>DATE Sep</b>	<b>SORTIE #</b>	<b>TIME OF APPLICATION</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>GALLONS OF PESTICIDE LOADED/ SPRAYED</b>		<b>FLYING HOURS</b>
16	1	0810-0910	275	1740	8.3	8.3	1.0
17	2	0730-0812	270	1793	8.0	8.0	0.7
17	3	0855-0948	256	1775	8.0	8.0	0.9
18	4	0735-0815	280	1856	8.5	8.5	0.7
18	5	0920-1020	294	1810	8.3	8.3	1.0
22	6	0955-1045	256	1811	8.5	8.5	0.8
22	7	1310-1356	254	1789	8.5	8.5	0.8
23	8	0740-0830	264	1822	8.5	8.5	0.8
23	9	0930-1020	257	1807	8.5	8.5	0.8
25	10	0730-0840	263	1800	8.5	8.5	0.8
25	11	0905-1010	260	1790	8.5	8.5	1.1
25	Flush	1035-1125	-	1,800	-	-	0.8
Totals			2,929	19,793 <sup>1</sup>	92.1	92.1	10.2

<sup>1</sup>Does not include flush water (see 3.g.)

**Attachment 2. Map of application on Saylor Creek Range, ID 16-25 September 2014. The black line outlines the spray block; red lines are individual application swaths\*. The chartreuse section of the map is an area that can hold water following heavy rains and was a “no spray” area.**



\*On 22 Sept 2014, spray was offset by one swath width due to wind conditions. This is reflected on the map by the white line through the center of the spray block. Visual confirmation from the entomologist observing from the target verified that this swath was appropriately treated.



**Attachment 3. Environmental conditions during Saylor Creek Plateau application September 2014.**

<b>DATE</b>	<b>Sortie</b>	<b>Temp F</b>	<b>Relative Humidity</b>	<b>Wind Dir at aircraft</b>	<b>Wind Speed at aircraft (knts)</b>	<b>Wind Dir on ground</b>	<b>Wind Speed on ground</b>	<b>Conditions</b>
16 Sep	1	71	29%	260	2	240	3 mph	Clear
17 Sep	2	65-70	37-40%	162	6	135	6 mph	Cloudy
	3	70	31-37%	028-067	2	130	1.5 mph	Cloudy
18 Sep	4	67	41%	322	16	270	2-6 mph	Clouds/haze
	5	73	33%	275	10	240-270	5 mph	Clouds/haze
22 Sep	6	63 F	70%	200	4	205	3.5 mph	Partly cloudy
	7	75 F	46%	035	3	040	1 mph	Partly cloudy
23 Sep	8	52 F	76%	120	3	120	5 mph	Partly cloudy
	9	60 F	62%	100	5	130	5.3 mph	Partly cloudy
25 Sep	10	51F	30%	230	4	180	5 mph	Partly cloudy
	11	72 F	30%	070	4	200	1 mph	Partly cloudy

## **After Mission Report Smoky Hill ANG Range**

Before leaving YARS training for the Salina spray trip started with myself SrA (b) (6) and TSgt (b) (6). With this being my first trip as a lead we started by going over all pre-mission preparation and procedures. After arriving to Salina the spray maintenance personnel and I configured the spray plane and set up for the following 2 weeks. After configuring the plane I then obtained contact information with the mission commander, the lead entomologist and all appropriate maintenance personnel. Throughout the trip I was trained on 3 module loading procedures to include, running the control panel, loading chemical and water. During the trip myself and TSgt (b) (6) were also trained on uploading chemical with engines running between sorties. Along with loading procedures we were also trained on cold weather procedures for handling of the spray system. Overall the trip ran very smooth other than days lost to inclement weather.

SrA (b) (6)



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

21 Apr 2014

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Parris Island MCRD, SC and and Kings Bay NSB, GA.

1. Aerial spray deployment to Beaufort MCAS, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities while creating health hazards to recruits at Parris Island MCRD and personnel at and Kings Bay NSB, GA.

2. Concept of Operations:

- a. 5 May (Monday)  
1700 Depart KYNG  
1800 Land KNBC
- b. 6 May (Tuesday)  
1300 Installation Brief  
1900 Depart KNBC  
Spray Parris Island MCRD  
2015 Land KNBC
- c. 7 May (Wednesday)  
1830 Depart KNBC  
Spray Kings Bay NSB  
2045 Land KNBC
- d. 8 May (Thursday) WX back up  
1830 -1900 Depart KNBC (As required)  
2015-2045 Land KNBC (As required)
- e. 9 May (Friday)  
1100 Depart KNBC  
1300 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Lt Col (b) (6) will serve as the Mission Commander. Lt Col (b) (6) will be the Aircraft Commander. Support at Parris Island MCRD, Kings Bay NSB, and Beaufort MCAS has been completed.

\\SIGNED\\

(b) (6), Lt Col, USAFR  
Chief of Aerial Spray



DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

18 Mar 2014

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Parris Island MCRD, SC

1. Aerial spray deployment to Beaufort MCAS, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at Parris Island MCRD.

2. Concept of Operations:

- a. 31 March (Monday)  
1600 Depart KYNG  
1800 Land KNBC
- b. 1 April (Tuesday)  
1300 Installation Brief  
1900 Depart KNBC  
2015 Land KNBC
- c. 2 April (Wednesday) WX backup  
1900 Depart KNBC  
2015 Land KNBC
- d. 3 April (Thursday)  
1200 Depart KNBC  
1230 Land KYNG

3. Maj (b) (6) will be the Mission Commander. Lt Col (b) (6) will be the Aircraft Commander. Support at Parris Island MCRD and Beaufort MCAS has been completed.

(b) (6) Lt Col, USAFR  
Aerial Spray Navigator

## Items to pack for Trip

Tape measure/Flip chart/

Camera/Tripod/etc.

Coolers/Water/Snacks/etc.

Radios

Gloves

Trash bags





## **OVERVIEW**

Two days of trials at Camp Blanding utilizing two sites. Two nozzle sizes will be tested (8001's on Tuesday) and (8005's or 8008's on Wednesday).

The sum of these trials will NOT exceed the labeled amount of product applied on either day.



## **DETAILS**

### **MONDAY October 28<sup>th</sup>**

Groups from USDA, NECE (?) Manatee Mosquito Control District, and AMVAC will meet at the Mout gate at 10:00 am.

Set up of the site and a run-through will be discussed with the group as to assignments, timetables etc.

Weather evaluation and predicted flight path discussed

- Weather station and survey tape installed at top of Holiday Hotel building at the Mout Site
- Team assignments:
  - Clean group
  - Collection group etc
- Spinner and Sentinel cage locations identified-
  - Village, approach and surrounding area
  - Mosque, approach and surrounding area
- Sentinel cage challenges identified
  - Inside open bldg
  - Inside closed bldg
  - Inside+cover, challenges etc.

Stands for sentinel cages and spinners will be placed accordingly. The goal will be to have enough stands to pre-mount the stands for spinners and cages at both the Mout and the Mosque sites prior to the trial so that ONLY the spinners and cages will have to be moved.

(b) (6)            comments-

I am having 60+ "indoor bases" for the spinners made up... these are simple 12" x 12" square plywood with 1/2" PVC pipe end caps screwed to the middle... the spinners will be mounted by means of PVC couplers (and PVC pipe lengths depending on spinner height requirement)... Does USDA intend to hang/co-locate cages with spinner stands (by means of a PVC crossbar with hooks that I will bring) or have them ALL hung/affixed/hidden separately?

By having this number of "indoor bases" we can choose locations/set them up at BOTH sites on Monday and leave them in place for the duration of the trial (only the spinner bodies will need moving between sites).

This leaves us with the 20 concrete block bases to use outside.(as permanent outdoor bases)

Background trap locations established and set by USDA

## MONDAY AFTERNOON

- (b) (6) , (b) (6) , (b) (6) and (b) (6) meet to discuss final instructions with questions/issues for meeting with (b) (6) (b) (6) later that evening.
- (b) (6) and (b) (6) (and anyone else with an interest) visit (b) (6) (b) (6) at JAX to discuss application details, review questions etc.

## TUESDAY AM

- (b) (6) travels to the Mout Site and joins /USDA/NECE to hang cages and place sentinels and spinners
- P. Connelly attends loading at JAX
  - Pull and inspect the upload filter
  - Flush the application tank with HAN (or preferred flush agent)
  - Pull and recheck the filter
  - Upload Dibrom
  - Pull and recheck upload filter

Given the config of the plumbing (forgive me I may need a refresher) steps 2 and 3 may not be necessary.

## **MOUT Application**

- USAF on inbound approach signals group of timetable.
- Spinners are turned on by means of WALKING to limit disturbance of dust and debris that will/could dirty slides.
- USAF applies at Mout Village site and holds or returns to JAX.
- No traffic in or out of Mout site for 1 hour post application
- NOTE: There may be an additional building set up if USDA wants to remove spinners and or cages sooner than the 1 hour post application wait time. This could easily be done on the periphery of the Mout Village, the Mosque site, or both.
- Spinners are collected, categorized and placed in the holding boxes by walking retrieval. Notation of 1 hour post application counts are made at time of collection

## **MOSQUE Application**

- Spinners are moved to Mosque site and fresh mosquitos are hung.
- Spinners at Mosque Site are turned on
- USAF applies at Mosque site
- USAF returns to JAX
  
- Cages and spinners are untouched for one hour
  
- Spinners, cages etc. collected from Mosque site by walking retrieval
- Notation of 1 hour post application counts are made at time of collection
  
  
- USDA/NECE handles the mosquito transport, set up and evaluation
- Mark Latham and P. Connelly (and any other interested parties) read the drops through DropVision program on site.
  
- 12 hour mortality counts taken

### **WEDNESDAY AM**

- Repeat Tuesday schedule with new nozzle configuration.

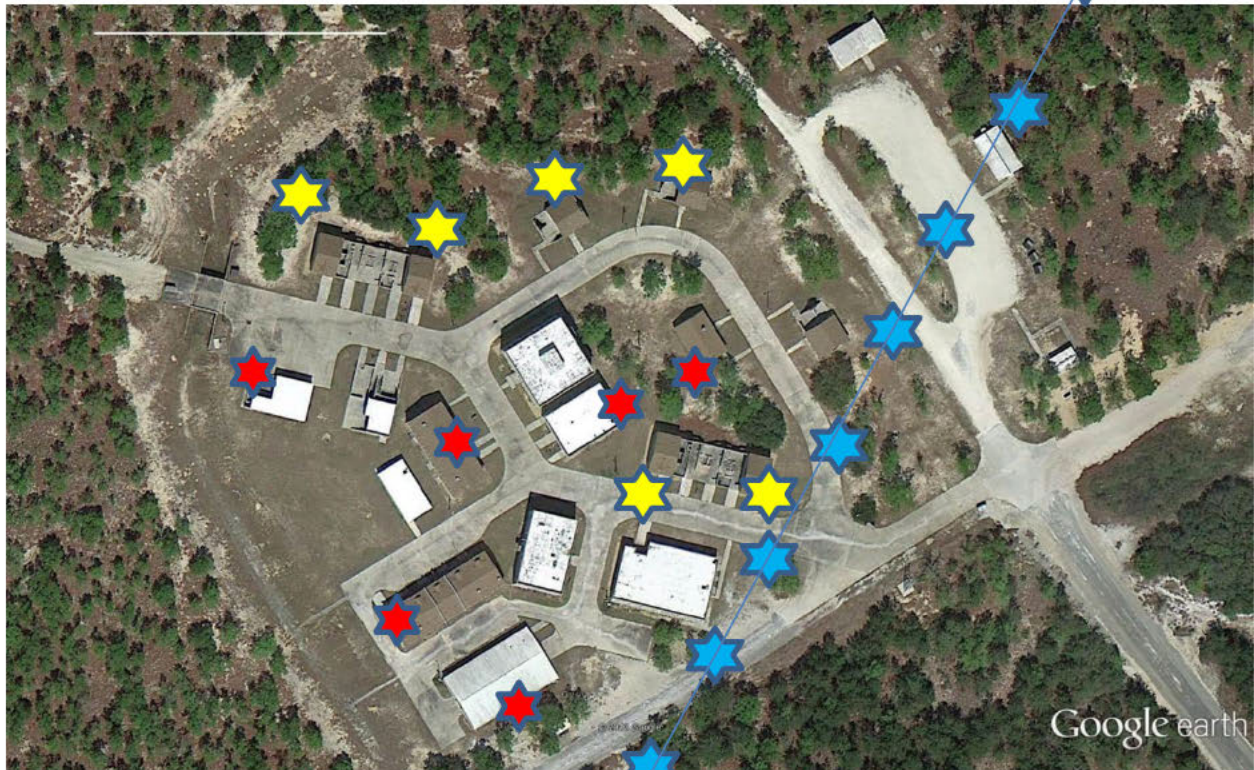
### **WEDNESDAY AFTERNOON or THURSDAY MORNING**

- Clean up as required

Blanding project ends...Reading continues at CMAVE

Open Bldg Indoor and outdoor placements (1 outside and 1 inside ..Total 2 each)

MOUT South (Approx. 5.75 acres)



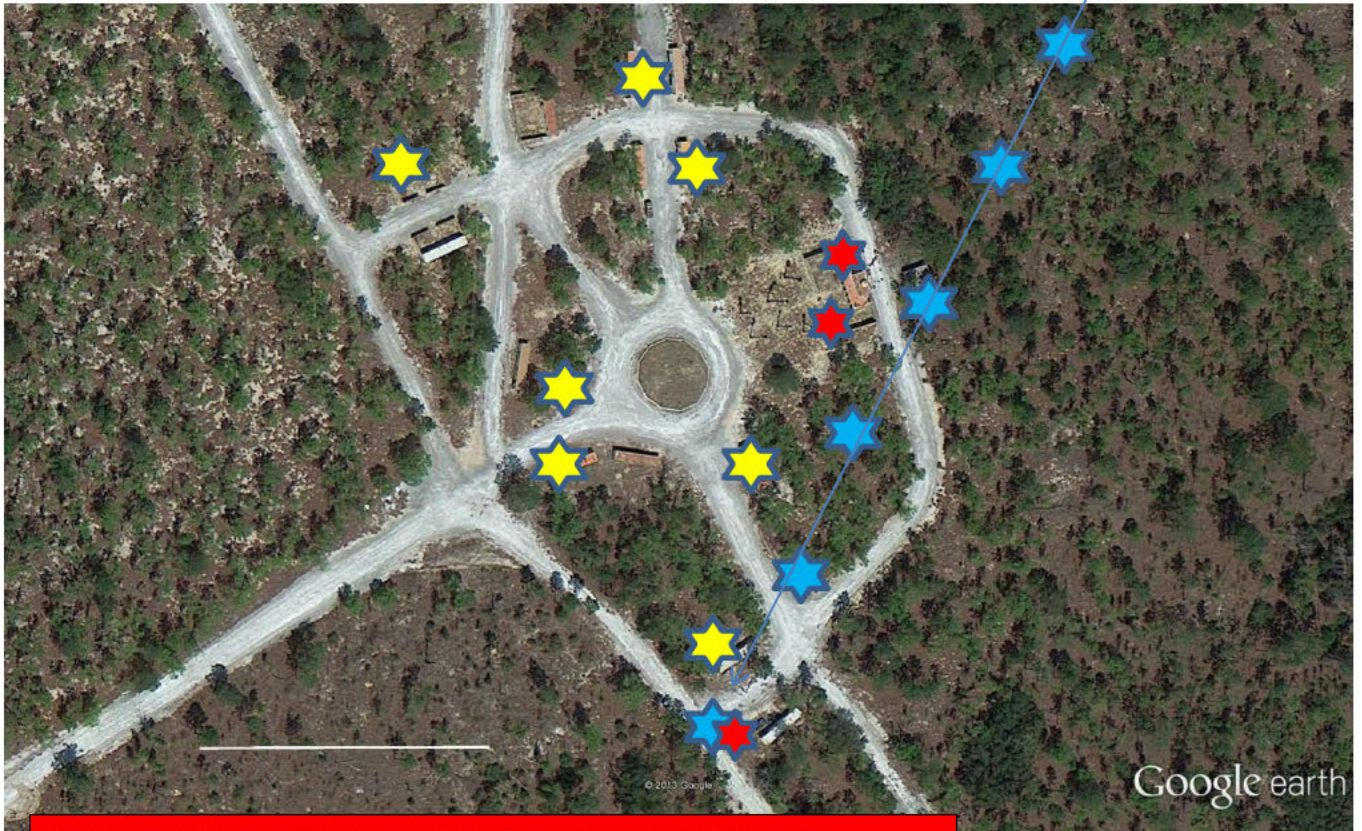
Closed Bldg. indoor and outdoor placements (1 outside one inside total of 2 each)

Pependicular to flight path (example assumes a north wind)



## Mosque Site

Open Bldg Indoor and Outdoor Placements (2 each)



Closed Bldg. Indoor and Outdoor Placements (2 each)

Pependicular to flight path (example assumes a north wind)

## OUTDOOR Spinner/Cage Stand



*Teflon coated 3 MM slides. The coated end must face into the wind.*

### *Do's and Don'ts*

*Don't touch the slide unless you have been instructed on removal*

*Do carefully document the location of the slide before placing it in the box.*

## Slide Spinner





*This spinner and Mosquitoes should be placed behind this indoor table*

Open Bldg Indoor Placements



*This sequestered site would be a good spot for the outdoor placement*

Outdoor Placements Open



## Indoor Placements Closed Bldg



*Pick a corner of the room AWAY  
from the openings*



*This interior hallway would be an  
excellent spot*

Additional Challenges (input from (b) (6) and (b) (6) needed here)

Boxed

Cabinets

Closet

Basement

**AERIAL SPRAY OPERATIONAL SCHEDULE**  
**NAS JACKSONVILLE, FL**  
**28 Oct - 1 Nov 2013**  
**QENRK3501301**

**a. OBJECTIVE/PURPOSE AND BENEFIT:** Provide an aerial spray platform for USDA to evaluate the control of *Aedes aegypti* inside two distinct urban settings (North American and Middle Eastern). The trials will be conducted at Camp Blanding, FL, an Army National Guard facility located near Jacksonville, FL.

**1. 910 AW PARTICIPANTS:**

**b. Aircrew:**

1. Pilots: Maj (b) (6) , Lt Col (b) (6)
2. Navigators: Lt Col (b) (6)(b) (6)
3. Flight Engineers: TSgt (b) (6)
4. Spray Operators: MSgt (b) (6) , SSgt (b) (6)
5. Mission Commander: Maj (b) (6)

**b. Maintenance:**

1. Spray Maintenance: MSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6)  
(b) (6) SSgt (b) (6)
2. Crew Chiefs: MSgt (b) (6)
3. Avionics: SMS (b) (6)

**c. Entomologist:** Lt Col (b) (6) (b) (6) Maj (b) (6) (in place)

**2. PPR: 1028-01**

**3. PLANNED SEQUENCE OF EVENTS:** (All times local) Scheduled times may vary depending upon weather, and needs of the USDA test directors and entomologist.

**28 Oct Monday**

0900 Show  
1100 Depart KYNG  
1415 Land KNIP

**29-30 Oct Tuesday - Wed Range located in R-2903A Range Time 0730-1600**

0800 Show  
1000 Depart KNIP  
1200 Land KNIP  
1330 Depart KNIP

1530 Land KNIP

**31 Oct Thursday**

This day is for sample analysis, test equipment cleaning, and aircrew training. We do not currently have range times scheduled for this day. A local flight training event is anticipated.

**1 Nov Friday**

0930 Show

1130 Depart KNIP

1400 Land KYNG

**4. SPRAY CONFIGURATION: Please note that the spray configuration and parameters are subject to change as we test different methods to best deliver the pesticide.**

- a. **Mass:** 2-Module System SP-2G
- b. **Booms:** Stainless Steel ULV Fuselage Booms
- c. **Nozzles:** 8001's, 8003,8005's.
- d. **Differential GPS:** Wingman Installed
- e. **Aircraft:** 89-9104
- f. **Mission Identifier:** QENRK3501301

**5. SPRAY PARAMETERS:**

- a. Pesticide:
  - Dibrom (Naled)
  - Organophosphate Insecticide
  - Signal Word: Danger
  - Flushing Agent: HAN
- b. Application: 1.0 oz/acre
- c. Spray Altitude: 100-150 Feet
- d. Swath Width: 500-1,000 Feet
- e. Ground Speed: 200 Knots (338 Feet/Second)
- f. Acreage: single pass sprays
- g. Spray-On Time: approx 30 sec passes
- h. Flow Rate: 1.8-3.6 gallons/minute

**5. AIR TO GROUND RADIO FREQUENCIES:**

Navy Jax Ops	310.2	137.775	Tower	120.0	360.2
Ground	128.6	336.4	ATIS	281.0	
PMSV	343.5				

**6. Transportation:**

Enterprise Car Rental: 904-772-7007 Fax: 904-269-5573

4 Full Size Car (b) (6) (b) (6) (b) (6) (b) (6) \$49.01/day and 1 compact  
(b) (6) 45/day

**7. Quarters:**

Navy Gateway Inns & Suites Jax Contact is (b) (6) (904)-542-3427/ DSN: 942-3138/3139

**Confirmation #82612053**

**8. CONTACTS:**

**a. Naval Air Station Jacksonville, FL (NAS JAX)**

1. For requesting PPR: DSN 942-2511 (904)542-2511
2. Transient line office: DSN 942-3843
3. Weather, Naval Aviation Forecast Center: DSN 564-2594/Comm (757) 444-2594
4. Tower: DSN 942-2516

**b. Camp Blanding, FL**

1. Camp Blanding Joint Training Center, Range Control  
SFC Stinson (904) 682-3824 Maj (b) (6)  
Range Operations: (904) 682-3121

**c. Youngstown ARS, OH: DSN: 346-XXXX; COM (330) 609-XXXX**

Toll Free 1 - 800 - 278 - 7046,+2 + Ext

1. 910 AW/CC: Col (b) (6)
2. 910 AW Command Post: Ext 1315; FAX 1161
3. 910 AW/PA: Maj (b) (6) ; FAX 1022
4. 910 OG/CC: Col (b) (6)
5. 910 OG: Airfield Manager, Ext 1186/1526
6. 757 AS/DO: Maj (b) (6)
7. 910 AW Supervisor of Flight Desk (SOF): 1069; FAX 1371
8. 757 AS/DOO: Ops Admin: SMSgt (b) (6) ; FAX 1657
9. 757 AS/DOS: Aerial Spray Office, Maj (b) (6)(b) (6) (b) (6) FAX 1616
10. 910 LG/CC: Ext 1225
11. 910 LG/LGM: Ext 1352
12. Maintenance Control: Ext 1327
13. 910 LG/LGMS: Spray Maintenance, SMSgt (b) (6)
14. Omega/SATO Travel: Ext 1772; 1-800-285-6342



DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

21 April 2014

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Parris Island MCRD, SC and Kings Bay NSB, GA.

1. Aerial spray deployment to Beaufort MCAS, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities while creating health hazards to recruits at Parris Island MCRD and personnel at Kings Bay NSB, GA.

2. Concept of Operations: Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

- a. 5 May (Monday)  
1700 Depart KYNG  
1800 Land KNBC
- b. 6 May (Tuesday)  
1300 Installation Brief  
1900 Depart KNBC  
Spray Parris Island MCRD  
2015 Land KNBC
- c. 7 May (Wednesday)  
1830 Depart KNBC  
Spray Kings Bay NSB  
2045 Land KNBC
- d. 8 May (Thursday) Weather back up  
1830 – 1900 Depart KNBC (As required)  
2015 – 2045 Land KNBC (As required)
- e. 9 May (Friday)  
1100 Depart KNBC



1300 Land KYNG

3. Lt Col (b) (6) will serve as the Mission Commander. Lt Col (b) (6) will be the Aircraft Commander. Support at Parris Island MCRD, Kings Bay NSB, and Beaufort MCAS has been completed.

(b) (6)

Lt Col, USAFR

910 Air Wing  
Aerial Spray Maintenance  
Post-Mission Report

AIRCRAFT   
MASS  CONFIGURATION   
BOOM USED  BOOM NO 771 F   
MISSION COMMANDER: LT col (b) (6) LT col (b) (6)  
FLIGHT ENGINEER: SMSGT (b) (6)  
SPRAY OPERATORS: (b) (6)  
SPRAY MAINTENANCE: (b) (6) Lead (b) (6) (Pro Sup) (b) (6)  
Robitaille  
ENTOMOLOGIST: Maj (b) (6) LTC (b) (6) LTC (b) (6)  
AVIONICS: [Click here to enter text.](#)  
CREW CHIEFS: (b) (6)  
OTHERS: MX Package, (b) (6) NAV:  
Gassman, Pilots (b) (6) Admin Support, (b) (6)

MISSION DATA

MISSION DATES: 9/15/2014 TO 9/26/2014

LOCATION: Grand Forks AFB

AIRCRAFT PARKING:

MISSION TYPE:

CHEMICAL USED IN: MAIN TANKS: Plateau, Control AMS, Prevent  
FLUSH TANK: H2O & Remove

CHEMICAL LOADS

TOTAL CHEMICAL LOADS:  TOTAL FLUSH LOADS:   
TOTAL CHEMICAL LOADED FOR THIS MISSION: 72 GAL  
TOTAL FLUSH AGENT LOADED FOR THIS MISSION: 18 GAL

WEATHER DATA

AVERAGE DAILY TEMPERATURE WAS: 89 F

DID WEATHER IMPACT THE MISSION:

## SPILL DATA

DID A CHEMICAL SPILL OCCUR:

AMOUNT OF CHEMICAL SPILLED:  GAL

LOCATION OF SPILL:

INSIDE AIRCRAFT:

OUTSIDE AIRCRAFT:

CONTAINED ON MASS MODULE:

REASON FOR SPILL:

## WASTE

LIST THE AMOUNT OF WASTE GENERATED AND TURNED OVER TO SITE  
COORDINATOR

LIQUID: 0 GAL      SOLID: 5 LBS

## ADDITIONAL MISSION COMMENTS

See attached

IS AN AIRCRAFT RINSE REQUIRED :

SIGNATURE

AERIAL SPRAY MAINTENANCE LEAD

QUALITY ASSURANCE:

(b) (6) (b) (6) (b) (6) =



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

7 May 2014

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations of Larvacide Operations for Aerial Spray at Grand Forks AFB, ND and Army Corps of Engineers' property near Williston, ND.

1. Aerial spray deployment of one C130 to Minot, ND from 27 May-6 June 2014 for the requested larvacide spray on Grand Forks AFB, ND and the Army Corps of Engineers' property near Williston, ND. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel working on Grand Forks AFB, the Army Corps property, and by extension, the citizens of Williston. The combination of the closure of Minot AFB runway and no other suitable airfield in the vicinity of the Army Corps property drove operations to be conducted out of Minot International Airport. Mission objectives provide training for aerial spray aircrew, entomologists, and maintenance personnel in all aspects of the aerial spray mission including working with non-DOD assets which could be required during an emergency spray.

2. Concept of Operations:

- a. 27 May (Monday)
  - 1000 Depart KYNG (O/B support aircraft)
  - 1015 Depart KYNG (spray aircraft)
  - 1230 Land KMOT (O/B support aircraft)
  - 1245 Land KMOT
  - 1300 Depart KMOT (O/B support aircraft)
  - 1730 Land KYNG (O/B support aircraft)
- b. 28 May-05 June (Weds- Thurs)
  - 0600 Show KMOT
  - 0730 Depart KMOT
  - Multiple 1.5 hr sorties each day depending on weather
- c. 6 June (Friday)
  - 1000 Depart KYNG (O/B support aircraft)
  - 1030 Depart KMOT (spray aircraft)
  - 1230 Land KMOT (O/B support aircraft)
  - 1330 Depart KMOT (O/B support aircraft)
  - 1500 Land KYNG (spray aircraft)

1800 Land KYNG (O/B support aircraft)

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: approx 1600 acres (GFAFB) 6800 acres (Army Corps)
- b. Altitude: 100 ft for larvaicide application
- c. Swath Width: 200 ft
- d. Groundspeed: 200 KIAS
- e. Flow Rate: 186 gals/min
- f. Application Rate: 2 gal/acre water with 0.75 oz of Altosid® (GFAFB); 5 gal/acre water with VectoBac (Army Corps)

4. Lt Col (b) (6) will serve as the Mission Commander. Lt Col (b) (6) will be the Aircraft Commander. Support required at Minot AFB, Grand Forks AFB, the Army Corps of Engineers, and Minot International Airport has been completed.

\\SIGNED\\

(b) (6), Lt Col, USAFR  
Chief of Aerial Spray

**910 AW AERIAL SPRAY UNIT  
CERTIFIED PEST MANAGEMENT PROFESSIONAL'S  
POST-MISSION REPORT (replaces AFRC Form 55)  
LANGLEY AFB, VA 3-6 AUGUST 2015**

**1. MISSION BASICS:**

- a. Installation Sprayed: Langley AFB, VA; Craney Island Army Corps of Engineers, Portsmouth, VA
- b. Mission Duration: 3-6 August 2015
- c. Purpose of Application: Control vector and nuisance control of mosquitoes
- d. Application Date: 5 August 2015
- e. Times of Application: 1811-2000 local
- f. Acres Treated: 11,060
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6), Environmental/Spray Coordinator, (b) (6)
- h. Date Spray Map Last Approved: 4 August 2015
- i. Date of Waste Generation acceptance: 4 April 1996
- j. Installation In-Briefing: Lt Col (b) (6), Lt Col (b) (6), Lt Col (b) (6) Maj (b) (6) Maj (b) (6) and CE staff @ 1500 hrs on 4 August 2015
- k. Mission Identifier: QENRK3531215

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Maj (b) (6), Maj (b) (6)
  - (2) Navigator: Lt Col (b) (6)
  - (3) Flight Engineer: SSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6), MSgt (b) (6), MSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: SSgt (b) (6) (Lead), TSgt (b) (6), TSgt (b) (6), TSgt (b) (6) SrA (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6) SSgt (b) (6)
  - (3) Avionics: TSgt (b) (6)
- d. **Entomologists:** Lt Col (b) (6), Maj (b) (6)
- e. **Flying Data:**
  - (1) Spray Sorties/Hours: 1/2.0
  - (2) Ferry Sorties/Hours: 2/2.8

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 90 gallons
- d. Gallons Pesticide Applied: 90 gallons
- e. Gallons and Name Diluent Used: N/A
- f. Gallons and Name of Flush Used: 6 gallons aromatic naptha
- g. Other Additives Used: None
- h. Application Rate: 1.04 oz/acre

**APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99105
- b. Spray System (Modules Used) and System ID #: MASS 4



- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: 8003
- e. Nozzle Orientation & Number Used: 22 Total; 11 left, 11 right
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 5.1 gallons/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1500'
- b. Spray Off-set: 1500'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 KTS

**6. WEATHER OBSERVATIONS:** Wind: 300° at 5.2 knots (average) ground observation.  
Temp: 88 degrees F, Humidity: 69 percent.

7. **SPRAY MONITORING:** Pre- and post-spray mosquito collections were taken at 6 locations at Langley AFB using CO2-baited CDC mosquito traps. Pre-spray collections were taken on 21 July, 23 July, and 4 August. Post-spray collections were taken on 6 August and 11 August. Similar collections were taken at Craney Island Army Corps of Engineers using both CO2-baited CDC traps and BG traps baited with CO2 and with BG lures.

**Langley AFB:**

Trap 1: Horse Stable	Average 0 females (Pre-Spray); 0 females (Post-Spray) No reduction
Trap 2: B-52	Average 115 females (Pre-Spray); 10 females (Post-Spray) 91.3% reduction
Trap 3: Pest Shop	Average 46.3 females (Pre-Spray); 47.5 females (Post-Spray) No reduction
Trap 4: WSA	Average 282.3 females (Pre-Spray); 22 females (Post-Spray) 92.2% reduction
Trap 5: WSA 2	Average 126 females (Pre-Spray); 0 females (Post-Spray) 100% reduction
Trap 6: Bethel Fam Camp	Average 0 females (Pre-Spray); 0 females (Post-Spray) No reduction

**Craney Island Army Corps of Engineers:**

Trap 1: Morro	29 females (Pre-Spray); 38 females (Post-Spray) No reduction
Trap 2: Morro BG	26 females (Pre-Spray); 8 females (Post-Spray) 69.2% reduction
Trap 3: CHS	6 females (Pre-Spray); 8 females (Post-Spray) No reduction
Trap 4: Flagship	3 females (Pre-Spray); 0 females (Post-Spray) 100% reduction
Trap 5: Landfill	243 females (Pre-Spray); 18 females (Post-Spray) 92.6% reduction
Trap 6: Bishop's Green	5 females (Pre-Spray); 2 females (Post-Spray) 60.0% reduction

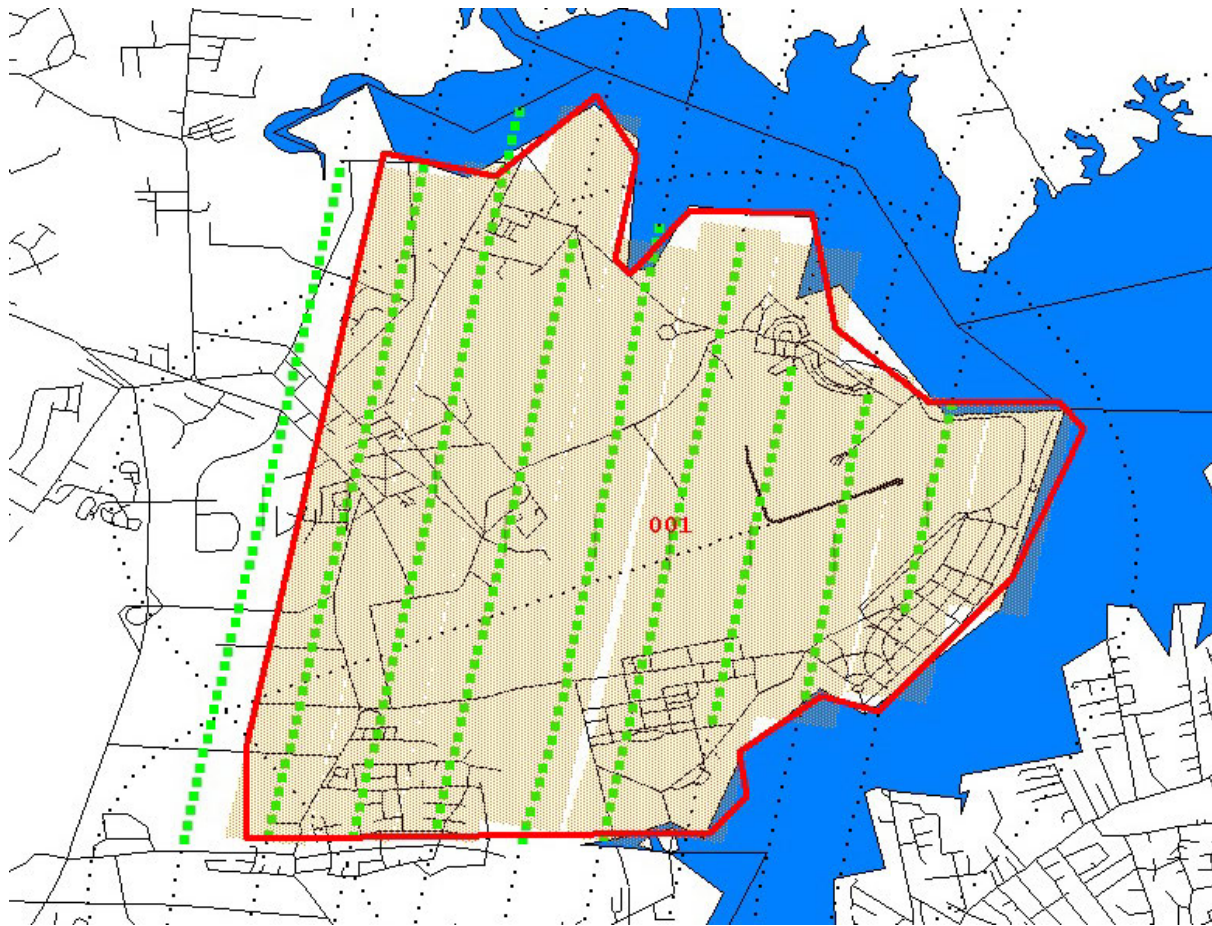
8. **REMARKS:** This mosquito adulticide application at Langley AFB and Craney Island Army Corps of Engineers was intended to reduce nuisance and vector mosquito species. System calibration was conducted on the ground prior to application. No significant problems were encountered during this application, and results appear to be excellent, particularly in the areas of the B-52, WSA, and WSA 2 traps at Langley AFB and at the landfill location at Craney Island, which is located next to the dredge spoil area. It is of note that larviciding of the dredge spoil area is currently underway to provide additional and integrated control of the mosquito population. Larvicide application, in conjunction with this recent aerial spray application, is expected to significantly reduce mosquito numbers in the near future. We appreciate the support we received from ALL sections at Langley AFB and Craney Island Army Corps of Engineers, with special thanks going to (b) (6) and (b) (6) for their thorough coordination at all levels.

//signed//

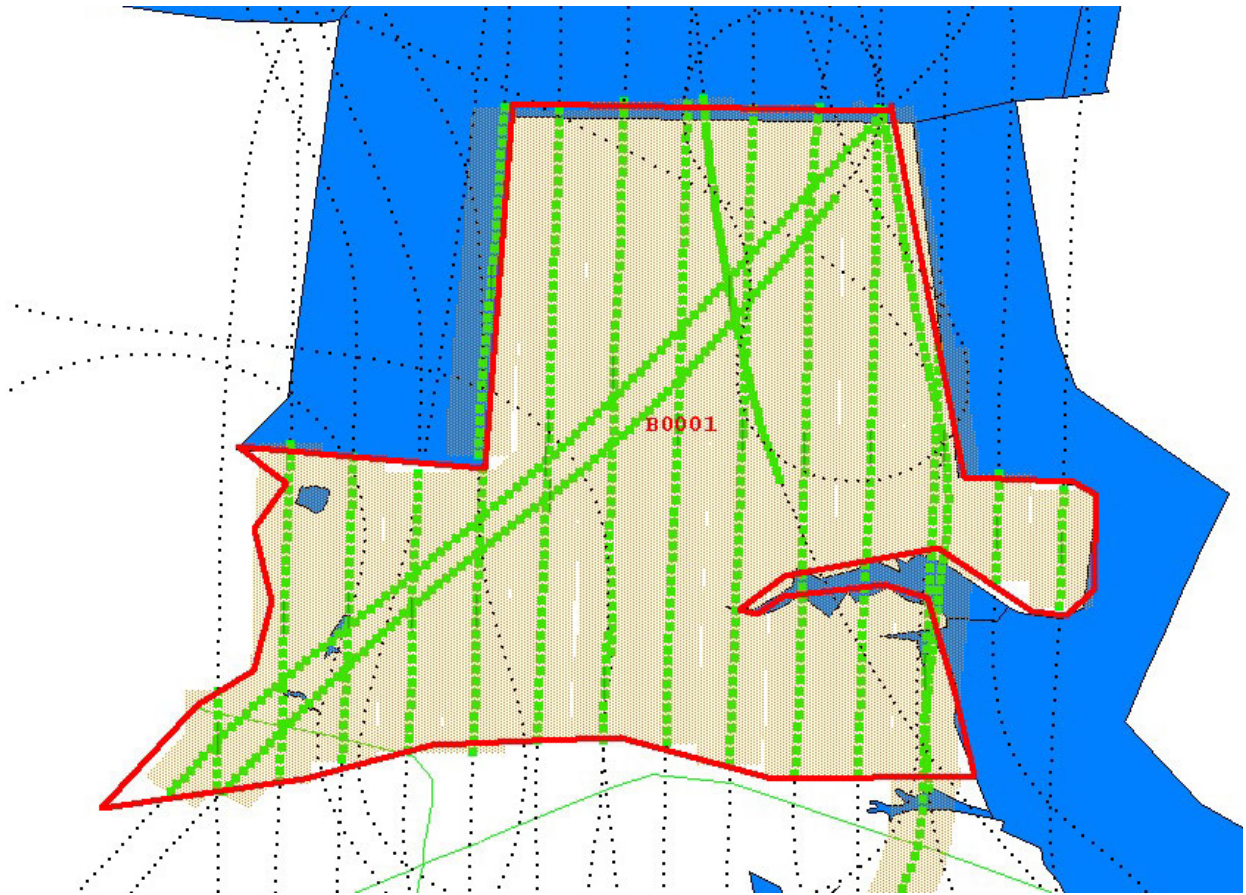
**(b) (6) , LT COL, USAFR**  
**DoD Certified Pest Management Professional**



**Attachment 1. Application to Langley AFB, VA on 5 August 2015. Swath lines are in green.**



**Attachment 2. Application to Craney Island Army Corps of Engineers, Portsmouth, VA on 5 August 2015. Swath lines are in green.**



**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**PARRIS ISLAND MCRD, SC 6-9 APRIL 2015**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 6-9 April 2015
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 8 April 2015
- e. Time/s of Application (Local): 1950-2155 hrs
- f. Acres Treated: 6,851
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) , Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 8 April 2015
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): Col (b) (6) Mr. (b) (6)  
Mr. (b) (6) Lt Col (b) (6) Lt Col (b) (6) Maj (b) (6)
- k. Mission Identifier: QENRK3531096

**2. OPERATIONAL:**

- a. **Mission Commander:** Maj (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) , Lt Col (b) (6) , Maj (b) (6)
  - (2) Navigators: Lt Col (b) (6) , Lt Col (b) (6)
  - (3) Flight Engineer: SMSgt (b) (6) , MSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6) , MSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) (lead), SMSgt (b) (6) , MSgt (b) (6) TSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6)
  - (2) Crew Chiefs: SrA (b) (6) , TSgt (b) (6)
  - (3) Avionics: TSgt (b) (6)
- d. **Entomologist:** Lt Col (b) (6) , Lt Col (b) (6)
- e. **Flying Data:**
  - (1) Application Sorties/Hours: 1/2.1
  - (2) Training Sorties/Hours: 1/2.2
  - (3) Ferry Sorties/Hours: 2/4.1

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 55 gallons
- e. Gallons Pesticide Applied: 48 gallons
- f. Gallons and Name Diluent Used: N/A
- g. Gallons and Name of Flush Used: purge only; cleaned with HAN on the ground
- h. Other Additives Used: None
- i. Application Rate: 0.90 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: 3003



- e. Nozzle Orientation & Number Used: 18 nozzles; straight down
- f. Pressure: 40 PSI
- g. Flow Rate: 2.8 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 2000'
- c. Spray Release Altitude: 300'
- d. Ground Speed: 200 KTS

**6. WEATHER OBSERVATIONS:** Wind; 190@10 kts at 300 ft; 180-190@4 kts dropping to 2.5 kts during application (Ground observation). Temp; 69 degrees F. Humidity; 88 percent.

**7. SPRAY MONITORING:** Pre and post-spray collections were made with Mosquito Magnet traps at 3 locations (see Attachment 1) and light traps. During the application, the treatment site was monitored on the ground. Biting midges (sand fleas) and mosquitoes were present in high numbers during the first hour of the application.

	Date	8-Apr			10-Apr					
		Location			Location			% Difference		
		Page Field	Horse Island	Rifle Range	Page Field	Horse Island	Rifle Range	Page Field	Horse Island	Rifle Range
<i>Culicoides</i> (midges)										
	<i>melleus</i>	135	188	300	0	14	0	100	93	100
	<i>hollensis</i>	131	138	275	0	60	105	100	56	62
	<i>furans</i>	180	5906	7995	0	230	1602	100	96	80
Mosquitoes										
	<i>Ae. taeniorhynchus</i>	80	413	330	0	66	18	100	84	95
	<i>Cx. salinarius</i>	13	450	90	0	34	28	100	92	69
	<i>Ae. vexans</i>	26	263	30	0	28	0	100	89	100

**8. REMARKS:** This night application represents the culmination of a 10-year effort to develop a technology transfer from the civilian sector to the Department of Defense. In short, night spraying can be more effective by targeting disease vector insects when they are actively host-seeking (many mosquito species are active after dark) while limiting pesticide exposure to pollinators, such as honey bees and butterflies, which are day active. The path to this first night pesticide spray was a cautious but steady development of the needed science and technology: years of data were analyzed to determine the highest effective altitude and still maintain safety. A modified crew compliment (NVG Cadre), daytime surveys, and GPS enabled flight aids with known obstacles were some of the factors implemented to ensure safety and efficacy. Flight crews made the application wearing night vision goggles and spraying at 300ft above ground level beginning approximately 30 minutes after sunset. Insect activity (biting midges and mosquitoes) at the time of the application was high and very annoying. Monitors on the ground reported a moderate and consistent wind from the south and the application lasted about 2 hours (See attachment 1). No adverse effects on wildlife were noted by ground observers. This spray was highly effective. Pre-spray biting fly (mosquitoes and midges) collections from mosquito magnets were some of the highest observed at Parris Island in recent years. Post-spray insect levels were substantially decreased based on personal observations, light trap collections, and Mosquito Magnet traps at various locations on the Depot. For example, in section 7 we see that target insects were decreased by an average of 90% (with a range of 56-100 % reductions). Calibration of the system was relatively straightforward. The "k" factor used was 0.250 which matches with previous work. Thanks to (b) (6) and (b) (6) for their consistent support of this integrated pest management program and to (b) (6) and (b) (6) for use of the Beaufort Co. Mosquito Control Laboratory for processing insect samples.

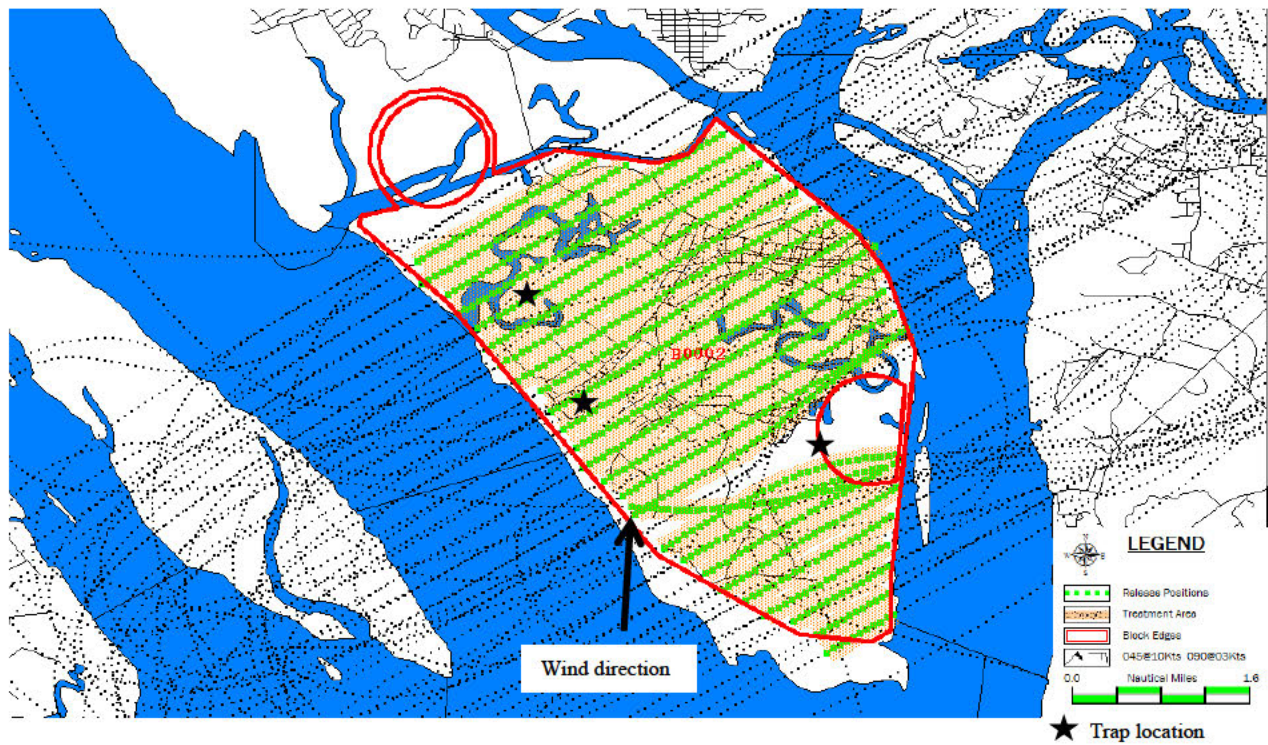
//signed//

(b) (6) Lt Col, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

//signed//

(b) (6), Lt Col, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

**Attachment 1. Spray application of Parris Island on 8 April 2015. Red circular objects indicate No-Fly zones for eagles' nests. Black dots are path of the aircraft and green dots are release positions.**





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

27 March 2015

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Parris Island MCRD, SC

1. Aerial spray deployment of one C-130 during 6-10 April 2015 to Beaufort MCAS, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at Parris Island MCRD. Two NVG aerial spray sorties will be flown at 300'AGL by NVG cadre personnel to validate the 910AW NVG aerial spray capability.

2. Concept of Operations (All times are local):

- a. 6 April (Mon)  
1700 Depart KYNG  
1900 Land KNBC
- b. 7 April (Tues)  
1500 Calibration of MASS  
1600 Installation Brief  
1915 Depart KNBC (NVG training flight)  
2115 Land KNBC
- c. 8 April (Weds) Spray  
2015 Depart KNBC (NVG dispersal flight)  
2215 Land KNBC
- d. 9 April (Thurs)  
Weather backup
- e. 10 April (Fri)  
1200 Depart KNBC  
1400 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 7500 acres
- b. Altitude: 300' AGL
- c. Swath Width: 1000 ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 0.75 oz/acre of Dibrom-Naled Organophosphate insecticide

4. Maj (b) (6) will serve as the mission commander with Lt Col (b) (6) as the aircraft commander. Support at Parris Island MCRD and Beaufort MCAS has been completed.

//SIGNED//

(b) (6), Lt Col, USAFR  
Chief of Aerial Spray



**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**PARRIS ISLAND MCRD, SC 06 – 10 OCTOBER 2014**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 06 – 10 October 2014
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control. Additionally, a confirmation trial for future night operations 300ft release was accomplished.
- d. Application Date/s: 08 - 09 October 2014
- e. Time/s of Application: 1620-1850 (8 Oct); 1750-1920 (9 Oct)
- f. Acres Treated: 1,598 (8 Oct); 6,828 (9 Oct)
- g. Project Coordinator: (b) (6) Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 7 Oct 2014
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: Lt Col (b) (6) , Maj (b) (6) , Maj (b) (6)
- k. Mission Identifier: QENRK3591279

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Maj (b) (6) , Maj (b) (6)
  - (2) Navigator: Lt Col (b) (6)
  - (3) Flight Engineer: MSgt (b) (6) wton
  - (4) Spray Operators: SMSgt (b) (6) , SMSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6)  
(b) (6) SSgt (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6) SrA (b) (6)
  - (3) Avionics: MSgt (b) (6) A1C (b) (6)
- d. **Entomologists:** Lt Col (b) (6) , Maj (b) (6)
- e. **Flying Data:**
  - (1) Application Sorties/Hours: 2/4.0 (2.5 + 1.5)
  - (2) Ferry Sorties/Hours: 2/4.5 (2.3 + 2.2)

**3. PESTICIDE:**

- a. Trade Name: Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 60 Gallons
- e. Gallons Pesticide Applied: 54 Gallons
- f. Gallons and Name Diluent Used: N/A
- g. Gallons and Name of Flush Used: None/Air purge
- h. Other Additives Used: None
- i. Application Rate: 2.9 Gallons per Minute (0.8 oz/acre)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 90-9107
- b. Spray System ID #: MASS#4
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: 8003
- e. Nozzle Orientation & Number Used: 13 Total; 6 left, 7 right
- f. Pressure: 30 - 38 PSI
- g. Flow Rate: 2.9 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 1000'
- c. Spray Release Altitude: 300' (8 Oct), 150' (9 Oct)
- d. Ground Speed: 200 KTS

**6. WEATHER OBSERVATIONS:** Wind; 220°/16 knots (8 Oct) 090°/8 knots (9 Oct) at release height. Temperature 79.5 degrees F; humidity 75 percent.

**7. SPRAY MONITORING:**

Navy Preventative Medicine conducts weekly mosquito collections at 6 locations using light traps. During the application period only 2 locations returned information and indicate a 92% reduction in the *Aedes* spp. mosquito population.

**8. REMARKS:**

The application made on 08 October was in support of trials to determine efficacy of aerial applications using standard spray parameters at an altitude of 300ft (night spray altitude). This was done in conjunction with the USDA Center for Medical, Agricultural, and Veterinary Entomology using caged mosquitoes as bioassays and results are being collated and will be published in the Army's Medical Department Journal. A standard application for biting midge/mosquito control was conducted on 09 October, beginning an hour prior to sunset and conditions appeared to favor an excellent treatment (moderate steady winds and target pest activity). However, efficacy reports varied: members reported midges still present during the following day's formations, while others who worked outside reported far fewer mosquitoes. Insect trapping to evaluate the efficacy of the spray was difficult because traps would have needed to be deployed and recovered over the holiday weekend, which isn't feasible under the current financial situation and scheduling restrictions. In short, it appears the application wasn't "highly" successful in temporarily reducing the midge populations. Recommend applying at the higher 1.0 oz/acre rate when midge populations are high. Two eagles' nests on the island are considered to be in use, and as usual a ½ mile no-spray/no-fly buffer was maintained around the nests. The next projected opportunity of an application at the Parris Island MCRD will be in late October.

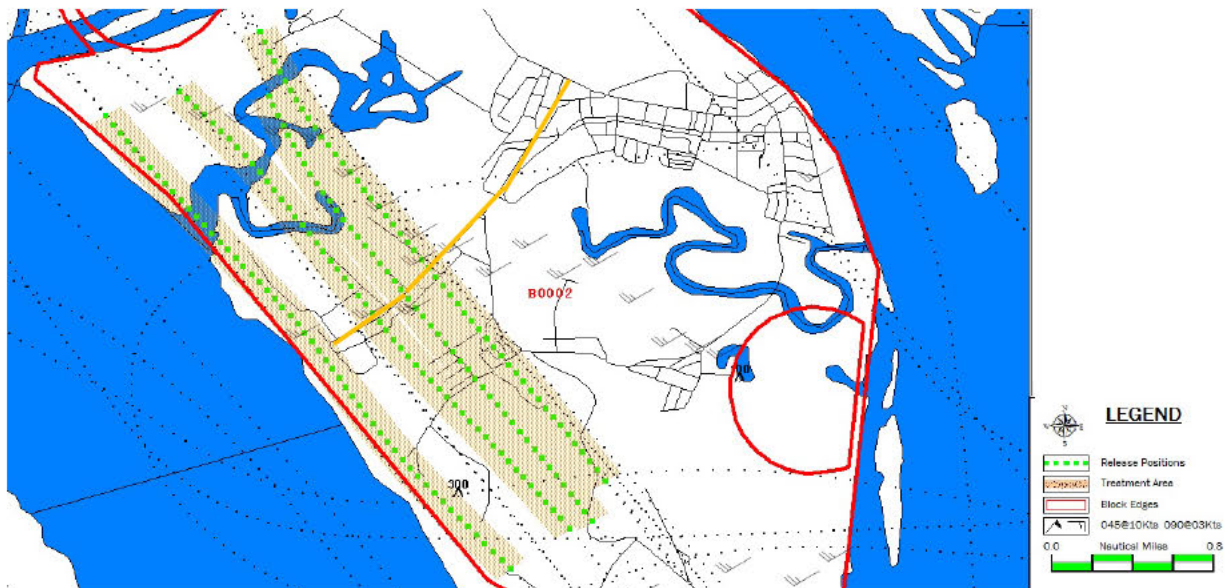
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(b) (6) , Lt Col, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

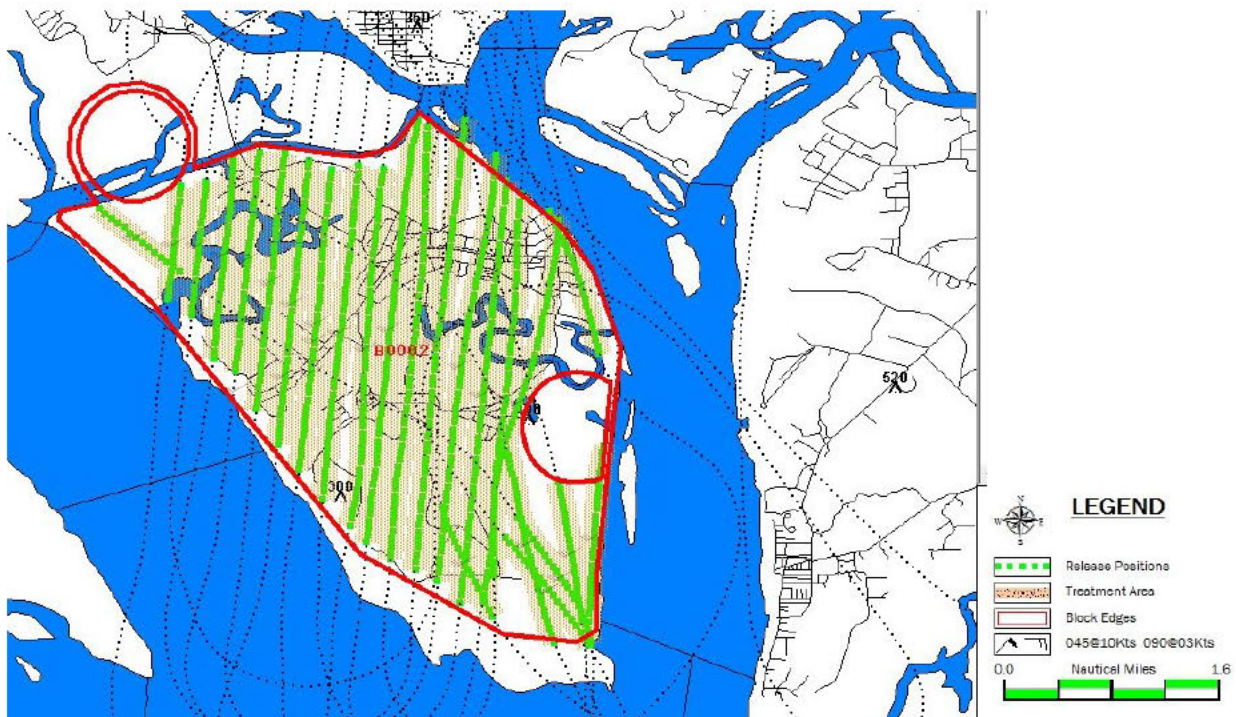
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(b) (6) , Maj, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

**Attachment 1. Spray application from 300ft release height for development of techniques for night sprays (Parris Island, MCRD 08 October 2014). Red circular objects indicate No-Fly zones for eagles' nests. Orange line shows transect along which sentinale caged mosquitoes were deployed for assesment of the effect of sprays. Results are being collated and will be published at a later date.**



**Attachment 2. Spray application at Parris Island, MCRD 09 October 2014. Red circular objects indicate No-Fly zones for eagles' nests.**



**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**USDA TESTS CAMP BLANDING WITH NVG CADRE TRAINING 8-11 DEC 14**

**1. MISSION BASICS:**

- a. Installation Sprayed: Camp Blanding ANG Base, Florida
- b. Mission Duration: 8-11 Dec 14
- c. Purpose of Application: USDA aerial spray testing for Dengue Control
- d. Application Dates: 9 and 10 Dec 14
- e. Time/s of Application (local): 1530 9 Dec; 1630 10 Dec.
- f. Acres Treated: 379 Dec 9 (testing); 456 Dec 10 (testing)
- g. Project Coordinator: (b) (6) (USDA (b) (6) ), (b) (6) (Camp Blanding)
- h. Date Spray Map Last Approved: N/A
- i. Date of Waste Generation Letter: N/A
- j. Installation In-Briefing: 9 Dec; Lt Col (b) (6) (b) (6) Dr. (b) (6) (b) (6)
- k. Mission Identifier: QENRK9931342

**2. OPERATIONAL:**

- a. **Mission Commander:** Maj (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) , Maj (b) (6)
  - (2) Navigators: Lt Col (b) (6) , Lt Col (b) (6)
  - (3) Flight Engineers: SMSgt (b) (6) , MSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6) , MSgt (b) (6) , SMSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) (lead), TSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6) , SrA (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6) , SSgt (b) (6)
  - (3) Avionics: MSgt (b) (6)
- d. **Entomologists:** Lt Col (b) (6) , Lt Col (b) (6) , Lt Col (b) (6) (b) (6) Lt Col (b) (6) , Maj (b) (6) (safety briefer), Maj (b) (6)
- e. **Flying Data:**
  - (1) Spray Sorties/Hours: 2/8.7 (includes NVG training)
  - (2) Ferry Sorties/Hours: 2/5.5

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Zenivex® (Etofenprox 1.48 lbs/gallon)
- b. EPA Registration Number: 2724-791
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 10 gal
- e. Gallons Pesticide Applied: 4 gal
- f. Gallons and Name Diluent Used: 10 gal BVA-13
- g. Gallons and Name of Flush Used: None
- h. Other Additives Used: None
- i. Application Rate: 0.60 oz/acre (50:50 Zenivex/BVA-13 mix)



#### **4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 89-9103
- b. Spray System (Modules Used) and System ID #: 1
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan (9 Dec); 8005 Flat Fan (10 Dec)
- e. Nozzle Orientation & Number Used: 14 (9 Dec); 8 (10 Dec) oriented straight down
- f. Pressure: 38 p.s.i.
- g. Flow Rate: 4.3 gallons per minute

#### **5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 250 feet upwind of target (9 Dec); no offset (10 Dec)
- c. Spray Release Altitude: 140 feet
- d. Ground Speed: 200 Knots (338 Feet/Second)

#### **6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 300°@ 8 Knots (9 Dec); 280°@ 6 Knots (10 Dec)
  - (2) Release Altitude: 310°@12 Knots (9 Dec); 300°@9 Knots (10 Dec)
- b. Temperature (Degrees Fahrenheit): 59° F (9 Dec); 64° F (10 Dec)
- c. Relative Humidity: 59%
- d. Cloud Cover: Clear
- e. Source: Aircraft/ground measurements

#### **7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: Visual observation of aircraft course (GPS)
  - (2) Results: Pending analysis by USDA (CMAVE)
- b. Effectiveness: Pending analysis by USDA (CMAVE)

#### **8. TESTING:**

A collaborative testing effort has been ongoing between the USAFR aerial spray group and the USDA Center for Medical and Veterinary Entomology (CMAVE). The objectives of this test were to determine the efficacy of aerially applied etofenprox (a synthetic pyrethroid) on vector mosquitos closely associated with human dwellings. Previous work at this location had used naled (an organophosphate). For the tests, caged mosquitoes were placed both inside and outside dwellings simulated by 2 locations at the urban warfare training center at Camp Blanding. Pesticide was aerially applied at 150' AGL in a flight line 250 feet upwind (Dec 9), and with no offset (Dec 10) perpendicular to the direction of the winds recorded at the target areas. Results from these trials should be available after data analysis from the laboratories of CMAVE (USDA), and should contribute greatly to our knowledge of vector mosquito control with respect to aerial applications. We hope to continue these collaborative efforts with the USDA in the near future.

#### **9. NIGHT VISION GOGGLE (NVG) AERIAL SPRAY TRAINING PROGRAM:**

Earlier in 2014, the aerial spray unit was tasked by HQ AFRC/A3 to develop a nighttime application capability. Therefore after the completion of testing on each day, NVG aerial spray cadre aircrew members conducted a NVG training flight at Avon Park Bombing Range in FL. Two

successful training sorties were flown at 300' AGL to refine and validate the unit's newly developed NVG Aerial Spray training program.

**10. REMARKS:**

No significant technical issues were encountered during the operational aspects of this mission. We thank the personnel at CMAVE for designing this test, the many folks participating from the Navy Entomology Center of Excellence, and the personnel at both Camp Blanding and NAS Jacksonville for providing outstanding logistical support towards these efforts.

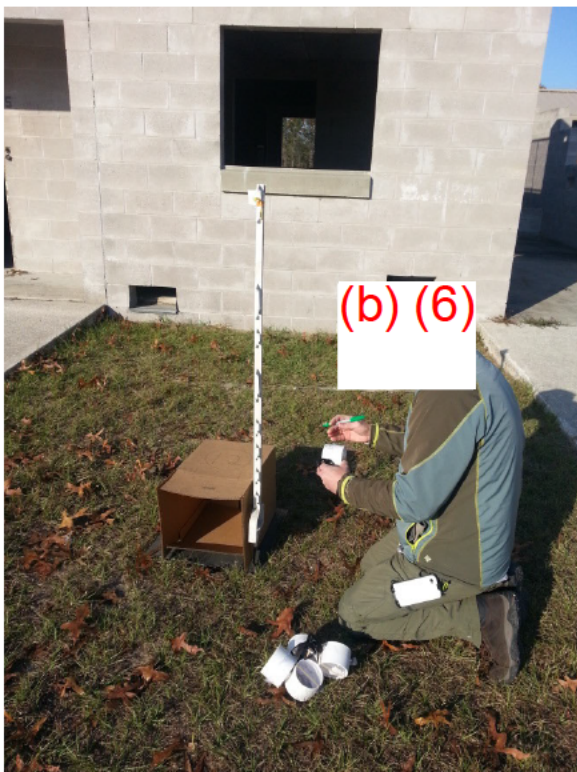
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(b) (6) (b) (6) Lt Col, USAFR  
DoD Certified Pest Management Professional

Attachments: Figures 1 & 2 below.



**Fig.1. A USAFR C130 applies Zenivex over structures at the Camp Blanding facility. Caged mosquitoes placed both inside the building and outside were used to assess efficacy of these applications.**



**Fig. 2. A USDA scientist labels mosquito cages prior to the application. Cages were attached to the white pole and others were placed in the box next to the pole.**





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND**

2 Mar 2015

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna, Ohio 44473-0910

**SUBJECT:** Concept of Operations for Aerial Spray at the Utah Test and Training Range

1. Aerial spray flight proficiency training will be accomplished on Targets 21, 23, 24, and Nord LZ at the Utah Test and Training Range (UTTR). Spray sorties will apply Krovar to control vegetation (i.e., *Halogeton*) growth aiding bombing mission test evaluations and unexploded ordnance recovery. Two aerial spray-configured C-130s will be available from 9 - 20 Mar 15 for the requested spray mission. One support C-130 (15-16 Mar and 19-20 Mar) will be utilized to swap crew and maintenance personnel to maximize training.

2. Concept of Operations:

- a. 9 March (Mon)
  - 1000 1st Spray aircraft depart KYNG
  - 1015 2nd Spray aircraft depart KYNG
  - 1300 1st Spray aircraft land KHIF
  - 1315 2nd Spray aircraft land KHIF
- b. 10 -13 March (Tues-Fri)
  - 0800 Spray aircraft depart KHIF
  - 1230 Spray aircraft land KHIF
  - 2 Sorties planned for each day per aircraft
- c. 16-19 Mar (Mon-Thurs)
  - 0800 Spray aircraft depart KHIF
  - 1230 Spray aircraft land KHIF
  - 2 sorties planned each day per aircraft
- d. 20 March (Fri)
  - 0800 1st Spray aircraft depart KHIF
  - 0815 2nd Spray aircraft depart KHIF
  - 1300 1st Spray aircraft land KYNG
  - 1315 2nd Spray aircraft land KYNG

3. Spray parameters:

Herbicide: Krovar 1DF®

Application rate: 22.5 gal/acre (10 lbs Krovar in 22.4 gal of water)

Acreage: 1,700 acres (Targets 21, 23+24)

Ground speed: 200 knots (337.55 ft/sec)

Spray altitude: 100 feet AGL

Swath width: 35 feet

Flow rate: 366.1 gal/min

4. Lt Col (b) (6) will serve as the mission commander.
5. Lt Col (b) (6) and Maj (b) (6) are the aircraft commanders.
6. Support required at both Hill AFB and the UTTR has been coordinated.

//SIGNED//

(b) (6), Lt Col, USAFR  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT  
UTAH TEST AND TRAINING RANGE, 9-20 MARCH 2015**

**1. MISSION BASICS:**

- a. Installation Sprayed: Utah Test and Training Range (UTTR)
- b. Mission Duration: 9-20 March 2015
- c. Purpose of Application: Weed control on UTTR Targets 21, 23 and 24, facilitate UXO recovery
- d. Application Dates: See Attachment 1
- e. Times of Application (Local): See Attachment 1
- f. Acres Treated: 1,547
- g. Flying Data:
  - (1) Spray sorties/hours: 20/27.2
  - (2) Flush sorties/hours: 4/5.1
  - (2) Ferry sorties/hours: 8/40.1
- h. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) /Range Specialist/DSN (b) (6)  
Environmental Coordinator, (b) (6) DSN (b) (6)
- i. Date Spray Map Last Approved: 9 March 2015
- j. Installation In-Briefing: (When/Where/Briefers): 9 March/HQ UTTR/Mr. (b) (6) (b) (6)  
Ms. (b) (6) (b) (6) Lt Col (b) (6) Lt Col (b) (6) Lt Col (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Entomologists: Lt Col (b) (6) Lt Col (b) (6) (2nd half)
- c. ARMS: MSgt (b) (6) (1st half), SrA (b) (6) (2nd half)
- d. 1st HALF AIRCREW (9-14 March)  
AIRCREW 1: SPRAY 04  
Pilots: Lt Col (b) (6) Lt Col (b) (6) Maj (b) (6)  
Navigators: Lt Col (b) (6)  
Flight Engineers: MSgt (b) (6) SSgt (b) (6)  
Spray Operators: MSgt (b) (6) TSgt (b) (6) TSgt (b) (6)  
  
AIRCREW 2: SPRAY 05  
Pilots: Lt Col (b) (6) Lt Col (b) (6) Maj (b) (6)  
Navigators: Lt Col (b) (6) Maj (b) (6)  
Flight Engineers: SMSgt (b) (6) SSgt (b) (6)  
Spray Operators: MSgt (b) (6) MSgt (b) (6)  
  
2nd HALF AIRCREW (15-20 March)  
AIRCREW 1: SPRAY 04  
Pilots: Maj (b) (6) Capt (b) (6) Capt (b) (6)  
Navigators: Lt Col (b) (6) Lt (b) (6)  
Flight Engineers: MSgt (b) (6)

Spray Operators: MSgt (b) (6) (IL), MSgt (b) (6), TSgt (b) (6)  
(upgrade)

**AIRCREW 2: SPRAY 05**

Pilots: Lt Col (b) (6), Maj (b) (6), Maj (b) (6)

Navigators: Lt Col (b) (6)

Flight Engineers: SMSgt (b) (6)

Spray Operators: SMSgt (b) (6) (IL), SMSgt (b) (6), TSgt (b) (6)

e. Maintenance:

MX Supervisor: SMSgt (b) (6)

Spray MX: TSgt (b) (6) (lead), TSgt (b) (6), TSgt (b) (6),

MSgt (b) (6), TSgt (b) (6)

910 MX Specialists: TSgt (b) (6) TSgt (b) (6) TSgt (b) (6) MSgt (b) (6) TSgt (b) (6)

Crew Chiefs: MSgt (b) (6) MSgt (b) (6) SSgt (b) (6) TSgt (b) (6) SrA (b) (6)

COMM: TSgt (b) (6), TSgt (b) (6), SSgt (b) (6), SSgt (b) (6),

SSgt (b) (6), SSgt (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Krovar® IDF
- b. EPA Registration Number: 352-505
- c. Formulation Sprayed: 9.9 lbs Krovar® per 20.7 gallons formulation
- d. Gallons Pesticide Mix Loaded: 32,053
- e. Gallons Pesticide Mix Applied: 32,053
- f. Formulation Used: 450 lbs Krovar®, 4.0 gal StaPut®, ½ gal Foam Fighter®, 200 ounces Hi-Light® Dye, remainder water per 1000 gal of spray mix. 15,350 lbs of Krovar used.
- g. Gallons and Name of Flush Used: 900 gal water
- h. Other Additives Used: 158 gal Clasp®; 51.6 gal Hi-Light® dye; 7.1 gal No Foam
- i. Application Rate: 22.5 gal/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99105, 99108
- b. Spray System (Modules Used) and System ID #: 3 and 5
- c. Spray System Configuration: 3-Module System/UHV Fuselage Booms
- d. Nozzle Type/Size: UHV Fuselage
- e. Nozzle Orientation & Number Used: 2 oriented straight back
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 366 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 35'
- b. Spray Off-set: None
- c. Spray Release Altitude: 100' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. See Attachment 2

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique Used: Blue dye pattern on targets and observations from ground markers
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Techniques Used: Monitoring of weed emergence in spring
  - (2) Results: Will be determined this spring by range personnel

- 8. REMARKS:** The spray area was increased by approximately 400 acres in 2013 but ordering and contracting difficulties delayed the treatment of the entire expanded area until this year. This larger area increased the number of treatment sorties by two from previous years, but the project was completed in the same time period (2 weeks) through disciplined sortie scheduling coupled with “out of the box” thinking to get the aircraft repaired and flying again. No spraying was conducted on 14-15 March because the UTTR was closed. It appears that environmental paperwork should be completed for a separate but related aerial spray project to control cheat grass along firebreaks in September or October using an herbicide with the active ingredient of imazipac. Many thanks for the various agencies supporting this mission and special thanks to SMSgt (b) (6) for acting as our sponsor again this year.

//signed//

(b) (6), Lt Col, USAFR  
DoD Certified Pest Management Professional

Attachment 1: Summary Spray Chart

**10-19 March 2015**

**SPRAY OPERATIONS SUMMARY FOR UTAH TEST AND TRAINING RANGE**

<b>DATE March</b>	<b>SORTIE #</b>	<b>AIRCRAFT #</b>	<b>TIMES</b>	<b>SPRAY ON TIME (min)</b>	<b>TARGET</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>FLYING HOURS</b>
10	1	104	0850-1000	4.5	23,24	81	1605	1.2
10	2	104	1140-1245	4.6	23,24	81	1537	1.1
11	3	104	0820-0920	4.5	21,24	81	1651	1.0
11	4	104	1020-1120	4.9	24,21	70	1450	1.0
11	5	104	1230-1340	4.5	24,21	79	1676	1.2
12	6	107	0915-1035	6.0	21	88	1707	1.3
12	7	104	0925-1025	4.7	23,24	81	1728	1.0
12	8	104	1135-1235	4.5	23,24	80	1641	1.0
13	9	107	0805-0915	5.2	21	80	1697	1.2
13	10	104	0930-1040	4.4	21,23,24	84	1596	1.2
13	11	104	1225-1400	4.5	21	80	1676	1.6
13	Flush	104						0.8
16	12	104	0825-1000	4.8	21	79	1725	1.6

16	13	107	0920-1035	4.3	21	70	1511	1.2
16	14	104	1050-1255	4.8	21	79	1706	2.1
16	15	107	1130-1310	4.8	21	79	1697	1.7
17	16	104	0810-1010	4.8	21	78	1655	2.0
17	17	107	0845-1010	5.0	21	81	1697	1.4
18	18	104	0805-0925	5.2	21	85	1698	1.3
18	19	107	0910-0952	4.9	21	79	1748	1.4
18	20	104	1040-1225	2.0	21	32	652	1.7
18	Flush	107						1.2
19	Flush	104						1.6
19	Flush	107						1.5
		Totals		92.9		1,547	32,053	31.5



**Attachment 2. UTTR Aerial Spray Weather Log 2015**

UTTR Aerial Spray Weather Log 2015						
Date	Avg Windspeed (mph)	Wind Direction	direction/speed (in kts at altitude)	Temperature in F°	RH%	Time
10-Mar-15	3.5	190		38	43	0900
	2.2	190		43	43	1000
	2.0-6.0	150		55	30	1220
11-Mar-15	2.0	20	080/6	38	48	0818
	2.0	20	190/7	50	46	1000
	4.5	150		54	40	1040
	9.0	150	160/7	54	38	1205
	8.0	140		58	30	1300
12-Mar-15	3.5	50	330/5	46	78	0840
	4.0	20		49	65	0930
	7.2	10	040/6	50	52	1100
	8.0	10		54	50	1222
13-Mar-15	2.7	320		35	62	0815
	7.0	320	350/6	43	60	0845
	6.0	320	030/10	46	53	0914
	7.0	20	350/6	54	50	1110
	10.0	350		60	44	1235
16-Mar-15	2.1	140	no data reported	51	42	0805
	3.5	270		54	45	0916
	3.0	360		54	45	0938
	4.0	330		61	33	1115
	light&var	light&var		66	32	1150
17-Mar-15	3.0	30	150/12	52	47	0830
	6.0	30	170/9	58	48	0930
18-Mar-15	3.5	30	030/16	52	47	0830
	4.6	30	360/12	58	48	0930



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

3 Sep 2015

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Capability and Concept of Operations for NVG (Night Vision Goggle) Aerial Spray at Joint Base Charleston, SC.

1. One C-130 will deploy to JB Charleston from 10-13 Sep 2015 in response to a requested aerial spray to control adult mosquitoes at JB Charleston, SC. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of JB Charleston. Operations for this mission will be conducted from JB Charleston.

2. Concept of Operations (All times are local)

- a. 10 Sep (Thursday)  
1600 – Depart KYNG  
1800 – Land KCHS
- b. 11 Sep (Friday)  
1930 – Depart KCHS  
2130 – Land KCHS
- c. 12 Sep (Saturday)  
2000 – Depart KCHS  
2130 – Land KCHS
- d. 13 Sep (Sunday)  
1200 – Depart KCHS  
1400 – Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: approx. 18,000 acres
- b. Altitude: 300 feet for adulticide application
- c. Swath Width: 2,000 feet

d. Groundspeed: 200 KIAS

e. Application Rate: .85 oz/acre of Trumpet EC

4. Lt Col (b) (6)(b) (6) will serve as the Mission Commander.

5. Lt Col (b) (6) will be the Aircraft Commander.

6. Required support at JB Charleston has been coordinated.

\\Signed\\

(b) (6), Lt Col, USAFR  
Chief, 757<sup>th</sup> Aerial Spray

- a. Aircraft Tail Number:** 99108
- b. Spray System (Modules Used) and System ID #:** SP2G

- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: 8003
- e. Nozzle Orientation & Number Used: 27 Total; 13 left, 14 right
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 6.3 gallons/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: 2000'
- c. Spray Release Altitude: 300'
- d. Ground Speed: 200 KTS

**6. WEATHER OBSERVATIONS:** Wind: 200° at 3.5 knots (average) ground observation.  
Temp: 80 degrees F, Humidity 74 percent.

**7. SPRAY MONITORING:** Pre- and post-spray mosquito collections were taken at 4 locations using CO<sub>2</sub>-baited CDC mosquito traps. Landing rates were used to monitor populations at the various location on JB Charleston.

**Traps:**

4 Trap average 226 mosquitoes pre spray; 5 mosquito average post-spray: 98.7% control

**Landing count (per minute):**

14 Average at GC Bridge pre-spray; 0 at GC Bridge post-spray: 100% control

24 Average at Spoil Site pre-spray; 0 at Spoil site post-spray: 100% control

14 Average at Charleston Co. Mosquito District pre-spray; 0 at District post-spray: 100% control

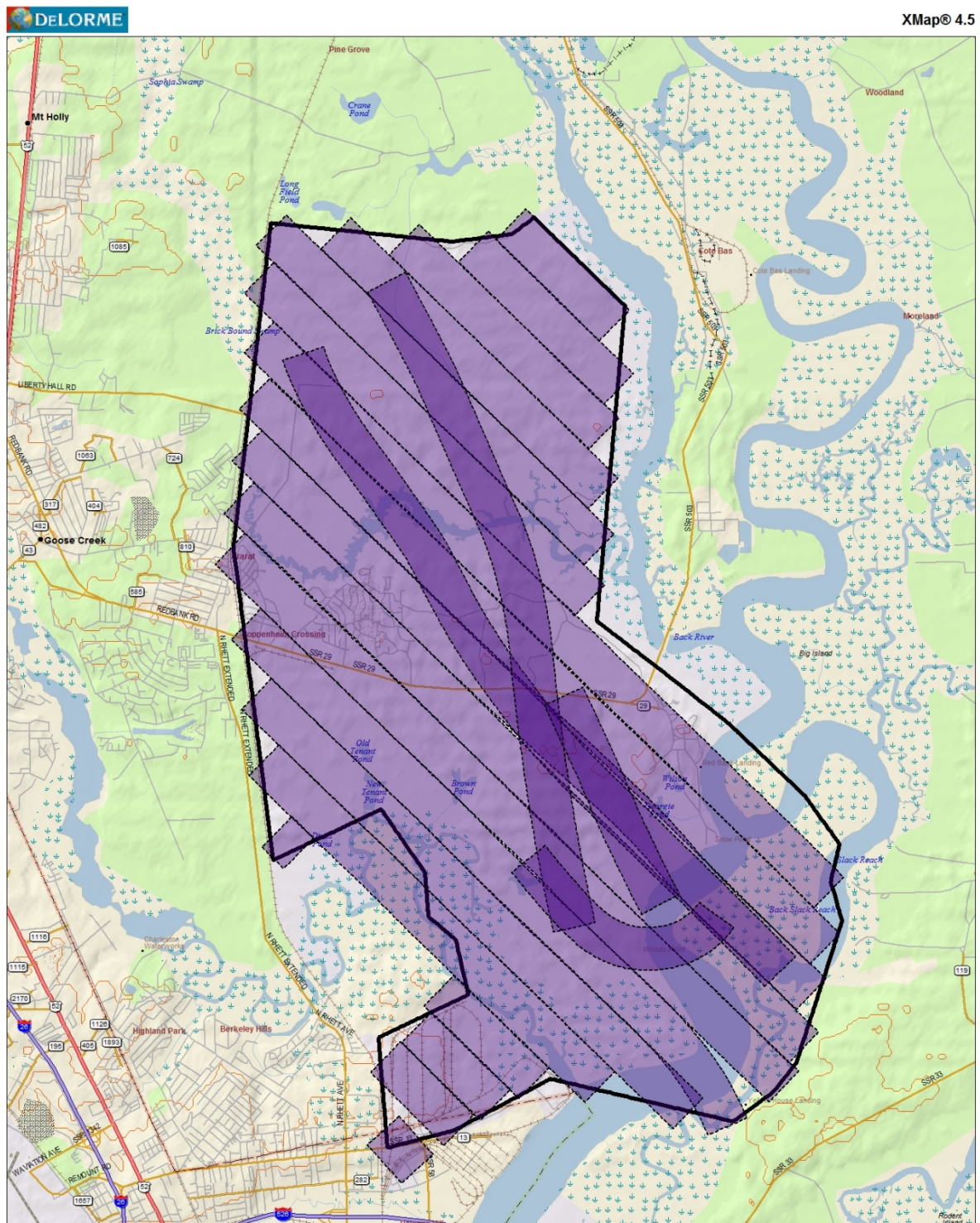
**8. REMARKS:** This application is the second night spray conducted at this location. System calibration was conducted on the ground prior to application. No significant problems were encountered and results appear to be excellent. Post application mosquito landing counts were zero. Pre and Post-Spray trap data indicate 97.8% reduction in mosquito populations. These data appear to validate the effectiveness of night-time aerial application. We appreciate the support we received from ALL sections at JB Charleston, with special thanks going to (b) (6) for his thorough coordination at all levels.

//signed//

(b) (6), Lt Col, USAFR  
DoD Certified Pest Management Professional



Attachment 1. Application to Naval Weapons Station, JB Charleston 11 Sept 2015. Swath lines are in purple.. A 2000 foot offset was utilized to compensate for crosswind deposition.



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www.delorme.com

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Data Zoom 12-0



DEPARTMENT OF THE AIR FORCE

Aerial Spray Unit  
Youngstown ARS, Ohio

**Pest Management Professional's Post-mission Report**  
**Minot AFB, Cities of Minot, & Williston ND - Adult Mosquito Control**  
**13-16 July 2015**

**1. MISSION BASICS:**

- a. Installation/Community Sprayed: Minot AFB, City of Minot, Watford City, Williston and surrounding areas, North Dakota
- b. Mission Duration: 13-16 July 2015
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date/s: 13&14 July
- e. Time/s of Application (Local): 2105-2205 (13 Jul); 2020-2130; 2140-2200
- f. Acres Treated: 5,366 (13 Jul); 7, 837 (14 Jul); 13,203 acres
- g. Project Coordinator/s (Name/Rank, Title, Phone #): TSgt (b) (6) (Minot AFB); (b) (6) (City of Minot); (b) (6) (Williston)
- h. Date Spray Map Last Approved: 13 Jul 2015
- i. Date of Waste Generation Letter: 28 July 2013
- j. Installation In-Briefing: (When/Where/Briefer/s): 13 Jul, via telephone with LtCol (b) (6) (Mission Commander) and 5CES Deputy Civil Engineer, Ms. (b) (6) Pearson and other base representatives; 14 Jul with (b) (6) via telephone

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Certified PMP/Entomologists (Category 11): Lt Col (b) (6) (safety briefer), Maj (b) (6) (certified applicator state ND)
- c. Aircrew:
  - (1) Pilots: Lt Col (b) (6), Maj (b) (6)
  - (2) Navigators: Maj (b) (6)
  - (3) Flight Engineers: MSgt (b) (6), TSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6), MSgt (b) (6), MSgt (b) (6), TSgt (b) (6)
- d. Maintenance:
  - (1) Spray Maintenance: MSgt (b) (6) (b) (6), TSgt (b) (6), TSgt (b) (6) (lead), TSgt (b) (6) (b) (6), SrA (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6), TSgt (b) (6)
  - (3) Avionics: TSgt (b) (6)

**Flying Data:**

- (1) Spray Sorties/Hours: 3 sorties (1.0 + 1.2 + 0.3) = 2.5 hrs
- (2) Ferry Sorties/Hours: 2 sorties (4.0 + 3.3) = 7.3 hrs



**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet<sup>®</sup> EC Concentrate (78% naled)
- b. EPA Registration Number: 59639-90-5481
- c. Formulation Sprayed: Emulsified Concentrate (Trumpet)
- d. Gallons Pesticide Loaded: 40 gal Trumpet (13 Jul); 105 gal Trumpet (14 Jul)
- e. Gallons Pesticide Applied: 30 gal (13 Jul) & 45 gal (14 Jul)
- f. Gallons downloaded: 60 gal of Trumpet downloaded
- g. Gallons and Name Diluent Used: none
- h. Gallons and Name of Flush Used: 8 gal aromatic naptha
- i. Other Additives Used: None
- j. Application Rate: 0.72 oz/acre (14 Jul); 0.75 oz/acre (14 Jul)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99108
- b. Spray System (Modules Used) and System ID #: 1
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet<sup>®</sup> 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 19-8003s total (13 Jul); oriented straight down
- f. Pressure: 42-45 psi
- g. Flow Rate: 5.2 gallons per minute (13 Jul); 5.4 gallons per minute (14 Jul)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2,000 ft (13-14 Jul)
- b. Spray offset: 2,000 ft (13-14 Jul)
- c. Spray Release Altitude: 150 ft'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 270°@2 kts (13 Jul) & 210°3-5 kts (14 Jul)
  - (2) Release Altitude: 300°@7 kts (13 Jul) & 170-220°@4-8 kts (14 Jul)
- b. Temperature (Degrees Fahrenheit): 74° dropping to 71° F (13 Jul); 87-82° F (14 Jul)
- c. Relative humidity: 86-89% (13 Jul) & 49-74% (14 Jul)
- d. Cloud Cover: partly cloudy
- e. Source: Ground observations and aircraft

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Monitoring is done with New Jersey light traps in the City of Minot by the North Dakota Department of Health. Mosquito Magnets are used as traps by Minot AFB Public Health. Pre-application mosquito counts from 2 traps collected the week ending 3 July were 182 and 262 in Minot and over 150 female mosquitoes on the base.
- b. Minot AFB Pest Control Shop (5 CES/CEOUE) reported they collected 13 mosquitoes per trap the night following the application, a significant reduction of mosquito activity. No data was available from the North Dakota Department of Health because the state only reports weekly data. That information will be added to this report when available. However, because less than half the area was treated, reductions may be less than desired.

**8. REMARKS AND RECOMMENDATIONS:** This was the second mosquito adulticide application for Minot AFB in 2015, and the first for the City of Minot. Both the AFB and the City reported moderate numbers of mosquitoes and decided to treat at a relatively low rate (0.75 oz/acres – note 0.6 oz/acre is minimum label rate). The MASS displayed some unusual readings during the calibration on 13 July, namely the recirculation rate was lower than the flow rate (normally the opposite is observed). Nonetheless, the MASS delivered the desired flow rate ( $\pm 3\%$ ) and was deemed calibrated by the certified applicator. The application over the AFB was a textbook operation and good results were reported. As mentioned during the inbrief, the size of the spray area is rather small to expect any relief for a substantial period of time. Nonetheless, It is worthwhile to continue to spray Minot AFB because it gives the 5CES Pest Management a break from truck sprays and aerial applications complete the entire base perimeter in about an hour. Doubling the spray block size and spraying after dark should significantly improve the results of this program for Minot AFB.

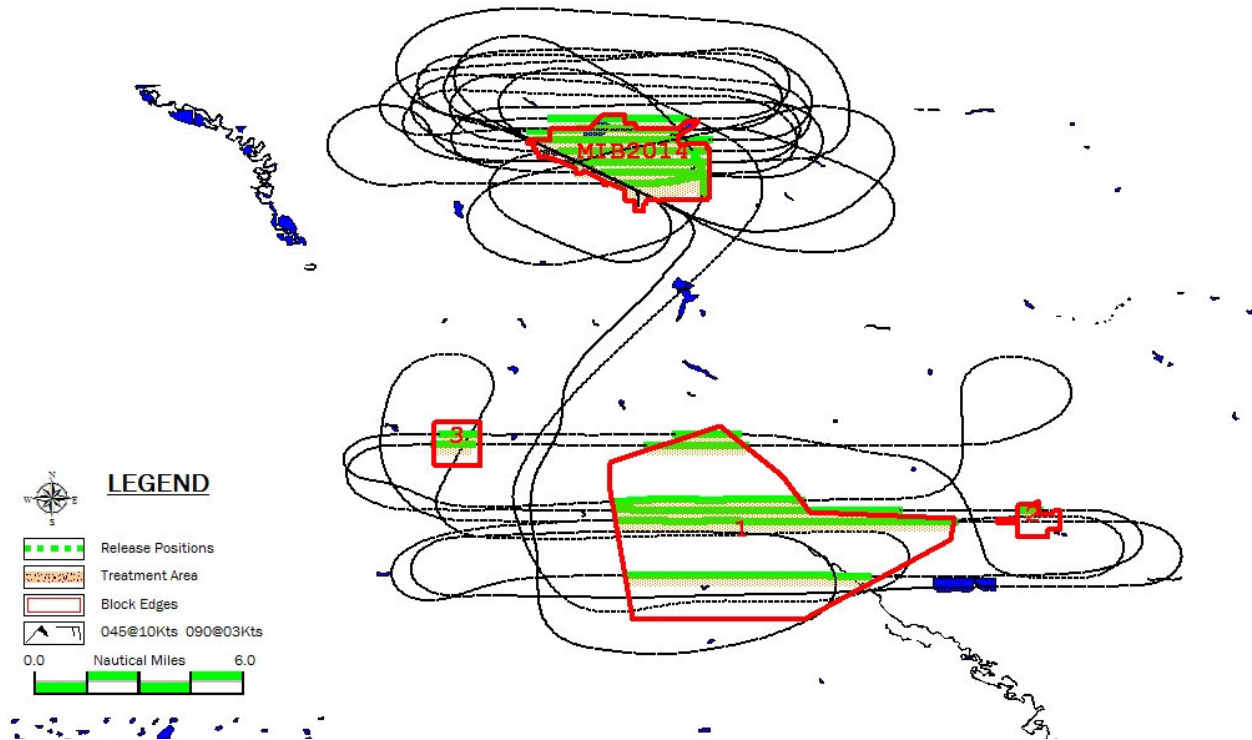
During the application on 14 July, the MASS digital pressure display suddenly stopping working. Because there was no way to determine the pressure in the spray booms without the display, the crew decided to terminate spray operations and land. Spray maintenance rapidly replaced the pressure transducer at the spray booms and the crew took the plane out again. Unfortunately, it was quickly determined that the problem had not been resolved. At this point, there was no more daylight left and operations were suspended for the night. The next morning (15 July) a different model of pressure transducer was installed and a calibration was attempted. It was then apparent that repairs to the MASS were beyond the scope of the supplies and replacement parts on hand. These maintenance issues left the City of Minot's area incomplete and with 60 gallons of unused Trumpet insecticide. Without a functioning MASS, Spray 08 could not plan for a spray over Williston either. The decision was made to redeploy to Youngstown ARS to make the necessary repairs to MASS#1 the following day (16 July). The Air Force Spray Unit will attempt to complete these spray areas at the earliest feasible calendar date acceptable for all parties and pending continued mosquito problems.

A special thanks to MSgt (b) (6) for his consistent communication and support of the aerial spray operation.

//signed//

(b) (6), Lt Col, USAFR  
Entomologist/DoD Certified Applicator

Attachment 1. Shows the areas treated 13 & 14 July over Minot AFB and City of Minot, respectively. The black dots are the track of the aircraft and the light green lines are the track of the aircraft while spraying. Red represents the outline of the spray treatment areas. Some tracks flown outside the spray block were treated so that the pesticide would drift back into the target area with the prevailing wind direction.





DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

14 April 2015

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Capability and Concept of Operations for Aerial Spray at Joint Base Charleston, SC.

1. One C-130 will deploy to JB Charleston from 17-18 April, 2015. This is an out of cycle response to decade high mosquito counts affecting the health and welfare of the personnel at JB Charleston. In addition, training of aerial spray aircrew, entomologists, and maintenance members will be accomplished while providing a beneficial reduction in mosquito populations. Operations for this mission will be conducted from JB Charleston.

2. Concept of Operations (All times are local)

- a. 17 Apr (Friday)
  - 1130 – Depart KYNG
  - 1330 – Land KCHS
  - 1800 – Depart KCHS (spray JB Charleston)
  - 2000 – Land KCHS
- b. 18 Apr (Saturday)
  - 1000 – Depart KCHS
  - 1200 – Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: approx. 18,000 acres
- b. Altitude: 150 feet for adulticide application
- c. Swath Width: 2,000 feet
- d. Groundspeed: 200 KIAS
- e. Application Rate: 1.0-1.2 oz/acre of Trumpet EC

4. Lt Col (b) (6) will serve as the Mission Commander.

5. Lt Col (b) (6) will be the Aircraft Commander.

6. Required support at JB Charleston has been coordinated.

\\Signed\\

(b) (6), Capt, USAFR  
Assistant Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**757 Airlift Squadron – Aerial Spray Operations**  
**3976 King Graves Rd Unit 24**  
**Vienna OH 44473-5924**

**910 AW AERIAL SPRAY UNIT -- POST-MISSION REPORT FOR**  
**Minot, Watford City, Trenton & Williston ND Adult Mosquito**  
**Control 17-20 August 2015**

**1. MISSION BASICS:**

- a. Installation Sprayed: City of Minot, ND and the cities of Williston, Trenton, and Watford City, North Dakota
- b. Mission Duration: 17-21 August 2015
- c. Purpose of Application: Control adult nuisance and vector mosquitoes
- d. Application Date: 18 and 19 August 2015
- e. Time of Application (Z): 0039-0200 (18 August); 2308-0152 (19 August);
- f. Acres Treated: 15,517 (Minot), 30,225 Williston/Trenton/Watford City
- g. Project Coordinator/s (Name/Rank, Title, Phone #): Mr. (b) (6) City of Minot Public Works (b) (6) ; Williston Vector Control, (b) (6) (b) (6)
- h. Date Spray Map Last Approved: 18 August 2015
- i. Date of Waste Generation Letter: 28 July 2013
- j. Installation In-Briefing: (When/Where/Briefer/s): City of Minot Public Works Bldg, Lt Col (b) (6) , Lt Col (b) (6) , Lt Col (b) (6) , Maj (b) (6) Maj (b) (6) (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: LtCol (b) (6)
- b. Entomologist (Category 8 & 11): Maj (b) (6)
- c. Aircrew:
  - 1) Pilots: Lt Col (b) (6) , Major (b) (6)
  - 2) Navigators: Lt Col (b) (6)
  - 3) Flight Engineer: MSgt (b) (6)
  - 4) Spray Operators: SMSgt (b) (6) , TSgt (b) (6) , SSgt (b) (6)
- b. Maintenance:
  - 1) Spray Maintenance: TSgt (b) (6) (lead); MSgt (b) (6) TSgt (b) (6) (b) (6) TSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6)
  - Crew Chief(s): MSgt (b) (6) TSgt (b) (6)
  - Avionics: TSgt (b) (6)

**Flying Data:**

- (1) Spray Sorties/Hours: 2/4.2
- (2) Ferry Sorties/Hours: 2/6.8
- (3) Mission ID: QENRK3531229

**3. PESTICIDES:**

**Minot**

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 90 gal Trumpet®
- d. Gallons and Name of Flush Used: 5 Gal HAN
- e. Other Additives Used: none
- f. Application Rate: 0.75 oz/acre Trumpet®

**Williston et al.**

- g. Trade Name: Duet
- h. EPA Registration Number: 1021-1795-8329
- i. Gallons Pesticide Loaded: 275Gal Duet
- j. Gallons and Name of Flush Used: 7 gal HAN
- k. Other Additives Used: none
- l. Application Rate: 1.2 oz/acre Duet

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 89106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 26 straight down for Minot & 24 for Williston
- f. Pressure (PSI): 41-52 PSI
- g. Flow Rate: 5.45 GPM for Minot and 8.7 GPM for Williston

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000' (Williston Area and City of Minot)
- b. Spray Off Set: none
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 18 August 300° @ 5 knots (ground);  
19 August 170° @ 4 knots (ground)
- b. Temperature (Degrees Fahrenheit): 70 °F (18 Aug); 73 °F (19 Aug)
- c. Relative Humidity: 64% (18 Aug); 57% (19 Aug)
- d. Cloud Cover: scattered clouds
- e. Source: Ground observations and onboard aircraft readings

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Minot City pest management and Williston Mosquito control conducts adult mosquito trapping to monitor mosquito densities.
- b. Effectiveness:
  - (1) Technique/s Used: CDC light traps
  - (2) Results: Mosquitoes counts pre and post spray for the Williston area and for Minot are in Attachment

**8. REMARKS:** Continued high numbers of mosquitoes in both the City of Minot and Williston ND areas prompted each location to participate in an aerial spray application. Spray operations were conducted on the evenings of 18-19 August. Weather conditions were excellent each day. Operations proceeded smoothly and no equipment malfunctions were encountered. Only 2 swaths were applied in the Watford City area due to time constraints. Spray efficacy in the Williston/Trenton/Watford City area in terms of mosquito numbers was disappointing as mosquito populations actually increased according to the trap data. The synthetic pyrethroid insecticide in this case did not perform satisfactorily. Trap information from the City of Minot is pending and will be added upon receipt. Many thanks to the city of Minot, Minot AFB pest management personnel, and Minot AFB OSS and Transient Alert for supporting this mission.

//signed//

(b) (6) , Lt Col, USAFR  
DoD Certified Pest Management Professional



Attachments: 1-4

**Attachment 1. Williston Area and Minot Pre and Post application data.**

**Williston Area:**

Pre spray trap catch: 63 (1 traps) (conducted 19 August)

Post spray trap catch: 151 (1 traps) (conducted 20 August)

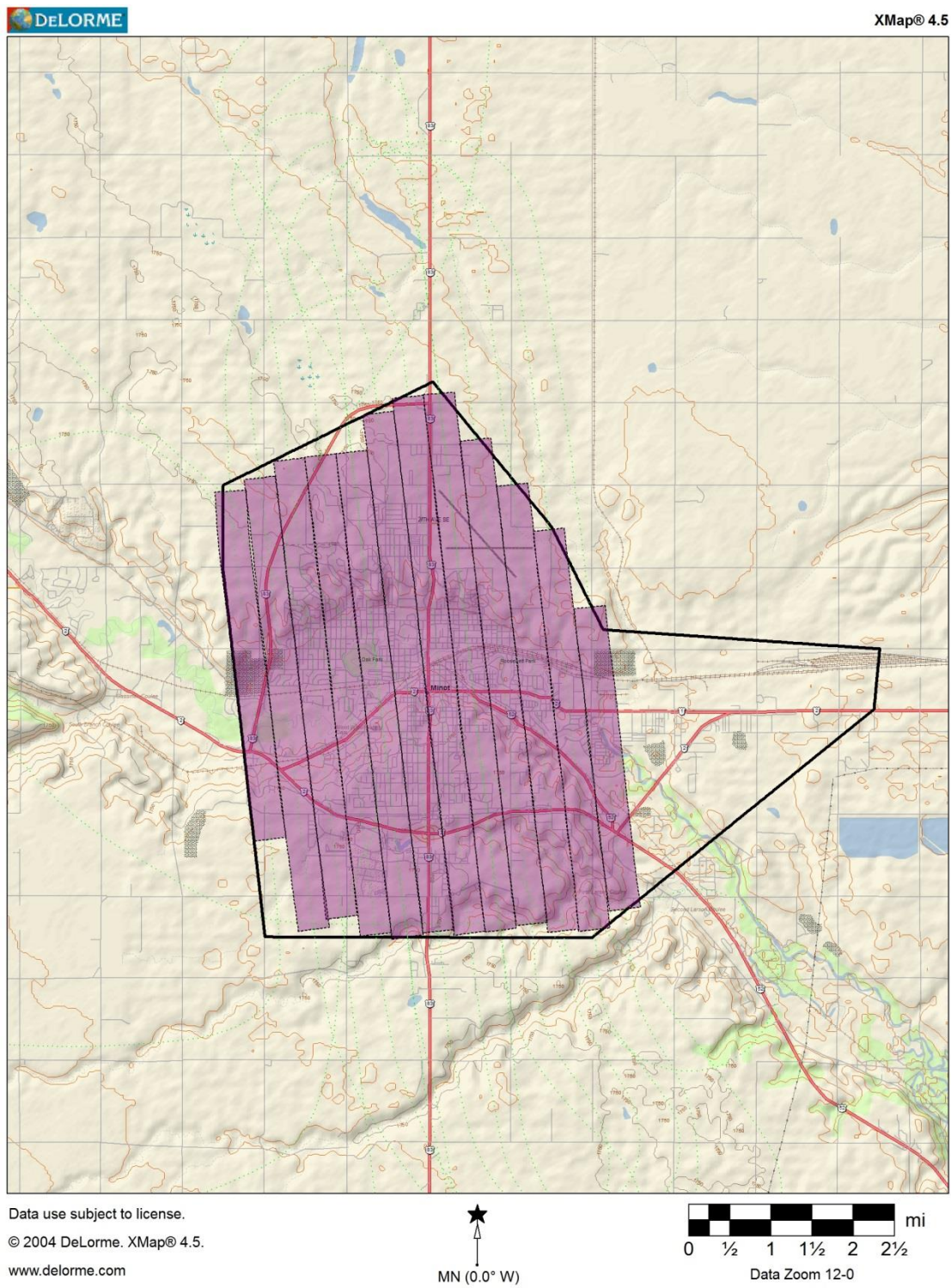
Approx 2.4x increase

**Minot City Area:**

Pre spray trap catch: 700 (3 traps) (conducted 8 August)

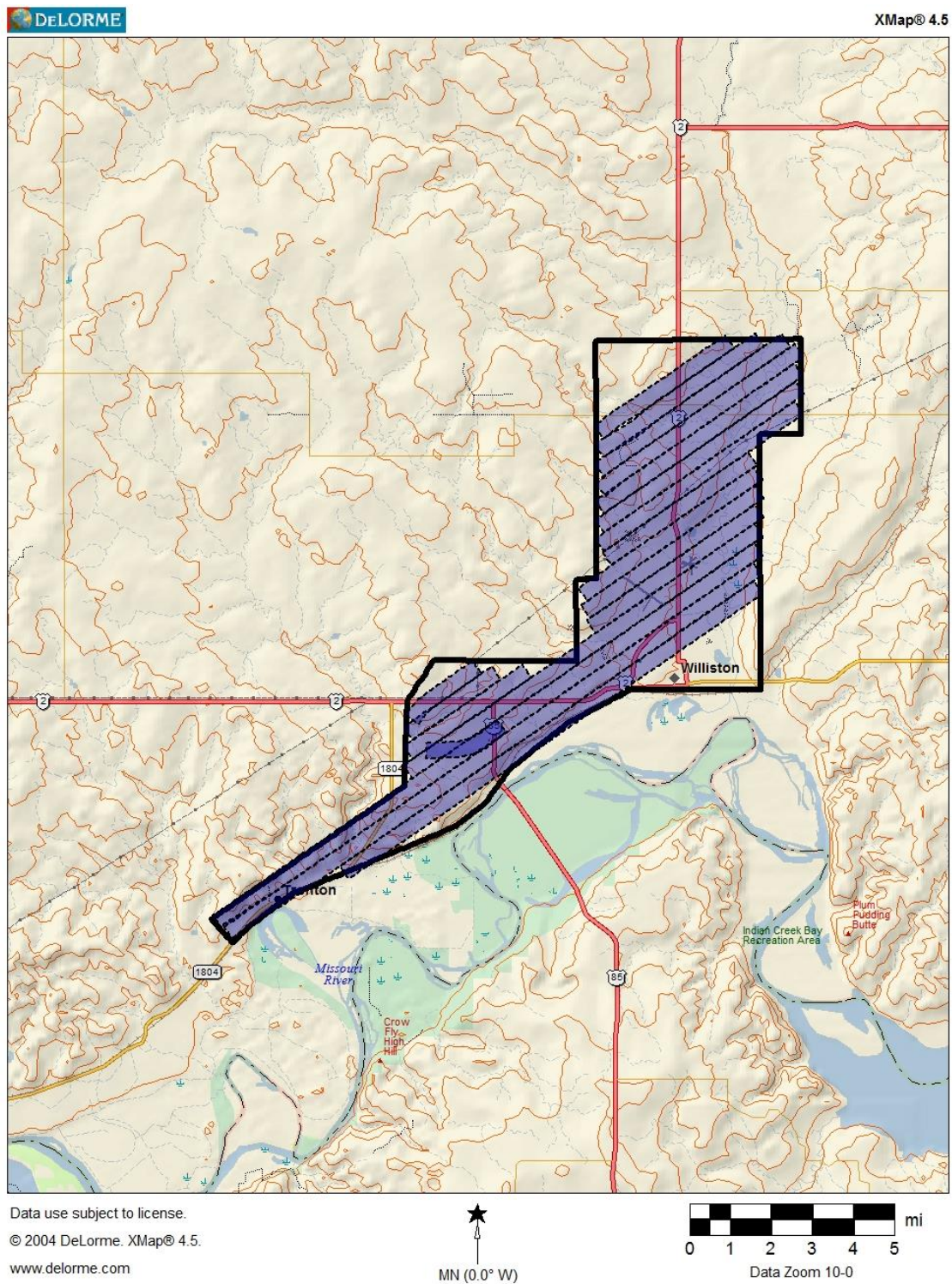
Post spray trap catch: (3 traps) pending

**Attachment 2. Minot Sortie. Map shows application area for 18 August.**



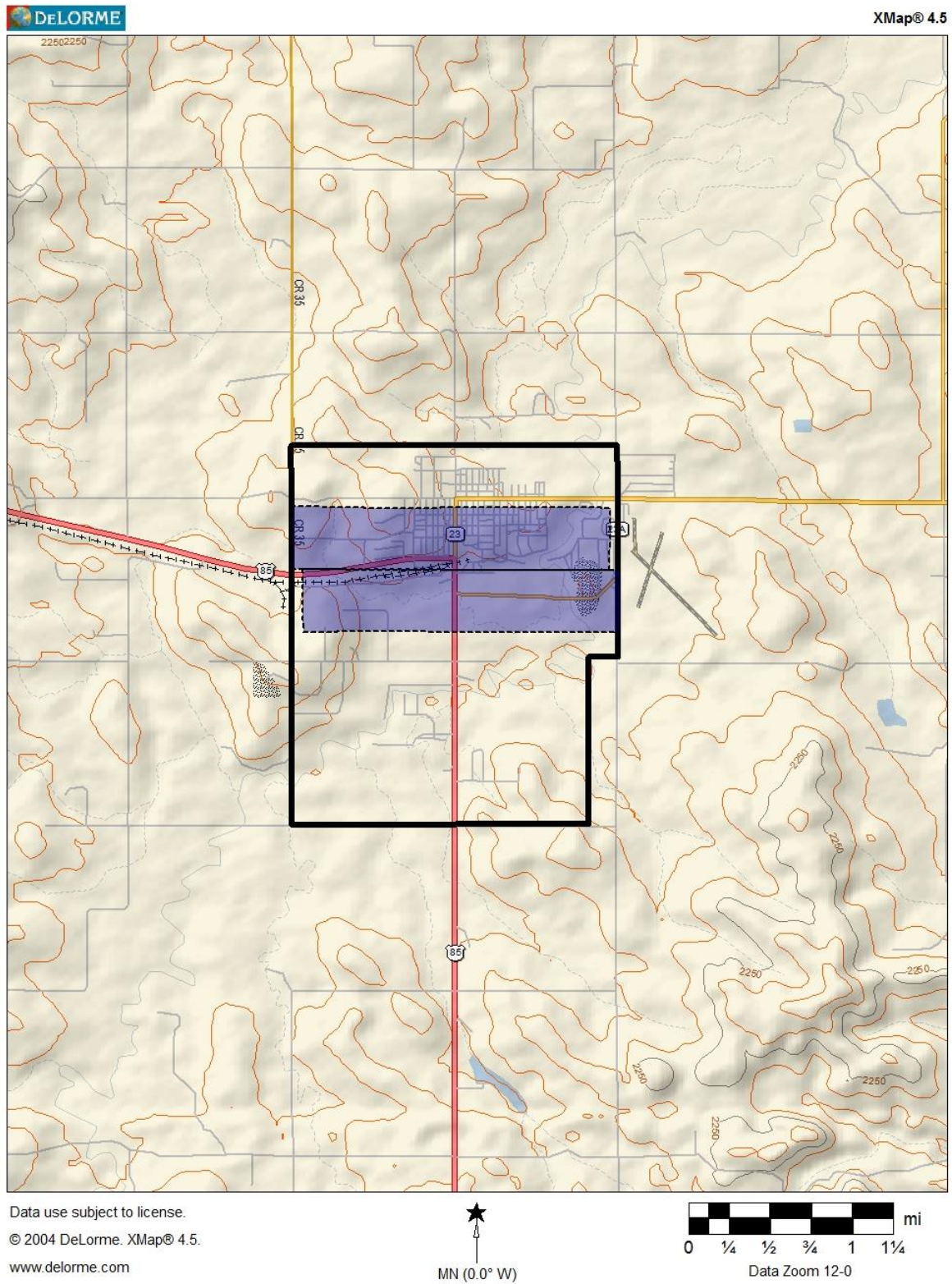


**Attachment 3. Williston area sortie 19 August 2015. Application areas include Williston and Trenton, ND.**





**Attachment 4. Watford city application areas. Applied 19 August 2015 in conjunction with Williston/Trenton sortie.**



**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**JB CHARLESTON, SC 18-21 June 2015**

**1. MISSION BASICS:**

- a. Installation Sprayed: JB Charleston, South Carolina
- b. Mission Duration: 18-21 June 2015
- c. Purpose of Application: Control vector and nuisance control of salt marsh mosquitoes on the Naval Weapons Station area of JB Charleston
- d. Application Date: 19 Jun 2015
- e. Times of Application: 2100-2217 local
- f. Acres Treated: 17,924
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) , Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 19 June 2015
- i. Date of Waste Generation acceptance: 6 July 2012
- j. Installation In-Briefing: (When/Where/Briefer/s): Lt Col (b) (6) Lt Col (b) (6) Maj (b) (6) Lt Col (b) (6) Lt Col (b) (6) Lt Col (b) (6) (b) (6) (b) (6) and the 628 CES @ 1400 hrs on 19 June 2015
- k. Mission Identifier: QENRK351169

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) Lt Col (b) (6) (b) (6)
  - (2) Navigators: Lt Col (b) (6) , Lt Col (b) (6)
  - (3) Flight Engineer: MSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6) rby, SMSgt (b) (6) , MSgt (b) (6) , MSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) SSgt (b) (6) MSgt (b) (6) ; TSgt (b) (6) TSgt (b) (6) SrA (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6) , SSgt (b) (6)
  - (3) Avionics: MSgt (b) (6)
- d. **Entomologists:** Lt Col (b) (6) , Lt Col (b) (6) , Maj (b) (6)
- e. **Flying Data:**
  - (1) Training Sorties/Hours: 1/2.0
  - (2) Ferry Sorties/Hours: 2/4.0

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 120 gallons
- d. Gallons Pesticide Applied: 120 gallons
- e. Gallons and Name Diluent Used: N/A
- f. Gallons and Name of Flush Used: 6 Gallons aromatic naptha
- g. Other Additives Used: None
- h. Application Rate: 0.86 oz/acre

**APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99103

- b. Spray System (Modules Used) and System ID #: SP2G
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: 8003
- e. Nozzle Orientation & Number Used: 27 Total; 13 left, 14 right
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 6.2 gallons/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: 2000'
- c. Spray Release Altitude: 300'
- d. Ground Speed: 200 KTS

**6. WEATHER OBSERVATIONS:** Wind: 180° at 3.5 knots (average) ground observation.  
Temp: 85 degrees F, Humidity 74 percent.

**7. SPRAY MONITORING:** Pre- and post-spray mosquito collections were taken at 5 locations using CO<sub>2</sub>-baited CDC mosquito traps. Landing rates were used to monitor populations at the spoil site and a New Jersey trap was used to monitor populations at GC bridge.

Trap 1: DTP	Average 61.5 females (10 Jun, 11 Jun); 0 females (23 Jun) 100% reduction
Trap 2: SPAWAR:	Average 35.5 females (10 Jun, 11 Jun, 12 Jun, 16 Jun); 0 females (23 Jun) 100% reduction
Trap 3: Golf Course	Average 1,225 females (10 Jun, 11 Jun, 12 Jun, 16 Jun); 0 females (23 Jun) 100% reduction
Trap 4: NPTU	Average 84 females (16 Jun); 0 females (23 Jun) 100% reduction
Trap 5: Wharf A	Average 508 females (10 Jun, 11 Jun, 12 Jun, 16 Jun); 0 females (23 Jun) 95% reduction
Landing count (per minute):	
Spoil site	Average 5.2 females (3 Jun, 4 Jun, 5 Jun, 15 Jun, 16 Jun, 17 Jun); Average 0.5 (19 Jun, 20 Jun) 90% reduction
New Jersey Trap:	
GC Bridge	Average 301.7 females (3 Jun, 4 Jun, 5 Jun, 10-17 Jun); Average 1.5 females (19 Jun, 20 Jun) 99.5% reduction

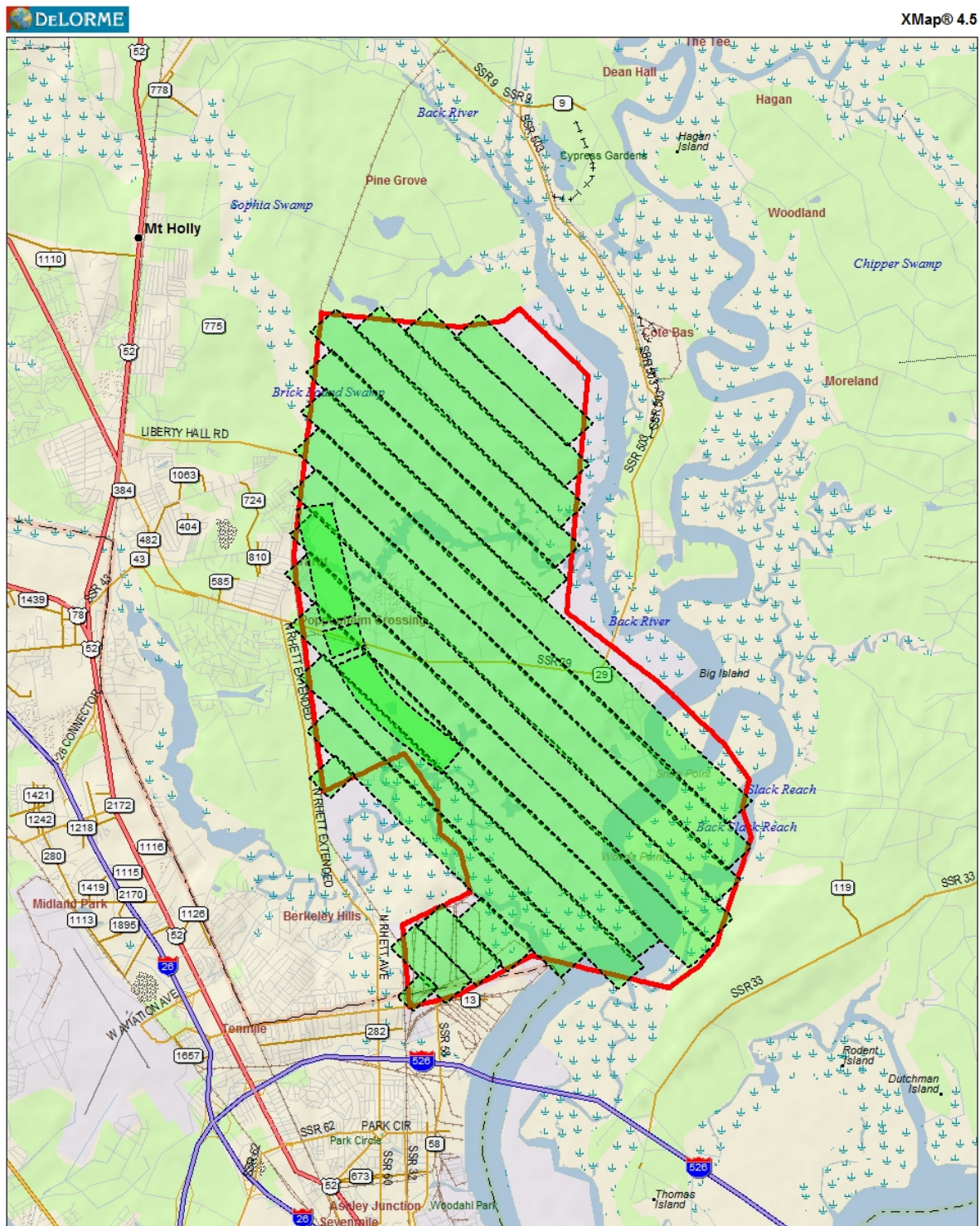
**8. REMARKS:** This application is the first adulticide application conducted for FY 15, and the first night spray conducted at this location. System calibration was conducted on the ground prior to application. No significant problems were encountered during this application, and results appear to be excellent. Because of the large dredge spoil and marshlands associated with the Naval Weapons Station, larvicide operations are of significant interest. Berkeley County, with dredge spoil areas adjacent to JB Charleston, has previously expressed interest in participating in an IRT program to spray acreage outside the boundaries of the Weapons Station. The county mosquito control district has recently conducted aerial larvicide application to this area, the first in three years. We appreciate the support we received from ALL sections at JB Charleston, with special thanks going to (b) (6) for his thorough coordination at all levels.

//signed//

(b) (6), Maj, USAFR  
DoD Certified Pest Management Professional



Attachment 1. Application to Naval Weapons Station, JB Charleston 19 June 2015. Swath lines are in green.  
A 2000 foot offset was utilized to compensate for crosswind deposition.



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www.delorme.com

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Data Zoom 11-0





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

14 April 2015

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Parris Island MCRD, SC

1. Aerial Spray deployment of one C-130 during 20-23 April 2015 to Beaufort MCAS, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at Parris Island MCRD.

2. Concept of Operations (All times are local):

- a. 20 April (Monday)
  - 1600 – Depart KYNG
  - 1800 – Land KNBC
- b. 21 April (Tuesday)
  - 1400 – Installation Brief
  - 1500 – Show/WX Decision
  - 1500 – Calibration
  - 1800 – Depart KNBC (spray sortie)
  - 2000 – Land KNBC
- c. 22 April (Wednesday)
  - 1500 – Show/WX Decision
  - 1800 – Depart KNBC (WX backup sortie/training sortie)
  - 2000 – Land KNBC
- d. 23 April (Thursday)
  - 1100 – Depart KNBC
  - 1300 – Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 7,500 acres
  - b. Altitude: 150 feet AGL
  - c. Swath Width: 1,000 feet
  - d. Groundspeed: 200 KIAS
  - e. Application Rate: 0.75 oz/acre of Dibrom-Naled Organophosphate insecticide
- 4. Lt Col (b) (6) will serve as the mission commander
  - 5. Major (b) (6) will serve as the aircraft commander.
  - 6. Support at Parris Island MCRD and Beaufort MCAS has been completed.

//SIGNED//  
(b) (6), Capt, USAFR  
Assistant Chief of Aerial Spray

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**PARRIS ISLAND MCRD, SC 20 – 23 Apr 2015**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 20 – 23 Apr 2015
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 21 April 2015
- e. Time/s of Application: 1836-2016 hrs local time
- f. Acres Treated: 6,564
- g. Project Coordinator: (b) (6) , Environmental/Spray Coordinator, DSN(b) (6)
- h. Date Spray Map Last Approved: 21 Apr 2015
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: Capt (b) (6) , Maj(b) (6) , Maj<sup>(b) (6)</sup>(b) (6) , Lt Col (b) (6) briefed Mr (b) (6)
- k. Mission Identifier: QENRK3531110

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Maj (b) (6) , Capt (b) (6)
  - (2) Navigator: Lt Col (b) (6) , Maj (b) (6)
  - (3) Flight Engineer: MSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6) , MSgt (b) (6) , SSgt (b) (6) (b) (6) SrA (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6) , MSgt (b) (6)(b) (6) TSgt (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6) , SSgt (b) (6)
  - (3) Avionics: TSgt (b) (6) , SSgt (b) (6)
- d. **Entomologists:** Lt Col (b) (6) , Maj (b) (6)
- e. **Flying Data:**
  - (1) Application Sorties/Hours: 1/1.7
  - (2) Training Sortie: 1/1.1
  - (3) Ferry Sorties/Hours: 2/4.6 (2.3+2.3)

**3. PESTICIDE:**

- a. Trade Name: Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 39
- e. Gallons Pesticide Applied: 39
- f. Gallons and Name Diluent Used: N/A
- g. Gallons and Name of Flush Used: 5 gal Aromatic Naptha
- h. Other Additives Used: None
- i. Application Rate: 2.7 Gallons per Minute (0.76 oz/acre)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 90-9107
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: 8003
- e. Nozzle Orientation & Number Used: 13 Total; 6 left, 7 right
- f. Pressure: 38-43 PSI
- g. Flow Rate: 2.7 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 1000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 kts

**6. WEATHER OBSERVATIONS:** Wind; 280°/3-7 knots (ground); 280°/12 knots (release height)  
Temperature 79.5 degrees F; humidity 75 percent.

**7. SPRAY MONITORING:** 3 mosquito magnets were used to collect insects before and after sprays. See attachment 2 for pre- and post-spray values. Light traps are also used to monitor insect populations but are identified by Navy Preventive Medicine and the results are not immediately available.

**8. REMARKS:** This was a standard evening application (2 hrs prior to sunset). Insect activity had increased following a night spray 2 weeks earlier, to the point that control of midges and mosquitoes was again requested. Environmental conditions were good for aerial spraying. A marked reduction in midge activity was noted by personnel working on the Depot and in trap collections, which were visibly reduced in light traps (actual counts pending from Navy Preventive Medicine) and also in the Mosquito Magnets (see Attachment 2). Midges collected in Mosquito magnets were reduced in numbers on average by 89% following the sprays. The primary pest mosquito, *Culex salinarius* was reduced by only 50% on average at two locations and actually increased in numbers at the Rifle Range location. This species is evening and night active and, thus, may be more susceptible to night sprays. Two eagles' nests on the island are considered to be in use, and as usual a ½ mile no-spray/no-fly buffer was maintained around the nests. No adverse effects on area wildlife were noted by ground observers. The next projected opportunity for an application at the Parris Island MCRD will be in October.

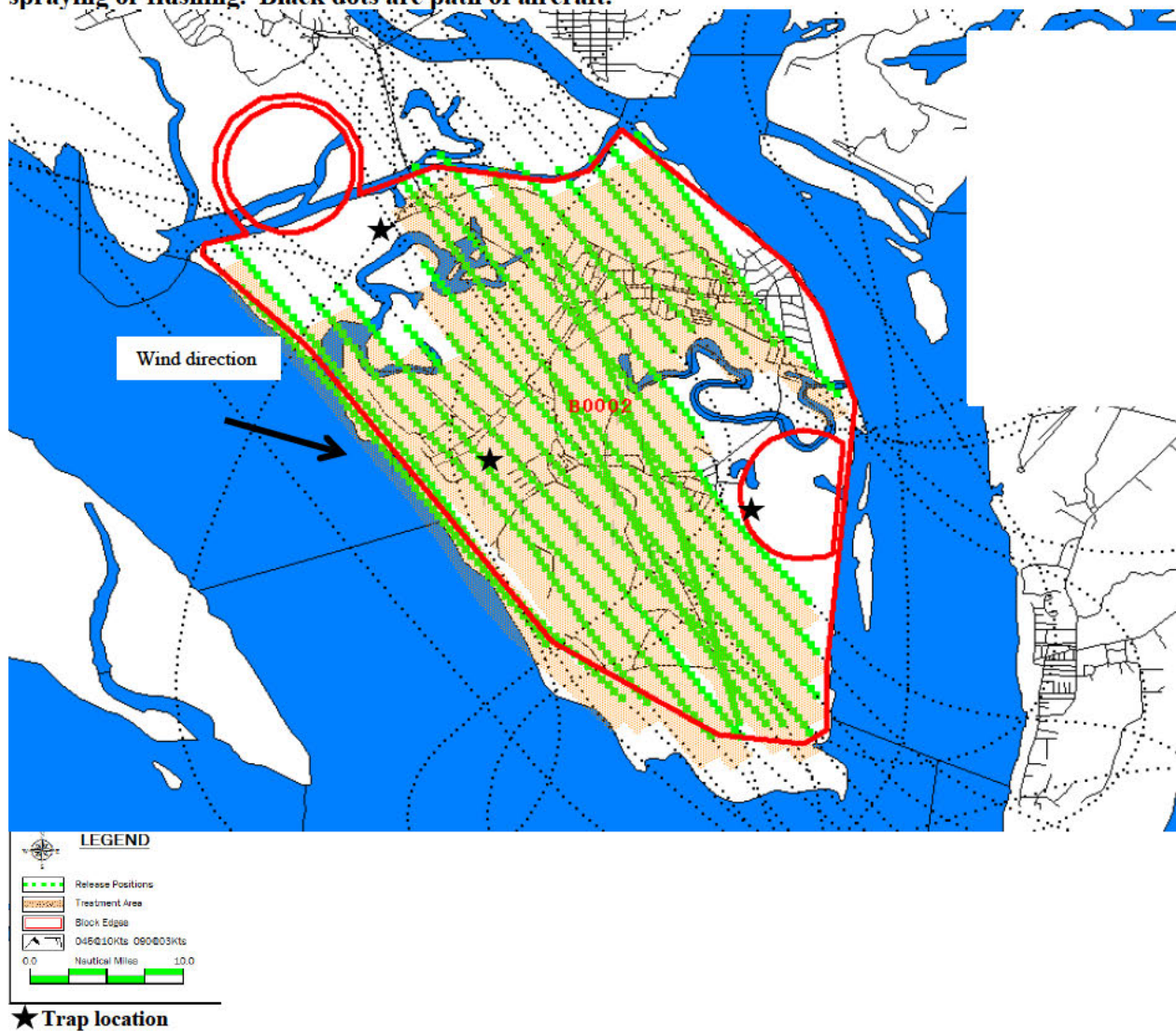
//Signed//

(b) (6) , Lt Col, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

//Signed//

(b) (6) , Maj, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

**Attachment 1. Spray application from 150ft release height (Parris Island, MCRD 21 April 2015). Red circular objects indicate No-Fly zones for eagles' nests. Green lines show when the aircraft was spraying or flushing. Black dots are path of aircraft.**



## Attachment 2.

	Date	21-Apr			23-Apr			% Difference		
		Location			Location			Location		
		Page Field	Horse Island	Rifle Range	Page Field	Horse Island	Rifle Range	Page Field	Horse Island	Rifle Range
<i>Culicoides (midges)</i>										
	<i>furens</i>	969	8208	1702	132	230	268	86	97	84
<i>Mosquitoes</i>										
	<i>Ae. taeniorhynchus</i>	4	1	25	0	0	0	100	100	100
	<i>Cx. salinarius</i>	162	52	126	24	35	192	85	33	52+





**910 AW AERIAL SPRAY UNIT -- POST-MISSION REPORT FOR  
Minot AFB, Watford City, Trenton & Williston ND Adult Mosquito  
Control 22-26 June 2015**

## 1. MISSION BASICS:

- a. Installation Sprayed: Minot AFB and the cities of Williston, Trenton, and Watford City, North Dakota
- b. Mission Duration: 22-26 June 2015
- c. Purpose of Application: Control adult nuisance and vector mosquitoes
- d. Application Date: 23, 24, and 25 June 2015
- e. Time of Application (Z): 0135-0215 (23 June); 0030-0325 (24 Jun); 0115-0200 (24 Jun)
- f. Acres Treated: 5,000 (Minot AFB), 26,000 Williston/Trenton/Watford City
- g. Project Coordinator/s (Name/Rank, Title, Phone #): Mr. (b) (6) , Supervisor - Pest Management Shop, DSN (b) (6) , Williston Vector Control, (b) (6) , (b) (6)
- h. Date Spray Map Last Approved: 23 June 2015
- i. Date of Waste Generation Letter: 28 July 2013
- j. Installation In-Briefing: (When/Where/Briefer/s): Minot AFB CE Conference Room, Lt Col (b) (6) , Maj (b) (6) , Lt Col (b) (6) Capt (b) (6) ; Maj (b) (6)

## 2. OPERATIONAL:

- a. Mission Commander: LtCol (b) (6)
- b. Entomologist (Category 8 & 11): Maj (b) (6)
- c. Aircrew:
- 1) Pilots: Maj (b) (6), Capt (b) (6)
- 2) Navigators: Lt Col (b) (6)
- 3) Flight Engineer: SMSgt (b) (6); SSgt (b) (6)
- 4) Spray Operators: MSgt (b) (6), MSgt (b) (6), SMSgt (b) (6)
- b. Maintenance:
- 1) Spray Maintenance: TSgt (b) (6) (Lead), TSgt (b) (6), TSgt (b) (6)  
(b) (6) TSgt (b) (6), TSgt (b) (6) (b) (6) SrA (b) (6)  
Crew Chief(s): TSgt (b) (6), SrA (b) (6)
- 2) Avionics: TSgt (b) (6)

## Flying Data:

- (1) Spray Sorties/Hours: 2/4.3  
(2) Ferry Sorties/Hours: 2/7.2  
(3) Mission ID: QENRK3531173

### 3. PESTICIDES:

**Minot  
AFB.**

- Trade Name (% Active Ingredient): Trumpet<sup>®</sup> EC (78% AI naled)
- EPA Registration Number: Trumpet<sup>®</sup> EC 59639-90-5481
- Gallons Pesticide Loaded: 30 gal Trumpet<sup>®</sup>
- Gallons and Name of Flush Used: 7 Gal HAN
- Other Additives Used: none
- Application Rate: 0.77 oz/acre Trumpet<sup>®</sup>

**Williston et al.**

- g. Trade Name: Duet
- h. EPA Registration Number: 1021-1795-8329
- i. Gallons Pesticide Loaded: 165 Gal Duet
- j. Gallons and Name of Flush Used: 7 gal HAN
- k. Other Additives Used: none
- l. Application Rate: 0.8/acre Duet

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 89105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 14 straight down for Minot & 19 for Williston
- f. Pressure (PSI): 41-52 PSI
- g. Flow Rate: 2.79 GPM for Minot and 5.8 GPM for Williston

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000' (Williston Area); 1000' (Minot AFB)
- b. Spray Off Set: 1000-2000' depending on wind speed
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 23 Jun 170° @ 5 knots (ground);  
24 Jun 110° @ 5 knots (ground); 25 Jun 230° @ 6 knots  
(ground)
- b. Temperature (Degrees Fahrenheit): 62-66 °F (23-25 Jun)
- c. Relative Humidity: 62-66% (23-25 Jun)
- d. Cloud Cover: scattered clouds
- e. Source: Ground observations and onboard aircraft readings

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. The Minot AFB CES pest management and Williston Mosquito control conducts adult mosquito trapping to monitor mosquito densities on base.
- b. Effectiveness:
  - (1) Technique/s Used: CDC light traps
  - (2) Results: Mosquitoes counts pre and post spray for the Williston area and for Minot AFB are in Attachment

**8. REMARKS:** Continued high numbers of mosquitoes in both the Minot and Williston ND areas along with Minot AFB prompted each location to participate in an aerial spray application. Spray operations were conducted on the evenings of 23-25 June. Weather conditions were marginal early each day, with a window of opportunity opening up 1-2 hrs before scheduled take off time. Minor malfunctions in the pressure indicator of the spray system was the only interruption to spray operations, and required that the first sortie to spray the base be terminated prematurely. Marginal forecasts prompted the target priority to be the Williston area the following day, so as to attempt to complete as much of the mission as possible if the mission was weathered out later in the week. Trap reductions were 75% at Minot AFB, however it must be noted that post-spray trap collections were not conducted until the following week, possibly allowing a significant emigration of insect populations into the target area. Trap reductions were approximately 69% pre vs post spray in the Williston area. While these reductions are significant, the sheer numbers of mosquitos in the area indicated this spray probably only provided marginal relief. Many thanks to the Minot AFB pest management personnel, the CE flight, and Minot AFB OSS for supporting this mission.



Sortie information can be found in Attachments 2-3.

**//signed//**  
**(b) (6)**, Lt Col, USAFR  
**DoD Certified Pest Management Professional**

Attachments:

## **Attachment 1. Williston Area and Minot AFB Pre and Post application data.**

### **Williston Area:**

Pre spray trap catch: 1554 (2 traps) (conducted 23 June)

Post spray trap catch: 484 (2 traps) (conducted 25 June)

Approx 69% reduction

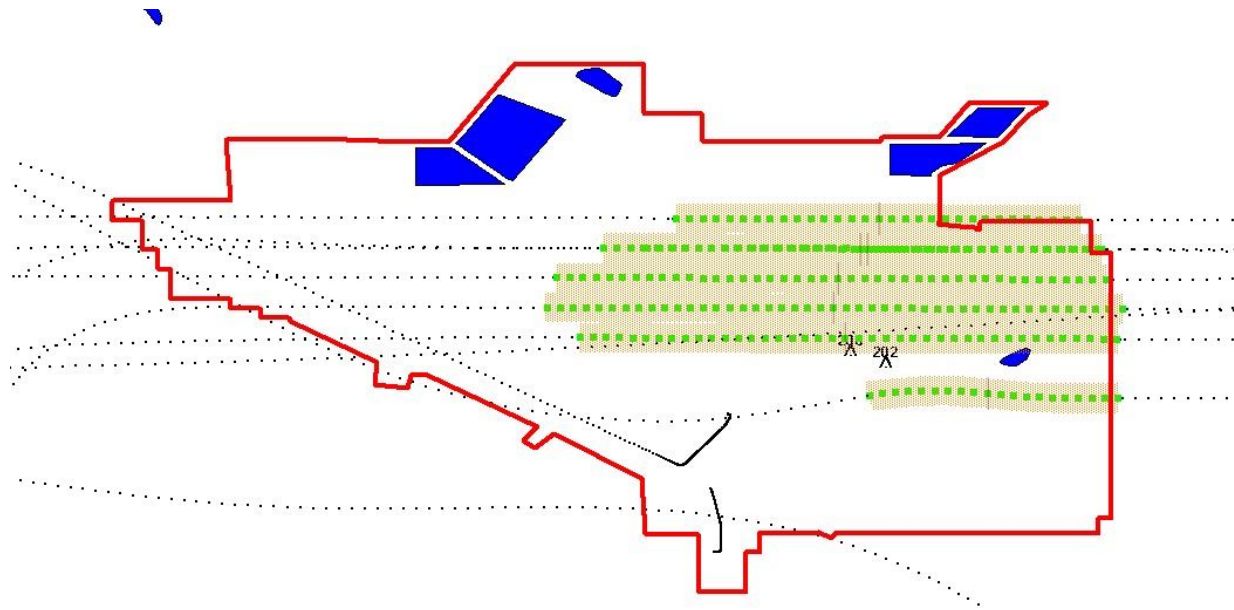
### **Minot AFB:**

Pre spray trap catch: 300/trap/day (8 traps) (conducted 22 June)

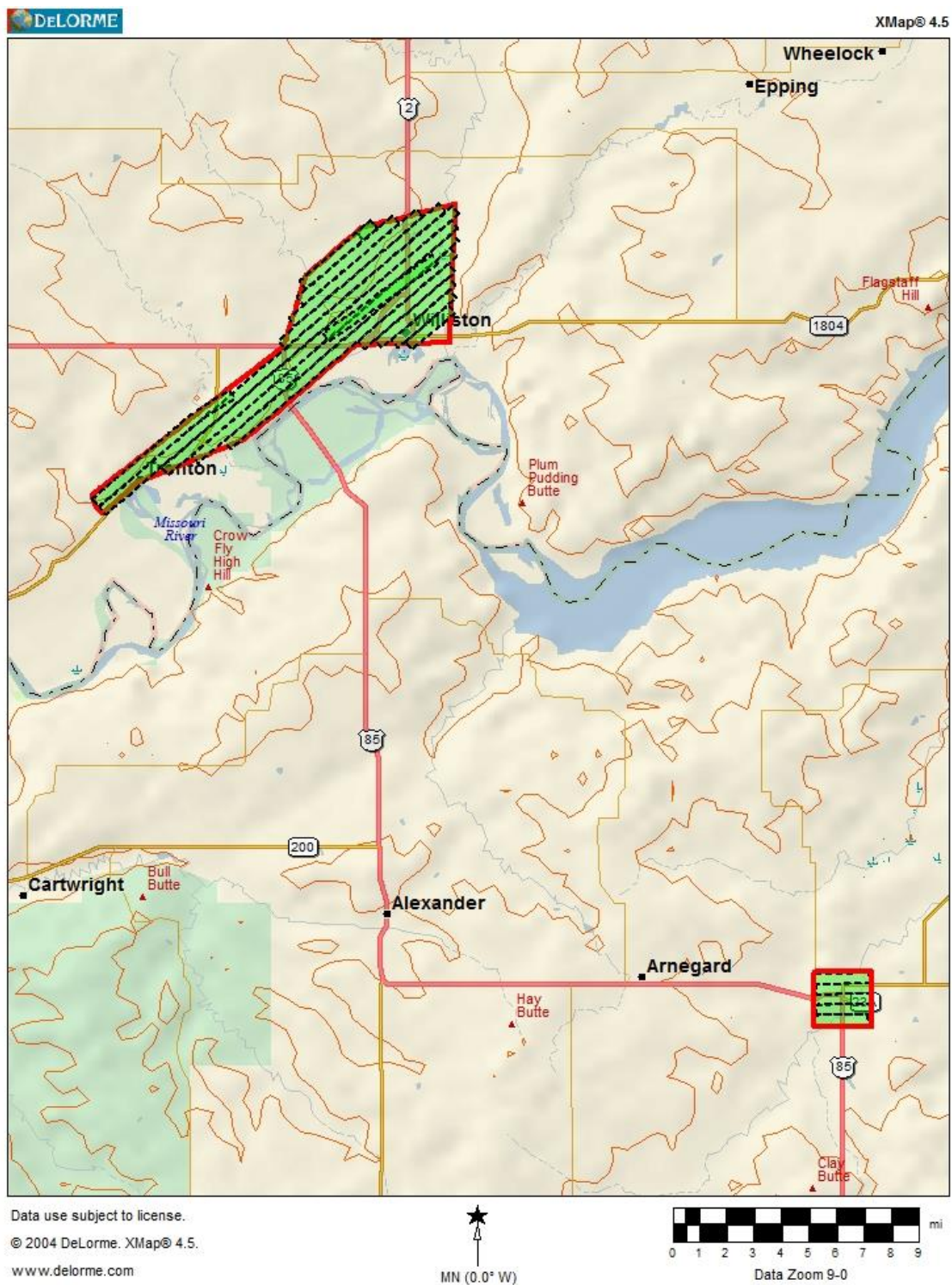
Post spray trap catch: 75/trap/day (conducted 29 June)

Approx 75% reduction

**Attachment 2. Minot AFB Sortie. Map shows application area for 25 June sortie only. Data from 23 June sortie could not be recovered from the GPS unit.**



**Attachment 3. Williston area sortie. Application areas include Williston, Trenton, and Watford City ND.**





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

12 Mar 15

**MEMORANDUM FOR HQ AFRC/A300**

**FROM:** 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

**SUBJECT:** Concept of Operations for Aerial Spray Static Display at Jacksonville NAS, FL

1. The 910AW will provide a single C-130 aerial spray platform as a static display for the upcoming Tri-Service Pest Management Conference taking place at NAS Jacksonville, FL the week of 23-27 March 2015. The trip will serve an excellent opportunity to educate DoD Pest Management professionals on the 910 AW's aerial spray unique capability.
2. Concept of Operations (All times are local):
  - a. 24 March (Tues)  
1600 Depart KYNG  
1900 Land KNIP
  - b. 25 March (Weds)  
1300-1630 Static display at KNIP  
1730 Depart KNIP  
2030 Land KYNG
3. Spray Parameters: N/A (no flying, static display only)
4. Lt Col (b) (6) will be the aircraft commander. Support at Jacksonville NAS has been completed.

//SIGNED//  
(b) (6) Lt Col, USAFR  
Chief of Aerial Spray





DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT**  
**WILLISTON ARMY CORPS OF ENGINEERS, 26 MAY – 5 JUNE 2015**

**1. MISSION BASICS:**

- a. Installation Sprayed: Williston Army Corps of Engineers
- b. Mission Duration: 26 May-5 June 2015
- c. Purpose of Application: Reduce the development of nuisance mosquitoes in standing water in locations not easily assessable by ground
- d. Application Dates: See Attachment 1
- e. Times of Application (Local): See Attachment 1
- f. Acres Treated: 1,079
- g. Flying Data:
  - (1) Spray sorties/hours: 6/13.6
  - (2) Training sorties/hours: 1/1.7
  - (2) Ferry sorties/hours: 8/28.6
- h. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) / Army Corps of Engineers, Williston Manager (b) (6)
- i. Date Spray Map Last Approved: 22 May 2015
- j. Installation In-Briefing: (When/Where/Briefer/s): Lt Col (b) (6) & (b) (6) at the Army Corps of Engineers, Williston

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Entomologists: Lt Col (b) (6), Lt Col (b) (6), Maj (b) (6)
- c. ARMS: SrA (b) (6)
- d. 1<sup>st</sup> HALF AIRCREW (26-29 May)
  - Pilots: Maj (b) (6), Maj (b) (6)
  - Navigator: Lt Col (b) (6)
  - Flight Engineers: MSgt (b) (6), TSgt (b) (6)
  - Spray Operators: MSgt (b) (6), TSgt (b) (6), SrA (b) (6)
  - Crew Chiefs: MSgt (b) (6), SrA (b) (6)
- 2nd HALF AIRCREW (30 May-5 June)
  - Pilots: Maj (b) (6), Maj (b) (6), Capt (b) (6)
  - Navigators: Lt Col (b) (6)
  - Flight Engineers: SMSgt (b) (6), TSgt (b) (6)
  - Spray Operators: MSgt (b) (6), SMSgt (b) (6), MSgt (b) (6)
  - SSgt (b) (6)
- e. Maintenance:
  - MX Supervisor: SMSgt (b) (6)
  - Spray MX: SSgt (b) (6), (Lead), MSgt (b) (6), TSgt (b) (6), TSgt (b) (6)

910 MX Specialists: MSgt (b) (6) , SSgt (b) (6) , SSgt (b) (6)(b) (6) ,  
TSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6) TSgt (b) (6) , SrA (b) (6)  
(b) (6)  
Crew Chiefs: TSgt (b) (6) , SrA (b) (6)  
COMM: SSgt (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Vectobac® 12AS (1200 ITU/mg)
- b. EPA Registration Number: 73049-38
- c. Formulation Sprayed: 1.5 pints of Vectobac in 5 gallons water per acre
- d. Gallons Pesticide Mix Loaded: 5,407
- e. Gallons Pesticide Mix Applied: 5,407 (222 gallons of VectoBac12AS)
- f. Gallons and Name of Flush Used: 900 gal water
- g. Other Additives Used: 1 gallon Poly Control 2
- h. Application Rate: 5 gal/acre (water with 1.5 pints Vectobac® + 0.05 oz of Poly Control 2)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 909108
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 3-Module System/ UHV Fuselage Booms
- d. Nozzle Type/Size: UHV Fuselage
- e. Nozzle Orientation & Number Used: 12 oriented straight back.
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 233 gallons per minute.

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 35'
- b. Spray Off-set: None
- c. Spray Release Altitude: 100' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. See Attachment 2.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique Used: water sensitive dye cards
  - (2) Results: 100 ft swath confirmed. See remarks for details
- b. Effectiveness:
  - (1) Techniques Used: floating bioassay cages (FBCs) with wild-collected larvae; pre/post larval dips
  - (2) Results: 61 – 91% mortality in FBCs and similar results in wild populations sampled by dips. See Attachment 2A-C

**8. REMARKS:** The annual hatch of the primary pest mosquito in this operation, *Aedes vexans*, is initiated by the rising meltwaters of the undammed Yellowstone River. However, the rise of the river is dependent on environmental conditions 250 miles away. In May of 2015, the river began to rise but this initial upsurge was followed by cool temperatures and, consequently, the anticipated larval hatch did not occur until after the start of the mission. In fact, larval sampling occurring just days prior to the departure from Youngstown found very little insect activity. Therefore, it was



decided the day of the mission's departure to shrink the footprint to a single aircraft. This added quite a bit of confusion to the deployment but was the responsible course of action as it was impossible to justify two aircraft sitting at Minot AFB with no areas to treat in Williston. A significant larval hatch occurred during the second week of the mission and several sorties were flown at maximum capacity. Additionally, specific training requirements were completed for several crew members. The paucity of larval targets wasn't a complete negative, the lack of large areas to treat allowed for the project to shift focus to testing the efficacy of these sprays in different habitats found in the Williston Confluence. Three locations were chosen: (1) Hell's Canyon (see Attachment 2A) – a wet meadow with snowmelt pools showing heavy mosquito breeding. This location also functioned as a source of wild larvae used in the other testing locations; (2) Corps Ponds (Attachment 2B) – Emergent vegetation south of the Army Corps of Engineers' ponds. This site was along a channel section of the confluence area, a historical mosquito producing area; (3) Trenton South (Attachment 2C) – This site tends to flood at the early flood- level stage and is forested with 80 ft tall cottonwoods with a significant canopy created by the newly budding leaves. Complete trial results are listed in Attachment 2A-C, but to summarize, the overall findings showed a higher efficacy in open areas with minimal water movement in contrast to increased canopy and fluctuating water levels. In general, a greater droplet density on water sensitive cards could be easily correlated with greater larval mortality. Larval dips (see Attachment 3) tracked well with the mortality determined from the floating bioassay cages (FBCs). **Conclusions from these studies:** mortality was measured to be between 61- 91% using FBCs and larval dips. The application rate was 1.5 pints/acre of VectoBac12AS, this is equivalent to 75% of the maximum allowed label rate (2 pints/acre). Mortality above 90% should probably be considered successful when using a fast-moving fixed-wing aircraft, especially when considering the variation in terrain on the Army Corps property. In some cases an even lower percent mortality may be considered worthwhile, especially when larval densities are high. Considering the effort involved in getting 2 C-130 aircraft and 40+ people to North Dakota, not to mention the funds allocated to this mosquito control project, it seems prudent to spray at the higher label rate. The additional cost of the pesticide is minor compared to the cost of re-treating the area because of poor results. **Recommendation:** Repeat study at the maximum label rate of 2 pints/acre in 2016.

//signed//

(b) (6) , Lt Col, USAFR  
DoD Certified Pest Management Professional

//signed//

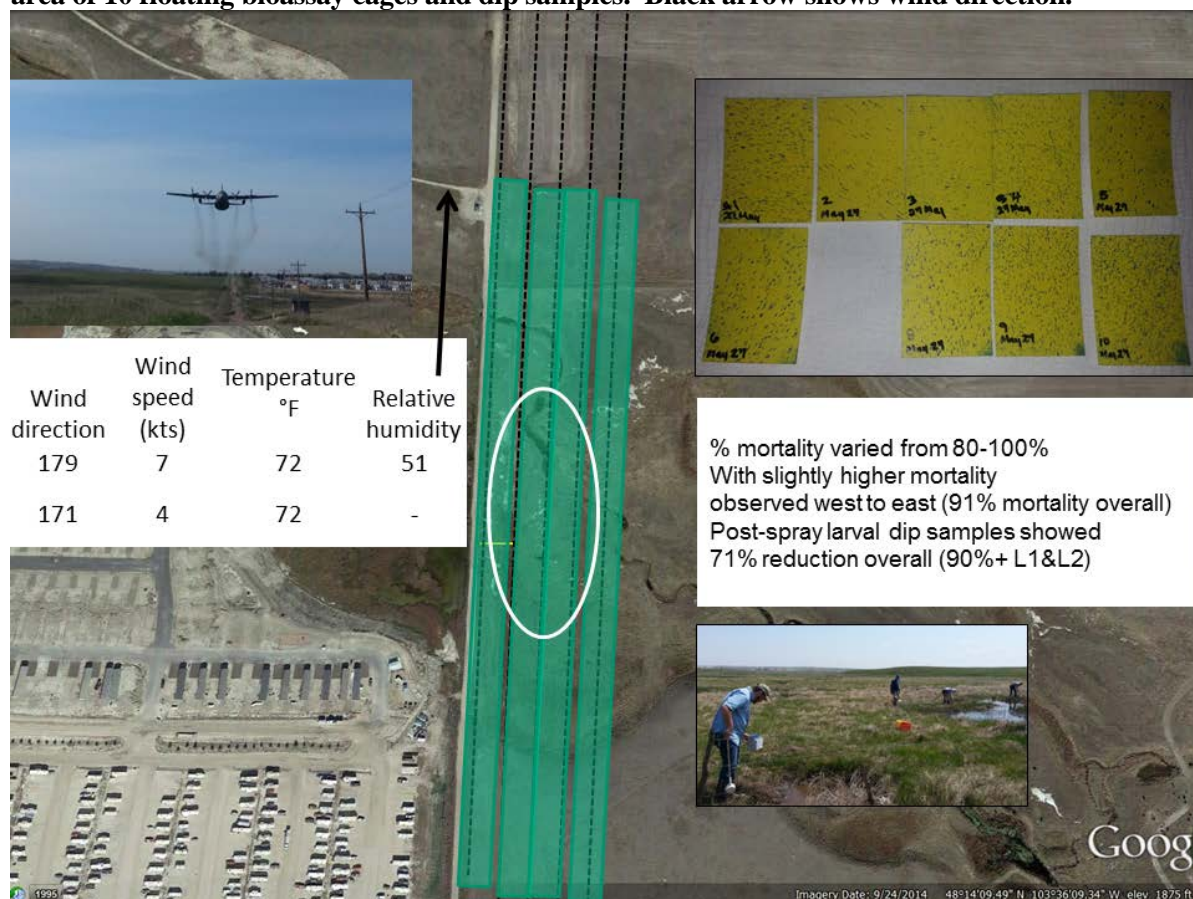
(b) (6) , Lt Col, USAFR  
DoD Certified Pest Management Professional

**27 May- 4 June 2105****SPRAY OPERATIONS SUMMARY FOR WILLISTON ARMY CORPS OF ENGINEERS AREAS**

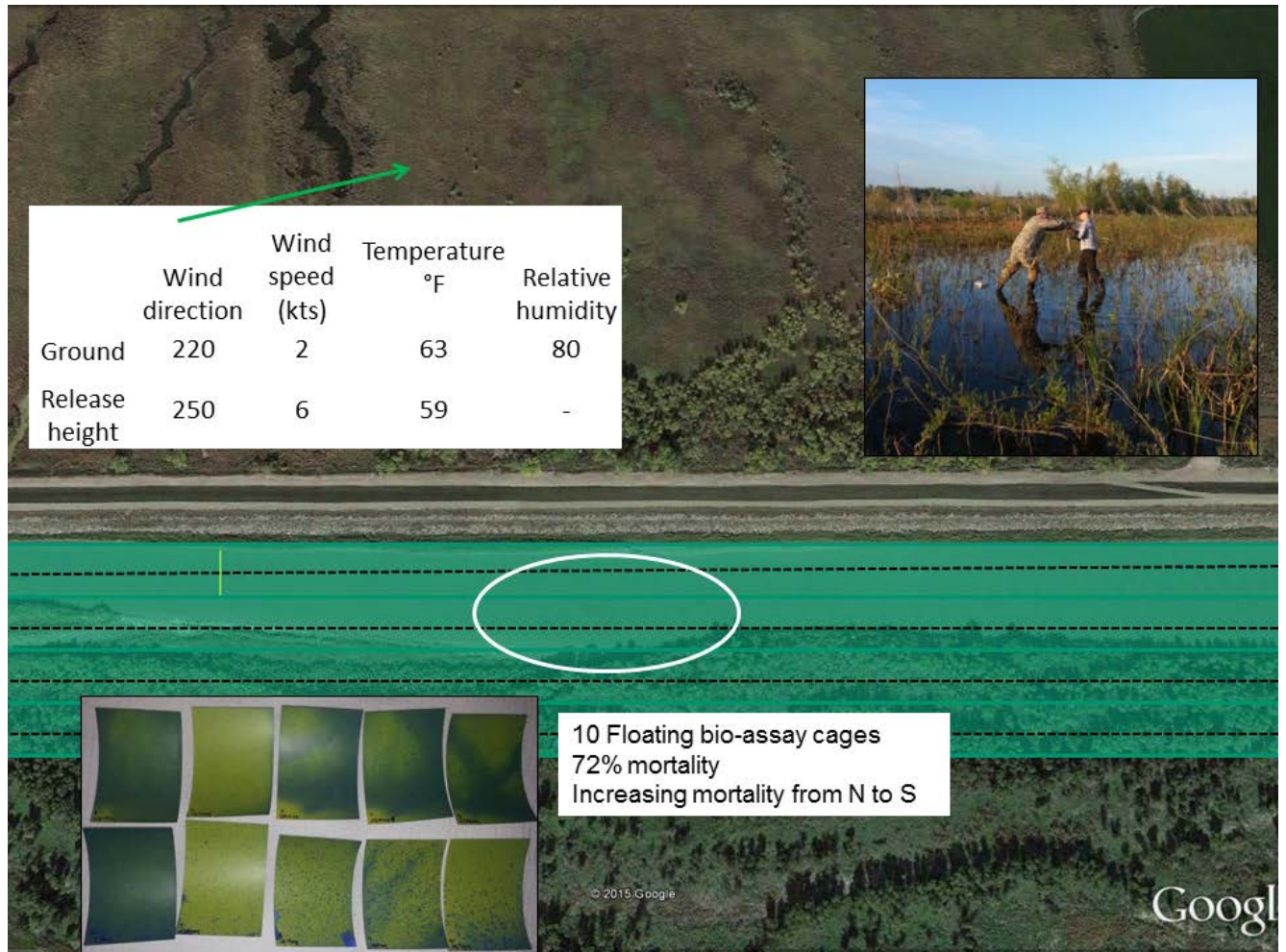
DATE May/June	SORTIE #	TIMES	GALLONS OF VECTOBAC	GALLONS SPRAYED (water+VectoBac)	ACRES	FLYING HOURS
27	1	0914-1114	15	375	75	2.0
28	2	0825-1020	13.5	343	68	1.9
1	3	0745-1015	15	375	74	2.5
3	4	1320-1550	15	375	74	2.5
4	5	0618-0850	81	1,940	388	2.5
4	6	0950-1200	82.5	1,999	400	2.2
Totals			222	5,407	1,079	13.6

**Attachment 2:**

**A. 27May15 larvicide application at “Hell’s Canyon” site. Wet meadow habitat or snowmelt pools. Black dotted lines represent path of aircraft; green blocks are 100 foot swath showing “spray-on”. Yellow cards are water sensitive and represent amount of product by drop size and density. White circle is approximate area of 10 floating bioassay cages and dip samples. Black arrow shows wind direction.**

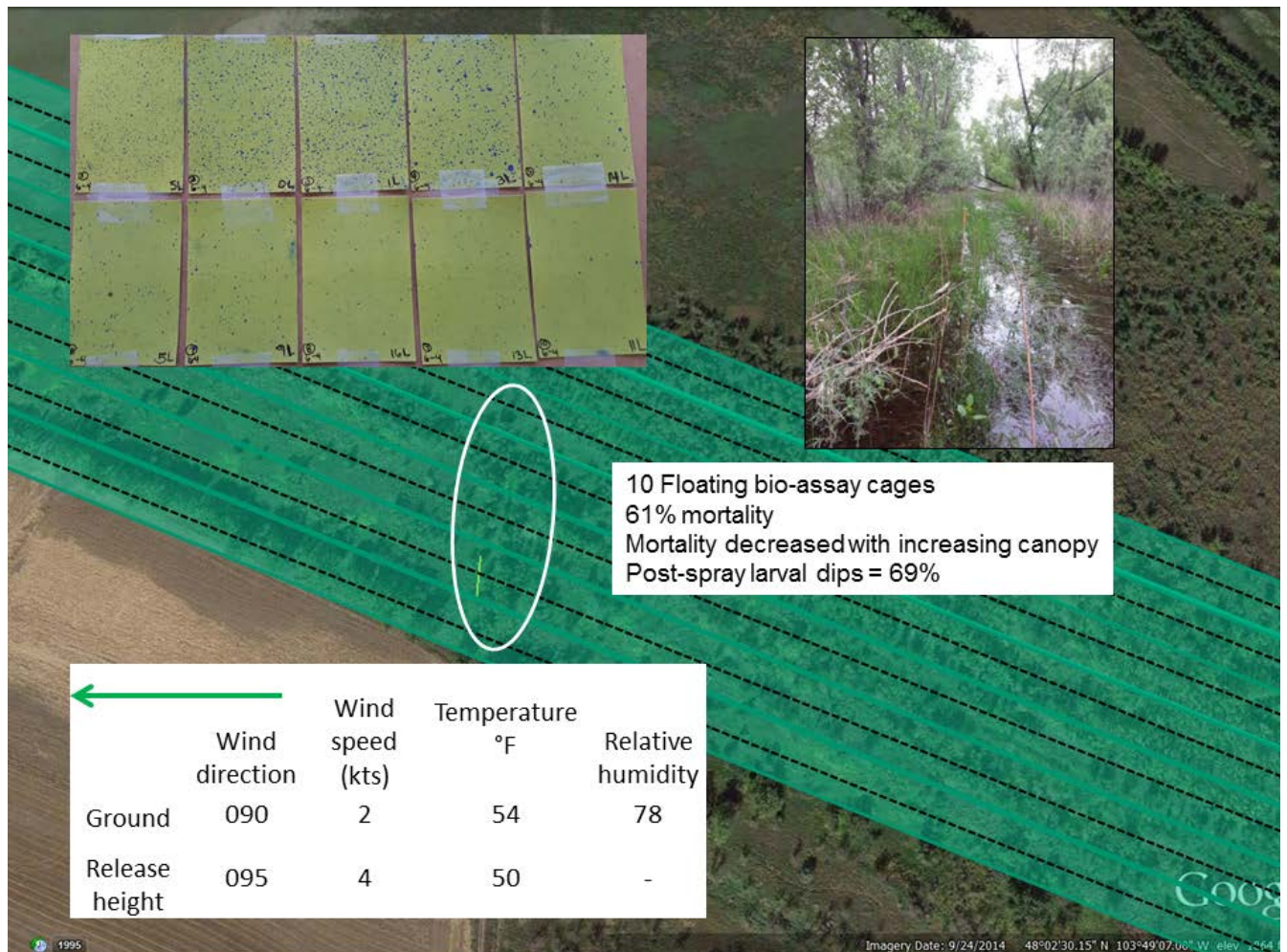


B. 28May15 larvicide application at the “Corps Pond” site. Flooded side channel of river with some minor emergent vegetation. North is up. Black dotted lines represent path of aircraft; green blocks are 100 foot swath showing “spray-on”. Yellow cards are water sensitive and represent amount of product by drop size and density. In this case, the darkening seen on the cards was caused by excessive humidity, which is a drawback to this particular media. White circle is approximate area of 10 floating bioassay cages. Green arrow shows wind direction.





C. 4June15. Trenton South location with some canopy from cottonwood trees with leaves. Black dotted lines represent path of aircraft; green blocks are 100 foot swath showing “spray-on”. Yellow cards are water sensitive and represent amount of product by drop size and density. White circle is approximate area of 10 floating bioassay cages and dip samples. Green arrow shows wind direction.



**Attachment 3.** Sampling stations consisted of (left to right): water sensitive cards; floating bioassay cages which are screened to allow water to mix with contents, but lids were placed on cage after application. Each cage contained 20 mosquito larvae; and dip samples. Larval dips were made before and after the larvicide application and larval mortality was read at 24 hours.



**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**PARRIS ISLAND MCRD, SC 27-30 October 2014**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 27-30 October 2014
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 28 October 2014
- e. Time/s of Application (Local): 1700 Takeoff
- f. Acres Treated: 8,000
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6)  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 28 October 2014
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): Lt Col (b) (6), Lt Col (b) (6)  
(b) (6) Maj (b) (6), Lt Col (b) (6) Capt (b) (6)
- k. Mission Identifier: QENRK3591300

**2. OPERATIONAL:**

- a. **Mission Commander:** Maj (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6), Capt (b) (6)
  - (2) Navigator: Lt Col (b) (6)
  - (3) Flight Engineer: SMSgt (b) (6) MSgt (b) (6)
  - (4) Spray Operators: MSgt (b) (6), MSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) (lead), MSgt (b) (6), TSgt (b) (6), TSgt (b) (6) wanger
  - (2) Crew Chiefs: MSgt (b) (6), SrA (b) (6)
  - (3) Avionics: TSgt (b) (6)
- d. **Entomologist:** Lt Col (b) (6)
- e. **Flying Data:**
  - (1) Application Sorties/Hours: 1/2.0
  - (2) Training Sorties/Hours: 1/1.4
  - (3) Ferry Sorties/Hours: 2/4.3

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 49 Gallons
- e. Gallons Pesticide Applied: 49 Gallons
- f. Gallons and Name Diluent Used: N/A
- g. Gallons and Name of Flush Used: 7 Gallons HAN
- h. Other Additives Used: None
- i. Application Rate: 0.78 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: 3003
- e. Nozzle Orientation & Number Used: 13 Total; 6 left, 7 right
- f. Pressure: 40 PSI
- g. Flow Rate: 2.8 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 1000'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 KTS

**6. WEATHER OBSERVATIONS:** Wind; 130 at 5.5 KTS (average) Ground observation.  
Temp; 68-72 degrees F. Humidity; 76 percent.

**7. SPRAY MONITORING:** Pre and post spray landing counts were made at 2 locations (see section 8). During the application, the treatment site was monitored on the ground. There was no evidence of adverse effects of application on non-target species. Several species of Lepidoptera, Diptera, and Odonata were noted during the insect survey the day following the spray application.

**8. REMARKS:** This was the last spray conducted by the Air Force Aerial Spray Unit at Parris Island for calendar year 2014. Both eagles' nests on the island were active, and as usual a ½ mile no-spray/no-fly buffer was maintained around the nests (See attachment 1). This spray appeared to be highly effective. Pre-spray biting fly (mosquitoes and midges) landing counts conducted in the weapons area and the causeway yielded counts of 22 and 30 respectively. Post-spray landing counts at the weapons area, Elliot Beach and Page Field resulted in counts of 4, 0, and 0 respectively. Reduced nuisance pest populations will undoubtedly improve the quality of training, morale, and the productivity of base personnel and recruits. There were no significant problems encountered in this mission. Calibration of the system was relatively straightforward. The "k" factor on the flow meter had to be adjusted slightly to reflect actual measured flow. The "k" factor used was 0.250. Thanks to (b) (6) and (b) (6) for once again facilitating these activities, and thanks to TSgt (b) (6) for an excellent job with spray maintenance communication and coordination.

//signed//

(b) (6), Lt Col, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL



**Attachment 1. Spray application of Parris Island 28 October 2014. Red circular objects indicate No-Fly zones for eagles' nests. Green areas are pesticide dispersion swaths.**







**DEPARTMENT OF THE AIR FORCE**  
**757 Airlift Squadron – Aerial Spray Operations**  
**Youngstown Air Reserve Station, OH**

**910 AW AERIAL SPRAY UNIT – POST-MISSION REPORT FOR**  
**GRAND FORKS AFB ADULT MOSQUITO CONTROL**  
**29 June – 2 July 2015**

**1. MISSION BASICS:**

- a. Installation Sprayed: Grand Forks AFB North Dakota
- b. Mission Duration: 29 June – 2 July 2015
- c. Purpose of Application: Control adult nuisance and vector mosquitoes
- d. Application Date 30 June 2015
- e. Time of Application (Local): 2255 -0040 (30 Jun-1 Jul); sunset was 2132
- f. Acres Treated: 4,841
- g. Project Coordinator/s (Name/Rank, Title, Phone #): TSgt (b) (6) NCOIC Pest Management Shop, DSN (b) (6)
- h. Date Spray Map Last Approved: 30 June 2015
- i. Date of Waste Generation Letter: 22 June 2001
- j. Installation In-Briefing: (When/Where/Briefer/s): GFAFB MSG Conference Room, Col (b) (6) (MSG/CC); Lt Col (b) (6) (MSG/CD); Maj (b) (6) (CES/CC); Maj (b) (6) (CES/Ops Flight CC); TSgt (b) (6) (319 CES/Pest Management NCOIC); Lt Col (b) (6) Maj (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Maj (b) (6)(b) (6)
- b. Entomologist (Category 11): Lt Col (b) (6)
- c. Aircrew:
  - 1) Pilots: Lt Col (b) (6) Lt Col (b) (6)
  - 2) Navigators: Lt Col (b) (6) Lt Col (b) (6)
  - 3) Flight Engineer: SMSgt (b) (6) MSgt (b) (6)
  - 4) Spray Operators: SMSgt (b) (6) MSgt (b) (6) MSgt (b) (6)
- d. Maintenance:
  - 1) Spray Maintenance: TSgt (b) (6) (Lead), TSgt (b) (6), TSgt (b) (6)  
Robitaille, SSgt (b) (6) SrA (b) (6)  
Crew Chief(s): MSgt (b) (6) A1C (b) (6)
  - 2) Avionics: MSgt (b) (6)
- e. Flying Data:
  - 1) Spray Sorties/Hours: 1/1.7
  - 2) Ferry Sorties/Hours: 2/6.3
  - 3) Mission ID: QENRK3531180

**3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 45 gal Trumpet®
- d. Gallons Sprayed: 45 gal Trumpet®
- e. Gallons and Name of Flush Used: 8 gal aromatic naptha (Atsol-150)
- f. Other Additives Used: none
- g. Application Rate: 1.2 oz/acre Trumpet®

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99103
- b. Spray System (Modules Used) and System ID #: SP2/#1
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 17 straight down
- f. Pressure (PSI): 41-43
- g. Flow Rate: 3.4 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Offset: 500'
- c. Spray Release Altitude: 300'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): winds were light and variable to calm at altitude (300 ft) and on the ground
- b. Temperature (Degrees Fahrenheit): 69 dropping to 64 °F
- c. Relative Humidity: 87 increasing to 94%
- d. Cloud Cover: scattered clouds
- e. Source: Ground observations and onboard aircraft readings

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. The 319 CES pest management conducts adult mosquito trapping to monitor mosquito densities on base.
- b. Effectiveness:

- (1) Technique/s Used: Mosquito magnet traps
- (2) Results: numbers of mosquitoes in one night trapping

<u>Location</u>	<u>Pre-spray</u>	<u>Post-spray</u>
Gate 1	350	6
Gate 1b	150	0
Gate 2	78	20
Dogwood	255	1
Beech	85	0

GFAFB pest management trapping (shown above) shows a reduction of 97% of all mosquitoes the day after sprays.

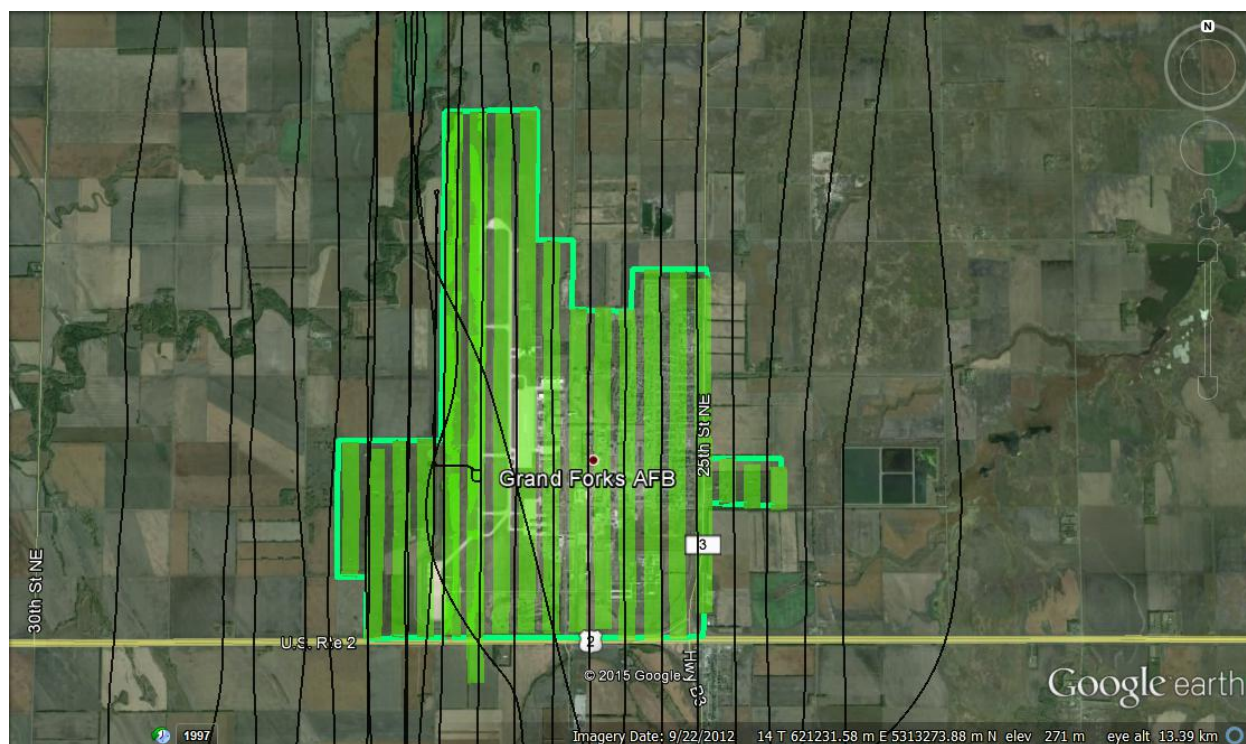
**8. REMARKS:** Continued moderate numbers (183 average) of mosquitoes collected in traps prompted Grand Forks AFB (GFAFB) to make the decision to receive an aerial spray application (see 7b). This was the first night spray for GFAFB. After sunset sprays potentially target the flight activity pattern of the target mosquitoes, resulting in greater efficacy, while reducing pesticide exposure to honeybees (which are day active). The target pest was *Aedes vexans* and *Aedes dorsalis* which are aggressive evening and early night biting species. Night spraying is a new and developing capability for the 910AW's Aerial Spray Unit (this was the 3<sup>rd</sup> operational application) and, therefore, may likely not be available for all spray requests until additional aircrews have been trained.

The environmental parameters on night of 30 June were somewhat less than desirable conditions for aerial spraying: very light and variable winds were encountered, whereas moderate, consistent winds are preferred. Therefore, a 1,000 ft. swath was used to allow for complete swath coverage even with low wind.

The spray area was 4,800 acres (down from 11,500 acres in 2014) and it is recommended that GFAFB consider increasing the size of the treatment area beyond the base perimeter in order to create a buffer area to discourage the immediate immigration of mosquitoes from outside the spray area. Post-spray trap count data showed an exciting 97% mosquito reduction following the application. Special thanks to TSgt (b) (6) and other 319th Pest Management staff for excellent support through great communication, insect trapping, equipment, etc., it was sincerely appreciated. There are no scheduled potential aerial spray opportunities left in this calendar year. However, the Spray Unit will contact GFAFB if any other spray projects cancel.

//signed//  
(b) (6) Lt Col, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

**Attachment 1. Image shows Grand Forks AFB, pesticide application swaths during the application on 30 June 2015, black is the path of the aircraft; thin green lines show the limit of the spray area; and thicker green lines indicate where spraying occurred.**







**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

17 Aug 2015

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Langley AFB and Craney Island Army Corps of Engineers, VA.

1. Aerial spray deployment of one C-130 to Langley AFB, VA. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of Langley AFB. Operations will be conducted out of Langley AFB, VA.

2. Concept of Operations: All times local

- a. 31 Aug (Monday)  
1600 Depart KYNG  
1700 Land KLFI
- b. 1-3 Sep (Tuesday-Thursday)  
1800 Depart KLFI  
2030 Land KLFI
- c. 4 Sep (Friday)  
1300 Depart KLFI  
1400 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Location: Langley AFB and Craney Island, VA
- b. Altitude: 150 ft for adulticide application
- c. Swath Width: 2,000 feet
- d. Airspeed: 200 KGS
- e. Application Rate: 1.0 oz/acre Trumpet

4. Lt Col (b) (6) will serve as the Mission Commander. Support required at Langley AFB, VA is completed.

\\SIGNED\\

(b) (6)

, Lt Col, USAFR  
Chief, Aerial Spray

# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: MSgt. (b) (6) (b) (6) - Luke AFB, AZ - 23-27 Feb 2015

**Aircraft Tail Number:** 89009105

**MASS Number:** MASS 3

**Configuration:** LV/HV

**Boom & Nozzle Type:** Fuselage,  
Raindrop

**Chemical in Main Tank:** Cornerstone,  
Clasp, Blue Dye

**Chemical in Flush Tank:** H2O

**Total Chemical Loads:** 3

**Total Flush Loads:** 1

**Amount of Liquid Waste Generated:**  
0

**Amount of Solid Waste Generated:**  
0

## 1. From a maintenance aspect, what training was accomplished on this mission?

On Wed we did do a hot upload that went very well. We had no problems. We all (Loads and AS Maintenance) talked about the hot upload and how it was going to happen. Only issue was when the plane taxied in, they parked one spot to far away for the fill hose to reach. They Taxied around and parked in the right one and everything went as planned.

## 2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.

Communication was established with LT Col (b) (6) a week prior to the mission. Spray MXS coordinated well with each other. The Luke Fire Dept. was more than helpful with getting to the plane when called.

## 3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.

The trip was a success and don't believe anything could have been done better. The only suggestion that I would make is that we find a way to not have to rely on the fire department for getting water on the system. We did have an issue that could have potentially been a mission impact. If the base has a 911 call or IFE all of their other operations stop so they can handle it. If we are doing a hot turn and they get a call, we would have to stop all ops and wait for Fire Dept. to return



which could affect our mission. We did need the aircraft rinsed off after the last sortie due to a overboard vent of the system. We called the fire dept. to coordinate it and was told it wouldn't be a problem. After waiting 1.5 hours I called again and was told that they had a couple of 911 calls and no one was in the shop. I told them to cancel the call and ended up doing the rinse the next day. Had we needed them for a hot upload at the time, we would have had to wait or cancel the mission for the day due to lack of range time. We need a plan B incase this happens again.

**4. How was host base and TA support? Please include details.**

Everything was great. I would like to Highlight Luke Fire Dept. for their outstanding support. Their flexibility and willingness to work with us on getting the system filled or getting the aircraft sprayed off was greatly appreciated and key to our mission success.

**5. Where there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

For the 1st two loads we loaded 4.5 gal of Cornerstone, 5 1/2 gal of Clasp and one bottle of blue dye. The last load was a partial load because there was 400 gal left from the previous sortie. We added 50 gal of water, 2.5 gal of Cornerstone and 1 gal of Clasp.

**6. Where there any notable observations from a maintenance perspective inflight?**

N/A                      Spray MXS did not go on flight

**7. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Yes good communication around.

**8. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

The mission went very well. The only issues would be that we were not all roomed in the same place. Some were on the Billeting side of the base, while others were on the Base housing side. Also the TLF houses we stayed in were nice, however, only one room had a Queen size bed, all others were Singles. This made for a very uncomfortable sleep condition the entire week.



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

22 June 2015

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

**SUBJECT:** Concept of Operations for Aerial Spray at Grand Forks AFB, ND.

1. Aerial spray deployment of one C-130 during 29 June-2 July 2015 in response to a requested aerial spray to control adult mosquitoes at Grand Forks AFB, ND. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of Grand Forks AFB. Operations will be conducted out of Grand Forks AFB.

2. Concept of Operations: All times local

- a. 29 June (Monday)  
1100 Depart KYNG  
1300 Land KRDR
- b. 30 June – 1 July (Tuesday – Wednesday)  
2100 Depart KRDR  
2300 Land KRDR
- c. 2 July (Thursday)  
1500 Depart KRDR  
1900 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: GFAFB approximately 12,000 acres
- b. Altitude: 300 feet for NVG adulticide application
- c. Swath Width: 2,000 feet
- d. Airspeed: 200 KGS
- e. Application Rate: 1.0 oz/zcre of Trumpet EC

4. Maj (b) (6) will serve as the Mission Commander. Support required at Grand Forks AFB has been completed.

\\SIGNED\\

(b) (6)

, Lt Col, USAFR  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

27 Jul 2015

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

**SUBJECT:** Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Langley AFB and Craney Island Army Corps of Engineers, VA.

1. Aerial spray deployment of one C-130 to Langley AFB, VA. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of Langley AFB. Operations will be conducted out of Langley AFB, VA.

2. Concept of Operations: All times local

- a. 3 Aug (Monday)  
1600 Depart KYNG  
1700 Land KLFI
- b. 4-5 Aug (Tuesday-Wednesday)  
1800 Depart KLFI  
2030 Land KLFI
- c. 6 Aug (Thursday)  
1300 Depart KLFI  
1400 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Location: Langley AFB and Craney Island, VA
- b. Altitude: 150 ft for adulticide application
- c. Swath Width: 2,000 feet
- d. Airspeed: 200 KGS
- e. Application Rate: 1.0 oz/acre Trumpet

4. Lt Col (b) (6) will serve as the Mission Commander. Support required at Langley AFB, VA is completed.

\\SIGNED\\

(b) (6), Lt Col, USAFR  
Chief, Aerial Spray



DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

17 Feb 2015

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

SUBJECT: Capability and Concept of Operations for Aerial Spray Application at Luke AFB

1. Aerial spray deployment of one C-130 to Luke AFB, AZ (KLUF) from 23-27 Feb 15 to train aerial spray aircrew, entomologists, and maintenance members in control of invasive weed species on the Barry Goldwater Range. The range roadways will be sprayed to control the growth of Saharan Mustard on the range.
2. Concept of Operations:
  - a. 23 Feb (Mon)  
1000 Depart KYNG  
1340 Land KLUF  
1600 In Brief
  - b. 24 -26 Feb (Tues-Thurs)  
0700 Depart KLUF  
0930 Land KLUF
  - c. 27 Feb (Fri)  
0800 Depart KLUF  
1530 Land KYNG
3. Spray Configuration:
  - a. MASS – SP2G
  - b. Parameters –100' AGL and above
  - c. Chemical – Glyphosate (Roundup)
  - d. Rate – 440 GPM (10 Gal/Acre finished rate)
4. Maj (b) (6) ] will serve as Mission Commander.
5. Support required at Luke AFB and Barry Goldwater range has been coordinated. Please contact the aerial spray office if you have any questions at DSN (b) (6) ]

//SIGNED//



(b) (6), Lt Col, USAFR  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

5 Jul 2015

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

**SUBJECT:** Concept of Operations for Aerial Spray at Minot AFB, Minot, Burlington, Surrey, Williston, Trenton and Watford City.

1. Aerial spray deployment of one C-130 to Minot AFB, ND to train aerial spray aircrew, pest management personnel, and maintenance members in the control of nuisance and vector mosquitoes, with adulticide in order to improve working conditions and lower the risk of vector-borne illness to individuals working and living on Minot AFB and the cities of Minot, Burlington, Surrey, Williston, Trenton and Watford, ND. Aerial spraying performed off DOD installation property will be conducted IAW Innovative Readiness Training (IRT) Program criteria.

2. Concept of Operations: All times local

- a. 13 July (Monday)  
1100 Depart KYNG  
1330 Land KMIB
- b. 14-15 July (Tuesday – Wednesday)  
1930 Depart KMIB  
2100 Land KMIB
- c. 16 July (Thursday)  
1100 Depart KMIB  
1430 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Location: MAFB (5,169 acres); Williston/Trenton (25,000 acres)  
Watford (6,400 acres); Minot/Burlington/Survey (22,600 acres)
- b. Altitude: 150 ft for adulticide application
- c. Swath Width: MAFB, Minot, Burlington and Surrey (1,000 feet);  
Williston/Trenton/Watford (2,000 feet)
- d. Airspeed: 200 KGS
- e. Application Rate: MAFB (1.0 oz/acre Trumpet)

Williston/Trenton/Watford (0.75 oz/acre Duet)

4. Lt Col (b) (6)  
AFB has been completed.

will serve as the Mission Commander. Support required at Minot

\\SIGNED\\

(b) (6), Lt Col, USAFR  
Chief, Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

12 Aug 2015

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Minot, Burlington, Surrey, Williston, Trenton and Watford City.

1. Aerial spray deployment of one C-130 to Minot AFB, ND to train aerial spray aircrew, pest management personnel, and maintenance members in the control of nuisance and vector mosquitoes, with adulticide in order to improve working conditions and lower the risk of vector-borne illness to individuals working and living in the cities of Minot, Burlington, Surrey, Williston, Trenton and Watford, ND. Aerial spraying performed off DOD installation property will be conducted IAW Innovative Readiness Training (IRT) Program criteria.

2. Concept of Operations: All times local

- a. 17 Aug (Monday)  
1200 Depart KYNG  
1330 Land KMIB
- b. 18-20 Aug (Tuesday – Thursday)  
1930 Depart KMIB  
2100 Land KMIB
- c. 21 Aug (Friday)  
1100 Depart KMIB  
1430 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Location: Williston/Trenton (25,000 acres), Watford (6,400 acres);  
Minot/Burlington/Surrey (22,600 acres)
- b. Altitude: 150 ft for adulticide application
- c. Swath Width: Williston/Trenton/Watford (2,000 feet);  
Minot, Burlington and Surrey (1,000 feet)
- d. Airspeed: 200 KGS

e. Application Rate: Williston/Trenton/Watford (1.0-1.2 oz/acre Duet)  
Minot, Burlington and Surrey (0.75-1.0 oz/acre Trumpet)

4. Lt Col (b) (6) will serve as the Mission Commander. Support required at Minot AFB is completed.

\\SIGNED\\

(b) (6), Lt Col, USAFR  
Chief, Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

18 June 2015

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Minot AFB and the cities of Williston, Trenton and Watford, ND.

1. Aerial spray deployment of one C-130 to Minot AFB, ND to train aerial spray aircrew, pest management personnel, and maintenance members in the control of nuisance and vector mosquitoes, with adulticide in order to improve working conditions and lower the risk of vector-borne illness to individuals working and living on Minot AFB and the cities of Williston, Trenton and Watford, ND. Aerial spraying performed off DOD installation property will be conducted IAW Innovative Readiness Training (IRT) Program criteria.

2. Concept of Operations: All times local

- a. 22 June (Monday)  
1100 Depart KYNG  
1330 Land KMIB
- b. 23 June – 25 June (Tuesday – Thursday)  
1930 Depart KMIB  
2100 Land KMIB
- c. 26 June (Friday)  
1030 Depart KMIB  
1430 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:



- a. Area to be treated: MAFB (5,169 acres); Williston/Trenton (25,000 acres)  
Watford (6,400 acres)
- b. Altitude: 150 ft for adulticide application
- c. Swath Width: MAFB (1,000 feet); Williston/Trenton/Watford (2,000 feet)
- d. Airspeed: 200 KGS
- e. Application Rate: MAFB (1.0 oz/acre Trumpet)  
Williston/Trenton/Watford (0.75 oz/acre Duet)

4. Lt Col (b) (6) will serve as the Mission Commander. Support required at Minot AFB has been completed.

\\SIGNED\\  
(b) (6), Lt Col, USAFR  
Chief of Aerial Spray

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**MOUNTAIN HOME AFB, SAYLOR CREEK RANGE, ID**  
**14-25 September 2015**

**1. MISSION BASICS:**

- a. Installation Sprayed: Mountain Home AFB, Saylor Creek Range, ID
- b. Mission Duration: 14-25 Sep 2015
- c. Purpose of Application: Herbicide application to control cheat grass to suppress range fires and promote native flora
- d. Application Dates and Times (Local): See attachment 1
- e. Acres Treated: 17,521
- f. Flying Data:
  - (1) Spray Sorties/Hours: 10 sorties + 1 flush sortie; 12.8 hours
  - (2) Ferry Sorties/Hours:
    - (a) Spray aircraft 99103: 4 ferries; 13.5 hours (2 ferries for LOX to/from BOI)
    - (b) Support aircraft: 4 ferries; 34.8 hours
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6), Natural Resource Manager, (b) (6)
- h. Date Spray Map Last Approved: 6 August 2015
- i. Installation In-Briefing: (When/ Briefer/s): Maj (b) (6) and (b) (6), 14 Sep 2015
- j. Mission Identifier: QENRK3531257

**3. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6) (14-18), Maj (b) (6) (19-25)
- b. **Aircrew:**
  - (1) **Pilots:** Lt Col (b) (6) (14-18), Lt Col (b) (6) (19-25), Capt (b) (6) (b) (6)
  - (2) **Navigator:** Maj (b) (6)
  - (3) **Flight Engineers:** MSgt (b) (6) (14-18), SMSgt (b) (6) (19-25)
  - (4) **Spray Operators:** MSgt (b) (6) (14-18), MSgt (b) (6) (14-18), TSgt (b) (6) (14-18), TSgt (b) (6) (14-18), SMSgt (b) (6) (18-25), MSgt (b) (6) (18-25), MSgt (b) (6) (18-25)
- c. **Maintenance:**
  - (1) **Spray Maintenance:** TSgt (b) (6) (lead), MSgt (b) (6), TSgt (b) (6) (b) (6) TSgt (b) (6), TSgt (b) (6)
  - (2) **Crew Chiefs:** TSgt (b) (6), A1C (b) (6)
  - (3) **Hydro/Prop/EE/Avi/Com/ARMS/Age:** SSMSgt (b) (6), MSgt (b) (6) SMSgt (b) (6) elisio, SMSgt (b) (6), MSgt (b) (6), SSgt (b) (6) (b) (6) SSgt (b) (6), SSgt (b) (6), TSgt (b) (6), TSgt (b) (6), TSgt (b) (6), SrA (b) (6) SrA (b) (6) (b) (6) SrA (b) (6), SrA (b) (6), SrA (b) (6), SrA (b) (6)
- d. **Entomologists:** Maj (b) (6), Maj (b) (6) (b) (6) (safety briefer)

**4. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Panoramic® 2SL and Plateau® (23% AI, imazapic ammonium); (Plateau® used until stores were depleted; Panoramic® used primarily for the mission)
- b. EPA Registration Number: Panoramic® 2SL: 81927-19, Plateau®: 241-365
- c. Gallons Pesticide Loaded: See attachment 1
- d. Gallons Pesticide Applied: See attachment 1
- e. Gallons and Name Diluent Used: See attachment 1 (total spray – gallons of pesticide = gallons)

- water)
- f. Gallons and Name of Flush Used: 1775 gallons water
- g. Other Additives Used: 4.5 gallons Control per sortie; 3.6 quarts of Clasp<sup>®</sup> per sortie
- h. Application Rate: 7 gal/acre (4 oz/acre AI)

**APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99103
- b. Spray System (Modules Used) and System ID #: SP-3G MASS 3
- c. Nozzle Type/Orientation: Raindrop/Straight back
- d. Number of Nozzles: 18 Total; 9 left, 9 right
- e. Pressure: 40 p.s.i.
- f. Flow Rate: 326 gallons/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 100'
- b. Spray Off-set: Weather dependent. No off-set when flown into the wind
- c. Spray Release Altitude: 100'
- d. Ground Speed: 200 KTS

**6. WEATHER OBSERVATIONS:** See attachment 3

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

**a. Deposition Pattern:**

- (1) Techniques Used: Visual observation from PMP on range
- (2) Results: See remarks

**b. Effectiveness**

- (1) Techniques Used: Vegetation measurement, visual observations
- (2) Results: Will be determined in the spring of 2016

**8. REMARKS:**

This mission continues the mitigation of the invasive weed, cheat grass, in order to suppress range fires and promote the reestablishment of healthy native flora, particularly native bunch grasses and sagebrush.

The majority of the sorties were flown with a headwind or tailwind with less than a 45% crosswind component and all applications were observed from the target by a certified applicator, verifying proper deposition. It is of note that due to extremely high winds, one sortie out of 11 that were planned was unable to be completed. The untreated area, which constitutes approximately five swaths, is visible on the spray map in attachment 2. Efficacy of the 2015 application of Plateau<sup>®</sup>/Panoramic<sup>®</sup> will be determined by Mountain Home AFB Office of Natural Resources during the spring season 2016.

MUO Airfield operations, fire department, POL, RAPCON, and TA support was outstanding during the entire mission. This continues to be an excellent training/real world mission and we would like to thank the personnel at Mountain Home AFB for the excellent support we received.

//signed//

(b) (6)

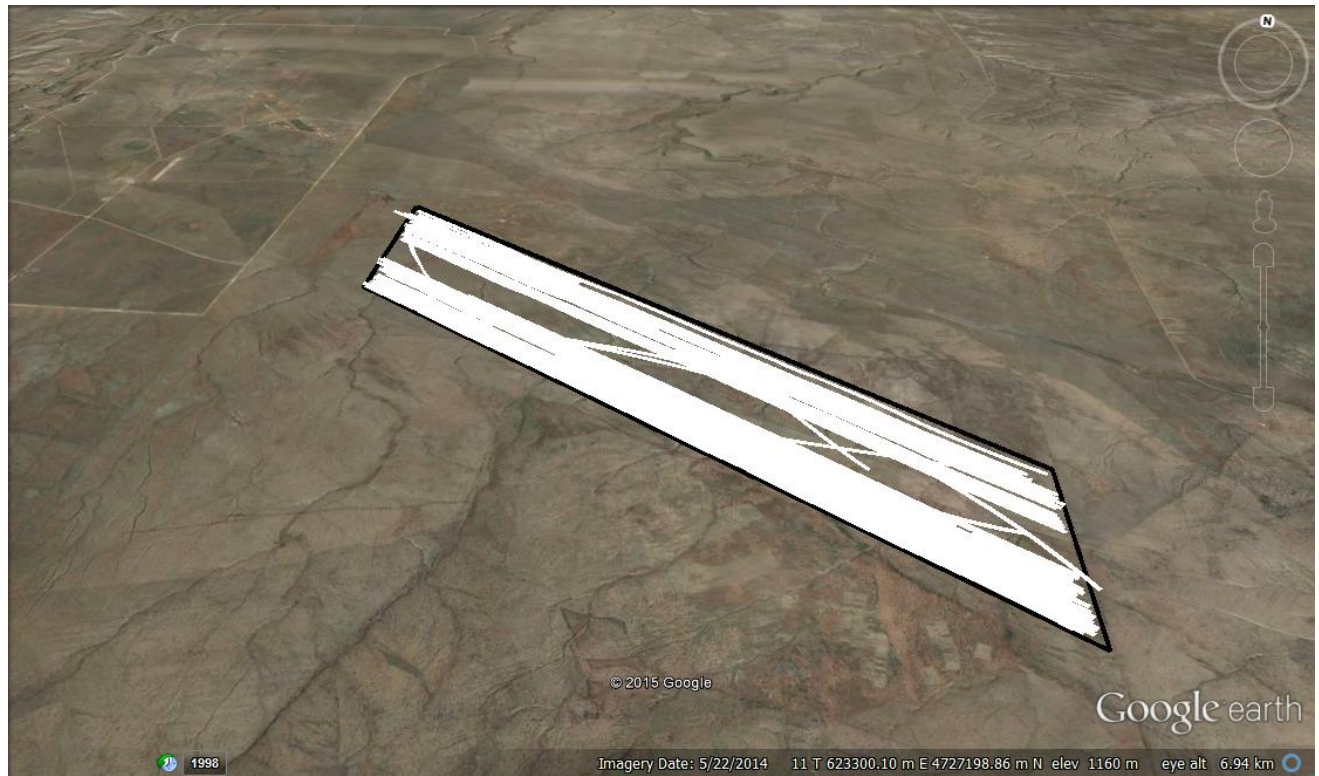
**Maj, USAFR  
DoD Certified Pest Management Professional**

**Attachment 1. Summary Spray Chart****SPRAY OPERATIONS SUMMARY FOR SAYLOR CREEK RANGE  
14-25 September 2015**

<b>DATE Sep</b>	<b>SORTIE #</b>	<b>TIME OF APPLICATION</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>GALLONS OF PESTICIDE LOADED/ SPRAYED</b>		<b>FLYING HOURS</b>
17	1	0820-0955	345.5	1736	8.3	8.3	1.3
17	2	1025-1100	268	1692	8.1	8.1	2.0
17	3	0815-0845	270	1784	8.1	8.1	1.0
18	4	0955-1035	289	1774	8.1	8.1	1.3
18	5	0800-0850	263	1649	8.1	8.1	1.3
22	6	0845-0915	225.5	1760	8.1	8.1	0.9
22	7	1015-1045	302	1781	8.1	8.1	1.0
23	8	0925-0955	260	1772	8.1	8.1	0.9
23	9	0855-0925	255	1769	8.1	8.1	0.9
25	10	1020-1105	259	1804	8.1	8.1	1.4
25	Flush	-	-	1800 water	-	-	0.8
Totals			2,737	17,521 <sup>*</sup>			12.8

<sup>\*</sup> Does not include water from flush sortie

**Attachment 2. Map of application on Saylor Creek Range, ID 14-25 September 2015. The black line outlines the spray block; white lines are individual application swaths.**



**Attachment 3. Environmental conditions during Saylor Creek application.**

<b>DATE Sep</b>	<b>SORTIE #</b>	<b>TEMP (°F)</b>	<b>RELATIVE HUMIDITY</b>	<b>WIND DIR AT AIRCRAFT</b>	<b>WIND SPEED AT AIRCRAFT (KTS)</b>	<b>WIND DIR ON GROUND</b>	<b>WIND SPEED ON GROUND (MPH)</b>	<b>CONDITIONS</b>
17	1	49	85	180	02	WSW	2	cloudy
17	2	50	86	180	02	SSW	8	cloudy
18	3	48	83	220	06	S	6	clear
18	4	49	85	306	03	WSW	2	clear
21	5	60	43	230	08	SSE	12	high winds
22	6	58	49	100	10	SE	5	clear
22	7	58	49	050	05	SE	3	clear
23	8	58	42	260	08	SW	3	clear
23	9	61	39	260	08	SW	3	clear
23	10	58	38	250	08	SW	3	clear





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

16 Jul 2015

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Aerial insecticide efficacy test in high temperatures in partnership with USDA and US Navy using Dibrom and caged mosquitoes at the Naval Air Facility, El Centro, CA

1. Aerial spray deployment of one C-130 to NAS El Centro, CA to conduct USDA testing in a controlled environment. The testing is to provide efficacy to improve the risk of vector-borne illness to individuals. Aerial spraying performed on DOD installation property will be conducted under USDA and US Navy guidance.

2. Concept of Operations: All times local

- a. 24 July (Friday)  
1100 Depart KYNG  
1330 Land KNJK
- b. 25, 27-28 July (Saturday, Monday-Tuesday)  
1930 Depart KNJK  
2100 Land KNJK
- c. 29 July (Friday)  
1030 Depart KNJK  
1900 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Location: El Centro Naval Air Facility, CA
- b. Altitude: 150 ft for adulticide application
- c. Swath Width: 1,000 feet
- d. Airspeed: 200 KGS
- e. Application Rate: 1.0 oz/acre Dibrom

4. Lt Col (b) (6) will serve as the Mission Commander. Support required at NAS El Centro has been completed.

\\SIGNED\\

(b) (6)

Chief, Aerial Spray

, Lt Col, USAFR



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

18 May 2015

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

**SUBJECT:** Concept of Operations of Larvacide Application for Aerial Spray in and around the Army Corps of Engineers' property, Williston, ND.

1. Aerial spray deployment of two C130's to Minot, ND from 26 May-5 June 2015 for the requested larvacide spray in and around the Army Corps of Engineers' property near Williston, ND. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel working on the Army Corps' property, and by extension, the citizens of Williston. Mission objectives provide training for aerial spray aircrew, entomologists, and maintenance personnel in all aspects of the aerial spray mission.

2. Concept of Operations: All times local

- a. 26 May (Tuesday)
  - 1100 Depart KYNG (Support Aircraft)
  - 1200 Depart KYNG (Spray Aircraft 1)
  - 1215 Depart KYNG (Spray Aircraft 2)
  - 1330 Land KMIB (Support Aircraft)
  - 1430 Land KMIB (Spray Aircraft 1)
  - 1445 Land KMIB (Spray Aircraft 2)
  - 1500 Depart KMIB (Support Aircraft)
  - 1930 Land KYNG (Support Aircraft)
- b. 27 May-29 May (Wednesday-Friday)
  - 0600 Show KMIB
  - 0730 Depart KMIB
  - (Multiple 1.5 hr sorties each day depending on weather)
- c. 30 May (Saturday)
  - 0800 Depart KYNG (O/B support aircraft)
  - 1030 Land KMOT
  - 1100 Depart KMOT
  - 1430 Land KYNG
- d. 1 June-4 June (Monday-Thursday)
  - 0600 Show KMIB
  - 0730 Depart KMIB

(Multiple 1.5 hr sorties each day depending on weather)

- e. 5 June (Friday)
  - 0830 Depart KYNG (O/B support aircraft)
  - 1100 Land KMIB
  - 1200 Depart KMIB
  - 1630 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 10,000 acres
- b. Altitude: 100 ft for larvaicide application
- c. Swath Width: 100 ft
- d. Groundspeed: 200 KIAS
- e. Flow Rate: 233 gals/min
- f. Application Rate: 5 gal/acre (water with 1.5 pints of Vectobac® + 0.45 oz of Poly Control 2)

4. Lt Col (b) (6) will serve as the Mission Commander the first week and Lt Col (b) (6) (b) (6) will serve as Mission Commander the second week. Support required at Minot AFB and Minot International Airport has been completed.

\\SIGNED\\

(b) (6), Lt Col, USAFR  
Chief of Aerial Spray

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**JB CHARLESTON, SC 4-7 May, 2016**

**1. MISSION BASICS:**

- a. Installation Sprayed: JB Charleston, South Carolina
- b. Mission Duration: 4-7 May 2016
- c. Purpose of Application: Control vector and nuisance control of salt marsh mosquitoes on the Naval Weapons Station area of JB Charleston
- d. Application Date: 5 May 2016
- e. Times of Application: 2340-0200 Zulu
- f. Acres Treated: 17,614
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) , Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 5 May 2016
- i. Date of Waste Generation acceptance: 6 July 2012
- j. Installation In-Briefing: (When/Where/Briefer/s): Lt Col (b) (6) Maj (b) (6) , and (b) (6) at the 628 CES @ 1030 hrs on 5 May 2016
- k. Mission Identifier: QENRK3531125

**2. OPERATIONAL:**

- a. **Mission Commander:** Major (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) , Lt Col (b) (6) , Capt (b) (6)
  - (2) Navigators: Major (b) (6) , Capt (b) (6)
  - (3) Flight Engineer: MSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) (lead), SMSgt (b) (6) ; TSgt (b) (6) , TSgt (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6) , SSgt (b) (6)
  - (3) Avionics: TSgt (b) (6)
- d. **Entomologist:** Lt Col (b) (6)
- e. **Flying Data:**
  - (1) Training Sorties/Hours: 2/3.8
  - (2) Ferry Sorties/Hours: 2/4.2

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet<sup>®</sup> EC (78% AI naled)
- b. EPA Registration Number: 5481-481
- c. Gallons Pesticide Loaded: 120 gallons
- d. Gallons Pesticide Applied: 117 gallons
- e. Gallons and Name Diluent Used: N/A
- f. Gallons and Name of Flush Used: 10 Gallons aromatic naptha
- g. Other Additives Used: None
- h. Application Rate: 0.85 oz/acre

**APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99107
- b. Spray System (Modules Used) and System ID #: SP2G

- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: 8003
- e. Nozzle Orientation & Number Used: 27 Total; 13 left, 14 right
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 6.2 gallons/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: None
- c. Spray Release Altitude: 300'
- d. Ground Speed: 200 KTS

**WEATHER OBSERVATIONS:** Wind: 300° at 9.0 knots at altitude; 300 at 4.5 knots (average) ground observation. Temp: 68 degrees F, Humidity 76 percent.

**6. SPRAY MONITORING:** Pre- and post-spray mosquito collections or landing counts were taken at various locations on JB Charleston. Pre- and post-spray numbers are presented in Attachment 1. In summary, there was 100% reduction in landing counts and 99.9% reduction in trap counts. These results must be interpreted with caution however, as some pre-spray trap counts were taken almost 2 weeks prior to the spray. In addition, the evening of the spray and subsequent days after were relatively cool and mosquito activity may have been depressed. However, based on the pre- and post-spray landing counts, we are reasonably sure the spray had the desired effect.

**7. REMARKS:** This application is the second night spray conducted at this location this fiscal year. System calibration was conducted on the ground prior to application. No significant problems were encountered and results appear to be good. No problems were reported in flight. Unfortunately, the GPS flight data was overwritten. Thus, we only have flight data from the subsequent training flight and not the actual spray flight. We will correct this problem in future by immediately downloading the data after every actual spray mission. We appreciate the support we received from ALL sections at JB Charleston, with special thanks going to (b) (6) for his thorough coordination at all levels.

//signed//

(b) (6) Lt Col, USAFR  
DoD Certified Pest Management Professional



Attachment 1. Pre and post spray landing and trap counts at various locations on JB Charleston.

SITE	TRAP TYPE	SAMPLER	SAMPLE NUMBER	PRE COUNT	DATE	POST COUNT	DATE
GC Bridge	Landing Count	Tony	per minute	2	4/28/2016	0	5/6/2016
GC Bridge	Landing Count	Tony	per minute	3	5/2/2016	0	5/6/2016
GC Bridge	Landing Count	Tony	per minute	1	5/3/2016	0	5/6/2016
Spoil Site	Landing count	Tony	per minute	10	4/28/2016	0	5/6/2016
Spoil Site	Landing count	Tony	per minute	6	5/2/2016	0	5/6/2016
Spoil Site	Landing count	Tony	per minute	12	5/3/2016	0	5/6/2016
DTP	CDC Light Trap	Pre-Med 1	per trap	176	4/13/2016	0	5/6/2016
SPAWAR	CDC Light Trap	Pre-Med 1	per trap	132	4/13/2016	N/A	N/A
GOLF COURSE	CDC Light Trap	Pre-Med 1	per trap	2512	4/21/2016	5	5/6/2016
Horse Stable	CDC Light Trap	Pre-Med 1	per trap	320	4/21/2016	0	5/6/2016
WHARF A	CDC Light Trap	Pre-Med 1	per trap	46	4/13/2016	6	5/6/2016

Trap totals:

3186

11

%

Reduction 99.9



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

25 April 2016

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

**SUBJECT:** Capability and Concept of Operations for NVG (Night Vision Goggle) Aerial Spray at Joint Base Charleston, SC.

1. One C-130 will deploy to JB Charleston from 4-7 May, 2016 in response to a requested aerial spray to control adult mosquitoes at JB Charleston, SC. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of JB Charleston. Operations for this mission will be conducted from JB Charleston.

2. Concept of Operations (All times are local)

- a. 4 May (Wednesday)  
1700 – Depart KYNG  
1900 – Land KCHS
- b. 5 May (Thursday)  
1930 – Depart KCHS  
2200 – Land KCHS
- c. 6 May (Friday)  
1930 – Depart KCHS  
2200 – Land KCHS
- d. 7 May (Saturday)  
1200 – Depart KCHS  
1400 – Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: approx. 18,000 acres

- b. Altitude: 300 feet for adulticide application
- c. Swath Width: 2,000 feet
- d. Groundspeed: 200 KIAS
- e. Application Rate: .85 oz/acre of Trumpet EC

- 4. Maj (b) (6) will serve as the Mission Commander.
- 5. Lt Col (b) (6) will be the Aircraft Commander.
- 6. Required support at JB Charleston has been coordinated.

\\Signed\\  
(b) (6), Major, USAFR  
Chief, 757<sup>th</sup> Aerial Spray

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**PARRIS ISLAND MCRD, SC 5-7 APRIL 2016**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 5-7 April 2016
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 6 April 2016
- e. Time/s of Application (Local): 1940-2210 hrs
- f. Acres Treated: 5,775
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) , Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 5 April 2016
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): Mr. (b) (6) Mr. (b) (6) Lt Col (b) (6) (b) (6)
- k. Mission Identifier: QENRK3531095

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Aircrew:
  - (1) Pilots: Maj (b) (6) , Maj (b) (6)
  - (2) Navigators: Lt Col (b) (6) , Maj (b) (6)
  - (3) Flight Engineer: MSgt (b) (6) omain
  - (4) Spray Operators: MSgt (b) (6) , MSgt (b) (6) , TSgt (b) (6) (b) (6)
- c. Maintenance:
  - (1) Spray Maintenance: TSgt (b) (6) (lead), MSgt (b) (6) , TSgt (b) (6) (b) (6) TSgt (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6) , MSgt (b) (6)
  - (3) Avionics: MSgt (b) (6)
- d. Entomologist: Lt Col (b) (6)
- e. Flying Data:
  - (1) Application Sorties/Hours: 1/2.5
  - (2) Training Sorties/Hours: n/a
  - (3) Ferry Sorties/Hours: 2/3.8

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 35 gallons
- e. Gallons Pesticide Applied: 35 gallons
- f. Gallons and Name Diluent Used: N/A
- g. Gallons and Name of Flush Used: 5 gal of HAN
- h. Other Additives Used: None
- i. Application Rate: 0.78 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: 3003

- e. Nozzle Orientation & Number Used: 18 nozzles; straight down
- f. Pressure: 40 PSI
- g. Flow Rate: 2.8 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 1000'
- c. Spray Release Altitude: 300'
- d. Ground Speed: 200 KTS

**6. WEATHER OBSERVATIONS:** Wind; 160@17 kts at 300 ft; 170@3-5 kts (ground observation). Temp; 65-59 degrees F. Humidity; 88 percent.

**7. SPRAY MONITORING:** Pre and post-spray collections were made by Navy Preventative Medicine (Naval Hospital) with CDC traps baited with dry ice, EVS traps in storm drains, and New Jersey light traps at several locations (see below). Note that only one of the New Jersey trap locations is reported here because the other 5 locations had very low numbers. During the application, the treatment site was monitored by staff on the ground. Biting midges (sand fleas) were present in high numbers during the first hour of the application.

5-Apr					8-Apr					% Difference		
Trap type	Location	Golf Course	Rifle Range/flag pole	STC /car wash	Trap type	Location	Golf Course	Rifle Range/flag pole	STC /car wash	Page Field	Horse Island	Rifle Range
CDC dry ice	Aniwetoo/Farm Rd 1328	Golf Course 504	Rifle Range/flag pole 75	STC /car wash trap stalled	CDC dry ice	Aniwetoo/Farm Rd 468	Golf Course 472	Rifle Range/flag pole 268	STC /car wash 31	65	6	+257
EVS/Storm drains	Lyceum 82	MC Exchange off-line	Housing CDC 0		EVS/Storm drains	Lyceum 53	MC Exchange 3	Housing CDC 0		35	n/a	0
New Jersey*	Horse Island 68				New Jersey*	Horse Island 12				82		

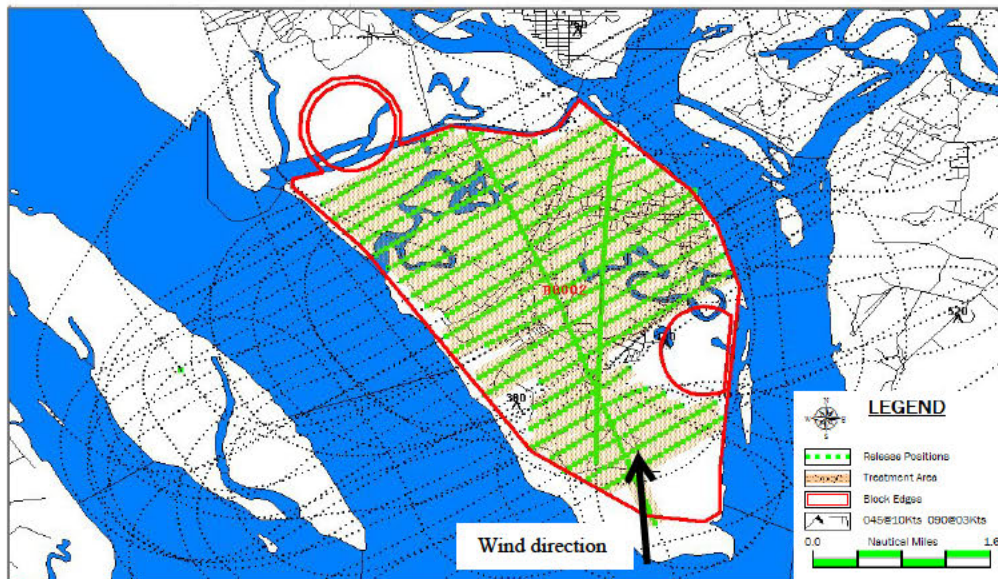
**8. REMARKS:** Despite cool temperature and moderate winds, there were plenty of midges present during this night application. In fact, the midges were present in such numbers at the beginning of the spray period that it was difficult to take wind readings without subjecting oneself to hundreds of midge bites. An hour into the spray period on the northeast side of the spray block, there were windy conditions and no midges were noted at that location. It was completely dark by then and with no moon, some of the published literature suggests less midge and mosquito activity under such conditions. Monitors on the ground reported a moderate and consistent wind from the south and the application lasted about 2 hours (See attachment 1). No adverse effects on wildlife were noted by ground observers using night vision enhancing equipment. This spray was less effective than most sprays based on the information presented in the chart on item 7. The best control was a 65% reduction relative to insect densities recorded prior to the spray. Some factors leading to poor results may be attributed to cold and breezy conditions on the night of the spray effort, less than maximum label rate application, and low light conditions noted above. In this particular case, 6 April was the only opportunity to make an application and certainly there were plenty of midges present; thus, it was decided to make the application. Calibration of the modular aerial spray system was straightforward. The "k" factor used was 0.250 which matches previous work. Thanks to LT (b) (6) PO1(b) (6) PO3 (b) (6), and Mr. (b) (6) from Naval Hospital, Preventive Medicine for supporting the spray effort with insect surveillance.

//signed//

(b) (6), Lt Col, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL



**Attachment 1. Spray application of Parris Island on 6 April 2016. Red circular objects indicate No-Fly zones for eagles' nests. Black dots are path of the aircraft and green dots are release positions. Green lines forming an "X" are flushing runs and not part of the insecticide application.**







**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND**

26 February 2016

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757AS/DOS  
3976 King Graves Rd  
Vienna, Ohio 44473-0910

SUBJECT: Concept of Operations for Aerial Spray at the Utah Test and Training Range

1. Aerial spray flight proficiency training will be accomplished on Targets 21, 23, 24, and Nord LZ at the Utah Test and Training Range (UTTR). Spray sorties will apply Krovar to control vegetation (i.e., *Halogeton*) growth aiding bombing mission test evaluations and unexploded ordnance recovery. Three aerial spray-configured C-130s will be available from 7 - 18 March 2016 for the requested spray mission. On 12 March one C-130 will fly to Youngstown to swap crew and maintenance personnel to maximize training.

2. Concept of Operations:

a. 7 March (Monday)

0900 Vader 01 departs KYNG  
1000 Vader 02 departs KYNG  
1100 Vader 03 departs KYNG  
1200 Vader 01 lands KHIF  
1300 Vader 02 lands KHIF  
1400 Vader 03 lands KHIF

b. 8 -11 March (Tuesday – Friday)

0800 Spray 01 departs KHIF  
0830 Spray 02 departs KHIF  
0930 Spray 01 lands KHIF  
0930 Spray 03 departs KHIF  
1000 Spray 02 lands KHIF  
1030 Spray 01 departs KHIF  
1100 Spray 02 departs KHIF  
1100 Spray 03 lands KHIF  
1200 Spray 01 lands KHIF  
1230 Spray 02 lands KHIF

c. 12 March (Saturday)

0900 Spray 03 departs KHIF  
1500 Spray 03 lands KYNG  
1000 Spray 04 departs KYNG  
1300 Spray 04 lands KHIF

d. 14 -17 March (Monday – Thursday)  
Same timeline as the first week

e. 18 March (Friday)  
0730 Spray 01 departs KHIF  
0745 Spray 02 departs KHIF  
0800 Spray 03 departs KHIF  
1330 Spray 01 lands KHIF  
1345 Spray 02 lands KHIF  
1400 Spray 03 lands KHIF

3. Spray parameters:

Herbicide: Krovar 1DF®

Application rate: 22.5 gal/acre (10 lbs Krovar in 22.4 gal of water)

Acreage: 1,700 acres (Targets 21, 23+24)

Ground speed: 200 knots (337.55 ft/sec)

Spray altitude: 100 feet AGL

Swath width: 35 feet

Flow rate: 366.1 gal/min

4. Maj Steven Stroney will serve as the mission commander.

5. Aircraft Commanders:

(b) (6)

6. Support required at both Hill AFB and the UTTR has been coordinated.

//SIGNED//

(b) (6), Maj, USAFR  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
UTAH TEST AND TRAINING RANGE, 7-18 MARCH 2016**

**1. MISSION BASICS:**

- a. Installation Sprayed: Utah Test and Training Range (UTTR)
- b. Mission Duration: 7-18 March 2016
- c. Purpose of Application: Weed control on UTTR Targets 21, 23 and 24, facilitate UXO recovery
- d. Application Dates: See Attachment 1
- e. Times of Application (Local): See Attachment 1
- f. Acres Treated: 1,539
- g. Flying Data:
  - (1) Spray sorties/hours: 19/29.7
  - (2) Flush sorties/hours: 4/5.1
  - (2) Ferry sorties/hours: 8/39.4
- h. Project Coordinator (Name/Rank, Title, Phone #): Frank Sharrett/Range Specialist/DSN 777-5345  
Environmental Coordinator (b) (6) DSN (b) (6)
- i. Date Spray Map Last Approved: 7 March 2016
- j. Installation In-Briefing: (When/Where/Briefer/s): Lt Col (b) (6) Maj (b) (6) Maj (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Maj (b) (6)
- b. Entomologists: Lt Col (b) (6) Lt Col (b) (6) Maj (b) (6)
- c. ARMS: MSgt (b) (6) (1st half), MSgt (b) (6) (2nd half)
- d. 1<sup>st</sup> Half Aircrew:
  - Pilots: Lt Col (b) (6) Lt Col (b) (6) Maj (b) (6) Capt (b) (6) Maj (b) (6) Maj (b) (6)
  - Lt Col (b) (6) Lt Col (b) (6)
  - Navigators: Capt (b) (6) Lt Col (b) (6) Lt Col (b) (6) Capt (b) (6)
  - Flight Engineers: TSgt (b) (6), MSgt (b) (6) MSgt (b) (6)
  - Spray Operators: SMSgt (b) (6) MSgt (b) (6) TSgt (b) (6) MSgt (b) (6) SSgt (b) (6)
  - TSgt (b) (6) SrA (b) (6) SMSgt (b) (6) SSgt (b) (6) MSgt (b) (6)
- 2<sup>nd</sup> Half Aircrew:
  - Pilots: Lt Col (b) (6) Lt Col (b) (6) Maj (b) (6) Capt (b) (6) Capt (b) (6) Maj (b) (6)
  - Col (b) (6)
  - Navigators: Capt (b) (6) Maj (b) (6), Maj (b) (6)
  - Flight Engineers: TSgt (b) (6), SMSgt (b) (6) MSgt (b) (6)
  - Spray Operators: SMSgt (b) (6) MSgt (b) (6) TSgt (b) (6) MSgt (b) (6) SSgt (b) (6)
  - TSgt (b) (6) SrA (b) (6) MSgt (b) (6) SMSgt (b) (6) MSgt (b) (6)

- e. Maintenance:  
MX Supervisor: MSgt (b) (6)  
Spray MX: TSgt (b) (6) (lead), TSgt (b) (6) TSgt (b) (6) SSgt (b) (6)  
SMSgt (b) (6) TSgt (b) (6) TSgt (b) (6) SSgt (b) (6)  
910 MX Specialists: MSgt (b) (6) MSgt (b) (6) TSgt (b) (6) MSgt (b) (6)  
MSgt Eckenrode, TSgt (b) (6)  
Crew Chiefs: SSgt (b) (6) SSgt (b) (6) MSgt (b) (6) SrA (b) (6) MSgt (b) (6)  
SrA Clegg, SrA (b) (6)  
AT MX: Maj (b) (6) CMSgt (b) (6) SrA (b) (6) SrA (b) (6) TSgt (b) (6) MSgt (b) (6)  
SMSgt (b) (6)

### 3. PESTICIDE:

- a. Trade Name: Krovar® IDF
- b. EPA Registration Number: 352-505
- c. Formulation Sprayed: 10 lbs Krovar® per 22.5 gallons formulation.
- d. Gallons Pesticide Mix Loaded: 31,834
- e. Gallons Pesticide Mix Applied: 31,834
- f. Formulation Used: 450 lbs Krovar®, 4.0 gal StaPut®, ½ gal Foam Fighter®, 200 ounces Hi-Light® Dye, remainder water per 1000 gal of spray mix. 15,300 lbs of Krovar used.
- g. Gallons and Name of Flush Used: 4,000 gal water
- h. Other Additives Used: 170 gal Clasp®; 87.5 gal Hi-Light® dye; 5.3 gal No Foam.
- i. Application Rate: 22.5 gal/acre

### 4. APPLICATION EQUIPMENT:

- a. Aircraft Tail Number: 99106, 99108
- b. Spray System (Modules Used) and System ID #: 3 and 5.
- c. Spray System Configuration: 3-Module System/ UHV Fuselage Booms
- d. Nozzle Type/Size: UHV Fuselage
- e. Nozzle Orientation & Number Used: 2 oriented straight back.
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 366 gallons per minute.

### 5. APPLICATION PARAMETERS:

- a. Swath Width Flown: 35'
- b. Spray Off-set: None
- c. Spray Release Altitude: 100' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

### 6. WEATHER OBSERVATIONS:

- a. See Attachment 2.

### 7. SPRAY MONITORING (Pre- and Post-Treatment):

- a. Deposition Pattern:
  - (1) Technique Used: blue dye pattern on targets and observations from ground markers.
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Techniques Used: monitoring of weed emergence in spring.
  - (2) Results: will be determined this spring by range personnel.

8. **REMARKS:** This mission was another successful spring application of Krovar to control vegetation on Targets 21, 23, and 24. In addition, with good weather (single cancellation on 14 March) and efficient flying, there was enough time to also send one sortie to Wildcat Target (Attachment 1). The flight paths of the aircraft are shown in Attachment 3a and b.
- a. This year's spray also included an additional aircraft (9103) flown without a MASS for aircrew training on the UTTR. This procedure was successful for a variety of reasons including the benefit of moving trainees from the no-release flights to actual sprays within short periods of time. As a bonus, the extra aircraft allowed for the use of a spare to keep the actual mission running. This last aspect worked particularly well insomuch that several aircraft maintenance issues which could have resulted in lost sorties, were quickly remedied utilizing resources from the extra aircraft.
  - b. A revised environmental assessment regarding herbicide sprays for vegetation management on the UTTR was signed with a finding of no significant impact on 2 November 2015. The main change in this new assessment was to consider the use of any appropriate Air Force approved herbicide to manage firebreaks, with the aforementioned approval to be implemented as early as the fall of 2016, granted all parties are able to agree on the exact nature and scope of the project. The spray mission is requested by UTTR/HQ and we appreciate the opportunity to make these applications on their behalf. Mr. Frank "Bass" Sharrett replaced Mr. Matt Bolduc as the directing range officer for the mission and Ms. Bonnie Stevenson remains as the cornerstone of the operation. Many thanks to the various agencies at Hill AFB supporting this mission: 75CES Pest Management, 75<sup>th</sup> Air Base Wing - Base Operations, and a special thanks to SMSgt (b) (6) (b) (6) (514 FLTS/DOC) for acting as our sponsor again this year.

//signed//

(b) (6) Lt Col, USAFR  
DOD CERTIFIED PEST MANAGEMENT PROFESSIONAL

Attachment 1: Summary Spray Chart

**8-17 March 2016**

**SPRAY OPERATIONS SUMMARY FOR UTAH TEST AND TRAINING RANGE**

<b>DATE March</b>	<b>SORTIE #</b>	<b>AIRCRAFT #</b>	<b>TIMES</b>	<b>SPRAY ON TIME (min)</b>	<b>TARGET</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>FLYING HOURS</b>
8	1	106	0935-1035	5.4	23,24	88	1794	1.3
8	2	108	1005-1225	3.1	21	51	1069	1.2
8	3	106	1140-1225	6.1	23,24	99	1881	1.4
8	4	108	1220-1343	1.9	21	31	668	0.9
9	5	106	0830-1019	5.1	23,24	84	1788	1.1
9	6	108	1040-1243	4.8	21	81	1710	2.0
9	7	106	1119-1213	5.5	23,24	89	1915	1.2
10	8	106	0810-0925	5.3	23,24	86	1793	1.3
10	9	108	0858-1027	5.2	21	84	1773	1.5
10	10	106	1010-1124	5.2	23,24	84	1805	1.4
10	11	108	1138-1338	5.5	21	90	1791	2.0
11	12	106	0800-0921	5.0	23,24	83	1739	1.4
11	13	108	0842-1030	5.0	21	82	1757	1.6



11	14	106	1010-1200	5.2	21	86	1787	1.8
11	15	108	1115-1320	5.6	21	91	1804	2.1
15	16	106	0830-1020	5.2	21	85	1722	1.8
15	17	108	1030-1235	5.2	21	86	1766	2.1
15	18	106	0845-1010	5.0	21	81	1697	1.4
16	19	106	0835-1045	4.8	Wildcat	78	1575	2.2
16	Flush	108						1.3
16	Flush	108						1.1
16	Flush	106						1.7
17	Flush	106						1.2
17	Flush	108						1.1
		Totals		94.1		1,539	31,834	36.1*

\* This includes 6.4 hours of flush sortie flying time

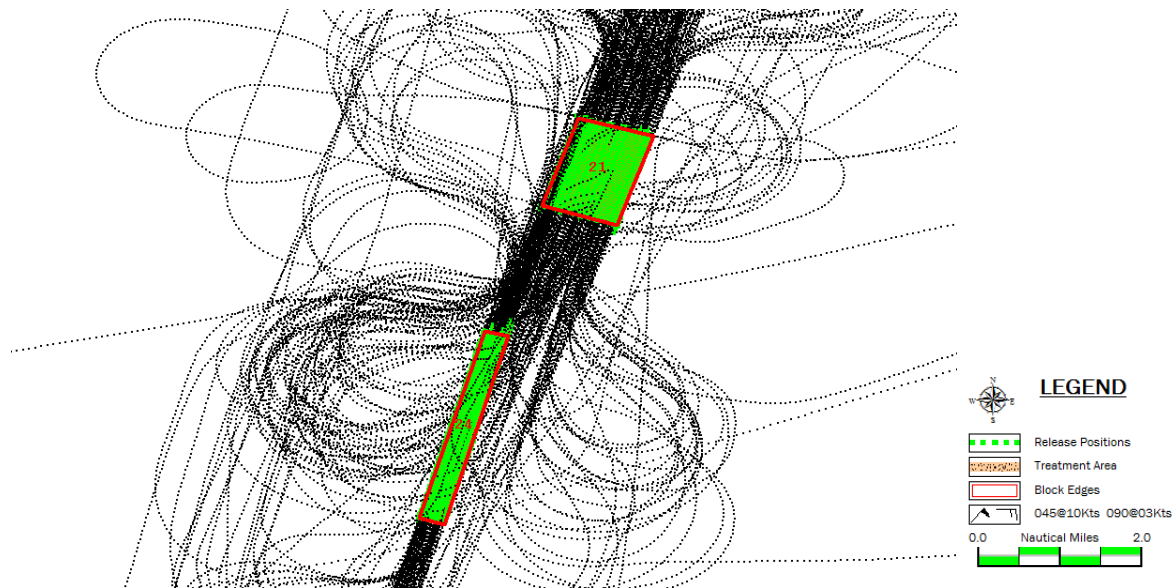
\*\* No flights were made on 12 & 13 because the UTTR was closed. 14 March flights were weather cancelled.

## Attachment 2. UTTR North Range Aerial Spray Weather Log 2016

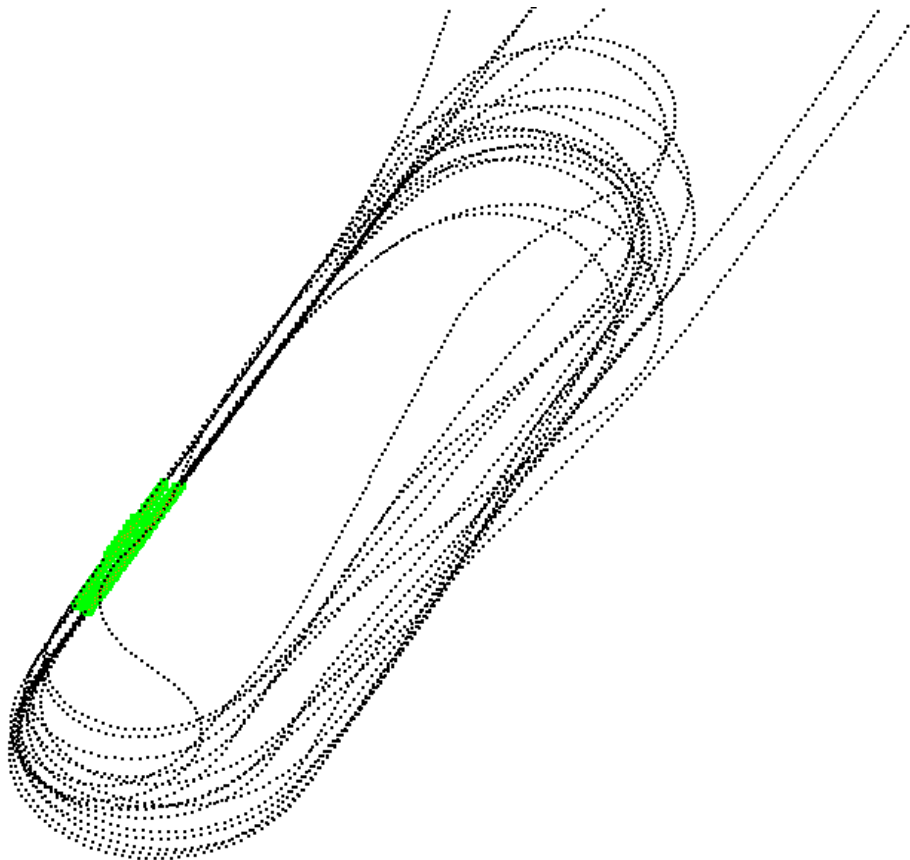
Date	Time	Wind Direction	Wind Speed (mph)	Relative Humidity (%)	Temp (°F)	Conditions
8-Mar-16	0800	148	1.7	67	31	Clear
8-Mar-16	0830	142	1.5	64	39	Clear
8-Mar-16	0900	297	1.2	55	42	Clear
8-Mar-16	0930	274	2.3	60	41	Clear
8-Mar-16	1000	320	4.3	58	42	Clear
8-Mar-16	1030	308	2.0	55	44	Clear
8-Mar-16	1100	331	2.0	50	47	Clear
8-Mar-16	1130	323	4.3	52	46	Clear
8-Mar-16	1200	310	2.5	45	49	Clear
8-Mar-16	1230	321	4.0	47	49	Clear
8-Mar-16	1300	334	2.0	42	53	Clear
8-Mar-16	1330	290	3.7	45	52	Clear
9-Mar-16	0640	014	3.5	60	41	Scattered clouds
9-Mar-16	0710	002	1.2	53	42	Partly cloudy
9-Mar-16	0740	346	2.3	56	39	Partly cloudy
9-Mar-16	0810	347	1.5	54	44	Partly cloudy
9-Mar-16	0835	310	1.6	59	43	Partly cloudy
9-Mar-16	0910	030	2.4	50	48	Partly cloudy
9-Mar-16	0940	348	1.8	44	52	Scattered clouds
9-Mar-16	1010	331	4.8	47	53	Scattered clouds
9-Mar-16	1040	300	7.1	48	47	Partly cloudy
9-Mar-16	1110	347	1.6	30	62	Mostly clear
9-Mar-16	1140	312	4.2	46	47	Partly cloudy
9-Mar-16	1200	298	4.5	40	48	Partly cloudy
10-Mar-16	0800	N/A	0.0	39	54	Scattered clouds
10-Mar-16	0830	022	1.6	42	54	Partly cloudy
10-Mar-16	0900	044	1.5	37	55	Partly cloudy
10-Mar-16	0930	279	2.8	44	51	Scattered clouds
10-Mar-16	0945	295	5.6	40	51	Scattered clouds
10-Mar-16	1000	304	1.7	33	59	Scattered clouds
10-Mar-16	1030	230	4.1	33	56	Scattered clouds
10-Mar-16	1100	266	4.5	34	55	Mostly clear
10-Mar-16	1130	277	3.0	41	55	Mostly clear
10-Mar-16	1200	225	5.0	33	57	Mostly clear
10-Mar-16	1230	188	3.6	30	60	Mostly clear
11-Mar-16	0800	026	9.0	67	46	Partly cloudy
11-Mar-16	0830	014	9.2	69	46	Partly cloudy; gusts to 11.5mph
11-Mar-16	0900	034	9.8	65	49	Partly cloudy; gusts to 12.5mph
11-Mar-16	0930	020	5.8	62	52	Partly cloudy
11-Mar-16	0955	006	5.5	64	52	Partly cloudy
11-Mar-16	1025	006	4.1	53	56	Partly cloudy
11-Mar-16	1055	278	2.6	46	59	Partly cloudy
11-Mar-16	1125	268	3.1	44	58	Partly cloudy
11-Mar-16	1150	224	4.2	35	61	Partly cloudy
11-Mar-16	1225	242	6.1	37	59	Partly cloudy
15-Mar-16	0724	160	3.0	72	28	Scattered clouds
15-Mar-16	0800	N/A	0.0	67	32	Scattered clouds
15-Mar-16	0830	186	3.6	72	31	Scattered clouds
15-Mar-16	0900	210	2.0	74	31	Scattered clouds
15-Mar-16	0930	180	4.0	69	35	Scattered clouds
15-Mar-16	1000	180	4.0	68	37	Scattered clouds
15-Mar-16	1030	198	6.5	60	38	Scattered clouds
15-Mar-16	1100	200	7.6	58	38	Scattered clouds
15-Mar-16	1130	200	6.5	58	40	Scattered clouds
15-Mar-16	1200	208	4.0	52	39	Scattered clouds

**Attachment 3. a & b. GPS track recordings for Krovar aerial spray applications.**

**a. GPS track recording for Krovar aerial spray applications on targets 21, 23, & 24. 8-15 March 2016.**



**b. GPS track recording for Krovar aerial spray applications on Wildcat 16 March 2016.**





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

1 Dec 2015

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations for NAS Jacksonville, FL

1. One C-130 will be available 8-12 Dec 15 for exploring the efficacy of ultra-low volume larviciding on the Florida Army National Guard's Camp Blanding Joint Training Center. The aircraft will operate from Mayport NS, FL and use the SP2 configuration with VectoBacWDG larvicide. This mission will also provide real-world training for aerial spray air crew, entomologists and maintenance personnel.

2. Concept of Operations:

a. 8 December (Tuesday)  
1045 Show KYNG  
1300 Depart KYNG  
1515 Land KNRB

b. 9-11 December (Wed-Fri)  
1500 Depart KNRB  
1730 Land KNRB

c. 12 December (Saturday)  
0900 Show KNIP  
1100 Depart KNIP  
1315 Land KYNG

3. Aircraft will be SP2G configured with ULV booms.

4. Lt. Col. (b) (6) will serve as mission commander.

5. Lt. Col. (b) (6) will act as aircraft commander.

6. Support required at Mayport Naval Station, FL is completed.

(b) (6), Lt. Col., USAFR  
757AS Chief Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

1 Dec 2015

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Concept of Operations for Aerial Spray at Smoky Hill ANG Range, Salina, KS.

1. Control musk thistle at the Smoky Hill ANGR, to improve grazing areas, to eliminate the Range as a source of infestation to neighboring farms from wind-blown musk thistle seeds and to support state and local noxious weed control efforts. This mission will also provide real-world training for aerial spray entomologists and maintenance personnel.

2. Concept of Operations:

- a. 8 November (Tuesday)  
1300 Depart KYNG  
1500 Land KSLN  
1600 Installation Brief
- b. 9-11 November (Wednesday-Friday)  
1500 Depart KSLN  
1730 Land KSLN
- c. 12 November (Saturday)  
0900 Show Time KSLN  
1000 Depart KSLN  
1300 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 50 Acres for testing
- b. Altitude: 300' AGL
- c. Swath Width: 1000 ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 7 Gal finish spray/Acre (water with 0.35 Oz of AirexDC® & 0.71 Oz of Milestone®/gallon)

4. Lt. Col (b) (6) will serve as the mission commander with Lt. Col. (b) (6) as the aircraft commander (8-12 Dec 15) Support at NAS Jacksonville is completed.

//SIGNED//

(b) (6), Lt Col, USAFR  
Chief, 757<sup>th</sup> Aerial Spray





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

4 Jan 2016

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Capability and Concept of Operations DoD Aerial Spray Course

1. One C-130 is available 10-14 Jan 16 supporting the annual DoD Aerial Spray Applicator Course in conjunction with Lee County Mosquito Control Fly-In. The aircraft will operate from Page Field (KFMY), FL and use the SP2 configuration. This mission will fly a spray characterization test, support a static display, and fly DoD personnel on an aerial spray orientation flight.

2. Concept of Operations:

**10 Jan (Sun)**

0830 Showtime  
1200 Depart KYNG  
1530 Land KFMY – Safety Brief not required

**11 Jan (Mon)**

0900 Weather call  
1100 Depart KFMY (Day Training over water)  
1200 Land KMFY

**12 Jan (Tues)**

1530-1700 C130 Static Display with SP2 Spray System

**13 Jan (Weds)**

0530 Weather call/Showtime  
0730 Depart KFMY – Spray Characterization test at Lee County AP  
0930 Land KFMY

**14 Jan (Thur)**

0900 Depart KFMY – DoD Pers Orientation Flight  
1030 Land KFMY  
1200 Depart KFMY  
1515 Land KYNG

3. Aircraft will be SP2G configured with LV booms installed.

4. Lt. Col (b) (6) will serve as mission commander.
5. Maj (b) (6) will act as aircraft commander.
6. Support required at Page Field, FL is complete.

(b) (6), Lt. Col., USAFR  
757AS Chief Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

1 Sept 2016

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

**SUBJECT:** Capability and Concept of Operations for Aerial Spray at Mountain Home AFB and Saylor Creek Bombing Range, ID

1. Aerial spray deployment of one C-130 from 12-23Sept 2016 in response to an aerial spray request to aid fire prevention on Saylor Creek Bombing Range located near Mountain Home AFB, ID. Herbicide will be applied to target cheat grass while allowing native fire resistant vegetation (sagebrush) to re-establish and become competitive. During the operation aerial spray flight proficiency training will be accomplished while providing real-world training for aerial spray entomologists and maintenance personnel.

2. Concept of Operations (All times are local)

- a. 12 Sep (Mon)
  - 1100 Support Spray aircraft depart KYNG
  - 1200 Aircraft depart KYNG
  - 1500 Spray aircraft land KMUO
  - 1510 Support aircraft land KMUO
- b. 13-16 Sep (Tues - Fri) Spray Sorties
  - 0700 Depart KMUO
  - 1115 Land KMUO
  - TBD Support aircraft return to YNG
- c. 19-22 Sep (Mon-Thur)
  - 0700 Depart KMUO
  - 1115 Land KMUO
  - TBD Support aircraft return to YNG
- d. 23 Sept (Fri) Redeployment
  - 0900 Spray aircraft depart KMUO
  - 0910 Support aircraft depart KMUO
  - 1600 Spray aircraft land KYNG
  - 1610 Support aircraft land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: approx. 3200 acres
- b. Altitude: 100' AGL for herbicide application
- c. Swath Width: 100ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 0.57 ounces of Panoramic 2SL in 7 gal water per acre

4. Lt Col (b) (6) will serve as the Mission Commander. Maj (b) (6) will be the Aircraft Commander. Required support at both Mountain Home AFB and Saylor Creek has been coordinated.

//SIGNED//

(b) (6), Major, USAFR  
Chief, Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

11 Apr 2015

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Capability and Concept of Operations for NVG (Night Vision Goggle) Aerial Spray at Joint Base Charleston, SC.

1. One C-130 will deploy to JB Charleston from 14-17 April, 2016 in response to a requested aerial spray to control adult mosquitoes at JB Charleston, SC. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations that negatively impact the health and welfare of the personnel of JB Charleston. Operations for this mission will be conducted from JB Charleston.

2. Concept of Operations (All times are local)

- a. 14 Apr (Thursday)  
1600 – Depart KYNG  
1800 – Land KCHS
- b. 15 Apr (Friday)  
1930 – Depart KCHS \*sunset @ 1750L  
2130 – Land KCHS
- c. 16 Apr (Saturday)  
1930 – Depart KCHS  
2130 – Land KCHS
- d. 17 Apr (Sunday)  
1200 – Depart KCHS  
1400 – Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: approx. 18,000 acres
- b. Altitude: 300 feet for adulticide application when conducted at night using NVGs
- c. Swath Width: 2,000 feet

- d. Groundspeed: 200 KIAS
- e. Application Rate: .85-1.25 oz/acre of Trumpet EC

4. Lt Col (b) (6) will serve as the Mission Commander.

5. Lt Col (b) (6) will be the Aircraft Commander.

6. Required support at JB Charleston has been coordinated.

\\Signed\\

(b) (6), Lt Col, USAFR  
Chief, 757<sup>th</sup> Aerial Spray





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

14 June 2016

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Capability and Concept of Operations for Aerial Spray at Joint Base Charleston, SC.

1. One C-130 will deploy to JB Charleston from 16-19 June, 2016 in response to a requested aerial spray to control adult mosquitoes at JB Charleston, SC. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of JB Charleston. Operations for this mission will be conducted from JB Charleston.

2. Concept of Operations (All times are local)

- a. 16 June (Thursday)  
1700 – Depart KYNG  
1900 – Land KCHS
- b. 17 June (Friday)  
1900 – Depart KCHS  
2300 – Land KCHS
- c. 18 June (Saturday)  
1900 – Depart KCHS  
2300 – Land KCHS
- d. 19 June (Sunday)  
1200 – Depart KCHS  
1400 – Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: approx. 18,000 acres
  - b. Altitude: 150 feet for adulticide application
  - c. Swath Width: 2,000 feet
  - d. Groundspeed: 200 KIAS
  - e. Application Rate: .85 oz/acre of Trumpet EC
- 4. Lt Col (b) (6) will serve as the Mission Commander.
  - 5. Lt Col (b) (6) will be the Aircraft Commander.
  - 6. Required support at JB Charleston has been coordinated.

\\Signed\\  
(b) (6), Major, USAF  
Chief, 757<sup>th</sup> Aerial Spray

**910 AW AERIAL SPRAY UNIT  
CERTIFIED PEST MANAGEMENT PROFESSIONAL'S  
POST-MISSION REPORT (replaces AFRC Form 55)  
MINOT AFB, CITIES OF MINOT, BURLINGTON,  
WILLISTON, AND WATFORD CITY, ND  
17-22 July 2016**

**1. MISSION BASICS:**

- a. Installation/Community Sprayed: Minot AFB, Cities of Minot, Burlington, Williston, and Watford City, ND
- b. Mission Duration: 17-22 July 2016
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date/s: 18 July 2016 (Minot AFB), 19 July 2016 (Williston and Watford City), 21 July 2016 (Minot City and Burlington)
- e. Time/s of Application (Local): 2020-2120 (18 July) Sunset 2137L, 1855-1925 + 1955-2125 (19 July) Sunset 2137L, 1915-2135 (21 July) Sunset 2137L
- f. Acres Treated: 4,454 (18 July – Minot AFB) 5,835 (19 July - Watford City), 24,132 (19 July – Williston), 20,626 (21 July – Minot City and Burlington)
- g. Project Coordinator/s: (b) (6) (Minot AFB), Fran Bosch (Williston/Watford), (b) (6) (Minot City/Burlington)
- h. Date Spray Map Last Approved: 18 July 2016 (Minot AFB, Minot/Burlington), 19 July 2016 (Williston/Watford)
- i. Date of Waste Generation Letter: 28 July 2013
- j. Installation In-Briefing: Maj (b) (6), Maj (b) (6), Maj (b) (6), Maj (b) (6), and Capt (b) (6) briefed personnel from Civil Engineering, Public Health, Pest Management, and Weather @ 1300 on 18 July 2016.
- k. Mission Identifier: QENRK3531199

**2. OPERATIONAL:**

- a. Mission Commander: Maj (b) (6)
- b. Certified PMP/Entomologists (Category 11): Maj (b) (6) (safety briefer), Maj (b) (6) (certified applicator, state ND)
- c. Aircrew:
  - (1) Pilots: Maj (b) (6), Maj (b) (6)
  - (2) Navigator: Capt (b) (6)
  - (3) Flight Engineer: MSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6), SMSgt (b) (6)
- d. Maintenance:
  - (1) Spray Maintenance: TSgt (b) (6), (lead), MSgt (b) (6), TSgt (b) (6), TSgt (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6), SrA (b) (6)
  - (3) Avionics: TSgt (b) (6)
- e. Flying Data:
  - (1) Spray Sorties/Hours: 3 sorties (1.3 + 3.5 + 2.5) = 7.3 hrs

(2) Ferry Sorties/Hours: 2 sorties (4.2 + 3.2) = 7.4 hrs

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet® EC Concentrate (78% naled)
- b. EPA Registration Number: 5481-481
- c. Formulation Sprayed: Emulsified Concentrate (Trumpet)
- d. Gallons Pesticide Loaded: 210 gal (18 July), 120 gal (22 July)
- e. Gallons Pesticide Applied: 210 gal (18-19 July), 120 gal (22 July)
- f. Gallons downloaded: 0
- g. Gallons and Name Diluent Used: none
- h. Gallons and Name of Flush Used: 10 gal aromatic naptha
- i. Other Additives Used: None
- j. Application Rate: 0.78 oz/acre (18-19 July), 0.74 oz/acre (21 July)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99108
- b. Spray System (Modules Used) and System ID #: 1
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 22 total, oriented straight down
- f. Pressure: 38-42 psi
- g. Flow Rate: 5.7 gallons per minute (18-19 July), 5.4 gallons per minute (21 July)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2,000 ft
- b. Spray offset: 2,000 ft
- c. Spray Release Altitude: 150 feet
- d. Ground Speed: 200 knots

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 114°@5 kts (18 July); 040°@8 kts (19 July); 210°@4 kts (21 July)
- b. Temperature (Degrees Fahrenheit): 83°F (18 July); 88° F (19 July); 88° F (21 July)
- c. Relative humidity: 55% (18 July); 57% (19 July); 47% (21 July)
- d. Cloud Cover: Clear (18-19 July, 21 July)
- e. Source: Ground observations

**7. SPRAY MONITORING (Pre- and Post-Treatment):** Mosquito monitoring on Minot AFB is done with Mosquito Magnets and CDC light traps by Minot AFB Public Health. Unfortunately, only one CDC trap site and one Mosquito Magnet trap location were consistent before and after the treatment. The CDC trap located at the softball fields collected 121, 150, and 60 mosquitoes prior to the spray on 14 June, 28 June, and 29 June, respectively. This is an average of 110.3 mosquitoes per trap night. This trap collected 56 and 292 mosquitoes after the spray on 19 July and 21 July, respectively. This is an average of 174 mosquitoes per trap night.

The Mosquito Magnet located at Combat Arms Training and Management (CATM) collected 300, over 900, and 250 mosquitoes prior to the spray on 27 June, 6 July, and 13 July, respectively. This is an average of over 483 mosquitoes per trap night prior to treatment. This trap collected 600 mosquitoes after the spray on 19 July. The CDC trap counts indicate an increase in mosquito population of 58%. The Mosquito Magnet collection was 24% decreased following treatment.

In the City of Williston, prior to application seven CDC traps collected a total of 235 and 161 mosquitoes on 18 July and 19 July, respectively. This represents an average of 28.3 mosquitoes per trap night. Post-application collection yielded 21, 28, and 15 total mosquitoes on 20 July, 21 July, and 22 July, respectively. This represents an average of 3 mosquitoes per trap night. These numbers indicate a 72.8% reduction in mosquito populations.

In the City of Minot, three New Jersey traps are used to monitor mosquito populations. Through the week of 11 through 17 July, prior to treatment, these traps collected 22, 0, and 20 female mosquitoes representing an average of 14 mosquitoes per trap. Through the week of 25 through 31 July, following treatment, these traps collected 216, 23, and 73 female mosquitoes representing an average of 104 mosquitoes per trap. This represents a significant increase of 743%.

**8. REMARKS AND RECOMMENDATIONS:** The system was calibrated on the ground prior to application, and all applications went well with no adverse effects noted. The CDC trap on Minot AFB indicates an increase in population following the spray, however with only one consistent trap site this may not be indicative of the actual effect on the mosquito population. The city of Minot also observed an increase in population. The cause of this increase is unknown, but could be due to a number of factors. All locations decided to treat at a relatively low rate (0.75 oz/acres), which could have minimized the effectiveness of the spray.

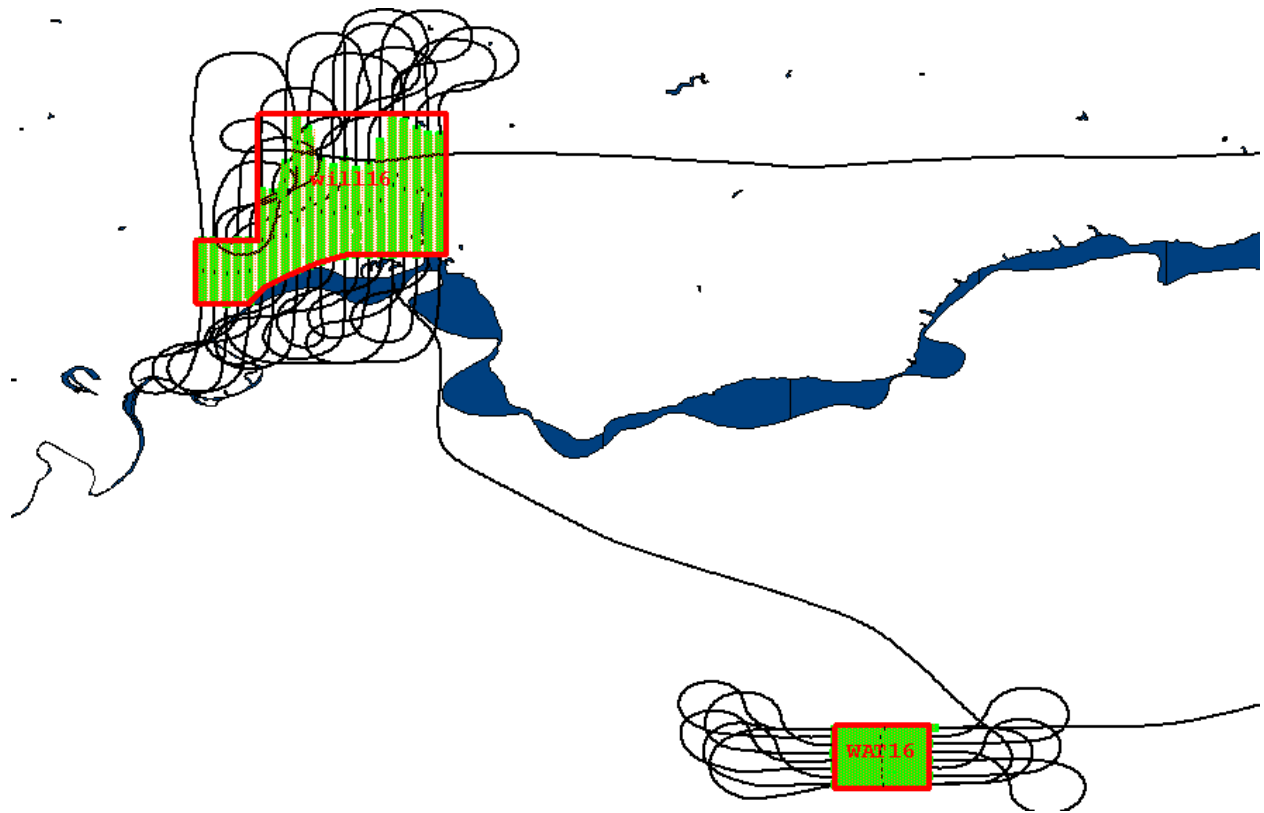
Due to a malfunction with the Wingman navigation system, a map of the Minot AFB spray is not available. Maps of the cities of Minot, Burlington, Williston, and Watford are included as attachments 1 and 2.

We sincerely appreciate the efforts of Mr. (b) (6) , Mr. (b) (6) , and Mr. (b) (6) in their support of the aerial spray operation.

//signed//  
(b) (6) , Maj, USAF  
Entomologist/DoD Certified Applicator

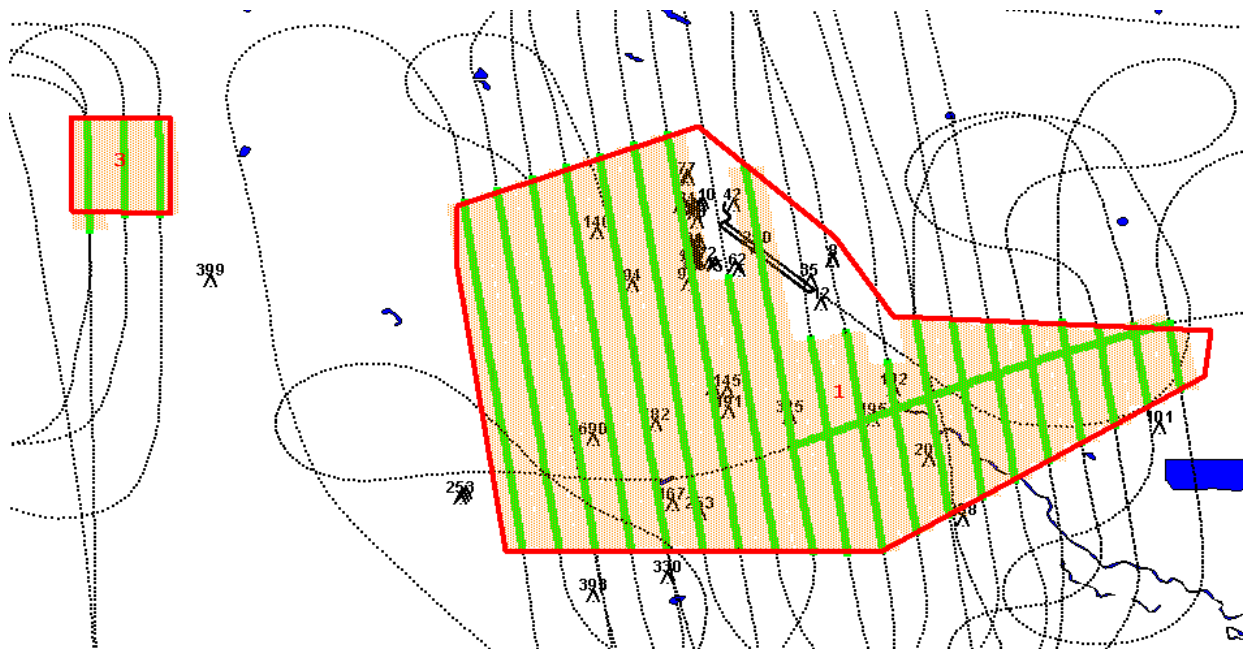
//signed//  
(b) (6) , Maj, USAF  
Entomologist/DoD Certified Applicator

Attachment 1. Application on 19 July 2016 over the cities of Williston and Watford. The green lines represent the track of the aircraft and the tan areas represent the treated area.





Attachment 2. Application on 21 July over the cities of Minot and Burlington. The green lines represent the track of the aircraft and the tan areas represent the treated area.





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

14 April 2016

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Parris Island MCRD, SC

1. Aerial spray deployment of one C-130 from 19-22 April 2016 to Beaufort MCAS, SC to train aerial spray aircrew, entomologists, and maintenance members in the control of mosquitoes and biting midges. These pests negatively impact outdoor training activities and create health hazards to recruits at Parris Island MCRD, SC. NVG aerial spray sorties are planned at 300' AGL.

2. Concept of Operations (All times are local):

- a. 19 April (Tuesday)  
1700 Depart KYNG  
1900 Land KNBC (Safety Brief Immediately Upon Landing)
- b. 20 April (Wednesday)  
1030 Installation Brief  
1630 Weather call/Calibration of MASS, Chemical Load/Training sortie and/or actual  
1930 Depart KNBC  
2145 Land KNBC
- c. 21 April (Thursday)  
1630 Weather call/Chemical load/calibration  
1930 Depart KNBC  
2130 Land KNBC
- d. 22 April (Friday)  
1200 Depart KNBC  
1400 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 7500 acres
  - b. Altitude: 300' AGL
  - c. Swath Width: 1000 ft
  - d. Groundspeed: 200 KIAS
  - e. Application Rate: 0.75-1.0 oz/acre of Dibrom-Naled an organophosphate insecticide
4. Lt Col (b) (6) will serve as the mission commander with Lt Col (b) (6) as the aircraft commander. Support at Parris Island MCRD and Beaufort MCAS has been completed.

//SIGNED//

(b) (6), Maj, USAFR  
Chief, 757<sup>th</sup> Aerial Spray

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**PARRIS ISLAND MCRD, SC 19-22 April 2016**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island Marine Corps Recruit Depot, South Carolina
- b. Mission Duration: 19-22 April 2016
- c. Purpose of Application: Biting Midge (*Culicoides* spp.)/Mosquito Control
- d. Application Date/s: 20 April 2016
- e. Time/s of Application (Local): 1945 Local Takeoff
- f. Acres Treated: 7,410
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) ,  
Environmental/Spray Coordinator, DSN (b) (6)
- h. Date Spray Map Last Approved: 5 April 2016
- i. Date of Waste Generation Letter: 10 April 2000
- j. Installation In-Briefing: (When/Where/Briefer/s): Lt Col (b) (6) , Lt Col (b) (6)  
(b) (6)
- k. Mission Identifier: QENRK3532110

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Aircrew:
  - (1) Pilots: Lt Col (b) (6) , Lt Col (b) (6)
  - (2) Navigator: Lt Col (b) (6) , Capt (b) (6)
  - (3) Flight Engineer: MSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6) , TSgt (b) (6) , SrA (b) (6)
- c. Maintenance:
  - (1) Spray Maintenance: TSgt (b) (6) (lead), TSgt (b) (6) , TSgt  
Tom Kocis, TSgt (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6) , SSgt (b) (6) , SSgt (b) (6)  
(b) (6)
  - (3) Avionics: MSgt (b) (6)
- d. Entomologists: Lt Col (b) (6) , Lt Col (b) (6)
- e. Flying Data:
  - (1) Application Sorties/Hours: 1/1.4
  - (2) Training Sorties/Hours: 1/0.8
  - (3) Ferry Sorties/Hours: 2/3.5

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom® Concentrate
- b. EPA Registration Number: 59639-16-2A
- c. Formulation Sprayed: Concentrate (87.4 % AI)
- d. Gallons Pesticide Loaded: 60 Gallons
- e. Gallons Pesticide Applied: 51 Gallons
- f. Gallons and Name Diluent Used: N/A
- g. Gallons and Name of Flush Used: 7 Gallons HAN
- h. Other Additives Used: None
- i. Application Rate: 0.88 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: 3003
- e. Nozzle Orientation & Number Used: 13 Total; 6 left, 7 right
- f. Pressure: 40 PSI
- g. Flow Rate: 2.8 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: 0'
- c. Spray Release Altitude: 150'
- d. Ground Speed: 200 KTS

**6. WEATHER OBSERVATIONS:** Wind; 230 @ 8kts; temps 74 at 300ft observation at altitude.  
Ground observation: 070@2-3. 77 degrees F (2000 hrs).

**7. SPRAY MONITORING:** We were fortunate to have the assistance of LT (b) (6) PO1 Pullen, PO3 Salinas, and Mr. (b) (6) from Naval Hospital, Preventive Medicine and Dr. (b) (6) (b) (6) and Captain (b) (6) (USAFSAM) with pre and post spray insect trapping and analysis. Pre and post spray trap counts are in attachment 1. Overall, there was an approximate 90% apparent reduction in mosquito populations and approximately 80% reduction in biting midge populations. Overall, we would consider this application to be a success, although the relative efficiency of night application vs. crepuscular application of pesticide to control biting midges remains to be determined as night applications are a relatively new procedure for our group. Ground monitoring of non-target species was conducted during the time of spray using Night Vision Goggles, and further monitoring was conducted by Captain (b) (6) the following day. There did not appear to be any evidence of adverse effects of application on non-targets.

**8. REMARKS:** Both eagle nests on the island were active, and as usual a ½ mile no-spray/no-fly buffer was maintained around the nests (See attachment 2). Again, this spray appeared to be effective. Reduced nuisance pest populations will undoubtedly improve the quality of training, morale, and the productivity of base personnel and recruits. There were no significant problems encountered in this mission. Calibration of the system was relatively straightforward. The “k” factor used was 0.250. Beaufort MCRD Weather Shop predicted the potential for an atmospheric temperature inversion during the spray timeframe. Aircrew and groundcrew monitored temperature during the application and no inversions were encountered (see 6.0). Thanks to (b) (6) and (b) (6), as well as our aforementioned colleagues at Parris Island MCRD PrevMed and USAFSAM for facilitating these activities. We also wish to thank the personnel at Beaufort County Mosquito Control District for graciously allowing access to their facilities for insect identification.

//signed//

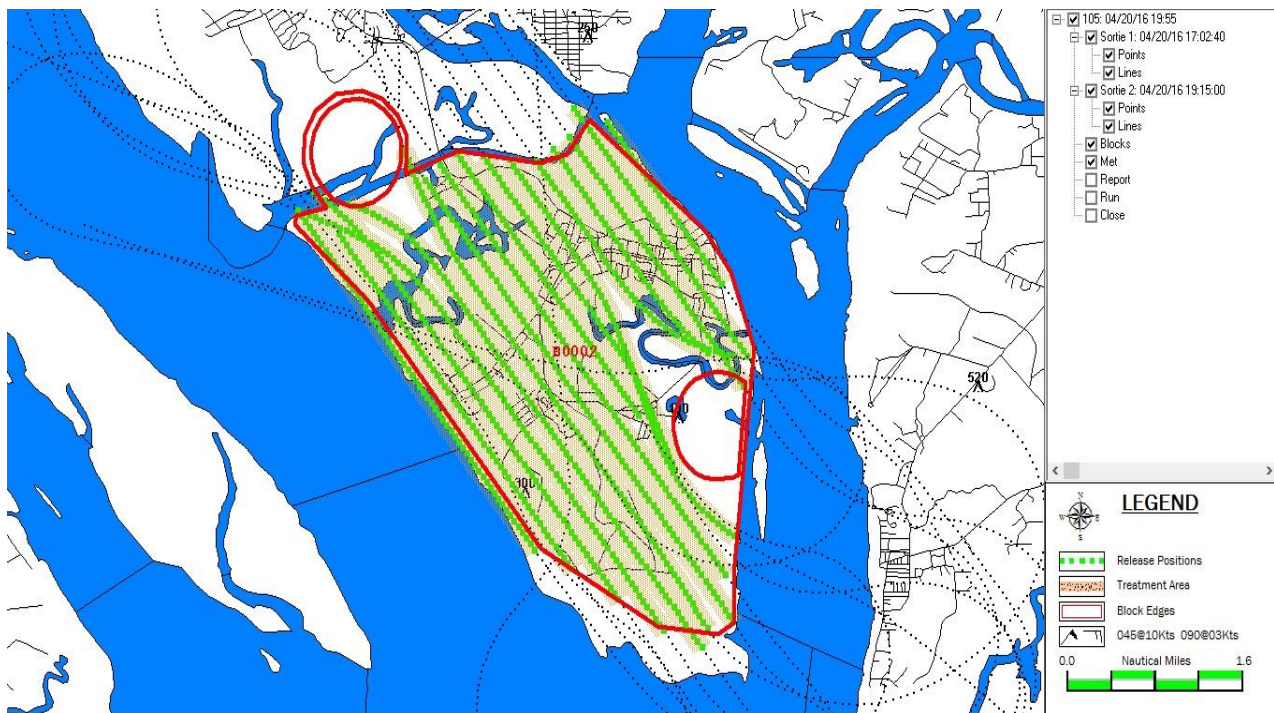
(b) (6), Lt Col, USAFR  
DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL

Attachment 1. Pre and post spray mosquito and midge counts at various locations on Parris Island MCRD. (ND=No Data Available)

<b>Mosquitos</b>						
Location	Trap		Pre Spray	Post-Spray	Change (%)	
Golf course	CDC		808	263	-67.45	
Rifle range	CDC		1344	17	-98.74	
Aniwetoea/Farm Rd	CDC		2032	160	-92.13	
Carwash	CDC		ND	13		
Lyceum	EVS		250	48	-80.80	
Marine Exchange	EVS		0	0		
Enlisted housing	EVS		4	4	0.00	
<b>Totals</b>			4438	505	-88.62	
<b>Culicoides sp. And related biting Diptera</b>						
Location	Trap		Pre Spray - 2	Pre Spray -1	Post-Spray	Change (%)
Trap 1	Mosquito Magnet		850	ND	ND	
Trap 2	Mosquito Magnet		3616	10000	1678	-83.22
Trap 3	Mosquito Magnet		4023	2727	979	-64.10
Trap 4	Mosquito Magnet			1700	126	-92.59
<b>Totals</b>			8489	14427	2783	-80.71



Attachment 2. Map depicting Parris Island spray location. Highlighted areas depict application swaths.





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

4 Oct 2016

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

**SUBJECT:** Concept of Operations for Aerial Spray at Smoky Hill ANG Range, Salina, KS.

1. Control musk thistle at the Smoky Hill ANGR, to improve grazing areas, to eliminate the Range as a source of infestation to neighboring farms from wind-blown musk thistle seeds and to support state and local noxious weed control efforts. This mission will also provide real-world training for aerial spray entomologists and maintenance personnel.

2. Concept of Operations:

- a. 24 October (Monday)  
1100 Depart KYNG  
1300 Land KSLN  
1500 Installation Brief
- b. 25-28 October (Tuesday-Friday)  
0645 Depart KSLN  
0915 Land KSLN
- c. 29 October (Saturday)  
0645 Depart KSLN  
1130 Land KSLN  
1300 Depart KSLN  
1700 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 3,000 acres
- b. Altitude: 100' AGL
- c. Swath Width: 100 ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 7 Gal finish spray/Acre (water with 0.35 oz of AirexDC® & 0.71 oz of Milestone®/gallon)

4. Lt Col (b) (6) will serve as the mission commander with Maj (b) (6) as the aircraft commander (24-29 Oct 16) Support at Smoky Hill ANG Range, Salina, KS is completed.

//SIGNED//

(b) (6)

Chief of Aerial Spray

, Lt Col, USAF

**910 AW AERIAL SPRAY UNIT  
CERTIFIED PEST MANAGEMENT PROFESSIONAL'S  
POST-MISSION REPORT (replaces AFRC Form 55)  
MINOT AFB, CITIES OF MINOT & WILLISTON, ND  
26 June – 1 July 2016**

**1. MISSION BASICS:**

- a. Installation/Community Sprayed: Minot AFB, City of Williston and Watford City, ND
- b. Mission Duration: 26 June -1 July 2016
- c. Purpose of Application: Adult Mosquito Control
- d. Application Date/s: 27-29 June
- e. Time/s of Application (Local): 2120-2212 (27 Jun) Sunset 2150L – Civil Twilight 2231L; 2130-2310 + 2350-0200 (28-29 Jun) Sunset 2150L – Civil Twilight 2231L; 2120-2240 (29 Jun) Sunset 2150L – Civil Twilight 2231L
- f. Acres Treated: 4,422 (27 Jun – Minot AFB); 28,694 (28-29 Jun – Williston); 3,259 (29 Jun – Watford City)
- g. Project Coordinator/s: (b) (6) (Minot AFB); Fran Bosch (Williston)
- h. Date Spray Map Last Approved: 26 Jun 2016
- i. Date of Waste Generation Letter: 28 July 2013
- j. Installation In-Briefing: Lt Col (b) (6) and Maj (b) (6) briefed with 5 CES Operations Chief Engineer, Mr. (b) (6) and representatives from Public Health, Pest Management, Airfield Management and Weather @ 1400 on 26 Jun.
- k. Mission Identifier: QENRK3531179

**2. OPERATIONAL:**

- a. Mission Commander: Maj (b) (6)
- b. Certified PMP/Entomologists (Category 11): Lt Col (b) (6) (safety briefer), Maj (b) (6) (certified applicator state ND)
- c. Aircrew:
  - (1) Pilots: Lt Col (b) (6), Capt (b) (6)
  - (2) Navigators: Lt Col (b) (6), Capt (b) (6)
  - (3) Flight Engineers: CMSgt (b) (6) SMSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6), MSgt (b) (6), TSgt (b) (6)
- d. Maintenance:
  - (1) Spray Maintenance: TSgt (b) (6), (lead), MSgt (b) (6), TSgt (b) (6), TSgt (b) (6), SrA (b) (6)
  - (2) Crew Chiefs: SSgt (b) (6), SSgt (b) (6), SrA (b) (6)
  - (3) Avionics: MSgt (b) (6), SrA (b) (6)
- e. Flying Data:
  - (1) Spray Sorties/Hours: 4 sorties (0.9 + 1.7 + 2.2 + 1.3) = 6.1 hrs
  - (2) Ferry Sorties/Hours: 3 sorties (4.0 + 4.6 + 1.9) = 10.5 hrs

### **3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet® EC Concentrate (78% naled)
- b. EPA Registration Number: 59639-90-5481
- c. Formulation Sprayed: Emulsified Concentrate (Trumpet)
- d. Gallons Pesticide Loaded: 210 gal Trumpet (27 Jun)
- e. Gallons Pesticide Applied: 20 gal (27 Jun); 169 gal (28-29 Jun); 20 gal (29 Jun)
- f. Gallons downloaded: 0
- g. Gallons and Name Diluent Used: none
- h. Gallons and Name of Flush Used: 10 gal aromatic naptha
- i. Other Additives Used: None
- j. Application Rate: 0.75 oz/acre (27-29 Jun)

### **4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99107
- b. Spray System (Modules Used) and System ID #: 1
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV Wing Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 23 total (27-29 Jun); oriented straight down
- f. Pressure: 38-42 psi
- g. Flow Rate: 5.45 gallons per minute (27-29 Jun)

### **5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2,000 ft (27-29 Jun)
- b. Spray offset: 2,000 ft (27-29 Jun)
- c. Spray Release Altitude: 300 ft (NVG)
- d. Ground Speed: 200 Knots (338 Feet/Second)

### **6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 90°@3.5 kts (27 Jun); 360°@6 kts (28 Jun); 30°@7 kts (29 Jun)
- b. Temperature (Degrees Fahrenheit): 68°F (27 Jun); 70° F (28 Jun); 70° F (29 Jun)
- c. Relative humidity: 73% (27 Jun); 61% (28 Jun); 64% (29 Jun)
- d. Cloud Cover: Clear (27-28 Jun); partly cloudy (29 Jun)
- e. Source: Ground observations

**7. SPRAY MONITORING (Pre- and Post-Treatment):** Mosquito monitoring on Minot AFB is done with Mosquito Magnets and CDC light traps by Minot AFB Public Health. Mosquito magnets collected over 300 mosquitoes per night prior to treatment. Pre-application mosquito counts on 28 June from two CDC traps collected 150 and 200 mosquitoes per night on base. Post-application counts dropped to 60 and 75 mosquitoes on 29 June, a reduction of 62.5%.

Mosquito trap counts for the City of Williston were somewhat misleading. Pre-application mosquito counts from CDC traps collected 636 mosquitoes (28 June). Post-application counts taken the following night dropped to 416 mosquitoes on 29 June, a reduction of 34.6%. It is unclear when traps were collected following application. Williston was sprayed the following night with Zenivex by a local applicator. Mosquito populations dropped to 112 on June 30, a reduction of 73% from the night before and 82% below pre-spray trap counts.

**8. REMARKS AND RECOMMENDATIONS:** This was the first mosquito NVG adulticide application for Minot AFB in 2016, and the first for the City of Williston and Watford City. Both Minot AFB and the City of Williston reported moderate numbers of mosquitoes and decided to treat at a relatively low rate (0.75 oz/acre). The application over the Minot AFB went well and good results were reported. As mentioned during the in-brief, the size of the spray area is rather small to expect any relief for a substantial period of time. Nonetheless, no mosquitoes were observed on the flight line the following night after spraying.

A small leak in the flow control valve on 28 June caused the aircrew to return to base to replace a gasket. The mission commander decided to finish treating the City of Williston before the airfield closed at 0200. The aircrew took the plane out again and completed treatment of the City of Williston. Watford City was completed on 29 June.

The 757 AS completed operations at Minot AFB on 30 Jun and proceeded to Charleston AFB, SC. Rain prevented aerial spray operations at Charleston AFB.

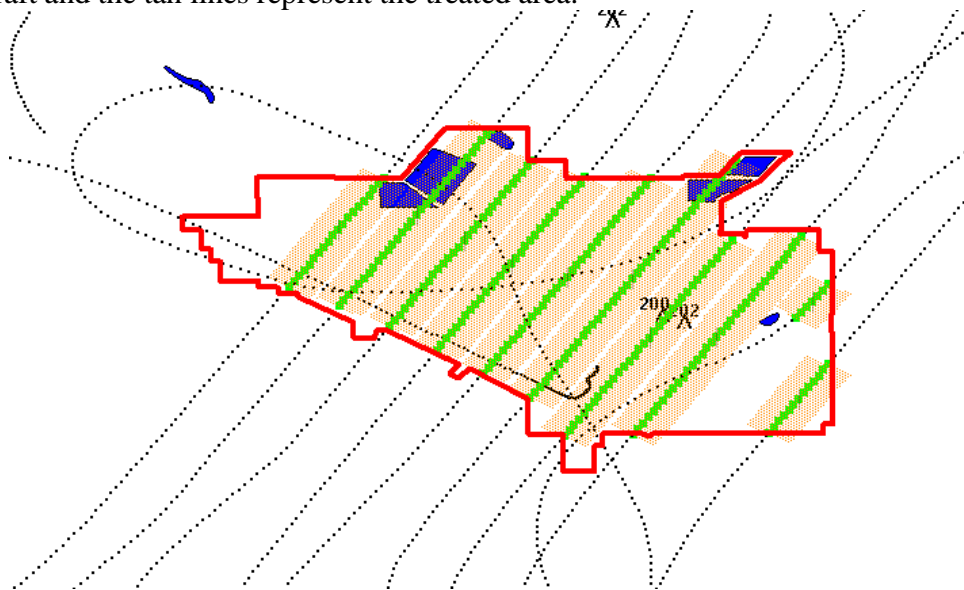
A special thanks to Mr. (b) (6) (b) (6) and Mr. (b) (6) (b) (6) for their support of the aerial spray operation.

//signed//  
(b) (6), Lt Col, USAF  
Entomologist/DoD Certified Applicator

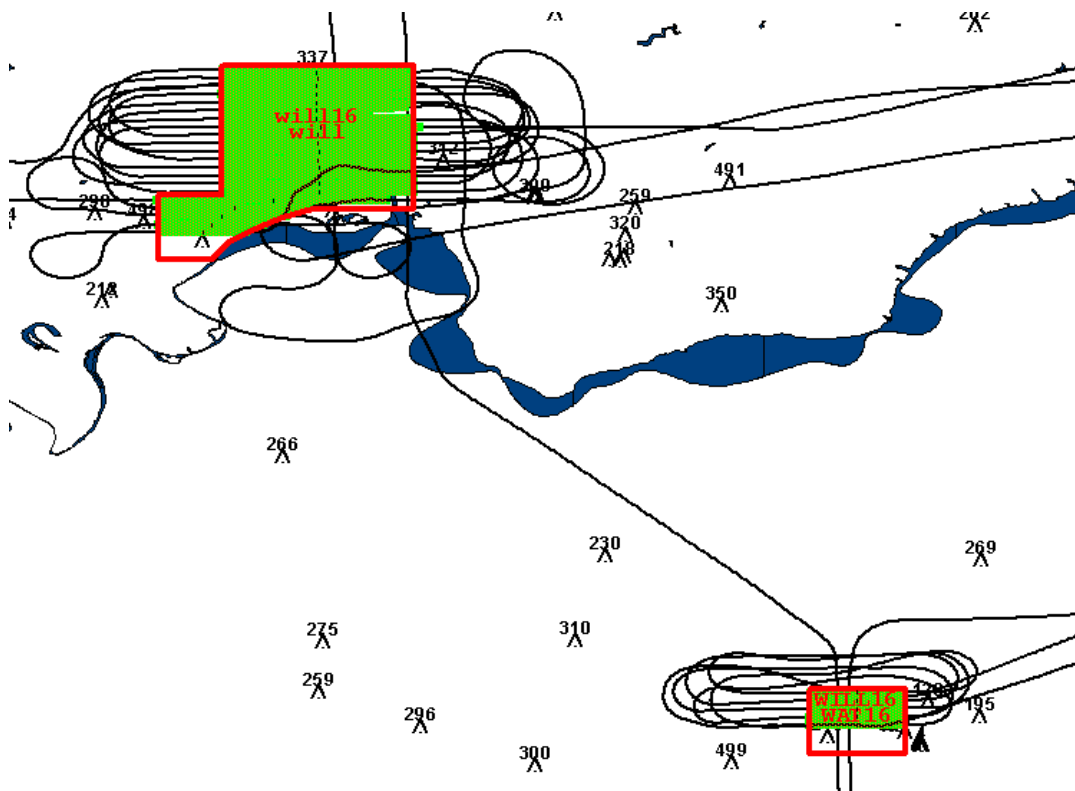
//signed//  
(b) (6), Maj, USAF  
Entomologist/DoD Certified Applicator



Attachment 1. Application on 27 June 2016 over Minot AFB. The green lines represent the track of the aircraft and the tan lines represent the treated area.



Attachment 2. Application on 28-29 June 2016 over Williston and Watford City. Treated areas are highlighted in green.





DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

6 July 2016

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Grand Forks AFB, ND.

1. Aerial spray deployment of one C-130 during 11-15 July 2016 in response to a requested aerial spray to control adult mosquitoes at Grand Forks AFB, ND. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of Grand Forks AFB. Operations will be conducted out of Grand Forks AFB. AFRC 16-14-MASS1 (Grand Forks): Aerial Spray.

2. Concept of Operations: All times local

- a. 11 July (Monday)  
1100 Depart KYNG  
1300 Land KRDR
- b. 12-14 July (Tuesday – Thursday)  
2130 Depart KRDR  
2300 Land KRDR
- c. 15 July (Friday)  
1500 Depart KRDR  
1900 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: GFAFB approximately 12,000 acres
- b. Altitude: 300 feet for NVG adulticide application
- c. Swath Width: 2,000 feet
- d. Airspeed: 200 KTS
- e. Application Rate: 1.0 oz/zcre of Trumpet EC

4. **Maj(b) (6)** will serve as the Mission Commander. Support required at Grand Forks AFB has been completed.

\\SIGNED\\

(b) (6)

, Major, USAFR  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

22 June 2016

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

**SUBJECT:** Concept of Operations for Aerial Spray at Homestead AFB and surrounding Miami-Dade County

1. Aerial spray deployment of one C-130 from 5-8 Jul 2016 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the citizens of Homestead ARB and surrounding Miami-Dade County. Aerial spraying performed off DOD installation property will be conducted IAW Innovative Readiness Training (IRT) Program criteria. This mission will also provide real-world training for aerial spray entomologists and maintenance personnel. Operations will be conducted out of Homestead ARB, FL.

2. Concept of Operations (All times are local)

a. 5 July (Tuesday)  
1700 Depart KYNG  
2030 Land KHST

b. 6-7 July (Wed-Thurs)  
1930 Depart KHST  
2100 Land KHST

c. 8 July (Friday)  
1230 Depart KHST  
1600 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

a. Area to be treated: 10,000 -110,000 acres; final acreage TBD

- b. Altitude: 150 ft for adulticide application
- c. Swath Width: 2000 ft
- d. Groundspeed: 200 Kts
- e. Chemical: Dibrom<sup>®</sup> Concentrate
- f. Application Rate: 0.5 oz/acre or as determined by entomologist

4. Lt Col (b) (6) will serve as the mission commander (MC). Maj (b) (6) will be the aircraft commander. Required support at Homestead AFB, FL has been completed.

(b) (6), Major, USAFR  
Chief of Aerial Spray





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

18 July 2016

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Homestead AFB and surrounding Miami-Dade County (Miami Dade) AFRC 16-15MASS2 approval.

1. Aerial spray deployment of one C-130 from 15-19 August 2016 for the requested adulticide spray mission. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the citizens of Homestead ARB and surrounding Miami-Dade County. Aerial spraying performed off DOD installation property will be conducted IAW Innovative Readiness Training (IRT) Program criteria. This mission will also provide real-world training for aerial spray entomologists and maintenance personnel. Operations will be conducted out of Homestead ARB, FL. aerial spray sorties are planned at 150' AGL.

2. Concept of Operations (All times are local)

- a. 15 August (Monday)  
1700 Depart KYNG  
2030 Land KHST
- b. 16-18 August (Tues.-Thurs)  
1730 Depart KHST  
2000 Land KHST
- c. 19 August (Friday)  
1230 Depart KHST  
1600 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.



3. Spray Parameters:

- a. Area to be treated: 10,000 -110,000 acres; final acreage TBD
- b. Altitude: 150 ft for adulticide application
- c. Swath Width: 2000 ft
- d. Groundspeed: 200 Kts
- e. Chemical: Dibrom<sup>®</sup> Concentrate
- f. Application Rate: 0.5 oz/acre or as determined by entomologist

4. Lt Col (b) (6) will serve as the mission commander (MC). Maj (b) (6) will be the aircraft commander. Required support at Homestead AFB, FL has been completed.

\\SIGNED\\

(b) (6), Maj, USAFR  
Chief of Aerial Spray



DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

26 Jul 2016

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Langley AFB and Craney Island Army Corps of Engineers, VA.

1. Aerial spray deployment of one C-130 to Langley AFB, VA. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of Langley AFB. Operations will be conducted out of Langley AFB, VA.

2. Concept of Operations: All times local

- a. 29 Aug (Monday)  
1700 Depart KYNG  
1815 Land KLFI
- b. 30-31 Aug (Tuesday-Wednesday)  
1730 Depart KLFI  
2000 Land KLFI
- c. 1 Sep (Thursday)  
1200 Depart KLFI  
1315 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Location: Langley AFB and Craney Island, VA
- b. Altitude: 150 ft for adulticide application
- c. Swath Width: 2,000 feet
- d. Airspeed: 200 KNTS
- e. Application Rate: 1.0 oz/acre Trumpet

4. Lt Col **(b) (6)** will serve as the Mission Commander. Support required at Langley AFB, VA is completed.

\\SIGNED\\

(b) (6), MAJOR, USAFR  
Chief, Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

22 June 2016

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

**SUBJECT:** Concept of Operations for Aerial Spray at Minot AFB and the cities of Williston, Watford, ND and JB Charleston, SC.

1. Aerial spray deployment of one C-130 to Minot AFB, ND to train aerial spray aircrew, pest management personnel, and maintenance members in the control of nuisance and vector mosquitoes, with adulticide in order to improve working conditions and lower the risk of vector-borne illness to individuals working and living on Minot AFB and the cities of Williston and Watford, ND. Aerial spraying performed off DOD installation property will be conducted IAW the Innovative Readiness Training (IRT) Program criteria. The mission will redeploy from Minot AFB, ND to JB Charleston, SC for NVG Aerial Spray of JB Charleston, SC.

2. Concept of Operations: All times local

- a. 27 June (Monday)  
1700 Depart KYNG  
1930 Land KMIB
- b. 28 June – 29 June (Tuesday – Wednesday)  
1930 Depart KMIB  
2100 Land KMIB
- c. 30 June (Thursday)  
1030 Depart KMIB  
2359 Land KCHS
- d. 1 July (Friday)  
1230 Depart KCHS  
1430 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

KMIB:

- a. Area to be treated: 5,000 acres
- b. Altitude: 300 feet
- c. Swath Width: 2,000 feet
- d. Airspeed: 200 KGS
- e. Application Rate: 0.85 oz/acre Trumpet

Williston and Watford, ND:

- f. Area to be treated: 36,000 acres
- g. Altitude: 300 feet
- h. Swath Width: 2,000 feet
- i. Airspeed: 200 KGS
- j. Application Rate: 1.0 oz/acre Trumpet

JB Charleston:

- k. Area to be treated: 18,000 acres
- l. Altitude: 300 feet
- m. Swath Width: 2,000 feet
- n. Airspeed: 200 KGS
- o. Application Rate: 0.85 oz/acre Trumpet

4. Maj (b) (6) will serve as the Mission Commander. Support required at Minot AFB as well as JB Charleston has been completed.

\\SIGNED\\

(b) (6), Maj, USAFR  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

13 July 2016

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

**SUBJECT:** Concept of Operations for Aerial Spray at Minot AFB and the cities of Minot, Williston, Watford City, Burlington, ND.

1. Aerial spray deployment of one C-130 to Minot International Airport, ND to train aerial spray aircrew, pest management personnel, and maintenance members in the control of nuisance and vector mosquitoes, with adulticide in order to improve working conditions and lower the risk of vector-borne illness to individuals working and living on Minot AFB and the cities of Williston, Minot, Burlington, Watford City, ND. Aerial spraying performed off DOD installation property will be conducted IAW the Innovative Readiness Training (IRT) Program criteria. The mission will redeploy from Youngstown Air Reserve Station, Ohio 22 July, 2016.

2. Concept of Operations: All times local

- a. 17 July (Sunday)  
1700 Depart KYNG  
1935 Land KMOT
- b. 18-21 July (Tuesday – Thursday)  
1900 Depart KMOT  
2130 Land KMOT
- c. 22 July (Friday)  
1030 Depart KMOT  
1435 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

Location: Minot AFB



Acres: 5,169  
Chemical: Trumpet® EC (78% AI Naled)  
Gallons loaded: 30  
Flow Rate: 5.4 GPM  
Application Rate: 0.75 oz/acre  
Flush: Highly Aromatic Naptha (HAN)  
Altitude: 300 feet AGL  
Airspeed: 200 KGS  
Swath Width: 2,000 feet  
Nozzle/Orientation: ULV 8003 Tee Jet oriented straight down  
Number of Nozzles: (12 left – 12 right) 24 Total

Location: Minot City  
Acres: 21,100  
Chemical: Trumpet® EC (78% AI Naled)  
Gallons loaded: 124  
Flow Rate: 5.4 GPM  
Application Rate: 0.75 oz/acre  
Flush: Highly Aromatic Naptha (HAN)  
Altitude: 300 feet AGL  
Airspeed: 200 KGS  
Swath Width: 2,000 feet  
Nozzle/Orientation: ULV 8003 Tee Jet oriented straight down  
Number of Nozzles: (12 left – 12 right) 24 Total

Location: Burlington  
Acres: 1,021  
Chemical: Trumpet® EC (78% AI Naled)  
Gallons loaded: 6  
Flow Rate: 5.4 GPM  
Application Rate: 0.75 oz/acre  
Flush: Highly Aromatic Naptha (HAN)  
Altitude: 300 feet AGL  
Airspeed: 200 KGS  
Swath Width: 2,000 feet  
Nozzle/Orientation: ULV 8003 Tee Jet oriented straight down  
Number of Nozzles: (12 left – 12 right) 24 Total

Location: Williston  
Acres: 30,629  
Chemical: Trumpet® EC (78% AI Naled)  
Gallons loaded: 180  
Flow Rate: 5.4 GPM  
Application Rate: 0.75 oz/acre

Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300 feet AGL
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet oriented straight down
Number of Nozzles:	(12 left – 12 right) 24 Total

Location:	Watford City
Acres:	5,794
Chemical:	Trumpet® EC (78% AI Naled)
Gallons loaded:	34
Flow Rate:	5.4 GPM

4. Maj (b) (6) will serve as the Mission Commander. Support required at Minot International Airport as well as from Minot AFB, ND has been completed.

\\SIGNED\\  
(b) (6), Maj, USAFR  
Chief of Aerial Spray

**910 AW AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S**  
**POST-MISSION REPORT (replaces AFRC Form 55)**  
**MOUNTAIN HOME AFB, SAYLOR CREEK RANGE, ID**  
**12-23 September 2016**

**1. MISSION BASICS:**

- a. Installation Sprayed: Mountain Home AFB, Saylor Creek Range, ID
- b. Mission Duration: 12-23 Sep 2016
- c. Purpose of Application: Herbicide application to control cheat grass to suppress range fires and promote native flora
- d. Application Dates and Times (Local): See attachment 1
- e. Acres Treated: 2,711
- f. Flying Data:
  - (1) Spray Sorties/Hours: 10 sorties; 8.2 hours
  - (2) Ferry Sorties/Hours:
    - (a) Spray aircraft 99103: 4 ferries; 12.6 hours (2 ferries for LOX from BOI)
    - (b) Support aircraft: 4 ferries; 22.3 hours
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) (b) (6) - (b) (6) Natural Resource Manager, (b) (6)
- h. Date Spray Map Last Approved: 6 August 2015
- i. Installation In-Briefing: (When/ Briefer/s): Maj (b) (6) and (b) (6), 13 Sep 2016 (informal)
- j. Mission Identifier: QENRK3531256

**3. OPERATIONAL:**

- a. **Mission Commander:** Maj (b) (6) (12-17), Lt Col (b) (6) (18-23)
- b. **Aircrew:**
  - (1) Pilots: Maj (b) (6), Lt Col (b) (6) (12-16), Maj (b) (6) (17-23)
  - (2) Navigator: Maj (b) (6)
  - (3) Flight Engineers: SMSgt (b) (6)
  - (4) Spray Operators: MSgt (b) (6), CMSgt (b) (6) (12-17), TSgt (b) (6) (b) (6) (17-23)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) (lead), MSgt (b) (6), TSgt (b) (6) (b) (6) SSgt (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6), SSgt (b) (6)
  - (3) Hydro/Prop/EE/Avi/Com/ARMS/Age: SMSgt (b) (6), MSgt (b) (6) (b) (6) MSgt (b) (6), MSgt (b) (6), SSgt (b) (6), SSgt (b) (6), SSgt (b) (6), TSgt (b) (6), TSgt (b) (6) (b) (6) TSgt (b) (6), TSgt (b) (6)
- d. **Entomologists:** Maj (b) (6), Maj (b) (6) (b) (6)

**4. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Panoramic® 2SL and Plateau® (23% AI, imazapic ammonium); (Plateau® used until stores were depleted; Panoramic® used primarily for the mission)
- b. EPA Registration Number: Panoramic® 2SL: 81927-19, Plateau®: 241-365
- c. Gallons Pesticide Loaded: See attachment 1
- d. Gallons Pesticide Applied: See attachment 1
- e. Gallons and Name Diluent Used: See attachment 1 (total spray – gallons of pesticide = gallons water)
- f. Other Additives Used: 1 gallon Control per sortie; 3.6 quarts of Clasp® per sortie

**g.** Application Rate: 6.33 gal/acre (3.5 oz/acre AI)

**APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99103
- b. Spray System (Modules Used) and System ID #: SP-3G MASS 3
- c. Nozzle Type/Orientation: Raindrop/Straight back
- d. Number of Nozzles: 18 Total; 9 left, 9 right
- e. Pressure: 40 p.s.i.
- f. Flow Rate: 295 gallons/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 100'
- b. Spray Off-set: Weather dependent. No off-set when flown into the wind
- c. Spray Release Altitude: 100' (150' on 23 Sep)
- d. Ground Speed: 200 KTS

**6. WEATHER OBSERVATIONS:** See attachment 3

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

**a. Deposition Pattern:**

- (1) Techniques Used: Visual observation from PMP on range
- (2) Results: See remarks

**b. Effectiveness**

- (1) Techniques Used: Vegetation measurement, visual observations
- (2) Results: Will be determined in the spring of 2017

**8. REMARKS:**

This mission continues the mitigation of the invasive weed, cheat grass, in order to suppress range fires and promote the reestablishment of healthy native flora, particularly native bunch grasses and sagebrush.

The majority of the sorties were flown with a headwind or tailwind with less than a 45% crosswind component and all applications were observed from the target by a certified applicator, verifying proper deposition. It is of note that on 13 September only one sortie was completed and spray could not be accomplished on 14 September due to a mechanical malfunction that had to be repaired. No application was completed on 19 September per orders from 910 AW chain of command. Additionally, due to fog and a low cloud ceiling, no application was conducted on 22 September. A final sortie was completed on 23 September, but this left a small area of the spray block untreated, which can be seen in attachment 2. Efficacy of the 2016 application of Plateau®/Panoramic® will be determined by Mountain Home AFB Office of Natural Resources during the spring season 2017.

MUO Airfield operations, fire department, POL, RAPCON, and TA support was outstanding during the entire mission. This continues to be an excellent training/real world mission and we would like to thank the personnel at Mountain Home AFB for the excellent support we received.

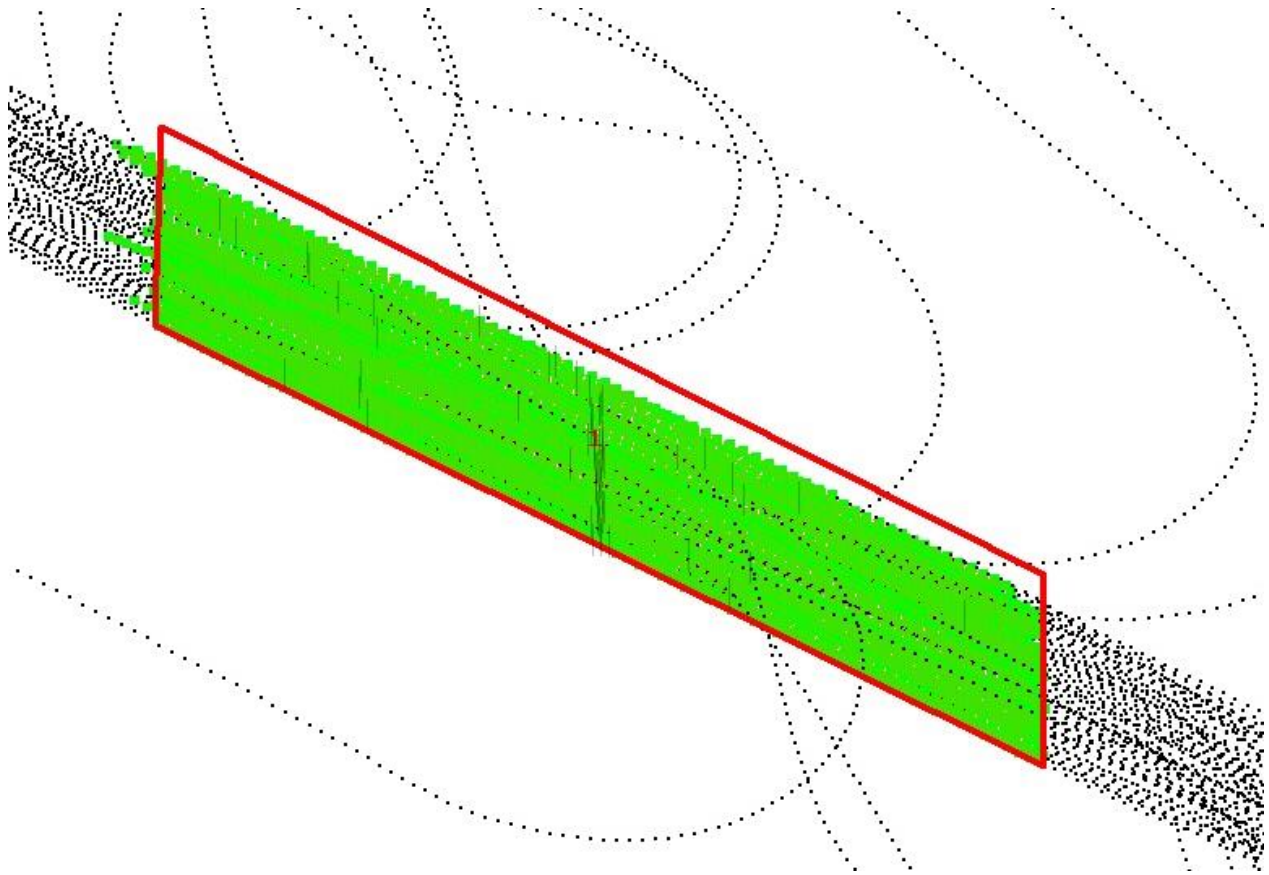
//signed//

(b) (6) , Maj, USAFR  
DoD Certified Pest Management Professional

**Attachment 1. Summary Spray Chart****SPRAY OPERATIONS SUMMARY FOR SAYLOR CREEK RANGE  
12-23 September 2016**

<b>DATE Sep</b>	<b>SORTIE #</b>	<b>TIME OF APPLICATION</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>GALLONS OF PESTICIDE LOADED/ SPRAYED</b>		<b>FLYING HOURS</b>
13	1	0750-0820	312	1721	8.3	8.3	0.8
15	2	0755-0820	305	1801	8.1	8.1	0.8
15	3	0915-0945	307	1761	8.1	8.1	0.7
16	4	0740-0810	260	1775	8.1	8.1	0.8
16	5	0910-0945	255	1742	8.1	8.1	1.0
20	6	0735-0805	237	1618	8.3	7.0	0.7
20	7	0900-0925	265	1666	7.0	7.2	0.7
21	8	0710-0745	237	1629	7.2	7.3	0.8
21	9	0825-0905	263	1685	7.3	7.1	1.0
23	10	0715-0750	270	1769	7.1	8.1	0.9
Totals			2,711	17,167			8.2

**Attachment 2. Map of application on Saylor Creek Range, ID 12-23 September 2016. The red line outlines the spray block; green lines are individual application swaths.**





**Attachment 3. Environmental conditions during Saylor Creek application.**

<b>DATE Sep</b>	<b>SORTIE #</b>	<b>TEMP (°F)</b>	<b>RELATIVE HUMIDITY</b>	<b>WIND DIR AT AIRCRAFT</b>	<b>WIND SPEED AT AIRCRAFT (KTS)</b>	<b>WIND DIR ON GROUND</b>	<b>WIND SPEED ON GROUND (MPH)</b>	<b>CONDITIONS</b>
13	1	40	85	050	08	ENE	3	clear
15	2	43	94	250	05	NNE	2	clear
15	3	49	86	250	06	SSE	5	clear
16	4	42	92	180	08	E	4	clear
16	5	50	78	033	03	SE	6	clear
20	6	53	60	260	07	NW	2	clear
20	7	57	54	260	05	NNE	4	clear
21	8	51	61	240	04	ENE	2	clear
21	9	53	62	240	07	ESE	1	cloudy
23	10	49	75	320	30	WNW	32	clear



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON – AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION, OH 44473

18 December 2015

MEMORANDUM FOR 757 AS/DO

FROM: 757 AS/DOS

**SUBJECT:** Post-mission report Camp Blanding Joint Training Center Spray Trials with Valent BioSciences Corporation 8-11 December 2015.

**1. Purpose:** Aerial pesticide efficacy evaluation in partnership with Valent BioSciences Corporation using VectoBac® WDG at Weinberg Drop Zone, Camp Blanding Joint Training Center, Florida.

**2. Participants:**

**a. Aircrew:**

- (1) Pilots: Lt Col (b) (6) Maj (b) (6)
- (2) Navigator: Capt (b) (6)
- (3) Flight Engineer: SSgt (b) (6)
- (4) Spray Operators: SMSgt (b) (6) SSgt (b) (6)

**b. Maintenance:**

- (1) Spray Maintenance: TSgt (b) (6) TSgt (b) (6)  
TSgt (b) (6) TSgt (b) (6)
- (2) Crew Chiefs: TSgt (b) (6) SSgt (b) (6)
- (3) Avionics: MSgt (b) (6)

**c. Entomologists:** Lt Col (b) (6) Lt Col (b) (6) (b) (6)

**d. Mission Commander:** Lt Col (b) (6)

**3. Spray Configuration:**

- a. Mass:** #1 SP-2G (2-Module System)
- b. Booms:** Stainless steel fuselage ULV booms, LV configuration
- c. Nozzles:** size = 8020 TeeJet; 26 open oriented straight down.
- d. Differential GPS:** Wingman installed
- e. Aircraft:** 90-9103
- f. Mission Identifier:** QENRK3532342

**4. Spray Parameters:**

- a. Pesticide:** VectoBac® WDG (*Bacillus thuringiensis israelensis*)  
EPA Reg. No. 73049-56, Biological larvicide  
Signal Word: Caution  
Amount of Pesticide Used: 100 lbs of VectoBac® WDG  
Adjuvant: FD&C Red #40 Granular Dye (2% by Weight)  
Flushing Agent: Water, then air purge

- b. **Application:** 0.25 Gallons per acre target rate
- c. **Spray Altitude:** Variable; 100, 150, and 200 feet AGL (attachment 1)
- d. **Swath Width:** 500 feet
- e. **Ground Speed:** 200 knots
- f. **Acreage:** 201 acres
- g. **Spray-On Time:** 52 sec
- h. **Flow Rate:** 58 gallons/minute

**5. Sequence of events:**

- a. **8 Dec (Tuesday)**  
1340 Depart KYNG  
1640 Land KNRB
- b. **9 Dec (Wednesday)**  
1000 Site set-up by entomologists  
1530 Load VectoBac<sup>®</sup>; calibrated flow rate with 8020 nozzles
- c. **10 Dec (Thursday)**  
0700 Show KNRB and weather decision  
0845 Depart KNRB  
1200 Land KNRB
- d. **11 Dec (Friday)**  
0730 Show KNRB  
1000 Depart KNRB  
1230 Land KYNG

**6. Operational Details:**

- a. **Flying Data:**
  - (1) Spray Sorties/hours: 1/3
  - (2) Ferry Sorties/hours: 3/6
- b. **Pesticide Applied:**
  - (1) 50.2 gal (10 December) covering 201 acres
  - (2) Applications conformed to label; maximum label rate was not exceeded.

**7. Comments:** This testing seeks to determine the feasibility of using a Modular Aerial Spray System (MASS) equipped C-130 for the application of VectoBac<sup>®</sup> WDG to control immature mosquitoes over large areas. The product examined contains the active ingredient, *Bacillus thuringiensis israelensis* (Bti), which is a species of bacterium that is highly specific to insects; as a result, negative impacts on non-target species are highly limited with its use. Additionally, this product does not persist in the environment and is of extremely low risk for use in water.

Dengue and chikungunya virus continue to be a public health threat to Americans as cases of these mosquito-borne illnesses are occurring in large numbers in the Caribbean and Central America. Additionally, these illnesses can impact our deployed warfighters in such locations

as Africa and Asia. With these concerns in mind, trials at Camp Blanding looked at applying Bti as an ultra-low-volume larvicide to impact container breeding mosquitoes with an emphasis on *Aedes aegypti* and *Ae. albopictus*. We mixed the VectoBac® at a 20% by weight solution and sprayed with 8020 flat fan nozzles attempting to produce a droplet size of approximately 100 microns and a swath width of 500 ft. Dyed material was collected using kromekote cards and empty containers collected drops that will be rinsed at a contracted laboratory to determine larval mortality via bioassay trials.

VectoBac® WDG mixed well in the MASS with a small amount of clumping seen during mixing and an equal amount of clumped material left in the bottom of the tank after spraying. Valent BioSciences suggested the use of a Venturi inductor to promote mixing but the small amount of material needed for this mission and the lack of a water source led us to mix by hand. However, for a large-scale contingency mission, the use of external mixing containers would be imperative and should involve a Venturi inductor. Additional pesticides and/or formulations may be examined in future evaluations.

Reasonable spray conditions were present on the Weinburg Drop Zone on the test day, although very little air movement was encountered at release altitude (Attachment 1). This application needed 3-5 knots of wind to create the 500 ft swath for each pass with a relative humidity as high as 81% when operations began. Later, the RH dropped to below 60% (Attachment 2). Attachment 3 details the path of the aircraft on the drop zone and Attachment 4 shows the general setup of the collection stations.

Preliminary results from observations of large drops on cards indicate a less than 500 ft swath. However, we are interested in the biological activity of small drops collected in the sample containers. Those data are still pending laboratory analysis.

This project represents a return to working with Valent BioSciences on larviciding techniques. Previous work was conducted at Cherry Point MCAS in August 2000. We thank the technical staff at Valent BioSciences ((b) (6) and (b) (6)), as well as (b) (6) and (b) (6) for their expertise in experimental design and droplet analysis. We hope to continue this work in an actual urban setting, perhaps in the Florida Keys or Cayman Island, UK where other aircraft have used this technique with some success. A special thanks to (b) (6), CPT (b) (6), and (b) (6) (b) (6) for their continued support of these tests and Camp Blanding. These individuals worked in a superior capacity to make sure these tests were a success!

//signed//

(b) (6)

Research Entomologist

, Lt Col, PhD, USAFR

Attachment 1. Data recorded during the evaluations from the spray aircraft (10 Dec 2015). Winds aloft were light.

Pass #	Time	Release height (ft)	Flt line	Spray-on time (s)	Wind direction (degrees)	Wind speed (kts)
1	0906	150	305	8	049	1
2	0929	200	305	12	210	1.5
3	0955	150	305	12	150	1
4	1017	100	305	12	255	1
5	1042	150	215	8	088	1

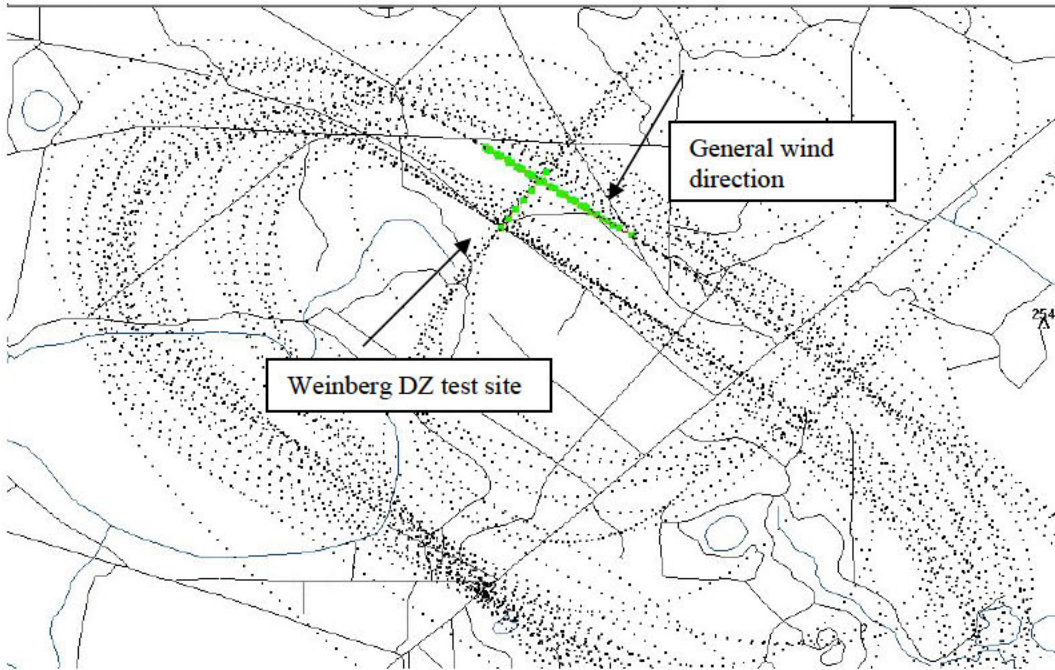
Attachment 2. Ground observations of meteorological data recorded during the evaluations (10 Dec 2015).

Date: December-10-15

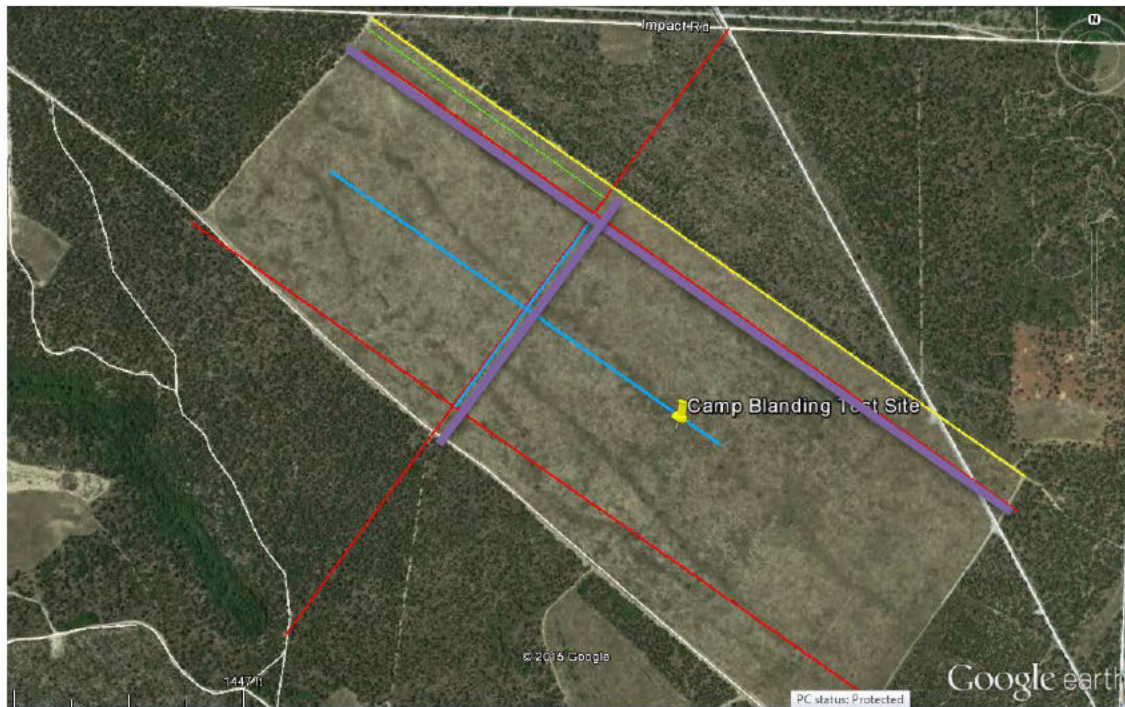
Trial	Time	Ht	Flt Line	Spray Trial	Ground Met			
				Comments	Ta(F)	RH	Wind(kt)	Drn
	8:30				58	81	2	30+-
1	9:07	150	305	sprayed water until sample line, then dye afterwards....trial scrubbed				
	9:24				65	63	3.4	30+-
2	9:29	200	305	flew over -100ft...dye OK				
	9:48				68	60	2.6	30+-
3	9:54	150	305	flew over -50ft...winds shifted southerly after pass				
	10:10				69	57	2.5	30+-
4	10:17	100	305					
5	10:40	150	215	flew with wind...winds had southerly tendency				



Attachment 3. Flight patterns recorded on 10 Dec 2015. Green dots represent the path of the aircraft while spraying occurred. Black dots are the path of the aircraft.



Attachment 4. Area of Weinberg Drop Zone where testing was conducted. Blue lines represent placement of card lines and bioassay jars. Purple lines represent the approximate flight path of the aircraft while spraying occurred.





# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead : MSgt. (b) (6) , 31 May-10 June Minot AFB, ND

**Aircraft Tail Number:** 9105 & 9108

**MASS Number:** MASS-3 & 5

**Configuration:** Fuselage

**Boom & Nozzle Type:** Fuselage,  
Raindrop

**Chemical in Main Tank:** VectobaBac  
12AS

**Chemical in Flush Tank:** H2O

**Total Chemical Loads:** 17

**Total Flush Loads:** 16

**Amount of Liquid Waste Generated:**  
0gal

**Amount of Solid Waste Generated:**  
100LBS

**1. From a maintenance aspect, what training was accomplished on this mission?**

Training was not accomplish from a maintenance standpoint

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Flushing at the end of the day helped in keeping the tanks clean after each day of spraying and will in turn make home station cleanup of the system a lot easier.

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

Although we had a minor off ACFT incident which was classified as a leak, and it got handled properly, some areas could use some attention. See item 9 for details of incident.

**4. How was host base and TA support? Please include details.**

T.A. got all equipment needed in a timely manner. Had no problems at all. Had to go to the active duty phase doc to borrow a borescope. The let us use it along with a SSgt. A big thanks goes out to them for the help.

**5. Where there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

**6. No issues with the chemical or chemical load**

## **7. Where there any notable observations from a maintenance perspective inflight?**

On one of the 1st end of day flush runs, the loads flushed the tanks but did not spray out what they flushed. Not that big of a deal but not the practice we want to happen. If you flush, spray out what you flush, then purge.

## **8. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Coordination and communication was great. After each sortie Aircrew and I debriefed to ensure any problems were addressed and show times for the next day were also discussed. However, after the swap out, we had some loads informed us of a possible problem with the system and explained it to us. Come to find out the next day, the problem they described was completely different than what the actual problem was. This needs to be clear when conveyed and we need to know all of the information because if some information is left out, that could change a lot with the system and how Spray maintenance goes about fixing the problem. Both Mission Commanders did a awesome job communicating with me about any changes or needed information.

## **9. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

On June 2 (Thursday) morning we (Aerial Spray Maintenance) were getting ready to load for the morning sorties. The chemical for the mission was on a flat bed trailer. In the process of getting ready to back the trailer to the ACFT for loading, we couldn't get the tractor trailer to start. We then called out mobile maintenance. Per their request, we were going to take the tractor trailer to MOPO to get looked at and swap it out with one of motorpools. After TSgt. (b) (6) put the landing gear down for the trailer and disconnected the air hoses, he then went to pull out. As soon as all of the weight was on the landing gear, the right side landing gear gave out and tilted the trailer which made one of the 250 gallon vats of VectoBac fall off the trailer and puncture causing a leak in two places. Noticing this, TSgt. (b) (6) stopped the tractor trailer and shut it off. TSgt. (b) (6) and TSgt. (b) (6) then exited the vehicle to assess what had just happened. Aerial Spray immediately got the spill kits out and contained the leak. We then tried to put some PIG PUTTY on the leaks which helped significantly. TSgt. (b) (6) then got in the fork lift to try and tilt the vat back to its upright position. Noticing that all of this is happening rather quickly, the loads from one of the ACFT came over to assist. This is the part that needs attention. Although their help is greatly appreciated, we are fully capable to handle these types of situations as it is our job. I had to tell them to please step back and let us handle it, which at that point I had everyone handling the leak (TSgt. (b) (6) TSgt. (b) (6) and Sra. (b) (6) stop what they were doing to go and get into PPE. After getting direction from Maj. Mundel as to the classification, it was decided that is would be classified as a LEAK and WAS NOT reportable. All we needed to do was to clean up the chemical as much as possible and then to wash off the area with the fire hose. As we were in the process of hosing off the concrete, the base fire chiefs along with their commander came out and wanted to know what was going on. He wasn't happy. After explaining what had happened and that we

were handling it according to proper procedures, he seemed to calm down but still wanted his Bio Env. to come out to make sure we were doing everything right. After they came out and in fact told him that we were handling it correctly, he then left. We then continued to finish cleaning up and then continued to go swap out the flatbed and tractor trailer to move the chemical vats over to. Once that was all done we had no problems the rest of the trip.

My suggestion would be to coordinate with motorpool to have a flatbed trailer with the tractor trailer for the two weeks we are there. CE's equipment isn't taken care of and is to blame for this incident. This is a way to make sure this doesn't happen again.



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

7 July 2016

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Grand Forks AFB, ND and JB Charleston SC.

1. Aerial spray deployment of one C-130 during 11-15 July 2016 in response to a requested aerial spray to control adult mosquitoes at Grand Forks AFB, ND and JB Charleston, SC. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of Grand Forks AFB and JB Charleston, SC. Operations will be conducted out of Grand Forks AFB, ND 11-13 July and redeploy to continue operations out of JB Charleston, SC from 13-15 July.

2. Concept of Operations: All times local

- a. 11 July (Monday)  
1700 Depart KYNG  
1900 Land KRDR
- b. 12 July (Tuesday)  
2130 Depart KRDR  
2230 Land KRDR
- c. 13 July (Wednesday)  
1200 Depart KRDR  
1600 Land KYNG  
1630 Depart KYNG  
1830 Land KCHS
- d. 14 July (Thursday)  
2000 Depart KCHS  
2200 Land KCHS
- e. 15 July (Friday)  
1100 Depart KCHS  
1300 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: Grand Forks AFB approximately 12,000 acres
- b. Altitude: 300 feet for NVG adulticide application
- c. Swath Width: 2,000 feet
- d. Air Speed: 200 KTS
- e. Application Rate: 1.0 oz/acre of Trumpet EC

- a. Area to be treated: JB Charleston approximately 18,000 acres
- b. Altitude: 300 feet for NVG adulticide application
- c. Swath Width: 2,000 feet
- d. Air Speed: 200 KTS
- e. Application Rate: 0.85 oz/acre of Trumpet EC

4. Maj (b) (6) will serve as the Mission Commander at Grand Forks AFB, ND. Maj. Jennifer Remmers will serve as the Mission Commander at JB Charleston, SC. Support required at both Grand Forks AFB, ND and JB Charleston, SC has been completed.

\\SIGNED\\

(b) (6), Major, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND**

27 May 2016

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations of Larvacide Application for Aerial Spray in and around the Army Corps of Engineers' property, Williston, ND.

1. Aerial spray deployment of two C130's to Minot, ND from 31 May-10 June 2016 for the requested larvacide spray in and around the Army Corps of Engineers' property near Williston, ND. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel working on the Army Corps' property, and by extension, the citizens of Williston. Mission objectives provide training for aerial spray aircrew, entomologists, and maintenance personnel in all aspects of the aerial spray mission.

2. Concept of Operations: All times local

- a. 31 May (Tuesday)
  - 1100 Depart KYNG (Support Aircraft)
  - 1200 Depart KYNG (Spray Aircraft 1)
  - 1215 Depart KYNG (Spray Aircraft 2)
  - 1330 Land KMIB (Support Aircraft)
  - 1430 Land KMIB (Spray Aircraft 1)
  - 1445 Land KMIB (Spray Aircraft 2)
  - 1500 Depart KMIB (Support Aircraft)
  - 1930 Land KYNG (Support Aircraft)
- b. 1-3 June (Wednesday-Friday)
  - 0600 Show KMIB
  - 0730 Depart KMIB
  - (Multiple 1.5 hr sorties each day depending on weather)
- c. 4 June (Saturday)
  - 0800 Depart KMOT(O/B support aircraft)
  - 1230 Land KYNG
  - 1330 Depart KYNG
  - 1800 Land KMOT
- d. 6-9 June (Monday-Thursday)
  - 0600 Show KMIB
  - 0730 Depart KMIB



(Multiple 1.5 hr sorties each day depending on weather)

- e. 10 June (Friday)  
0830 Depart KYNG (O/B support aircraft)  
1100 Land KMIB  
1200 Depart KMIB  
1630 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 10,000 acres
- b. Altitude: 100 ft for larvicide application
- c. Swath Width: 100 ft
- d. Groundspeed: 200 KIAS
- e. Flow Rate: 233 gals/min
- f. Application Rate: 5 gal/acre (water with 2.0 pints of Vectobac® + 0.45 oz of Poly Control 2)

4. Lt Col (b) (6) will serve as the Mission Commander. Support required at Minot AFB and Minot International Airport has been completed.

\\SIGNED\\

(b) (6), Maj, USAF  
Chief of Aerial Spray

**910 AW -- AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**PARRIS ISLAND MCRD, SC 2-5 May 2017**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island MCRD, SC
- b. Mission Duration: 2-5 May 2017
- c. Purpose of Application: Mosquito and biting midge (*Culicoides* spp.) control
- d. Application Date: 3 May 2017
- e. Time/s of Application (Zulu): 0025-0145 hrs (Zulu)
- f. Acres Treated: 5610 acres
- g. Project Coordinator: (b) (6) Environmental, DSN (b) (6)
- h. Date Spray Map Last Approved: 19 April 2017
- i. Date of Waste Generation Letter: 30 October 2007
- j. Installation In-Briefing: (When/Where/Briefer/s): Mr. (b) (6) and Ms. (b) (6) were briefed at NEARO 3 May 2017, by Lt Col (b) (6) and Maj (b) (6)

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6), Lt Col (b) (6)
  - (2) Navigators: Maj (b) (6), 1 Lt (b) (6)
  - (3) Flight Engineers: MSgt (b) (6)
  - (4) Spray Operators: CMSgt (b) (6)(b) (6), MSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) (lead), MSgt (b) (6), MSgt (b) (6) (b) (6) TSgt (b) (6), TSgt (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6), SSgt (b) (6), SrA (b) (6)
  - (3) Avionics: MSgt (b) (6)
- d. **Entomologist:** Maj (b) (6)

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom® Concentrate
- b. EPA Registration Number: 5481-480
- c. Formulation Sprayed: Concentrate (87.4% AI naled)
- d. Gallons Pesticide Loaded: 41 Gallons Dibrom®
- e. Gallons Pesticide Applied: 41 Gallons Dibrom®
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 10 gallons HAN
- h. Other Additives Used: None
- i. Application Rate: 0.94 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 15 nozzles oriented straight down
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 3.3 gallons per minute
- h. Sorties: 1/1.8 hrs (application); 2/4.4 hrs (ferry)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: none
- c. Spray Release Altitude: 300'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 130@3 knots
  - (2) Release Altitude: 180@15 knots
- b. Temperature (Degrees Fahrenheit):
  - (1) Ground: 73°F
  - (2) Release Altitude: 75°F
- c. Cloud Cover: Broken
- d. Source: Ground observations and aircraft SCNs

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations (Maj Remmers)
  - (2) Results: Adequate coverage through sprayed area
- b. Effectiveness:
  - (1) Technique/s Used: CDC light trap and gravid traps
  - (2) Results: Parris Island (3 locations)

Location	Trap Type	Pre-Spray (1 May)	Post-Spray (9 May)	% Reduction
Bldg 102	CDC	17 Females	0 Mosquitoes	99.9%
Crucible Aid Station	Gravid	1 Female 3 Males	0 Mosquitoes	99.9%
Golf Course	Gravid	1 Female	8 Females 4 Males	No reduction

8. **REMARKS:** The spray system was calibrated on the ground prior to pesticide application. Application proceeded without any significant problems, and no negative effect on wildlife was observed. An area of ¼ mile surrounding each of three eagles' nests was not treated. At the golf course a marginal increase in mosquito numbers was observed following the spray. This is likely due to the trap location coinciding with an untreated area (see attachment 1). Overall, however, results indicate that this application was effective. An inspection on the day following the spray found a hole in the rear oil transmitter on engine #1. Youngstown coordinated dropping off parts and a Mobile Repair Team. The aircraft was repaired that same day, allowing the spray team to return to Youngstown the following day. Excellent support by the 910 MX. Thanks to (b) (6) (b) (6) and (b) (6) (b) (6) as well as Parris Island MCRD PrevMed for facilitating these activities.

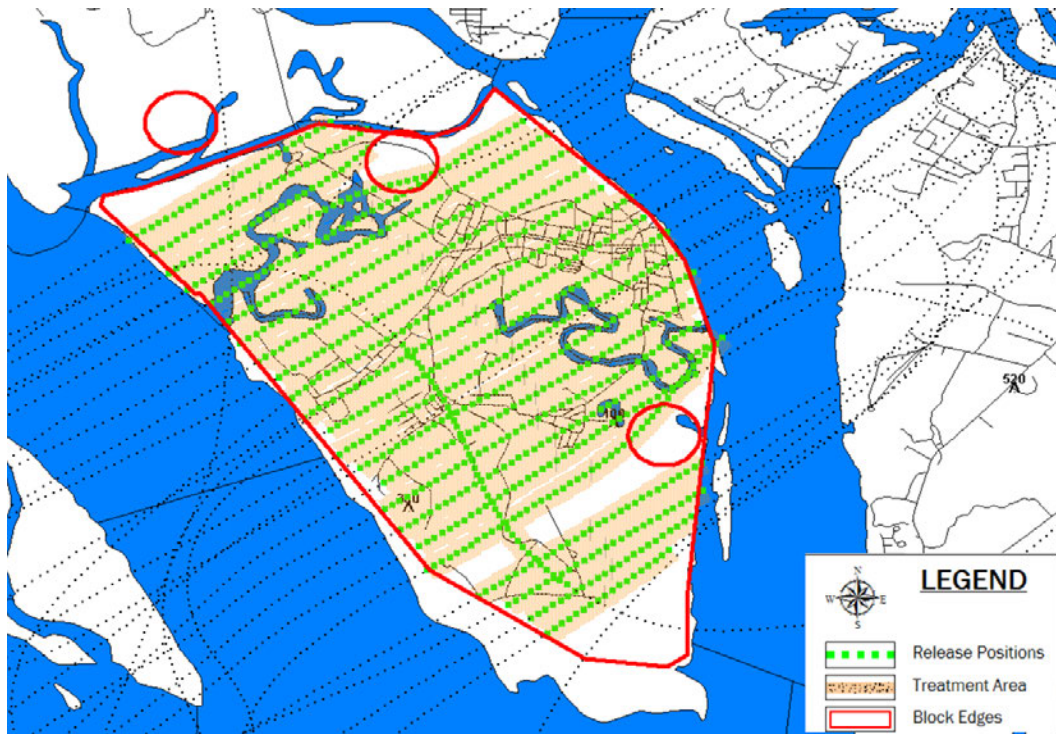
//signed//

(b) (6)

, Maj, USAF

**DOD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

**Attachment 1. Areas sprayed (beige blocks) at Parris Island MCRD 3 May 2017. Red lines show spray block boundary and circular no-spray/no-fly areas for eagles' nests.**





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

28 April 2017

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Parris Island MCRD, SC

1. Aerial spray deployment of one C-130 from 2-5 May 2017 to Beaufort MCAS, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at Parris Island MCRD. NVG aerial spray sorties are conducted at 300' AGL.

2. Concept of Operations (All times are local):

- a. 2 May (Tuesday)  
1700 Depart KYNG  
1900 Land KNBC
- b. 3 May (Wednesday)  
1630 Weather call/Calibration of MASS, Chemical Load/actual application planned for Parris Island MCRD  
1900 Depart KNBC  
2130 Land KNBC
- c. 4 May (Thursday)  
1630 Weather call/Calibration of MASS, Chemical Load/actual application planned for Parris Island MCRD  
1900 Depart KNBC  
2130 Land KNBC
- d. 5 May (Friday)  
1000 Depart KNBC  
1200 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:



- a. Area to be treated: 7500 acres on Parris Island.
  - b. Altitude: 300' AGL NVG operations
  - c. Swath Width: 1000ft
  - d. Groundspeed: 200 KIAS
  - e. Application Rate: 0.75-1 oz/acre of Dibrom- an organophosphate insecticide
4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) as the Aircraft Commander. Support at Parris Island MCRD and Beaufort MCAS has been completed.

//SIGNED//

(b) (6), MAJOR, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

28 September 2017

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Joint Base Charleston and Parris Island, SC

1. Aerial spray deployment of one C-130 from 3-7 October 2017 to Joint Base Charleston, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at Joint Base Charleston and Parris Island MCRD. NVG aerial spray sorties will be conducted at 300' AGL.

2. Concept of Operations (All times are local):

a. 3 October (Tuesday)

1700 Depart KYNG  
1900 Land KCHS

b. 4 October (Wednesday)

1300 Installation brief at JB Charleston  
1600 Weather call/Chemical Load  
1630 Calibration  
1800 Depart KCHS  
2000 Land KCHS

c. 5 October (Thursday)

1600 Weather call/Chemical Load at Charleston AFB  
1730 Calibration  
1800 Depart KCHS  
2000 Land KCHS

d. 6 October (Friday)

1600 Weather call/Chemical Load at Charleston AFB  
1730 Calibration (if necessary)  
1800 Depart KCHS  
2000 Land KCHS

e. 7 October (Saturday)

0900 Depart KCHS  
1130 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

Locations:	Parris Island MCRD and JB Charleston
Acres:	7,500 (Parris Island); 18,000 (JB Charleston)
Chemical:	Parris Island: Dibrom <sup>®</sup> (EPA Reg. No. 5481-480) Charleston: Trumpet <sup>®</sup> EC (EPA Reg. No. 5481-481)
Gallons loaded:	45 gallons (Parris Island); 120 gallons (Charleston)
Flow Rate:	2.7 GPM (Parris Island); 6.2 GPM (Charleston)
Application Rate:	0.75 oz/ac (Parris Island); 0.85 oz/acre (Charleston)
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300'
Airspeed:	200 KTS
Swath Width:	1,000 feet (Parris Island); 2,000 feet (Charleston)
Nozzle/Orientation:	ULV 8003 Tee Jet Flat Fan / Straight Down
Number of Nozzles:	13 (Parris Island); 27 (Charleston)

4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) as the Aircraft Commander. Support at Joint Base Charleston has been completed.

//SIGNED//

(b) (6), MAJOR, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
UTAH TEST AND TRAINING RANGE, 6-17 MARCH 2017**

**1. MISSION BASICS:**

- a. Installation Sprayed: Utah Test and Training Range (UTTR)
- b. Mission Duration: 6-17 March 2017
- c. Purpose of Application: Weed control on UTTR Targets 21, 23 and 24, (NORD LZ) facilitate UXO recovery
- d. Application Dates: See Attachment 1
- e. Times of Application (Local): See Attachment 1
- f. Acres Treated: 1,522
- g. Flying Data:
  - (1) Spray sorties/hours: 20/33.5
  - (2) Flush sorties/hours: 5/6.3
  - (3) Spray training sorties/hours: 11/17.6
  - (2) Ferry sorties/hours: 8/39.4
- h. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) Range Specialist/DSN (b) (6)  
Environmental Coordinator, (b) (6) DSN (b) (6)
- i. Date Spray Map Last Approved: 6 March 2017
- j. Installation In-Briefing: (When/Where/Briefer/s): Lt Col (b) (6) Lt Col (b) (6)  
Maj Stroney on 6 March at UTTR HQ

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Entomologists (certified applicators): Lt Col (b) (6) Lt Col (b) (6) Maj (b) (6)  
Maj (b) (6)
- c. ARMS: MSgt (b) (6) MSgt (b) (6) (2nd half), TSgt (b) (6) (2nd half),  
SSgt (b) (6) (2nd half)
- d. 1<sup>st</sup> Half Aircrew:
  - Pilots: Col Phillips, Lt Col (b) (6) Lt Col (b) (6) Lt Col (b) (6) Lt Col (b) (6)  
Maj Grein, Maj (b) (6) Maj (b) (6), Lt Col (b) (6) Capt (b) (6) Maj (b) (6) Maj (b) (6)  
1Lt Sammartino
  - Navigators: Lt Col SMSgt (b) (6) MSgt (b) (6) TSgt (b) (6), MSgt (b) (6)
  - Spray Operators: SMSgt (b) (6) SMSgt (b) (6) SMSgt (b) (6)  
MSgt (b) (6), MSgt (b) (6), TSgt (b) (6) SSgt (b) (6) SSgt (b) (6)  
TSgt (b) (6) SrA (b) (6)
- 2<sup>nd</sup> Half Aircrew:
  - Pilots: Lt Col (b) (6) Lt Col (b) (6) Lt Col (b) (6) Lt Col (b) (6) Lt Col (b) (6)  
Lt Col (b) (6) Maj (b) (6), Maj (b) (6), Capt (b) (6) Capt (b) (6) 1Lt (b) (6)
  - Navigators: Maj (b) (6) Maj (b) (6), Maj (b) (6)
  - Flight Engineers: SMSgt (b) (6), MSgt (b) (6), SMSgt (b) (6) MSgt (b) (6)
  - Spray Operators: SMSgt (b) (6) SMSgt T (b) (6) SMSgt (b) (6)  
MSgt (b) (6) TSgt (b) (6) SSgt (b) (6) TSgt (b) (6) SrA (b) (6)  
MSgt (b) (6)

e. Maintenance:

**OIC's** Maj (b) (6) (1<sup>st</sup> week), Capt (b) (6) (2<sup>nd</sup> week)

**1<sup>st</sup> Shirt:** MSgt (b) (6)

**Supervisor:** SMSgt (b) (6)

**Spray MX:** TSgt (b) (6) (lead), MSgt (b) (6) MSgt (b) (6)  
TSgt (b) (6) TSgt (b) (6)

**MX Specialists:** TSgt (b) (6) SSgt (b) (6) TSgt (b) (6)  
MSgt (b) (6) SrA (b) (6) SrA (b) (6)

**Crew Chiefs:** MSgt (b) (6) (lead), MSgt (b) (6) TSgt (b) (6)  
SSgt (b) (6) SSgt (b) (6)

**AT MX:** MSgt (b) (6) TSgt (b) (6) TSgt (b) (6)  
SSgt (b) (6) SSgt (b) (6) SrA (b) (6)

**Comm:** Maj (b) (6) TSgt (b) (6) TSgt (b) (6) SrA (b) (6)  
A1C (b) (6)

**22<sup>nd</sup> AF/AMC:** Maj Michael (b) (6) Maj John (b) (6) SMSgt (b) (6) (b) (6)

### 3. PESTICIDE:

- a. Trade Name: Krovar® IDF
- b. EPA Registration Number: 352-505
- c. Formulation Sprayed: 10 lbs Krovar® per 22.5 gallons/acre application rate.
- d. Gallons Pesticide Mix Loaded: 31,690
- e. Gallons Pesticide Mix Applied: 31,690
- f. Formulation Used: 450 lbs Krovar®, 4.0 gal StaPut®, ½ gal Foam Fighter®, 200 ounces Hi-Light® Dye, remainder water per 1000 gal of spray mix.
- g. Krovar applied: 15,775 lbs
- h. Gallons and Name of Flush Used: 4,000 gal water
- i. Other Additives Used: 185 gal Clasp®; 92.5 gal Hi-Light® dye; 11 gal Foam-buster.

### 4. APPLICATION EQUIPMENT:

- a. Aircraft Tail Number: 99108, 99106, 99103 (1<sup>st</sup> week), 99105 (2<sup>nd</sup> week)
- b. Spray System (Modules Used) and System ID #: 3 and 5.
- c. Spray System Configuration: 3-Module System/ UHV Fuselage Booms
- d. Nozzle Type/Size: UHV Fuselage
- e. Nozzle Orientation & Number Used: 2 oriented straight back.
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 366 gallons per minute.

### 5. APPLICATION PARAMETERS:

- a. Swath Width Flown: 35'
- b. Spray Off-set: None
- c. Spray Release Altitude: 100' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)



**6. WEATHER OBSERVATIONS:**

- a. See Attachment 2.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique Used: blue dye pattern on targets and observations from ground markers.
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Techniques Used: monitoring of weed emergence in spring.
  - (2) Results: will be determined this spring by range personnel.

**8. REMARKS:** A wet spring, some areas receiving 200% greater than normal precipitation, made the prospect of successful aerial herbicide applications somewhat dubious in the weeks prior to this year's start date. Nonetheless, as the actual dates approached, the targets had dried enough to make the applications and, in fact, the moist soil on the targets should promote absorption of the herbicide and aid the herbicide's mode of action. In the end, this year's project had no weather cancellations. Krovar was again applied to control vegetation on Targets 21, 23, and 24. In addition, efficient flying created enough time to also send 2 sorties to NORD LZ and Target 22 (Attachment 3b). The flight paths of the aircraft are shown in Attachment 3a and b.

- a. This year's spray also included the "Aerial Spray Refresher" with an additional aircraft flown without a MASS for aircrew training on the UTTR. This procedure was successful for a variety of reasons including the benefit of moving trainees from no-release flights to actual sprays within short periods of time.
- b. Visitors from AMC and 22<sup>nd</sup> AF received familiarization with the spray mission, flew sorties, and provided constructive feedback.
- c. We received and conducted a survey of the new spray areas provided by 75CES Natural Resources for a potential fire suppression and habitat restoration mission. These blocks are appropriate for herbicide applications against cheat grass and should be conducted as a separate mission from the target treatments. A September or October timeframe is suggested for cheat grass control.
- d. Many thanks to the various agencies at Hill AFB supporting this mission: 75CES Pest Management, 75<sup>th</sup> Air Base Wing - Base Operations, and a special thanks to SMSgt (b) (6) (b) (6) (514 FLTS/DOC) for acting as our sponsor again this year.

//signed//

(b) (6) , Lt Col, USAFR  
DOD CERTIFIED PEST MANAGEMENT PROFESSIONAL



Attachment 1: Summary Spray Chart

**7-15 March 2017**

**SPRAY OPERATIONS SUMMARY FOR UTAH TEST AND TRAINING RANGE**

<b>DATE March</b>	<b>SORTIE #</b>	<b>AIRCRAFT #</b>	<b>TIMES</b>	<b>SPRAY ON TIME (min)</b>	<b>TARGET</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>FLYING HOURS</b>
7	1	106	1140-1320	5.7	23,24	94	1737	1.7
8	2	108	0839-1019	5.1	21	82	1688	1.7
8	3	106	0935-1120	5.2	23,24	85	1694	1.8
8	4	108	1210-1350	5.0	21	81	1747	1.7
9	5	108	0807-0937	4.8	21	78	1711	1.7
9	6	106	0850-1010	4.7	23,24	77	1604	1.3
9	7	108	1025-1210	4.9	21	80	1731	1.7
9	8	106	1100-1137	NA	NA	NA	NA	NA
9	9	106	1153-1305	4.8	23,24	78	1653	1.2
10	10	108	0835-0930	.3	21	5	114	.9
10	11	106	0900-1000	4.9	23,24	79	1647	1.0
10	12	108	1030-1220	4.8	21	79	1634	1.8
10	13	106	1043-1209	5.5	23,24	89	1781	1.4

13	14	108	0805-0945	4.9	21	79	1706	1.7
13	15	106	0845-0955	5.5	23/24	89	1690	1.2
13	16	108	01038-1238	5.0	21	81	1707	2.0
13	17	106	1120-1255	5.2	23/24/21	84	1668	2.3
14	18	108	0805-0940	5.3	21	86	1723	1.6
14	19	106	0845-1020	5.6	21	90	1765	1.6
14	20	108	1040-1250	4.7	21/22/Nord	76	1802	2.2
14	Flush	106	1130-1255					1.4
15	21	108	0814-1035	2.4	22	30	888	2.4
15	Flush	106	0850-1040					1.8
15	Flush	108	1120-1245					1.4
15	Flush	106	1155-1315					1.3
15	Flush	108	1405-1505					1.0
		Totals		139.3		1,522	31,690	39.8*

\* This includes 6.3 hours of flush sortie flying time

\*\* No flights were made on 11 & 12 because the UTTR was closed. Sortie 8 did not spray because of a GPS issue.

## Attachment 2. UTTR North Range Aerial Spray Weather Log 2017

### 8 March 2017

Time	Wind Speed (mph)	Wind Direction	Temperature	Relative Humidity (%)
0745	2.1	140	37	52
0800	3.0	140	37	55
0830	3.2	140	40	60
0900	5.0	140	41	47
0930	6.1	140	47	45
1000	6.2	130	50	45
1030	7.6	130	52	51
1100	6.6	150	52	39
1130	6.6	140	54	41
1200	6.6	140	55	44

### 9 March 2017

Time	Wind Speed (mph)	Wind Direction	Temperature	Relative Humidity (%)
0730	3.0	110	38	70
0800	2.0	300	50	60
0830	2.4	312	46	67
0900	0.0	n/a	55	46
0930	2.0	310	55	60
1000	3.5	290	51	50
1030	4.0	242	51	50
1100	4.5	238	55	41
1130	2.5	250	56	42

### 10 March 2017

Time	Wind Speed (mph)	Wind Direction	Temperature	Relative Humidity (%)
0730	2.0	140	41	77
0800	0.0	n/a	42	78
0830	2.0	240	42	75
0900	2.1	240	45	65
0930	0.0	n/a	50	65
1000	2.0	240	52	55
1030	6.2	200	53	56
1100	5.0	200	55	56

### 11 March 2017

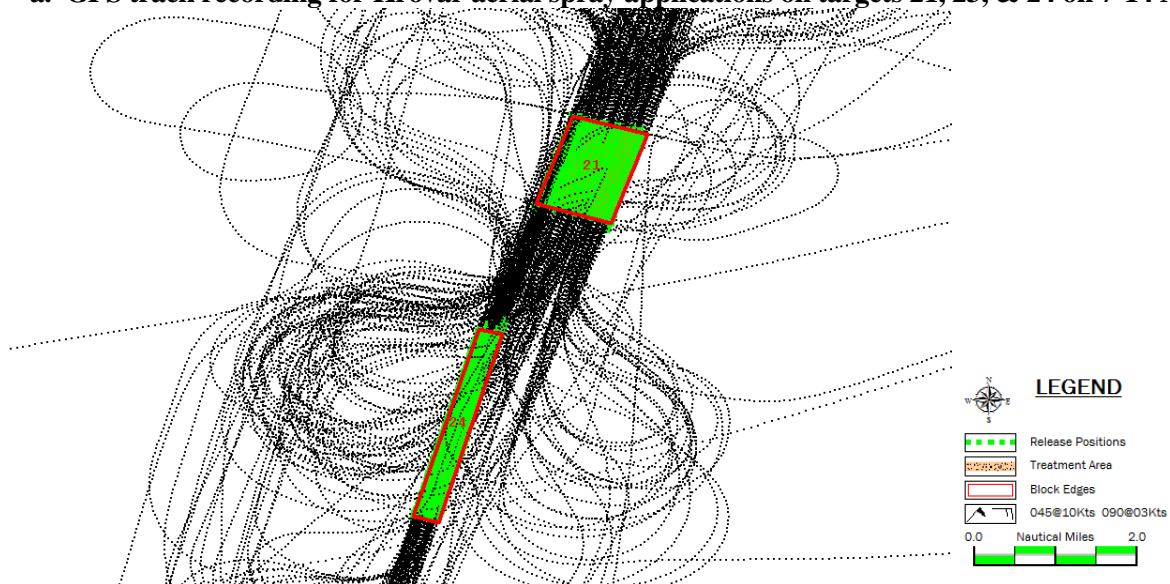
Time	Wind Speed (mph)	Wind Direction	Temperature	Relative Humidity (%)
0730	2.5	110	32	75
0800	2.0	120	35	65
0830	3.0	130	42	62
0900	3.7	130	50	52
0930	4.5	130	50	52
1000	3.4	140	57	39
1030	4.3	160	58	42
1100	4.4	150	59	39
1130	5.3	140	54	42

### 14 March 2017

Time	Wind Speed (mph)	Wind Direction	Temperature	Relative Humidity (%)
0700	0.0	n/a	38	68
0800	0.0	n/a	38	62
0900	1.0	167	48	52
0915	4.0	165	48	55
0930	6.3	340	48	58
1000	2.4	335	52	52

**Attachment 3a&b. GPS track recording for Krovar aerial spray applications on targets 21, 23, 24, and NORD LZ and Target 22. 7-15 March 2017.**

**a. GPS track recording for Krovar aerial spray applications on targets 21, 23, & 24 on 7-14 March 2017**



**b. GPS track recording for Krovar aerial spray applications on NORD LZ and Target 22 on 14-15 March 2017.**





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

29 August 2017

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

**SUBJECT:** Capability and Concept of Operations for NVG (Night Vision Goggle) Aerial Spray at Langley AFB, VA.

1. One C-130 will deploy to Langley AFB, VA from 7-10 September 2017 in response to requested aerial sprays to control adult mosquitoes at Langley AFB and Craney Island Army Corps of Engineers in VA, and JB Charleston in SC. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of Langley AFB, Craney Island Army Corps of Engineers, and JB Charleston. Operations for this mission will be conducted from Langley AFB, VA.

2. Concept of Operations (All times are local)

- a. 7 September (Thursday)  
1600 – Depart KYNG  
1730 – Land KLFI
- b. 8 September (Friday)  
1530 – Depart KLFI  
1700 – Land KCHS  
1930 – Depart KCHS  
2200 – Land KCHS  
2215 – Depart KCHS  
2345 – Land KLFI
- c. 9 September (Saturday)  
1900 – Depart KLFI  
2200 – Land KLFI
- d. 10 September (Sunday)  
1200 – Depart KLFI  
1330 – Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: approx. 30,700 acres (18,000 JB Charleston; 12,700 Langley AFB/Craney Island)
  - b. Altitude: 300 feet for adulticide application
  - c. Swath Width: 2,000 feet
  - d. Groundspeed: 200 KIAS
  - e. Application Rate: .85 oz/acre of Trumpet EC (18,000 acres JB Charleston); .9 oz/acre of Dibrom (12,700 acres Langley AFB/Craney Island)
4. Maj (b) (6) will serve as the Mission Commander.
  5. Lt Col (b) (6) will be the Aircraft Commander.
  6. Required support at Langley AFB and JB Charleston has been coordinated.

\\Signed\\  
(b) (6), Major, USAF  
Chief of Aerial Spray





**DEPARTMENT OF THE AIR FORCE  
AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
NAF EL CENTRO, 14 – 18 AUGUST 2017**

**1. MISSION BASICS:**

- a. Installation: The mission operated from the Naval Air Facility, El Centro, CA
- b. Mission Duration: 14-18 August 2017
- c. Purpose of Application: Conduct an aerial insecticide efficacy evaluation in a high temperature, desert environment in partnership with USDA-CMAVE and U.S. Navy, using Aqua Zenivex™ E20 and Altosid® SR
- d. Application Dates: 15-16 August 2017
- e. Times of Application (Local):
  - (1) 15 August: 0916-1004, 1800-1848
  - (2) 16 August: 0900-0955, 1200-1245
- f. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) Range Complex  
Sustainment Coordinator, DSN (b) (6)
- g. Mission Identifier: QENRK3531226

**2. PARTICIPANTS:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) (A/C), Lt Col (b) (6)
  - (2) Navigator: Lt Col (b) (6)
  - (3) Flight Engineer: TSgt (b) (6)
  - (4) Spray Operators: CMSgt (b) (6) MSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: MSgt (b) (6) (Lead), MSgt (b) (6), TSgt (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6) TSgt (b) (6)
  - (3) Avionics: TSgt (b) (6)
- d. **Entomologists:** Lt Col (b) (6) (DoD Cert number (b) (6)  
11/2019: (b) (6) ex 05/2020), Maj (b) (6) (DoD Cert number NJ-  
(b) (6) ex 08/2018; AA (b) (6) ex 05/2020)

**3. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 89-9105
- b. Spray System (Modules Used) and System ID #: SP2G, MASS #2
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: 8005 Tee Jet
- e. Nozzle Orientation & Number Used: 34 nozzles oriented straight down

**4. APPLICATION PARAMETERS:**

- a. Pesticides:

- (1) Aqua Zenivex™ E20  
Etofenprox 20%  
Signal Word: Warning
- (2) Altosid® SR  
(S)-Methoprene 20%  
Signal Word: Caution
- b. Application
  - (1) Trial 1: 0.59 oz/acre Aqua Zenivex™ E20 (sorties 1&2)
  - (2) Trial 2: 0.53 oz/acre Aqua Zenivex™ E20 + 1.0 oz/acre Altosid® SR
  - (3) Trial 3: 0.89 oz/acre Altosid® SR
- c. Swath Width Flown: 500'
- d. Spray Release Altitude: 150' AGL
- e. Ground Speed: 200 Knots (338 Feet/Second)
- f. Acreage: Single pass sprays
- g. Flow Rate:
  - (1) Trial 1: 18.2 GPM
  - (2) Trial 2: 19.8 GPM
  - (3) Trial 3: 18.0 GPM
- h. Gallons and Name of Flush Used: 200 gallons water

**5. SEQUENCE OF EVENTS (ALL TIMES LOCAL):**

- a. 14 August (Monday)  
0900 Show KYNG  
1105 Depart KYNG  
1505 Arrive KSKF  
1635 Depart KSKF  
1810 Arrive KNJK
- b. 15 August (Tuesday)465  
0700 Show KNJK  
0730 Loaded pesticide and calibrated spray system  
0910 Depart KNJK  
1010 Land KNJK  
1755 Depart KNJK  
1855 Land KNJK
- c. 16 August (Wednesday)  
0700 Show KNJK  
0730 Loaded pesticide  
0855 Depart KNJK  
1030 Land KNJK  
1155 Depart KNJK  
1255 Land KNJK
- d. 17 August (Thursday)  
Applications complete, sorties cancelled; data processing; MASS cleaning
- e. 18 August (Friday)  
0600 Show  
0700 Depart KNJK  
1555 Arrive KYNG

**7. OPERATIONAL DETAILS:**

- a. Flying Data:
  - (1) Spray sorties/hours:  $1.0 + 1.0 + 1.6 + 1.0 = 4.6$
  - (2) Ferry sorties/hours: 3/14.6
- b. Pesticide Applied: spray mix = pesticide and water
  - (1) 37 gallons of spray mix (2.1 gal Aqua Zenivex™ E20) covering 465 acres (15 Aug)
  - (2) 50 gallons of spray mix (2.4 gal Aqua Zenivex™ E20 + 4.6 gal Altosid® SR) covering 584 acres (16 Aug)
  - (3) 30 gallons of spray mix (2.7 gal Altosid® SR) covering 391 acres (16 Aug)
- c. Environmental Conditions (wind direction/speed; temp) at spray altitude (150 ft):
  - (1) Sortie 1, 15 Aug  
Pass 1: 09:53:52L; 219-229°/18 knots; 89.8°F
  - (2) Sortie 2, 15 Aug  
Pass 1: 18:09:18L; 222-250°/31 knots; 93.2°F  
Pass 2: 18:19:15L; 221-226°/30 knots; 93.2°F  
Pass 3: 18:29:05L; 222-227°/29 knots; 93.2°F
  - (4) Sortie 3, 16 Aug  
Pass 1: 09:16:18L; 190-218°/5 knots; 84.2°F  
Pass 2: 09:25:57L; 176-230°/5 knots; 87.8°F  
Pass 3: 09:36:18L; 232-235°/4 knots; 91.4°F  
Pass 4: 09:46:17L; 164-248°/3 knots; 91.4°F  
Pass 5: 09:55:33L; 033-239°/2 knots; 91.4°F
  - (4) Sortie 4, 16 Aug  
Pass 1: 12:04:57L; 022-126°/1 knot; 95.0°F  
Pass 2: 12:14:35L; 086-118°/3 knots; 95.0°F  
Pass 3: 12:19:01L; 100-130°/2 knots; 95.0°F  
Pass 4: 12:23:59L; 105-110°/3 knots; 95.0°F

**COMMENTS:** These spray sorties were flown in support of the Deployed Warfighter Protection Program in conjunction with scientists from the Center for Medical and Veterinary Entomology (CMAVE) and the Navy Environmental and Preventive Medicine Unit 5 (NEPMU5). Specifically, we are interested in the efficacy of aerial pesticide applications against indoor-resting adult and larval mosquitoes in hot and arid environments (e.g., *Aedes aegypti*). Additionally, we are looking at the possibility of combining adulticide and larvicide pesticide products to potentially increase aerial spray capabilities. Naval Air Facility (NAF), El Centro and associated El Centro Bomb Range provide the perfect environment for these evaluations, with temperatures reaching above 100°F and sometimes as high as 114°F. These spray trials differed from work in 2015 by examining effects on both larval and adult mosquitoes, and by evaluating water-based products as opposed to oil-based products such as those tested previously. Attachment 1 shows the flight path of the C130 over the bomb range. Live caged mosquitoes served as bioassays to determine pesticide efficacy against adult mosquitoes. Cups were placed in the test area and, in the laboratory, will be used to measure efficacy against larval mosquitoes. The experimental setup is shown in Attachment 2, with a variety of tents deployed under the C130 while spraying. Both cups and caged mosquitoes were placed inside and outside of the tents. A detailed analysis of the project will be generated by USDA-CMAVE in the near future. Results and recommendations will be reported at scientific meetings and published in scientific journals. These measures will be utilized to better control disease vectors with the end goal of protecting the health of our deployed troops. We want to extend a special thank you to the staff of the Coachella Valley Mosquito and Vector Control District and NEPMU5 for their critical support of the project. In addition, we thank the NAF El Centro staff, in particular, Mr.

(b) (6) (b) (6) for their continued support of these trials. We hope to continue with aerial spray collaborations in FY18 with the USDA and the Navy.

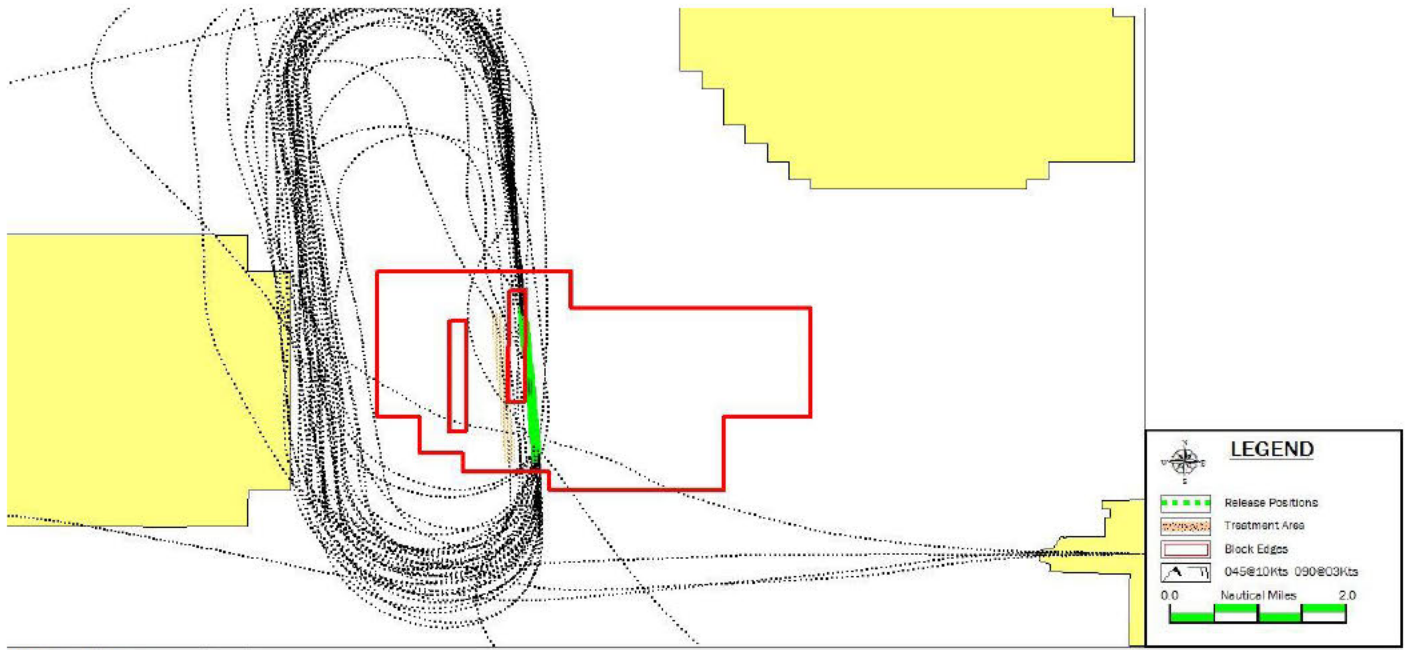
//signed//

(b) (6) , Maj, USAF  
**DoD Certified Pest Management Professional**

//signed//

(b) (6) , Lt Col, USAF  
**DoD Certified Pest Management Professional**

**Attachment 1. Area sprayed at the El Centro Bomb Range, CA, 15-16 August 2017. Green lines indicate individual swaths. Red blocks were GPS reference polygons.**



**Attachment 2. Setup of tents with C130 making an application on the El Centro Bomb Range, 15 Aug 2017 (photo credit: LT Jennifer Knapp).**







**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

1 April 2017

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Parris Island MCRD, SC and Kings Bay Naval Submarine Base, GA

1. Aerial spray deployment of one C-130 from 17-21 April 2017 to Beaufort MCAS, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at Parris Island MCRD and to provide the same for members operating at Kings Bay Naval Submarine Base. NVG aerial spray sorties are conducted at 300' AGL.

2. Concept of Operations (All times are local):

- a. 17 Apr (Monday)  
1700 Depart KYNG  
1900 Land KCHS (RON due to KNBC field closed)
- b. 18 Apr (Tuesday)  
1200 Depart KCHS  
1230 Arrive KNBC  
1400 Brief at Parris Island and via phone for Kings Bay  
1630 Weather call/Calibration of MASS, Chemical Load/actual application planned for Submarine Base Kings Bay  
1845 Depart KNBC  
2220 Land KNBC
- c. 19 Apr (Wednesday)  
1630 Weather call/Calibration of MASS, Chemical Load/actual application planned for Parris Island MCRD  
1900 Depart KNBC  
2130 Land KNBC
- d. 20 Apr (Thursday)  
1630 Weather call/Calibration of MASS, Chemical Load/actual application planned for Parris Island MCRD  
1900 Depart KNBC  
2130 Land KNBC
- e. 21 Apr (Friday)



1000 Depart KNBC  
1200 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc.  
All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 7500 acres on Parris Island and 15,000 on Kings Bay.
  - b. Altitude: 300' AGL NVG operations
  - c. Swath Width: 1000-2,000 ft
  - d. Groundspeed: 200 KIAS
  - e. Application Rate: 0.75-1 oz/acre of Dibrom- an organophosphate insecticide
4. Lt Col (b) (6) (b) (6) will serve as the Mission Commander with Maj (b) (6) (b) (6) as the Aircraft Commander. Support at Parris Island MCRD and Beaufort MCAS has been completed.

//SIGNED//

(b) (6), MAJOR, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

19 October 2017

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Joint Base Charleston and Parris Island, SC

1. Aerial spray deployment of one C-130 from 22-27 October 2017 to Hill AFB, UT to train aerial spray aircrew, entomologists, and maintenance members to reduce the risk of range fires by controlling cheat grass (*Bromus tectorum*) and other invasive weed species while promoting reestablishment and success of native flora on the Utah Test and Training Range (UTTR).

2. Concept of Operations (All times are local):

- a. 22 October (Sunday)
  - 1200 Depart KYNG (Support aircraft)
  - 1215 Depart KYNG (Spray aircraft)
  - 1500 Land KHIF
  - 1515 Land KHIF
- b. 23-26 October (Monday-Thursday)
  - 0800 Depart KHIF for the UTTR
  - 1000 Land KHIF (planned two sorties per day)
- c. 27 October (Friday)
  - 0900 Depart KHIF
  - 1500 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

Locations:	Utah Test and Training Range (UTTR)
Acres:	1,448
Chemical:	Plateau (Herbicide)
Gallons loaded:	67
Flow Rate:	326 GPM
Application Rate:	7 gallons per acre
Flush:	Water
Altitude:	100'
Airspeed:	200 KTS
Swath Width:	100 feet
Nozzle/Orientation:	Raindrop
Number of Nozzles:	18

4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) as the Aircraft Commander. Support at Hill AFB and the UTTR has been completed.

//SIGNED//

(b) (6), MAJOR, USAF  
Chief of Aerial Spray

**910 AW AERIAL SPRAY  
PMP'S POST-MISSION REPORT  
SMOKY HILL ANGR, KS 24-29 October 2016**

**1. MISSION BASICS:**

- a. **Installation Sprayed:** Smoky Hill ANGR, Salina KS
- b. **Mission Duration:** 24-29 October 2016
- c. **Purpose of Application:** Control of Musk Thistle (*Cardus nutans*) on Smoky Hill, ANGR.
- d. **Application Date/s:** 25-27 October 2016  
**Time/s of Application (Local):** See attachment 2
- e. **Acres Treated:** 1963 acres
- f. **Project Coordinator/s (Name/Rank, Title, Phone #):** (b) (6) , Aerial Spray Coordinator, Smoky Hill ANGR, DSN (b) (6)
- g. **Date Spray Map Last Approved:** 24 October 2016
- h. **Date of Waste Generation Letter:** N/A

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Certified PMP (Category 11):** Lt Col (b) (6) , Lt Col (b) (6)
- c. **Aircrew:**
  - (1) Aircraft Pilots: Lt Col (b) (6) , Major (b) (6)
  - (2) Navigators: Lt Col (b) (6)
  - (3) Flight Engineer: SMSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6) , SMSgt (b) (6)
- d. **Safety Briefer:** Lt Col (b) (6)
- e. **Spray Maintenance/Pesticide Loaders:** SMSgt (b) (6) (Pro Super), MSgt (b) (6) (Lead), TSgt (b) (6) , TSgt (b) (6) , SrA (b) (6)
- f. **Spray Ground Monitors:** Lt Col (b) (6) (b) (6) Lt Col (b) (6)
- g. **Crew Chief(s):** TSgt (b) (6) (b) (6) TSgt (b) (6)
- h. **AGE:** SrA (b) (6)
- i. **Ele/Env:** TSgt (b) (6)
- j. **Prop:** TSgt (b) (6)
- k. **Com/Nav:** TSgt (b) (6)
- l. **Inst/Cntl:** TSgt (b) (6)
- m. **Flying Data:**
  - 1. Spray Sorties/Hours: 8 Actual + 1 Flush Sortie (5.3 hours spray-on time)

**3. PESTICIDE:**

- a. **Trade Name (% Active Ingredient):** Milestone®
- b. **EPA Registration Number:** 62719-6
- c. **Formulation Sprayed:** Milestone® mixed with water and AirexDC® Drift Control
- d. **Gallons Pesticide Loaded:** 76.2 Gallons Milestone Concentrate/ 38.1 Gallons AirexDC®
- e. **Gallons Pesticide Applied:** 76.2 Gallons Milestone Concentrate
- f. **Gallons and Name Diluent Used:** Approx. 13440 gallons water
- g. **Gallons and Name of Flush Used:** Approx 1800 gallons water
- h. **Other Additives Used:** 5 gallons of AirexDC® per load
- i. **Application Rate:** 6.85 gallons finish spray/acre

**4. APPLICATION EQUIPMENT:**

- a. **Aircraft Type (Tail Number):** 909104
- b. **Spray System (Modules Used) and System ID #:** 3-Module system
- c. **Spray System Configuration:** Fuselage Booms
- d. **Nozzle Type/Size:** R-20 Raindrop Nozzles
- e. **Nozzle Orientation & Number Used:** 18 Total, straight back
- f. **Pressure:** 50-55
- g. **Flow Rate:** 326 GPM

**5. APPLICATION PARAMETERS:**

- a. **Swath Width Flown:** 100'
- b. **Spray Off Set:** As needed
- c. **Spray Release Altitude:** 100' AGL
- d. **Ground Speed:** 200 Knots

**6. WEATHER OBSERVATIONS:**

- a. **Winds (Direction/Speed):**  
Ground: 170°@8 knots (25 Oct), 250°@6 knots (26 Oct), 310°@5 knots (26 Oct), 340°@8 knots (26 Oct), 210°@4 knots (27 Oct), 210°@5 knots (27 Oct), 210°@5 knots (27 Oct), 210°@5 knots (27 Oct)
- b. **Temperature Range During Application (°F):** 53°- 72°
- c. **Source:** Ground observations

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

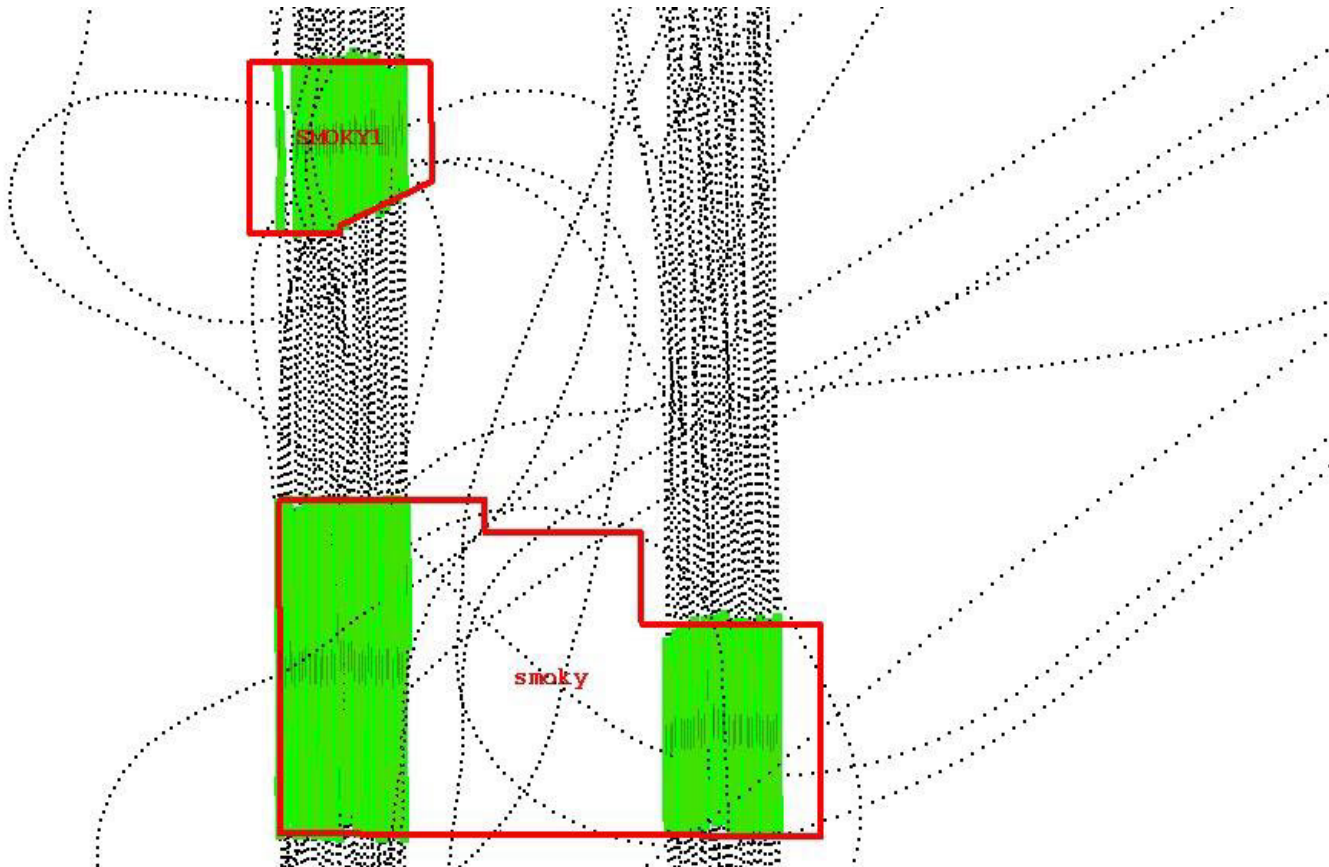
- a. **Deposition Pattern:**  
(1) Monitors observed/confirmed swath width from ground positions
- b. **Effectiveness:**  
(1) Technique/s Used: Visual field observations will be carried out in the spring by the Smoky Hill Staff. Good control is expected due to excellent coverage and application timing

**10. REMARKS:** Aerial herbicide operations were conducted in 2015 with excellent results. In 2016, the 757 AS returned to the Smoky Hill Bombing Range to continue spraying for Musk Thistle. Spray blocks for 2016 were concentrated on the Southern end of the Smoky Hill Range with one block on the Western edge. A total of 8 aerial spray sorties were conducted on the range, however the weather was generally uncooperative for efficient completion, with high winds (15-30 mph) prohibiting the 757 AS from completing all spray blocks. On the day of departure from Salina, one sortie was conducted to flush the spray system prior to leaving Smoky Hill Range. Range Management was very helpful with deconflicting airspace due to bomber and fighter training activities. Aircraft 104 and the MASS system operated well, without mechanical incident. The support aircraft broke down upon arrival in Salina and did not return to Youngstown for 2 days while awaiting parts for repairs. This mission was shortened by one week and approximately 46% of the acreage planned for aerial application was completed. As usual, we thank Smoky Hill Range Management for providing outstanding support and a great training opportunity for our airmen.

//Signed//

(b) (6) Lt Col, USAFR  
Certified Pest Management Professional

**Attachment 1.** Map depicting range designated spray areas and flight path of aircraft.





**Attachment 2.** Summary Spray Chart

**SPRAY OPERATIONS SUMMARY FOR SMOKY HILL ANG RANGE  
24-29 October 2016**

<b>DATE</b> Oct	<b>SORTIE #</b>	<b>LOCAL TIME OF APPLICATION</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>FLYING HOURS</b>
25	1	0820-0900	169	1119	1.0
26	1	0740-0820	253	1796	1.0
26	2	0908-0945	239	1676	0.9
26	3	1020-1058	275	1785	0.9
27	1	0738-0819	261	1780	1.0
27	2	0851-0929	267	1757	0.8
27	3	0957-1043	251	1763	1.0
27	4	1121-1158	248	1754	1.0
<b>Totals</b>	<b>8</b>	<b>317 min</b>	<b>1963</b>	<b>13440</b>	<b>7.6</b>



**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
LANGLEY AFB/CRANEY ISLAND, 31 JULY – 3 AUGUST 2017**

**1. MISSION BASICS:**

- a. Installations Sprayed: Langley AFB, VA; Craney Island Army Corps of Engineers, Portsmouth, VA
- b. Mission Duration: 31 July – 3 August 2017
- c. Purpose of Application: Control of nuisance and vector mosquito species at Langley AFB and Craney Island Army Corps of Engineers
- d. Application Date: 1 August 2017
- e. Times of Application (Local): 2020-2145
- f. Acres Treated: 12,461
- g. Flying Data:
  - (1) Spray sorties/hours: 1/2.2
  - (2) Ferry sorties/hours: 2/2.9
- h. Project Coordinator (Name/Rank, Title, Phone #):
  - (1) Langley: (b) (6) CES Pest Control, DSN (b) (6)
  - (2) Craney Island: (b) (6) City of Portsmouth, (b) (6) (cell)
  - (b) (6) Army Corps of Engineers, (b) (6)
- i. Date Spray Map Last Approved: 1 August 2017
- j. Installation In-Briefing: (When/Where/Briefer/s): 1 August 2017 at CE, briefed by Lt Col (b) (6)
- k. Mission Identifier: QENRK3531212

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) (A/C), 1Lt (b) (6)
  - (2) Navigators: Maj (b) (6) 1Lt (b) (6)
  - (3) Flight Engineer: MSgt<sup>(b) (6)</sup> (b) (6)
  - (4) Spray Operators: CMSgt (b) (6) CMSgt (b) (6) SMSgt (b) (6)
  - (b) (6) SSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: MSgt (b) (6) (b) (6) TSgt (b) (6) (Lead), MSgt (b) (6) MSgt (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6) SrA (b) (6)
  - (3) Avionics: SSgt (b) (6)
- d. **Entomologist:** Maj (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Trumpet® EC (78% a.i. naled)
- b. EPA Registration Number: 5481-481
- c. Additives Used: None
- d. Gallons Pesticide Loaded: 90 total; 28 (Langley), 62 (Crane Island)
- e. Gallons Pesticide Applied: 90
- f. Gallons and Name of Flush Used: 10 gallons H.A.N. (Highly Aromatic Naphtha)
- g. Application Rate: 0.89 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 89-9103
- b. Spray System (Modules Used) and System ID #: SP2G
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: 8003 Tee Jet
- e. Nozzle Orientation & Number Used: 28 nozzles oriented straight down
- f. Flow Rate: 6.72 gal/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: none
- c. Spray Release Altitude: 300' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Langley: Wind (ground) 115° @ 3 kts, Wind (at altitude) 100° @ 6 kts, Temperature 78°F, Relative Humidity 65%
- b. Crane Island: Wind (ground) 110° @ 3 kts, Wind (at altitude) 135° @ 5 kts, Temperature 79°F, Relative Humidity 68%

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations.
  - (2) Results: Adequate coverage through sprayed area
- b. Effectiveness:
  - (1) Technique/s Used: Pre- and post-spray surveillance was conducted using CDC light traps.

(2) Langley Results:

	<b>B-52</b>		<b>Pest Shop</b>		<b>WSA</b>	
	1-Aug (pre-spray)	3-Aug (post-spray)	1-Aug (pre-spray)	3-Aug (post-spray)	1-Aug (pre-spray)	3-Aug (post-spray)
Total Female Mosquitoes	24	5	0	1	34	5
<i>Culex</i> spp.	1	2	0	0	0	0
<i>Anopheles</i> spp.	4	0	0	1	0	1
<i>Aedes albopictus</i>	0	0	0	0	2	0
Other <i>Aedes</i> spp.	19	3	0	0	32	4
Total Reduction		79.1%		None		85.3%

(3) Craney Island Results:

	<b>North</b>		<b>Central</b>		<b>Southern Part</b>	
	<b>Landfill</b>		<b>High School</b>		<b>Morro Blvd</b>	
	31-Jul (pre-spray)	2-Jul (post-spray)	31-Jul (pre-spray)	2-Jul (post-spray)	31-Jul (pre-spray)	2-Jul (post-spray)
Total Female Mosquitoes	1245	15	177	4	61	36
<i>Ae sollicitans</i>	669	4	120	0	25	0
<i>Cu melamura</i>	30	4	12	4	22	35
<i>Cx spp</i>	422	4	30	0	5	0
<i>Anopheles spp</i>	65	3	10	0	1	0
<i>Ae. atlanticus/tormentor</i>	0	0	1	0	2	1
<i>Ps. ferox</i>	0	0	0	0	0	0
<i>Ae. vexans</i>	0	0	4	0	2	0
<i>Ae. taeniorhynchus</i>	19	0	0	0	1	0
<i>Ps. columbiae</i>	40	0	0	0	3	0
Total Reduction		98.8%		97.7%		41.0%

**REMARKS:** This application was the first adulticide spray mission conducted at Langley AFB and Craney Island Army Corps of Engineers during 2017. It was also the first-ever USAF night spray at these locations. Prior to application, the spray system was calibrated to ensure proper

flow rate. No significant problems were encountered during this application, and no negative effects were observed.

Overall, this aerial spray application had excellent results based on trap data. At Craney Island, trap data indicated approximately 98% mosquito population reduction in the north and central areas. However, in the southern area *Culiseta melanura* trap counts increased. The reason for this is uncertain. It is possible that the mosquitoes that were trapped were newly emerged and had not been exposed to the pesticide treatment. Additionally, each area had one single trap which may fail to give an overall picture of the effect on the area's mosquito population. It should be noted that trap numbers indicate that all other species were controlled in the south.

We sincerely appreciate the support received from all sections of Langley AFB and Craney Island Army Corps of Engineers. In particular, special thanks go to (b) (6) and (b) (6) for their coordination and their assistance during spray operations.

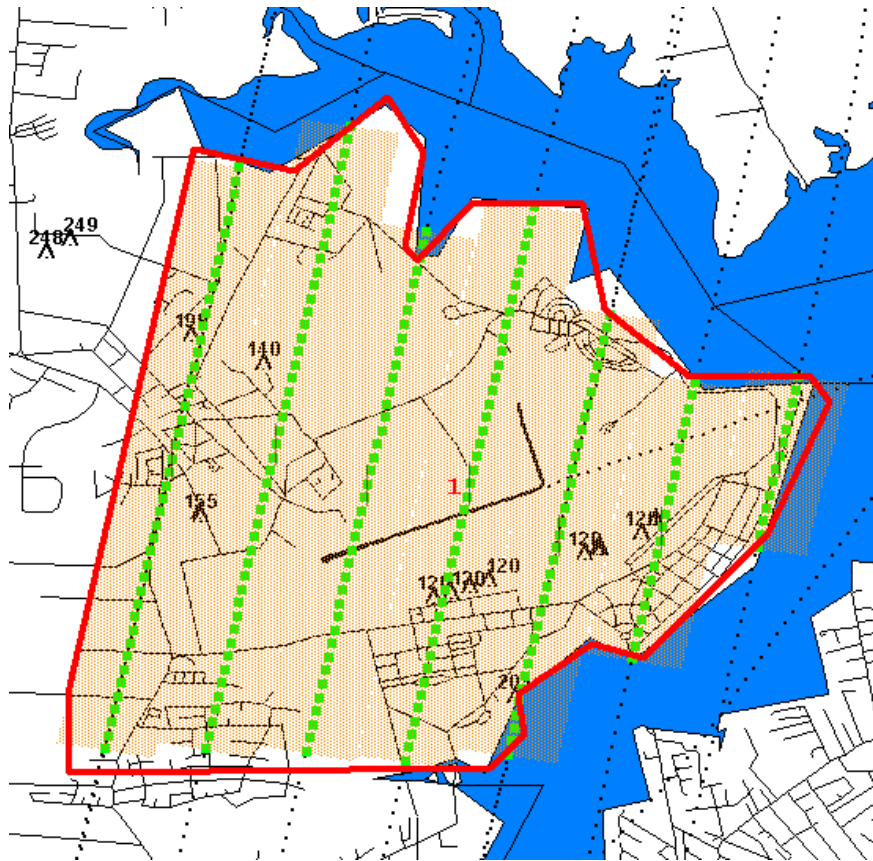
//signed//

(b) (6)

, Maj, USAF

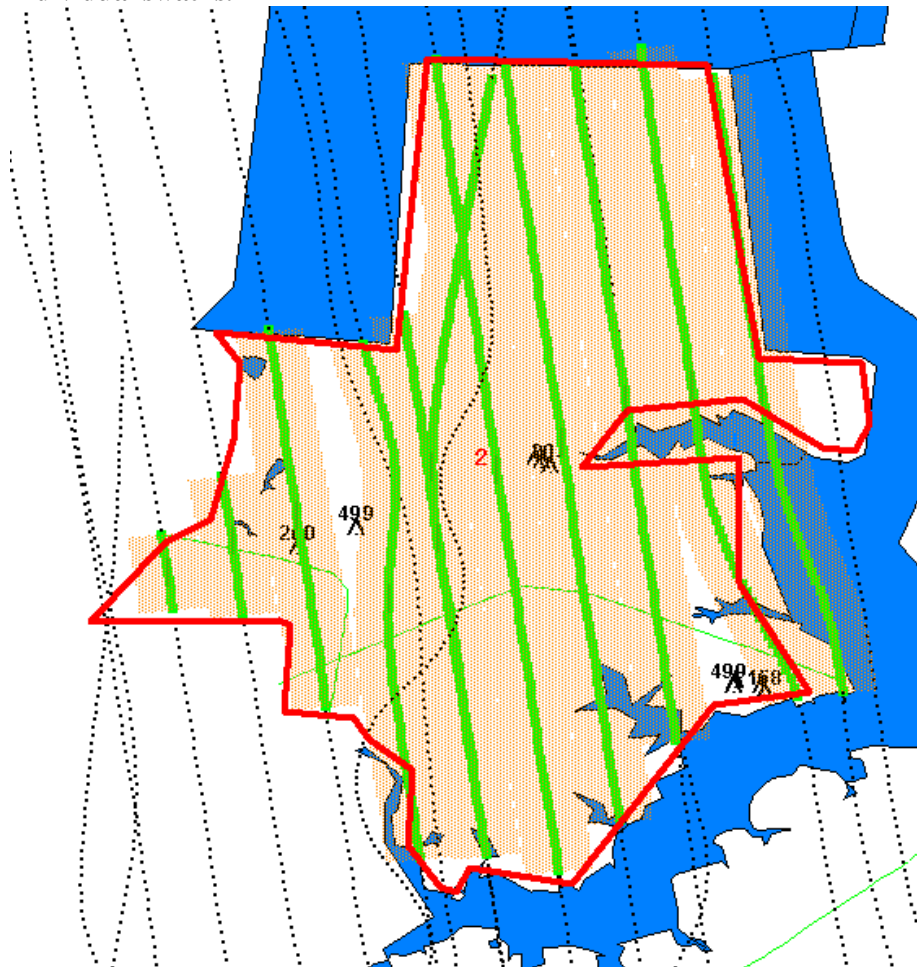
**DOD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

**Attachment 1. Area sprayed at Langley AFB, VA, 1 August 2017. Green lines indicate individual swaths.**





**Attachment 2. Area sprayed at Craney Island Army Corps of Engineers, VA, 1 August 2017. Green lines indicate individual swaths.**





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

24 August 2017

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

**SUBJECT:** Capability and Concept of Operations for NVG (Night Vision Goggle) Aerial Spray at Joint Base Charleston, SC.

1. One C-130 will deploy to JB Charleston from 7-10 September 2017 in response to a requested aerial spray to control adult mosquitoes at JB Charleston, SC. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of JB Charleston. Operations for this mission will be conducted from JB Charleston.

2. Concept of Operations (All times are local)

- a. 7 September (Thursday)  
1700 – Depart KYNG  
1900 – Land KCHS
- b. 8 September (Friday)  
1900 – Depart KCHS  
2200 – Land KCHS
- c. 9 September (Saturday)  
1900 – Depart KCHS  
2200 – Land KCHS
- d. 10 September (Sunday)  
1200 – Depart KCHS  
1400 – Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: approx. 18,000 acres
- b. Altitude: 300 feet for adulticide application
- c. Swath Width: 2,000 feet
- d. Groundspeed: 200 KIAS
- e. Application Rate: .85 oz/acre of Trumpet EC

4. Maj (b) (6) will serve as the Mission Commander.

5. Lt Col (b) (6) will be the Aircraft Commander.

6. Required support at JB Charleston has been coordinated.

\\Signed\\  
(b) (6) , Major, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

01 October 2017

MEMORANDUM FOR 757AS/DO

FROM: 757AS/DOS (Lt Col Breidenbaugh)

SUBJECT: Pest Management Professional's Post Mission Report – Hurricane Harvey Support

**1. SUMMARY:**

On 8 September 2017, the 910<sup>th</sup> AW, the United States Air Force's (USAF) Aerial Spray Unit arrived in San Antonio, Texas to conduct large-area aerial spray night operations for mosquito control in support of the Federal Emergency Management Agency (FEMA) and Texas Department of State Health Services (DSHS) Hurricane Harvey relief effort. Two C-130 aircraft equipped with Modified Aerial Spray Systems (MASS) and three crews were initially placed at Joint Base Kelly, Kelly Annex, Texas and flew the first mosquito control aerial spray sortie on 9 September. On 12 September, an additional spray aircraft arrived with a fourth aircrew and beginning 13 September, three aircraft were available. A total of 92 personnel from the 910<sup>th</sup> Airlift Wing were involved with flying, entomology, maintenance, administrative support, communication support, and life support for this mission. The mission was complete on 21 September 2017 and the team returned to Youngstown ARS, Ohio on 23 September after treating a total of 2.7 million acres.

**2. BACKGROUND:**

Hurricane Harvey made landfall on 25 August 2017 between Port Aransas and Port O'Connor, Texas as a category 4 hurricane. The destructive nature of this hurricane was well-covered in the U.S. by the national news as the system slowed down over eastern Texas and caused catastrophic flooding.

**3. RESULTS:**

A total of 2,701,071 acres were treated with 14,570 gallons of Dibrom (Naled) during the 13 day period. Flying hours totalled 138.6 hours over the 28 sorties necessary to complete the mission. Additional details are documented in attachment 1. Attachment 2 shows the areas treated. Results of the spray were reported from local mosquito control personnel and were consistently above 90% reduction in mosquito counts for all areas sprayed. In many cases, 99% reductions in mosquito landing rates were recorded. Additionally, no negative environmental effects (i.e., honey bee mortality) were reported to DSHS or USAF.

**4. OPERATIONAL LOCATION:**



Kelly Annex was approximately an 1-hour ferry flight from most areas that were treated by the Air Force. While this distance was far from ideal, considering the additional flying time required to reach the spray areas, it was chosen as a base of operation because of the availability of ramp space and lodging. Closer and ostensibly more desired locations, such as Ellington Field did not have the ramp space or the hotel rooms to support the large footprint associated with the USAF spray operation. Joint Base Lackland and Kelly Annex support capabilities included: lodging, fuel, vehicles, physical working facilities, and maintenance support. The FSS commander was extremely supportive, as were all local staff members.

## 5. ENTOMOLOGICAL FACTORS:

a. Pesticide: Dibrom<sup>®</sup> Concentrate (EPA registration no. 5481-480) was the pesticide chosen by the DSHS. The Department of Defense (DoD) did not influence product choice and only served as the pesticide applicator. This product, which contains 87.4% naled, is widely used throughout the United States for adult mosquito control operations. It has a historical precedent for use following mosquito outbreak emergencies and has shown outstanding results when used for aerial spray with the MASS system. However, this product is extremely heavy which limited each pesticide load to 540 gallons. As such, spray time and acreage treated per sortie were limited.

b. Spray areas: All spray boundaries were established by the State Entomologist with advisement from CDC entomologists and, where appropriate, from Air Force entomologists. Priority areas included those without other means of mosquito control (damaged or compromised capability or those areas without organized mosquito control) and areas with high human populations densities and/or high mosquito biting pressure. Spray areas were received electronically in \*.shp file format from DSHS and transferred to the USAF Wingman GPS system. The Wingman system functions with geographical information systems (GIS) to ensure exact boundaries of areas treated.

c. Insect surveillance & efficacy: The effected areas were located at a distances that did not allow for Air Force entomology resources to conduct insect surveillance. Therefore, mosquito species and their densities had to be determined by local mosquito abatement districts (MADs). By the time these flights began, most local mosquito control operations had at least a skeleton staff back at work and were able to determine the areas within their responsibility that required mosquito control. Furthermore, MADs in the Houston area (e.g., Harris County MCD) as well as in Orange, Jefferson, etc. Counties were able to conduct landing rates before and after sprays. These are shown in Attachment 3a-b. Overall the results were impressive. In fact, the Harris County MCD Director, stated that he had only previously heard how effective large area mosquito control could be but now he had witnessed it first-hand.

d. Spray monitoring: All spray operations were directed by an onboard AF entomologist, certified through the DoD in EPA category 11 for aerial pesticide application. Texas recognized DoD pesticide applicator certification through a reciprocity agreement and confirmed such in writing (Attachment 4). Weather conditions were monitored throughout each flight and onboard spray operators verified adequate flow through visible observation.

e. Spray timing: Insecticide applications were conducted beginning at approximately sunset following a day-time aerial survey to identify potential obstacles or environmental considerations. Spraying was completed each night at approximately midnight. By timing pesticide application in this manner, non-target insects such as honeybees and butterflies are at significantly less risk for potential detrimental effects from the spray. Beekeepers were notified of the spray times for each area, and no negative feedback was received from them.

f. Spray configuration: Fueselage booms with stainless steel flat fan (Tee Jet) nozzles were used. For each aircraft 29 size 8003 nozzles were used with 40 psi pressure in the spray lines.

g. Pesticide application: A swath width of 2,500 feet was used for all applications. The amount of pesticide applied was determined by representatives from the state of Texas after consultation with Air Force and CDC entomologists. An application rate of 0.69 ounces per acre was used throughout the mission. All spray systems were calibrated on the ground at Kelly Annex prior to the onset of aerial spray activities.

h. Spray maintenance: Personnel from Spray Maintenance loaded and physically configured the aircraft on a daily basis. With almost 40 hours of spray-on time during this mission, the spray systems were used for more time during a two-week period than they are generally used over an entire year. Despite this extensive usage, the systems functioned well throughout the mission and only required upkeep and minimal repairs. There were no incidents of pesticide spills or personnel exposure, which can be largely attributed to the professionalism and attention to detail demonstrated by the Aerial Spray Maintenance Flight.

## 6. MAPS:

Combat Flight Planning Software (CFPS) was utilized to create charts for each day's insecticide application.

## 7. FLYING ACTIVITIES:

a. Developing a plan for unfamiliar areas: Throughout each year, the aerial spray flight conducts training missions throughout the United States. These missions are critical to crew preparation for operating in a variety of locations and conditions. All areas have hazards including towers, power lines, birds, and other aircraft. Multiple chart sources are utilized, but cannot be completely relied upon for hazard identification. As such, prior to each night sortie, thorough surveys were conducted during daylight to identify both charted and un-charted potential hazards. Any un-charted hazards were marked for reference. Additionally, during the spray flights an additional navigator served as a safety observer, watching for potential hazards using Night Vision Goggles.

b. Weather decisions: Spray operations depend upon adequate weather conditions. A light wind of approximately 3-8 knots in at least a 45 degree crosswind is most desirable. Prior to aircraft take-off, weather was evaluated each day. Additionally, weather was re-evaluated upon reaching each spray area and spray operations did not commence until the onboard pesticide applicator (entomologist) gave approval. Throughout each spray sortie, wind conditions at altitude were measured and documented. During this mission, weather conditions were excellent



on most nights (attachment 1). A total of four sorties were cancelled due to inclement weather, three of which were on the same night due to a large thunderstorm.

#### 8. PUBLIC AFFAIRS:

a. Public notification procedure: The responsibility for notifying the public about aerial spray operations was assumed at the state level and coordinated with FEMA. Sample new releases are included in attachments 3 and 4. A blanket statement which covers a given area for a given amount of time allows for the most flexibility in completing mission assignments.

b. Daily reports: The Mission Commander issued a situation report (SITREP) immediately upon completion of each evening's sorties. Additionally, a USAF entomologist was onsite in Austin, TX throughout the mission to serve as a liaison. Each evening, this entomologist collected the data related to the areas treated and reported this information to the Texas Department of Agriculture, FEMA, CDC, and military leadership.

c. New conferences and news articles: A 910<sup>th</sup> Public Affairs representative was onsite at Kelly Annex to coordinate requests from news agencies for information concerning military mosquito sprays. The representative provided a "talking points" document for all personnel involved in the mission and organized a media day that allowed new agencies to report USAF operations.

#### 9. LESSONS LEARNED:

a. Many of the 910<sup>th</sup> AW personnel have previously been involved responding with FEMA to control insects after hurricanes. However, the field is constantly changing and each geographical location yields new challenges. Operation from Lackland Annex was an excellent location from a maintenance and lodging perspective. Being well-outside of the area of impact, the group was free of the issues associated with competing with displaced persons for hotel rooms and ramp space with other responding aircraft. Nonetheless, the distance that Air Force aircraft flew into the "area of operations" was significant and impacted the fitness of the crews when sorties were over 5 hours. The distance also eliminated the option of making a second sortie in a given night. Therefore, the option to work at a location closer to the treatment areas is worth giving a few hours of study, prior to making the easy decision to move farther afield to a location without constraints. Of course, time is of the essence when responding to an emergency but taking a good long look at the options on the front side can relieve hundreds of hours ferrying material into the area. In this case, Elliot Ellington Field was the most likely option but lodging was not immediately identified and ramp space had reached a "maximum on ground – mogged out", thus the decision was made to locate elsewhere. However, the research may not have been as thorough as may have been justified, given the ferry distance to the spray areas. One other factor was that application areas had not been assigned at the time the question of operation location needed a decision. It follows then that insuring that the host state handing out the assignments understands that the response efforts will be impacted by the assignments is another important factor in these decision-making processes. Sending an aerial spray liaison to work with the State Health Department and the military proved to be an important aspect of the smooth running of the operation.

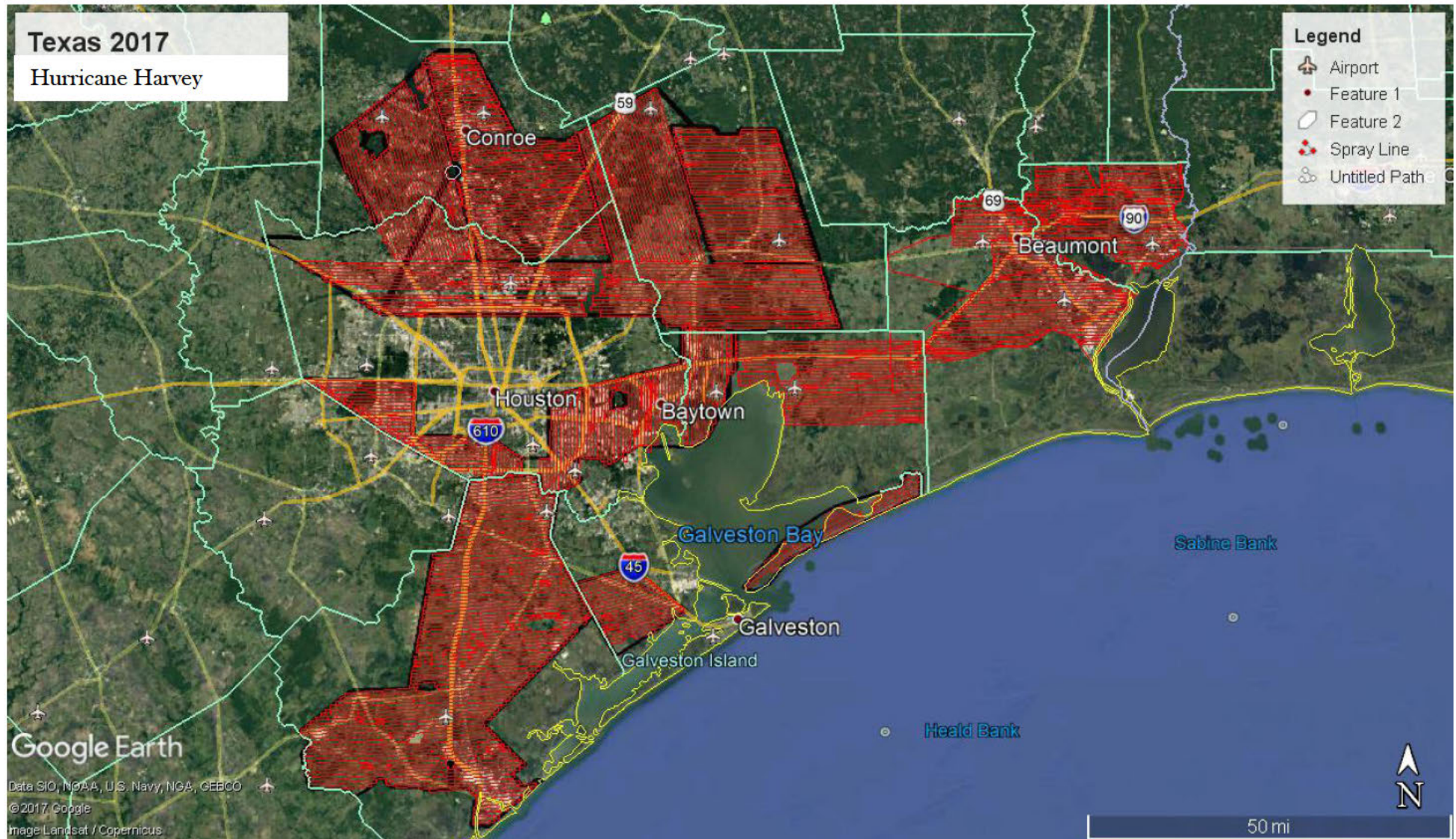
10. ACKNOWLEDGEMENTS:

a. The Air Force Aerial Spray Unit would like to thank Lackland AFB and Kelly Annex personnel for being such gracious hosts. The hanger and base operations physical work areas were superior in function and directly supported our operational success. Key players working issues with the “one team” approach included but are not limited to: DCE staffers Mr. (b) (6) LTC (b) (6) and Maj (b) (6) FEMA: Mr. (b) (6) Mr. (b) (6) and Ms. (b) (6) Texas DSHS Vector Control Task Force: Ms. (b) (6) Dr. (b) (6) Ms. (b) (6) and the State Medical Entomologist, Dr. (b) (6) CDC: Dr. (b) (6) Finally, a letter of thanks from the Texas DSHS to the 910<sup>th</sup> AW Commander was received and appreciated (attachment X).

**Attachment 1: Spray data listed by date, location, and aircraft.**

Date	Area	Tail	Flight Time (hr)	Crew	Ento	Gal loaded	Gal sprayed	Acres treated	Spray On Time (min)	App rate	GPM	WX/Comments	Ground Temp
9-Sep	Jefferson/Chambers/Orange	104	2.7	(b) (6)		0	0	0	0.00	0.00	0	Flow meter malfunction - no spray	
9-Sep	Jefferson/Chambers/Orange	107	5.5			540	540	102,813	88.27	0.67	6.1	Alt: 020@14; clear	21C @ Angleton
10-Sep	Jefferson/Chambers/Orange	106	5.4			523	523	98,570	84.48	0.68	6.2	Alt: 013@13; clear	22C @ Angleton
10-Sep	Jefferson/Chambers/Orange	107	4.3			536	536	98,855	84.36	0.69	6.3	Alt: 015@20; clear	22C @ Angleton
11-Sep	Jefferson/Chambers/Orange	104	5.9			553	553	93,842	80.44	0.75	6.8	Alt:024@19;clear	18C @ Angleton
11-Sep	Jefferson/Chambers/Orange	107	5.5			540	540	100,348	86.13	0.69	6.3	Alt: 020@15;clear	18C @ Angleton
12-Sep	Brazoria	106	4.7			540	540	98,105	86.24	0.70	6.4	Alt:230@8; partly cloudy	26C @ Houston
12-Sep	Jefferson/Chambers	107	4.3			540	320	58,195	50.00	0.70	6.3	Alt: 319@7, dropped to 0. Op terminated early	20C @ Angleton
13-Sep	Brazoria	104	4.2			540	540	99,243	85.16	0.70	6.4	Alt:169@15; 174@12;clear	26C @ Houston
13-Sep	Jefferson/Chambers/Brazoria	107	5.7			237	557	102,871	88.36	0.69	6.3	Alt: 190@16; clear	23C @ Angleton
14-Sep	Harris	104	4.5			540	540	100,513	86.32	0.69	6.5	Alt:167@14; 121@10	27C @ Houston
14-Sep	Brazoria	107	4.8			540	540	101,232	87.09	0.68	6.2	Alt: 133@14; 28C temp; clear	27C @ Houston
14-Sep	Brazoria	108	4.7			540	540	101,760	88.05	0.68	6.1	Alt:133@13; clear	27C @ Houston
15-Sep	Harris	104	3.7			540	540	101,255	87.11	0.68	6.2	Alt:132@12; clear, Temp 29C	26C @ Houston
15-Sep	Harris	107	4.1			540	540	101,279	87.10	0.68	6.2	Alt: 150@10; clear	28C @ Houston
15-Sep	Brazoria/Harris	108	5.8			540	532	99,198	85.49	0.69	6.2	Alt: 118@13; clear	26C @ Houston
16-Sep	Harris	104	5.0			540	540	100,523	86.22	0.69	6.3	Alt:095@11; clear, temp 30C	27C @ Houston
16-Sep	Harris	107	4.1			540	540	99,902	85.50	0.69	6.4	Alt: 090@10; clear	24C @ Houston
16-Sep	Harris (South)	108	5.8			540	548	103,895	89.20	0.67	6.1	Alt: 103@ 9; pcloudy; temp 29C	27C @ Houston
17-Sep	Harris	104	4.5			540	540	98,354	84.52	0.70	6.4	Alt:120@10; clear	28C @ Houston
17-Sep	Harris	107	4.0			540	540	100,891	86.41	0.69	6.4	Alt:110@5-10;clear	28C @ Houston
17-Sep	Harris (South)	108	6.1			540	540	102,774	88.22	0.67	6.1	Alt: 131@14; pcloudy; temp@alt 28C	28C @ Houston
19-Sep	Harris	104	5.4			540	540	97,634	83.26	0.71	6.5	Alt:142@13; pcloudy	27C @ Houston
19-Sep	Harris	107	4.8			540	540	101,473	88.11	0.68	6.2	Alt:151@12; clear	27C @ Houston
19-Sep	NE Liberty (Harris block)	108	4.7			540	540	100,348	83.13	0.69	6.3	Alt: 150-160@5-10; pcloudy; some haze	27C @ Houston
20-Sep	Harris	104	5.0			450	450	79,646	68.52	0.72	6.6	Alt:164@11;pcloudy;temp@28	28C @ Houston
20-Sep		108	4.2			450	450	84,946	72.59	0.68	6.2	Alt: 140-160@8-15; pcloudy; some haze	27C @ Houston
21-Sep	Galveston	104	4.8			480	480	84,946	76.54	0.72	6.3	Alt:140-150@8-10;pcloudy	28C @ Houston
21-Sep	Harris	107	4.4			450	450	82,645	71.10	0.70	6.3	Alt:169@11;pcloudy, storms;temp@6C	26C@Houston
	<b>TOTAL</b>		<b>138.6</b>			<b>14,579</b>	<b>14,579</b>	<b>2,696,056</b>	<b>2,317.92</b>	<b>0.69</b>			

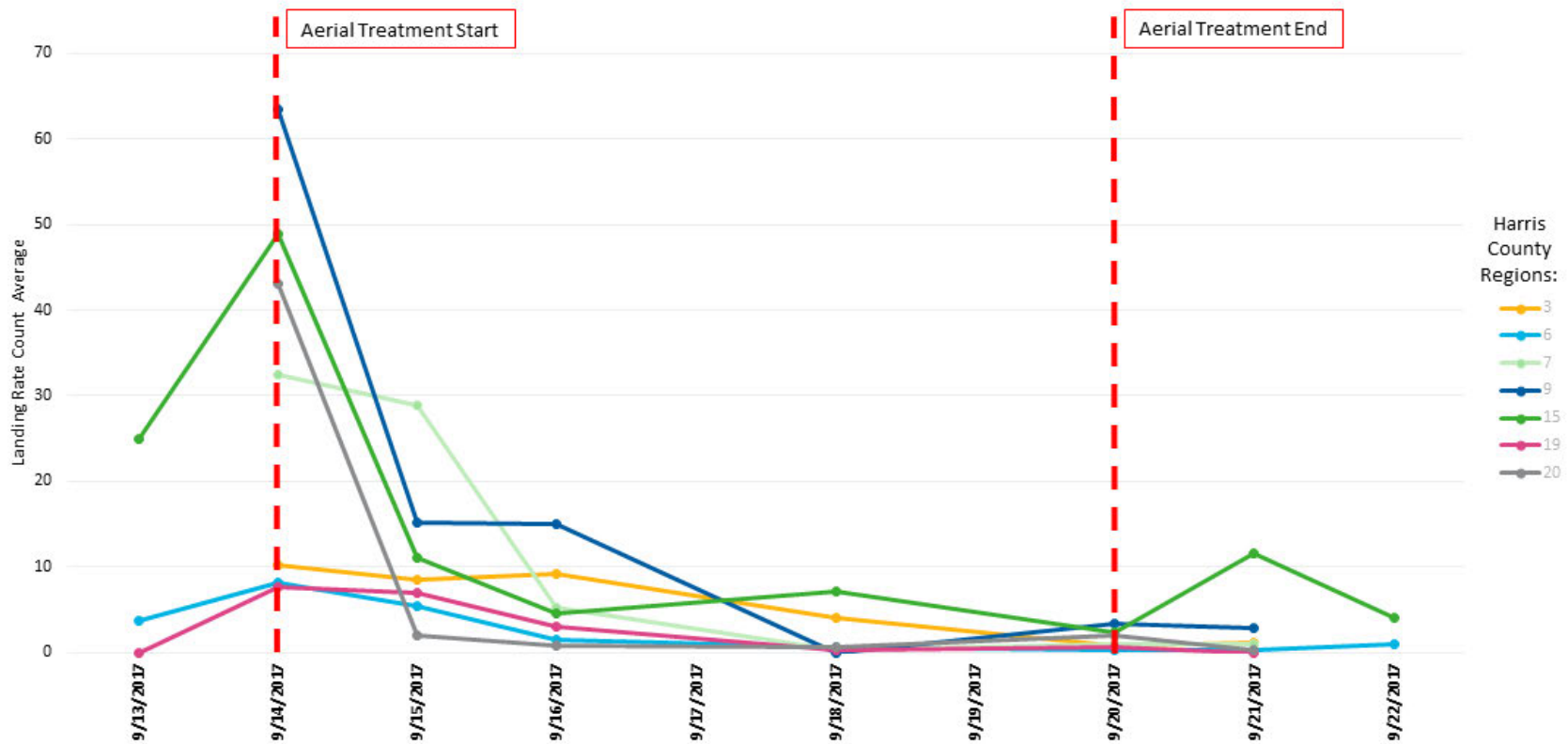
**Attachment 2: Spray areas treated between 9-21 September by U.S. Air Force**





Attachment 3a. Landing rate counts taken by Harris County Public Health staff members showing rapid suppression of mosquitoes after aerial sprays.

# Aerial Effects



Attachment 3b. Landing rates recorded by Jefferson County Mosquito Control District personnel. Spraying occurred 9-11 September. The results show generally decreasing mosquito populations.

### J.C.M.C.D. LANDING RATES: September, 2017

North Section		09/04	09/05	09/07	09/08	09/11	09/13	09/18	09/20	09/25	09/27		AVG.
1	Nederland	0	0	0	0	0	0						0.0
2	Spindletop	5	4	0	3	0	0						2.0
3	Beaumont City Hall	3	7	0	3	3	0						2.7
4	Beaumont Country Club	15	18	15	7	0	0						9.2
5	Lucas and Bigner Road	1	2	0	0	0	0						0.5
6	Griffing Rd. & Major Drive	20	9	7	0	0	0						6.0
7	Bevil Oaks	N/A	2	0	0	0	0						0.4
8	Griffin Berry Farm	N/A	8	10	1	0	0						3.8
9	Old Sour Lake Rd. off Westbury	N/A	0	0	0	0	0						0.0
10	North China	0	2	3	0	0	0						0.8
11	South China	0	5	5	0	0	7						2.8
12	Nome	0	0	0	2	0	0						0.3
13	Pine Island Road	0	0	0	0	0	0						0.0
14	Amelia	0	0	0	0	0	0						0.0
15	Beaumont Athletic Complex	0	2	3	0	0	0						0.8

Central Section		09/04	09/05	09/07	09/08	09/11	09/13	09/18	09/20	09/25	09/27		AVG.
1	Humble Camp	0	0	0	0	0	0						0.0
2	LaBelle	N/A	N/A	1	0	2	0						0.8
3	Green Thumb Acres	1	0	0	0	0	0						0.2
4	Winshire	0	0	0	0	0	0						0.0
5	Hamshire	2	0	0	0	0	0						0.3
6	Fannett	0	0	0	0	0	0						0.0
7	Boyt Road	0	0	0	0	0	0						0.0
8	Cheek	0	0	0	0	0	0						0.0
9	Tyrrell Park	2	1	10	0	0	0						2.2
10	Erie Street	0	0	0	0	0	0						0.0
11	Cardinal Acres	0	0	0	0	0	0						0.0
12	Mid - County	0	0	0	0	0	0						0.0

South Section		09/04	09/05	09/07	09/08	09/11	09/13	09/18	09/20	09/25	09/27		AVG.
1	Stonegate	0	4	0	0	0	0						0.7
2	Port Neches	5	6	6	12	2	0						5.2
3	Little Abbeville	9	12	21	12	3	0						9.5
4	Veteran's Memorial Park	11	8	10	10	2	5						7.7
5	Groves	0	3	1	1	0	0						0.8
6	Lakeview	2	6	3	0	0	0						1.8
7	Sub Courthouse	13	3	1	8	0	0						4.2
8a	Pleasure Island: volleyball net	8	45	21	23	30	10						22.8
8b	Pleasure Island: Logan Park	8	35	10	23	13	2						15.2
8c	Pleasure Island: Mariner's Cove	N/A	5	6	21	9	10						10.2
9	U.S. 87 & Intercoastal	N/A	12	17	19	5	0						10.6
10	Sabine Pass	N/A	N/A	2	0	1	1						1.0
11	Sabine	N/A	N/A	4	15	2	0						5.3
12	Port Acres	2	10	12	12	1	0						6.2
County AVG													3.2





TEXAS DEPARTMENT OF AGRICULTURE  
COMMISSIONER SID MILLER

September 8, 2017

Re: TDA Reciprocity Authorization: TDA Pesticide Licensure Certification  
Reciprocity for Department of Defense Pesticide Certificate Holders Providing  
Aerial Pesticide Support of DR-4332-TX

Dear Lt Col (b) (6) Air Force Reserve Command Entomologist:

The purpose of this letter is to provide pesticide applicator licensure certification reciprocity to qualified United States Department of Defense (DoD) personnel to purchase or acquire and to use and supervise the use of restricted use pesticides and state-limited-use pesticides for Aerial Application and Vector Pest Control in all eligible communities in the State of Texas identified in the United States Federal Emergency Management Agency (FEMA) disaster declaration for the Texas Hurricane Harvey, DR-4332-TX, declared on August 25, 2017, and for all subsequent declarations and continuations of said disaster declaration. The State of Texas has established a public health concern exists due to the extraordinary amount of rainfall that fell as a result of Hurricane Harvey, which has increased levels of standing water and has resulted in a significant increase in the mosquito population in the affected communities.

The Texas Department of Agriculture is authorized by law to grant licensure certification reciprocity with a federal agency. Accordingly, TDA is granting licensure certification reciprocity to any DoD personnel holding a valid DoD certificate permitting the purchase and use of restricted use pesticides and state-limited-use pesticides and any so qualified DoD personnel shall be considered certified by TDA for the purpose of purchasing or acquiring, using or supervising the use of, restricted use or state-limited-use pesticides for Aerial Application and Vector Pest Control in all eligible communities identified in DR-4332-TX, including all subsequent declarations and continuations thereof.

The Texas Department of Agriculture is the lead agency in the regulation of pesticide use, application, inspection and enforcement in Texas. For compliance assurance, TDA is requesting DoD to provide TDA a copy of the valid DoD certificate(s) for any DoD personnel relying on this TDA Reciprocity Authorization letter.


TDA Reciprocity Authorization, pg. 1

Pursuant to the Memorandum of Agreement between the Texas Department of Agriculture and The Department of Defense, executed May 5, 1986, and remaining in effect, TDA may enter DoD premises as mutually arranged:

- (1) To inspect any equipment used in the application of the restricted use pesticides or state-limited-use pesticides, and to inspect the immediate premises on which that equipment is stored;
- (2) To inspect or sample land exposed or reported to be exposed to restricted use pesticides or state-limited-use pesticides.
- (3) To inspect or areas where restricted use pesticides or state-limited-use pesticides are disposed or stored Inspect or sample land exposed or reported to be exposed to restricted use pesticides or state-limited-use pesticides; and
- (4) Observe the use and application of restricted use or state-limited use pesticides.

This TDA Reciprocity Authorization terminates upon the expiration of DR-4332-TX, and shall remain in effect until so terminated.

Very Truly Yours,

  
Mr. Jason Fearnleyhough  
Deputy Commissioner



DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

21 Aug 2017

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Langley AFB and Craney Island Army Corps of Engineers, VA.

1. Aerial spray deployment of one C-130 to Langley AFB, VA. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of Langley AFB. Operations will be conducted out of Langley AFB, VA.

2. Concept of Operations: All times local

- a. 28 August (Monday)  
1700 Depart KYNG  
1815 Land KLFI
- b. 29-30 August (Tuesday-Wednesday)  
2015 Depart KLFI  
2230 Land KLFI
- c. 31 Aug (Thursday)  
1200 Depart KLFI  
1315 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Location: Langley AFB and Craney Island, VA
- b. Altitude: 300ft AGL for NVG adulticide application
- c. Swath Width: 2,000 feet
- d. Airspeed: 200 KTS
- e. Application Rate: 0.9 oz/acre Dibrom

4. Lt Col **(b) (6)** will serve as the Mission Commander. Support required at Langley AFB, VA is completed.

\\SIGNED\\

(b) (6), Maj, USAF  
Chief, Aerial Spray





DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

26 Jul 2017

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Langley AFB and Craney Island Army Corps of Engineers, VA.

1. Aerial spray deployment of one C-130 to Langley AFB, VA. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of Langley AFB. Operations will be conducted out of Langley AFB, VA.

2. Concept of Operations: All times local

- a. 31 Jul (Monday)  
1700 Depart KYNG  
1815 Land KLFI
- b. 1-2 Aug (Tuesday-Wednesday)  
2015 Depart KLFI  
2230 Land KLFI
- c. 3 Aug (Thursday)  
1200 Depart KLFI  
1315 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Location: Langley AFB and Craney Island, VA
- b. Altitude: 300ft AGL for NVG adulticide application
- c. Swath Width: 2,000 feet
- d. Airspeed: 200 KTS
- e. Application Rate: 0.9 oz/acre Trumpet

4. Lt Col **(b) (6)** will serve as the Mission Commander. Support required at Langley AFB, VA is completed.

\\SIGNED\\

(b) (6), Maj, USAF  
Chief, Aerial Spray





**DEPARTMENT OF THE AIR FORCE**  
**757 AIRLIFT SQUADRON – AERIAL SPRAY UNIT YOUNGSTOWN AIR**  
**RESERVE STATION, OH 44473**

MEMORANDUM FOR 757 AS/DO

30 January 2017

FROM: 757 AS/DOS

**SUBJECT:** Post-mission report Camp Blanding Joint Training Center Spray Trials with Valent BioSciences Corporation 23-27 January 2017.

**1. Purpose:** Aerial pesticide efficacy evaluation in partnership with Valent BioSciences Corporation using VectoBac<sup>®</sup> WDG at Weinberg Drop Zone, Camp Blanding Joint Training Center, Florida. The test aimed to evaluate the functional swath width for this technique of ULV larviciding. These methods are the same that would be employed to control Zika virus vectors.

**2. Participants:**

**a. Aircrew:**

- (1) Pilots: Lt Col (b) (6), Lt Col (b) (6), Col (b) (6)(b) (6)
- (2) Navigator: Lt Col (b) (6)
- (3) Flight Engineer: SMSgt (b) (6)
- (4) Spray Operators: SMSgt (b) (6), MSgt (b) (6), MSgt (b) (6), TSgt (b) (6)

**b. Maintenance:**

- (1) Spray Maintenance: MSgt (b) (6), TSgt (b) (6), TSgt (b) (6), SSgt (b) (6)
- (2) Crew Chiefs: MSgt (b) (6), SSgt (b) (6)
- (3) Avionics: MSgt (b) (6)

**c. Entomologists:** Lt Col (b) (6), Lt Col (b) (6), Lt Col (b) (6)  
(b) (6) Maj (b) (6), Maj (b) (6)

**d. Mission Commander:** Major (b) (6)

**3. Spray Configuration:**

- a. Mass:** #1 SP-2G (2-Module System)
- b. Booms:** Wing Booms (full set) and Stainless steel fuselage ULV booms, LV configuration
- c. Nozzles:** size = 8020 TeeJet; 28 open oriented straight down. 8 each side wing booms, 6 each side fuselage booms
- d. Differential GPS:** Wingman installed
- e. Aircraft:** 90-9106
- f. Mission Identifier:** QENRK3531022

**4. Spray Parameters:**

- a. Pesticide:** VectoBac<sup>®</sup> WDG (*Bacillus thuringiensis israelensis*)  
EPA Reg. No. 73049-56, Biological larvicide  
Signal Word: Caution  
Amount of Pesticide Used: 100 lbs of VectoBac<sup>®</sup> WDG  
Adjuvant: FD&C Red #40 Granular Dye (2% by Weight)

Flushing Agent: Water, then air purge

- b. **Application:** 0.24 Gallons per acre target rate (finish spray)
- c. **Spray Altitude:** Variable; 100, 200, and 300 feet AGL (attachment 1)
- d. **Swath Width:** 500 feet nominal
- e. **Ground Speed:** 200 knots
- f. **Acreage:** 286 acres
- g. **Spray-On Time:** 74 seconds before purge
- h. **Flow Rate:** 58 gallons/minute

## 5. Operational Details:

- a. **Flying Data:**
  - (1) Spray Sorties/hours: 2/6.4
  - (2) Ferry Sorties/hours: 2/5.0
- b. **Pesticide Applied:**
  - (1) 71 gal (25 Jan) covering 286 acres
  - (2) Applications conformed to label; maximum label rate was not exceeded.

**6. Comments:** This testing seeks to determine the feasibility of using a C-130 equipped with the Modular Aerial Spray System (MASS) using wing and fuselage booms for the application of VectoBac<sup>®</sup> WDG to control immature mosquitoes over large areas with increased swath widths over traditional methods. The product examined contains the active ingredient, *Bacillus thuringiensis israelensis* (Bti), which is a species of bacterium that produces an endotoxin that is highly specific to insects; as a result, negative impacts on non-target species are highly limited with its use. Additionally, this product does not persist in the environment and is of extremely low to no risk for use in water.

Zika, dengue and Chikungunya virus continue to be a public health threat to Americans as cases of these mosquito-borne illnesses are occurring in large numbers in the Caribbean and Central America, to date, 220 cases of Zika have been acquired on the US mainland and 4,752 travel-associated cases. These illnesses can impact our deployed warfighters in such locations as Africa and Asia. With these concerns in mind, trials at Camp Blanding looked at applying Bti as an ultra-low-volume larvicide to impact container breeding mosquitoes with an emphasis on *Aedes aegypti* and *Ae. albopictus*. We mixed the VectoBac<sup>®</sup> at a 20% by weight solution and sprayed with 8020 flat fan nozzles attempting to produce a droplet size of approximately 100 microns and an effective swath width of 500 ft or greater. Dyed material was collected using kromekote cards and empty containers collected drops that will be rinsed at a contracted laboratory to determine larval mortality via bioassay trials.

VectoBac<sup>®</sup> WDG mixed well in the MASS with a small amount of clumping seen during mixing and an equal amount of clumped material left in the bottom of the tank after spraying. Valent BioSciences suggested the use of a Venturi inductor to promote mixing but the small amount of material needed for this mission and the lack of a water source led us to mix by hand. However, for a large-scale contingency mission, the use of external mixing containers would be imperative and should involve a Venturi inductor. Additional pesticides and/or formulations may be examined in future evaluations.

Reasonable spray conditions were present on the Weinburg Drop Zone on the test day, with moderate crosswinds at altitude facilitating downrange movement of material (Attachment 1). Attachment 2 details the path of the aircraft over the drop zone.

Preliminary results from observations of large drops on cards indicate a greater than 500'

swath width, though as stated previously, additional laboratory bioassays will be conducted to confirm effective swath.

This project represents a return to working with Valent BioSciences on larviciding techniques. We thank the technical staff at Valent BioSciences (b) (6) and (b) (6) (b) (6) as well as (b) (6) and (b) (6), of REMSPC, for their expertise in experimental design and droplet analysis. We hope to continue this work in an actual urban setting, where other aircraft have used this technique with some success. A special thanks to (b) (6) (b) (6) and CPT (b) (6) for their continued support of these tests at Camp Blanding. These individuals worked in a superior capacity to make sure these tests were a success!

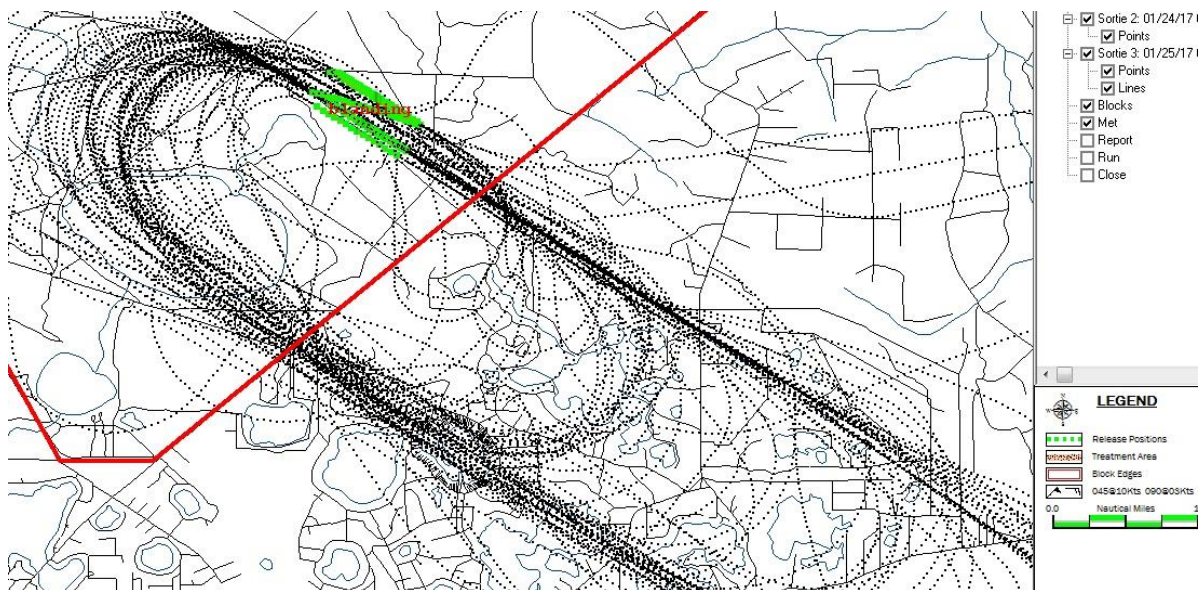
//signed//

(b) (6), Lt Col, PhD, USAFR  
Research Entomologist

Attachment 1. Data recorded during the evaluations from the spray aircraft (25 Jan 2017).

Spray Trial			Meteorology							
			Aircraft				Ground			
Pass	Time	Ht	Ta(F)	RH	Wind(kt)	Drn	Ta(F)	RH	Wind(kt)	Drn
1	9:45	300	63	--	12	220	62	--	3	270
2	10:16	200	61	--	6	190	57	87	1.7-3.4	270
3	10:48	100	61	--	6	190	63	76	1.7-2.6	248
4	11:10	300	64	--	6	210	67	65	2.6-4.3	225

Attachment 2. Flight patterns recorded on 25 Jan 2017. Green dots represent the path of the aircraft while spraying occurred. Black dots are the path of the aircraft.





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

6 June 2017

**MEMORANDUM FOR HQ AFRC/A3O**

**FROM:** 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

**SUBJECT:** Concept of Operations of Larvacide Application for Aerial Spray in and around the Army Corps of Engineers' property, Williston, ND.

1. Aerial spray deployment of one C130 to Minot, ND from 12 June-21 June 2017 for the requested larvacide spray in and around the Army Corps of Engineers' property near Williston, ND. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel working on the Army Corps' property, and by extension, the citizens of Williston. Mission objectives provide training for aerial spray aircrew, entomologists, and maintenance personnel in all aspects of the aerial spray mission.

2. Concept of Operations: All times local

- a. 12 June (Monday)
  - 1200 Depart KYNG (Support Aircraft)
  - 1200 Depart KYNG (Spray Aircraft)
  - 1430 Land KMIB (Support Aircraft)
  - 1430 Land KMIB (Spray Aircraft)
- b. 13-20 June (Tuesday-Tuesday)
  - 0530 Show KMIB
  - 0700 Depart KMIB
  - 0900 Land KMIB
  - (Multiple 2.0 hr sorties each day depending on weather)
- c. 21 June (Wednesday)
  - 1000 Depart KMIB (Spray Aircraft)
  - 1000 Depart KMIB (Support Aircraft)
  - 1400 Land KYNG (Spray Aircraft)
  - 1400 Land KYNG (Support Aircraft)

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 10,000 acres

- b. Altitude: 100 ft for larvicide application
- c. Swath Width: 100 ft
- d. Groundspeed: 200 KIAS
- e. Flow Rate: 233 gals/min
- f. Application Rate: 5 gal/acre (water with 2.0 pints of Vectobac® + 0.45 oz of Poly Control 2)

4. Maj (b) (6) will serve as the Mission Commander. Support required at Minot AFB has been completed.

\\SIGNED\\  
(b) (6), Maj, USAF  
Chief of Aerial Spray



**910 AW AERIAL SPRAY UNIT**  
**PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**WILLISTON ARMY CORPS OF ENGINEERS – LARVAL MOSQUITO CONTROL**  
**12-21 June 2017**

**1. MISSION BASICS:**

- a. Installation Sprayed: Army Corps of Engineers, Williston, ND
- b. Mission Duration: 12-21 June 2017
- c. Purpose of Application: Control of larval stage mosquitoes
- d. Flying Data:
  - (1) Spray Sorties/Hours: 7/13
  - (2) Ferry Sorties/Hours: 2/7.6
  - (3) Support sorties/hours: 2/7.2
- e. Application Dates: 15, 19, and 20 June 2017
- f. Time of Application (Local): see Attachment 1
- g. Acres Treated: 2,714
- h. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6) , ACE supervisor, Williston ND, (b) (6) . (b) (6) , Director, Williston Vector Control,
- i. Date Spray Map Last Approved: 9 June 2017
- j. Date of Waste Generation Letter: 26 May 2009
- k. Installation In-Briefing: (When/Where/Briefer/s): 9 June 2017 Williston ACE, Lt Col (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Maj (b) (6)
- b. Certified PMP/s (Category 11): Lt Col (b) (6) (Spray Ground Monitor – Williston), Lt Col (b) (6)
- c. Aircrew:
  - 1) Pilots: Lt Col (b) (6) , Capt (b) (6)
  - 2) Navigators: Lt Col (b) (6)
  - 3) Flight Engineers: SMSgt (b) (6)
  - 4) Spray Operators: SMSgt (b) (6) , MSgt (b) (6) , SSgt (b) (6)
- d. Safety Briefer: Lt Col (b) (6)
- e. Spray Maintenance: MSgt (b) (6) (lead), MSgt (b) (6) , TSgt (b) (6) (b) (6) TSgt (b) (6)
- f. Crew Chiefs: TSgt (b) (6) , SSgt (b) (6) , SrA (b) (6)
- g. MX Specialists: SMSgt (b) (6) (MX Supervisor), MSgt (b) (6) , SSgt (b) (6) , SSgt (b) (6) , SSgt (b) (6) , SrA (b) (6) , SrA (b) (6)

**3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Vectobac 12AS (1200 ITU/mg)
- b. EPA Registration Number: 73049-38
- c. Gallons pesticide loaded: 679 gallons
- d. Gallons finished tank mix applied: 13,336
- e. Gallons and Name of Flush Used: 800 gallons of water flush
- f. Other Additives Used: PolyControl drift reduction agent: 3 gallons
- g. Application Rate: 5 gal per acre of water mixed with 32 oz/acre Vectobac 12AS®

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99103
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 3-Module System/Fuselage Booms
- d. Nozzle Type/Size: R-20 Raindrop
- e. Nozzle Orientation & Number Used: 12 Straight back
- f. Pressure (PSI): 40 PSI
- g. Flow Rate: 232 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 100'
- b. Spray Off Set: None
- c. Spray Release Altitude: 100'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. see attachment 3

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Three locations/populations were sampled pre- and posttreatment with following results:

Location	# dips	Pre-application/dip	Post-application/dip
Corps 1	5	10	0
Dike	5	4	0
Carp Trail	5	5	0
Corps Pond 6	5	1	0
The Delta	5	20	0

- b. Floating bioassay cages were used with field-collected larvae to estimate efficacy. Two tests were conducted with uncorrected mortality overall of 99.5%. On both days, environmental conditions were excellent for aerial sprays.

**8. REMARKS:** In the previous 2 years, the Air Force arrived in western North Dakota before much of the local mosquito habitat had been subjected to the annual river confluence flooding, and subsequently, there were few areas that needed control. In response to this, the application was moved to dates later in June (12-21 June). Of course, Mother Nature can be difficult to predict and temperatures were warmer earlier in 2017 and the Air Force arrival was later than optimal for larval mosquito control. In fact, many locations already had adult mosquitoes. Therefore, it is recommended that we move the arrival time back to the first week in June as the earlier instars of mosquitoes are easier to control with larvicide. Weather was also a significant factor this year, as the first 2 days of the operation were grounded because of high winds and only a single sortie was flown on the third day for the same reason. The post-treatment samples from Williston Vector Control staff and the results from bioassay monitoring are quite encouraging, as it appears that nearly complete control may have been achieved in areas that were sprayed (see 7a&b). We thank the board and staff of the Williston Vector Control District for supporting these sprays with their resources. Many thanks to (b) (6) at the Army Corps of Engineers, Williston Office for his continued support of the project.

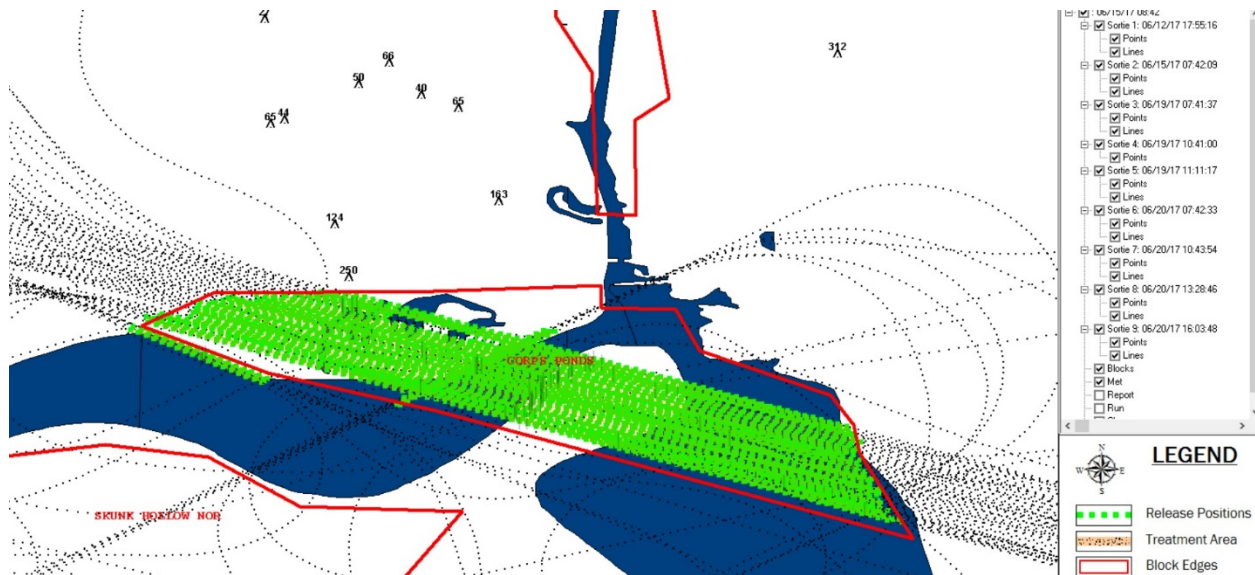
//signed//

(b) (6), Lt Col, USAF  
DoD Certified Pest Management Professional

**Attachment 1. SPRAY OPERATIONS SUMMARY FOR CONFULENCE AREA NEAR WILLISTON  
15-20 June 2017**

<b>DATE June</b>	<b>SORTIE #</b>	<b>TIMES</b>	<b>SPRAY ON TIME (min)</b>	<b>TARGET</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>FLYING HOURS</b>
15	1	0705-0905	8.3	Corps Ponds	387	1893	2.0
19	2	0705-0920	8.6	Test + Corps Ponds	389	1887	2.3
19	3	1020-1200	8.5	Corps Ponds	392	1908	1.7
20	4	0705-0905	8.4	Test + Corps Ponds	383	1907	2.0
20	5	0955-1130	8.5	Corps Ponds	388	1910	1.6
20	6	1240-1410	8.1	Corps Ponds	372	1894	1.5
20	7	1515-1710	8.8	Corps Ponds	403	1937	1.9
Totals					2,714	13,336	13

**Attachment 2. Image shows Williston Army Corps of Engineers (ACE) spray blocks (red) and pesticide application swaths (green) during the application in June 2017. The small area outside of the spray block (west corner) represent the efficacy trial on 20 June and was done on by direction of the ground Pest Management Professional and was on ACE property.**



### Attachment 3. Aerial Spray Weather Log

Date	Time	Wind Speed (kts)		Wind Direction		Temperature F		Relative Humidity (%)
		Ground	Altitude	Ground	Altitude	Ground	Altitude	
15 June	0745	10	14.0	200	200	58		78
19 June	0745	1.5	5.0	260	310	64	68	62
	1020	5.0	No data	220	No data	74	No data	40
20 June	0745	Calm	L/V	Calm	L/V	57	No data	67
	0955	3	No data	140	No data	69	No data	55
	1325	5	8	110	235	73	No data	34
	1540	5	No data	125	No data	75	No data	31

**910 AW -- AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**PARRIS ISLAND MCRD, SC AND JB CHARLESTON, SC 3-7 OCTOBER 2017**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island MCRD, SC; JB Charleston, SC
- b. Mission Duration: 3-7 October 2017
- c. Purpose of Application: To control pestiferous populations of mosquitoes (specifically *Aedes taeniorhynchus*) and biting midges (*Culicoides* spp.)
- d. Application Date: 4 Oct 2017 (Parris Island); 5 Oct 2017 (JB Charleston)
- e. Time/s of Application (Zulu): 2235-0042 hrs (Zulu) (Parris Island); 2305-0041 hrs (Zulu) (JB Charleston)
- f. Acres Treated: 8,083 acres (Parris Island); 18,507 acres (JB Charleston)
- g. Project Coordinator: (b) (6), Environmental, DSN (b) (6) (Parris Island); (b) (6), Spray Coordinator JB Charleston DSN (b) (6)
- h. Date Spray Map Last Approved: 4 Oct 2017 (Parris Island); 5 Oct 2017 (JB Charleston)
- i. Date of Waste Generation Letter: 30 October 2007
- j. Installation In-Briefing: (When/Where/Briefer/s): Telecom with (b) (6) (Parris Island). 4 Oct 2017, briefed by Lt Col (b) (6) and Maj (b) (6); 5 Oct 2017, JB Charleston CE, briefed by (b) (6), Lt Col (b) (6) Lt Col (b) (6), and Maj (b) (6)

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) (A/C), Major (b) (6)
  - (2) Navigators: Lt Col (b) (6); Maj (b) (6)
  - (3) Flight Engineers: CMSgt (b) (6)
  - (4) Spray Operators: CMSgt (b) (6), TSgt (b) (6), TSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) (lead), MSgt (b) (6), TSgt (b) (6), TSgt (b) (6), SSgt (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6), SrA (b) (6)
  - (3) Avionics: MSgt (b) (6)
- d. **Entomologist:** Maj (b) (6)

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (Parris Island); Trumpet<sup>®</sup> (JB Charleston)
- b. EPA Registration Number: 5481-480 (Dibrom); 5481-481 (Trumpet)
- c. Formulation Sprayed: Dibrom Concentrate (87.4% AI naled) (Parris Island); Trumpet (78% naled) (JB Charleston)
- d. Gallons Pesticide Loaded: 4 Oct; 45 Gallons Dibrom<sup>®</sup> (Parris Island); 5 Oct; 120 Gallons Trumpet<sup>®</sup> (JB Charleston)
- e. Gallons Pesticide Applied: 45 Gallons Dibrom<sup>®</sup> (Parris Island); 120 Gallons Trumpet<sup>®</sup> (Parris Island)
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 10 gallons HAN
- h. Other Additives Used: None
- i. Application Rate: 0.71 oz/acre (Parris Island); 0.83 oz/acre (JB Charleston)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 14 (Parris Island); 28 (JB Charleston) oriented straight down
- f. Pressure: 40 p.s.i. (Parris Island); 40 p.s.i. (JB Charleston)
- g. Flow Rate: 2.6 gallons per minute (Parris Island); 6.0 gallons per minute (JB Charleston)
- h. Sorties: 2/3.7 hrs (application); 2/4.1 hrs (ferry)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000' (Parris Island); 2000' (JB Charleston)
- b. Spray Off-set: 2000' (Parris Island); none (JB Charleston)
- c. Spray Release Altitude: 300'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 070@3 knots (Parris Island); 050@3 knots (JB Charleston)
  - (2) Release Altitude: 075@8 knots (Parris Island) and 050@7 knots (JB Charleston)
- b. Temperature (Degrees Fahrenheit): 73°F (Parris Island); 75°F (JB Charleston)
- c. Cloud Cover: Clear (both locations)
- d. Source: Ground observations and aircraft SCNs

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations (Maj (b) (6) )
  - (2) Results: Good coverage throughout both sprayed areas
- b. Effectiveness:
  - (1) Technique/s Used: Light traps deploy before and after spray application
  - (2) Results: Parris Island (3 locations)

Youth Center: 0 before; 0 after; 0% reduction in mosquito species

CAS: 100 before; 6 after; 94% reduction in mosquito species

4 BN: 114 before; 13 after; 89% reduction in mosquito species

Navy PrevMed comments: Substantial reduction of biting midge and mosquito populations after spray mission. PI environmental reported no adverse environmental effects of spray.

- (3) Results: JB Charleston (5 locations)

Spill Way: 1344 before; 62 after; 95% reduction in mosquito species

Golf Course: 88 before; 16 after; 82% reduction in mosquito species

Marrington Trail: 864 before; 9 after; 99% reduction in mosquito species

Horse Stables: 664 before; 56 after; 92% reduction in mosquito species

Spawar: 604 before; 56 after; 91% reduction in mosquito species

No adverse environment effects of spray were noted



**8. REMARKS:** Excellent coordination amongst all involved parties made this mission remarkably smooth. Good control of mosquito and midge populations in both locations was observed both observationally and anecdotally. Biting insect populations at Parris Island were not as heavy as on some previous missions, but were substantial enough to justify the need for application.

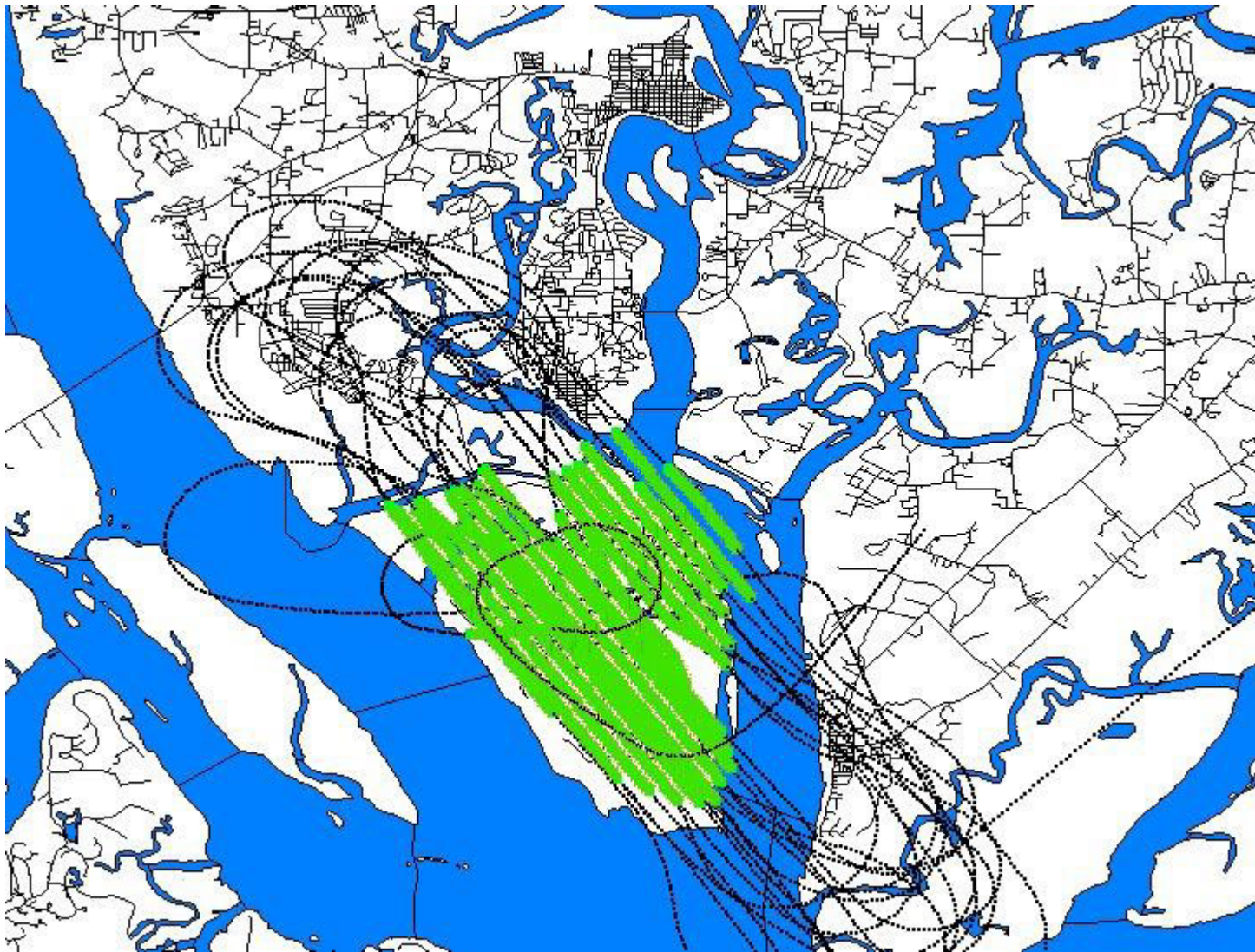
Actual applications at both locations proceeded without any significant functional problem or mishap, and no negative effect on wildlife was observed. Due to the presence of a newly found eagle's nest, a third no-fly area was added to the Parris Island locale. Many thanks to (b) (6) and (b) (6) (Parris Island), and (b) (6) (JB Charleston) for their help and alacrity in accomplishing this mission.

//signed//

(b) (6), Lt Col, USAFR  
**DOD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

**2 Attachments:**

**Attachment 1. Areas sprayed (green blocks) at Parris Island MCRD 4 Oct 2017.**







# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **JB CHARLESTON, SC**

### **3-7 October 2017**

### **QENRK3531276**

**Purpose/Objectives/Benefits:** One C-130 will deploy to JB Charleston, SC from 3-7 October 2017. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of JB Charleston and Parris Island MCRD. Operations for this mission will be conducted from JB Charleston utilizing Night Vision Goggles (NVGs).

#### **1. 910 AW PARTICIPANTS:**

Msn Commander:	Lt Col (b) (6)	(b) (6)
Entomologists:	Maj (b) (6)	
Pilots:	Lt Col (b) (6)	, Maj (b) (6)
Navigators:	Lt Col (b) (6)	, Capt (b) (6)
Flight Engineer:	CMSgt (b) (6)	
Spray Operators:	CMSgt (b) (6)	, TSgt (b) (6)
Spray Maintenance:	TSgt (b) (6)	(Lead) (b) (6)
	MSgt (b) (6)	, TSgt (b) (6), TSgt (b) (6), SSgt (b) (6)
		, TSgt (b) (6)
Crew Chiefs:	MSgt (b) (6)	, SrA (b) (6)
Comm/Nav:	MSgt (b) (6)	

#### **2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, laptop/Spray datasheet, O <sub>2</sub> hose extensions, NVGs
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system cards

### **3. SCHEDULE: (All Local Time)**

#### **3 October (Tues)**

1500 Showtime  
1700 Depart KYNG  
1900 Land KCHS

#### **4 October (Wed) Sunset: 1905L (PI) 1902L (CHS); Civil Twi: 1929L (PI) 1926L (CHS)**

1600 Weather call/Chemical Load at Charleston AFB  
1630 Calibration  
1800 Depart KCHS  
2000 Land KCHS

#### **5 October (Thurs) Sunset: 1903L (PI) 1900L (CHS); Civil Twi: 1928L (PI) 1925L (CHS)**

1400 Installation brief at JB Charleston  
1600 Weather call/Chemical Load at Charleston AFB  
1730 Calibration  
1800 Depart KCHS  
2000 Land KCHS

#### **6 October (Fri) Sunset: 1902L (PI) 1859L (CHS); Civil Twi: 1926L (PI) 1924L (CHS)**

1600 Weather call/Chemical Load at Charleston AFB  
1730 Calibration (if necessary)  
1800 Depart KCHS  
2000 Land KCHS

#### **7 October (Sat)**

1000 Showtime  
1200 Depart KCHS  
1400 Arrive KYNG

### **4. SPRAY CONFIGURATION AND PARAMETERS:**

Locations:	Parris Island MCRD and JB Charleston
Acres:	7,500 (Parris Island); 18,000 (JB Charleston)
Chemical:	Parris Island: Dibrom <sup>®</sup> (EPA Reg. No. 5481-480) Charleston: Trumpet <sup>®</sup> EC (EPA Reg. No. 5481-481) Signal word: Danger
Gallons loaded:	45 gallons (Parris Island); 120 gallons (Charleston)
Flow Rate:	2.7 GPM (Parris Island); 6.2 GPM (Charleston)
Application Rate:	0.75 oz/ac (Parris Island); 0.85 oz/acre (Charleston)
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300'
Airspeed:	200 KNTS
Swath Width:	1,000 feet (Parris Island); 2,000 feet (Charleston)
Nozzle/Orientation:	ULV 8003 Tee Jet Flat Fan / Straight Down
Number of Nozzles:	13 (Parris Island); 27 (Charleston)

## 5. AIR TO GROUND RADIO FREQUENCIES:

**Charleston AFB:** Tower – 843-414-2808  
Tower – 126.0 or 239.0  
Ground – 121.9 or 348.6  
Clearance – 127.325 or 291.65  
ATIS – 124.75  
Palmetto Ops – 134.1 or 349.4  
**Charleston Approach:** 135.8 or 379.925  
**Mt Pleasant Regional:** CTAF 122.8  
**Charleston Executive:** CTAF 122.8  
**Beaufort MCAS:** Tower - 119.05/340.2 MCAS TWR  
Approach - 123.7  
**Hilton Head Airport:** 118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)  
**Beaufort Co Airport:** 122.7 UNI  
**Spray Ground (CHS):** 392.2 UHF; 123.45 VHF

## 6. TRANSPORTATION:

**JB Charleston:** Will provide (4) vehicles for transportation to and from quarters and for messing. Vehicles will be at JB Charleston Transpo/Vehicle Ops. Confirmation #27754192.

**1x U Drive** – Officer Aircrew

**1x U Drive** - Enlisted Aircrew

**1x U Drive** - Maintenance

**1x U Drive** - Mission Commander/Entomologist

## 7. LODGING:

**JB Charleston Lodging office POC:** SSgt (b) (6) DSN: (b) (6)  
(b) (6) SSgt USAF AMC 628 FSS/FSVL

**Contract hotel:** Double Tree by Hilton Charleston Airport  
**POC:** Mr. (b) (6) – Group Sales Manager (843-518-6715)  
7401 Northwoods Boulevard, North Charleston, SC 29406

## 8. CONTACTS:

**Charleston AFB SC:** DSN: 673-XXXX; Commercial (843)-963-XXXX

Wing Commander:	x3418
MSG Commander:	x2200
Civil Engineer:	x4956
Deputy Chief/Civil Engineer:	x4954
Environmental Coordinator:	x2711
Base Operations:	x3026
Charleston Control Tower:	(843) 414-2808
Weather:	x3016
Pest Control Foreman:	x5266, (b) (6) ; cell (b) (6)
Pest Control NCOIC:	x5266
Public Affairs:	x1110
Fuels:	x5079
Transportation:	x4236
Fire Department:	x3777



**Parris Island MCRD SC: DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental Coord:	x3102	(b) (6)	(b) (6)	(cell)
		(b) (6)	(b) (6)	(cell)
HazWaste:	x4698	(b) (6)	(b) (6)	(cell)
AC/S, I&L:	x2511			
Deputy I&L	x4110	(b) (6)		
Pest Control:	x2364	(b) (6)	and (b) (6)	
P.I. Motor Pool:	x2233	(b) (6)		
P.I. Rifle Range:	x3183/3624			
Military Police	x3444			

**Beaufort MCAS SC: DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental:	x7370	(b) (6)
Fuels:	x7049/7448/7168	
Airfield Mgr:	x6316	
Trans Alert/VAL:	x7110	
Weather:	x7001/7926/7/9	
Base Security Manager:	x7090	
Provost Marshal Office:	x7209/7967/6335	

**Beaufort County Mosquito Control:**

(b) (6), Director	(843) 255-5800
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**910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

910 AW/CC:	x1243	
Command Post	x1315	FAX x1161
PA:	x1236	FAX x1022
OG/CC:	x1257/1179	
Safety	x1391	
Base Ops:	x1182	
SOF Desk:	x1069	FAX: x1371
757 AS/DO:	x1793	
757 AS Admin:	x1239	FAX x1657
757 AS Spray Office:	x1638/1111	FAX x1616
910 MXG/CC:	x1225	
910 LG/LGM:	x1352	
Maintenance Control:	x1348	
Spray Maintenance:	x1132/1586	



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND**

26 February 2018

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757AS/DOS  
3976 King Graves Rd  
Vienna, Ohio 44473-0910

SUBJECT: Concept of Operations for Aerial Spray at the Utah Test and Training Range

1. Aerial spray flight proficiency training will be accomplished on Targets 21, 23, 24, and Nord LZ at the Utah Test and Training Range (UTTR). Spray sorties will apply Krovar to control vegetation (i.e., *Halogeton*) growth aiding bombing mission test evaluations and unexploded ordnance recovery. Two aerial spray-configured C-130s will be available from 5 - 16 March 2018 for the requested spray mission. A swap out Mission is scheduled over the weekend to maximize aircrew training over the two week period.

2. Concept of Operations:

- a. 5 March (Monday)
  - 0930 Vader 24 departs (Support) KYNG
  - 1000 Vader 04 departs KYNG
  - 1015 Vader 07 departs KYNG
  - 1230 Vader 23 lands KHIF
  - 1300 Vader 04 lands KHIF
  - 1315 Vader 07 lands KHIF
- b. 6 March (Tuesday)
  - 0930 Vader 23 departs KHIF
  - 1430 Vader 23 lands KYNG
- c. 6 – 9 March (Tuesday - Friday)
  - 0800 Spray 04 departs KHIF
  - 0810 Spray 07 departs KHIF
  - 1200 Spray 04 lands KHIF
  - 1210 Spray 07 lands KHIF
- d. 10 March (Saturday)
  - 1000 Vader 24 departs KYNG
  - 1300 Vader 24 lands KHIF
- e. 11 March (Sunday)
  - 0930 Vader 24 departs KHIF

1430 Vader 24 lands KYNG

f. 12 – 15 March (Monday – Thursday)

0800 Spray 04 departs KHIF

0810 Spray 07 departs KHIF

1200 Spray 04 lands KHIF

1210 Spray 07 lands KHIF

g. 15 March (Thursday)

1000 Vader 24 departs KYNG

1300 Vader 24 lands KHIF

h. 16 March (Friday)

0800 Vader 24 departs KHIF

0810 Vader 04 departs KHIF

0820 Vader 07 departs KHIF

1500 Vader 23 lands KYNG

1510 Vader 04 lands KYNG

1520 Vader 07 lands KYNG

3. Spray parameters:

Herbicide: Krovar 1DF®

Application rate: 22.5 gal/acre (10 lbs Krovar in 22.4 gal of water)

Acreage: 1,700 acres (Targets 21, 23+24)

Ground speed: 200 knots (337.55 ft/sec)

Spray altitude: 100 feet AGL

Swath width: 35 feet

4. Lt Col (b) (6) will serve as the mission commander.

5. Aircraft Commanders:

Maj (b) (6)

Lt Col (b) (6)

Lt Col (b) (6)

Maj (b) (6)

Lt Col (b) (6)

6. Support required at both Hill AFB and the UTTR has been coordinated.

//SIGNED//

(b) (6)

, Maj, USAF

Chief of Aerial Spray

# SPRAY OPERATIONAL SCHEDULE

## UTAH TEST AND TRAINING RANGE MISSION

### 5-18 March 2018

**PURPOSE/BENEFIT/OBJECTIVE:** Aerial spray herbicide mission controlling halogeton on Targets 21, 23, and 24 on the Utah Test and Training Range (UTTR) to improve bombing mission test evaluations and unexploded ordnance recovery.

#### 1. 910 AW PARTICIPANTS:

**Mission Commander:** Lt Col (b) (6) (b) (6) (cell phone)

##### 1<sup>st</sup> HALF AIRCREW:

**Pilots:** Lt Col (b) (6) , Lt Col (b) (6) , Lt Col (b) (6) , Lt Col (b) (6)  
Maj (b) (6), Maj (b) (6) Maj (b) (6)  
Capt (b) (6) , Capt (b) (6) , Capt (b) (6) , Capt (b) (6) , Capt (b) (6)

**Navigators:** Lt Col (b) (6) , Lt Col (b) (6), Maj (b) (6) , Maj (b) (6) , 1Lt (b) (6)

**Flight Engineers:** CMSgt (b) (6) SMSgt (b) (6) , SSgt (b) (6) , TSgt (b) (6)

**Spray Operators:** SMSgt (b) (6), SMSgt (b) (6) ,  
MSgt (b) (6) MSgt (b) (6) , MSgt (b) (6) , MSgt (b) (6)  
SSgt (b) (6) , SSgt (b) (6) , SSgt (b) (6)

##### 2<sup>nd</sup> HALF AIRCREW:

**Pilots:** Lt Col (b) (6) , Lt Col (b) (6) , Lt Col (b) (6) , Lt Col (b) (6) , Lt Col (b) (6)  
Maj (b) (6), Maj (b) (6) , Maj (b) (6)  
Capt (b) (6) , Capt (b) (6) , Capt (b) (6)

**Navigators:** Lt Col (b) (6) , Maj (b) (6) , Maj (b) (6) , Capt (b) (6) , 1Lt (b) (6)

**Flight Engineers:** SMSgt (b) (6) , MSgt (b) (6)

**Spray Operators:** SMSgt (b) (6), SMSgt (b) (6) ,  
MSgt (b) (6) , MSgt (b) (6) , MSgt (b) (6) , MSgt (b) (6)  
SSgt (b) (6) , SSgt (b) (6) , SrA (b) (6)

##### MISSION SUPPORT:

**Entomologists:** **Both Weeks:** Lt Col (b) (6) , Maj (b) (6) ,  
**First Week:** Lt Col (b) (6) , Lt Col (b) (6), **Second Week:** Lt Col (b) (6)

**SARMS/ARMS:** **Both Weeks:** SMSgt (b) (6) , SSgt (b) (6)

**MEDICAL:** **First Week:** SrA (b) (6) , **Second Week:** SSgt (b) (6)

##### MAINTENANCE:

**Supervisor:** SMSgt (b) (6)

**Spray MX:** MSgt (b) (6) , MSgt (b) (6), TSgt (b) (6) , TSgt (b) (6)  
TSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6), SSgt (b) (6)

**MX Specialists:** MSgt (b) (6) , MSgt (b) (6) , MSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6),  
TSgt (b) (6) , SSgt (b) (6) , SrA (b) (6)

**Crew Chiefs:** MSgt (b) (6) , SSgt (b) (6), SrA (b) (6), A1C (b) (6)

##### COMM:

**Both Weeks:** TSgt (b) (6)  
**First Week:** Maj (b) (6) , SSgt (b) (6) , **Second Week:** MSgt (b) (6)

**COMMAND POST:** **First Week:** SrA (b) (6) , **Second Week:** SMSgt (b) (6)

## **2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, Calibration Tables/Laptop and or Spray datasheet, O <sub>2</sub> hose extensions
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system cards

## **3. IN-BRIEFING at Hill:**

1400 or as soon as clear at HQ UTTR (for entomologists and MC)

## **4. SCHEDULE: (All Local Time)**

### **PLANNED SEQUENCE OF EVENTS:** Hill AFB Tower Control and Runway Hours

Tower Opens at 0800L (Engine start typical at 0745 make engine start call in the blind)

### **NOTES:**

1. Scheduling reflects no weather or maintenance delays. In the event of weather or maintenance delays, the missions will be adjusted as required. ALL TIMES SUBJECT TO ADJUSTMENT BY MISSION COMMANDER
2. DUTY DAY FOR CIVILIANS WILL BE AS REQUIRED WITHIN CREW REST CONSTRAINTS.
3. ALL MX & A/C PERSONNEL WILL REMAIN ON DUTY UNTIL AIRCRAFT IS PRE-FLIGHT COMPLETE AND RELEASED BY THE MISSION COMMANDER.

### **5 March (Monday)**

0700 Bag Drop for Chalk 1 at Aerial Port.

0730 Show Chalk 1 All personal stay for safety and arrival brief. MC will release you.

0800 Show Chalk 2 & 3, Safety and Arrival brief in conjunction with the SOF brief for Chalks 2 & 3

0930 Depart KYNG Support (P-1) **Vader 24 MI: QENRK3531064 PPR: MS0501**

1000 Depart KYNG Spray (SP3G) **Vader 04 MI: QENRK3501064 PPR: MS0502**

1015 Depart KYNG Spray (SP3G) **Vader 07 MI: QENRK3502064 PPR: MS0503**

1300 Land KHIF first aircraft

### **6 – 9 March (Tuesday-Friday) Range Time 0600-1300L**

**Each aircraft will generally plan on 2 sorties per day.**

0630 Aircraft Released by MX

0700 Chemical Load first Aircraft

0745 Engine Start

0800 Takeoff

Second Aircraft will be loaded as soon as possible to Takeoff at 0845

**\*\*Weekend flying is currently unavailable.**

### **10 March Swap out departs KYNG to KHIF**

1000 Depart YNG

1300 Land HIF (**Vader XX, MI: QENRK3531069, PPR: TBD**)

**11 March (Swap out departs KHIF to KYNG)**

1000 Depart KHIF

1600 Land KYNG (Vader XX, MI: QENRK3531069, PPR: N/A)

**12 - 15 March (Monday-Thursday) Range time 0600-1300L**

**Each aircraft will plan on 2 sorties per day.**

0600 Show KHIF

0630 Weather call and mixing begin

0800 Depart KHIF

1300 Land KHIF

**16 March (Friday) All personnel**

0630 Checked out of billeting

0700 Bus from Hotels to Hill

0700 Return Rental vehicles to Enterprise

0730 Bus from Enterprise to Hill

0900 Depart KHIF

1600 Land KYNG

**\*\*All times are approximated. Actual times and mission details will be by the Mission Commander.**

**5. SPRAY CONFIGURATION: SP3G**

Spray 04 - MASS #3 / Spray 07 - MASS#5

MASS Modules SP3 configurations

UHV Fuselage booms oriented straight back

**6. SPRAY LOADING:**

**Sequence for Loading 1,000 Gallon Mixing Tank:**

Fill with water up to 750 Gallon Mark, and then add:

450 Pounds of Krovar I DF<sup>®</sup> (18 bags, 25 # each)

4.0 Gallons (15,140 ml) of Clasp<sup>®</sup>

15 oz of FTF Defomer<sup>®</sup>

400 Ounces Hi-Light<sup>®</sup> Dye

Add Water to 1,000 Gallon Mark and Agitate for 30 Minutes

**7. SPRAY PARAMETERS:**

Location: UTTR

Chemical: Krovar I DF<sup>®</sup>

Area to be treated: 1,700 Acres (Targets 21, 23+24); Target 22 =60 acres; NORD LZ = 16 acres

Swath Width: 35 Feet

Flow Rate: 366 Gallons/Minute

Altitude: 100 Feet AGL

Ground Speed: 200 Knots (337.55 ft/sec)

Flush: Air purge after last sortie

Formulas: Flow Rate = Gal/Time in Minutes

Acreage Sprayed = Total Sec x 338 x Swath Width / 43,560

**8. PARKING PLAN:**

Forestry Ramp and Building



## **9. AIR TO GROUND RADIO FREQUENCIES:**

<b>Clover Range:</b>	Provided after In-Brief
<b>Eagle Tower:</b>	Provided after In-Brief
<b>Diddle Knoll:</b>	Provided after In-Brief
<b>Spray Inter plane:</b>	Provided after In-Brief
<b>Base OPS:</b>	Provided after In-Brief
<b>Spray Ground:</b>	Provided after In-Brief

## 10. TRANSPORTATION:

**Enterprise (801)-593-6007 Option #4 for counter**  
**865 W 1000 N LAYTON, UT 84041-4833**  
**POC: Johnathan Reed E: Johnathan.m.reed@erac.com**

OPS 1 – (b) (6) (Sedan)  
OPS 2 – (b) (6) SUV-Range vehicle  
OPS 3 – (b) (6) (Sedan)  
OPS 4 – (b) (6) (Sedan)  
OPS 5 – (b) (6) (Sedan)  
OPS 6 – (b) (6) (Sedan)  
OPS 7 – (b) (6) (SUV) rented under (b) (6) name  
OPS 8 – (b) (6) (Truck) rented under (b) (6) name  
OPS 9 – (b) (6) (Sedan)  
OPS 10 – (b) (6) (Sedan)  
OPS 11 – (b) (6) (Sedan)  
OPS 12 – (b) (6) (Sedan)  
MX 1 – (b) (6) (Sedan)  
MX 2 – (b) (6) (Sedan)  
MX 3 – (b) (6) (Sedan)  
MX 4 – (b) (6) (Sedan)  
MX 5 – (b) (6) (Sedan)  
MX 6 – (b) (6) (Sedan)  
MX 7 – (b) (6) (Sedan)  
COMM 1 – (b) (6) (Sedan)  
Medical – (b) (6) 1<sup>st</sup> week/ (b) (6) 2<sup>nd</sup> week (Compact)

### Transportation to and from Hill:

Bags (Arr): Hill Transportation to provide (1) stake bed truck. Bags will be delivered to hotels.

Personnel (Arr): Rental vehicles pre-positioned on forestry ramp. All personnel to be transferred to hotels via rental vehicle.

Bags (Dep): Bag drop Thurs by 1200 for all personnel at forestry ramp.

Personnel (Dep): 0700 on Fri - Pickup for non-drivers via 44-PAX bus at hotels  
0730 on Fri – Pickup for rental car drivers at Enterprise

Hill Transportation confirmation numbers are as follow:  
28268539/ 28268553/ 28268561

**11. LODGING: 45 Rooms**

**HYATT PLACE SALT LAKE CITY/FARMINGTON/STATION PARK**

222 North Union Ave, Farmington, UT 84025

**POC:** (b) (6)

**T:** 801-683-4444 **O:** 801-447-4404 **F:** 801-683-4445

**30 Plus 7 reserved for the swap out weekend.**

**HAMPTON INN & SUITES SALT LAKE CITY/FARMINGTON**

332 West Park Lane, Farmington, UT 84025

**POC:** (b) (6)

**T:** 801-451-7999 **M:** 912-323-2160 **F:** 912-549-1065

**12. GENERAL TARGET INFORMATION:**

**Target 21:**

**Dimensions:** 4,980' X 7,770'

**Acreage:** 888

**Aircraft Loads:** 19,980 gal

**Sorties:** 11

**Passes (35' Swath):** 142

**Spray-On Time/Pass:** 23 Seconds

**Spray Heading:** 00/180

**Target 23 / 24:**

**Dimensions:** 16,675' X 1,657

**Acreage:** 635

**Aircraft Loads:** 14,265 gal

**Sorties:** 8

**Passes (35' Swath):** 47

**Spray-On Time/Pass:** 49 Seconds

**Spray Heading:** 004/184

**Note:** total acreage sprayed in 2017= 1,522

**SEQUENCING:**

**Target sequencing is determined by UTTR personnel based upon EOD clearance schedule and airspace scheduling.**

**Spray ops aircraft must stay south of Base Leg Knoll during turns on north run on Target 21. Coordination with range control is essential to assure that this portion of the range is released for air operations.**

**Spraying Priorities:**

**Target 21**

**Target modified target 23/24**

**Once the above areas are complete: northeast side of Target 22**

**13. CONTACTS:** The commercial area code for listings below is 801-777-XXXX unless otherwise indicated. DSN is 777-XXXX, 775-XXXX, and 586-XXXX.

**HILL AFB**

Airfield Manager: 777-4168/3592  
Base Operations: 777-1861; FAX: 777-2221  
AMOPS 777-1861  
KHIF Tower 777-3745  
Billeting: 777-1844  
Sponsor: 777-3000 SMSgt (b) (6) , 514FLT  
Weather: 777-2018  
Transit Alert: 777-3886  
C-130 Mx Contact: 777-2478  
Fuels: 777-7423 / 777-7311 available 0900-1800 daily, after hours contact CP  
Supply: 777-5391 (922 OE)  
Hill Motor Pool: 777-1843  
Public Affairs: 777-5201  
Dining Hall: 777-3428

**HQ UTTR**















(b) (6) 777-1007; Cell Phone # (b) (6)  
6066 Cedar Lane, Bldg 1274S  
Hill Range Control: 777-9386  
Current OPS: 777-9385  
Range Scheduler: 777-9386  
Eagle Tower: 777-1515/6  
Clover Operations: 777-7575  
Clover DO: 586-3103  
HQ UTTR/Radio Freq Monitor: 777-6715  
HQ UTTR/ Resource Monitor: 775-4257  
Environmental Coordinator: 777-1550; 801-940-0809  
Hill AFB Base OPS: 777-1861  
Entomology: 777-4427  
Weather: 777-1516/63

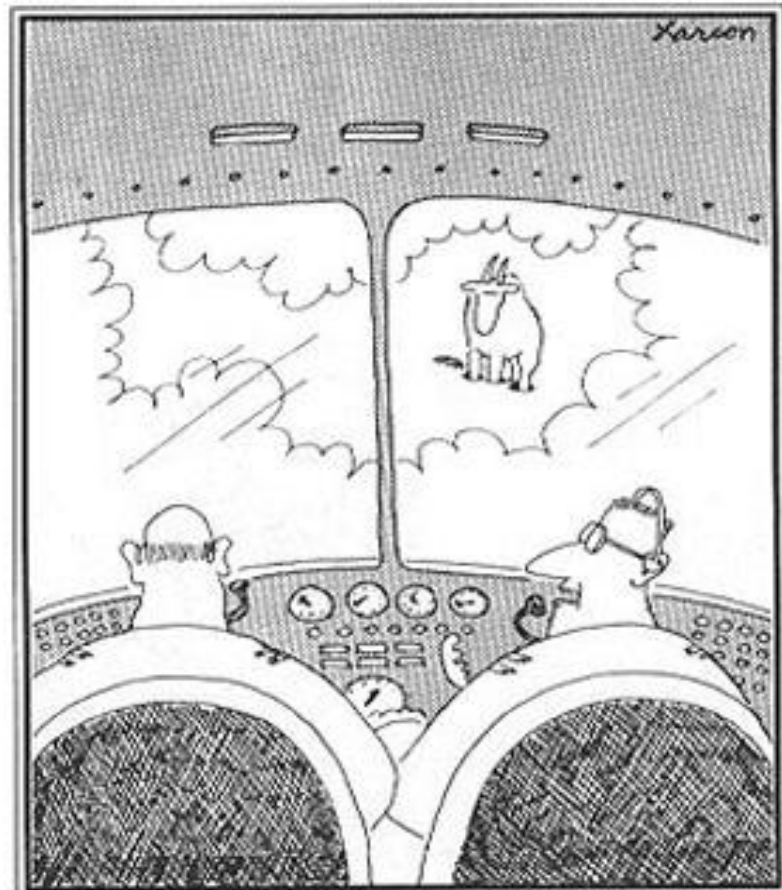
**OASIS RANGE SUPPORT DIRECTORATE:**

Oasis Chief: 777-1546  
North Range Security: 777-1521/2/4

**910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

910 AW/CC: x1243  
Command Post x1315 FAX x1161  
PA: x1236 FAX x1022  
OG/CC: x1257/1179  
Safety x1391  
Base Ops: x1182  
SOF Desk: x1069 FAX: x1371  
757 AS/DO: x1793

DAY		DESCRIPTION	HIGH / LOW	PRECIP	WIND
TODAY MAR 3		PM Showers	44°/29°	40%	SW 16 mph
SUN MAR 4		Snow	31°/18°	90%	W 14 mph
MON MAR 5		Sunny	34°/15°	10%	SSW 7 mph
TUE MAR 6		Sunny	35° 14°	0%	NW 7 mph
WED MAR 7		Sunny	38° 23°	0%	WNW 7 mph
THU MAR 8		Partly Cloudy	44°/31°	0%	WSW 7 mph
FRI MAR 9		Cloudy	46°/36°	10%	S 7 mph
SAT MAR 10		Showers	44°/32°	60%	SW 13 mph
SUN MAR 11		AM Snow Showers	43°/31°	40%	SW 8 mph
MON MAR 12		Mostly Sunny	45°/30°	20%	SSW 9 mph
TUE MAR 13		Mostly Sunny	46°/31°	0%	S 9 mph
WED MAR 14		Partly Cloudy	48°/33°	20%	S 11 mph
THU MAR 15		AM Showers	45°/32°	50%	SSW 12 mph
FRI MAR 16		Rain/Snow Showers	38° 29°	40%	SSW 12 mph



"Say . . . What's a mountain goat doing way up here in a cloud bank?"

1. Q: What has one head, one foot, and four legs?
2. Q: I travel all over the world, but always stay in my corner. What am I?
3. Q: What kind of coat is always wet when you put it on?

1. Bed 2. Stamp 3. A coat of paint



**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
UTAH TEST AND TRAINING RANGE, 5-16 MARCH 2018**

**1. MISSION BASICS:**

- a. Installation Sprayed: Utah Test and Training Range (UTTR)
- b. Mission Duration: 5-16 March 2018
- c. Purpose of Application: Weed control on UTTR Targets 21, 22, 23 and 24 to facilitate UXO recovery
- d. Application Dates: See Attachment 1
- e. Times of Application (Local): See Attachment 1
- f. Acres Treated: 1,518
- g. Flying Data:
  - (1) Spray sorties/hours: 19/27.9
  - (2) Flush sorties/hours: 5/5.7
  - (2) Ferry sorties/hours: 4/20.1
- h. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) Range Specialist/DSN (b) (6)  
(b) (6) Environmental Coordinator, (b) (6) DSN (b) (6)
- i. Date Spray Map Last Approved: 7 March 2016
- j. Installation In-Briefing: (When/Where/Briefer/s): Lt Col (b) (6) , Lt Col (b) (6)  
Maj (b) (6) Mr. (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Entomologists (certified applicators): Lt Col (b) (6) , Maj (b) (6) ; First Week:  
Lt Col (b) (6) , Lt Col (b) (6) , Second Week: Lt Col (b) (6)
- c. ARMS: SMSgt (b) (6) , SSgt (b) (6)
- d. 1<sup>st</sup> Half Aircrew:
  - Pilots: Lt Col (b) (6) , Lt Col (b) (6) , Lt Col (b) (6) , Lt Col (b) (6) , Maj (b) (6) , Maj (b) (6) ,  
Maj (b) (6) , Capt (b) (6) , Capt (b) (6) , Capt (b) (6) , Capt (b) (6) , Capt (b) (6)
  - Navigators: Lt Col (b) (6) , Lt Col (b) (6) , Maj (b) (6) , Maj (b) (6) , 1Lt (b) (6)
  - Flight Engineers: CMSgt (b) (6) , SMSgt (b) (6) , SSgt (b) (6) , TSgt (b) (6)
  - Spray Operators: SMSgt (b) (6) , SMSgt (b) (6) , MSgt (b) (6) , MSgt (b) (6) ,  
MSgt (b) (6) , MSgt (b) (6) , SSgt (b) (6) , SSgt (b) (6) , SSgt (b) (6)
- e. 2<sup>nd</sup> Half Aircrew:
  - Pilots Lt Col (b) (6) , Lt Col (b) (6) , Lt Col (b) (6) , Lt Col (b) (6) , Lt Col (b) (6) ,  
Maj (b) (6) , Maj (b) (6) , Maj (b) (6) , Capt (b) (6) , Capt (b) (6) , Capt (b) (6)
  - Navigators: Lt Col (b) (6) , Maj (b) (6) , Maj (b) (6) , Capt (b) (6)
  - Flight Engineers: SMSgt (b) (6) , SMSgt (b) (6)
  - Spray Operators: SMSgt (b) (6) , SMSgt (b) (6) , MSgt (b) (6) , MSgt (b) (6) ,  
MSgt (b) (6) , MSgt (b) (6) , SSgt (b) (6) , SSgt (b) (6) ,  
SrA Messina
- f. Maintenance:
  - OIC: Capt (b) (6)
  - Supervisor: SMSgt (b) (6)



- Spray MX: MSgt (b) (6) , MSgt (b) (6), TSgt (b) (6) , TSgt (b) (6) ,  
 TSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6), SSgt (b) (6)  
 MX Specialists: MSgt (b) (6) , MSgt (b) (6) , MSgt (b) (6) , TSgt (b) (6) ,  
 TSgt (b) (6), TSgt (b) (6) , SSgt (b) (6) , SrA (b) (6)  
 Crew Chiefs: MSgt (b) (6) , SSgt (b) (6), SrA (b) (6), A1C (b) (6)  
 g. Comm: TSgt (b) (6) , 1<sup>st</sup> week: Maj (b) (6) , SSgt (b) (6) ; 2<sup>nd</sup> week: MSgt (b) (6)  
 h. Command Post: SrA (b) (6) , 1<sup>st</sup> week; SMSgt (b) (6) , 2<sup>nd</sup> week

### 3. PESTICIDE:

- a. Trade Name: Krovar<sup>®</sup> IDF
- b. EPA Registration Number: 352-505
- c. Formulation Sprayed: 10 lbs Krovar<sup>®</sup> per 22.5 gallons formulation.
- d. Gallons Pesticide Mix Loaded: 31,834
- e. Gallons Pesticide Mix Applied: 31,834
- f. Formulation Used: 450 lbs Krovar<sup>®</sup>, 4.0 gal StaPut<sup>®</sup>, ½ gal Foam Fighter<sup>®</sup>, 200 ounces Hi-Light<sup>®</sup> Dye, remainder water per 1000 gal of spray mix. 15,250 lbs of Krovar used and 34,150 gallons of water
- g. Gallons and Name of Flush Used: 4,000 gal water
- h. Other Additives Used: 175 gal Clasp<sup>®</sup>; 90.5 gal Hi-Light<sup>®</sup> dye; 5.3 gal foam buster
- i. Application Rate: 22.5 gal/acre

### 4. APPLICATION EQUIPMENT:

- a. Aircraft Tail Number: 899104, 909107
- b. Spray System (Modules Used) and System ID #: 3 and 5.
- c. Spray System Configuration: 3-Module System/ UHV Fuselage Booms
- d. Nozzle Type/Size: UHV Fuselage
- e. Nozzle Orientation & Number Used: 2 oriented straight back.
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 366 gallons per minute.

### 5. APPLICATION PARAMETERS:

- a. Swath Width Flown: 35'
- b. Spray Off-set: None
- c. Spray Release Altitude: 100' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

### 6. WEATHER OBSERVATIONS:

- a. See Attachment 3.

### 7. SPRAY MONITORING (Pre- and Post-Treatment):

- a. Deposition Pattern:
  - (1) Technique Used: blue dye pattern on targets and observations from ground observers.
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Techniques Used: monitoring of weed emergence in spring.
  - (2) Results: will be determined this spring by range personnel.

8. **REMARKS:** Another successful spring application of Krovar to control vegetation on Targets 21, 23, and 24. Cold temperatures were encountered upon arrival and it was decided to weather cancel spray applications the first day because of concerns with damage from ice in the MASS overnight. However, training flights were still accomplished. This was our only weather day and with no significant aircraft maintenance issues, we were able to easily finish the prescribed areas (Attachment 1 and 2).
- a. The spray mission is requested by UTTR/HQ and we appreciate the opportunity to make these applications on their behalf. Mr. (b) (6) replaced Mr. (b) (6) as the directing range officer. Many thanks to the various agencies at Hill AFB supporting this mission: 75CES Pest Management, 75<sup>th</sup> Air Base Wing - Base Operations, and a special thanks to SMSgt (b) (6) (514 FLTS/DOC) for acting as our sponsor again this year.

//signed//

(b) (6), Lt Col, USAF  
**DOD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

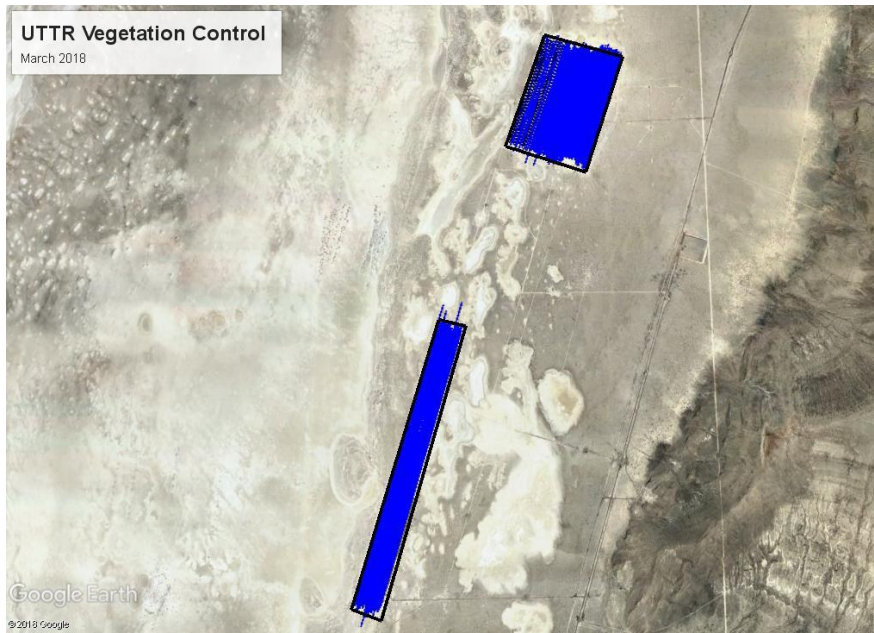
**SPRAY OPERATIONS SUMMARY FOR UTAH TEST AND TRAINING RANGE  
5-16 March 2018**

<b>DATE March</b>	<b>SORTIE #</b>	<b>AIRCRAFT #</b>	<b>TIME ON/OFF TARGET (Z)</b>	<b>SPRAY ON TIME (min)</b>	<b>TARGET</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>FLYING HOURS</b>
7	1	899104	1645-1720	5.3	23/24	90	1719	1.1
7	2	909107	1744-1825	4.9	21	80	1675	1.4
7	3	909107	2045-2140	5.5	21	89	1911	1.6
8	4	899104	1521-1552	5	23/24	81	1638	1.1
8	5	909107	1555-1650	5.3	21	85	1682	1.7
8	6	899104	1728-1805	4.3	23/24	72	1613	1.2
8	7	909107	1838-1955	6	21	97.6	1829	1.9
8	8	899104	1930-2015	5.5	23/24	90	1699	1.4
9	9	899104	1534-1606	5.5	23/24	90	1763	1.2
9	10	909107	1555-1645	5.3	21	86	1737	1.5
9	11	899104	1736-1812	5.3	23/24	86	1728	1.4
9	12	909107	1755-1850	5.2	21	85	1747	1.5
12	13	899104	1425-1505	5.2	21	84	1672	1.4
12	14	909107	1505-1600	5.1	21	83	1751	1.5
12	15	899104	1700-1750	5	21	81	1694	1.5
12	16	909107	1745-1840	5.1	21	83	1770	1.6
12	17	899104	1902-1928	2.5	21	41	816	1.4
13	18	899104	1420-1458	3.3	23/24	53	1092	1.3
13	19	909107	1456-1615	3.8	22	61	1268	2.2
			Totals	93.1		1,518	30,804	27.9

\*\* No flights were made on 10 & 11 because the UTTR was closed. 6 March flights were weather cancelled.

**Attachment 2. GPS recording for Krovar aerial spray applications on the UTTR 6-14 March 2018.targets 21, 23, 24, and Target 22. 8-16 March 2016.**

**a. Spray application pattern on Targets 21, 23, and 24.**



**b. Spray application pattern on Target 22.**



### Attachment 3. UTTR North Range Aerial Spray Weather Log 2018

Weather Data Hill AFB herbicide application					
7-Mar-18					
		Wind			
Time	Temp (°F)	Direction @ speed(kts)	Humidity (%)	Visability	Notes
7:15am	21	60@1	50	high clouds	
8:00	25	270@2.5	45	clear	
8:30	22	0@0	35		
9:00	22	0@0	36		
9:30	23	0@0	52		
9:45	23	0@0	50	#104 on target #23, 24	
10 00	23	270@2	50		
10:15	22	20@2	47	#104 off target #23, 24	
10:30	27	20@3	49		
10:45	28	220@2	48	#107 on target #21	
11 00	29	260@2	48		
11:15	33	220@2	56		
11:30	34	300@2	58	#107 off target #21	
12 00pm	37	20@2	60		
12:30	37	300@2	64		
1:00	38	340@5	64		
1:30	38	300@4	64		
1:45	38	280@4	61	#107 on target #21	
2:00	39	280@4	61		
2:15	40	280@4	60		
2:30	40	280@4	60	#107 off swath	
8-Mar-18					
		Wind			
Time	Temp (°F)	Direction @ speed(kts)	Humidity (%)	Visability	Notes
6:45am	23	350@2	67	clear	
7:30	25	350@1.4	65		
8:00	26	0@0	61		
8:15	33	0@0	61	#104 on target #23, 24	
8:30	34	0@0	61		
8:45	32	300@1	60		
9:00	32	300@1	60	#104 off target #24, 24	
9:15	34	0@0	60	#107 on target #21	
9:30	34	0@0	59		
9:45	34	0@0	59	#107 off target #21	
10 00	35	290@2	58		
10:30	37	290@1	61	#104 on target #23,24	
10:45	37	240@1	62		
11 00	38	200@1	63	#104 off target 23,24	
11:15	38	200@3	62		
11:30	39	250@3	62	#107 on target #21	
11:45	39	250@4	62		
12 00pm	40	240@5	62		
12:15	40	240@6	60		
12:30	40	240@7	60		
12:45	41	240@7	60		
1:00	41	240@7	61		
9-Mar					
		Wind			
Time	Temp (°F)	Direction @ speed(kts)	Humidity (%)	Visability	Notes
6:40am	30	20@1.9	70	clear	
7:30	29	260@1.3	70		
8:00	29	240@2	70		
8:15	30	250@2	69	#104 on target #23, 24	
8:30	30	240@2	70		
8:45	31	240@2	70	#104 off target #23,24	
9:00	32	240@1	70	#107 on target #21	
9:15	32	240@1	70		
9:30	32	240@1	70	#107 off taret #23,24	
9:45	34	240@1	70		
10:15	37	240@1	65		
10:30	39	280@2	64		
10:45	41	280@2	64		
11 00	42	280@2	64	#107 on target #21	
11:15	43	280@2	64		
11:30	44	280@2	64	#107 off target	

Date	Target	Time	Wind Dir	Wind Speed	Gusts	RH	Temp
12-Mar-18	21	0730	030	8		68	38
12-Mar-18	21	0745	040	4		68	38
12-Mar-18	21	0800	050	6		70	39
12-Mar-18	21	0815	050	8		69	40
12-Mar-18	21	0830	063	7		65	41
12-Mar-18	21	0845	060	5		65	43
12-Mar-18	21	0900	054	6		67	43
12-Mar-18	21	0915	036	6		65	45
12-Mar-18	21	0930	060	8	13	62	46
12-Mar-18	21	0945	050	6	8	63	45
12-Mar-18	21	1000	050	4	6	62	48
12-Mar-18	21	1015	063	7	9	60	49
12-Mar-18	21	1030	050	7	9	54	50
12-Mar-18	21	1045	060	6	9	53	49
12-Mar-18	21	1100	063	6	9	53	49
12-Mar-18	21	1115	063	7	9	57	50
12-Mar-18	21	1130	047	6	8	55	50
12-Mar-18	21	1145	050	5		54	51
12-Mar-18	21	1200	064	5		54	52
12-Mar-18	21	1215	022	5		53	51
12-Mar-18	21	1230	060	3		55	53
12-Mar-18	21	1245	330	5		50	56
12-Mar-18	21	1300	330	5		51	56
12-Mar-18	21	1315	350	6		49	55
13-Mar-18	24	0800	282	3		68	41
13-Mar-18	24	0815	281	3		68	41
13-Mar-18	24	0830	282	2		68	42
13-Mar-18	24	0845	303	3		68	42
13-Mar-18	24	0900	275	3		68	48
13-Mar-18	24	0915	280	3		68	48

**910 AW -- AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**JB CHARLESTON, SC 6-9 SEPTEMBER 2018**

**1. MISSION BASICS:**

- a. Installation Sprayed: JB Charleston, SC
- b. Mission Duration: 6-9 September 2018
- c. Purpose of Application: To control pestiferous populations of mosquitoes (specifically *Aedes taeniorhynchus*) and biting midges (*Culicoides* spp.)
- d. Application Date: 7 Sept 2018
- e. Time/s of Application: 2002-2150 hrs
- f. Acres Treated: 3,615 acres
- g. Project Coordinator: (b) (6), Spray Coordinator JB Charleston DSN (b) (6)
- h. Date Spray Map Last Approved: 7 Sept 2018
- i. Date of Waste Generation Letter: 30 October 2007
- j. Installation In-Briefing: (When/Where/Briefer/s): 7 Sept 2018, JB Charleston CE, briefed by MSgt (b) (6) (Pest Control NCOIC), (b) (6), Lt Col (b) (6) Lt Col (b) (6) and Maj (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Maj (b) (6)
- b. Aircrew:
  - (1) Pilots: Lt Col (b) (6) (A/C), Capt (b) (6)
  - (2) Navigators: Lt Col (b) (6), Maj (b) (6)
  - (3) Flight Engineer: MSgt (b) (6)
  - (4) Spray Operators: TSgt (b) (6), SSgt (b) (6)
- c. Maintenance:
  - (1) Spray Maintenance: TSgt (b) (6) (lead), TSgt (b) (6), TSgt (b) (6), TSgt (b) (6), AMN (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6), SrA (b) (6)
  - (3) Avionics: TSgt (b) (6)
- d. Entomologist:
  - (1) Lt Col (b) (6)

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet® EC
- b. EPA Registration Number: 5481-481
- c. Formulation Sprayed: Trumpet EC (78% naled)
- d. Gallons Pesticide Loaded: 7 Sept 2018, 30 Gallons Trumpet® EC
- e. Gallons Pesticide Applied: 7 Sept 2018 28 Gallons Trumpet® EC
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 8 gallons HAN
- h. Other Additives Used: None
- i. Application Rate: 1.0 oz/acre



**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99104
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 30 oriented straight down
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 7.3 gallons per minute
- h. Sorties: 1/1.5 hrs (application); 2/4.2 hrs (ferry)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: 500'
- c. Spray Release Altitude: 300'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 050@2 knots
  - (2) Release Altitude: 120@11 knots
- b. Temperature (Degrees Fahrenheit): 78°F
- c. Cloud Cover: partly cloudy
- d. Source: Ground observations and aircraft SCNs

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations (Maj (b) (6) )
  - (2) Results: Good coverage throughout both sprayed areas
- b. Effectiveness:
  - (1) Technique/s Used: Light traps deploy before and after spray application
  - (2) Results: JB Charleston (5 locations)

Trap data not available due to evacuation of JB Charleston with oncoming Hurricane Florence.

**8. REMARKS:** Excellent coordination and communication amongst all involved parties enabled this mission to proceed efficiently. Due to low mosquito pre-spray trap counts it was decided to spray only the section surrounding trap site (see attached spray map). Pre-spray surveillance passes were conducted at the targeted spray zone to confirm presence of obstacles, such as cranes and towers, that may affect designated spray path.

Applications proceeded without any significant functional problem or mishap, and no negative effect on wildlife was observed. Many thanks to MSgt (b) (6) (Pest Control NCOIC) and (b) (6) at JB Charleston for their help and alacrity in accomplishing this mission.

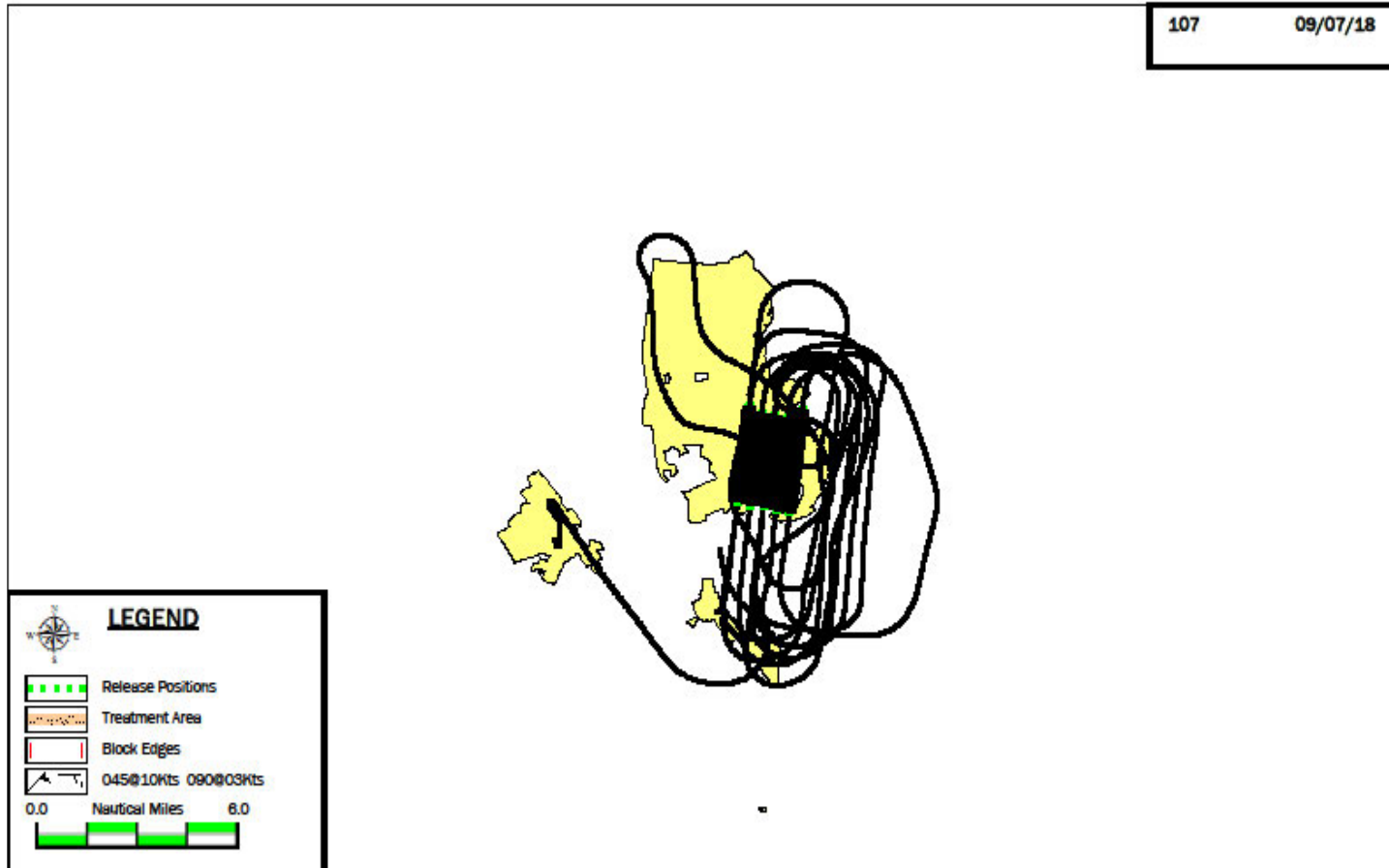
//signed//

(b) (6) , Lt Col, USAF  
**DOD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

**Attachment 1. Spray Block and aerial spray paths.** Solid lines indicate when spray was 'on'. Thin lines indicate paths of spray plane. Surveillance of the spray block was conducted prior to mission.

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09/07/18



# AERIAL SPRAY OPERATIONAL SCHEDULE

## SMOKY HILL ANG RANGE, SALINA, KS

### 6-17 Nov 2017

**Purpose/Objectives/Benefits:** Control musk thistle (*Carduus nutans*) at the Smoky Hill ANGR, to improve grazing areas, to reduce the potential of the ANG Range as a source of infestation to neighboring farms from wind-blown musk thistle seeds and to support state and local noxious weed control efforts.

#### 1. 910 AW PARTICIPANTS:

Msn Commander:	Lt Col (b) (6)	(b) (6) (b) (6) (b) (6)
	Lt Col (b) (6)	(b) (6) (b) (6) (b) (6)
Entomologists:	Lt Col (b) (6)	(in place), Lt Col (b) (6)
Pilots:	Lt Col (b) (6)	, Maj (b) (6)
	Maj (b) (6)	, Maj (b) (6)
Navigators:	Capt (b) (6)	, Lt (b) (6), Lt Col (b) (6)
	Lt Col (b) (6)	, Lt (b) (6)
Flight Engineer:	CMSgt (b) (6)	, MSgt (b) (6), MSgt (b) (6)
Spray Operators:	CMSgt (b) (6)	, MSgt (b) (6), MSgt (b) (6)
	TSgt (b) (6)	, SSgt (b) (6)
Pro Super:	SMSgt (b) (6)	(b) (6)
Spray Maintenance:	TSgt (b) (6) (Lead)	(b) (6)
	MSgt (b) (6)	, MSgt (b) (6), TSgt (b) (6), TSgt (b) (6)
	, TSgt (b) (6)	
Crew Chiefs:	TSgt (b) (6)	, SrA (b) (6)
Ele/Env:	TSgt (b) (6)	
Prop:	TSgt (b) (6)	
GAC:	TSgt (b) (6)	
GAC:	TSgt (b) (6)	
Com/Nav:	TSgt (b) (6)	, SSgt (b) (6)
AGE:	SMSgt (b) (6)	
Hydraulics	MSgt (b) (6)	

#### 2. REQUIRED ITEMS:

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, Calibration Tables/Laptop/Tablet and or Spray datasheet, O <sub>2</sub> hose extensions, Wireless Headsets (If desired)
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system cards

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### **3. SCHEDULE: (All Local Time)**

#### **6 Nov (Mon)**

0800 Showtime

1000 Support A/C Departs KYNG **MI: QENRK3532310 PPR: Not Required**

1000 Spray A/C Departs KYNG **MI: QENRK3531310 PPR: Not Required**

1200 Land KSLN x2 (Safety Brief Immediately upon Landing) and AOA training with Airfield

1400 In-brief at the Range (Galen Weins' office)

1400 Support A/C departs KSLN for KYNG

#### **7-10 Nov (Tuesday-Friday) Sunrise 0704 +1 min later each day**

0500 Show time \*as needed

0645: Depart KSLN (Multiple Sorties)

#### **11 Nov (Saturday) Swap out**

0800 Depart for Youngstown

1100 Arrive at Youngstown

#### **12 Nov (Sunday) Swap out **MI: QENRK3531310 PPR: Not Required****

1200 Depart KYNG

1400 Land KSLN

#### **13- 16 Nov (Monday-Thursday)**

0500 Show time \*as needed

0645: Depart KSLN (Multiple Sorties)

#### **17 Nov (Friday) Redeploy**

1100 Support Aircraft arrives at KSLN

1200 Spray Aircraft departs for KYNG

1200 Support Aircraft departs for KYNG

#### **RANGE SCHEDULE: (All Times Local)**

7-8 Nov 0700-0940

9 Nov 0700-1140

10-16 Nov 0700-1200

### **4. AIRCRAFT & SPRAY CONFIGURATION:**

**Aircraft:** AF89-9107

**System:** MASS: #3 SP3G (3-Module System) with Fuselage Booms

**Nozzle/Orientation:** Raindrop Nozzles; Pointed Back (R-20)

**Number of Nozzles:** 17 Total (8 left 9 right)

## 5. **SPRAY LOADING:**

Entomologist will determine quantity to load and work with the local pest managers to determine the application rate. Please see entomologist for final flow spray parameters as these numbers are subject to change depending on user requirements.

### **Furnished by Installation:**

177 gallons of Milestone is required to treat the proposed area  
Hazardous Waste Disposal

### **Mixing (each gallon of mix contains):**

0.71 Ounces of Milestone®  
0.35 Ounces of AirexDC® drift retardant  
126.9 Ounces of Water

### **First load (1800 + Sump of 75 gallons for total mix of 1875)**

Fill to 1800 gal water as shown on quantity indicator

Total Water Added = 1,875 gallons

Upload 10.5 gal/Milestone® + 5 gal of AirexDC®

Agitate by recirculating each mix for approximately 15 minutes. All tanks should be as close to empty as possible after each sortie

**Additional loads:** use “each gallon” values given above to determine proper mix (sump is full of good mix and not included in calculation)

## 6. **SPRAY PARAMETERS:**

Location:	All prescribed areas
Herbicide:	Milestone (active ingredient: “Aminopyralid” as Triisopropanolammonium salt of 2-pyridine carboxylic acid, 4-amino-3,6-dichloro-, 40.6%); EPA Registration Number 62719-519
Area to be treated:	4,522 Acres
Swath Width:	100 feet
Flow Rate:	326 GPM or TBD
Application Rate:	5 oz of Milestone in 7 gal of finished spray/acre (water with 0.71 oz of Milestone® and 0.35 oz of AirexDC®)
Altitude:	100’ AGL
Ground Speed:	200 Knots
Formulas:	Flow Rate = Gal/Time in Minutes Acreage Sprayed = Total Sec x 338 x Swath Width / 43560

## 7. **AIR TO GROUND RADIO FREQUENCIES:**

ATIS	120.15
Salina Ground	121.9
Salina Tower:	119.3/257.7
Unicom	122.95
NG Ops	49.95/304.6
Smokey Range	139.7/316.9/304.9
KCC	134.9/363.2 Expect IFR clearance, advise them you are departing R3601



8. **TRANSPORTATION:** Hertz Rental Agency (785)-827-7237; Fax (785)-827-3160  
Vehicles will be at Avflight FBO 1200L 6 NOV 17.  
Hertz will pick up vehicles at FBO on 17 NOV at 0900.

C. Marino 1 Van- Confirm No. H47003159F0  
Root 1 Van- Confirm No. H4702111065  
Ross 1 Van- Confirm No. H47018354B8

Fuel for U Drives will be provided by Smokey Hill Range.

Pilots/Navs U DRIVE VAN  
Entos. U DRIVE 6 PAX TRUCK  
MX U DRIVE (2) RANGERS

9. **LODGING:** Hampton Inn 401 West Schilling Road, Salina, Kansas, 67401  
POC: (b) (6) (b) (6) 785-823-9800 email: (b) (6)

Courtyard by Marriot Salina, 3020 Riffel Drive, Salina, Kansas, 67401  
POC: (b) (6) 785-309-1300 email: (b) (6)

\*\*OPS reservations at Hilton. MX reservations at Marriot\*\*

### **CONTACTS:**

#### **Smoky Hill Range, Salina, KS (DSN 743- Com 785)**

Range Scheduling DSN 743-8547 Com 316-759-8547  
- (b) (6) : DSN (b) (6) Com (b) (6)  
- Range Website: <https://cseaf.eglin.af.mil/CSE/home.aspx>

#### **Natural Resources and Range Coordinator**

- (b) (6) : DSN (b) (6) Com (b) (6) ; Cel (b) (6)

#### **Salina Airport Authority: (785) 827-8077**

- (b) (6) Executive Director Cel (b) (6)  
- **Supplies gate security cards to MX/OPS/SF enter the north ramp**  
- (b) (6) – Operations Manager Cel (b) (6)  
- (b) (6) –Office Manager

#### **AV Flight FBO**

- (b) (6) FBO Manager Cel (b) (6)  
- FBO Office (b) (6) Fax x0931

#### **(4) ARMY NATL GUARD HELO UNIT:**

- OPS OFFICER, CW4 (b) (6) : DSN (b) (6) ; COM (b) (6)

#### **(6) STATE WILDLIFE REP:**

- (b) (6) (DIST FISHERY BIOLOGIST), (b) (6)

#### **(7) DOW ELANCO REP: (b) (6) , (b) (6)**

#### **SALINE COUNTY FARM/ NOXIOUS WEED DIR:**

- (b) (6) , (b) (6) ; FAX (913) 826-6534



**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
SMOKY HILL AIR NATIONAL GUARD RANGE, SALINA, KS, 6-17 NOV 2017**

**1. MISSION BASICS:**

- a. Installation Sprayed: Smoky Hill Air National Guard Range, Salina KS
- b. Mission Duration: 6-17 November 2017
- c. Purpose of Application: Management of the noxious weed musk thistle
- d. Application Dates: See Attachment 1
- e. Times of Application (Local): See Attachment 1
- f. Acres Treated: 3,236
- g. Flying Data:
  - (1) Spray sorties/hours: 14/12.7
  - (2) Ferry sorties/hours: 4/11.7
  - (3) Support sorties/hours: 6/17.3
- h. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) Natural Resource Manager, DSN 743-6557 & Capt (b) (6) Environmental Coordinator, DSN (b) (6)
- i. Date Spray Map Last Approved: 6 Nov 2017
- j. Installation In-Briefing: (When/Where/Briefer/s): 6 Nov 2017/Salina Regional Airport /Lt Col (b) (6) , Lt Col (b) (6), Lt Col (b) (6), Capt (b) (6) Mr. (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Entomologists (certified applicators): Lt Col (b) (6) Lt Col (b) (6)
- c. Aircrew (superscript 1 or 2 indicated first or second half of the mission):
  - Pilots: Lt Col (b) (6) , Maj (b) (6)  
Maj (b) (6) , Maj (b) (6)
  - Navigators: Capt (b) (6) , 1Lt (b) (6) Lt Col (b) (6)  
Lt Col (b) (6) , 1Lt (b) (6)
  - Flight Engineers: CMSgt (b) (6) , MSgt (b) (6) MSgt (b) (6)
  - Spray Operators: CMSgt (b) (6) , MSgt (b) (6) MSgt (b) (6)  
TSgt (b) (6) , SSgt (b) (6)
- c. Maintenance:
  - Pro Super: SMSgt (b) (6)
  - Spray Maintenance: TSgt (b) (6) (Lead), MSgt (b) (6) MSgt (b) (6) TSgt (b) (6)  
(b) (6) , TSgt (b) (6) , TSgt (b) (6)
  - Crew Chiefs: TSgt (b) (6) , SrA (b) (6)
  - Ele/Env: TSgt (b) (6)
  - Prop: TSgt (b) (6) , TSgt (b) (6)
  - GAC: TSgt (b) (6) , TSgt (b) (6)
  - Com/Nav: TSgt (b) (6) , SSgt (b) (6)
  - AGE: SMSgt (b) (6)
  - Hydraulics: MSgt (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Milestone® (active ingredient: “Aminopyralid” as Triisopropanolammonium salt of 2-pyridine carboxylic acid, 4-amino-3,6-dichloro-, 40.6%)
- b. EPA Registration Number: 62719-519
- c. Formulation Sprayed: 5 oz/acre Milestone + 2.5 oz/acre of AirexDC in 7 gallons of water
- d. Gallons Pesticide Mix Loaded: 22,402
- e. Gallons Pesticide Mix Applied: 22,402
- d. Gallons of pesticide used: 134 Milestone
- g. Gallons and Name of Flush Used: 400 gal water
- h. Other Additives Used: 65.5 gal of AirexDC

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99107
- b. Spray System (Modules Used) and System ID #: 3
- c. Spray System Configuration: 3-Module System/ UHV Fuselage Booms
- d. Nozzle Type/Size: LV Fuselage
- e. Nozzle Orientation & Number Used: 18 – raindrop nozzles, oriented straight back.
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 326 gallons per minute.

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 100'
- b. Spray Off-set: None
- c. Spray Release Altitude: 100' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. See Attachment 2.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique Used: Visual observations by ground party of approximate 100 ft swath on all passes
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Techniques Used: Monitoring of weed emergence in spring
  - (2) Results: Will be determined this spring by range personnel

**8. REMARKS:**

- a. A total of 4,522 acres were targeted for this 2017 musk thistle management project. However, weather conditions were often not favorable during this year's mission, and at the end of the 12-day work period, only a single block was treated (see Attachment 3). Treated areas made up 72% of the entire area as originally submitted. Weather problems included frost on the wings, high winds, and low ceilings. With no external ice removal resources available at Salina Regional Airport, the only course of action is to wait until the frost disappears naturally; subsequently, the first sorties were delayed on 8-10 November. The following week, low ceilings (spray minimums are 1,500 ft ceiling and 5 miles visibility)

forced weather cancellations on 13-14 November. Range times were excellent this year with plenty of time to have completed the mission had the weather cooperated. Spray missions at other installations prevent us from shifting this project to earlier in the year. Thus, we will plan to be available in early November 2018, to continue this important project.

- b. We received anecdotal positive feedback regarding the efficacy of last year's application. When scouting for this year's treatment area, it was reported that it was quite clear where infestations began. That is, they began at the edge of the previous year's application. Milestone, therefore, appears to be working well as part of the Range's integrated pest management plan for musk thistle control.
- c. Many thanks to the Smoky Hill Range personnel that supported this project, we had excellent support all-around and, in particular, great vehicles. A special thanks to Mr. (b) (6) for his superb planning and sound decision-making regarding acceptable environmental parameters during sprays. The 757<sup>th</sup> anticipates availability for continuing this project in 2018.

//signed//

(b) (6)

, Lt Col, USAF

**DOD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

Attachment 1: Summary Spray Chart

**6-17 November 2017**

**SPRAY OPERATIONS SUMMARY FOR SMOKY HILL AIR NATIONAL GUARD RANGE**

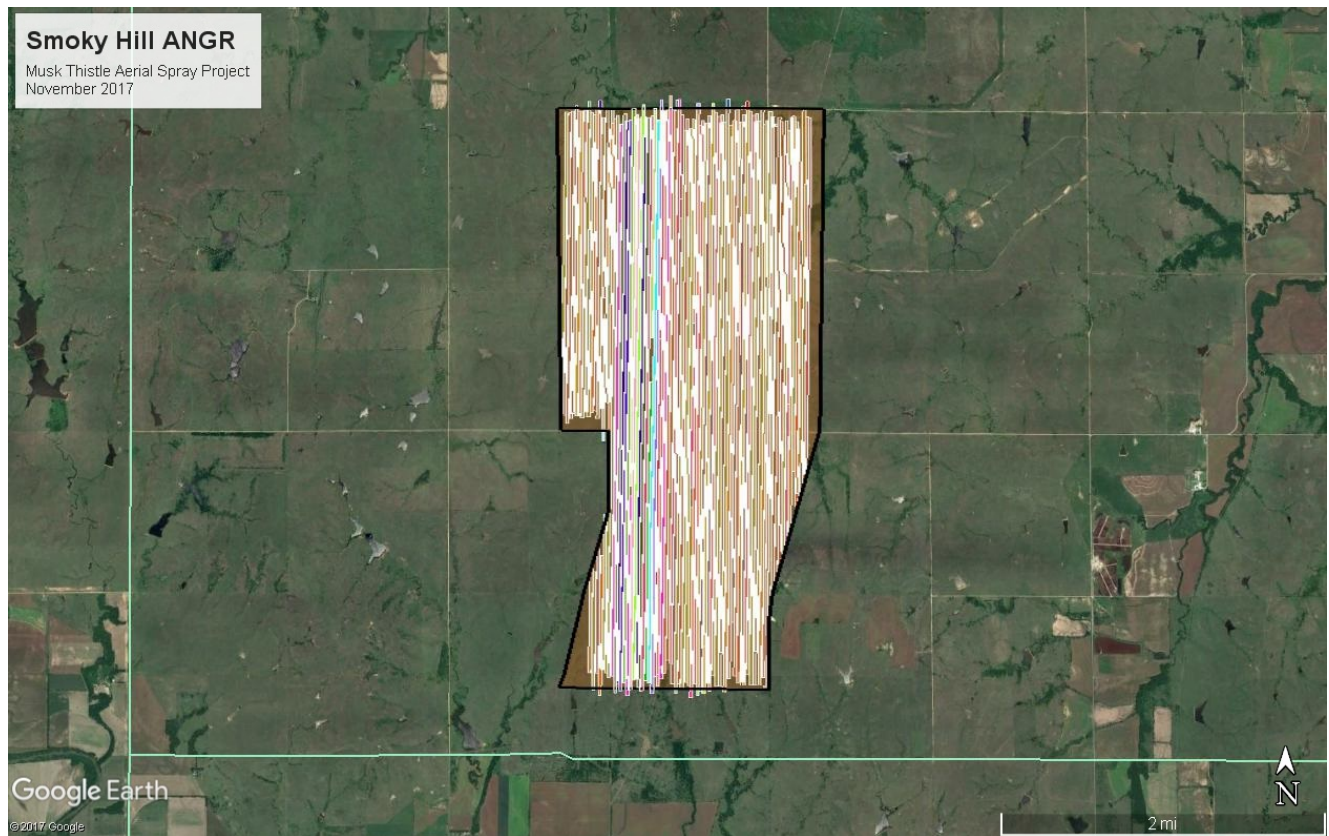
<b>DATE Nov</b>	<b>SORTIE #</b>	<b>TIMES</b>	<b>SPRAY ON TIME (sec)</b>	<b>GALLONS OF MILESTONE</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>FLYING HOURS</b>
7	1	0745-0905	330	12.5	255	1712	1.3
8	2	0945-1025	309	10.5	240	1648	0.7
8	3	1110-1150	297	9.5	230	1615	0.7
8	4	1240-1320	297	9.5	230	1609	0.7
8	5	1412-1500	323	9.5	227	1581	0.8
9	6	0848-0940	301	9.5	233	1643	0.9
10	7	0840-0935	344	10	266	1808	0.9
10	8	1020-1100	324	10.5	251	1737	0.7
10	9	1145-1255	334	10	259	1801	1.2
15	10	0715-0755	0	0	0	0	0.7
15	11	0830-0930	338	11	251	1809	1.0
16	12	0712-0812	345	10.5	261	1810	1.0
16	13	0848-0940	333	10.5	252	1782	0.9
16	14	1025-1135	362	10.5	281	1848	1.2
Totals	14	-	70.6 min	134	3,236	22,402	12.7

**Attachment 2. Range Aerial Spray Weather Log 2017. ALT = at release altitude**

Date	Target	Time (L)	Winds (ALT)	Winds ground	Temperature	Relative humidity
7-Nov	West block	610	-	360/4	35	60
7-Nov		652	-	360/6	35	60
7-Nov		715	-	360/8	32	60
7-Nov		755	300/7	360/7	33	65
8-Nov	West block	615	-	360/1	27	65
8-Nov		745	-	360/1	33	55
8-Nov		1000	-	280/1	40	47
8-Nov		1100	360/2	140/2	45	45
8-Nov		1200	140/2	180/3	55	35
8-Nov		1300	180/2	220/3	40	32
8-Nov		1400	180/5	200/4	50	35
9-Nov	West block	630	-	010/2	34	46
9-Nov		918	360/10	010/10	34	45
10-Nov	West block	800	-	100/6	30	50
10-Nov		916	140/8	140/8	34	55
10-Nov		1030	140/6	140/6	36	53
10-Nov		1200	140/5	140/5	37	50
13-Nov		Weather	cancelled			
14-Nov		Weather	cancelled			
15-Nov	West block	715	-	340/4	40	80
15-Nov		854	335/13	340/8	46	63
16-Nov		720	160/5	160/5	35	79
16-Nov		807	150/7	160/2	45	60
16-Nov		1015	160/12	-	-	-



**Attachment 3. GPS track recording showing the application coverage of the Milestone herbicide treatment on the Smoky Hill ANGR, KS 7-16 Nov 2017.**





**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
GRAND FORKS AFB, ND, 11-15 JUNE 2018**

**1. MISSION BASICS:**

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 11-15 June 2018
- c. Purpose of Application: Control of nuisance and vector mosquito species through application of larvicide
- d. Application Dates: 12-13 June 2018
- e. Times of Application (Local):
  - (1) Sortie 1 (12 Jun): 0925-1020
  - (2) Sortie 2 (12 Jun): 1120-1215
  - (3) Sortie 3 (13 Jun): 0630-0740
  - (4) Sortie 4 (13 Jun): 0830-0940
- f. Acres Treated: 1,607
- g. Flying Data:
  - (1) Spray sorties/hours: 4/5.2
  - (2) Flush sorties/hours: 0/0
  - (2) Ferry sorties/hours: 2/6.1
- h. Project Coordinator (Name/Rank, Title, Phone #): MSgt (b) (6), Pest Management, DSN (b) (6)
- i. Date Spray Map Last Approved: 11 June 2018
- j. Installation In-Briefing: (When/Where/Briefer/s): 11 June 2017 at 319 CE, briefed by Lt Col (b) (6)

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Maj (b) (6) (A/C), Capt (b) (6)
  - (2) Navigator: Lt Col (b) (6)
  - (3) Flight Engineer: MSgt (b) (6)
  - (4) Spray Operators: MSgt (b) (6), SSgt (b) (6), TSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: MSgt (b) (6) (lead), TSgt (b) (6), TSgt (b) (6), (b) (6) TSgt (b) (6), Amn (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6), TSgt (b) (6)
  - (3) Avionics: SSgt (b) (6), TSgt (b) (6)
- d. **Entomologist:** Maj (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Altosid® Liquid Larvicide Concentrate (SR20)
- b. EPA Registration Number: 2724-446
- c. Formulation Sprayed: 0.35 ounces Altosid® per gallon with water
- d. Other Additives Used: 0.25 ounces AirexDC™ per gallon
- e. Gallons Pesticide Mix Loaded: 3,645
- f. Gallons Pesticide Mix Applied: 3,645
- g. Gallons and Name of Flush Used: 130 gal water
- h. Application Rate: 2.3 gal/acre mixed formulation, 0.80 oz/acre active ingredient (Altosid®)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 89-9104
- b. Spray System (Modules Used) and System ID #: MASS 5 SP2G
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: R-20 raindrop nozzles
- e. Nozzle Orientation & Number Used: 12 nozzles oriented straight back
- f. Flow Rate: 211 gallons per minute.

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 200'
- b. Spray Off-set: None
- c. Spray Release Altitude: 100' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. See Attachments 1 and 2.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations.
  - (2) Results: Adequate coverage through sprayed area (Attachment 3)
- b. Effectiveness:
  - (1) Technique/s Used: Larval sampling for treatment justification. Average 12 larvae/dip (MSgt Baksh, personal communication).
  - (2) Results: Because of the nature of the pesticide used (insect growth hormone), larvae are not immediately killed but instead die in the pupal stage. Therefore, post-treatment sampling must occur after the treated larvae have pupated. Pupae are then collected and observed for emergence of adults. This generally will take a week or more; as such, results cannot be determined at this time.

**8. REMARKS:**

- a. We would like to thank the Air Wing for a very nice reception at Grand Forks. MSgt (b) (6) met the spray team upon arrival and had arranged for vehicles and billeting.
- b. There was an excellent inbrief at the MSG conference room where we had a good discussion about the larvicide project and began a separate discussion on increasing the adult mosquito control spray area (conducted later in the summer) to include a buffer area outside of the base fence line. The buffer area will provide a longer period of biting relief to the base population and better justify the use of a C130 which is intended to be used for larger areas. The current proposed area is approximately 5,000 acres. Ideally, an appropriate size spray block for a C130 spray would be double that. A smaller area (e.g. 8,000 acres) may also be discussed. According to our historical information, July 2014 was the last time an area outside the base boundary was sprayed (11,500 acres).
- c. Weather initially appeared to be of concern but winds began from the west and then shifted to the east allowing the sprayers to target the spray blocks that were appropriately aligned for into the wind applications. There were no significant issues observed during this treatment for control of larval mosquitoes. Light winds on the second day allowed for the mission to be completed without using the weather day. During future inbriefs, it would be prudent to discuss what the policy will be for situations where buildings or parking lots are included in the spray block. In this case, the team decided not to spray such areas. Additionally, one area that was initially planned to be sprayed was not treated in its entirety as it was observed that the area was open water where mosquitoes typically do not breed. Instead, the northern and southern borders of the area were treated where larvae may have been present. During future inbriefs, it would also be worthwhile to question the Minot AFB planners about miscellaneous issues that they may not have initially considered. For example, there was runway/taxiway maintenance where people and vehicles were in the spray area. Another situation was

that the Fire Department was training with the aircraft hull generating flame and smoke. These things should be delayed or discussed prior to sprays for next year.

//signed//

(b) (6), Lt Col, USAF  
**DOD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

//signed//

(b) (6), Maj, USAF  
**DOD CERTIFIED PEST MANAGEMENT PROFESSIONAL**



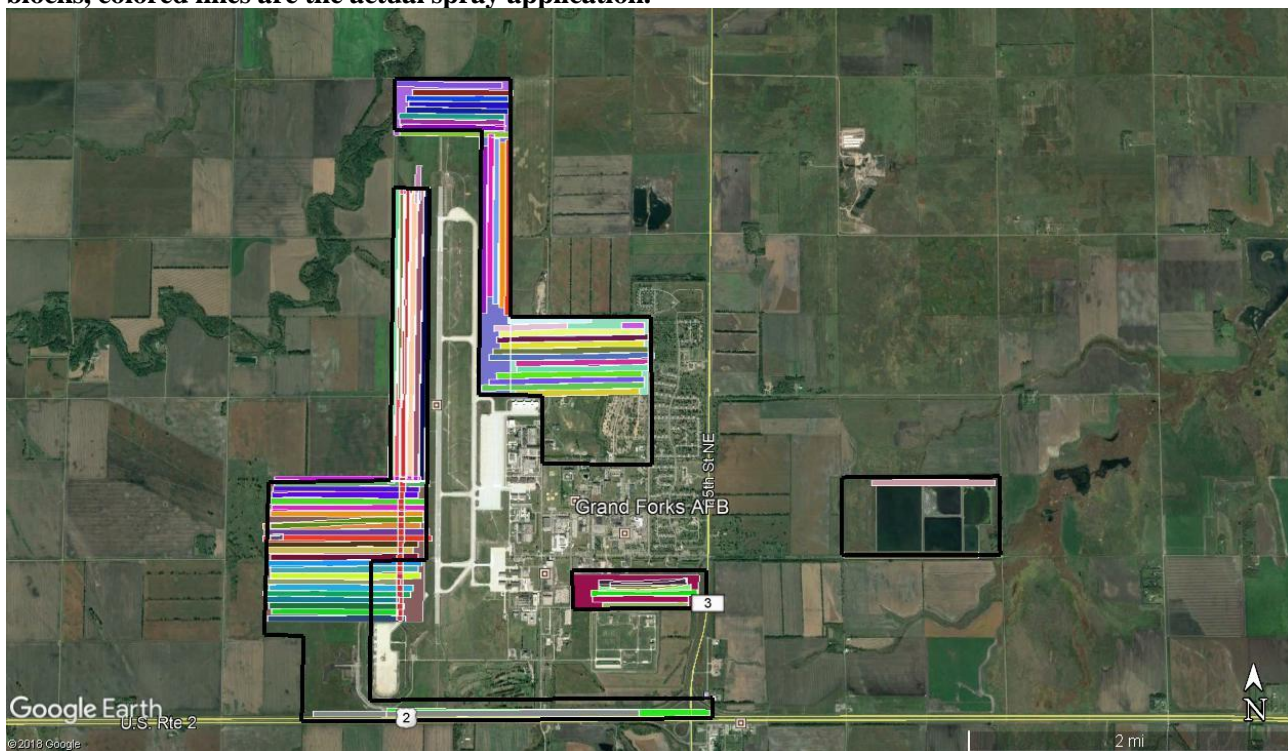
**Attachment 1: Ground weather observations for Grand Forks AFB, ND during spray operations, 12-13 June 2018.**

DATE June	Sortie	Time (local)	Wind (kts)	Wind Direction	Relative Humidity (%)	Temp (°F)	Conditions
12	1	0915	4.0	300°	60	59	Overcast
12	2	1124	6.0	200°	55	63	Clear
13	3	0700	6.2	270°	55	62	Clear
13	4	0831	5.0	270°	46	69	Clear

**Attachment 2: Weather observations for Grand Forks AFB, ND at altitude (100' AGL) during spray operations, 12-13 June 2018.**

DATE June	Sortie	Time (local)	Wind (kts)	Wind Direction	Conditions
12	1	0925	6	280°	Overcast
12	2	1120	11	220°	Clear
13	3	0630	8	272°	Clear
13	5	0840	6	270°	Clear

**Attachment 3. Areas sprayed at Grand Forks AFB, 12-13 June 2018. Black outlines are the proposed spray blocks, colored lines are the actual spray application.**



**AERIAL SPRAY OPERATIONAL SCHEDULE**  
**CAMP BLANDING MASS CONFIGURATION TRAINING**  
**JACKSONVILLE NAS, FL**  
**13-17 Aug 2018**  
**QENRK3531225/PPR: 081301**

**OBJECTIVE/PURPOSE/BENEFIT:** The 910<sup>th</sup> Aerial Spray Unit will be analyzing efficacy of aerial sprays to control *Aedes aegypti* (vector mosquito for Zika virus, dengue, and yellow fever) at Florida National Guard's Camp Blanding, Joint Training Center on the MOUT South Range utilizing the mock urban setting. The trials will be conducted at with collaborators from U.S. Department of Agriculture's Center for Medical and Veterinary Entomology, Navy's Entomology Center of Excellence, Manatee County Mosquito Control District, and AMVAC. This mission will provide real-world training for aerial spray air crew, entomologists, and maintenance personnel with the goal of mission readiness for interrupting Zika virus transmission. Investigate the Flying will be done by the U.S. Air Force Reserve's Aerial Spray Unit.

**1. 910 AW PARTICIPANTS:**

Msn Commander:	Maj (b) (6)	(in place/no lodging)
Entomologists:	Lt Col (b) (6)	(Test Director, in place),
	Lt Col (b) (6)	(in place)
Pilot:	Lt Col (b) (6)	, Capt (b) (6)
Navigator:	1Lt (b) (6)	
Flight Engineer:	MSgt (b) (6)	
Spray Operators:	SMSgt (b) (6)	(IL), MSgt (b) (6), SSgt (b) (6)
Spray Maintenance:	MSgt (b) (6)	(LEAD), MSgt (b) (6), TSgt (b) (6), TSgt
	(b) (6)	, AMN (b) (6)
Crew Chiefs:	MSgt (b) (6)	, SrA (b) (6)
Avionics:	TSgt (b) (6)	

**2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, Calibration Tables/Laptop/Tablet and or Spray datasheet, O <sub>2</sub> hose extensions, wireless headsets.
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios, Wingman system cards



**3. SCHEDULE (All Local Time):**

**PPR: 081301**

**13 Aug (Monday)**

0900 Showtime

1100 Depart KYNG

1330 Land KNIP

1430 Weather decision for Tuesday followed by loading and calibration

**14 Aug (Tuesday)** 0653 Sunrise

0600 Showtime and weather decision

0800 Range time begins (Range time is all day, we will attempt to complete the 2 trials by noon, but afternoon is an option). 2 trials with minimum of 1.5 hr separation. Over the water training or return to KNIP.

1200 Land KNIP

**15 Aug (Wednesday)**

0600 Showtime and weather decision

0800 Range time begins (Range time is all day, we will attempt to complete the 2 trials by noon, but afternoon is an option). 2 trials with minimum of 1.5 hr separation. Over the water training or return to KNIP.

1200 Land KNIP

**16 Aug (Thursday)** weather backup or training day

0600 Showtime and weather decision

0800 Range time begins (Range time is all day, we will attempt to complete the 2 trials by noon, but afternoon is an option). 2 trials with minimum of 1.5 hr separation. Over the water training or return to KNIP.

1200 Land KNIP

**17 Aug (Friday)**

0800 Showtime

1000 Depart KNIP

1230 Land KNIP

\*\*\*\*\*Note\*\*\*\*\* Scheduled Range times until 1700 Monday-Thursday should afternoon work be necessary.

#### 4. AIRCRAFT & SPRAY CONFIGURATION:

**Chemical:** Dibrom® (EPA Reg. No. 5481-480) **Signal word:** Danger  
**MASS:** MASS 4; SP2  
**Gallons loaded:** 60 gallons  
**Flow Rate:** 3.63 GPM  
**Application Rate:** 1.0 oz/acre  
**Flush:** Highly Aromatic Naptha (HAN)  
**Altitude:** 150'  
**Airspeed:** 200 KNTS  
**Swath Width:** 1,000 feet  
**Nozzle/Orientation:** ULV 8003 Tee Jet Flat Fan / Straight Down  
**Number of Nozzles:** 17  
**Aircraft:** 90-9107  
**Offset:** 500' upwind or to be determined based on environmental parameters

#### 5. TRANSPORTATION:

**Pick Up/Return:** Enterprise / JAX-Naval Air Station / NAS JAX Terminal  
NAS Jacksonville, FL 32212 / PHONE: (904)772-7007  
13 AUG 18 1500L / 17 AUG 18 1000L

1. 7-PAX Van / Confirm # : 1170417132 / Entos
  2. 7-PAX Van / Confirm # : 1170417091 / Officer Crew
  3. 7-PAX Van / Confirm # : 1170417058 / Enlisted Crew
  4. 7-PAX Van / Confirm # : 1170417014 / Spray MX-TSgt Chad Conroy
  5. 7-PAX Van / Confirm # : 1170417188 / MX
- (Reservations under Kacie Chiappini-Change to driver / Use Confirm # when picking up)

#### 6. LODGING:

**17 rooms reserved- They will need the tax exempt form that will be in the binder**

**Property:** Courtyard by Marriott Jacksonville Orange Park  
**Property Address:** 610 Wells Rd, Orange Park, FL 32073  
**Property Phone:** 904-854-1500  
**Group Name:** 910 AW/ 757 AS Aerial Spray Group  
**POC:** (b) (6) 904-854-1500 (b) (6)

#### 7. CONTACTS:

##### AIR TO GROUND RADIO FREQUENCIES:

NIP Ops	137.775	310.2
NIP Twr	120.0	340.2
NIP Gnd	128.6	336.4
ATIS	281.0	
PMSV	343.5	
Blanding Range Control	134.10	277.45 sqwk 4000 (contact every 30min)
Keystone Field (42J)	122.7	

**Naval Air Station Jacksonville, FL (NAS JAX) DSN: 942-XXXX; COM: (904) 542-XXXX**

PPR:	DSN 942-2511	(904)542-2511
Transient line office:	DSN 942-3843	
Wx, NAviation Frct Cntr:	DSN 564-2594	(757) 444-2594
Tower:	DSN 942-2516	

**Camp Blanding, FL DSN: 822-XXXX; COM: (904) 682-4XXX**

Camp Blanding Joint Training Center, Range Control

Range Operations:(Radio Room) (904) 682-3121

Airspace:	x3824	SSG (b) (6)	
		(b) (6)	(b) (6)

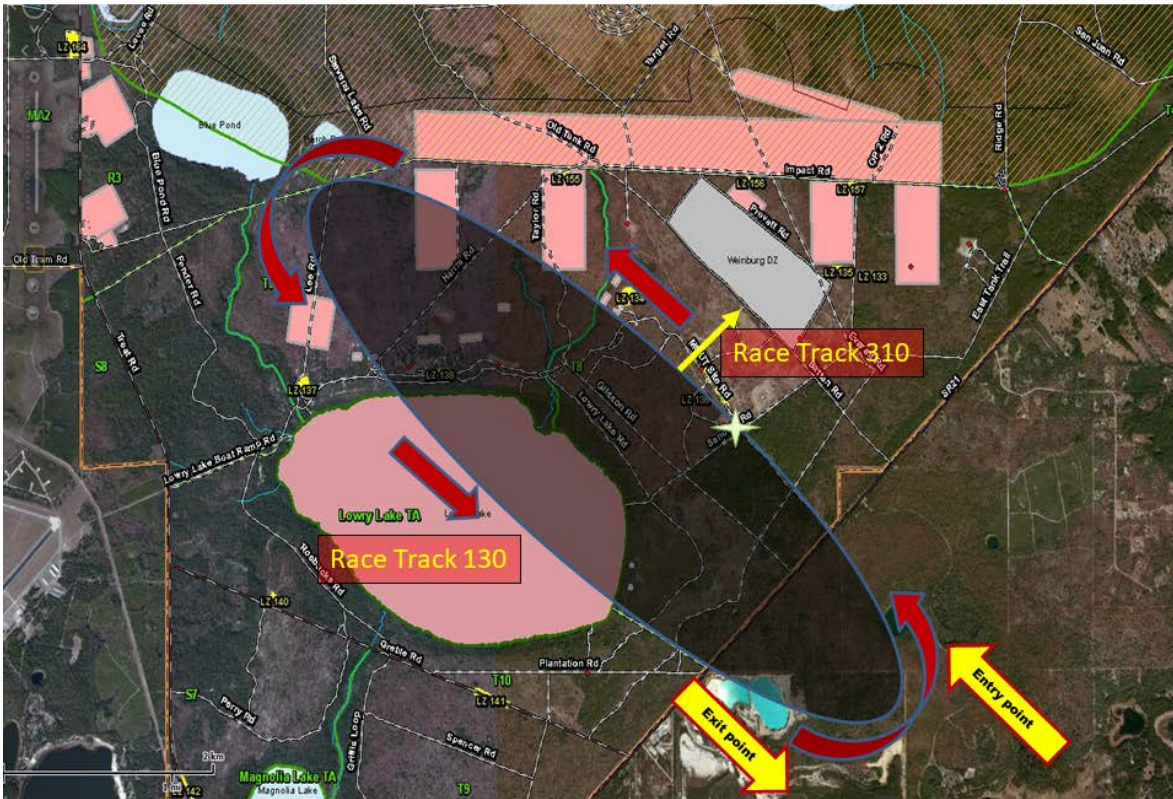
Environmental Compliance Coordinator:

**Youngstown ARS OH: DSN: 346-XXXX; COM: (330) 609-XXXX**

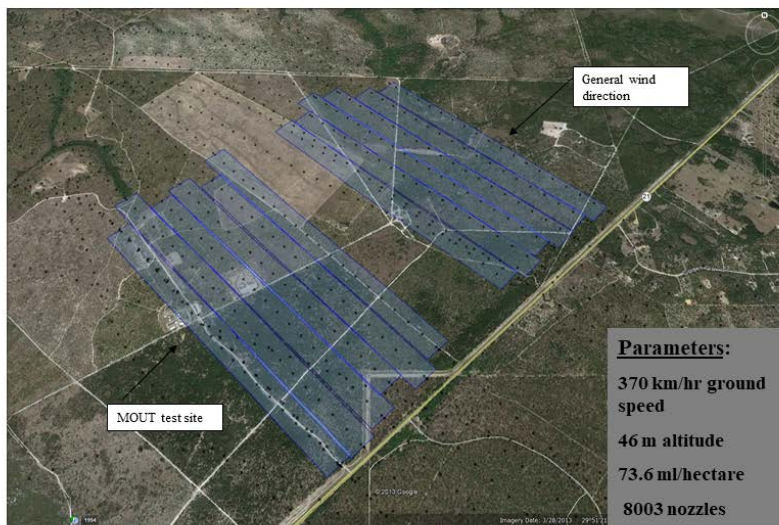
910 AW/CC:	x1243	
Command Post	x1315	FAX x1161
PA:	x1236	FAX x1022
OG/CC:	x1257/1179	
Safety	x1391	
Base Ops:	x1182	
SOF Desk:	x1069	FAX: x1371
757 AS/DO:	x1793	
757 AS Admin:	x1239	FAX x1657
757 AS Spray Office:	x1638/1111	FAX x1616
910 MXG/CC:	x1225	
910 LG/LGM:	x1352	
Maintenance Control:	x1348	
Spray Maintenance:	x1132/1586	
910 LG/LGL:	x1137	

## 8. RANGE PLANNING:

2. Example flight ellipse to MOUT site showing entry and exit. Other options are available to meet Range Control requirements and de-conflict with any other users.



## ***Aircraft flight pattern***







DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION

CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
JB CHARLESTON, 15-19 May 2018

1. MISSION BASICS:

- a. Installation Sprayed: JB Charleston, SC
- b. Mission Duration: 15-19 May 2018
- c. Purpose of Application: Control of nuisance and vector salt marsh mosquito species on the Naval Weapons Station area of JB Charleston
- d. Application Dates: 16 May 2018
- e. Times of Application (Local): 1940-2150(Zulu)
- f. Acres Treated: 17,856
- g. Flying Data:
  - (1) Spray sorties/hours: 1/2.2
  - (2) Ferry sorties/hours: 4/4.1
- h. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) , Environmental/Spray Coordinator, DSN (b) (6)
- i. Date Spray Map Last Approved: 16 May 2018
- j. Installation In-Briefing: (When/Where/Briefer/s): 16 May 2018 at CE, briefed by (b) (6) (b) (6) , Maj (b) (6) and Lt Col (b) (6)
- k. Mission Identifier: QENRK3531135

2. OPERATIONAL:

- a. **Mission Commander:** Maj (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Capt (b) (6) (A/C), Lt Col (b) (6)
  - (2) Navigators: Lt Col (b) (6) , Lt Col (b) (6)
  - (3) Flight Engineers: SMSgt (b) (6) , MSgt (b) (6)
  - (4) Spray Operators: CMSgt (b) (6) , SMSgt (b) (6) , MSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) (Lead), TSgt (b) (6) , TSgt (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6) , SSgt (b) (6)
  - (3) Avionics: SSgt (b) (6)
- d. **Entomologist:** Lt Col (b) (6)

3. PESTICIDE:



- a. Trade Name: Trumpet® EC (78% a.i. naled)
- b. EPA Registration Number: 5481-481
- c. Additives Used: None
- d. Gallons Pesticide Loaded: 120
- e. Gallons Pesticide Applied: 120
- f. Gallons and Name of Flush Used: 10 gallons H.A.N. (Highly Aromatic Naphtha)
- g. Application Rate: 0.85 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 90-9108
- b. Spray System (Modules Used) and System ID #: SP2G
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: 8003 Tee Jet
- e. Nozzle Orientation & Number Used: 27 nozzles oriented straight down
- f. Flow Rate: 6.2 gal/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: none'
- c. Spray Release Altitude: 300' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:** Wind (ground) 170° @ 3.9 kts, Wind (at altitude) 170° @ 8 kts, Temperature 75° F, 69% RH

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations.
  - (2) Results: Adequate coverage through sprayed area
- b. Effectiveness:
  - (1) Technique/s Used: Pre- and post-spray surveillance was conducted using CDC light traps.
  - (2) Results:

Location	Trap Type	Pre-Spray (15 May)	Post-Spray (18 May)	% Reduction
Spillway	CDC	465	696	-32.0%
Golf Course	CDC	210	48	77.1%
Horse Stable	CDC	312	28	91.0%
Hooker Lake	CDC	61	N/D	N/A

**REMARKS:** This application is the first adulticide spray mission conducted at the Naval Weapons Station at JB Charleston during 2018. Prior to application, the spray system was calibrated to ensure proper flow rate. No significant technical problems were encountered

during this application, however poor mosquito control was evidenced at the dredge spoil location, which is on the south end of the block. We speculate that control was poor at this location because prevailing winds were from the south and no offset was used, despite being requested. In essence, it is apparent that we basically missed the target. While “painting the box”, i.e. not spraying outside of target area to account for meteorological conditions may seem intuitive, in future we must stress to aircrew the need for proper offsets. Reasonable levels of control were obtained elsewhere on station. Because of the large dredge spoil and marshlands associated with the Naval Weapons Station, future larvicide operations are being considered. While we appreciate the sincere support we encountered from ALL sections at JB Charleston, special thanks goes to Tony Mincey and MSgt Winter for their thorough coordination at all levels.

//signed//

**Lt Col (b) (6), USAF**  
**DOD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

Attachment 1. Area sprayed at JB Charleston, SC, 16 May 2018. Green lines indicate individual swaths.



**910 AW AERIAL SPRAY UNIT POST-MISSION REPORT  
MINOT AFB AND CITY OF MINOT, N.D. – ADULT MOSQUITO  
CONTROL 16-20 July, 2018**

**1. MISSION BASICS:**

- a. Installation Sprayed: Minot AFB and Cities of Minot and Burlington, ND
- b. Mission Duration: 16-20 July 2018
- c. Purpose of Application: Control adult nuisance and vector mosquitoes
- d. Application Date: 17 July 2018
- e. Time of Application (Local): 2145-0015 (17 July)
- f. Acres Treated: 12,183
- g. Project Coordinator/s (Name/Rank, Title, Phone #): (b) (6) , Minot AFB Pest Management Shop, DSN (b) (6) ; (b) (6) , City of Minot Public Works
- h. Date Spray Map Last Approved: 17 July 2018
- i. Date of Waste Generation Letter: 22 June 2004
- j. Installation In-Briefing: (When/Where/Briefer/s): Minot AFB CE, Lt Col (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Certified PMP/s (Category 11): Lt Col (b) (6) , Lt Col (b) (6)
- c. Aircrew:
  - 1) Pilots: Lt Col (b) (6) , Capt (b) (6)
  - 2) Navigators: Lt Col (b) (6) , Maj (b) (6)
  - 3) Flight Engineers: MSgt (b) (6)
  - 4) Spray Operators: SMSgt (b) (6) , MSgt (b) (6) TSgt (b) (6)
- d. Safety Briefer: Lt Col (b) (6)
- e. Spray Maintenance: TSgt (b) (6) (lead), TSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6) , SSgt (b) (6)
- f. Spray Ground Monitors: Lt Col (b) (6)
- g. Crew Chief: TSgt (b) (6) , SSgt (b) (6)
- h. Avionics: MSgt (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 1/1.6
  - (2) Ferry Sorties/Hours: 2/6.4

**3. PESTICIDES:**

- a. Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
- b. EPA Registration Number: Trumpet® EC 59639-90-5481
- c. Gallons Pesticide Loaded: 210 gal Trumpet® (17 July)
- d. Gallons Pesticide Applied: 210 gal Trumpet® (17 July)
- e. Gallons and Name of Flush Used: 3 Gallon HAN
- f. Other Additives Used: none
- g. Application Rate: 0.98 oz/acre Trumpet®

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99107
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 31 straight down
- f. Pressure (PSI): 41 PSI
- g. Flow Rate: 7.2 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off Set: None
- c. Spray Release Altitude: 300 feet
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 127-141° @ 11-14 knots (aerial observation) (17 July)
- b. Temperature: 69-76 °F (17 June)
- c. Relative Humidity: 58%
- d. Cloud Cover: Clear
- e. Source: Aerial observations and National Weather Service

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

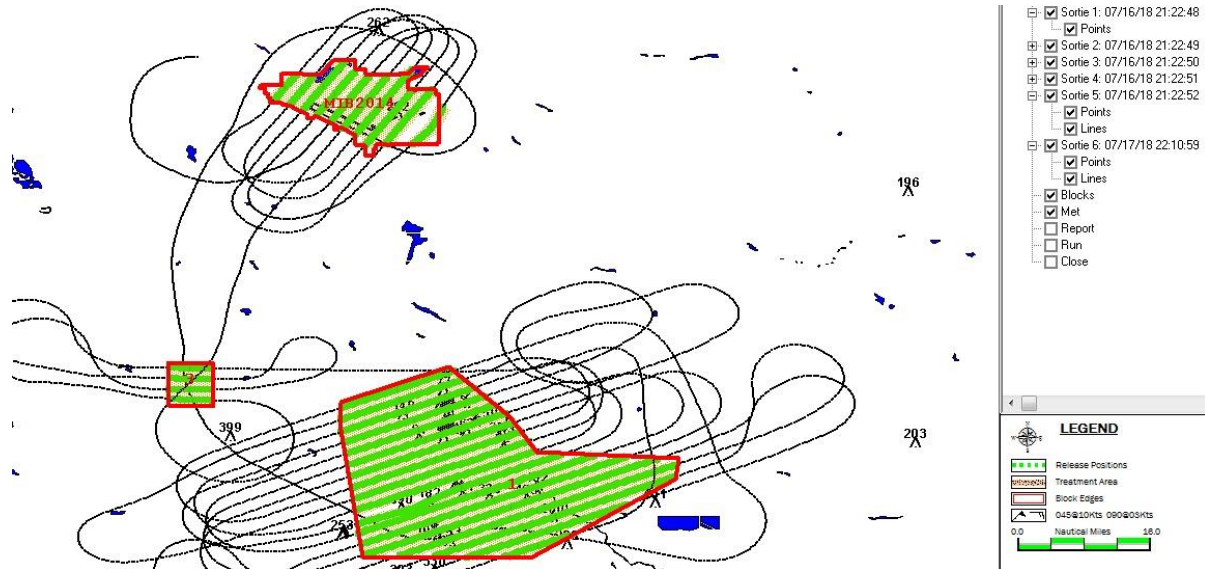
- a. Minot AFB and City of Minot conduct adult mosquito trapping to monitor mosquito densities on base.
- b. Effectiveness:
  - (1) Technique/s Used: Mosquito traps, Mosquito Magnet
  - (2) Results: Minot AFB: Prespray trap count (2 traps): 870; 1800. Post-spray counts 120; 270. Reductions of 86 and 85% respectively.

**8. REMARKS:** Meteorological conditions were good during the City of Minot and Minot AFB applications, with a moderate unidirectional wind assuring good coverage. Preliminary post-spray observations at Minot AFB indicate good control of mosquitoes. Pending trap count data from City of Minot will undoubtedly confirm this. Originally the City of Williston was also scheduled for application during this mission but mechanical difficulties prevented completion. Many thanks to (b) (6) (Minot AFB) and (b) (6) (City of Minot) for their support.

//signed//

**Lt Col (b) (6) , USAFR**  
**DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

**Attachment 1. Image shows Minot AFB, City of Minot, and City of Burlington spray blocks (red) and pesticide application swaths (green) during application on 17 July 2018.**





**AERIAL SPRAY PLAN**  
**MINOT AFB, ND**  
**16 -20 July 2018**  
**MI: QENRK3531197**

**PURPOSE/BENEFIT/OBJECTIVE:** One C-130 will deploy to Minot AFB from 16-20 July, 2018. Aerial Spray flight proficiency training will be accomplished on (NVG's) Night Vision Goggles while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel working and living in and around Minot AFB, Williston, and Watford city. Aerial spraying of the cities will be in accordance with the Individual Readiness Training (IRT) program.

**1. 910 AW PARTICIPANTS:**

**Mission Commander:** Lt Col (b) (6) (b) (6)  
**Entomologist:** Lt Col (b) (6) , Lt Col (b) (6) (in Williston)

**AIRCREW:**

**Pilots:** Lt Col (b) (6) , Capt (b) (6)  
**Navigators:** Maj (b) (6) , Lt Col (b) (6)  
**Flight Engineers:** MSgt (b) (6)  
**Spray Operators:** SMSgt (b) (6) , TSgt (b) (6) , MSgt (b) (6)

**MAINTENANCE:**

**Spray MX:** TSgt (b) (6) (Lead), TSgt (b) (6) , TSgt (b) (6) ,  
TSgt (b) (6) , SSgt (b) (6)  
**Avionics:** MSgt (b) (6)  
**Crew Chiefs:** TSgt (b) (6) , SSgt (b) (6) (Share Room)

**2. REQUIRED ITEMS:**

Msn Commander: MC Laptop Computer  
Entomologist: Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer  
Navigator: Maps/Map Bag, Validation Map  
Spray Operators: PPE, Calibration, Laptop and or Spray datasheet, O2 hose extensions, NVG's, wireless headsets.  
Spray Maintenance: Deployment Kit, Support Equipment  
Avionics: 2 Multi-band hand-held radios; Wingman system cards

### **3. SCHEDULE: (All Local Times)**

**16 July (Monday) Pesticide/Safety brief will be conducted at the aircraft prior to departing for KMIB**

1500 – Showtime

1700 – Depart KYNG

1935 – Land KMIB **PPR: 0116AW**

**17-19 July (Tuesday-Thursday) Sunset 2139L – Civil Twilight 2218L (Minot); Sunset 2148L – Civil Twilight 2227L (Williston)**

1500 – (Tuesday only) – In brief at 5 CES Commanders Conference Room in Bldg. 445

1830 – Weather Call/Pesticide Load/Calibration

2115 – Depart KMIB (daytime survey Minot AFB/Minot 1<sup>st</sup> night & Williston 2<sup>nd</sup> night)

0030 – Land KMIB

**20 July (Friday)**

1200 – Depart KMIB

1600 – Land KYNG

### **4. SPRAY CONFIGURATION AND PARAMETERS:**

<b>Location:</b>	<b>Minot AFB</b>
Acres:	5,170
Chemical:	Trumpet <sup>®</sup> EC (78% AI Naled)
Gallons loaded:	30
Flow Rate:	7.1 GPM
Application Rate:	0.98 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300 feet AGL
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet oriented straight down
Number of Nozzles:	(15 left – 16 right) 31 Total

<b>Location:</b>	<b>Minot City/Burlington</b>
Acres:	22,128
Chemical:	Trumpet
Gallons loaded:	180
Flow Rate:	7.1 GPM
Application Rate:	0.98 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300 feet AGL
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet oriented straight down
Number of Nozzles:	(15 left – 16 right) 31 Total

<b>Location:</b>	<b>Williston/Watford</b>
Acres:	23,622
Chemical:	Trumpet
Gallons loaded:	180
Flow Rate:	7.1 GPM
Application Rate:	0.98 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300 feet AGL
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet oriented straight down
Number of Nozzles:	(15 left – 16 right) 31 Total

**Flush and Purge procedures per day will be furnished by the Mission Commander**

#### **4. RADIO FREQUENCIES:**

<b>Spray Ground:</b>	UHF 392.2; VHF 123.45
<b>Minot AFB:</b>	Tower – 120.65 VHF or 253.5 UHF Ground – 134.0 VHF or 257.8 UHF Approach – 119.6 VHF or 363.8 UHF ATIS – 278.8 UHF Command Post – 321.0 “Raymond 12” PTD – 372.2

#### **5. TRANSPORTATION:**

MIB Vehicle Ops POC:	A1C (b) (6) (b) (6) <b>Confirmation Number: # 28749017</b>
(6+pax) U-Drive	MC/Entomologist (3)
(6+pax) U-Drive	Pilots and Navigators (4)
(6+pax) U-Drive	Engineers and Spray Operators (5)
(6+pax) U-Drive	Spray MX (5)
(6+pax) U-Drive	Crew Chiefs and Avionics (2)
Enterprise Rent-A-Car Minot Intl Airport 25 Airport Rd Ste 13 Minot, ND 58703	Lt Col (b) (6) <b>Confirmation Number: #1932942454COUNT</b>

## 6. LODGING:

Staybridge Suites  
3009 S. Broadway  
Minot, ND 58701  
(701)852-0852  
POC: (b) (6)

Sakakawea Inn  
Minot AFB, ND  
POC for Non-A: (b) (6)  
(701)723-6161 Ext. 3012

## 7. CONTACTS:

<b>Minot AFB:</b>	DSN prefix 453, commercial 701-723-xxxx
Base Operations:	x2347
Environmental Office:	x4871 ((b) (6) )
Base Civil Engineer:	x2434 (Lt Col (b) (6) )
Pest Management:	x2393 (b) (6) ) (b) (6) cell
Weather:	x6381 or x3631
Billeting:	x6161 or 701-727-6161
Fire Department:	x2461
Transient Alert	x3153
Minot Tower	x3330
AGE flight chief	701-723-2299
 Williston VCD	 701-577-4563 ((b) (6) )
 Minot City	 701-833-7677 (b) (6) ) 701-833-7613 ((b) (6) )

**910 AW -- AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**PARRIS ISLAND MCRD, SC 17 – 20 April 2018**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island MCRD, SC
- b. Mission Duration: 17-20 April 2018
- c. Purpose of Application: Mosquito and biting midge (*Culicoides* spp.) control
- d. Application Date: 18 April 2018
- e. Time/s of Application (Zulu): 0030-0155 hrs (Zulu)
- f. Acres Treated: 6750 acres
- g. Project Coordinator: (b) (6), Environmental, DSN (b) (6)
- h. Date Spray Map Last Approved: 18 April 2018
- i. Date of Waste Generation Letter: 30 October 2007
- j. Installation In-Briefing: (When/Where/Briefer/s): Capt (b) (6) was briefed April 18, 2018, by Lt Col (b) (6).

**2. OPERATIONAL:**

- a. **Mission Commander:** Maj (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6), Capt (b) (6)
  - (2) Navigators: Lt Col (b) (6), Lt Col (b) (6)
  - (3) Flight Engineers: MSgt (b) (6)
  - (4) Spray Operators: MSgt (b) (6), TSgt (b) (6), SSgt J<sup>(b)</sup> (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) (lead), MSgt (b) (6), TSgt (b) (6), TSgt (b) (6), TSgt (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6), SrA (b) (6)
  - (3) Avionics: SSgt (b) (6)
- d. **Entomologist:** Lt Col (b) (6)

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate
- b. EPA Registration Number: 5481-480
- c. Formulation Sprayed: Concentrate (87.4% AI naled)
- d. Gallons Pesticide Loaded: 40 Gallons Dibrom<sup>®</sup>
- e. Gallons Pesticide Applied: 40 Gallons Dibrom<sup>®</sup>
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 8 gallons HAN
- h. Other Additives Used: None
- i. Application Rate: 0.76 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 909108
- b. Spray System (Modules Used) and System ID #: 4
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 13 nozzles oriented straight down
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 2.7 gallons per minute
- h. Sorties: 1/2.5 hrs (application); 2/4.0 hrs (ferry)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000'
- b. Spray Off-set: none
- c. Spray Release Altitude: 300'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 175@ 6-8 knots
  - (2) Release Altitude: 190@15 knots
- b. Temperature (Degrees Fahrenheit):
  - (1) Ground: 68°F
  - (2) Release Altitude: 68°F
- c. Cloud Cover: Clear
- d. Source: Ground observations and aircraft SCNs

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

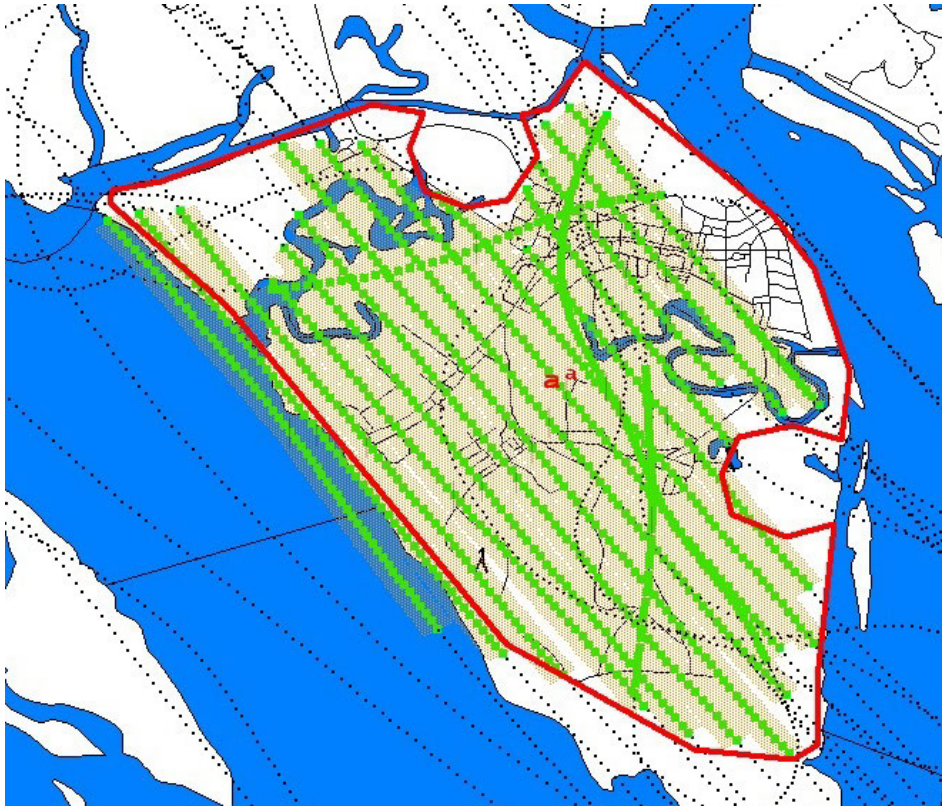
- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations (Lt Col Haagsma)
  - (2) Results: Adequate coverage through sprayed area
- b. Effectiveness:
  - (1) Technique/s Used: Field observation (landing and biting)

- 8. REMARKS:** The spray system was calibrated on the ground prior to pesticide application. Initially, there were problems with the aircraft GPS system, but those problems were resolved in flight. An area of ¼ mile surrounding each of three eagles' nests was not treated (see attachment 1). Midge populations were moderate to heavy, especially in the areas around the rifle ranges and the golf course. Initial reports post-spray indicate good control. Pre-spray mosquito populations (as determined by PrevMed trapping) were almost non-existent, and thus, effects of spray on mosquito populations are not quantifiable. As always, many thanks to (b) (6), (b) (6), and Capt (b) (6), as well as Parris Island MCRD PrevMed for facilitating these activities.

//signed//  
(b) (6), Lt Col, USAF  
DOD CERTIFIED PEST MANAGEMENT PROFESSIONAL



**Attachment 1. Areas sprayed (beige blocks) at Parris Island MCRD 18 April 2018. Red lines show spray block boundary and circular no-spray/no-fly areas for eagles' nests.**



# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **JB CHARLESTON/PARRIS ISLAND, SC**

### **18-21 JUNE 2018**

### **QENRK3532169**

**Purpose/Objectives/Benefits:** One C-130 will deploy to JB Charleston, SC from 11-18 June 2018. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito and biting midge populations affecting the health and welfare of the personnel of JB Charleston and MCRD Parris Island. Operations for this mission will be conducted from JB Charleston utilizing Night Vision Goggles (NVGs).

#### **1. 910 AW PARTICIPANTS:**

<b>Msn Commander:</b>	<b>Maj</b> (b) (6)	(b) (6)
Entomologists:	Lt Col (b) (6)	
Pilots:	Capt (b) (6)	, Lt Col (b) (6)
Navigators:	Lt Col (b) (6)	, Maj (b) (6)
Flight Engineer:	MSgt (b) (6)	, TSgt (b) (6)
Spray Operators:	MSgt (b) (6)	, MSgt (b) (6), MSgt (b) (6)
<b>Spray Maintenance:</b>	<b>TSgt</b> (b) (6)	<b>(Lead)</b> (b) (6)
	SMSgt (b) (6)	, TSgt (b) (6), TSgt (b) (6),
	TSgt (b) (6)	, Amn (b) (6)
Crew Chiefs:	MSgt (b) (6)	, SrA (b) (6)
Comm/Nav:	SSgt (b) (6)	

#### **2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, laptop/Spray datasheet, O <sub>2</sub> hose extensions, NVGs
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system cards

### **3. SCHEDULE: (All Local Time)**

#### **18 June (Mon)**

1500 Showtime  
1700 Depart KYNG  
1900 Land KCHS

#### **19 June (Tues) Sunset: 2031L; Civil Twi: 2100L (CHS) – NVG Spray**

1245 Installation brief at Charleston AFB  
1630 Weather call/Chemical Load at Charleston AFB  
1700 Calibration  
2000 Depart KCHS  
2230 Land KCHS

#### **20 June (Wed) Sunset: 2032L; Civil Twi: 2101L (PI) – Dusk Spray**

1600 Installation brief at MCRD Parris Island  
1630 Weather call/Chemical Load at Charleston AFB  
1700 Calibration  
1900 Depart KCHS  
2045 Land KCHS

#### **21 June (Thurs)**

1200 Depart KCHS  
1400 Arrive KYNG

### **4. SPRAY CONFIGURATION AND PARAMETERS:**

Locations:	MCRD Parris Island and JB Charleston
Acres:	7,500 (Parris Island); 18,000 (JB Charleston)
Chemical:	Parris Island: Dibrom <sup>®</sup> (EPA Reg. No. 5481-480) Charleston: Trumpet <sup>®</sup> EC (EPA Reg. No. 5481-481) Signal word: Danger
Gallons loaded:	45 gallons (Parris Island); 120 gallons (Charleston)
Flow Rate:	2.7 GPM (Parris Island); 6.2 GPM (Charleston)
Application Rate:	0.75 oz/ac (Parris Island); 0.85 oz/acre (Charleston)
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300' AGL NVG Operations, 150' AGL Day Operations
Airspeed:	200 Knots Ground Speed
Swath Width:	1,000 feet (Parris Island); 2,000 feet (Charleston)
Nozzle/Orientation:	ULV 8003 Tee Jet Flat Fan / Straight Down
Number of Nozzles:	13 (Parris Island); 27 (Charleston)
Formulas:	Flow Rate = Gal/Time in Minutes Acreage Sprayed = Total Sec x 338 x Swath Width / 43,560

## 5. AIR TO GROUND RADIO FREQUENCIES:

**Charleston AFB:** Tower – 843-414-2808  
Tower – 126.0 or 239.0  
Ground – 121.9 or 348.6  
Clearance – 127.325 or 291.65  
ATIS – 124.75  
Palmetto Ops – 134.1 or 349.4  
**Charleston Approach:** 119.3 or 379.925  
**Mt Pleasant Regional:** CTAF 122.7  
**Charleston Executive:** CTAF 122.8  
**MCAS Beaufort:** Tower - 119.05/342.875 MCAS TWR  
Approach - 123.7  
**Hilton Head Airport:** 118.975 Tower, 118.975 CTAF (tower open 0700-2100L)  
**Beaufort Co Airport:** CTAF/UNICOM 122.7  
**Spray Ground (CHS):** 392.2 UHF; 123.45 VHF

## 6. TRANSPORTATION:

**JB Charleston:** Will provide (3) vehicles for transportation to and from quarters and for messing. Vehicles will be at JB Charleston Transportation/Vehicle Ops. Confirmation #28548338.

**1x 8-PAX Van** – Officer Aircrew

**1x 8-PAX Van** - Enlisted Aircrew

**1x 15-PAX Van** - Maintenance

### **Commercial Rental Vehicles:**

**Budget Rent-A-Car,** 5501 Porsche Blvd, Bldg 300, Charleston Intl Airport, (843)552-1771

**1x Rental** – Mission Commander (Remmers – Confirmation #36989192US2)

## 7. LODGING:

**Contract hotel:** Double Tree by Hilton Charleston Airport

**POC:** Mr. (b) (6) – Group Sales Manager (843-518-6715)

7401 Northwoods Boulevard, North Charleston, SC 29406

**“Non-A”** – Per email from Inns of Charleston attached to DD Form 1351-5

## 8. CONTACTS:

<b>Charleston AFB SC:</b>	<b>DSN: 673-XXXX; Commercial (843)-963-XXXX</b>		
Wing Commander:	x3418		
MSG Commander:	x2200		
Civil Engineer:	x4956		
Deputy Chief/Civil Engineer:	x4954		
Environmental Coordinator:	x2711		
Base Operations:	x3026		
Charleston Control Tower:	(843) 414-2808		
Weather:	x3016		
Pest Control Foreman:	x5266, (b) (6)	((b) (6)	(cell)
Pest Control NCOIC:	x5266, MSgt (b) (6)	((b) (6)	(cell)
Public Affairs:	x1110		
Fuels:	x5079		

Transportation: x4236  
Fire Department: x3777

**MCRD Parris Island SC: DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental Coord: x3102 (b) (6) (b) (6) (cell)  
Capt (b) (6) (b) (6) (cell)  
HazWaste: x4698 (b) (6) (b) (6) (cell)  
AC/S, I&L: x2511  
Deputy I&L x4110 (b) (6)  
Pest Control: x2364 (b) (6) and (b) (6)  
P.I. Motor Pool: x2233 (b) (6)  
P.I. Rifle Range: x3183/3624  
Military Police x3444

**MCAS Beaufort SC: DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental: x7370 (b) (6)  
Fuels: x7049/7448/7168  
Airfield Mgr: x6316  
Trans Alert/VAL: x7110  
Weather: x7001/7926/7/9  
Base Security Manager: x7090  
Provost Marshal Office: x7209/7967/6335

**Beaufort County Mosquito Control:**

(b) (6), Director (b) (6)

**910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

910 AW/CC: x1243  
Command Post x1315 FAX x1161  
PA: x1236 FAX x1022  
OG/CC: x1257/1179  
Safety x1391  
Base Ops: x1182  
SOF Desk: x1069 FAX: x1371  
757 AS/DO: x1793  
757 AS Admin: x1239 FAX x1657  
757 AS Spray Office: x1638/1111 FAX x1616  
910 MXG/CC: x1225  
910 LG/LGM: x1352  
Maintenance Control: x1348  
Spray Maintenance: x1132/1586

**AERIAL SPRAY PLAN**  
**MINOT AFB, ND**  
**20-23 August 2018**  
**MI: QENRK3531232 – PPR: 01-20-DL**

**PURPOSE/BENEFIT/OBJECTIVE:** One C-130 will deploy to Minot AFB from 20-23 August, 2018. Aerial Spray flight proficiency training will be accomplished on (NVG's) Night Vision Goggles while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel working and living in and around Minot AFB, Williston, and Watford city. Aerial spraying of the cities will be in accordance with the Individual Readiness Training (IRT) program.

**1. 910 AW PARTICIPANTS:**

**Mission Commander:** Maj (b) (6) (b) (6)  
**Entomologist:** Lt Col (b) (6)

**AIRCREW:**

**Pilots:** Maj (b) (6) , Capt (b) (6)  
**Navigators:** Maj (b) (6) , Lt Col (b) (6)  
**Flight Engineers:** SMSgt (b) (6)  
**Spray Operators:** MSgt (b) (6) , SSgt (b) (6)

**MAINTENANCE:**

**Spray MX:** MSgt (b) (6) (LEAD) (b) (6)  
TSgt (b) (6) , TSgt (b) (6) ,  
TSgt (b) (6) , MSgt (b) (6) , AMN (b) (6)  
**Avionics:** MSgt (b) (6)  
**Crew Chiefs:** TSgt (b) (6) , SrA (b) (6)

**2. REQUIRED ITEMS:**

**Msn Commander:** MC Laptop Computer  
**Entomologist:** Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer  
**Navigator:** Maps/Map Bag, Validation Map  
**Spray Operators:** PPE, Calibration, Laptop and or Spray datasheet, O2 hose extensions, NVG's, wireless headsets.  
**Spray Maintenance:** Deployment Kit, Support Equipment  
**Avionics:** 2 Multi-band hand-held radios; Wingman system cards



### **3. SCHEDULE: (All Local Times)**

**20 August (Monday) Pesticide/Safety brief will be conducted at the aircraft prior to departing for KMIB**

1500 – Showtime

1700 – Depart KYNG

1935 – Land KMIB **PPR: 01-20-DL**

**21-22 August (Tuesday-Wednesday) Sunset 2048L – Civil Twilight 2122L (Williston)**

1600 – (Tuesday only) – In brief at 5 CES Commanders Conference Room in Bldg. 445

1730 – Weather Call/Pesticide Load/Calibration

2025 – Depart KMIB (daytime survey Williston)

2330 – Land KMIB

**23 August (Thursday)**

1200 – Depart KMIB

1600 – Land KYNG

### **4. SPRAY CONFIGURATION AND PARAMETERS:**

<b>Location:</b>	<b>Williston/Watford/Minot AFB</b>
Acres:	28,795
Chemical:	Trumpet
Gallons loaded:	210
Flow Rate:	6.74 GPM
Application Rate:	0.93 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300 feet AGL
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet oriented straight down
Number of Nozzles:	(15 left – 16 right) 31 Total

**Flush and Purge procedures per day will be furnished by the Mission Commander**

#### 4. RADIO FREQUENCIES:

<b>Spray Ground:</b>	UHF 392.2; VHF 123.45
<b>Minot AFB:</b>	Tower – 120.65 VHF or 253.5 UHF Ground – 134.0 VHF or 257.8 UHF Approach – 119.6 VHF or 363.8 UHF ATIS – 278.8 UHF Command Post – 321.0 “Raymond 12” PTD – 372.2

#### 5. TRANSPORTATION:

MIB Vehicle Ops POC:	A1C (b) (6) (b) (6) <b>Confirmation Number: # 28885363</b>
(6+pax) U-Drive	MC/Entomologist (2)
(6+pax) U-Drive	Pilots and Navigators (4)
(6+pax) U-Drive	Engineers and Spray Operators (5)
(6+pax) U-Drive	Spray MX (5)
(6+pax) U-Drive	Crew Chiefs and Avionics (3)

#### 6. LODGING:

Staybridge Suites- **19 Rooms Reserved**  
3009 S. Broadway  
Minot, ND 58701  
(701)852-0852  
POC: (b) (6) – sales@minotsbs.com

Sakakawea Inn – Non-A issued  
Minot AFB, ND  
POC for Non-A: (b) (6) – (b) (6) (b) (6)  
(701)723-6161 Ext. 3012

## 7. CONTACTS:

<b>Minot AFB:</b>	DSN prefix 453, commercial 701-723-xxxx	
Base Operations:	x2347	
Environmental Office:	x4871 ((b) (6) )	
Base Civil Engineer:	x2434 (Lt Col (b) (6) )	
Pest Management:	x2393 ((b) (6) )((b) (6) )	cell
Weather:	x6381 or x3631	
Billeting:	x6161 or 701-727-6161	
Fire Department:	x2461	
Transient Alert	x3153	
Minot Tower	x3330	
AGE flight chief	701-723-2299	
Williston VCD	701-577-4563 ((b) (6) )	
Minot City	701-833-7677 ((b) (6) )	
	701-833-7613 ((b) (6) )	



**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**



**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
UTAH TEST AND TRAINING RANGE, 22-27 OCT 2017**

**1. MISSION BASICS:**

- a. Installation Sprayed: Utah Test and Training Range (UTTR)
- b. Mission Duration: 22-27 October 2017
- c. Purpose of Application: Habitat restoration and development of firebreaks with a focus on cheat grass management and native species recovery on the UTTR
- d. Application Dates: See Attachment 1
- e. Times of Application (Local): See Attachment 1
- f. Acres Treated: 1,540
- g. Flying Data:
  - (1) Spray sorties/hours: 6/7.5
  - (2) Ferry sorties/hours: 2/10.4
  - (3) Support sorties/hours: 4/20.8
- h. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) Natural Resources Manager/DSN (b) (6) Environmental Coordinator, (b) (6) DSN (b) (6)
- i. Date Spray Map Last Approved: 22 Oct 2018
- j. Installation In-Briefing: (When/Where/Briefer/s): 22Oct 2018/Zulu Ops, Forestry Ramp/Lt Col (b) (6) Lt Col (b) (6), Lt Col (b) (6), Maj (b) (6), Mr. (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Entomologists (certified applicators): Maj (b) (6), Lt Col (b) (6) c.
  - Aircrew:
    - Pilots: Lt Col (b) (6), Lt Col (b) (6)
    - Navigators: Lt Col (b) (6), 1Lt (b) (6), 1Lt (b) (6)
    - Flight Engineer: Lt Col SMSgt (b) (6)
    - Spray Operators: SMSgt (b) (6), SSgt (b) (6)
- d. Maintenance:
  - Spray Maintenance: MSgt (b) (6) (lead), TSgt (b) (6), TSgt (b) (6), TSgt (b) (6), TSgt (b) (6)
  - Crew Chiefs: TSgt (b) (6), SrA (b) (6)
  - Avionics: MSgt (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Plateau Herbicide (active ingredient: 23.6% Ammonium salt of imazapic)
- b. EPA Registration Number: 241-365
- c. Formulation Sprayed: 6 oz/acre Plateau + 5 oz/acre of Clasp or MSO in 7 gallons of water
- d. Gallons Pesticide Mix Loaded and applied: 10,677 / 10,677
- e. Gallons of pesticide used: 72.5 gal of Plateau
- f. Gallons and Name of Flush Used: 500 gal water
- g. Other Additives Used: 61 gal of Clasp/MSO

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99106
- b. Spray System (Modules Used) and System ID #: 3
- c. Spray System Configuration: 3-Module System/ UHV Fuselage Booms
- d. Nozzle Type/Size: LV Fuselage
- e. Nozzle Orientation & Number Used: 18 – raindrop nozzles, oriented straight back.
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 326 gallons per minute.

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 100'
- b. Spray Off-set: None
- c. Spray Release Altitude: 100' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. See Attachment 2.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique Used: Visual observations by ground party of approximate 100 ft swath on all passes
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Techniques Used: monitoring of weed emergence in spring
  - (2) Results: will be determined this spring by range personnel

**8. REMARKS:** This is the first time we have worked specifically on controlling cheat grass on the Utah Test and Training Range (UTTR). This initiative follows 16 years of successful fire suppression and habitat restoration on the Saylor Creek Range, ID. Thus, these methods are now standard operating procedures and we expect our results here to be highly successful in achieving the goals of this project for both the Natural Resources office and for the UTTR.

- a. The overall scope of this year's project is shown in Attachment 3 along with the post-spray flight patterns. Natural Resources will use these flight paths to pinpoint the daily applications and monitor the effectiveness in the spring. Some of the spray areas were chosen to serve specifically as firebreaks while others will be seeded with native plants. Native plants are typically more resistant to fire. Often, fires started elsewhere, can be more easily controlled in areas with more native vegetation. Therefore, we hope that this important project will be funded for several seasons, in order to increase the overall size of treatment areas and, consequently, provide the full-benefit of invasive species control and habitat restoration. In support of this end, the Air Force Aerial Spray Unit will plan to open their schedule to participate in this project for October 2018 and beyond.

- b. We had excellent support from Hill Air Force Base and specifically want to thank the 75<sup>th</sup> Air Base Wing/CC, Col (b) (6), for her letter of invitation and support. We also had excellent support from 75<sup>th</sup> CEG/CEI (Natural Resources), 75<sup>th</sup> OSS/OSAM (Base Operations), 75<sup>th</sup> LRS/LGRDDO (Transportation), UTTR DOO, and others.

//signed//

(b) (6)

, Lt Col, USAF

**DOD CERTIFIED PEST MANAGEMENT PROFESSIONAL**



Attachment 1: Summary Spray Chart

**22-27 October 2017**

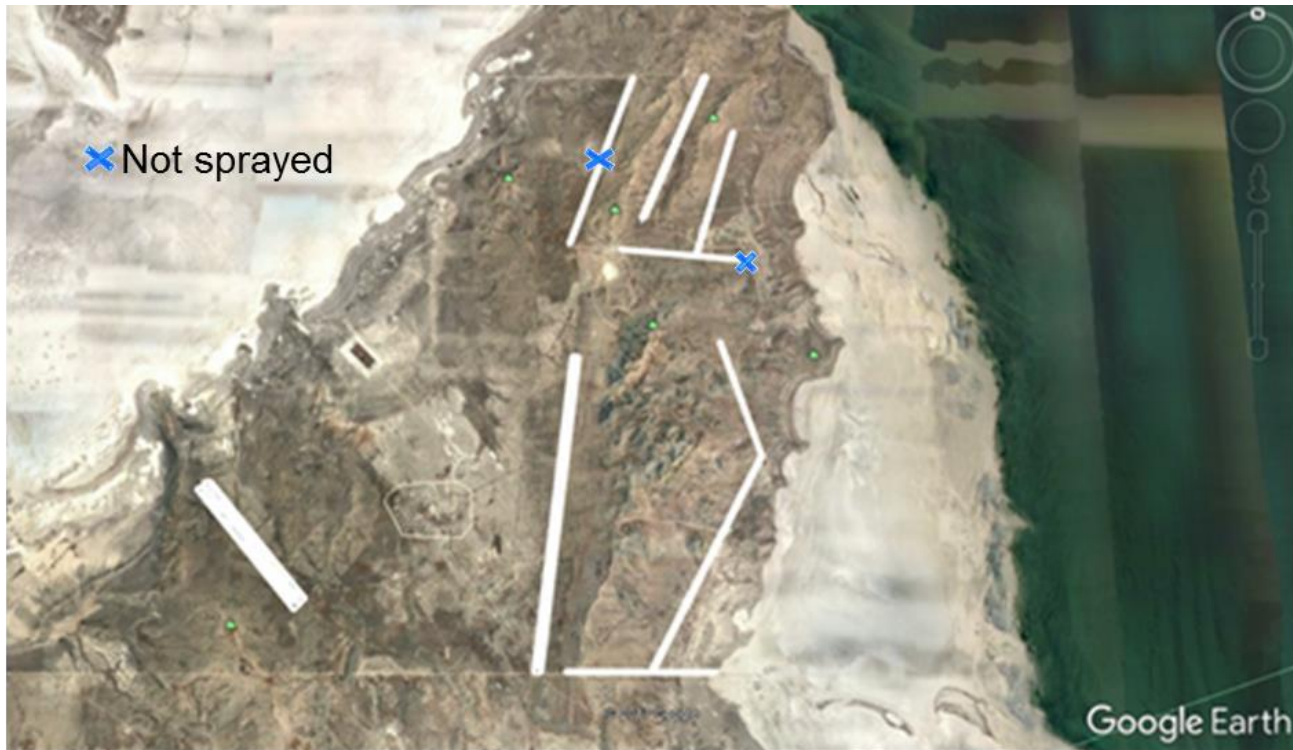
**SPRAY OPERATIONS SUMMARY FOR UTAH TEST AND TRAINING RANGE**

<b>DATE Oct</b>	<b>SORTIE #</b>	<b>TIMES</b>	<b>SPRAY ON TIME (sec)</b>	<b>TARGET</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>FLYING HOURS</b>
23	1	0820-1000	346	HAG_Coffin, HAG North, HAG South	268	1800	1.7
24	2	0805-0930	335	Scad Valley, GAT_Middle	260	1817	1.4
25	3	0805-0902	347	East Co Rd	269	1814	1.0
25	4	1200-1320	337	CBU Valley	264	1828	1.3
26	5	0807-0937	323	East Co Rd	251	1818	0.9
26	6	1200-1310	317	CBU Valley	228	1828	1.2
Totals			33.7 min		1,540	10,905	7.5

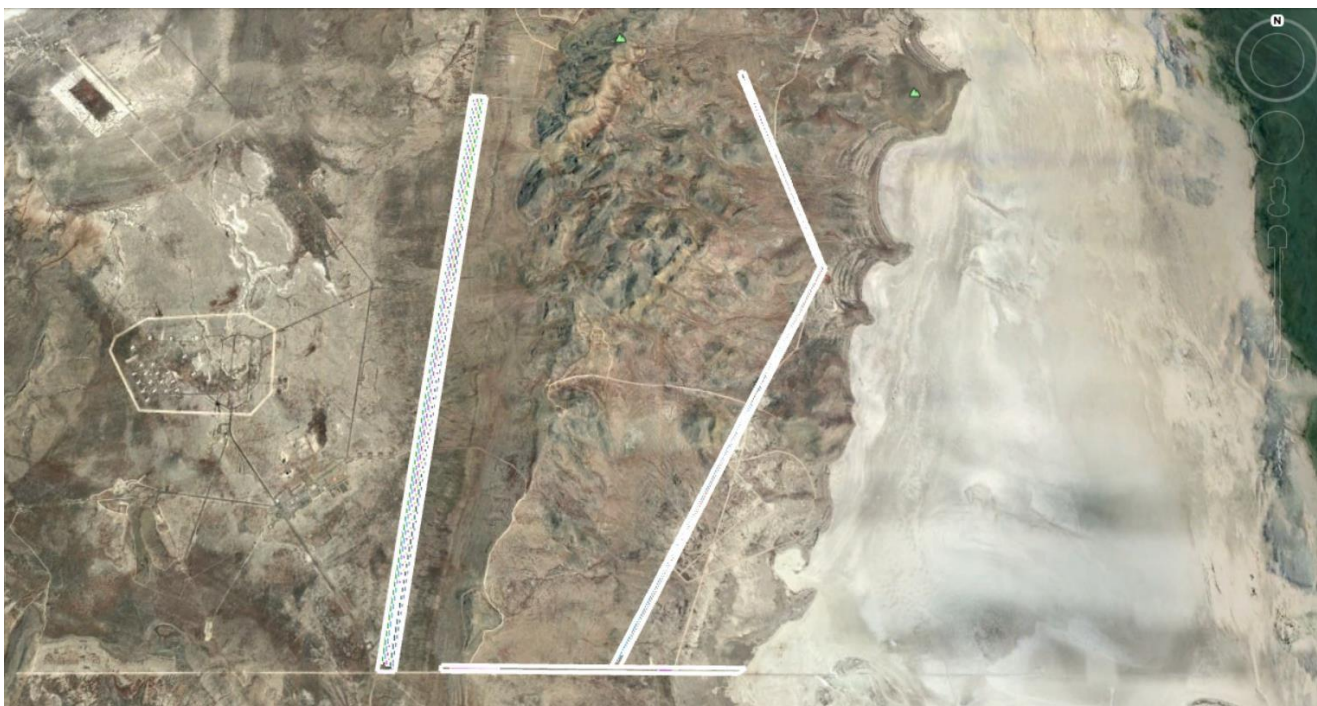
## Attachment 2. UTTR Aerial Spray Weather Log October 2017

23-Oct	HAG coffin	-	822		120/5	40	65
23-Oct		1	8:55	085/03			
23-Oct		2	9:01	120/06			
23-Oct		3	9:05	115/05			
23-Oct		4	9:10	160/02			
23-Oct	HAG North	1	9:17	290/02			
23-Oct		2	9:22	290/04			
23-Oct		3	9:28	250/04			
23-Oct	HAG South	1	9:33	130/02			
23-Oct		2	9:36	000/01			
24-Oct	Scad Valley	1	8:23	350/10	310/8	40	66
24-Oct	GAT Middle	1	8:47	345/11			
24-Oct		2	8:52	324/11			
24-Oct		3	8:56	352/12			
25-Oct	Co Rd East	1	805	157/08	140/2	35	45
25-Oct		2	8:25	185/02			
25-Oct		3	8:29	150/10			
25-Oct		3	8:39	135/04			
25-Oct		4	8:42	040/04	140	43	45
25-Oct	CBU Valley	1	12:21	276/07	270/3	60	33
25-Oct		2	12:24	346/02			
25-Oct		3	12:28	275/06			
25-Oct		4	12:32	358/02			
25-Oct		5	12:36	280/05			
25-Oct		6	12:43	320/02			
25-Oct		7	12:47	280/07			
25-Oct		8	12:51	260/03			
26-Oct	Co Rd East	5	8:21	130/07	150/2	43	50
26-Oct		6	8:25	310/05			
26-Oct		7	8:36	128/04			
26-Oct		8	8:42	340/08			
26-Oct	CBU Valley	9	12:16	015/10			
26-Oct		10	12:19	338/06			
26-Oct		11	12:23	013/11			

**Attachment 3a. Overview of the spray blocks for Oct 2017 cheat grass application on the UTTR. The blue “X” indicates spray blocks that were not sprayed this year but may be treatment areas in the future.**

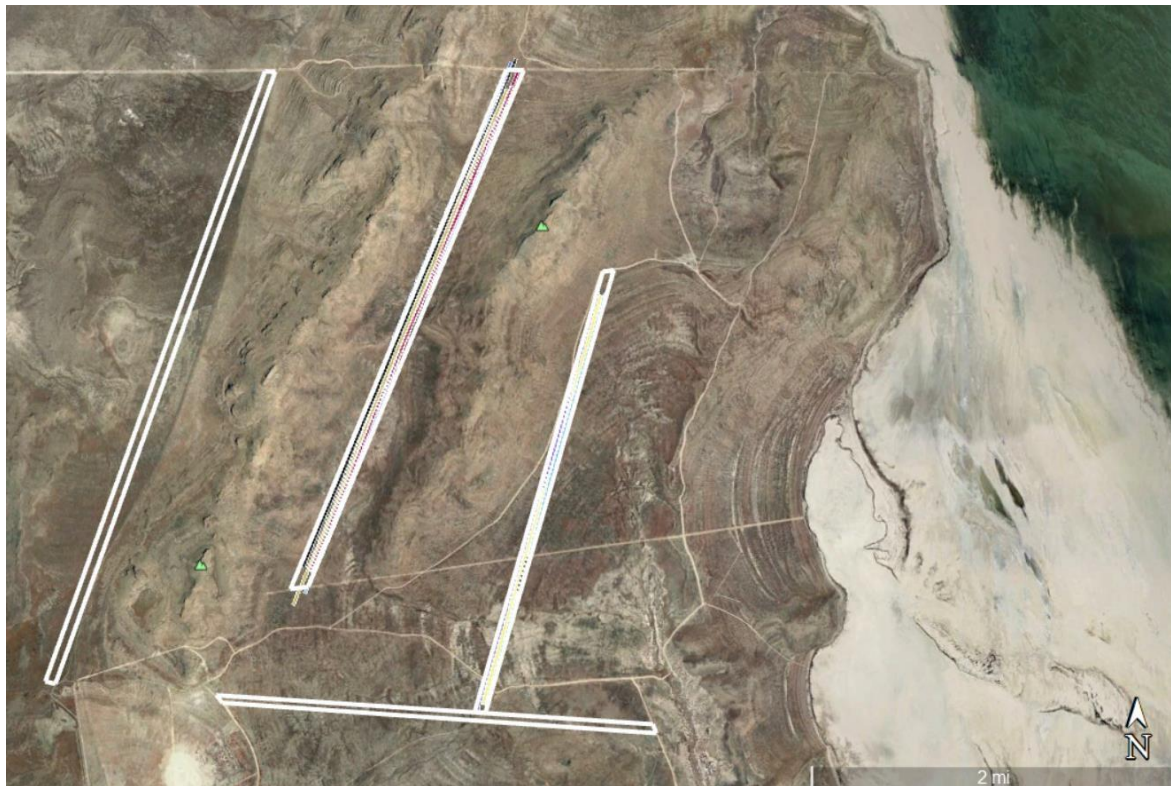


**Attachment 3b. GPS track recording for applications on 23, 25, and 26 Oct 2017.**

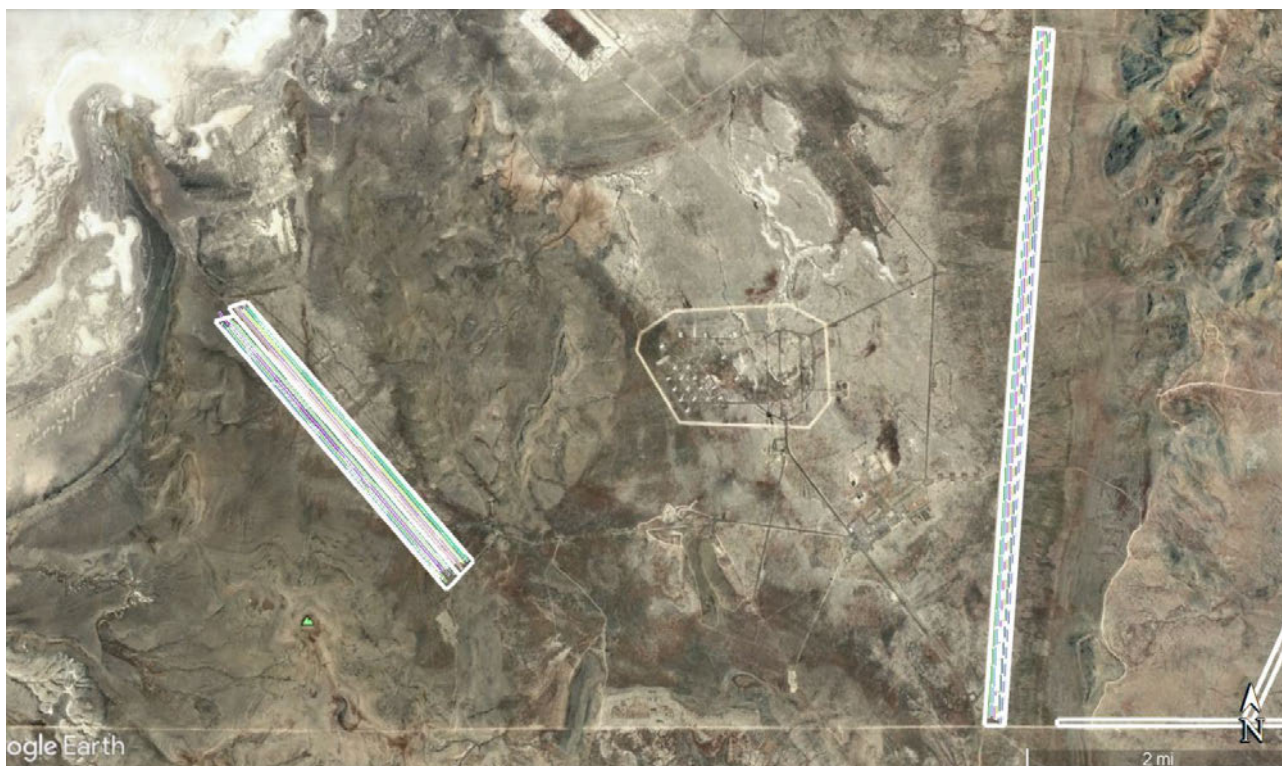




**Attachment 3c. GPS track recording for applications on 24 Oct 2017. Only 2 of these 4 block were treated this year.**



**Attachment 3d. GPS track recording for applications on 25 & 26 Oct 2017.**





**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
MINOT AFB, MINOT, WILLISTON, AND WATFORD CITY, 25-29 JUNE 2018**

**1. MISSION BASICS:**

- a. Areas Sprayed: Minot AFB; Minot, Williston, and Watford City
- b. Mission Duration: 25-29 June 2018
- c. Purpose of Application: Control of adult nuisance and vector mosquitoes
- d. Application Date: 27 June 2018
- e. Times of Application (Local): 2155 27 June – 0255 28 June
- f. Acres Treated: 48,923
- g. Flying Data:
  - (1) Spray sorties/hours: 2/6.2
  - (2) Ferry sorties/hours: 2/6.8
- h. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) (Minot AFB); (b) (6) (b) (6) (City of Minot); (b) (6) (City of Williston)
- i. Date Spray Map Last Approved: 26 June 2018
- j. Installation In-Briefing: (When/Where/Briefer/s): 26 June 2018 at CE, briefed by Lt Col (b) (6), (b) (6), Deputy Base CE
- k. Mission Identifier: QENRK3531176

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6), Capt (b) (6)
  - (2) Navigators: Lt Col (b) (6), Lt Col (b) (6)
  - (3) Flight Engineer: MSgt (b) (6)
  - (4) Spray Operators: SSgt (b) (6), TSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) (Lead), TSgt (b) (6), TSgt (b) (6), (b) (6), TSgt (b) (6), Amn (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6), SrA (b) (6)
  - (3) Avionics: MSgt (b) (6)
- d. **Entomologist:** Maj (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Trumpet® EC (78% A.I. naled)
- b. EPA Registration Number: 5481-481
- c. Additives Used: None
- d. Gallons Pesticide Loaded: 394 gallons Trumpet®

- e. Gallons Pesticide Applied: 394 gallons Trumpet®
- f. Gallons and Name of Flush Used: 20 gallons H.A.N. (Highly Aromatic Naphtha)
- g. Application Rate: 1.0 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 89-9104
- b. Spray System (Modules Used) and System ID #: SP2G, System #1
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: 8003 Tee Jet
- e. Nozzle Orientation & Number Used: 31 nozzles oriented straight down
- f. Nozzle pressure: 38-41 psi
- g. Flow Rate: 7.1 gal/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: none
- c. Spray Release Altitude: 300' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 220@3 knots
  - (2) Release Altitude: 150@6 knots
- b. Temperature (Degrees Fahrenheit): 66°F
- c. Cloud Cover: Clear
- d. Source: Ground observations and aircraft SCNs

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Application Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations. See Attachment 1 and 2 for areas treated.
  - (2) Results: Adequate coverage throughout the sprayed area
- b. Effectiveness:
  - (1) Technique/s Used: Pre- and post-spray surveillance was conducted using CDC light traps and New Jersey traps.
  - (2) Results: The environmental conditions were favorable for effective mosquito control on 27 June. It is clear from the mosquito trapping data out by the ND State Health Department (NDSHD), numbers of *Aedes vexans* were high (see table below and traps marked with \*). Unfortunately, NDSHD collections are completed weekly so post-spray numbers are not available at this time. These reductions will be mentioned in the next report when the area is treated again mid-July. Trapping is a significant part of these integrated pest management projects and efforts to effectively monitor mosquito populations during aerial spray operations are the responsibility of the requesting agency.



Location	Trap Type	Pre-Spray (25 Jun)	Post-Spray (28 Jun)	% Reduction
Minot AFB	Light	15	3	-80%

Minot	Trap Type	Pre-Spray (25 Jun)	Post-Spray (28 Jun)	% Reduction
Trap #1*	light	3003	pending	n/a
Trap #2	Light	3288	pending	n/a
Williston Traps	Trap Type	Pre-Spray (25 Jun)	Post-Spray (28 Jun)	% Reduction
Combined traps	New Jersey	194	70	-64%
Williston #1*	Light	924	pending	n/a
Williston #2*	Light	1825	pending	n/a

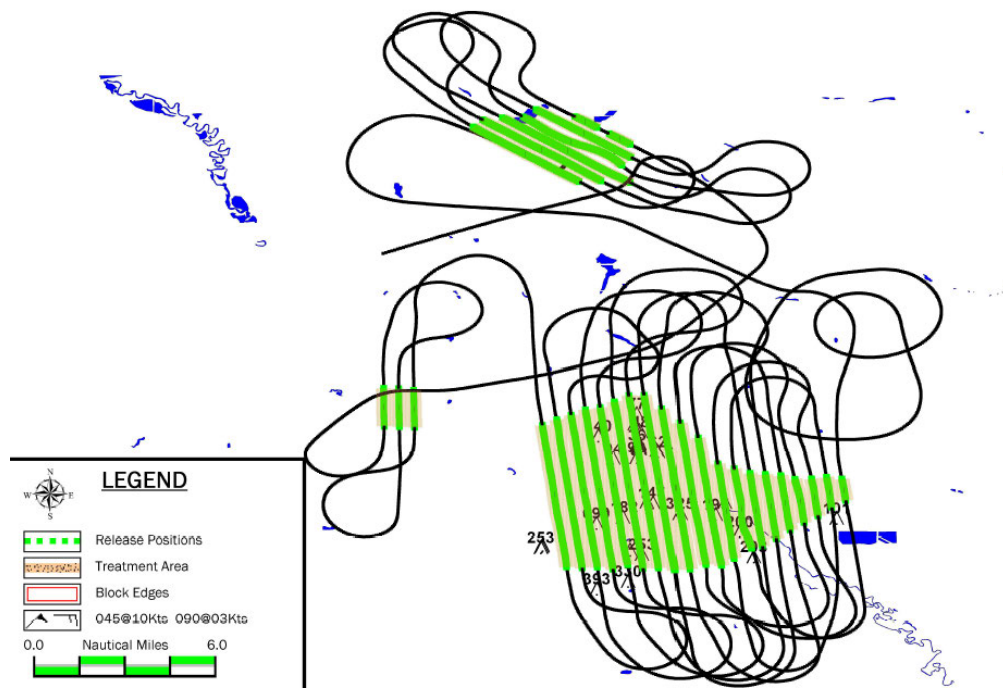
#### 8. REMARKS:

A fine "thank you" goes out to the 5LRS Vehicle Operations for providing us with government vehicles, we had great interactions with the staff but will want to coordinate vehicle placement better in the future. Leaving the vehicles at Base Operations is currently the best practice and will eliminate the need for a bus. At the inbrief on 26 June, we had good participation from most groups, but a representative from the Weather Shop was absent. We also reviewed the pre-spray mosquito density data from Minot AFB, Minot, and Williston. Pre and post- mosquito trapping numbers are a requirement for aerial spray operations and trap type, location, date set and retrieved, along with total number of mosquitoes collected are the minimum data requested. Another big help was from SMSgt (b) (6) 5OSS/OSAA), the time deviation on the airfield schedule to 24 hour operations on 27-28 June was directly responsible for mission success. Evening thunderstorms on Tuesday kept crews off the flightline during the chemical loading time. As a result, we ran out of daylight to load and conduct an aerial survey. The decision was made to stop the process and fly the daylight aerial survey without any spraying. This allowed us greater flexibility the following night and we were able to complete the entire area (but needed the extended airfield hours). This is not the preferred method but the last night's weather was predicted to be poor again, so we used the window of opportunity to ensure mission success. Feedback from Minot AFB personnel, grass cutting crews in Minot, and Williston area residents reported noticeable drops in mosquito attacks. In many cases, they spoke of a mosquito-free weekend. The next opportunity for a spray will be 16-20 July for these same areas.

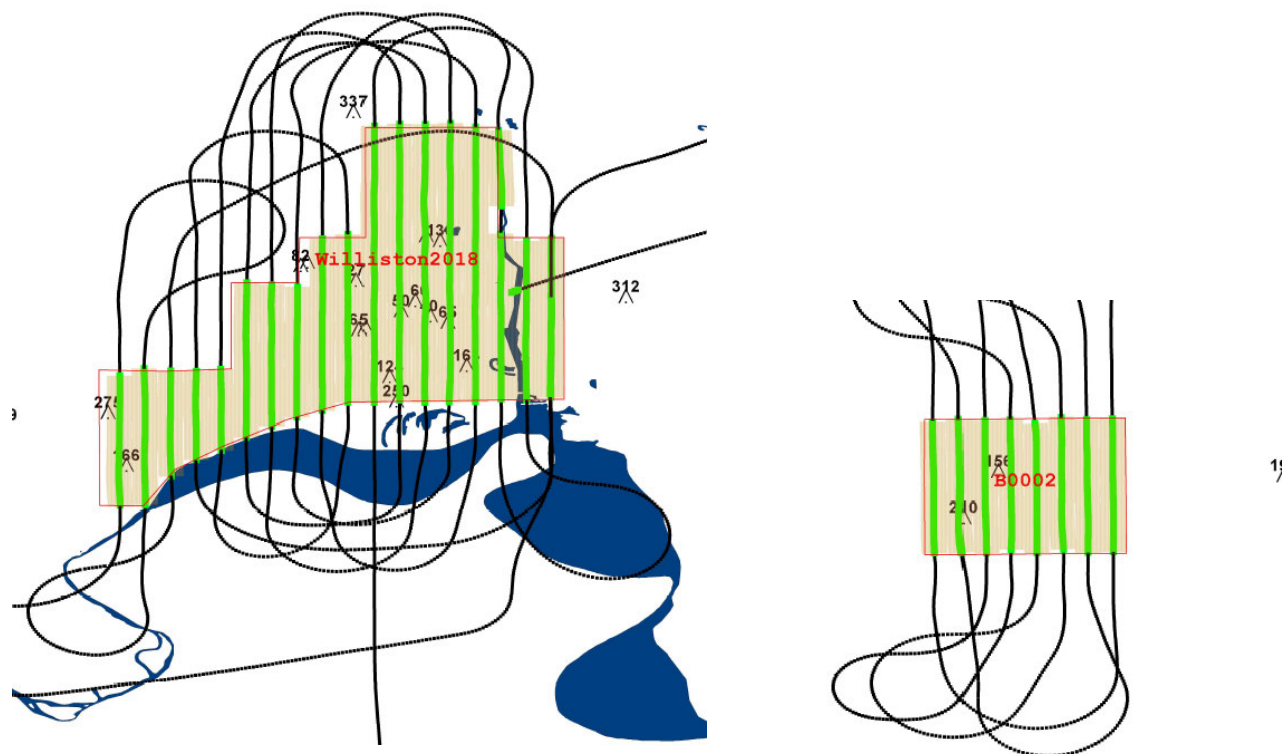
//signed//

(b) (6) , Lt Col, USAF  
DOD CERTIFIED PEST MANAGEMENT PROFESSIONAL

**Attachment 1. Area sprayed at Minot AFB, Minot, and Burlington ND, 27 June 2018. Black lines are the path of the spray aircraft. Green lines indicate individual spraying swaths.**



**Attachment 2. Area sprayed at Williston (left) and Watford City (lower right), North Dakota 27 and into the morning of 28 June 2018. Black lines are the path of the spray aircraft. Green lines indicate individual spraying swaths.**



**AERIAL SPRAY PLAN**  
**LANGLEY AFB/CRANEY ISLAND ACE, VA**  
**27 - 30 August 2018**  
**QENRK3531239/PPR: 08-27-GA-01**

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Langley AFB and Craney Island Army Corps of Engineers (ACE). Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of members operating at Langley AFB, Craney Island Army Corps of Engineers.

**1. 910 AW PARTICIPANTS:**

Msn Commander:	Lt Col (b) (6)	(b) (6)
Entomologist:	Maj (b) (6)	
Pilots:	Lt Col (b) (6)	, Maj (b) (6)
Navigators:	Maj (b) (6)	, Capt (b) (6)
Flight Engineer:	SMSgt (b) (6)	, MSgt (b) (6), TSgt (b) (6)
Spray Operators:	MSgt (b) (6)	, MSgt (b) (6), TSgt (b) (6)
Spray Maintenance:	TSgt (b) (6)	(LEAD) (b) (6)
	TSgt (b) (6)	, TSgt (b) (6), MSgt (b) (6), AMN (b) (6)
Crew Chiefs:	MSgt (b) (6)	, SRA (b) (6)
Avionics:	TSgt (b) (6)	

**2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	PCM Card, Pest Safety Binder, VHF, Radios, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, Calibration Tables/Laptop and or Spray datasheet, O2 hose extension, wireless headsets, NVG's if required
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand held radios; Wingman system cards

**3. SCHEDULE: (All Local Times)**

**27 Aug (Monday)**

1700 – Depart KYNG

1815 – Land KLFI

**DO NOT LEAVE UNTIL BRIEFED AND CLEARED OUT BY THE MISSION COMMANDER!**

**28-29 Aug (Tuesday-Wednesday) Sunset 1939 Civil Twilight 2006L**

1530– Installation Brief (Tuesday)

1630 – Wx Call/Chemical Load

1700 – MASS Calibration

1900 – Depart KLFI – conduct aerial daytime review of the area begin spraying near twilight

0030 – Land KLFI

**30 Aug (Thurs)**

1200 – Depart KLFI

1315 – Land KYNG

**4. SPRAY CONFIGURATION AND PARAMETERS:**

Locations:	Langley AFB (3,783 acres), Craney Island ACE and 3mi buffer area of Portsmouth (8,935 acres)
Acres:	12,718 for both locations to be sprayed in one sortie
Chemical:	Trumpet® EC (EPA Reg. No. 5481-481)
	Signal word: Danger
Gallons loaded:	90 gallons
Flow Rate:	6.58 GPM
Application Rate:	0.9 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300'
Airspeed:	200 KNTS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet Flat Fan / Straight Down
Number of Nozzles:	29

**5. TRANSPORTATION:**

Langley Vehicle Ops POC:	(b) (6)	(b) (6)
8-PAX VAN	Pilots/Navs	
8-PAX VAN	Engs/LMs	
8-PAX VAN	Spray MX	
6-PAX TRUCK	(b) (6)	
6-PAX TRUCK	MX	

**6. LODGING:**

Langley Billeting:	(757) 764-4667/DSN 574-4667 ext 9030
Confirmation:	20130306236

Joint Base Langley-Eustis  
70 Nealy Ave, Bldg 82  
Langley AFB, VA 23665

**7. RADIO FREQUENCIES and COMMUNICATIONS:**

Langley AFB (KLFI):	ATIS – 270.1
(Class D)	Ground – 121.7 / 275.8
	Clearance Delivery – 118.85 / 257.625
	Tower – 125.0 / 253.5
	App/Dep (Norfolk) – 124.9 / 125.7 / 126.05 / 127.9
	Command Post – 251.25
	METRO – 239.8
	PTD – 142.3 / 376.2
(b) (6) AAF/Ft	Tower – 126.3 / 269.25; Phone – (757) 878-2058
(b) (6) (KFAF) (Class D):	Approach (Norfolk) – 125.7
	Base Ops – 134.1; Phone – (757) 878-5828/2584
Newport News/	Tower – 118.7 / 348.6
Williamsburg Intl	Approach (Newport) – 125.7
(KPHF) (Class D)	Departure (Newport) – 124.9
Norfolk NAS/Chambers	Tower – 124.3 / 379.15; Phone – DSN 564-2442
Field (KNGU)	Approach (Norfolk) – 118.9 / 353.7 / 335.625
(Class D Surface-020 MSL,	Base Ops Phone – DSN 262-3419 / Comm 757-322-3419

**8.**

**Langley AFB:**

**DSN: 574-XXXX; Commercial (757) 764-XXXX**

Base Operator	x1110
---------------	-------

Wing Commander: x5321

Command Post: x5411

Public Affairs: x5701

Wing Safety: x5057

Base Operations: x2504

Base Civil Engineer: x5342

Weather: x5908

Lodging (Langley Inn): x4667 or 757-764-4667

Fire Department: x3068

Transient Alert x2539/4517

Langley Control Tower: x7999

Pest Control Foreman: x3324

Vehicle Ops x6446

## Army Corps of Engineers

(b) (6)

**office: 757-201-7186**

## City of Portsmouth Biologist

(b) (6)

(b) (6)

**, work cell**

## Youngstown ARS:

**DSN: 346-XXXX; Commercial (330) 609-XXXX**

910 AŴ/CC: x1243

Command Post x1315

PA: x1236 FAX x1022

OG/CC: x1257/1179

Safety x1391

Base Ops: x1186

SOF Desk: x1069 FAX: x1371

757 AS/DO: x1793

757 AS Admin: x1239 FAX x1657

757 AS Spray Office: x1638/1111 FAX x1616

910 MXG/CC: x1225

910 LG/LGM: x1352

Maintenance Control: x1348

Spray Maintenance: x1132/1586

910 LG/LGL: x1137





**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
LANGLEY AFB/CRANEY ISLAND, 29-30 AUGUST 2018**

**1. MISSION BASICS:**

- a. Installations Sprayed: Langley AFB, VA; Craney Island Army Corps of Engineers, Portsmouth, VA
- b. Mission Duration: 29-30 August 2018
- c. Purpose of Application: Control of nuisance and vector mosquito species at Langley AFB and Craney Island Army Corps of Engineers
- d. Application Date: 29 August 2018
- e. Times of Application (Zulu): 2330-0130
- f. Acres Treated: 12,010
- g. Flying Data:
  - (1) Spray sorties/hours: 1/2.0
  - (2) Ferry sorties/hours: 2/2.8
  - (3) Training sorties/hours: 1/0.5
- h. Project Coordinator (Name/Rank, Title, Phone #):
  - (1) Langley: (b) (6), CES Pest Control, DSN (b) (6)
  - (2) Craney Island: (b) (6), Army Corps of Engineers, (b) (6)  
(b) (6) and (b) (6) City of Portsmouth, (b) (6)
- i. Date Spray Map Last Approved: 29 August 2018
- j. Installation In-Briefing: (When/Where/Briefer/s): 29 August 2018 at CE, briefed by Lt Col (b) (6)
- k. Mission Identifier: QENRK3531239

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6), Maj (b) (6)
  - (2) Navigators: Maj (b) (6), Capt (b) (6)
  - (3) Flight Engineer: CMSgt (b) (6), SMSgt (b) (6), TSgt (b) (6)
  - (4) Spray Operators: MSgt (b) (6), MSgt (b) (6), TSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) (Lead), MSgt (b) (6), TSgt (b) (6), Amn (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6), SRA (b) (6)
  - (3) Avionics: TSgt (b) (6)
- d. **Entomologist (Cat. 11 PMP):** Maj (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Trumpet® (a.i. naled)
- b. EPA Registration Number: 5481-481
- c. Additives Used: None
- d. Gallons Pesticide Loaded: 90 total
- e. Gallons Pesticide Applied: 90
- f. Gallons and Name of Flush Used: 15 gallons H.A.N. (Highly Aromatic Naphtha)
- g. Application Rate: 0.96 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 90-9104
- b. Spray System (Modules Used) and System ID #: SP2G
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: 8003 Tee Jet
- e. Nozzle Orientation & Number Used: 29 nozzles oriented straight down
- f. Flow Rate: 6.7 gal/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: 2000'
- c. Spray Release Altitude: 300' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Craney Island: Wind (at altitude) 210-240° @ 14 kts, Temperature 85°F, Relative Humidity 79%
- b. Langley: Wind (at altitude) 202-204° @ 10 kts, Temperature 84°F, Relative Humidity 78%

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations.
  - (2) Results: Adequate coverage through sprayed area. See Attachment 1.
- b. Effectiveness:
  - (1) Technique/s Used: Pre- and post-spray surveillance was conducted using CDC light traps with CO<sub>2</sub>.

(1) Pre and post spray trap counts from Langley AFB. Average reduction 84 %

<b>28-Aug-18</b>								
	Lt 1 LAG-0003	Horse Stables		0	0	0	0	0
	Lt 3 LAG-0002	B-52		31	48	18	0	97
	Lt 5 LAG-0006	Pest Shop	vexans, An br/cr	22	51	35	0	108
	Lt 4 LG-0032	WSA	Tris, vexans, br/cr, sallis	66	184	88	0	338

Total	543
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29-Aug-18								
	Lt 1 LAG-0003	Horse Stables		0	0	0	0	0
	Lt 3 LAG-0002	B-52		9	36	12	0	57
	Lt 5 LAG-0006	Pest Shop	vexans, An br/cr	43	87	54	0	184
	Lt 4 LG-0032	WSA	Tris, vexans, br/cr, sallis	40	249	60	0	349

Total	590
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<b>30-Aug-18</b>								
	Lt 1 LAG-0003	Horse Stables		0	0	0	0	0
	Lt 3 LAG-0002	B-52		3	6	1	0	10
	Lt 5 LAG-0006	Pest Shop	vexans, An br/cr	7	14	6	0	27
	Lt 4 LG-0032	WSA	Tris, vexans, br/cr, sallis	33	213	71	0	317

Total	354
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31-Aug-18								
	Lt 1 LAG-0003	Horse Stables		0	0	0	0	0
	Lt 3 LAG-0002	B-52		2	2	2	0	6
	Lt 5 LAG-0006	Pest Shop	vexans, An br/cr	7	1	18	0	26
	Lt 4 LG-0032	WSA	Tris, vexans, br/cr, sallis	11	30	18	0	59

Total	91
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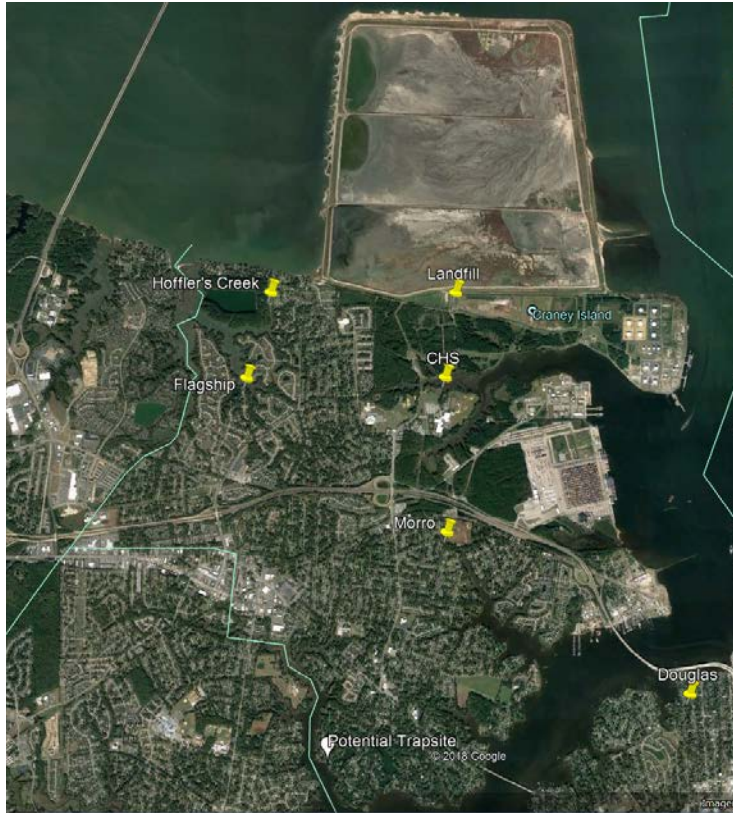
(2) Craney Island and Portsmouth Results: Reductions of 99.9 and 100% respectively at Landfill sites and Hoffler's Creek site.

	Pre Spray	Post Spray		Pre Spray	Post Spray		Pre Spray	Post Spray
	8/27/2018	8/30/2018		8/27/2018	8/30/2018		8/27/2018	8/30/2018
	<b>Landfill</b>			<b>High School</b>			<b>Morro Blvd.</b>	
<i>Oc. sollicitans</i>	1908	3		0	0		0	0
<i>Ae. vexans</i>	0	0		1	0		0	0
<i>Ae. taeniorhynchus</i>	26	0		0	1		0	0
<i>Ps. Columbiae</i>	78	1		0	0		0	0
<i>Ps. ferox</i>	0	0		0	0		2	0
<i>Cx. Spp</i>	146	6		0	0		0	3
<i>An. Spp</i>	2	0		0	0		0	0
<i>Ae. albopictus</i>	0	0		0	0		0	0
<b>Total Trap Count</b>	<b>2160</b>	<b>10</b>		<b>1</b>	<b>1</b>		<b>3</b>	<b>3</b>

	Pre Spray	Post Spray		Pre Spray	Post Spray
	8/27/2018	8/30/2018		8/27/2018	8/30/2018
	<b>Hoffler's Creek</b>			<b>Flagship Way</b>	
<i>Oc. sollicitans</i>	45	0		8	0
<i>Ae. vexans</i>	1	0		0	0
<i>Ae. taeniorhynchus</i>	10	0		3	0
<i>Ps. Columbiae</i>	0	0		1	0
<i>Ps. ferox</i>	21	0		0	0
<i>Cx. Spp</i>	4	0		2	3
<i>An. Spp</i>	1	0		1	2
<i>Ae. albopictus</i>	10	0		2	0
<b>Total Trap Count</b>	<b>100</b>	<b>0</b>		<b>17</b>	<b>5</b>

(3) Trap locations at Craney Island



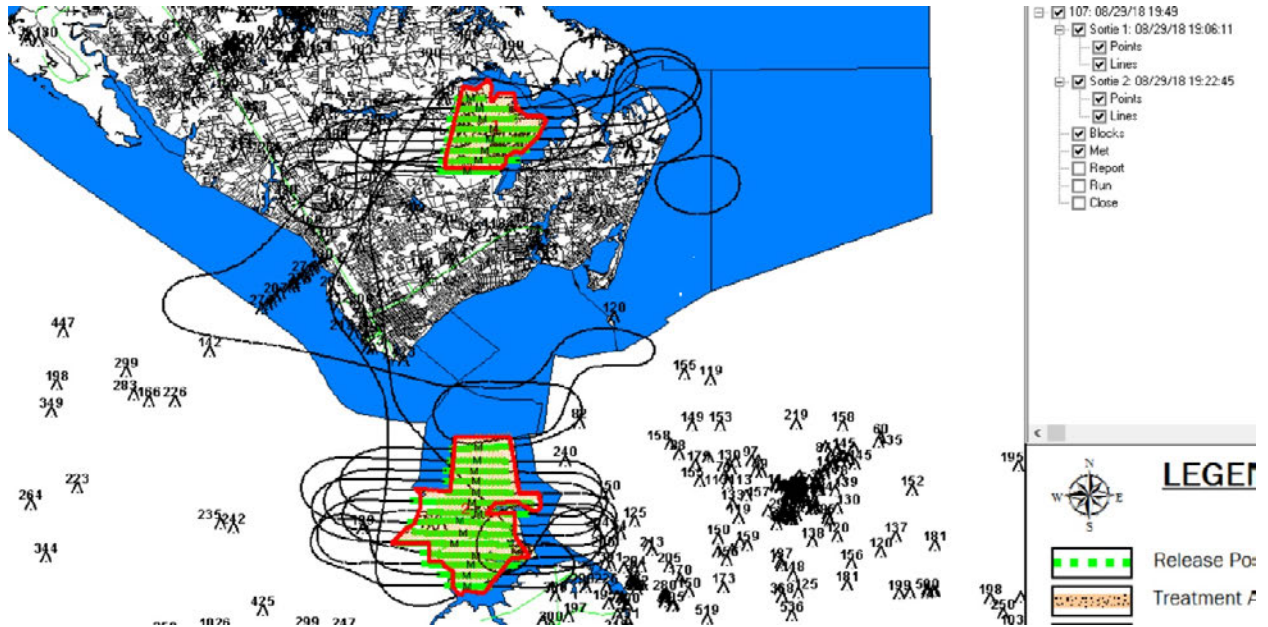
8. **REMARKS:** Relatively high mosquito counts made this night application a needed intervention to help protect the quality of life for local residents.

The Portsmouth Mosquito Control Division monitors insect populations and reported excellent control where mosquito populations were most numerous. Reductions in mosquito populations ranged from 71-100 %. Langley AFB also reported good control overall, with population reductions of about 85%. No significant problems were encountered during the actual application. This mission was originally planned for 4 days, but aircraft maintenance problems at home station prevented arrival on-site until the day of the planned spray. Thus, the timeline was by necessity, rushed. However, the professionalism and good attitude of crew allowed for safe and effective mission completion.

We sincerely appreciate the support received from all sections of Langley AFB and Craney Island Army Corps of Engineers. In particular, special thanks go to (b) (6) and (b) (6) for their coordination and their assistance during spray operations.

//signed//  
(b) (6), Lt Col, USAF  
DoD Certified Pest Management Professional

**Attachment 1. Area sprayed at Langley AFB, Craney Island Army Corps of Engineers, and Portsmouth, 29 Aug 2018. Green lines indicate individual spray swaths.**







**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
WILLISTON ARMY CORPS OF ENGINEERS, 29 MAY – 6 JUNE 2018**

**1. MISSION BASICS:**

- a. Installation Sprayed: Williston Army Corps of Engineers
- b. Mission Duration: 29 May- 6 June 2018
- c. Purpose of Application: Reduce the development of nuisance mosquitoes in standing water in locations not easily assessable by ground
- d. Application Dates: 31 May 2018 (Sortie 1); 4 June 2018 (Sortie 2)
- e. Times of Application (Local): 0735 – 1000 (Sortie 1); 0718 – 0910 (Sortie 2)
- f. Acres Treated: 428 (Sortie 1); 399 (Sortie 2); 827 (TOTAL)
- g. Flying Data:
  - (1) Spray sorties/hours: 2/4.3
  - (2) Ferry sorties/hours: 6/21.8
- h. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) 'Army Corps of Engineers, Natural Resource Specialist, (b) (6)
- i. Date Spray Map Last Approved: 29 May 2018
- j. Installation In-Briefing: (When/Where/Briefer/s): 29 May 2018/Lt Col (b) (6) & (b) (6) at the Army Corps of Engineers, Williston Resource Office

**2. OPERATIONAL:**

- a. Mission Commander: Maj (b) (6)
- b. Entomologists: Lt Col (b) (6) (29 May – 1 June), Lt Col (b) (6) (29 May – 2 June), Lt Col (b) (6) (3 - 6 June)
- c. SARM: SSgt (b) (6)
- d. Aircrew:
  - Pilots: Lt Col (b) (6) , Capt (b) (6)
  - Navigator: Lt Col (b) (6)
  - Flight Engineer: CMSgt (b) (6)
  - Spray Operators: MSgt (b) (6) , MSgt (b) (6) , MSgt (b) (6)
- e. Maintenance:
  - Spray MX: TSgt (b) (6) (LEAD), SMSgt (b) (6) (1<sup>st</sup> Sgt), SMSgt (b) (6) (b) (6) , TSgt (b) (6) , MSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6)
  - 910 MX Specialists: MSgt (b) (6) , TSgt (b) (6)
  - Crew Chiefs: TSgt (b) (6) , SrA (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Vectobac® 12AS (1200 ITU/mg)
- b. EPA Registration Number: 73049-38
- c. Formulation Sprayed: 1.8 pints of Vectobac in 4.5 gallons water per acre
- d. Gallons Pesticide Mix Loaded: 1,903 (Sortie 1); 1,900 (Sortie 2)

- e. Gallons Pesticide Mix Applied: 1,880 (Sortie 1); 1,880 (Sortie 2); (TOTAL 185 gallons of VectoBac12AS)
- f. Gallons and Name of Flush Used: None
- g. Other Additives Used: None
- h. Application Rate: 4.7 gal/acre (water with 1.8 pints Vectobac®)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 909108
- b. Spray System (Modules Used) and System ID #: 5
- c. Spray System Configuration: 3-Module System
- d. Nozzle Type/Size: LV/HV (Raindrop) Fuselage
- e. Nozzle Orientation & Number Used: 12 oriented straight back.
- f. Pressure: 40 p.s.i.
- g. Flow Rate: 220 gallons per minute.

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 100'
- b. Spray Off-set: None
- c. Spray Release Altitude: 100' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WATER LEVEL OBSERVATIONS:**

- a. See Attachment 1.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

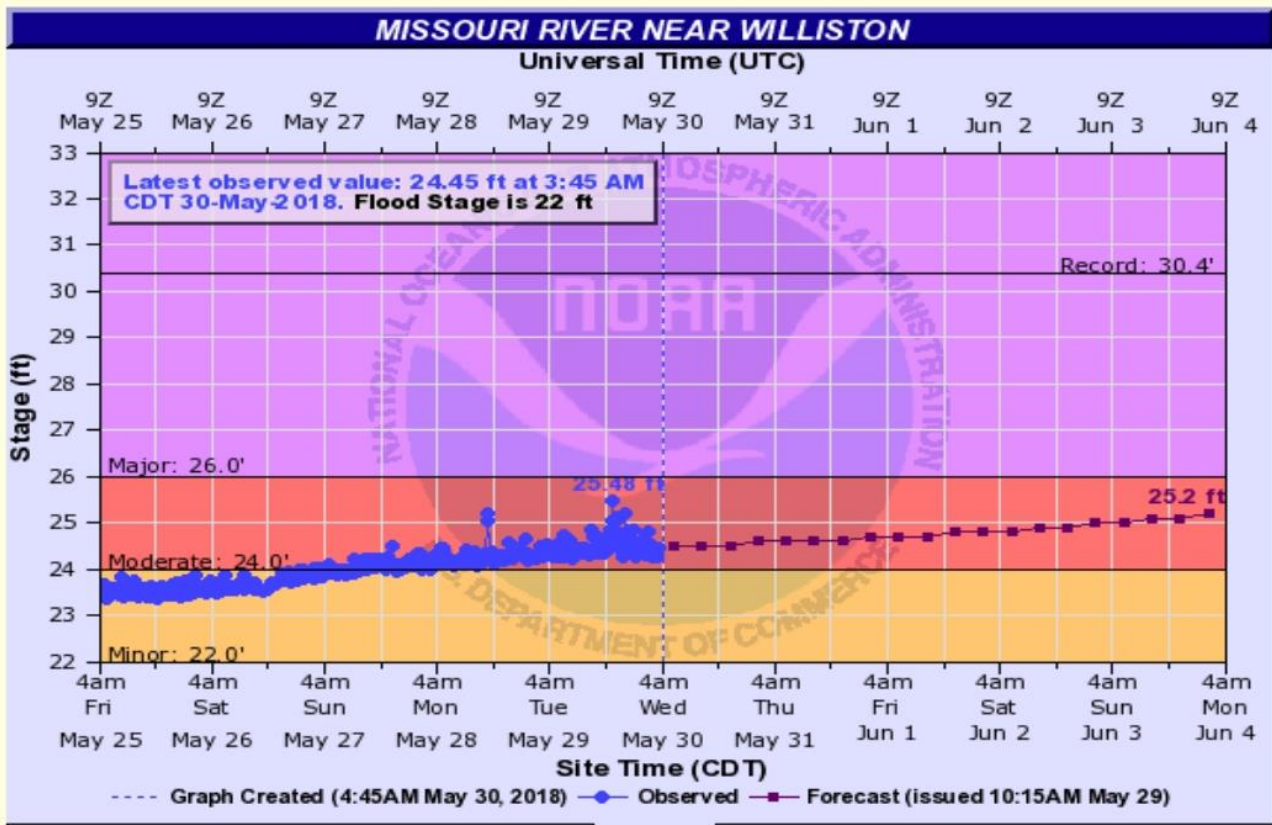
- a. Deposition Pattern:
  - (1) Technique Used: water sensitive dye cards
  - (2) Results: 100 ft swath confirmed.
- b. Effectiveness:
  - (1) Techniques Used: pre/post larval dips
  - (2) Results: Pending

- 8. REMARKS:** The annual hatch of the primary pest mosquito in this operation, *Aedes vexans*, is initiated by the rising meltwaters of the undammed Yellowstone River. However, the rise of the confluence of the Yellowstone, Missouri, and Little Muddy rivers at Williston is dependent on environmental conditions 250 miles away and can make long-range predictions of the rising waters difficult. To combat large mosquito populations resulting from floodwaters in the Williston area, a large-scale larvicide mission was planned and started in the floodplain area. Unfortunately, only 2 sorties (Attachment 2) were completed, due to poor weather (thunderstorms and high winds) and a bird strike which rendered the aircraft inoperable for remaining spray activities.

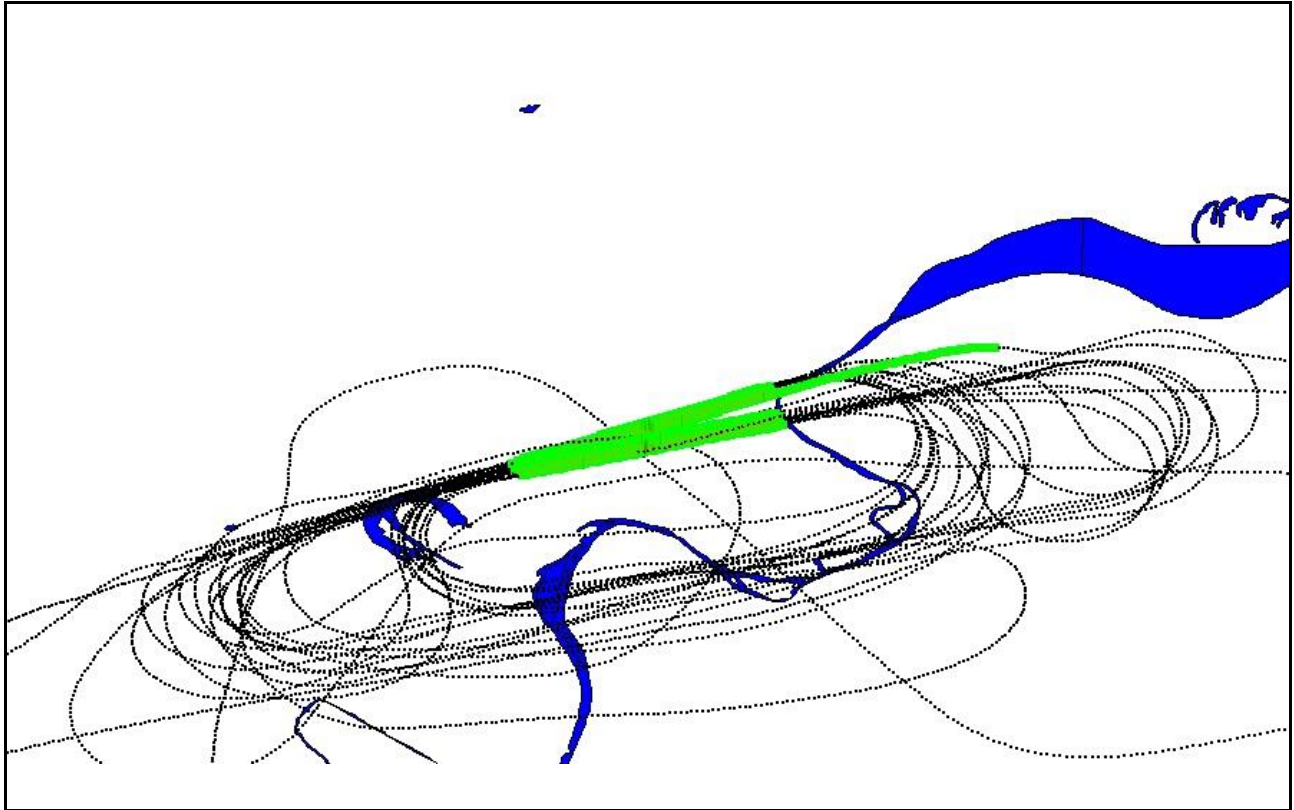
//signed//

(b) (6) , Lt Col, USAF  
DoD Certified Pest Management Professional

**Attachment 1:** Example of the level of flooding during May/June 2018. This chart shows the level of flooding from 25-30 May and predicted flooding for 31 May to 4 June. This type of hydrology is only usefully predictive within 1 week.



**Attachment 2:** Spray application to Big Timber area near Trenton on ACE property 31 May and 4 June 2018. Green lines indicate spray swaths.







**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
LANGLEY AFB/CRANEY ISLAND, 30 JULY – 2 AUGUST 2018**

**1. MISSION BASICS:**

- a. Installations Sprayed: Langley AFB, VA; Craney Island Army Corps of Engineers, Portsmouth, VA
- b. Mission Duration: 30 July – 2 August 2018
- c. Purpose of Application: Control of nuisance and vector mosquito species at Langley AFB and Craney Island Army Corps of Engineers
- d. Application Date: 31 July 2018
- e. Times of Application (Local): 2210-2400
- f. Acres Treated: 12,105
- g. Flying Data:
  - (1) Spray sorties/hours: 2/2.4 (day survey 0.8 + spray 1.9)
  - (2) Ferry sorties/hours: 2/3.2
  - (3) Training sorties/hours: 1/0.8
- h. Project Coordinator (Name/Rank, Title, Phone #):
  - (1) Langley: (b) (6), CES Pest Control, DSN (b) (6)
  - (2) Craney Island: (b) (6), Army Corps of Engineers, (b) (6)  
(b) (6) and (b) (6), City of Portsmouth, (b) (6)
- i. Date Spray Map Last Approved: 1 August 2017
- j. Installation In-Briefing: (When/Where/Briefer/s): 1 August 2017 at CE, briefed by Lt Col (b) (6)
- k. Mission Identifier: QENRK3531212

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) Lt Col (b) (6)
  - (2) Navigators: Lt Col (b) (6) Capt (b) (6)
  - (3) Flight Engineer: CMSgt (b) (6), SSgt (b) (6), SSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6) MSgt (b) (6) MSgt (b) (6)  
(b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) (Lead), MSgt (b) (6), MSgt (b) (6), TSgt (b) (6), Amn (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6), SRA (b) (6)
  - (3) Avionics: MSgt (b) (6)
- d. **Entomologist (Cat. 11 PMP):** Lt Col (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Dibrom® (87% a.i. naled)
- b. EPA Registration Number: 5481-480
- c. Additives Used: None
- d. Gallons Pesticide Loaded: 90 total; 28 (Langley), 62 (Craney Island)
- e. Gallons Pesticide Applied: 88
- f. Gallons and Name of Flush Used: 10 gallons H.A.N. (Highly Aromatic Naphtha)
- g. Application Rate: 0.93 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 89-9107
- b. Spray System (Modules Used) and System ID #: SP2G
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: 8003 Tee Jet
- e. Nozzle Orientation & Number Used: 31 nozzles oriented straight down
- f. Flow Rate: 6.3 gal/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: 2000'
- c. Spray Release Altitude: 300' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

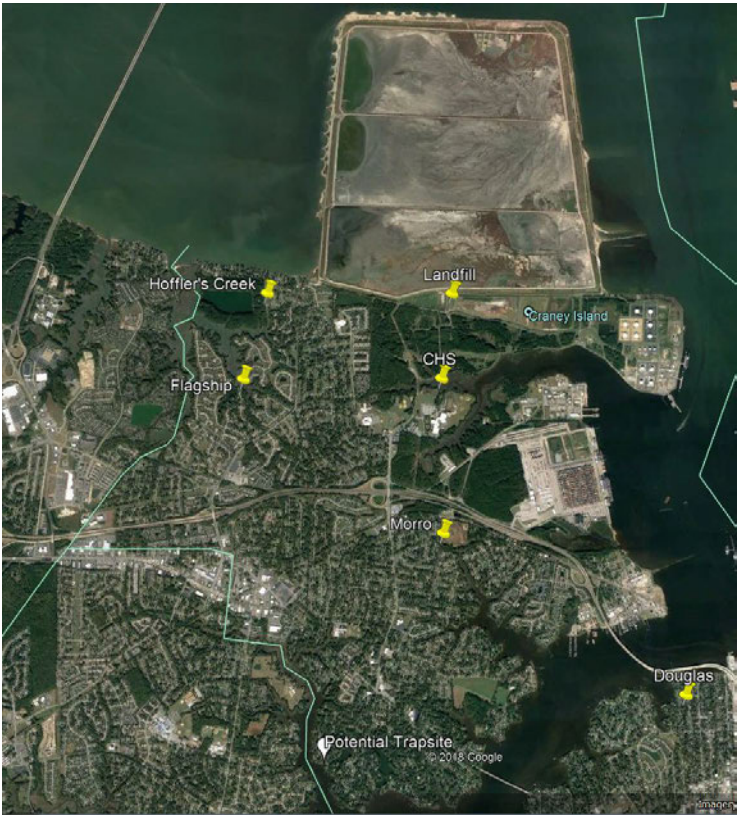
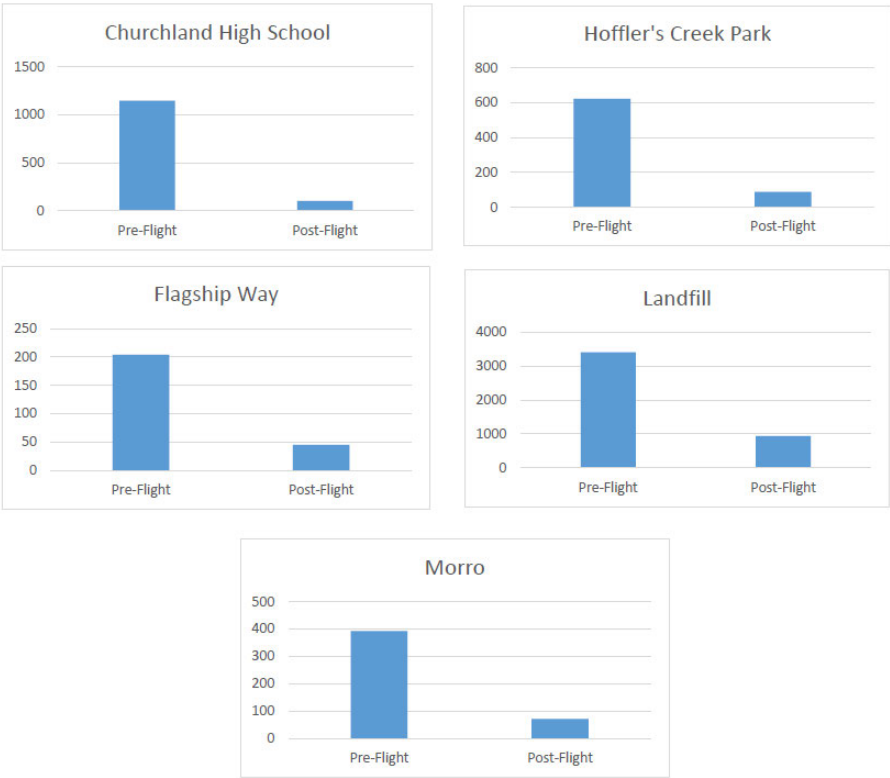
- a. Craney Island: Wind (at altitude) 190°@11 kts, Temperature 79°F, Relative Humidity 89%
- b. Langley: Wind (at altitude) 193° @ 12 kts, Temperature 80°F, Relative Humidity 88%

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations.
  - (2) Results: Adequate coverage through sprayed area. See Attachment 1.
- b. Effectiveness:
  - (1) Technique/s Used: Pre- and post-spray surveillance was conducted using CDC light traps with CO<sub>2</sub>.



(2) Craney Island and Portsmouth Results:



8. **REMARKS:** Relatively high mosquito counts made this night application against largely the unbanded saltmarsh mosquito *Culex salinarius* a needed intervention to help protect the quality of life for local residents, especially when they are involved with outdoor activities. The area has received near record rainfalls in July and more mosquito development is in the future. However, for now we had a relatively successful application. In this particular event, the pesticide was loaded with a favorable forecast but lightning forced closure of the flightline before the calibration was complete. With sunset approaching and the day survey incomplete, it was suggested (by Mr. (b) (6) - 633CES), that we could calibrate after the day survey. This worked out quite well, since the Langley airfield is well-lit and the calibration was supported by additional light carts. In the end, the mission successfully followed the suggested pattern, a daytime obstacle safety survey, calibration, and the operational flight.

The Portsmouth Mosquito Control Division, monitors insect populations and reported 88% reductions overall (see section 7.b.2). These are slightly lower than the target reduction of 95% and could be the result of a variety of factors. We will continue to monitor the efficacy of these sprays carefully and adjust accordingly. No significant problems were encountered during this application, and no negative effects were observed.

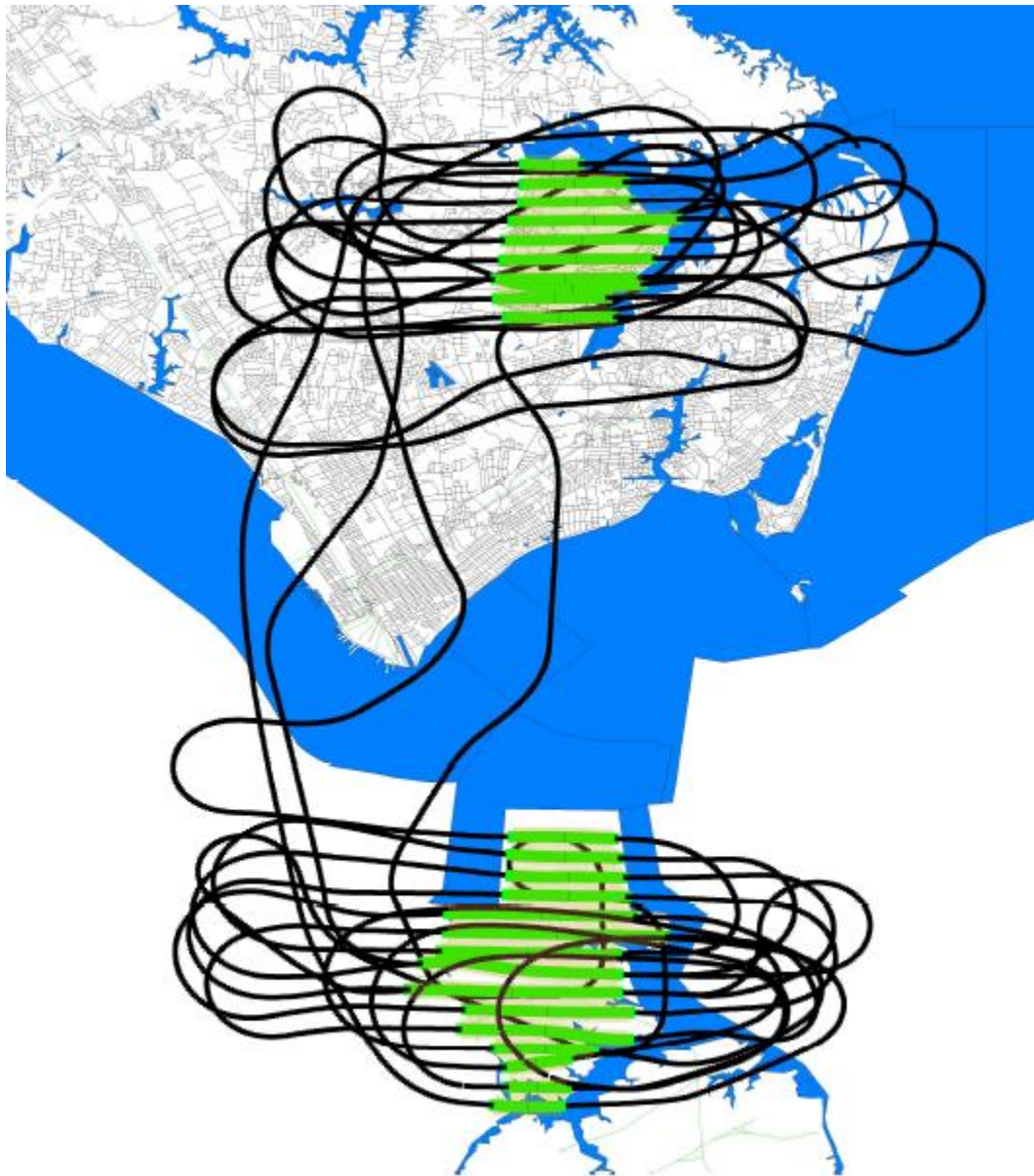
In addition, we held a meeting with local communities interested in hearing about the Innovative Readiness Training (IRT) Program. Representatives from York, Poquoson, Hampton, Chesapeake, and Suffolk were present. Communities were advised to update the local environmental assessment and put together an application. There was definite interest and we may see a new series of IRT applications this year. Thank you to Ms. (b) (6) (York County Public Works, Mosquito Control Division) for hosting the community discussions.

We sincerely appreciate the support received from all sections of Langley AFB and Craney Island Army Corps of Engineers. In particular, special thanks go to (b) (6) and (b) (6) for their coordination and their assistance during spray operations.

//signed//

(b) (6), Lt Col, USAF  
DoD Certified Pest Management Professional

**Attachment 1. Area sprayed at Langley AFB, Craney Island Army Corps of Engineers, and Portsmouth, 31 July 2018. Green lines indicate individual spray swaths.**





**UNITED STATES MARINE CORPS**  
MARINE CORPS RECRUIT DEPOT/EASTERN RECRUITING REGION  
P.O. BOX 19001  
PARRIS ISLAND, SOUTH CAROLINA 29905-9001

5090  
NREAO  
4 Apr 18

From: Natural Resources and Environmental Affairs Office  
To: Public Affairs Office

Subj: APRIL AERIAL SPRAY TO CONTROL SANDFLIES AND MOSQUITOES

1. In an effort to control sand flea and mosquito populations, MCRD Parris Island is scheduled to undergo aerial spray activities during the nights of 18 and 19 April 2018. In order to meet public service announcement requirements and to warn beekeepers within a five-mile radius of Parris Island, please release the following announcement to the local media including local radio stations between 13 and 19 April 2018.

"In an effort to control sand flea and mosquito populations and depending on weather conditions, MCRD Parris Island is scheduled to undergo aerial spray activities during the night of 18 and 19 April 2018. If weather permits, spray activities will occur approximately an hour after sundown.

The insecticides used present no threat to humans, plants or animals in the area and are approved by the Environmental Protection Agency; however, beekeepers within a five-mile radius are urged to keep hives covered."

2. Should you have any questions, please contact Captain (b) (6) at  
(b) (6) the Natural Resources and Environmental Affairs Office.

(b) (6)

# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: MSGT (b) (6) , Minot 20-23 AUG 2018

**Aircraft Tail Number:** 89009104

**MASS Number:** 1

**Configuration:** SPG 2

**Boom & Nozzle Type:** Fuselage, 8003's

**Chemical in Main Tank:** Trumpet

**Chemical in Flush Tank:** Aromatic  
Naptha

**Total Chemical Loads:** 1

**Total Flush Loads:** 1

**Amount of Liquid Waste Generated:**  
0 Gals

**Amount of Solid Waste Generated:**  
10 LBS

## 1. From a maintenance aspect, what training was accomplished on this mission?

We had great training for our new reservist, AMn (b) (6) . He was able to get signed off operating the barrels during the chemical upload and during the calibration worked the right side of the aircraft booms, buckets.

## 2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.

Worked great with the crew chiefs on this trip & TA was on the spot. Loadmasters did a great job flushing a purging the system. Saved lots of man hours on the ground for spray MXS!!

## 3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.

Calibration took longer than usual, finally opened up a few more sites and was able to get the system calibrated.

## 4. How was host base and TA support? Please include details.

Excellent as always.

## 5. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.

No issues

**6. Were there any notable observations from a maintenance perspective inflight?**

Spray MXS didn't fly

**7. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Yes.

**8. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

Trip was all around a good trip, no issues with the aircraft, system or weather.





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

29 August 2018

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at JB Charleston, SC

1. Aerial spray deployment of one C-130 from 6-9 September 2018 to JB Charleston, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes which negatively impact outdoor training activities and create health hazards to the personnel of JB Charleston. Operations for this mission will be conducted from JB Charleston.

2. Concept of Operations (All times are local):

- a. 6 September  
1700 Depart KYNG  
1900 Land KCHS
- b. 7 September  
1900 Depart KCHS for NVG Aerial Spray of JB Charleston  
2200 Land KCHS
- c. 8 September  
1900 Depart KCHS for NVG Aerial Spray of JB Charleston (WX backup)  
2200 Land KCHS
- d. 9 September  
1200 Depart KCHS  
1400 Land KYNG

3. Spray Parameters:

- a. Area to be treated: 18,000 acres over JB Charleston
- b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
- c. Groundspeed: 200 KIAS
- d. Application Rate: 0.85 oz/acre of Trumpet EC

4. Maj (b) (6) will be the Mission Commander with Lt Col (b) (6) as the Aircraft Commander.

//SIGNED//

(b) (6)

Chief of Aerial Spray

Maj, USAF



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

25 September 2018

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at JB Charleston and Parris Island, SC

1. Aerial spray deployment of one C-130 from 3-6 October 2018 to JB Charleston, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at MCRD Parris Island and health and welfare of the personnel of JB Charleston. Operations for this mission will be conducted from JB Charleston.

2. Concept of Operations (All times are local):

- a. 3 October  
1700 Depart KYNG  
1900 Land KCHS
- b. 4 October  
1800 Depart KCHS for Aerial Spray of Parris Island  
2030 Land KCHS
- c. 5 October  
1800 Depart KCHS for Aerial Spray of JB Charleston  
2030 Land KCHS
- d. 6 October  
1000 Depart KCHS  
1200 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 6500 acres on Parris Island
- b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
- c. Swath Width: 1000ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 0.75 oz/acre of Dibrom- an organophosphate insecticide

- a. Area to be treated: 18000 acres over JB Charleston
- b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
- c. Swath Width: 2000ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 0.85 oz/acre of Trumpet EC

4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) as the Aircraft Commander. Support at MCRD Parris Island and JB Charleston has been completed.

//SIGNED//

(b) (6), MAJOR, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

10 May 2018

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at JB Charleston and Parris Island, SC

1. Aerial spray deployment of one C-130 from 15-19 May 2018 to JB Charleston, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at MCRD Parris Island and health and welfare of the personnel of JB Charleston. Operations for this mission will be conducted from JB Charleston.

2. Concept of Operations (All times are local):

- a. 15 May (Tuesday)  
1700 Depart KYNG  
1900 Land KCHS
- b. 16 May (Wednesday)  
2000 Depart KCHS for Aerial Spray of JB Charleston  
2230 Land KCHS
- c. 17 May (Thursday)  
2000 Depart KCHS for Aerial Spray of Parris Island  
2230 Land KCHS
- d. 18 May (Friday)  
2000 Depart KCHS (Weather backup)  
2200 Land KCHS
- e. 19 May (Saturday)  
1000 Depart KCHS  
1200 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 6500 acres on Parris Island
- b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
- c. Swath Width: 1000ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 0.75 oz/acre of Dibrom- an organophosphate insecticide

- a. Area to be treated: 18000 acres over JB Charleston
- b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
- c. Swath Width: 2000ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 0.85 oz/acre of Trumpet EC

4. Maj (b) (6) will serve as the Mission Commander with Capt (b) (6) as the Aircraft Commander. Support at MCRD Parris Island and JB Charleston has been completed.

//SIGNED//

(b) (6), MAJOR, USAF  
Chief of Aerial Spray





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

12 June 2018

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at JB Charleston and Parris Island, SC

1. Aerial spray deployment of one C-130 from 18-21 June 2018 to JB Charleston, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at MCRD Parris Island and health and welfare of the personnel of JB Charleston. Operations for this mission will be conducted from JB Charleston.

2. Concept of Operations (All times are local):

- a. 18 June (Monday)  
1700 Depart KYNG  
1900 Land KCHS
- b. 19 June (Tuesday)  
2000 Depart KCHS for NVG Aerial Spray of JB Charleston  
2230 Land KCHS
- c. 20 June (Wednesday)  
1900 Depart KCHS for dusk Aerial Spray of Parris Island  
2130 Land KCHS
- d. 21 Jun (Thursday)  
1200 Depart KCHS  
1400 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.



3. Spray Parameters:

- a. Area to be treated: 7,500 acres on Parris Island
- b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
- c. Swath Width: 1000ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 0.75 oz/acre of Dibrom- an organophosphate insecticide

- a. Area to be treated: 18,000 acres over JB Charleston
- b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
- c. Swath Width: 2000ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 0.85 oz/acre of Trumpet EC

4. Maj (b) (6) will serve as the Mission Commander with Capt (b) (6) as the Aircraft Commander. Support at MCRD Parris Island and JB Charleston has been coordinated.

//SIGNED//

(b) (6), Maj, USAF  
Assistant Chief of Aerial Spray



DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

21 August 2018

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd, Unit 27  
Vienna Ohio 44473

SUBJECT: Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Langley AFB and Craney Island Army Corps of Engineers, VA.

1. Aerial spray deployment of one C-130 to Langley AFB, VA. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of Langley AFB.

2. Concept of Operations: All times local

- a. 27 Aug (Monday)  
1700 Depart KYNG  
1815 Land KLFI
- b. 28-29 August (Tuesday-Wednesday)  
1900 Depart KLFI  
2130 Land KLFI
- c. 30 Aug (Thursday)  
1200 Depart KLFI  
1315 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc.

3. Spray Parameters:

- a. Location: Langley AFB and Craney Island, VA
- b. Altitude: 300ft AGL for NVG adulticide application
- c. Swath Width: 2,000 feet
- d. Airspeed: 200 KTS
- e. Application Rate: 0.9 oz/acre Dibrom

4. Lt Col (b) (6) will serve as the Mission Commander.

\\SIGNED\\

(b) (6), Maj, USAF  
Assistant Chief, Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

14 August 2018

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Minot AFB, Williston and Watford City, North Dakota.

1. Aerial spray deployment of one C-130 to Minot AFB, ND to train aerial spray aircrew, pest management personnel, and maintenance members in the control of nuisance and vector mosquitoes, with mosquito adulticide in order to improve working conditions and lower the risk of vector-borne illness to individuals working and living in/on Minot AFB, Williston and Watford City. Aerial spraying performed off DOD installation property will be conducted IAW the Innovative Readiness Training (IRT) Program criteria.

2. Concept of Operations: All times local

- a. 20 August (Monday)  
1700 Depart KYNG  
1930 Land KMIB
- b. 21 August – 22 August (Tuesday – Wednesday)  
2025 Depart KMIB  
2330 Land KMIB
- c. 23 August (Thursday)  
1200 Depart KMIB  
1600 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

### 3. Spray Parameters:

#### Minot AFB:

- a. Area to be treated: 5,170 acres
- b. Altitude: 300 feet
- c. Swath Width: 2,000 feet
- d. Airspeed: 200 KGS
- e. Application Rate: 0.98 oz/acre Trumpet

#### Williston/Watford City:

- f. Area to be treated: 23,622 acres
- g. Altitude: 300 feet
- h. Swath Width: 2,000 feet
- i. Airspeed: 200 KGS
- j. Application Rate: 0.98 oz/acre Trumpet

4. Maj (b) (6) will serve as the Mission Commander. Support required at Minot AFB has been completed.

\\SIGNED\\

(b) (6), Maj, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

10 April 2018

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Parris Island, SC

1. Aerial spray deployment of one C-130 from 17-20 April 2018 to JB Charleston, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at Parris Island MCRD.

2. Concept of Operations (All times are local):

- a. 17 April (Tuesday)  
1700 Depart KYNG  
1900 Land KCHS
- b. 18 April (Wednesday)  
1730 Weather call/Calibration of MASS, Chemical Load/actual application planned for Parris Island MCRD  
1900 Depart KCHS  
2200 Land KCHS
- c. 19 April (Thursday) WX Backup  
1630 Weather call/Calibration of MASS, Chemical Load/actual application planned for Parris Island MCRD  
1800 Depart KCHS  
2100 Land KNBC
- d. 20 April (Friday)  
1000 Depart KCHS  
1200 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 7500 acres on Parris Island.
- b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
- c. Swath Width: 1000ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 0.75-1 oz/acre of Dibrom- an organophosphate insecticide

4. Maj (b) (6) will serve as the Mission Commander with Lt Col (b) (6) as the Aircraft Commander. Support at Parris Island MCRD and JB Charleston has been completed.

//SIGNED//

(b) (6), MAJOR, USAF  
Chief of Aerial Spray



# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **GRAND FORKS AFB, ND**

### **11-15 JUNE 2018**

### **QENRK3531162**

**Purpose/Objectives/Benefits:** To control nuisance and vector mosquitoes through the application of larvicide, thereby improving working conditions and reducing the risk of mosquito-borne illness for members operating at Grand Forks AFB, North Dakota.

#### **1. 910 AW PARTICIPANTS:**

Msn Commander:	<b>Lt Col</b> (b) (6)	(b) (6)
Entomologists:	Maj (b) (6)	
Pilots:	Maj (b) (6)	, Capt (b) (6)
Navigators:	Lt Col (b) (6)	
Flight Engineer:	MSgt (b) (6)	
Spray Operators:	MSgt (b) (6)	, SSgt (b) (6), SSgt (b) (6)
Spray Maintenance:	<b>MSgt</b> (b) (6)	<b>(Lead)</b> (b) (6)
	TSgt (b) (6)	, TSgt (b) (6), TSgt (b) (6)
	Amn (b) (6)	
Crew Chiefs:	MSgt (b) (6)	, TSgt (b) (6)
Comm/Nav:	TSgt (b) (6)	, SSgt (b) (6)

#### **2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, laptop/Spray datasheet, O <sub>2</sub> hose extensions
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system cards

#### **3. SCHEDULE: (All Local Time)**

##### **11 June (Mon) PPR JM 1101**

0800 Showtime  
1000 Depart KYNG  
1200 Land KRDR  
1500 Installation Brief

##### **12-14 June (Tuesday-Thursday) Sunrise: 0528L**

0530 Showtime  
0700 Depart KRDR  
1100 Land KRDR (multiple lifts planned)

##### **15 June (Friday)**

0800 Showtime  
1000 Depart KRDR  
1400 Land KYNG

#### **4. AIRCRAFT & SPRAY CONFIGURATION:**

**Aircraft:** AF89-9104

**System:** MASS: #5 SP2G (2-Module System) with Fuselage Booms

**Nozzle/Orientation:** Larvicide: R-20 Raindrop nozzles oriented straight back  
Number of Nozzles: 12 nozzles

#### **5. SPRAY MIXING AND LOADING:**

##### **Composition of Each Gallon:**

- (1) 0.375 ounces of Altosid® Liquid Larvicide Concentrate (SR20)
- (2) 0.25 ounces of AirexDC™ drift retardant
- (3) Water

##### **Typical Load:**

- (1) Fill with 450 gallons of water per tank; total water in tanks = 900 gallons
- (2) Add 1.33 gallons of Altosid® per tank (2.66 gallons total)
- (3) Add 0.88 gallons AirexDC™ per tank (1.76 gallons total) while agitating approximately 15 min
- (4) Total quantity mixed = 904.4 gallons

**Final Load for Complete Flush:** Fill tanks with the amount of water necessary for a proper system flush

##### **Mixing Instructions:**

SHAKE WELL BEFORE USING. Altosid® may separate on standing and must be thoroughly agitated prior to dilution.

PRECAUTIONARY STATEMENT: Spray solution should be used within 48 hours; always agitate before spraying.

#### **6. SPRAY PARAMETERS:**

Location:	All prescribed areas
Chemical:	Altosid®
Area to be treated:	Approximately 2,100 acres
Swath Width:	200 feet
Flow Rate:	233 gallons/minute
Application Rate:	2.5 gallons/acre (water with 0.94 oz of Altosid®)
Altitude:	100' AGL
Ground Speed:	200 Knots
Flush:	Water
Formulas:	Flow Rate = Gal/Time in Minutes Acreage Sprayed = Total Sec x 338 x Swath Width / 43,560

#### **7. AIR TO GROUND RADIO FREQUENCIES:**

KRDR Tower:	124.9 V
Grand Forks International:	118.4 V
Spray Ground:	392.2 UHF; 123.45 VHF

8. **TRANSPORTATION:** (Three 6-Pax Trucks, One 15 Pax Van)

U Drive – Officer Aircrew  
U Drive – Enlisted Aircrew  
U Drive – Spray MX  
U Drive – MX

9. **LODGING:**

**On Base Billeting:** Warrior Inn  
543 Holzapple St, Bldg #203  
Grand Forks AFB, ND 58205  
**POC - Ms. (b) (6)**  
DSN 362-7200 or (701) 747-7200, DSN Fax 362-3069  
21 rooms reserved – **Group Acct #: 204-400-90426**  
-- Prime Knight DSN 362-3844 or (701) 747-3844

**CONTACTS:**

**319 CE/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**

Flight Scheduler	(b) (6)	, 701-747-6837
Base Operations:	Airfield Manager, DSN 362-4409	
Environmental:	DSN (b) (6)	
Base Civil Engineer:	Lt Col (b) (6)	
Pest Management:	MSgt (b) (6) , DSN (b) (6) ; mobile (b) (6)	
Public Affairs:	DSN 362-5608/5023 (off duty CP ext 6711)	
Weather:	DSN 362-4396	
Billeting:	DSN 362-3070/6189/7200	
Transportation:	DSN 362-3976	

**910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

910 AW/CC:	x1243	
Command Post	x1315	FAX x1161
PA:	x1236	FAX x1022
OG/CC:	x1257/1179	
Safety	x1391	
Base Ops:	x1182	
SOF Desk:	x1069	FAX: x1371
757 AS/DO:	x1793	
757 AS Admin:	x1239	FAX x1657
757 AS Spray Office:	x1638/1111	FAX x1616
910 MXG/CC:	x1225	
910 LG/LGM:	x1352	
Maintenance Control:	x1348	
Spray Maintenance:	x1132/1586	

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **GRAND FORKS AFB, ND**

### **11-15 JUNE 2018**

### **QENRK3531162**

**Purpose/Objectives/Benefits:** To control nuisance and vector mosquitoes through the application of larvicide, thereby improving working conditions and reducing the risk of mosquito-borne illness for members operating at Grand Forks AFB, North Dakota.

#### **1. 910 AW PARTICIPANTS:**

Msn Commander:	<b>Lt Col</b> (b) (6)	(b) (6)
Entomologists:	Maj (b) (6)	
Pilots:	Maj (b) (6)	, Capt (b) (6)
Navigators:	Lt Col (b) (6)	
Flight Engineer:	MSgt (b) (6)	
Spray Operators:	MSgt (b) (6)	, SSgt (b) (6), SSgt (b) (6)
Spray Maintenance:	<b>MSgt</b> (b) (6)	<b>(Lead)</b> (b) (6)
	TSgt (b) (6)	, TSgt (b) (6), TSgt (b) (6)
	Amn (b) (6)	
Crew Chiefs:	MSgt (b) (6)	, TSgt (b) (6)
Comm/Nav:	TSgt (b) (6)	, SSgt (b) (6)

#### **2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, laptop/Spray datasheet, O <sub>2</sub> hose extensions
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system cards

#### **3. SCHEDULE: (All Local Time)**

##### **11 June (Mon) PPR JM 1101**

0800 Showtime  
1000 Depart KYNG  
1200 Land KRDR  
1500 Installation Brief

##### **12-14 June (Tuesday-Thursday) Sunrise: 0528L**

0530 Showtime  
0700 Depart KRDR  
1100 Land KRDR (multiple lifts planned)

##### **15 June (Friday)**

0800 Showtime  
1000 Depart KRDR  
1400 Land KYNG

#### **4. AIRCRAFT & SPRAY CONFIGURATION:**

**Aircraft:** AF89-9104

**System:** MASS: #5 SP2G (2-Module System) with Fuselage Booms

**Nozzle/Orientation:** Larvicide: R-20 Raindrop nozzles oriented straight back  
Number of Nozzles: 12 nozzles

#### **5. SPRAY MIXING AND LOADING:**

##### **Composition of Each Gallon:**

- (1) 0.375 ounces of Altosid® Liquid Larvicide Concentrate (SR20)
- (2) 0.25 ounces of AirexDC™ drift retardant
- (3) Water

##### **Typical Load:**

- (1) Fill with 450 gallons of water per tank; total water in tanks = 900 gallons
- (2) Add 1.33 gallons of Altosid® per tank (2.66 gallons total)
- (3) Add 0.88 gallons AirexDC™ per tank (1.76 gallons total) while agitating approximately 15 min
- (4) Total quantity mixed = 904.4 gallons

**Final Load for Complete Flush:** Fill tanks with the amount of water necessary for a proper system flush

##### **Mixing Instructions:**

SHAKE WELL BEFORE USING. Altosid® may separate on standing and must be thoroughly agitated prior to dilution.

PRECAUTIONARY STATEMENT: Spray solution should be used within 48 hours; always agitate before spraying.

#### **6. SPRAY PARAMETERS:**

Location:	All prescribed areas
Chemical:	Altosid®
Area to be treated:	Approximately 2,100 acres
Swath Width:	200 feet
Flow Rate:	233 gallons/minute
Application Rate:	2.5 gallons/acre (water with 0.94 oz of Altosid®)
Altitude:	100' AGL
Ground Speed:	200 Knots
Flush:	Water
Formulas:	Flow Rate = Gal/Time in Minutes Acreage Sprayed = Total Sec x 338 x Swath Width / 43,560

#### **7. AIR TO GROUND RADIO FREQUENCIES:**

KRDR Tower:	124.9 V
Grand Forks International:	118.4 V
Spray Ground:	392.2 UHF; 123.45 VHF

8. **TRANSPORTATION:** (Three 6-Pax Trucks, One 15 Pax Van)

U Drive – Officer Aircrew  
U Drive – Enlisted Aircrew  
U Drive – Spray MX  
U Drive – MX

9. **LODGING:**

**On Base Billeting:** Warrior Inn  
543 Holzapple St, Bldg #203  
Grand Forks AFB, ND 58205  
**POC - Ms. (b) (6)**  
DSN 362-7200 or (701) 747-7200, DSN Fax 362-3069  
21 rooms reserved – **Group Acct #: 204-400-90426**  
-- Prime Knight DSN 362-3844 or (701) 747-3844

**CONTACTS:**

**319 CE/CEVP, 525 6<sup>th</sup> Ave, Grand Forks AFB ND 58205**

Flight Scheduler	(b) (6)	, (b) (6)
Base Operations:	Airfield Manager, DSN (b) (6)	
Environmental:	DSN 362-4655	
Base Civil Engineer:	Lt Col (b) (6)	
Pest Management:	MSgt (b) (6) , DSN (b) (6) ; mobile (b) (6)	
Public Affairs:	DSN 362-5608/5023 (off duty CP ext 6711)	
Weather:	DSN 362-4396	
Billeting:	DSN 362-3070/6189/7200	
Transportation:	DSN 362-3976	

**910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

910 AW/CC:	x1243	
Command Post	x1315	FAX x1161
PA:	x1236	FAX x1022
OG/CC:	x1257/1179	
Safety	x1391	
Base Ops:	x1182	
SOF Desk:	x1069	FAX: x1371
757 AS/DO:	x1793	
757 AS Admin:	x1239	FAX x1657
757 AS Spray Office:	x1638/1111	FAX x1616
910 MXG/CC:	x1225	
910 LG/LGM:	x1352	
Maintenance Control:	x1348	
Spray Maintenance:	x1132/1586	



**AERIAL SPRAY OPERATIONAL SCHEDULE**  
**MINOT, ND**  
**25-29 June 2018**  
**QENRK3531176**

**PURPOSE/BENEFIT/OBJECTIVE:** One C-130 will deploy to Minot AFB from 25-29 June, 2018. Aerial Spray flight proficiency training will be accomplished on Night Vision Goggles (NVGs) while providing a beneficial reduction in mosquito populations improving the health and welfare of personnel working and living in and around Minot AFB, Minot, Williston, and Watford City. Aerial spraying of the cities will be in accordance with the Individual Readiness Training (IRT) program.

**1. 910 AW PARTICIPANTS:**

Mission Commander:	Lt Col (b) (6)	(b) (6)
Entomologist:	Maj (b) (6)	
Pilots:	Lt Col (b) (6)	, Capt (b) (6)
Navigators:	Lt Col (b) (6)	, Lt Col (b) (6)
Flight Engineer:	MSgt (b) (6)	
Spray Operators:	SSgt (b) (6)	, TSgt (b) (6)
Spray MX:	TSgt (b) (6)	, (Lead) (b) (6)
	TSgt (b) (6)	. TSgt (b) (6), TSgt (b) (6), Amn (b) (6)
Avionics:	MSgt (b) (6)	
Crew Chiefs:	TSgt (b) (6)	, SrA (b) (6)

**2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, Laptop and/or Spray datasheet, O <sub>2</sub> hose extensions, NVGs
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system cards

**3. SCHEDULE: (All Local Times)**

**25 June (Monday) Sunset 2151L – Civil Twilight 2233L**

**Pesticide/Safety brief will be conducted at the aircraft prior to departing for KMIB**

1500 – Showtime

1700 – Depart KYNG

1935 – Land KMIB

**26-28 June (Tuesday-Thursday) Sunset 2151L – Civil Twilight 2233L**

1500 – (Tuesday only -- Inbrief at 5 CES Commanders Conference Room in Bldg. 445

1900 – Weather Call/Chemical Load/Calibration

2115 – Depart KMIB (daytime survey Minot AFB/Minot 1<sup>st</sup> night & Williston 2<sup>nd</sup> night)

0030 – Land KMIB

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**29 June (Friday)**  
1200 – Depart KMIB  
1600 – Land KYNG

**4. SPRAY CONFIGURATION AND PARAMETERS:**

<b>Location:</b>	<b>Minot AFB</b>
Acres:	5,170
Chemical:	Trumpet® EC (78% AI Naled)
Gallons loaded:	approx. 30
Flow Rate:	7.1 GPM
Application Rate:	0.98 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300 feet AGL
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet oriented straight down
Number of Nozzles:	(15 left – 16 right) 31 Total

<b>Location:</b>	<b>Minot City/Burlington</b>
Acres:	22,128
Chemical:	Trumpet
Gallons loaded:	6 drums
Flow Rate:	7.1 GPM
Application Rate:	0.98 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300 feet AGL
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet oriented straight down
Number of Nozzles:	(15 left – 16 right) 31 Total

<b>Location:</b>	<b>Williston/Watford</b>
Acres:	23,622
Chemical:	Trumpet
Gallons loaded:	180 (6 drums)
Flow Rate:	7.1 GPM
Application Rate:	0.98 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300 feet AGL
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet oriented straight down
Number of Nozzles:	(15 left – 16 right) 31 Total

**Flush and Purge procedures per day will be furnished by the Mission Commander**

7. **RADIO FREQUENCIES:**

**Spray Ground:** UHF 392.2; VHF 123.45

**Minot AFB:** Tower – 120.65 VHF or 253.5 UHF  
Ground – 134.0 VHF or 257.8 UHF  
Approach – 119.6 VHF or 363.8 UHF  
ATIS – 278.8 UHF  
Command Post – 321.0 “Raymond 12”  
PTD – 372.2

8. **TRANSPORTATION:**

MIB Vehicle Ops POC: A1C (b) (6) , (b) (6)  
Confirmation Number: # 28715419

U-Drive (6 pax): MC/Entomologist  
U-Drive (6 pax): Pilots and Navigators  
U-Drive (6 pax): Engineers and Spray Operators  
U-Drive (6 pax): Spray MX  
U-Drive (6 pax): Crew Chiefs and Avionics

9. **LODGING:**

**MAFB Billeting:** 701-248-7000, DSN 453-6161 ext. 3012 Group reservations  
**POC:** Brittany Peterson email: brittany.peterson.3@us.af.mi  
**Location:** Staybridge Suites  
3009 S Broadway, Minot, ND 58701  
Phone: 701.852.0852

**Confirmation number:** Organization/Group Name: Youngstown Air Reserve Station

10. **CONTACTS:**

**Minot AFB:** DSN prefix 453, commercial 701-723-xxxx

Base Operations:	x2347	
Environmental Office:	x4871 (b) (6)	)
Base Civil Engineer:	x2434 (Lt Col (b) (6)	)
Pest Management:	x2393 (b) (6)	) (b) (6) cell
Weather:	x6381 or x3631	
Billeting:	x6161 or 701-727-6161	
Fire Department:	x2461	
Transient Alert	x3153	
Minot Tower	x3330	
AGE flight chief	701-723-2299	
Williston VCD	701-577-4563 (b) (6)	)
Army Corps of Eng	701-572-6469 (b) (6)	)
Minot City	701-833-7677 (b) (6)	)
	701-xxx-xxxx (b) (6)	)

**910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

910 AW/CC:	x1243	
Command Post	x1315	FAX x1161
PA:	x1236	FAX x1022
OG/CC:	x1257/1179	
Safety	x1391	
Base Ops:	x1182	
SOF Desk:	x1069	FAX: x1371
757 AS/DO:	x1793	
757 AS Admin:	x1239	FAX x1657
757 AS Spray Office:	x1638/1111	FAX x1616
910 MXG/CC:	x1225	
910 LG/LGM:	x1352	
Maintenance Control:	x1348	
Spray Maintenance:	x1132/1586	

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **PARRIS ISLAND MCRD, SC**

### **17-20 APRIL 2018**

### **QENRK3592107**

**Purpose/Objectives/Benefits:** Aerial spray deployment of one C-130 during 17-20 April to Charleston AFB Intl, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at Parris Island MCRD. NVG sorties will be flown at 300' AGL.

#### **1. 910 AW PARTICIPANTS:**

Msn Commander:	Maj (b) (6)	(b) (6)
Entomologists:	Lt Col (b) (6)	
Pilots:	Lt Col (b) (6)	, Capt (b) (6)
Navigators:	Lt Col (b) (6)	, Lt Col (b) (6)
Flight Engineer:	MSgt (b) (6)	
Spray Operators:	MSgt (b) (6)	, TSgt (b) (6), SSgt (b) (6)
Spray Maintenance:	TSgt (b) (6)	(330) 853-1311
	MSgt (b) (6)	, TSgt (b) (6), TSgt (b) (6)
	TSgt (b) (6)	, TSgt (b) (6)
Crew Chiefs:	TSgt (b) (6)	, SrA (b) (6)
Comm/Nav:	SSgt (b) (6)	

#### **2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, laptop/Spray datasheet, O <sub>2</sub> hose extensions, NVG's
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system cards

### **3. SCHEDULE: (All Local Time)**

#### **17 APR (Tues) PPR: Via GDSS2**

1500 Showtime  
1700 Depart KYNG  
1900 Land KCHS

#### **18 APR (Wed) Sunset: 1952L; Civil Twi: 2017L**

1630 Installation brief at Parris Island Bldg 151  
1700 Weather call/Chemical Load  
1730 Calibration  
1930 Depart KCHS  
2200 Land KCHS

#### **19 APR (Thurs) Sunset at Parris Island: 1952L; Civil Twi: 2018L weather backup**

1600 Weather call/Chemical Load  
1630 Calibration (if needed)  
1800 Depart KCHS  
2100 Land KCHS

#### **20 APR (Fri)**

1000 Depart KCHS  
1200 Land KYNG

### **4. AIRCRAFT & SPRAY CONFIGURATION:**

**Aircraft:** AF90-9108

**System:** MASS: #4 SP2G (2-Module System) with Fuselage Booms

**Nozzle/Orientation:** ULV 8003 Tee Jet orientated straight down

**Number of Nozzles:** 13 nozzles; may be adjusted during calibration

### **5. SPRAY LOADING:**

Entomologist will determine quantity to load and work with the local pest managers to determine the application rate. System will be calibrated after the chemical is loaded. Please see entomologist for final flow spray parameters as these numbers are subject to change depending on user requirements.

**How Much Pesticide:** approx. 40 gallons for Parris Island

**Where:** Taxi Location

**When:** 1600 after wx call. \*\*Calibration will be performed prior to spraying

**Furnished by Installation:**

Pesticide

Hazardous Waste Disposal



**6. SPRAY PARAMETERS: (PARRIS ISLAND MCRD SC)**

Location: All prescribed areas  
Chemical: Dibrom - insecticide  
Area to be treated: approx. 6,500 acres Parris Island  
Swath Width: 1,000 feet Parris Island  
Flow Rate: 2.72 GPM, TBD based on pest densities  
Application Rate: 0.75-1.0 oz/acre or as determined by entomologist  
Altitude: 300' AGL NVG operations, 150' AGL Day Operations  
Ground Speed: 200 Knots Ground Speed  
Flush: H.A.N. (Highly Aromatic Naphtha), flush and air purge  
Formulas: Flow Rate = Gal/Time in Minutes  
Acreage Sprayed = Total Sec x 338 x Swath Width / 43560

**RADIO FREQUENCIES:**

**Charleston AFB:** Tower - 843-414-2808  
Tower 126.0 or 239.0  
Ground 121.9 or 348.6  
Clearance - 127.325 or 291.65  
ATIS - 124.75  
Palmetto Ops - 134.1 or 349.4  
**Charleston Approach:** 135.8 or 379.925  
**Spray Ground:** 392.2 UHF; 123.45 VHF

**7. TRANSPORTATION:**

**U-Drive Vehicles:** Request sent 3 Apr 2017  
JB Charleston will supply us with 3 U-Drive vehicles; **Confirmation# 28429246**  
POC TRANSPORTATION SQ:  
SSgt (b) (6), VOCC Dispatcher  
(b) (6) (843) 963-4236  
**1x U Drive** - Van Enlisted Aircrew (Lawton)  
**1x U Drive** - Spray MX (Serrao)  
**1x U Drive** - Crew Chiefs

**Commercial Rental Vehicles:**

**Budget Rent-A-Car**, 5501 Porsche Blvd, Bldg 300, Charleston Intl Airport, (843) 552-1771  
**1x Rental** - Mission Commander/Entomologist ((b) (6)) - Confirmation # 32599821US2)  
**1x Rental** - Officer Aircrew ((b) (6)) - Confirmation # 32599821US2)

**8. LODGING:**

**Charleston SC:** (22 Rooms secured under 910<sup>th</sup> Aerial Spray Team)  
Hotel Website: [DoubleTree by Hilton - Charleston Airport, SC](#)  
7401 Northwoods Boulevard, North Charleston, SC, 29406  
POC: (b) (6) ) 843-518-6715  
**“Non-A”** – Per email from Inns of Charleston attached to DD Form 1351-5

## **CONTACTS:**

### **JB CHARLESTON (843)-963-XXXX, DSN 673-XXXX**

Wing Commander:	x3418
MSG Commander:	x2200
Civil Engineer:	x4956
Deputy Chief/Civil Engineer:	x4954
Environmental Coordinator:	x2711
Base Operations:	x3026
Charleston Control Tower:	(843) 414-2808
Weather:	x3016
Pest Control Foreman:	x5266, (b) (6) ; cell (b) (6)
Pest Control NCOIC:	x5266
Public Affairs:	x1110
Fuels:	x5079
Transportation:	x4236
Fire Department:	x3777

### **Parris Island MCRD SC: DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental Coord:	x3102 (b) (6) (b) (6)	(cell)
	(b) (6) (b) (6)	(cell)
HazWaste:	x4698 (b) (6) (b) (6)	(cell)
AC/S, I&L:	x2511	
Deputy I&L	x4110 (b) (6)	
Pest Control:	x2364 (b) (6) and (b) (6)	
P.I. Motor Pool:	x2233 (b) (6)	
P.I. Rifle Range:	x3183/3624	
Military Police	x3444	

### **Beaufort County Mosquito Control:**

Gregg Hunt, Director	(843) 255-5800
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### **910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

910 AW/CC:	x1243	
Command Post	x1315	FAX x1161
PA:	x1236	FAX x1022
OG/CC:	x1257/1179	
Safety	x1391	
Base Ops:	x1182	
SOF Desk:	x1069	FAX: x1371
757 AS/DO:	x1793	
757 AS Admin:	x1239	FAX x1657
757 AS Spray Office:	x1638/1111	FAX x1616
910 MXG/CC:	x1225	
910 LG/LGM:	x1352	
Maintenance Control:	x1348	
Spray Maintenance:	x1132/1586	

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **JB CHARLESTON/PARRIS ISLAND, SC**

### **15-19 MAY 2018**

### **QENRK3531135**

**Purpose/Objectives/Benefits:** One C-130 will deploy to JB Charleston, SC from 15 – 19 May 2018. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito and biting midge populations affecting the health and welfare of the personnel of JB Charleston and MCRD Parris Island. Operations for this mission will be conducted from JB Charleston utilizing Night Vision Goggles (NVGs).

#### **1. 910 AW PARTICIPANTS:**

Msn Commander:	Maj (b) (6)	(b) (6)
Entomologists:	Lt Col (b) (6)	
Pilots:	Capt (b) (6)	, Lt Col (b) (6)
Navigators:	Lt Col (b) (6)	, Lt Col (b) (6)
Flight Engineer:	SMSgt (b) (6)	, MSgt (b) (6) (in place)
Spray Operators:	CMSgt (b) (6)	, SMSgt (b) (6), MSgt (b) (6)
Spray Maintenance:	TSgt (b) (6)	(Lead) (b) (6)
	TSgt (b) (6)	, TSgt (b) (6), TSgt (b) (6)
Crew Chiefs:	TSgt (b) (6)	, SSgt (b) (6)
Comm/Nav:	SSgt (b) (6)	

#### **2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, laptop/Spray datasheet, O <sub>2</sub> hose extensions, NVGs
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system cards

### **3. SCHEDULE: (All Local Time)**

#### **15 May (Tues)**

1500 Showtime  
1700 Depart KYNG  
1900 Land KCHS

#### **16 May (Wed) Sunset: 2014L (PI) 2018L (CHS); Civil Twi: 2041L (PI) 2040L (CHS)**

1300 Installation brief at Charleston AFB  
1600 Weather call/Chemical Load at Charleston AFB  
1630 Calibration  
1900 Depart KCHS  
2200 Land KCHS

#### **17 May (Thurs) Sunset: 2015L (PI) 2013L (CHS); Civil Twi: 2042L (PI) 2040L (CHS)**

1600 Installation brief at MCRD Parris Island  
1630 Weather call/Chemical Load at Charleston AFB  
1700 Calibration  
1900 Depart KCHS  
2200 Land KCHS

#### **18 May (Fri) Sunset: 2015L (PI) 2014L (CHS); Civil Twi: 2042L (PI) 2041L (CHS)**

1600 Weather call/Chemical Load at Charleston AFB  
1630 Calibration (if necessary)  
1800 Depart KCHS  
2000 Land KCHS

#### **19 May (Sat)**

1000 Depart KCHS  
1200 Arrive KYNG

### **4. SPRAY CONFIGURATION AND PARAMETERS:**

Locations:	MCRD Parris Island and JB Charleston
Acres:	7,500 (Parris Island); 18,000 (JB Charleston)
Chemical:	Parris Island: Dibrom <sup>®</sup> (EPA Reg. No. 5481-480) Charleston: Trumpet <sup>®</sup> EC (EPA Reg. No. 5481-481) Signal word: Danger
Gallons loaded:	45 gallons (Parris Island); 120 gallons (Charleston)
Flow Rate:	2.7 GPM (Parris Island); 6.2 GPM (Charleston)
Application Rate:	0.75 oz/ac (Parris Island); 0.85 oz/acre (Charleston)
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300' AGL NVG Operations, 150' AGL Day Operations
Airspeed:	200 Knots Ground Speed
Swath Width:	1,000 feet (Parris Island); 2,000 feet (Charleston)
Nozzle/Orientation:	ULV 8003 Tee Jet Flat Fan / Straight Down
Number of Nozzles:	13 (Parris Island); 27 (Charleston)
Formulas:	Flow Rate = Gal/Time in Minutes Acreage Sprayed = Total Sec x 338 x Swath Width / 43,560

## 5. AIR TO GROUND RADIO FREQUENCIES:

**Charleston AFB:** Tower – 843-414-2808  
Tower – 126.0 or 239.0  
Ground – 121.9 or 348.6  
Clearance – 127.325 or 291.65  
ATIS – 124.75  
Palmetto Ops – 134.1 or 349.4  
**Charleston Approach:** 135.8 or 379.925  
**Mt Pleasant Regional:** CTAF 122.8  
**Charleston Executive:** CTAF 122.8  
**MCAS Beaufort:** Tower - 119.05/340.2 MCAS TWR  
Approach - 123.7  
**Hilton Head Airport:** 118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)  
**Beaufort Co Airport:** 122.7 UNI  
**Spray Ground (CHS):** 392.2 UHF; 123.45 VHF

## 6. TRANSPORTATION:

**JB Charleston:** Will provide (3) vehicles for transportation to and from quarters and for messing. Vehicles will be at JB Charleston Transportation/Vehicle Ops. Confirmation #28548338.

**1x 8-PAX Van** – Officer Aircrew

**1x 8-PAX Van** - Enlisted Aircrew

**1x 15-PAX Van** - Maintenance

### **Commercial Rental Vehicles:**

**Budget Rent-A-Car**, 5501 Porsche Blvd, Bldg 300, Charleston Intl Airport, (843)552-1771

**1x Rental** – Mission Commander ((b) (6)) – Confirmation #33999826US0)

**1x Rental** – Entomologist ((b) (6)) – Confirmation #34502989US3)

## 7. LODGING:

**Contract hotel:** Double Tree by Hilton Charleston Airport

**POC:** Mr. ((b) (6)) – Group Sales Manager (843-518-6715)

7401 Northwoods Boulevard, North Charleston, SC 29406

**“Non-A”** – Per email from Inns of Charleston attached to DD Form 1351-5

## 8. CONTACTS:

<b>Charleston AFB SC:</b>	<b>DSN: 673-XXXX; Commercial (843)-963-XXXX</b>
Wing Commander:	x3418
MSG Commander:	x2200
Civil Engineer:	x4956
Deputy Chief/Civil Engineer:	x4954
Environmental Coordinator:	x2711
Base Operations:	x3026
Charleston Control Tower:	(843) 414-2808
Weather:	x3016
Pest Control Foreman:	x5266, ((b) (6)) ((b) (6)) (cell)

Pest Control NCOIC:	x5266, MSgt (b) (6) (b) (6)	(cell)
Public Affairs:	x1110	
Fuels:	x5079	
Transportation:	x4236	
Fire Department:	x3777	

**MCRD Parris Island SC: DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental Coord:	x3102 (b) (6) (b) (6)	(cell)
	Capt (b) (6) (b) (6)	(cell)
HazWaste:	x4698 (b) (6) (b) (6)	(cell)
AC/S, I&L:	x2511	
Deputy I&L	x4110 (b) (6)	
Pest Control:	x2364 (b) (6) and (b) (6)	
P.I. Motor Pool:	x2233 (b) (6)	
P.I. Rifle Range:	x3183/3624	
Military Police	x3444	

**MCAS Beaufort SC: DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental:	x7370 (b) (6)
Fuels:	x7049/7448/7168
Airfield Mgr:	x6316
Trans Alert/VAL:	x7110
Weather:	x7001/7926/7/9
Base Security Manager:	x7090
Provost Marshal Office:	x7209/7967/6335

**Beaufort County Mosquito Control:**

(b) (6), Director	(843) 255-5800
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**910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

910 AW/CC:	x1243	
Command Post	x1315	FAX x1161
PA:	x1236	FAX x1022
OG/CC:	x1257/1179	
Safety	x1391	
Base Ops:	x1182	
SOF Desk:	x1069	FAX: x1371
757 AS/DO:	x1793	
757 AS Admin:	x1239	FAX x1657
757 AS Spray Office:	x1638/1111	FAX x1616
910 MXG/CC:	x1225	
910 LG/LGM:	x1352	
Maintenance Control:	x1348	
Spray Maintenance:	x1132/1586	



# AERIAL SPRAY PLAN

## ARMY CORPS OF ENGINEERS, WILLISTON, ND

### 29 May – 6 June 2018

**PURPOSE/BENEFIT/OBJECTIVE:** To control nuisance and vector mosquitoes with larvicide in order to improve working conditions and lower risk of vector-borne illness to individuals working and living in and around the Army Corps of Engineers' property, Williston, ND.

#### 1. 910 AW PARTICIPANTS:

Mission Commander:	Maj (b) (6)	(b) (6)	(cell phone)
Pilots:	Lt Col (b) (6)	, Capt (b) (6)	
Navigators:	Lt Col (b) (6)		
Flight Engineers:	CMSgt (b) (6)		
Spray Operators:	MSgt (b) (6)	, MSgt (b) (6)	, MSgt (b) (6)
Entomologists:	Lt Col (b) (6)	(Williston), Maj (b) (6)	(Minot),
	Lt Col (b) (6)	(Williston), Lt Col (b) (6)	(Minot – 3-6 June)
FE Equipment:	MSgt (b) (6)		
Spray MX:	TSgt (b) (6)	LEAD (b) (6)	, SMSgt (b) (6)
	, MSgt (b) (6)	, TSgt (b) (6)	, TSgt (b) (6)
	, TSgt (b) (6)	, SMSgt (b) (6)	(1 <sup>st</sup> Sgt.)
MX Specialists:	MSgt (b) (6)	, TSgt (b) (6)	
Crew Chiefs:	TSgt (b) (6)	, SRA (b) (6)	

#### 2. REQUIRED ITEMS:

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, Calibration, Laptop and Spray datasheet, O <sub>2</sub> hose extensions
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system cards

### 3. TRANSPORTATION:

Enterprise 1825 S Broadway Minot, ND 58701 (701-838-3800)  
Pick-up: 29 May 1300L  
Drop-off: 6 June 1000L

Maj. (b) (6)	Sedan	Confirm# 2022723893
Capt. (b) (6)	Minivan	Confirm# 2022723829
CMSgt. (b) (6)	Minivan	Confirm# 2022723859
TSgt. (b) (6)	Minivan	Confirm# 2022723845
MSgt. (b) (6)	Minivan	Confirm# 2022723873
TSgt. (b) (6)	Minivan	Confirm# 2022724997

Base Trans Pickup: 29 May 1500-1530L (*Sierra Ramp-Enterprise-Hotel*)  
Forklift Support: 29 May 1500  
Base Trans Pickup: 6 June Time TBD (*Hotel-Enterprise-Sierra Ramp*)  
Confirmation Numbers: 28591461, 28591407, 28591434

MAFB Trans Squadron: x3121 or (701) 723-3121  
POC: (b) (6), A1C, USAF  
Vehicle Operations Controller  
5 LRS/LGRDDO

### 4. SCHEDULE: (All Local Time)

#### 29 May 2018 Tuesday

0900 Show KYNG  
1100 Depart KYNG VADER 87 MI: QENRK9931149 PPR: 02-29-DB  
1130 Depart KYNG VADER/SPRAY 08 MI: QENRK3531149 PPR: 01-29-PJ  
1400 Land KMIB  
1430 Land KMIB

#### 30 May – 1 June (Weds-Fri) and 4-5 June (Monday-Tuesday)

Sunrise is 0550L; Airfield opens at 0700L; plan for takeoff as soon as possible after airfield opens.  
0530 Show KMIB and Weather decision  
0530 Load/Mix  
0700 Depart KMIB  
0900 Land KMIB (Multiple sorties each day depending on weather)

#### 2-3 June (Saturday-Sunday)

AIRFIELD CLOSED

#### 5 June (Tuesday)

1500 Vader XX (Support) Arrives PPR: 01-05-DB

#### 6 June (Wednesday)

1000 Depart KMIB (Vader 08)  
1000 Depart KMIB (Vader XX)  
1400 Arrive KYNG (Vader 08)  
1400 Arrive KYNG (Vader XX)

**5. LODGING:**

**OFF BASE**

Staybridge Suites  
3009 S Broadway, Minot, ND 5807  
POC: Nicole Carter (701)852-0852 ext. 504

**6. PESTICIDE:**

Trade Name: Vectobac® 12AS (1200 ITU/mg)  
EPA Registration Number: 73049-38  
Formula Sprayed: 2.0 pints of Vectobac in 5 gallons water per acre  
Flush: Water  
Other Additives: 1 gallon Poly Control 2  
Application Rate: 5 gal/acre mix (water with 2.0 pints Vectobac® + 0.05 oz of Poly Control 2)

**7. SPRAY PARAMETERS:**

Aircraft Tail Number: 909108  
Spray System Module and System ID: MASS #5  
Spray System Configuration: SP-3  
Nozzle Type/Size: Rain Drop (LV)  
Nozzle Orientation and Number Used: 12 (6 each side) straight back  
Pressure: 40 psi  
Flow Rate: 233 gallons per minute

**SPRAY MIXING AND LOADING:** Plan on ~1,900 gallons in the tanks per lift. A full load will consist of 1,800 gal of water in MASS tanks + 75 gal of water in the sump + 90 gal of Vectobac + 0.7 gal of Poly Control 2.

Subsequent loads can be calculated by the following formula:  
Determine the volume remaining in MASS. Add water to 1,800 gallons total. Add Vectobac at 6.4 oz per gallon of water added (e.g., the difference between 1800 and the amount remaining from the previous sortie; Poly Control 2 is added at 0.05 oz per gallon of water added.

**8. APPLICATION PARAMETERS:**

Swath Width: 100 feet  
Spray Release Altitude: 100 feet AGL  
Ground Speed: 200 knots (338 feet per second)

**9. PARKING PLAN:**

Sierra Ramp (Adjacent to taxiway Alpha and Bravo), just East of Base Ops

**10. AIR TO GROUND RADIO FREQUENCIES:**

Primary: UHF 392.2; VHF 123.45

**11. CONTACTS:**      **CONTACTS @ MINOT INTERNATIONAL AIRPORT (KMOT):**  
Airfield Director: (701) 857-4724 (b) (6)  
Assistant Dir/Security: (701) 857-4725 (b) (6)  
Office Administrative specialist: (b) (6)

**INFORMATIONAL N/A FOR THIS MISSION: CONTACT @ ND NATIONAL  
GUARD (@ KMOT):**

Capt (b) (6)                      Office: (701) 420-5807 (b) (6)  
(b) (6)

**CONTACTS @ KMIB:**

Minot AFB ND: DSN prefix: 453-  
Commercial area code and prefix (701) 723 –  
Base Operations: x2347 Airfield Manager: x3377/ x3637 FAX: 3637  
Security forces for EAL list approval COMM: (701) 723-3011 DSN: X3011  
Environmental Officer: x4871  
Base Civil Engineer: x2434  
Pest Management: x2393  
Public Affairs: x6212  
Weather: 3-6381/ x3631  
Billeting: x6161, x6161 or (701)727-6161  
Fire Dept: x2461  
Transient Alert: x3153,  
Minot AFB Twr – x3330  
Minot Int'l Twr (Magic City Twr) (701) 852-2346  
Williston Vector control district: (b) (6)  
Army Corps of Engineers: (b) (6) , office; (b) (6) cell  
Williston ADS 125.925  
Minot AFB Transportation Squadron: x3121 or (701) 723-3121



APPLICATION FOR AERIAL APPLICATION FOR PESTICIDE OVER A CITY  
North Dakota Department of Health  
Division of Air Quality  
SFN 14493 (9-09)

Scanned: ☒

Added to AQDB: ☐



PERMISSION IS REQUESTED TO CONTRACT FOR AERIAL APPLICATION OF PESTICIDE:

NAME OF CITY Minot Air Force Base	TO SPRAY FOR CONTROL OF Mosquitoes	REQUEST DATE April 11, 2018
NAME OF CITY CONTACT (b) (6)	TITLE Deputy Base Civil Engineer	TELEPHONE # (b) (6)
MAILING ADDRESS 5 CES/CD, 445 Peacekeeper Place	CITY Minot AFB	STATE/ZIP CODE ND / 58705-5006
E-MAIL ADDRESS (b) (6)		

AERIAL APPLICATOR SERVICE INFORMATION:

NAME OF APPLICATOR SERVICE Youngstown Air Reserve Station	NAME OF PILOT To Be Determined	TELEPHONE # (b) (6)
MAILING ADDRESS 3976 King Graves Road Unit 26	CITY Vienna	STATE/ZIP CODE OH / 44473-5932

PESTICIDE INFORMATION:

CHEMICAL NAME Trumpet EC	% CONCENTRATION 78.0% Naled	RATE OF APPLICATION 1.0 ounces/acre
METHOD [ULV, SPRAYER, OTHER (SPECIFY)] C-130 aircraft with a modular aerial spray system		DATE OF APPLICATION May 1 - Oct 31, 2018
METHOD PUBLIC NOTICE (check all that apply) <input checked="" type="checkbox"/> Radio <input type="checkbox"/> Newspaper <input checked="" type="checkbox"/> Television <input checked="" type="checkbox"/> Website <input type="checkbox"/> Posted Notification <input type="checkbox"/> Telephone <input checked="" type="checkbox"/> Other (Specify) <u>Base Rolling News Marquee</u>		DATE OF PUBLIC NOTICE one week prior to applications

SIGNATURE OF CITY CONTACT

SUBMIT YOUR APPLICATION TO:

North Dakota Department of Health  
Division of Air Quality  
918 E Divide, 2nd Floor  
Bismarck, ND 58501-1947

Fax Number: 701-328-5185  
Telephone: 701-328-5188

TO BE COMPLETED BY THE NORTH DAKOTA DEPARTMENT OF HEALTH

APPROVAL BY

Signature:

Date: 4/16/18

Approval from the Department of Health is required for aerial spraying of pesticides over a city [NDAC 33-15-10-01]. This application form must be completed before approval will be granted. Aircraft spraying and loading equipment must be dedicated for the use of only those chemical pesticides approved for residential ULV spraying and no other chemical pesticides will be used in the spraying or loading equipment. If a public health emergency exists, these requirements may be waived.

The aerial applicator must also be registered by the State of North Dakota Aeronautics Commission (701-328-9650) and must have Federal Aviation Administration (FAA) approval to conduct a spraying operation over a city congested area. To receive this approval the aerial application can contact the FAA Flight Standards District Office, 1801 - 23<sup>rd</sup> Ave. North, Room 211, Fargo, ND, 58502, 701-232-8949.

The North Dakota Department of Health will not be held liable for any accidents, misapplications, errors in mixing, etc. These are the sole responsibility of the pesticide applicator.

If the application of pesticide is not completed within five days of the date proposed, please contact this office. An extension may be granted.

## Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: (b) (6) , Charleston AFB/Parris Island Jun 18- Jun 21

**Aircraft Tail Number:** 89009104

**MASS Number:** 4

**Configuration:** ULV

**Boom & Nozzle Type:** Fuselage,

**Chemical in Main Tank:** Trumpet

**Chemical in Flush Tank:** Atsol 150

**Total Chemical Loads:** 1

**Total Flush Loads:** 0

**Amount of Liquid Waste Generated:**  
0

**Amount of Solid Waste Generated:** 10  
lbs.

**1. From a maintenance aspect, what training was accomplished on this mission?**

Amn Kopras new TR in shop. Trained individual on ULV upload/calibration procedures.

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Communication, personnel cohesion. Cooperation between ops, mx and charleston pest mngmt.

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

Charleston age equipment, power units were very unreliable numerous trips from charleston age mechanics to repair or swap out.

**4. How was host base and TA support? Please include details.**

TA support was very good, no noted issues.

**5. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

Besides the wx cancel for P.I., no noted issues with chemical

**6. Were there any notable observations from a maintenance perspective inflight?**

No noted issues with system in flight, Spray loads were extremely capable on this msn.



**7. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Coordination was extremely effective in accomplishing this msn.

**8. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

No issues with acft, awmas 4 performed well, Parris Island lift was canceled due to WX. Lodging location was excellent choice.

# AERIAL SPRAY MISSION REPORT

MISSION # QENRK3531176 ACFT CC (b) (6) MSN CC (b) (6)

PEST Mosquito CHEMICAL TRUMPET DILUENT \_\_\_\_\_

ACFT # 899104 MASS # SP6-2 # OF NOZZLES 31 TIPS ULV 8003

\*Contact AFRC Command Center Daily with Mission start date, end date, Operation name, daily number sorties, and total mission sorties 1 800-223- 1784 ext 70680 or DSN: 497-0680

PILOTS (b) (6) (b) (6)

NAVS (b) (6) (b) (6)

FLT ENG (b) (6)

SPRAY LM (b) (6) (b) (6)

## FERRY DATA

DATE	TAKEOFF	LAND	TIME	INTINERARY	REASON FOR STOP
25 Jun 18	1705	2035	3.5	KYNG-KMB	PREPOSITION
26 Jun 18	2135	2250	1.3	KMB-KMB	DAILY SERVICES
29 Jun 18	1835	1955	3.3	KMB-KYNG	PRE-POSITION

FERRY SORTIES/TIME 3, 9.1 SPRAY (TNG) SORTIES/TIME: 1, 4.9

TRAINING DATA: NAME \_\_\_\_\_

CONFIGURATION PROFILES AND #

PILOT (b) (6) - LEFT SEAT

COPILOT \_\_\_\_\_

NAVIGATOR \_\_\_\_\_

FE \_\_\_\_\_

SPRAY LM \_\_\_\_\_

QUALIFICATION FLT: NAME/DATE \_\_\_\_\_

## CHALLENGE

- (1) .85 oz Per Acre
- (2) 18,000 Acres
- (3) 2,000 swath width
- (4) 200 Knots
- (5) 27 Nozzles

1) How many Acres Per minute OF SPRAY

$$APM = \frac{\text{Knots} \times \text{Swath}}{430.15} = \frac{200 \times 2000}{430.15} = 930 \text{ Acres Per min}$$

2) WHAT IS THE SPRAY ON TIME

$$\frac{18,000}{930 \text{ Acres Per min}} = 19.35 \text{ min} \sim 19 \text{ min } 21 \text{ SEC} \checkmark$$

3) WHAT IS YOUR FLOW RATE Per minute

$$APM \times \frac{.85}{128} = 930 \times \frac{.85}{128} = 6.17 \checkmark$$

4) How many gallons required for 18,000 Acres  
min x Flow Rate

$$19.3 \times 6.2 \text{ gallons} = 119.66 \text{ gallons} \checkmark$$

Chalruson 062°/242°

↳ 21 Swath (1+20)

Swath	Heading	Time	
C <del>X</del>	242°	1+02	300' 25 sec Prior / 499' 15 sec Prior
<del>X</del>	062°	+34	249' R 55 sec Prior / 322' 34 sec Prior
<del>X</del>	242°	1+00	410' L 20 sec Prior / 295' L 20 sec
<del>X</del>	062°	+52	361' R 45 sec Prior / 322' L 30 sec Prior
<del>X</del>	242°	+56	410' R 22 sec Prior / 295' R 15 sec Prior
<del>X</del>	062°	+56	
<del>X</del>	242°	+55	Mult 170-180' TWS 20 sec Prior
<del>X</del>	062°	1+04	292' 15 sec AFTER
<del>X</del>	242°	+42	
<del>X</del>	062°	1+05	Mult 400' TWR 15 AFTER
<del>X</del>	242°	+42	
CC <del>X</del>	062°	1+05	
<del>X</del>	242°	+45	154' L 10 sec
CC <del>X</del>	062°	+30	
<del>X</del>	242°	+47	
<del>X</del>	062°	+15	
<del>X</del>	242°	+50	Mult TWS 230' L 45 sec Prior
R090 <del>X</del>	062°	1+10	260' TWR 45 sec
L090 <del>X</del>	242°	1+15	Mult 276' 30 sec
R090 <del>X</del>	062°	+50	
L090 <del>X</del>	242°	+40	Mult TWR 15 sec Pns

1075 sec ~ 18 min

242°

062°

15	-	21
14	-	20
13	-	19
12	-	18
11	-	17
10	-	16
9	-	2
8	-	1
7		

6

(4)

(4)

(4)

(4)

(4)

(4)

(4)

(4)

(3)

(3)

(3)

(1+05)  
TOTAL

(3)(3)(3)



CHARLESTON 142 - 200  
 ↳ 16 Swaths (1+05)

SWATH	Heading	Time
8	142°	1+52 295' L 45 sec / 154' L 1+15
2	322°	+30 mult 170' 15 sec PRIOR
9	142°	1+52 mult 170 R 15 sec PRIOR
3	322°	+42 mult 170 R 15 sec PRIOR
10	142°	1+50 194' L 32 sec / 246' L 1+20
4	322°	+50 mult 250 R 35 sec PRIOR
11	142°	1+47 mult 276' L 1+20
5	322°	1+05
12	142°	1+40 mult 260' L 50 sec PRIOR
		mult 460' - 610 10 sec AFTER

6	322°	1+05
13	142°	1+25
7	322°	1+52 295' L 1+00
DD 14	142°	+15 / +28 322' 40 sec PRIOR

LOGO 15	322°	+18
ROGO 16	142°	+16
LOGO 17	322°	+14
		1081

(1+00)

142°	322°	
8	- 2	(4)
9	- 3	(4)
10	- 4	(4)
11	- 5	(4)
12	- 6	(4)
13	- 7	(3)
14		(3)
	15	(3)
16		(3)
	17	(3)

SPRAY DATA			TARGET DATA								WEATHER DATA		
T/O	LAND	TIME	ON TARGET TIME	OFF TARGET TIME	ALT/ AGL	SPRAY ON TIME	PASS SWATH	ACRES	QUANTITY LOADED	QUANTITY SPRAYED	STAB CLASS	WIND	CLOUD CLOVER
DATE 19 JUN 18			TARGET CHS		2000 FT			SUNRISE:			SUNSET: 2031L		
1950L 2350Z	2150L 0150Z	2.0	2000L	2140	300A	19+03	1-17 2000FT	17,738	120	120		230/10	N/A
2.0			19+03		17 2000FT			17,738			120 120		
DATE			TARGET					SUNRISE:			SUNSET:		
DATE			TARGET					SUNRISE:			SUNSET:		
DATE			TARGET					SUNRISE:			SUNSET:		
DATE			TARGET					SUNRISE:			SUNSET:		
DATE			TARGET					SUNRISE:			SUNSET:		
GRAND TOTAL													

910 AW 0-85

\*Contact AFRC Command Center Daily with Mission start date, end date, Operation name, daily number sorties, and total mission sorties 1 800-223- 1784 ext 70680 or DSN: 497-0680



19 JUN 18  
CHS

120 GAC  
6.2 GPM

# AERIAL SPRAY FLOW RATE DATA

T70 23532

CHS 19 JUN 18

2000FT  
SOUTH OFFSET

SWATH	GALLONS	TIME	FLOW RATE
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

SWATH	GALLONS	TIME	FLOW RATE
N 1	2	421	5.714
S 2	14	2+13	6.363
N 3	17	161 2+41	6.296
S 4	28	221 4+31	6.22
N 5	32	312 5+12	6.15
S 6	43	419 6+59	6.14
N 7	48	472 7+52	6.1
S 8	58	568	6.13
N 9	69	666	6.216
S 10	75	732	6.15
N 11	84	816	6.18
S 12	91	886	6.15
N 13	96	935	6.15
S 14	108	1047	6.19
N 15	110	1064	6.21
S 16	111	1081	6.17
N 17	113	1096	6.19
18			
19	118	1143	6.19
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

230 @ 15

7.86  
9.46

11.1  
12.2

13.6  
14.8

15.6  
17.45

17.7  
18.6

18.3  
19.85

205

1105

305

1105

405

1105

555

1055

655

955

655

855

1105

655

155

155

155

11105

18.5 MIN



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

6 June 2017

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations of Larvacide Application for Aerial Spray in and around the Army Corps of Engineers' property, Williston, ND.

1. Aerial spray deployment of one C130 to Minot, ND from 12 June-21 June 2017 for the requested larvacide spray in and around the Army Corps of Engineers' property near Williston, ND. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel working on the Army Corps' property, and by extension, the citizens of Williston. Mission objectives provide training for aerial spray aircrew, entomologists, and maintenance personnel in all aspects of the aerial spray mission.

2. Concept of Operations: All times local

- a. 12 June (Monday)
  - 1200 Depart KYNG (Support Aircraft)
  - 1200 Depart KYNG (Spray Aircraft)
  - 1430 Land KMIB (Support Aircraft)
  - 1430 Land KMIB (Spray Aircraft)
- b. 13-20 June (Tuesday-Tuesday)
  - 0530 Show KMIB
  - 0700 Depart KMIB
  - 0900 Land KMIB
  - (Multiple 2.0 hr sorties each day depending on weather)
- c. 21 June (Wednesday)
  - 1000 Depart KMIB (Spray Aircraft)
  - 1000 Depart KMIB (Support Aircraft)
  - 1400 Land KYNG (Spray Aircraft)
  - 1400 Land KYNG (Support Aircraft)

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 10,000 acres
- b. Altitude: 100 ft for larvicide application
- c. Swath Width: 100 ft
- d. Groundspeed: 200 KIAS
- e. Flow Rate: 233 gals/min
- f. Application Rate: 5 gal/acre (water with 2.0 pints of Vectobac® + 0.45 oz of Poly Control 2)

4. Maj (b) (6) will serve as the Mission Commander. Support required at Minot AFB has been completed.

\\SIGNED\\

(b) (6), Maj, USAF  
Chief of Aerial Spray

**AERIAL SPRAY OPERATIONAL SCHEDULE**  
**FMCA COURSE**  
**FORT MEYERS, FL**  
**6-11 Jan 2019**  
**QENRK3531007/PPR:N/A**

**OBJECTIVE/PURPOSE/BENEFIT:** The 910<sup>th</sup> Aerial Spray Unit will deploy one C-130 to Page Field, FL from 6-11 January 2019 in support of the annual DoD Aerial Spray Applicator (Category 11) Course held in conjunction with Lee County Mosquito Control at Lee County, FL.

**1. 910 AW PARTICIPANTS:**

Entomologists:	Lt Col (b) (6)	, Lt Col (b) (6)	, Lt Col (b) (6)	, Lt
	Col (b) (6)	, Lt Col (b) (6)		
Pilot:	Maj (b) (6)	, Capt (b) (6)		
Navigator:	Maj (b) (6)			
Flight Engineer:	SMSgt (b) (6)			
Spray Operators:	CMSgt (b) (6)	, SMSgt (b) (6)		
Spray Maintenance:	TSgt (b) (6)	, (b) (6)	, (b) (6)	
Crew Chiefs:	MSgt (b) (6)			
Avionics:	TSgt (b) (6)			

**2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, Calibration Tables/Laptop/Tablet and or Spray datasheet, O <sub>2</sub> hose extensions, wireless headsets.
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios, Wingman system cards

**3. SCHEDULE (All Local Time):**

**06 Jan (Sunday)**

All entomologists will TR to Fort Myers

**07 Jan (Monday)**

1000 Showtime

1200 Takeoff

1700 Land KFMY – pesticide safety brief not required

**08 Jan (Tuesday)**

1700-1830 Static Display Page Field

**09 Jan (Wednesday)** weather backup or training day

0530 Weather call/Showtime

0700 Depart KFMY

0730-0830 – Spray Characterization test at Buckingham Airfield (Lee County Mosquito Control)

0900 Land KFMY

**10 Jan (Thursday)**

1130 Showtime

1300 Depart KFMY – Orientation Flight for DoD personnel

1430 Land KFMY

\*Could possibly be earlier show/takeoff

**11 Aug (Friday)**

0700 Showtime

0900 Depart KFMY

1200 Land KYNG

**4. AIRCRAFT & SPRAY CONFIGURATION:**

<b>Chemical:</b>	<b>None; Water only</b>
<b>MASS:</b>	<b>MASS 4; SP2</b>
<b>Gallons loaded:</b>	<b>500</b>
<b>Flow Rate:</b>	<b>235 GPM</b>
<b>Application Rate:</b>	<b>5.0 gal/acre</b>
<b>Flush:</b>	
<b>Altitude:</b>	<b>100'</b>
<b>Airspeed:</b>	<b>200 KNTS</b>
<b>Swath Width:</b>	<b>approx 100 feet</b>
<b>Nozzle/Orientation:</b>	<b>R-20 Raindrop</b>
<b>Number of Nozzles:</b>	<b>12</b>
<b>Aircraft:</b>	<b>30-2023</b>
<b>Offset:</b>	<b>None; Fly centerline or entomologist's discretion</b>

## 5. TRANSPORTATION:

**Pick Up/Return:** Hertz / KFMY FBO

5200 Captain (b) (6)

Dr, Fort Myers, FL 33907

(239) 931-3154 POC: (b) (6)

1. 5-PAX Sedan / Confirm # : / Officer Crew (b) (6)
2. 5-PAX Sedan / Confirm # : / Enlisted Crew (b) (6)
3. 5-PAX Sedan / Confirm # : / Spray MX-TSgt (b) (6)
4. 5-PAX Sedan / Confirm # : / MX (b) (6)

## 6. LODGING:

**16 rooms reserved- Tax exempt form was already e-mailed**

Property: Homewood Suites by Hilton Fort Meyers Airport/FGCU

Property Address: 16450 Corporate Commerce Way, Fort Meyers, FL 33913

Property Phone: 239-210-7300

Group Name: FL Mosquito Control

POC: (b) (6) 239) 210-7212 e-mail:(b) (6)

## 7. CONTACTS:

### AIR TO GROUND RADIO FREQUENCIES:

KFMY Base Ops	130.55	
KFMY Twr	119.0	306.95
KFMY Gnd	121.7	
ATIS	123.725	

**KFMY Base Operations Page Field: (239) 590-660**

Parking has been coordinated for the North Ramp

### **Spray Operations at Buckingham Field (FL59) NE of KRSW**

KRSW App	119.75, 125.15, 126.8
KRSW Twr	128.75
KRSW Gnd	121.9

**Youngstown ARS OH: DSN: 346-XXXX; COM: (330) 609-XXXX**



910 AW/CC:	x1243	
Command Post	x1315	FAX x1161
PA:	x1236	FAX x1022
OG/CC:	x1257/1179	
Safety	x1391	
Base Ops:	x1182	
SOF Desk:	x1069	FAX: x1371
757 AS/DO:	x1793	
757 AS Admin:	x1239	FAX x1657
757 AS Spray Office:	x1638/1111	FAX x1616
910 MXG/CC:	x1225	
910 LG/LGM:	x1352	
Maintenance Control:	x1348	
Spray Maintenance:	x1132/1586	
910 LG/LGL:	x1137	

**SPRAY OPERATIONAL SCHEDULE**  
**UTAH TEST AND TRAINING RANGE (UTTR)**  
**14-19 October 2018**  
**Mission # QENRK3501287**

**PURPOSE/BENEFIT/OBJECTIVE:** Aerial spray herbicide mission on the Utah Test and Training Range (UTTR) to reduce the risk of range fires by controlling cheat grass (*Bromus tectorum*) and other invasive weed species while promoting reestablishment and success of native flora.

**1. 910 AW PARTICIPANTS:**

**Mission Commander:** Lt Col (b) (6) (b) (6) (cell phone)

**AIRCREW:**

**Pilots:** Lt Col (b) (6) , Lt Col (b) (6) , Capt (b) (6)

**Navigators:** Maj (b) (6) Capt (b) (6)

**Flight Engineer:** SMSgt (b) (6) , MSgt (b) (6)

**Spray Operators:** MSgt (b) (6) , MSgt (b) (6) , TSgt (b) (6)

**CERTIFIED APPLICATORS:**

**Entomologists:** Lt Col (b) (6) , Lt Col (b) (6)

**MAINTENANCE:**

**Spray MX:** MSgt (b) (6) (lead),  
MSgt (b) (6) , MSgt (b) (6) , TSgt (b) (6) , SSgt (b) (6)

**Crew Chiefs:** MSgt (b) (6) (lead), SSgt (b) (6)

**Avionics:** TSgt (b) (6)

**2. REQUIRED ITEMS:**

Msn Commander: MC Laptop Computer  
Entomologist: Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer  
Navigator: Maps/Map Bag, Validation Map  
Spray Operators: PPE, Calibration Tables/Laptop and or Spray datasheet, O<sub>2</sub> hose extensions  
Spray Maintenance: Deployment Kit, Support Equipment  
Avionics: 2 Multi-band hand-held radios; Wingman system cards

**3. IN-BRIEFING at Hill:**

On arrival on the Forestry Ramp with Mr. (b) (6) and Mr. (b) (6) .  
Required: MC, Entos, pilots, navs, SM lead.

#### **4. SCHEDULE: (All Local Time)**

##### **PLANNED SEQUENCE OF EVENTS: Hill AFB Tower Control and Runway Hours**

Tower Opens at 0800L

##### **14 October (Sunday)**

1000 Show KYNG

1100 Safety and Arrival brief given in the aircrew briefing room

1200 Depart KYNG    Spray (SP3G)    **Vader04    MI: QENRK3501287    PPR: BD-1401**

1200 Depart KYNG    Support    **Vader83    MI: QENRK3531287    PPR: BD-1402**

1500 Land KHIF

1530 Inbrief on the Forestry Ramp: Do not leave until cleared off by MC: see 3. For required party

##### **15 – 18 October (Monday-Thursday) Plan on 2 sorties per day Range time is 0800-1300**

0600 Show KHIF

0630 Weather call and mixing begin

0749 Sunrise

0800 Depart KHIF

1300 Land KHIF

##### **19 October (Friday)**

0700 Checked out of billeting/depart

0900 Spray AC Depart KHIF

1100 Support AC arrives at KHIF

1530 Spray AC Land KYNG

##### **20 October (Saturday) Hill Field opens at 0900**

0700 Checked out of billeting

0730 Return vehicles

0900 Depart KHIF

1530 Land KYNG

**\*\*All times are approximated. Actual times and mission details will be updated as appropriate by the Mission Commander.**

#### **5. SPRAY CONFIGURATION:**

Aircraft:	89-9104
System:	SP-3G MASS: 3
Nozzle /Orientation:	Raindrop/Straight Back
Number of nozzles:	Fuselage – 18 nozzles

## **6. SPRAY LOADING:**

### **a. In each gallon of mix:**

0.857 ounces of Plateau herbicide (0.67 gallons in 100 gallons of water)  
0.71 ounces of Clasp (0.5 gal in 100 gallons)  
0.71 ounces of Methylated Seed Oil (0.5 gal in 100 gallons)  
125.7 ounces of water

### **b. First Load (4 Tanks of 450 gallons each + sump of 75 gallons)**

Fill to 450 gal water/tank. This is done by putting the filler hose into the rear tank with all tanks open to the common sump.  
Total water in tanks = 1,800 gal.  
75 gal/water in sump  
Total water added = 1,875 gallons  
Load 12.5 gallons of Plateau; agitating approximately 5-7 min  
Total quantity mix 1888 gallons

### **c. Subsequent Loads**

Fill with water for a total of 1800 gallons; use “per 100 gallons of water” measurements given above when adding less than 1800 gallons (i.e., residual product in tank when loading). When the MASS is returned empty, load 1800 gallons of water and add: 12.0 gallons Plateau and 10 gallons of Clasp and 10 gallons of MSO.

## **7. SPRAY PARAMETERS:**

Location: UTTR – HAT and GAT ranges plus associated targets  
Herbicide: Plateau Herbicide (active ingredient: 23.6% Ammonium salt of imazapic)  
Area to be treated: 1,745 (see #12 for more information)  
Swath Width: 100 feet  
Flow Rate: 326 gal/min (we are treating at 46.5 acres/minute)  
Application Rate: 7 gal/acre (6 oz of Plateau per acre)  
Altitude: 100' AGL  
Ground Speed: 200 Knots  
Flush: Water; air purge at end of each sortie to minimize dripping upon return  
Formulas: Flow Rate = Gal/Time in Minutes  
Acreage Sprayed = Total Sec x 338 x Swath Width / 43560

## **8. PARKING PLAN:** Forestry Ramp

## **9. AIR TO GROUND RADIO FREQUENCIES:**

**Clover Range:** 285.65 / 275.9 / 361.4 (p)  
**Eagle Tower:** 351.0; Mawk 2  
**Diddle Knoll:** 398.1 (Primary), 383.2 (Back-up); 134.1 / 118.45  
**Spray Inter plane:** 237.05 / 138.375  
**Base OPS:** 139.3  
**Spray Ground:** 292.2 / 123.45

10. **TRANSPORTATION:** 75<sup>TH</sup> Logistics Readiness Squadron  
Vehicle Operations Control Center  
Hill Air Force Base, UT  
POC: SrA (b) (6) / DSN: (b) (6)

**\*\* Call Vehicle Ops for driver pickup at the Forestry Ramp after landing\*\***

**Confirmation Number: 29070763**

**Pickup: 14 OCT 17 / 1500 / FORESTRY RAMP**  
**Dropoff: 20 OCT 17 / 1000/ FORESTRY RAMP**

OPS 1 – (4 PAX SEDAN)  
OPS 2 – (7 PAX VAN)  
OPS 3 – (7 PAX VAN)  
MX 1 – (7 PAX VAN)  
MX 2 – (3 PAX TRUCK W/ HITCH)

11. **LODGING:** Billeting Office: Mountain View Inn, 801-777-1844, FAX 801-775-2014  
Base Lodging POC: (b) (6) (Lodging)

Hilton Garden Inn Salt Lake City/Layton  
762 West Heritage Park Blvd  
Layton, UT 84041  
(801) 416-8899  
POC: (b) (6)

**Group Name: 910<sup>th</sup> Airlift Wing Aerial Spray**

12. **GENERAL TARGET INFORMATION: Listed by priority**

Block2\_Co Rd East – 529 acres  
Block3\_South GAT – 145 acres  
Block5\_North County Road – 356 acres  
Block1\_HAG\_Coffin – 374 acres  
Block4\_GAT\_middle – 171 acres  
Block6\_ – 170 acres

**13. CONTACTS:** Commercial Prefix (801) 777-XXXX; DSN 777-xxxx

**HILL AFB -**

**Project Coordinator: Mr. (b) (6) (b) (6) , cell (b) (6)**

Airfield Manager: 777-4168/3592  
Base Operations: 777-1861; FAX: 777-2221  
Billeting: 777-1844  
Weather: 777-2018  
Transit Alert: 777-3886  
C-130 Mx Contact: 777-2478/2229  
Fuels: 777-7423 / 777-7311 available 0900-1800 daily after hours contact CP  
Supply: 777-5391 (922 OE)  
Hill Motor Pool: 777-1843  
Public Affairs: 777-5201  
Dining Hall: 777-3428  
Breakfast Mon-Fri 0600-0800 Sat-Sun 0900-1300  
Lunch Mon-Fri 1100-1300 Sat-Sun 1030-1300  
Dinner Mon-Fri 1700-1900 Sat-Sun 1730-1900

**HQ UTTR**

(b) (6) (b) (6) ; FAX: 9205 Cell Phone # (b) (6)  
6066 Cedar Lane, Bldg 1274S

Hill Range Control: 777-9386  
Current OPS: 777-9385  
Range Scheduler: 777-9386  
Eagle Tower: 777-1515/6  
Clover Operations: 777-7575  
Clover DO: 586-3103  
HQ UTTR/Radio Freq Monitor: 777-6715  
HQ UTTR/ Resource Monitor: 775-4257  
Environmental Coordinator: 777-1550; 801-940-0809  
Hill AFB Base OPS: 777-1861  
Entomology: 777-4427  
Weather: 777-1516/63

**OASIS RANGE SUPPORT DIRECTORATE:**

Oasis Chief: 777-1546  
North Range Security: 777-1521/2/4

**910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

910 AW/CC: x1243  
Command Post x1315 FAX x1161  
PA: x1236 FAX x1022  
OG/CC: x1257/1179  
Safety x1391  
Base Ops: x1182  
SOF Desk: x1069 FAX: x1371  
757 AS/DO: x1793  
757 AS Admin: x1239 FAX x1657  
757 AS Spray Office: x1638/1111 FAX x1616





**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
UTAH TEST AND TRAINING RANGE, 14-19 OCT 2018**

**1. MISSION BASICS:**

- a. Installation Sprayed: Utah Test and Training Range (UTTR)
- b. Mission Duration: 14-19 October 2018
- c. Purpose of Application: Habitat restoration and development of firebreaks with a focus on cheat grass management and native species recovery on the UTTR
- d. Application Dates: See Attachment 1
- e. Times of Application (Local): See Attachment 1
- f. Acres Treated: 1,730
- g. Flying Data:
  - (1) Spray sorties/hours: 7/7.8
  - (2) Ferry sorties/hours: 2/10.2
  - (3) Support sorties/hours: 4/20.3
- h. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) /Natural Resources Manager/DSN (b) (6) ; Environmental Coordinator: (b) (6) DSN (b) (6)
- i. Date Spray Map Last Approved: 14 Oct 2018
- j. Installation In-Briefing: (When/Where/Briefer/s): 14 Oct 2018/Zulu Ops, Forestry Ramp/Lt Col (b) (6) /Lt Col (b) (6)/Capt (b) (6), Mr. (b) (6), Mr. (b) (6), Mr. (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Entomologists (certified applicators): Lt Col (b) (6), Lt Col (b) (6)
- c. Aircrew:
  - Pilots: Lt Col (b) (6), Lt Col (b) (6), Capt (b) (6)
  - Navigators: Maj (b) (6), Capt (b) (6)
  - Flight Engineer: SMSgt (b) (6), MSgt (b) (6)
  - Spray Operators: MSgt (b) (6), MSgt (b) (6), TSgt (b) (6)
- d. Maintenance:
  - MSgt (b) (6) (lead), TSgt (b) (6), TSgt (b) (6), SSgt (b) (6)
  - Crew Chiefs: MSgt (b) (6) (lead), SSgt (b) (6)
  - Avionics: TSgt (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Plateau Herbicide (active ingredient: 23.6% Ammonium salt of imazapic)
- b. EPA Registration Number: 241-365
- c. Formulation Sprayed: 6 oz/acre Plateau + 5 oz/acre of Clasp or MSO in 7 gallons of water
- d. Gallons Pesticide Mix Loaded and applied: 11,235 / 11,235
- e. Gallons of pesticide used: 72.5 gal of Plateau

- f. Gallons and Name of Flush Used: 200 gal water
- g. Other Additives Used: 70 gal of methylated seed oil (MSO); 30 gal of Clasp drift reduction adjuvant

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99104
- b. Spray System (Modules Used) and System ID #: 3
- c. Spray System Configuration: 3-Module System/ UHV Fuselage Booms
- d. Nozzle Type/Size: LV Fuselage
- e. Nozzle Orientation & Number Used: 18 – raindrop nozzles, oriented straight back.
- f. f. Pressure: 40 p.s.i.
- g. Flow Rate: 326 gallons per minute.

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 100'
- b. Spray Off-set: None
- c. Spray Release Altitude: 100' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Records are available on request from the 757AS/DOS as output data from weather station. 15 Oct – Winds light 360/3knts at altitude. 16 Oct – 310/0 with temps ranging from 28-71F and RH 78-32% on the ground; 130/2, 340/2, 030/5 altitude. 17 Oct – 60 (range 47-100)/1 with temps ranging 48-57F and RH 54-43% on the ground; 059/2, 080/6 altitude. 18 Oct – 125/1.8 with temps 50F-52F and RH 55-51%; 240/3 at altitude.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique Used: Visual observations by ground party of approximate 100 ft swath on all passes (see Attachment 3)
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Techniques Used: monitoring of weed emergence in spring
  - (2) Results: will be determined this spring by range personnel

**8. REMARKS:** This is the second application of Plateau specifically for fire breaks/fire suppression and habitat restoration on the Utah Test and Training Range (UTTR). The application last October (2017) has been highly successful (see Attachment 2).

- a. We had excellent support from Hill Air Force Base and specifically want to thank the 75<sup>th</sup> Air Base Wing/CC, Col (b) (6), for his letter of invitation and support. We also had excellent support from 75<sup>th</sup> CEG/CEI (Natural Resources), 75<sup>th</sup> OSS/OSAM (Base Operations), 75<sup>th</sup> LRS/LGRDDO (Transportation), UTTR DOO, and others.

//signed//

(b) (6), Lt Col, USAF  
DOD CERTIFIED PEST MANAGEMENT PROFESSIONAL

Attachment 1: Summary Spray Chart

**14-19 October 2018**

**SPRAY OPERATIONS SUMMARY FOR UTAH TEST AND TRAINING RANGE**

<b>DATE Oct</b>	<b>SORTIE #</b>	<b>TIMES</b>	<b>SPRAY ON TIME (sec)</b>	<b>TARGET</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>FLYING HOURS</b>
15	1	1035-1135	352	County Rd East	273	1667	1.0
16	2	0810-0910	382	County Rd East	301	1759	1.0
16	3	1020-1120	100	South GAT	80	573	1.0
16	4	1210-1315	354	South GAT, North County Road	277	1846	1.1
17	5	0805-0910	320	HAG Coffin, GAT middle	248	1762	1.1
17	6	1040-1150	328	CAG Coffin, GAT middle	254	1799	1.2
18	7	0800-0922	379	Block 6	297	1829	1.4
Totals			36.9 min		1,730	11,235	7.8

Attachment 2. Example of results from last year's application (October 2017), application was made between the road and white line.



Attachment 3. Overview of the spray blocks for Oct 2018 cheat grass application on the UTTR.



Attachment 4. GPS track recording for applications on the UTTR 15-18 October 2018.



**910 AW AERIAL SPRAY UNIT POST-MISSION REPORT  
MINOT AFB, CITY OF MINOT, AND WILLISTON, N.D. – ADULT  
MOSQUITO CONTROL 15-19 July, 2019**

**1. MISSION BASICS:**

- a. Installation Sprayed: Minot AFB and Cities of Minot, Burlington, and Williston, ND
- b. Mission Duration: 15-19 July 2019
- c. Purpose of Application: Control adult nuisance and vector mosquitoes
- d. Application Dates: 16-17 July 2019
- e. Time of Application (Local): 9:40-11:35 (16 July)  
9:35-11:45 (17 July)
- f. Acres Treated: 28,011 (16 July)  
12,338 (17 July)
- g. Project Coordinator/s (Name/Rank, Title, Phone #):  
(b) (6), Minot AFB Pest Management Shop, DSN (b) (6)  
(b) (6), City of Minot Public Works, (b) (6) (b) (6)  
(b) (6), City of Williston
- h. Date Spray Map Last Approved: 16 July 2019
- i. Date of Waste Generation Letter: 22 June 2004
- j. Installation In-Briefing: (When/Where/Briefer/s): Minot AFB CE, Lt Col (b) (6),  
Lt Col (b) (6) (b) (6) Lt Col (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Certified PMP/s (Category 11): Lt Col (b) (6), Lt Col (b) (6)
- c. Aircrew:
  - 1) Pilots: Lt Col (b) (6), Maj (b) (6)
  - 2) Navigators: Lt Col (b) (6), Lt Col (b) (6)
  - 3) Flight Engineers: MSgt (b) (6)
  - 4) Spray Operators: CMSgt (b) (6), MSgt (b) (6), MSgt (b) (6); TSgt (b) (6)
- d. Safety Briefer: Lt Col (b) (6)
- e. Spray Maintenance: TSgt (b) (6) (lead), TSgt (b) (6), TSgt (b) (6)  
TSgt (b) (6)
- f. Spray Ground Monitors: Lt Col (b) (6)
- g. Crew Chief: (b) (6), SSgt (b) (6)
- h. Avionics: MSgt (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 2/4.6
  - (2) Ferry Sorties/Hours: 2/6.4

**3. PESTICIDES:**

- a. Applied at Minot AFB and City of Minot:
  - 1) Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
  - 2) EPA Registration Number: Trumpet® EC 59639-90-5481
  - 3) Gallons Pesticide Loaded: 210 gal Trumpet® (16 July)
  - 4) Gallons Pesticide Applied: 210 gal Trumpet® (16 July)
  - 5) Gallons and Name of Flush Used: 5 Gallon HAN
  - 6) Other Additives Used: none
  - 7) Application Rate: 0.98 oz/acre Trumpet®



b. Applied in Williston:

- 1) Trade Name (% Active Ingredient): Imperium (2% AI deltamethrin)
- 2) EPA Registration Number: 432-1534
- 3) Gallons Pesticide Loaded: 90 gal Imperium (17 July)
- 4) Gallons Pesticide Applied: 90 gal Imperium (17 July)
- 5) Gallons and Name of Flush Used: 5 Gallon HAN
- 6) Other Additives Used: none
- 7) Application Rate: 1.0 oz/acre Imperium

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99105
- b. Spray System (Modules Used) and System ID #: 3
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 31 straight down (16 July)  
26 straight down (17 July)
- f. Pressure (PSI): 40 PSI
- g. Flow Rate: 7.1 GPM (16 July)  
7.3 GPM (17 July)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off Set: None
- c. Spray Release Altitude: 300 feet
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 248° @ 7-9 knots (16 July)  
180-240° @ 4-7 knots (17 July)
- b. Temperature: 62-65 °F (16 July)  
60-65 °F (17 July)
- c. Relative Humidity: 79% (16 July)  
87% (17 July)
- d. Cloud Cover: Partly Cloudy
- e. Source: National Weather Service

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Minot AFB conducted adult mosquito trapping to monitor mosquito densities on base.
  - 1) Technique/s Used: Mosquito traps
    - A) Results: Minot AFB: Pre-spray trap count (1 trap): 243.  
Post-spray count 4000+.
- b.. City of Minot conducted adult mosquito trapping to monitor mosquito densities.
  - 1) Technique/s Used: Mosquito traps
    - A) Results: Pre-spray trap count (2 traps): 1512; 907. Post-spray counts 803; 778.  
Reductions of 47 and 15% respectively.

c. City of Williston conducted adult mosquito trapping to monitor mosquito densities.

1) Technique Used: Mosquito traps

A) Results: (mosquito numbers)

	<u>Pre spray</u>	<u>Post spray</u>
Trap #2	43	86
Trap #3	4	5
Trap #5	68	397
Trap #6	17	4
Trap #7	11	28

Comment: Weather conditions in Minot affected the flight times for Williston. Therefore only part of Williston was effectively sprayed. It was noted that many of the Williston mosquito traps were on the border of the spray block and may not have been reached because of the limited spray conditions.

2) Technique: Efficacy Field test:

Mosquito cages were placed in a test field and in an untreated site.

A) Results (% mortality)

<u>Treated cages</u>	<u>Untreated cages</u>
97%	3%

Comment: The Imperium mosquito control product was very effective in controlling the mosquitoes placed in test cages. Unofficial pre and post spray landing rates taken at the test site demonstrated high efficacy of the control product. Drift analysis of the spray droplets demonstrated effective droplet density and volume 3500' downwind from the flight path.

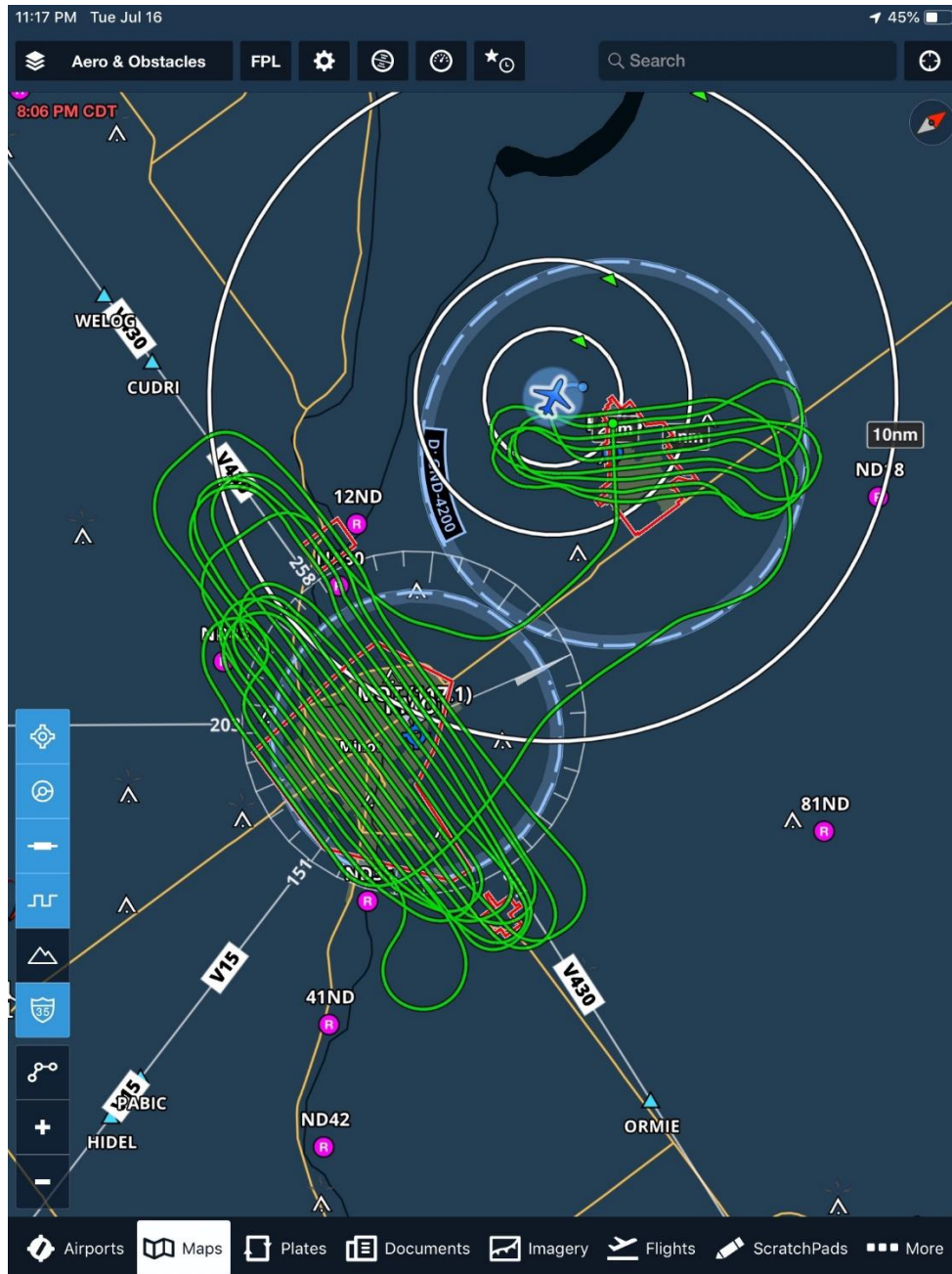
**8. REMARKS:** Meteorological conditions were good during the City of Minot and Minot AFB applications, with a moderate winds assuring good coverage. The City of Williston tested Imperium insecticide, a new formulation of deltamethrin developed for aerial mosquito control. The results from the field trial of Imperium in Williston demonstrated good results. Many thanks to (b) (6) (Minot AFB), (b) (6) (City of Minot), and (b) (6) (City of Williston) for their support.

//signed//

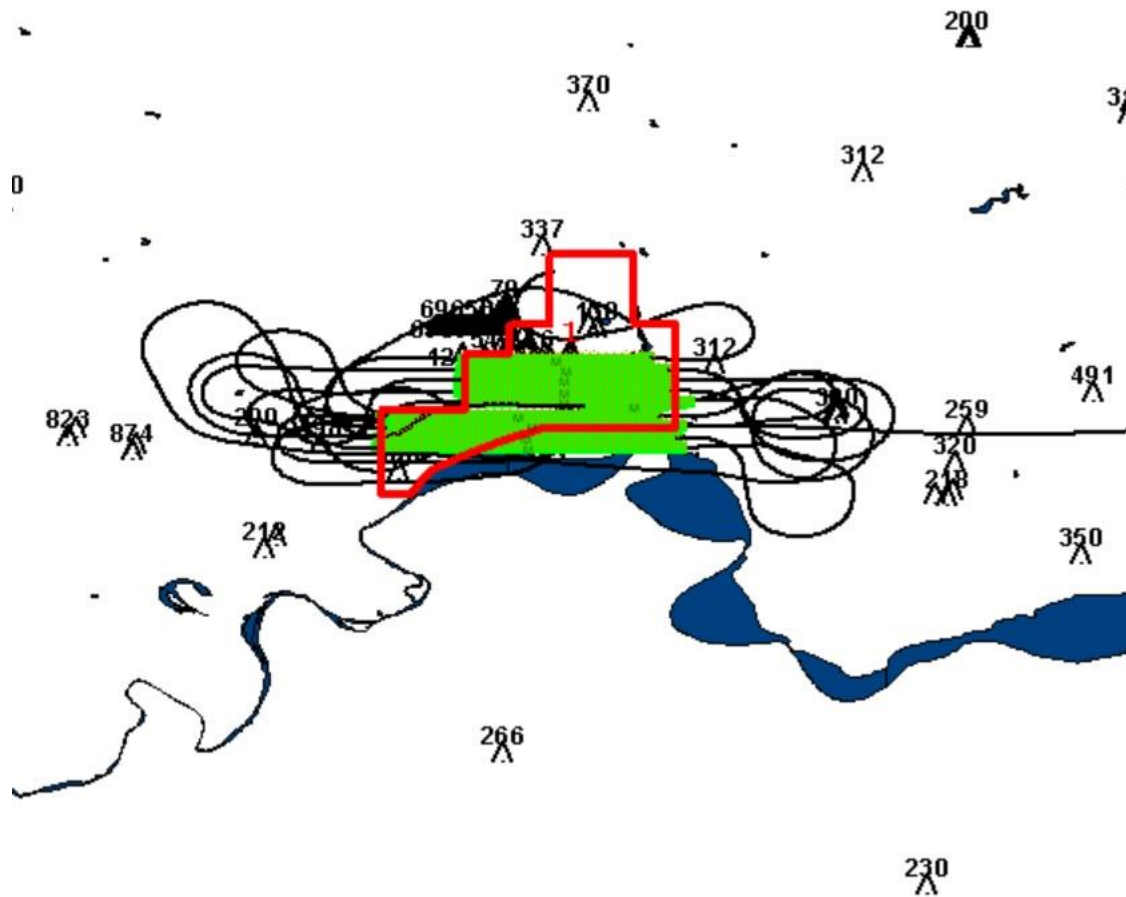
Lt Col (b) (6) , USAFR

**DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

**Attachment 1.** Image shows Minot AFB, City of Minot, and City of Burlington spray blocks (red) and pesticide application swaths (green) during application on 16 July 2019.



Attachment 2. Image shows City of Williston spray block (red) and pesticide application swaths (green) during application on 17 July 2019.



**910 AW – AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**PARRIS ISLAND MCRD, SC AND JB CHARLESTON, SC 17-21 Jun 2019**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island MCRD, SC; JB Charleston, SC
- b. Mission Duration: 17-21 June 2019
- c. Purpose of Application: To control pestiferous populations of mosquitoes (specifically *Aedes taeniorhynchus*) and biting midges (*Culicoides* spp.)
- d. Application Date: 19 June 2019 (Parris Island); 18 June 2019 (JB Charleston)
- e. Time/s of Application (Zulu): 0000-0200 hrs (Zulu) (Parris Island); 0015-0205 hrs (Zulu) (JB Charleston)
- f. Acres Treated: 7,417 acres (Parris Island); 17,895 acres (JB Charleston)
- g. Project Coordinator: Capt (b) (6), Environmental, DSN (b) (6) (Parris Island); MSgt (b) (6), Spray Coordinator JB Charleston DSN 673-5266
- h. Date Spray Map Last Approved: 19 June 2019 (Parris Island); 18 June 2019 (JB Charleston)
- i. Date of Waste Generation Letter: 30 October 2007
- j. Installation In-Briefing: (When/Where/Briefer/s): On Site (Parris Island). Briefed by Lt Col (b) (6) 19 June 2019, JB Charleston CE, briefed by MSgt (b) (6), Lt Col (b) (6) 18 June 2019.

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Maj (b) (6) (A/C), Capt (b) (6)
  - (2) Navigators: Lt Col (b) (6); Maj (b) (6)
  - (3) Flight Engineers: MSgt (b) (6); MSgt (b) (6)
  - (4) Spray Operators: CMSgt (b) (6), MSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6), TSgt (b) (6), TSgt (b) (6), TSgt (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6), SSgt (b) (6)
  - (3) Avionics: MSgt (b) (6)
- d. **Entomologist:** Lt Col (b) (6)

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Dibrom<sup>®</sup> Concentrate (Parris Island); Trumpet<sup>®</sup> (JB Charleston)
- b. EPA Registration Number: 5481-480 (Dibrom); 5481-481 (Trumpet)
- c. Formulation Sprayed: Dibrom Concentrate (87.4% AI naled) (Parris Island); Trumpet (78% naled) (JB Charleston)
- d. Gallons Pesticide Loaded: 19 Jun; 45 Gallons Dibrom<sup>®</sup> (Parris Island); 18 Jun; 120 Gallons Trumpet<sup>®</sup> (JB Charleston)
- e. Gallons Pesticide Applied: 45 Gallons Dibrom<sup>®</sup> (Parris Island); 120 Gallons Trumpet<sup>®</sup> (JB Charleston)
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 10 gallons HAN
- h. Other Additives Used: None
- i. Application Rate: 0.75 oz/acre (Parris Island); 0.85 oz/acre (JB Charleston)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 13 (Parris Island); 28 (JB Charleston) oriented straight down
- f. Pressure: 40 p.s.i. (Parris Island); 40 p.s.i. (JB Charleston)
- g. Flow Rate: 2.6 gallons per minute (Parris Island); 6.3 gallons per minute (JB Charleston)
- h. Sorties: 2/3.8 hrs (application); 2/4.2 hrs (ferry)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000' (Parris Island); 2000' (JB Charleston)
- b. Spray Off-set: 2000' (Parris Island); none (JB Charleston)
- c. Spray Release Altitude: 300'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 220@6 knots (Parris Island); 240@5 knots (JB Charleston)
  - (2) Release Altitude: 220@14 knots (Parris Island) and 240@10 knots (JB Charleston)
- b. Temperature (Degrees Fahrenheit): 73°F (Parris Island); 75°F (JB Charleston)
- c. Cloud Cover: Clear (both locations)
- d. Source: Ground observations and aircraft SCNs

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations (Lt Col Teig)
  - (2) Results: Good coverage throughout both sprayed areas
- b. Effectiveness:
  - (1) Technique/s Used: Light traps deploy before and after spray application
  - (2) Results: Parris Island (4 locations)

Golf course: 540 before; 196 after; 64% reduction  
Elliot's Beach: 8 before; 11 after; 38% increase  
Leatherneck Square: 157 before; 5 after; 97% reduction  
Outdoor pool: 38 before; 6 after; 84% reduction

Navy PrevMed comments: Substantial reduction of biting midge and mosquito populations after spray mission. PI environmental reported no adverse environmental effects of spray.

- (3) Results: JB Charleston (5 locations)

Spill Way: 252 before; 820 after; 69% increase  
Golf Course: 36 before; 5 after; 86% reduction  
Marrington Trail: 600 before; 16 after; 98% reduction  
Hopper Bridge: 684 before; 220 after; 67% reduction  
Spawar: 604 before; 27 after; 97% reduction

No adverse environment effects of spray were noted



8. **REMARKS:** Excellent coordination amongst all involved parties made this mission remarkably smooth. Reasonable control of mosquito and midge populations in both locations was observed both observationally and anecdotally. Biting insect populations at Parris Island were not as heavy as on some previous missions, but were substantial enough to justify the need for application. At spillway location at JB Charleston there was a substantial increase in mosquito numbers after the application. Charleston pest management POC speculated that there might have been a post spray mosquito hatch that had immigrated from outside the spray zone, but this could not be verified.

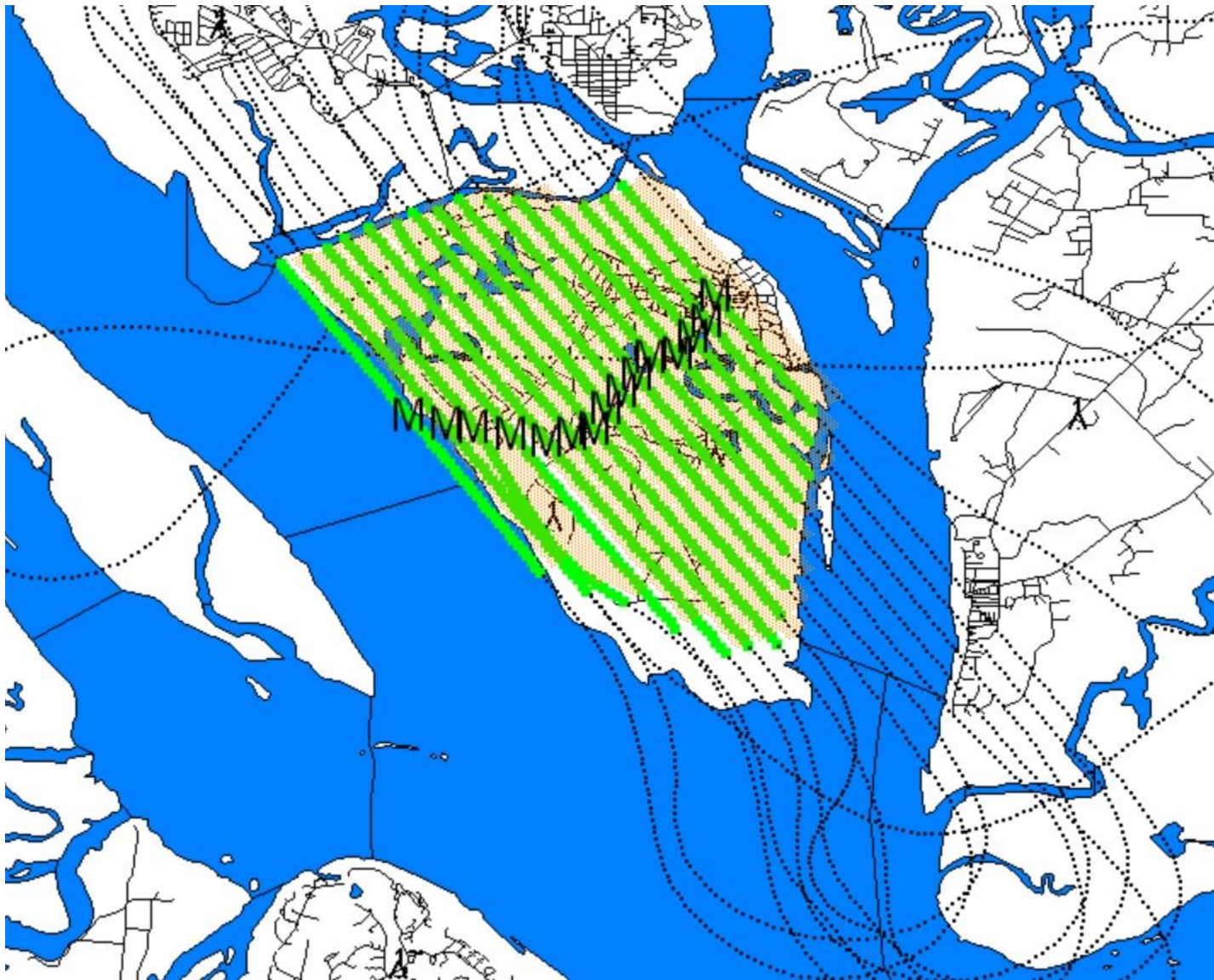
Actual applications at both locations proceeded without any significant functional problem or mishap, and no negative effect on wildlife was observed. On this mission no eagles were present at Parris island, which resulted in complete coverage without buffer zones. Many thanks to Capt (b) (6) and (b) (6) (Parris Island), and MSgt (b) (6) Winter (JB Charleston) for their help and alacrity in accomplishing this mission.

//signed//

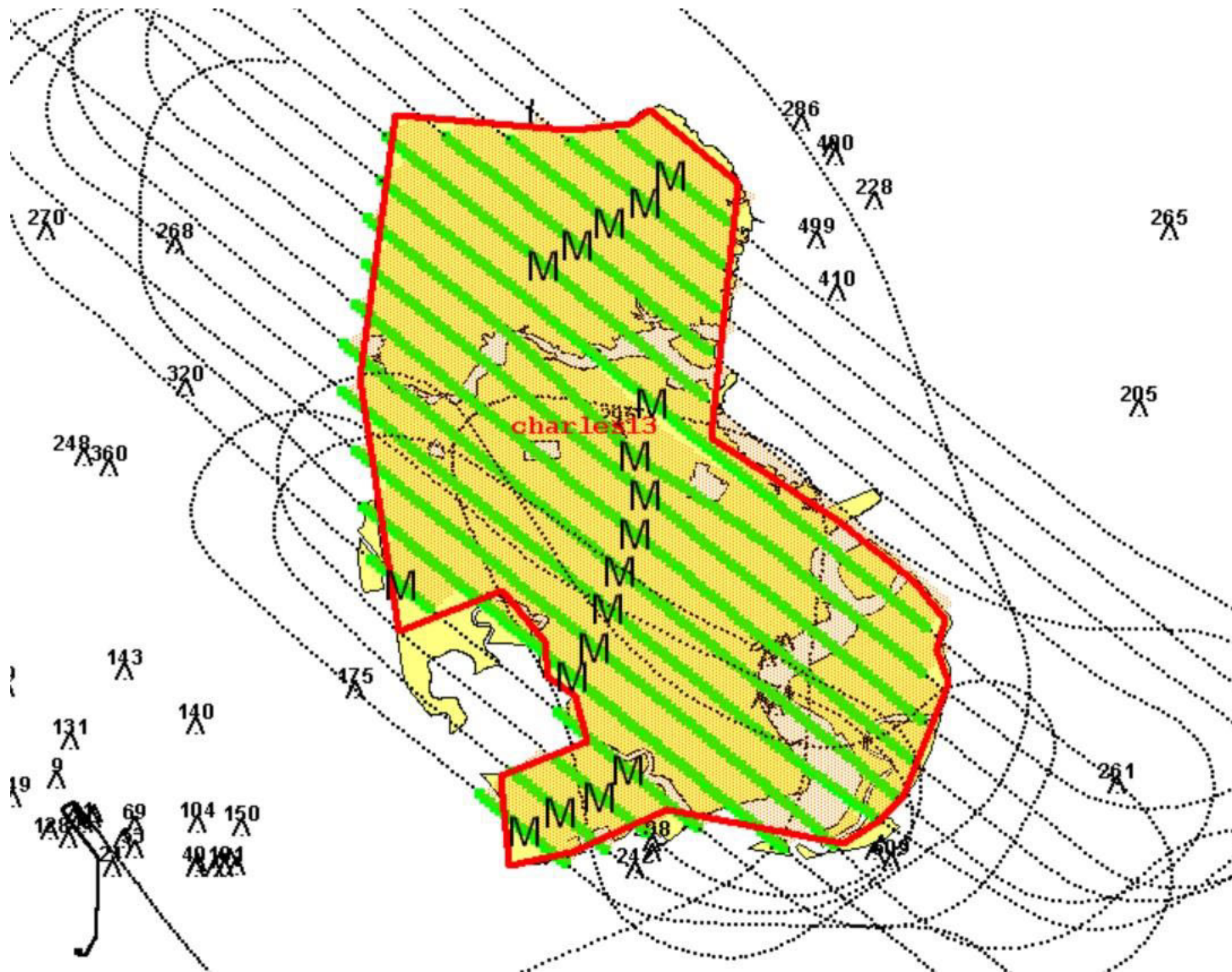
(b) (6), Lt Col, USAFR  
DOD CERTIFIED PEST MANAGEMENT PROFESSIONAL

2 Attachments:

Attachment 1. Areas sprayed (green blocks) at Parris Island MCRD 19 June 2019.



Attachment 2. Areas sprayed (beige blocks and green lines) at JB Charleston 18 June 2019.





**910 AW -- AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**PARRIS ISLAND MCRD, SC AND JB CHARLESTON, SC 17-21 Jun 2019**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island MCRD, SC; JB Charleston, SC
- b. Mission Duration: 24-27 September 2019
- c. Purpose of Application: To control pestiferous populations of mosquitoes (specifically *Aedes taeniorhynchus*) and biting midges (*Culicoides* spp.)
- d. Application Date: 26 Sept 2019 (Parris Island); 25 Sept 2019 (JB Charleston)
- e. Time/s of Application (Zulu): 2240-0050 hrs (Parris Island); 2255-0135 hrs (JB Charleston)
- f. Acres Treated: 7,533 acres (Parris Island); 18,305 acres (JB Charleston)
- g. Project Coordinator: Capt (b) (6), Environmental, DSN (b) (6)-(b) (6) (Parris Island); MSgt (b) (6), Spray Coordinator JB Charleston DSN (b) (6)-(b) (6)
- h. Date Spray Map Last Approved: 26 Sep 2019 (Parris Island); 25 Sept 2019 (JB Charleston)
- i. Date of Waste Generation Letter: 30 October 2007
- j. Installation In-Briefing: (When/Where/Briefer/s): On Site (Parris Island). Telephone by Lt Col (b) (6); 26 Sept 2019. JB Charleston CE, briefed by MSgt (b) (6), Lt Col (b) (6); 25 Sept 2019.

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Maj (b) (6) (A/C), Lt Col (b) (6)
  - (2) Navigators: Lt Col (b) (6); Maj (b) (6)
  - (3) Flight Engineers: SMSgt (b) (6)
  - (4) Spray Operators: CMSgt (b) (6), TSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6), MSgt (b) (6), TSgt (b) (6), TSgt (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6), TSgt (b) (6)
  - (3) Avionics: TSgt (b) (6)
- d. **Entomologist:** Lt Col (b) (6)

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet® (78%) Both locations.
- b. EPA Registration Number: 5481-481 (Trumpet)
- c. Formulation Sprayed: Trumpet (78% naled) (JB Charleston and Parris Island)
- d. Gallons Pesticide Loaded: 25 Sept; 120 Gallons (JB Charleston); 26 Sept; 60 Gallons Trumpet® (Parris Island)
- e. Gallons Pesticide Applied: 60 Gallons Dibrom® (Parris Island); 120 Gallons Trumpet® (JB Charleston)
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 20 gallons water
- h. Other Additives Used: None
- i. Application Rate: 1.15 oz/acre (Parris Island); 0.85 oz/acre (JB Charleston)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 18 (Parris Island); 29 (JB Charleston) oriented straight down
- f. Pressure: 40 p.s.i. (Parris Island); 40 p.s.i. (JB Charleston)
- g. Flow Rate: 4.2 gallons per minute (Parris Island); 6.2 gallons per minute (JB Charleston)
- h. Sorties: 2/3.8 hrs (application); 2/4.2 hrs (ferry)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000' (Parris Island); 2000' (JB Charleston)
- b. Spray Off-set: none (Parris Island); 1000' (JB Charleston)
- c. Spray Release Altitude: 300'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 220@6 knots (Parris Island); 240@5 knots (JB Charleston)
  - (2) Release Altitude: 220@14 knots (Parris Island) and 240@10 knots (JB Charleston)
- b. Temperature (Degrees Fahrenheit): 73°F (Parris Island); 75°F (JB Charleston)
- c. Cloud Cover: Clear (both locations)
- d. Source: Ground observations and aircraft SCNs

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations (Lt Col Haagsma)
  - (2) Results: Good coverage throughout both sprayed areas
- b. Effectiveness:
  - (1) Technique/s Used: Light traps deploy before and after spray application
  - (2) Results: Parris Island

Post Spray trapping results have not yet been submitted by Parris island. However, Navy PrevMed comments: Substantial reduction of biting midge and mosquito populations after spray mission. PI environmental reported no adverse environmental effects of spray. This report will be updated upon receipt of additional data.

- (3) Results: JB Charleston (5 locations)

Spill Way: 843 before; 412 after; 51% reduction  
Golf Course: 53 before; 8 after; 85% reduction  
Marrington Trail: 443 before; 13 after; 97% reduction  
Hopper Bridge: 2823 before; 520 after; 81% reduction  
Spawar: 463 before; 23 after; 95% reduction

Totals: 4625 before; 976 after; 78% reduction

No adverse environment effects of spray were noted

**8. REMARKS:** Excellent coordination amongst all involved parties made this mission remarkably smooth. Reasonable control of mosquito and midge populations in both locations was observed both observationally and anecdotally. Application direction was less than ideal for JB Charleston application because aircraft was somewhat limited by air traffic operating out of Charleston International, resulting in only a 25 degree crosswind component (ideal is 90 degrees). This perhaps it the reason that although trap results from JB Charleston were not poor, and ideal spray application would result in reductions greater than 90%.

Actual applications at both locations proceeded without any significant functional problem or mishap, and no negative effect on wildlife was observed. On this mission no eagles were present at Parris island, which resulted in complete coverage without buffer zones. Many thanks to Capt (b) (6) and (b) (6) (Parris Island), and MSgt (b) (6) (JB Charleston) for their help in accomplishing this mission.

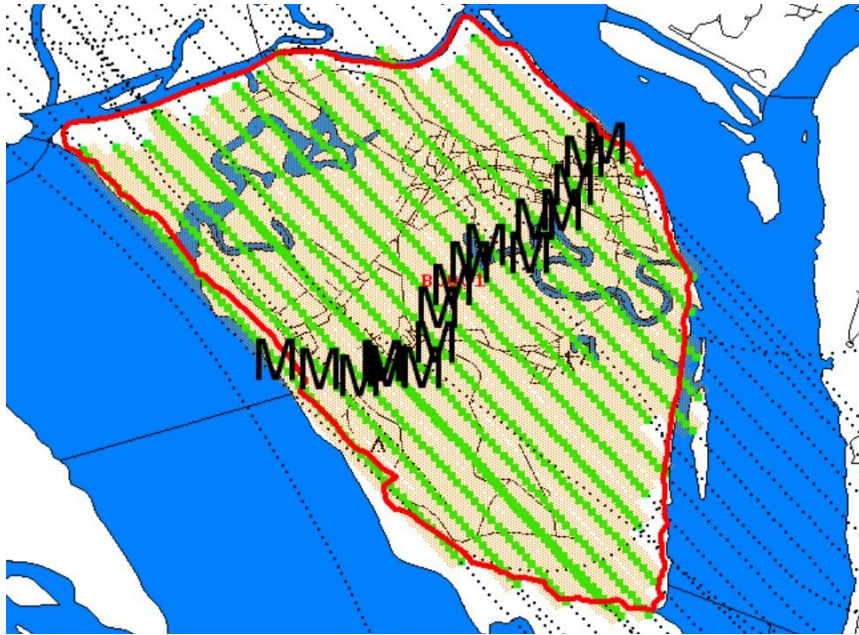
//signed//

(b) (6), Lt Col, USAFR  
**DOD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

**2 Attachments:**



**Attachment 1. Areas sprayed at Parris Island MCRD 26 Sept 2019.**







**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

9 October 2018

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Joint Base Charleston and Parris Island, SC

1. Aerial spray deployment of one C-130 from 14-19 October 2018 to Hill AFB, UT to train aerial spray aircrew, entomologists, and maintenance members to reduce the risk of range fires by controlling cheat grass (*Bromus tectorum*) and other invasive weed species while promoting reestablishment and success of native flora on the Utah Test and Training Range (UTTR).

2. Concept of Operations (All times are local):

- a. 14 October
  - 1200 Depart KYNG (Support aircraft)
  - 1210 Depart KYNG (Spray aircraft)
  - 1500 Land KHIF
  - 1510 Land KHIF
- b. 15-18 October
  - 0800 Depart KHIF for the UTTR
  - 1000 Land KHIF (planned two sorties per day)
- c. 19 October
  - 0800 Depart KHIF
  - 1400 Land KYNG
  - 1500 (Support Aircraft arrives)
- d. 20 October
  - 0800 Depart KHIF (Support Aircraft)
  - 1400 Land KHIF

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

Locations:	Utah Test and Training Range (UTTR)
Acres:	1,448
Chemical:	Plateau (Herbicide)
Gallons loaded:	67
Flow Rate:	326 GPM
Application Rate:	7 gallons per acre
Flush:	Water
Altitude:	100'
Airspeed:	200 KTS
Swath Width:	100 feet
Nozzle/Orientation:	Raindrop
Number of Nozzles:	18

4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) as the Aircraft Commander. Support at Hill AFB and the UTTR has been completed.

//SIGNED//

(b) (6), MAJOR, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

25 September 2018

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at JB Charleston and Parris Island, SC

1. Aerial spray deployment of one C-130 from 3-6 October 2018 to JB Charleston, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at MCRD Parris Island and health and welfare of the personnel of JB Charleston. Operations for this mission will be conducted from JB Charleston.

2. Concept of Operations (All times are local):

- a. 3 October  
1700 Depart KYNG  
1900 Land KCHS
- b. 4 October  
1800 Depart KCHS for Aerial Spray of Parris Island  
2030 Land KCHS
- c. 5 October  
1800 Depart KCHS for Aerial Spray of JB Charleston  
2030 Land KCHS
- d. 6 October  
1000 Depart KCHS  
1200 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 6500 acres on Parris Island
- b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
- c. Swath Width: 1000ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 0.75 oz/acre of Dibrom- an organophosphate insecticide

- a. Area to be treated: 18000 acres over JB Charleston
- b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
- c. Swath Width: 2000ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 0.85 oz/acre of Trumpet EC

4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) as the Aircraft Commander. Support at MCRD Parris Island and JB Charleston has been completed.

//SIGNED//

(b) (6), MAJOR, USAF  
Chief of Aerial Spray





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

10 June 2019

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at JB Charleston and MCRD Parris Island, SC  
Operating out of JB Charleston, SC.

1. Aerial spray deployment of one C-130 from 17-21 June 2019 to JB Charleston, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at MCRD Parris Island and JB Charleston, SC. Operations for this mission will be conducted from JB Charleston.

2. Concept of Operations (All times are local):

- a. 17 June  
1700 Depart KYNG  
1900 Land KCHS
- b. 18 June  
1945 Depart KCHS for Aerial Spray of MCRD Parris Island  
2200 Land KCHS
- c. 19 June  
2015 Depart KCHS for Aerial Spray of JB Charleston  
2215 Land KCHS
- d. 20 June  
1945 Depart KCHS (Weather Backup)  
2200 Land KCHS
- e. 21 June  
1000 Depart KCHS  
1200 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc.  
All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 18,500 acres over JB Charleston
  - b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
  - c. Swath Width: 2000ft
  - d. Groundspeed: 200 KIAS
  - e. Application Rate: 0.85 oz/acre of Trumpet EC
- 
- a. Area to be treated: 6500 acres on MCRD Parris Island
  - b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
  - c. Swath Width: 1000ft
  - d. Groundspeed: 200 KIAS
  - e. Application Rate: 0.75 oz/acre of Dibrom- an organophosphate insecticide
4. Lt Col (b) (6) will serve as the Mission Commander with Maj (b) (6) as the Aircraft Commander. Support at MCRD Parris Island and JB Charleston has been completed.

(b) (6) , Maj, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

17 September 2019

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at JB Charleston and MCRD Parris Island, SC  
Operating out of JB Charleston, SC.

1. Aerial spray deployment of one C-130 from 24-27 September 2019 to JB Charleston, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at MCRD Parris Island and JB Charleston, SC. Operations for this mission will be conducted from JB Charleston.

2. Concept of Operations (All times are local):

- a. 24 September  
1700 Depart KYNG  
1900 Land KCHS
- b. 25 September  
1900 Depart KCHS for Aerial Spray of JB Charleston  
2130 Land KCHS
- c. 26 September  
1900 Depart KCHS for Aerial Spray of MCRD Parris Island  
2130 Land KCHS
- d. 27 September  
1100 Depart KCHS  
1300 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc.  
All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 18,500 acres over JB Charleston
- b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
- c. Swath Width: 2000ft
- d. Airspeed: 200 KGS
- e. Application Rate: 0.85 oz/acre of Trumpet EC

- a. Area to be treated: 6500 acres on MCRD Parris Island
- b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
- c. Swath Width: 1000ft
- d. Airspeed: 200 KGS
- e. Application Rate: 0.85 oz/acre of Trumpet EC

4. Lt Col (b) (6) will serve as the Mission Commander with Maj (b) (6) as the Aircraft Commander. Support at MCRD Parris Island and JB Charleston has been completed.

(b) (6), Maj, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

8 July 2019

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Minot AFB, Minot, Burlington, Williston and Watford City, North Dakota.

1. Aerial spray deployment of one C-130 to Minot AFB, ND to train aerial spray aircrew, pest management personnel, and maintenance members in the control of nuisance and vector mosquitoes, with mosquito adulticide in order to improve working conditions and lower the risk of vector-borne illness to individuals working and living in/on Minot AFB, Minot, Burlington, Williston and Watford City. Aerial spraying performed off DOD installation property will be conducted IAW the Innovative Readiness Training (IRT) Program criteria.

2. Concept of Operations: All times local

- a. 15 July (Monday)  
1700 Depart KYNG  
1930 Land KMIB
- b. 16 June – 17 July (Tuesday – Wednesday)  
2130 Depart KMIB  
2330 Land KMIB
- c. 18 July (Thursday)  
1400 Depart KMIB  
1830 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

### 3. Spray Parameters:

#### Minot AFB:

- a. Area to be treated: 5,000 acres
- b. Altitude: 300 feet
- c. Swath Width: 2,000 feet
- d. Airspeed: 200 KGS
- e. Application Rate: 0.75 oz/acre Trumpet EC Insecticide

#### Minot City/Burlington:

- f. Area to be treated: 22,120 acres
- g. Altitude: 300 feet
- h. Swath Width: 2,000 feet
- i. Airspeed: 200 KGS
- j. Application Rate: 0.87 oz/acre Trumpet EC Insecticide

#### Williston/Watford City:

- k. Area to be treated: 36,400 acres
- l. Altitude: 300 feet
- m. Swath Width: 2,000 feet
- n. Airspeed: 200 KGS
- o. Application Rate: 1.0 oz/acre Imperium Insecticide

4. Maj (b) (6) will serve as the Mission Commander. Support required at Minot AFB has been completed.

\\SIGNED\\

(b) (6), Maj, USAF  
Chief of Aerial Spray





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

14 August 2019

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Tyndall AFB and Langley AFB/Craney Island.

1. One C-130 will deploy to Tyndall/Langley AFB from 19-23 August 2019. Mosquito and biting midge control will be conducted at Tyndall AFB and Langley AFB/Craney Island ACE. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito and biting midge populations affecting the health and welfare of the personnel at both installations.

2. Concept of Operations (All times are local):

- a. 19 August  
1400 Depart KYNG  
1700 Land KPAM
- b. 20 August  
1845 Depart KPAM for Aerial Spray of Tyndall Air Force Base  
2200 Land KPAM
- c. 21 August  
1200 Depart KPAM  
1500 Land KLFI  
1915 Depart KLFI for Aerial Spray of Langley Air Force Base and Craney Island (Army Corps)  
2130 Land KLFI
- d. 22 August  
1915 Depart KLFI (Weather Backup)  
2130 Land KLFI
- e. 23 August  
1100 Depart KLFI  
1300 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 24,000 acres over Tyndall AFB
  - b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
  - c. Swath Width: 2000ft
  - d. Groundspeed: 200 KIAS
  - e. Application Rate: 1.1 oz/acre of Trumpet EC
- 
- a. Area to be treated: 12,000 acres over Langley AFB and Craney Island
  - b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
  - c. Swath Width: 2000ft
  - d. Groundspeed: 200 KIAS
  - e. Application Rate: 0.8 oz/acre of Trumpet EC

4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) as the Aircraft Commander. Support at Tyndall AFB and Langley AFB has been completed.

(b) (6), Maj, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

10 April 2019

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Tyndall AFB, FL and MCRD Parris Island, SC  
Operating out of JB Charleston, SC

1. Aerial spray deployment of one C-130 from 15-18 April 2019 to JB Charleston, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at MCRD Parris Island, and to provide emergency response for mosquito and biting midge control at Tyndall AFB following a recent hurricane. Operations for this mission will be conducted from JB Charleston.

2. Concept of Operations (All times are local):

- a. 15 April  
1200 Depart KYNG  
1400 Land KPAM  
1600 Depart KPAM  
1800 Land KCHS
- b. 16 April  
1845 Depart KCHS for Aerial Spray of Tyndall AFB  
2330 Land KCHS
- c. 17 April  
1930 Depart KCHS for Aerial Spray of MCRD Parris Island \* WX backup for Tyndall AFB  
2200 Land KCHS
- d. 18 April  
1000 Depart KCHS  
1200 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 23,500 acres over Tyndal AFB

- b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
  - c. Swath Width: 2000ft
  - d. Groundspeed: 200 KIAS
  - e. Application Rate: 0.85 oz/acre of Trumpet EC
- 
- a. Area to be treated: 6500 acres on Parris Island
  - b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
  - c. Swath Width: 1000ft
  - d. Groundspeed: 200 KIAS
  - e. Application Rate: 0.75 oz/acre of Dibrom- an organophosphate insecticide
4. Lt Col (b) (6) will serve as the Mission Commander with Maj (b) (6) as the Aircraft Commander. Support at JB Charleston and Tyndall AFB has been completed.

//SIGNED//

(b) (6), MAJOR, USAF  
Chief of Aerial Spray





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

20 May 2019

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations of Larvacide Application for Aerial Spray in and around the Army Corps of Engineers' property, Williston, ND and Grand Forks AFB, ND.

1. Aerial spray deployment of one C130 to Minot International Airport, ND from 28 May – 7 June 2019 for the requested larvacide spray over the Army Corps of Engineers' property near Williston, ND and Grand Forks AFB, ND. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel working on the Army Corps' property, and by extension, the citizens of Williston. While conducting missions out of Minot International Airport, we will also conduct a routine lavarside spray at Grand Forks AFB, ND. Mission objectives provide training for aerial spray aircrew, entomologists, and maintenance personnel in all aspects of the aerial spray mission.

2. Concept of Operations: All times local

- a. 28 May (Tuesday)
  - 1200 Depart KYNG (Support Aircraft)
  - 1200 Depart KYNG (Spray Aircraft)
  - 1430 Land KMOT (Support Aircraft)
  - 1430 Land KMOT (Spray Aircraft)
- b. 29 May - 06 June (Wednesday-Thursday)
  - 0530 Show KMOT
  - 0700 Depart KMOT
  - 0900 Land KMOT
  - (Multiple 2.0 hr sorties each day depending on weather)
- c. 07 June (Friday)
  - 1000 Depart KMOT (Spray Aircraft)
  - 1000 Depart KMOT (Support Aircraft)
  - 1400 Land KYNG (Spray Aircraft)
  - 1400 Land KYNG (Support Aircraft)

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

Williston, ND

- a. Area to be treated: 10,000 acres
- b. Altitude: 100 ft for larvicide application
- c. Swath Width: 100 ft
- d. Groundspeed: 200 KIAS
- e. Flow Rate: 233 gals/min
- f. Application Rate: 5 gal/acre (water with 2.0 pints of Vectobac<sup>®</sup> + 0.45 oz of Poly Control 2)

Grand Forks AFB, ND

- a. Area to be treated: 2,100 acres
- b. Altitude: 100 ft for larvicide application
- c. Swath Width: 200 ft
- d. Groundspeed: 200 KIAS
- e. Flow Rate: 233 gals/min
- f. Application Rate: 2.5 gal/acre (water with 0.94 oz of Altosid<sup>®</sup>)

4. Lt Col (b) (6) will serve as the Mission Commander. Support required at Minot AFB has been coordinated.

\\SIGNED\\

(b) (6), Maj, USAF  
Chief of Aerial Spray



**AERIAL SPRAY PLAN**  
**MINOT AFB, ND**  
**15 -18 July 2019**  
**MI: QZNRK3491196**

**PURPOSE/BENEFIT/OBJECTIVE:** One C-130 will deploy to Minot AFB from 15-18 July, 2019. Aerial Spray flight proficiency training will be accomplished on (NVG's) Night Vision Goggles while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel working and living in and around Minot AFB, Williston, and Watford city. Aerial spraying of the cities will be in accordance with the Individual Readiness Training (IRT) program.

**1. 910 AW PARTICIPANTS:**

**Mission Commander:** Lt Col (b) (6)  
**Entomologist:** Lt Col (b) (6) , Lt Col (b) (6) (in Williston)

**AIRCREW:**

**Pilots:** Lt Col (b) (6) , Maj (b) (6)  
**Navigators:** Lt Col (b) (6) , Lt Col (b) (6)  
**Flight Engineers:** MSgt Rich Lawton  
**Spray Operators:** CMSgt (b) (6) , MSgt (b) (6) , MSgt (b) (6) , TSgt (b) (6)

**MAINTENANCE:**

**Spray MX:** TSgt (b) (6) (Lead), TSgt (b) (6) ,  
TSgt (b) (6) , TSgt (b) (6)  
**Avionics:** MSgt (b) (6)  
**Crew Chiefs:** SSgt (b) (6) , SSgt (b) (6)

**2. REQUIRED ITEMS:**

Msn Commander: MC Laptop Computer  
Entomologist: Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer  
Navigator: Maps/Map Bag, Validation Map  
Spray Operators: PPE, Calibration, Laptop and or Spray datasheet, O<sub>2</sub> hose extensions, NVG's, wireless headsets.  
Spray Maintenance: Deployment Kit, Support Equipment  
Avionics: 2 Multi-band hand-held radios; Wingman system cards

### **3. SCHEDULE: (All Local Times)**

**15 July (Monday) Pesticide/Safety brief will be conducted at the aircraft prior to departing for KMIB**

1500 – Showtime

1700 – Depart KYNG

1935 – Land KMIB **PPR: 01-15-CC**

**16-17 July (Tuesday-Wednesday) Sunset 2140L – Civil Twilight 2220L (Minot); Sunset 2148L – Civil Twilight 2227L (Williston)**

1345 – (Tuesday only) – In brief at 5 CES Commanders Conference Room in Bldg. 445

1830 – Weather Call/Pesticide Load/Calibration

2115 – Depart KMIB (daytime survey Minot AFB/Minot 1<sup>st</sup> night & Williston 2<sup>nd</sup> night)

0030 – Land KMIB

**18 July (Thursday)**

1200 – Depart KMIB

1600 – Land KYNG

### **4. SPRAY CONFIGURATION AND PARAMETERS:**

<b>Location:</b>	<b>Minot AFB</b>
Acres:	5,170
Chemical:	Trumpet <sup>®</sup> EC (78% AI Naled)
Gallons loaded:	30
Flow Rate:	7.1 GPM
Application Rate:	0.98 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300 feet AGL
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet oriented straight down
Number of Nozzles:	(15 left – 16 right) 31 Total

<b>Location:</b>	<b>Minot City/Burlington</b>
Acres:	22,128
Chemical:	Trumpet
Gallons loaded:	180
Flow Rate:	7.1 GPM
Application Rate:	0.98 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300 feet AGL
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet oriented straight down
Number of Nozzles:	(15 left – 16 right) 31 Total

<b>Location:</b>	<b>Williston/Watford</b>
Acres:	23,622
Chemical:	Imperium
Gallons loaded:	180
Flow Rate:	7.3 GPM
Application Rate:	1.0 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300 feet AGL
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet oriented straight down
Number of Nozzles:	(13 left – 13 right) 26 Total

**Flush and Purge procedures per day will be furnished by the Mission Commander**

#### **4. RADIO FREQUENCIES:**

<b>Spray Ground:</b>	UHF 392.2; VHF 123.45
<b>Minot AFB:</b>	Tower – 120.65 VHF or 253.5 UHF Ground – 134.0 VHF or 257.8 UHF Approach – 119.6 VHF or 363.8 UHF ATIS – 278.8 UHF Command Post – 321.0 “Raymond 12” PTD – 372.2

#### **5. TRANSPORTATION:**

MIB Vehicle Ops POC:	A1C (b) (6) 701-723-3121 <b>Confirmation Number: #30044627</b>
(6+pax) U-Drive	Pilots and Navigators (4)
(6+pax) U-Drive	Engineers and Spray Operators (5)
(6+pax) U-Drive	Spray MX (4)
(6+pax) U-Drive	Crew Chiefs and Avionics (3)
Rental Vehicle	MC and Entomologists (3)

Lt Col Janousek has taken care of his own rental car for Williston.

#### **6. LODGING:**

Staybridge Suites  
3009 S. Broadway

Minot, ND 58701  
(701)852-0852  
POC: (b) (6) (406) 690-5397 (b) (6)

Sakakawea Inn  
Minot AFB, ND  
POC for Non-A: (b) (6) (b) (6)  
(701)723-6161

7. **CONTACTS:**

<b>Minot AFB:</b>	DSN prefix 453, commercial 701-723-xxxx
Base Operations:	x2347
Environmental Office:	x4871 ((b) (6) )
Base Civil Engineer:	x2434 (Lt Col (b) (6) )
Pest Management:	x2393 ((b) (6) ) (b) (6) cell
Weather:	x6381 or x3631
Billeting:	x6161 or 701-727-6161
Fire Department:	x2461
Transient Alert	x3153
Minot Tower	x3330
AGE flight chief	701-723-2299
 Williston VCD	 701-577-4563 ((b) (6) )
 Minot City	 701-833-7677 ((b) (6) ) 701-833-7613 ((b) (6) )

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **JB CHARLESTON/PARRIS ISLAND, SC**

### **3-6 OCT 2018**

### **QENRK3591276**

**Purpose/Objectives/Benefits:** One C-130 will deploy to JB Charleston, SC from 3 – 6 October 2018. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito and biting midge populations affecting the health and welfare of the personnel of JB Charleston and MCRD Parris Island, SC. Operations for this mission will be conducted from JB Charleston utilizing Night Vision Goggles (NVGs) at night or will begin 2 hours prior to dusk and end at sunset depending on environmental factors and scheduling.

#### **1. 910 AW PARTICIPANTS:**

Msn Commander:	Lt Col (b) (6)		
Entomologists:	Lt Col (b) (6)	(in place), Lt Col (b) (6)	(in place)
Pilots:	Lt Col (b) (6)	, Maj (b) (6)	
Navigators:	Lt Col (b) (6)	, Capt (b) (6)	
Flight Engineer:	SSgt (b) (6)		
Spray Operators:	SMSgt (b) (6)	, MSgt (b) (6)	
Spray Maintenance:	TSgt (b) (6)	(Lead) (b) (6)	
	MSgt (b) (6)	, TSgt (b) (6)	, TSgt (b) (6)
	SSgt (b) (6)		
Crew Chiefs:	MSgt (b) (6)	, TSgt (b) (6)	
Comm/Nav:	TSgt (b) (6)		

#### **2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, laptop/Spray datasheet, O <sub>2</sub> hose extensions, NVGs
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system cards

### **3. SCHEDULE: (All Local Time)**

#### **3 OCT (Wed)**

1500 Showtime  
1700 Depart KYNG  
1900 Land KCHS

#### **4 OCT (Thurs) Sunset: 1905L (PI) 1900L (CHS); Civil Twi: 1929L (PI) 1925L (CHS)**

1045 Installation in-brief at JB Charleston, Bldg. 721 Main Conference Room  
1500 Weather call/Chemical Load at JB Charleston  
1530 Calibration  
1600 Installation brief at MCRD Parris Island  
1800 Depart KCHS  
2100 Land KCHS

#### **05 OCT (Fri) Sunset: 1904L (PI) 1859L (CHS); Civil Twi: 1928L (PI) 1924L (CHS)**

1530 Weather call/Chemical Load at JB Charleston  
1600 Calibration  
1800 Depart KCHS  
2100 Land KCHS

#### **06 OCT (Sat)**

1000 Depart KCHS  
1200 Arrive KYNG

### **4. SPRAY CONFIGURATION AND PARAMETERS:**

Locations:	MCRD Parris Island and JB Charleston
Acres:	7,500 (Parris Island); 18,000 (JB Charleston)
Chemical:	Parris Island: Dibrom <sup>®</sup> (EPA Reg. No. 5481-480) Charleston: Trumpet <sup>®</sup> EC (EPA Reg. No. 5481-481) Signal word: Danger
Gallons loaded:	45 gallons (Parris Island); 120 gallons (Charleston)
Flow Rate:	2.7 GPM (Parris Island); 6.2 GPM (Charleston)
Application Rate:	0.75 oz/ac (Parris Island); 0.85 oz/acre (Charleston)
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300' AGL NVG Operations, 150' AGL Day Operations
Airspeed:	200 Knots Ground Speed
Swath Width:	1,000 feet (Parris Island); 2,000 feet (Charleston)
Nozzle/Orientation:	ULV 8003 Tee Jet Flat Fan / Straight Down
Number of Nozzles:	13 (Parris Island); 27 (Charleston)
Formulas:	Flow Rate = Gal/Time in Minutes Acreage Sprayed = Total Sec x 338 x Swath Width / 43,560



## 5. AIR TO GROUND RADIO FREQUENCIES:

**Charleston AFB:** Tower – 843-414-2808  
Tower – 126.0 or 239.0  
Ground – 121.9 or 348.6  
Clearance – 127.325 or 291.65  
ATIS – 124.75  
Palmetto Ops – 134.1 or 349.4  
**Charleston Approach:** 135.8 or 379.925  
**Mt Pleasant Regional:** CTAF 122.8  
**Charleston Executive:** CTAF 122.8  
**MCAS Beaufort:** Tower - 119.05/340.2 MCAS TWR  
Approach - 123.7  
**Hilton Head Airport:** 118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)  
**Beaufort Co Airport:** 122.7 UNI  
**Spray Ground (CHS):** 392.2 UHF; 123.45 VHF

## 6. TRANSPORTATION:

**JB Charleston:** Vehicles will be at JB Charleston Transportation/Vehicle Ops. Confirmation #29047933.

**1x 6-PAX Truck** – Entomologists  
**1x 6-PAX Truck** – Officer Aircrew  
**1x 8-PAX Van** – Enlisted Aircrew  
**1x 6-PAX Truck** – Maintenance  
**1x 8-PAX Van** – Maintenance

## 7. LODGING:

**Contract hotel:** Homewood by Hilton Charleston Airport  
**POC:** Ms. Julianne Dirks – Group Sales Manager (843-518-6201)  
7401 Northwoods Boulevard, North Charleston, SC 29406  
**“Non-A”** – Per email from Inns of Charleston attached to DD Form 1351-5

## 8. CONTACTS:

<b>Charleston AFB SC:</b>	<b>DSN: 673-XXXX; Commercial (843)-963-XXXX</b>		
Wing Commander:	x3418		
MSG Commander:	x2200		
Civil Engineer:	x4956		
Deputy Chief/Civil Engineer:	x4954		
Environmental Coordinator:	x2711		
Base Operations:	x3026		
Charleston Control Tower:	(843) 414-2808		
Weather:	x3016		
Pest Control POC :	x5266, (b) (6)	((b) (6)	(cell)
Pest Control NCOIC:	x5266, MSgt (b) (6)	((b) (6)	(cell)
Public Affairs:	x1110		
Fuels:	x5079		
Transportation:	x4236		
Fire Department:	x3777		

**MCRD Parris Island SC: DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental Coord:	x3102	Capt (b) (6)	(b) (6)	(cell)
		(b) (6)	(b) (6)	(cell)
HazWaste:	x4698	(b) (6)	(b) (6)	(cell)
AC/S, I&L:	x2511			
Deputy I&L	x4110	(b) (6)		
Pest Control:	x2364	(b) (6)	and (b) (6)	
P.I. Motor Pool:	x2233	(b) (6)		
P.I. Rifle Range:	x3183/3624			
Military Police	x3444			

**MCAS Beaufort SC: DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental:	x7370	(b) (6)
Fuels:	x7049/7448/7168	
Airfield Mgr:	x6316	
Trans Alert/VAL:	x7110	
Weather:	x7001/7926/7/9	
Base Security Manager:	x7090	
Provost Marshal Office:	x7209/7967/6335	

**Beaufort County Mosquito Control:**

(b) (6) , Director (843) 255-5800

**910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

910 AW/CC:	x1243	
Command Post	x1315	FAX x1161
PA:	x1236	FAX x1022
OG/CC:	x1257/1179	
Safety	x1391	
Base Ops:	x1182	
SOF Desk:	x1069	FAX: x1371
757 AS/DO:	x1793	
757 AS Admin:	x1239	FAX x1657
757 AS Spray Office:	x1638/1111	FAX x1616
910 MXG/CC:	x1225	
910 LG/LGM:	x1352	
Maintenance Control:	x1348	
Spray Maintenance:	x1132/1586	

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **TYNDALL AFB/PARRIS ISLAND, SC**

### **15-18 April 2019**

### **QZNRK3491105**

**Purpose/Objectives/Benefits:** One C-130 will deploy to JB Charleston, SC from 15-18 April 2019. Mosquito and biting midge control will be conducted at Tyndall AFB following an emergency request in response to recent hurricane Michael. Weather permitting, a spray flight will also occur at MCRD Parris Island. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito and biting midge populations affecting the health and welfare of the personnel at both installations. Operations for this mission will be conducted from JB Charleston utilizing Night Vision Goggles (NVGs).

#### **1. 910 AW PARTICIPANTS:**

Msn Commander:	Lt Col (b) (6)	(b) (6)	
Entomologists:	Lt Col (b) (6)	, Lt Col (b) (6)	(in place at Tyndall AFB)
Pilots:	Maj (b) (6)	, Maj (b) (6)	
Navigators:	Lt Col (b) (6)	, Lt Col (b) (6)	
Flight Engineer:	MSgt (b) (6)	, TSgt (b) (6)	(in place Charleston)
Spray Operators:	CMSgt (b) (6)	, MSgt (b) (6)	, TSgt (b) (6)
Spray Maintenance:	MSgt (b) (6)	(Lead) (b) (6)	
	TSgt (b) (6)	, TSgt (b) (6)	, TSgt (b) (6)
	SrA (b) (6)		
Crew Chiefs:	MSgt (b) (6)	, TSgt (b) (6)	
Comm/Nav:	MSgt (b) (6)		

#### **2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, laptop/Spray datasheet, O <sub>2</sub> hose extensions, NVGs
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system cards

### **3. SCHEDULE: (All Local Time)**

#### **15 APR (Mon)**

1000 Showtime

1200 Depart KYNG

1400 Land KPAM \*Before landing, conduct aerial survey\* Tyndall AFB is on Central Time  
PPR: 0415-02DC

1430 Installation brief at Tyndall

1600 Depart KPAM

1800 Land CHS - PPR: Via GDSS2

#### **16 APR (Tues) Sunset: 1911L (KPAM) 1953L (PI); Civil Twi: 1935L (KPAM) 2018L (PI)**

1500 Weather call/Chemical Load at JB Tyndall AFB

1530 Calibration

1845 Depart KCHS

2330 Land KCHS

#### **17 APR (Wed) Sunset: 1910L (KPAM) 1954L (PI); Civil Twi: 1935L (KPAM) 2019L (PI)**

1400 Telecom in-brief with Parris Island

1630 Weather call/Chemical Load at JB Tyndall AFB

1700 Calibration

1930 Depart KCHS

2200 Land KCHS

#### **18 APR (Thur)**

1000 Depart KCHS

1200 Arrive KYNG

### **4. SPRAY CONFIGURATION AND PARAMETERS:**

Locations:	MCRD Parris Island and Tyndall AFB
Acres:	7,500 (Parris Island); 25,500 (Tyndall AFB)
Chemical:	Parris Island: Dibrom <sup>®</sup> (EPA Reg. No. 5481-480) Tyndall AFB: Trumpet <sup>®</sup> EC (EPA Reg. No. 5481-481) Signal word: Danger
Gallons loaded:	45 gallons (Parris Island); 200 gallons (Tyndall AFB)
Flow Rate:	2.7 GPM (Parris Island); 7.1 GPM (Tyndall AFB)
Application Rate:	0.75 oz/ac (Parris Island); 1.0 oz/acre (Tyndall AFB)
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300' AGL NVG Operations, 150' AGL Day Operations
Airspeed:	200 Knots Ground Speed
Swath Width:	1,000 feet (Parris Island); 2,000 feet (Tyndall AFB)
Nozzle/Orientation:	ULV 8003 Tee Jet Flat Fan / Straight Down
Number of Nozzles:	13 (Parris Island); 31 (Tyndall AFB)
Formulas:	Flow Rate = Gal/Time in Minutes Acreage Sprayed = Total Sec x 338 x Swath Width / 43,560

**5. AIR TO GROUND RADIO FREQUENCIES:**

**Tyndall AFB AFB:** Tower – 843-414-2808  
Tower – 126.0 or 239.0  
Ground – 121.9 or 348.6  
Clearance – 127.325 or 291.65  
ATIS – 124.75  
Palmetto Ops – 134.1 or 349.4  
**Tyndall AFB Approach:** 135.8 or 379.925

**Mt Pleasant Regional:** CTAF 122.8  
**Charleston AFB Executive:** CTAF 122.8  
**MCAS Beaufort:** Tower - 119.05/340.2 MCAS TWR  
Approach - 123.7  
**Hilton Head Airport:** 118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)  
**Beaufort Co Airport:** 122.7 UNI  
**Spray Ground (CHS):** 392.2 UHF; 123.45 VHF

**Charleston AFB:** Tower – 850-283-4950/4553  
Tower – 133.95 or 263.15  
Ground – 121.9 or 259.3  
Clearance – 118.05 or 348.7  
ATIS – 254.4  
**Charleston App Control:** N abv 5000' 125.2 / N blw 5000' 120.825  
S abv 5000' 124.15 / S blw 5000' 119.775

**6. TRANSPORTATION:**

**JB Charleston AFB:** Vehicle will be at JB Charleston AFB Transportation/Vehicle Ops. Confirmation #29730641.

**1x 15-PAX Van** – Maintenance

**CHARLESTON,SC APO,CHS  
5501 PORSCHE BLVD BUILDING 300,  
CHARLESTON INTL AIRPORT  
NORTH CHARLESTON, SC 29418 US  
843-552-1771**

**1x Sedan** – Entomologists  
**1x Sedan** – Officer Aircrew  
**1x Sedan** – Enlisted Aircrew  
**1x Sedan** – Maintenance

7. **LODGING:**

**TBD:**

8. **CONTACTS:**

**JB Charleston AFB SC: DSN: 673-XXXX; Commercial (843)-963-XXXX**

Wing Commander:	x3418		
MSG Commander:	x2200		
Civil Engineer:	x4956		
Deputy Chief/Civil Engineer:	x4954		
Environmental Coordinator:	x2711		
Base Operations:	x3026		
Tyndall AFB Control Tower:	(843) 414-2808		
Weather:	x3016		
Pest Control POC:	x5266, (b) (6)	(b) (6)	(cell)
Pest Control NCOIC:	x5266, (b) (6)	(b) (6)	(cell)
Public Affairs:	x1110		
Fuels:	x5079		
Transportation:	x4236		
Fire Department:	x3777		

**MCRD Parris Island SC: DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental Coord:	x3102	Capt (b) (6)	(b) (6)	(cell)
		(b) (6)	(b) (6)	(cell)
HazWaste:	x4698	(b) (6)	(b) (6)	(cell)
AC/S, I&L:	x2511			
Deputy I&L	x4110	(b) (6)		
Pest Control:	x2364	(b) (6)	and (b) (6)	
P.I. Motor Pool:	x2233	(b) (6)		
P.I. Rifle Range:	x3183/3624			
Military Police	x3444			

**MCAS Beaufort SC: DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental:	x7370	(b) (6)
Fuels:	x7049/7448/7168	
Airfield Mgr:	x6316	
Trans Alert/VAL:	x7110	
Weather:	x7001/7926/7/9	
Base Security Manager:	x7090	
Provost Marshal Office:	x7209/7967/6335	

**Beaufort County Mosquito Control:**

(b) (6) , Director (843) 255-5800



**AERIAL SPRAY OPERATIONAL SCHEDULE**  
**JB CHARLESTON, SC/ PARRIS ISLAND, SC**  
**17-21 JUNE 2019**  
**MSN# QZNRK3491168**

**Purpose/Objectives/Benefits:** One C-130 will deploy to JB Charleston, SC from 17-21 June 2019. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito and biting midge populations affecting the health and welfare of the personnel of JB Charleston and MCRD Parris Island, SC. Operations for this mission will be conducted from JB Charleston utilizing Night Vision Goggles (NVGs).

**1. 910 AW PARTICIPANTS:**

Msn Commander:	Lt Col (b) (6)	(b) (6)	
Entomologists:	Lt Col (b) (6)	, Lt Col (b) (6)	(in place Charleston)
Pilots:	Maj (b) (6)	, Capt (b) (6)	
Navigators:	Lt Col (b) (6)	, Maj (b) (6)	
Flight Engineer:	MSgt (b) (6)	, MSgt (b) (6)	(in place Charleston)
Spray Operators:	CMSgt (b) (6)	, MSgt (b) (6)	
Spray Maintenance:	TSgt (b) (6)	(Lead)	
	TSgt (b) (6)	, TSgt (b) (6)	, TSgt (b) (6)
	TSgt Jeffrey McGhee		
Crew Chiefs:	TSgt (b) (6)	SSgt (b) (6)	
Comm/Nav:	MSgt (b) (6)		

**2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, laptop/Spray datasheet, O <sub>2</sub> hose extensions, NVGs
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system cards

### **3. SCHEDULE: (All Local Time)**

#### **17 JUN (Mon)**

1500 Showtime

1700 Depart KYNG

1900 Land CHS - **PPR: Via GDSS2**

#### **18 JUN (Tues) Sunset: 2032L; Civil Twi: 2100L (KCHS)**

1300 Inbrief for Charleston

1600 Weather call/Chemical Load

1630 Calibration

2015 Depart KCHS

2215 Land KCHS

#### **19 JUN (Wed) Sunset: 2031L; Civil Twi: 2100L (PI)**

1630 Inbrief for PI

1730 Weather Call/Chemical load

1800 Calibration

2200 Depart KCHS

0015 Arrive KCHS

#### **20 JUN (Thur) Sunset: 2032L; Civil Twi: 2101L (WX Backup)**

1600 Weather Call/Chemical load

1630 Calibration

1945 Depart KCHS

2200 Arrive KCHS

#### **21 JUN (Fri)**

1000 Depart KCHS

1200 Arrive KYNG

### **4. SPRAY CONFIGURATION AND PARAMETERS:**

Locations:	MCRD Parris Island and JB Charleston
Acres:	6,500 (Parris Island); 18,500 (JB Charleston)
Chemical:	Parris Island: Dibrom <sup>®</sup> (EPA Reg. No. 5481-480) JB Charleston: Trumpet <sup>®</sup> EC (EPA Reg. No. 5481-481) Signal word: Danger
Gallons loaded:	45 gallons (Parris Island); 120 gallons (JB Charleston)
Flow Rate:	2.7 GPM (Parris Island); 6.2 GPM (JB Charleston)
Application Rate:	0.75 oz/ac (Parris Island); 0.85 oz/acre (JB Charleston)
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300' AGL NVG Operations, 150' AGL Day Operations
Airspeed:	200 Knots Ground Speed
Swath Width:	1,000 feet (Parris Island); 2,000 feet (JB Charleston)
Nozzle/Orientation:	ULV 8003 Tee Jet Flat Fan / Straight Down
Number of Nozzles:	13 (Parris Island); 27 (JB Charleston)
Formulas:	Flow Rate = Gal/Time in Minutes Acreage Sprayed = Total Sec x 338 x Swath Width / 43,560

## 5. AIR TO GROUND RADIO FREQUENCIES:

**Mt Pleasant Regional:** CTAF 122.8  
**Charleston AFB Executive:** CTAF 122.8  
**MCAS Beaufort:** Tower - 119.05/340.2 MCAS TWR  
Approach - 123.7  
**Hilton Head Airport:** 118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)  
**Beaufort Co Airport:** 122.7 UNI  
**Spray Ground (CHS):** 392.2 UHF; 123.45 VHF

**Charleston AFB:** Tower – 850-283-4950/4553  
Tower – 133.95 or 263.15  
Ground – 121.9 or 259.3  
Clearance – 118.05 or 348.7  
ATIS – 254.4  
**Charleston App Control:** N abv 5000’ 125.2 / N blw 5000’ 120.825  
S abv 5000’ 124.15 / S blw 5000’ 119.775

## 6. TRANSPORTATION:

**JB Charleston AFB:** Vehicle will be at JB Charleston AFB Transportation/Vehicle Ops. Confirmation #29929301.

**1x 15-PAX Van** – Maintenance  
**1x 6-PAX Truck** - Maintenance

**Budget Rental**  
**CHARLESTON, SC APO, CHS**  
**5501 PORSCHE BLVD BUILDING 300,**  
**CHARLESTON INTL AIRPORT**  
**NORTH CHARLESTON, SC 29418 US**  
**843-552-1771**

**1x Sedan** – Entomologists (b) (6) Conf# 09762622US2  
**1x Sedan** – Officer Aircrew (b) (6) Conf# 09850283US2  
**1x Sedan** – Enlisted Aircrew (b) (6) Conf# 09850546US6

## 7. LODGING:

Double Tree by Hilton Charleston Charleston – Airport (843) 518-6200  
7401 Northwoods Boulevard, North Charleston, SC 29406

\*You need the e-mail from the Inns of Charleston stating no rooms available and the 1351-5 added to your travel voucher in place of a Non-A. You will have to fill out the top of the 1351-5 before attaching it to your travel voucher.

## 8. CONTACTS:

### **JB Charleston AFB SC: DSN: 673-XXXX; Commercial (843)-963-XXXX**

Wing Commander:	x3418		
MSG Commander:	x2200		
Civil Engineer:	x4956		
Deputy Chief/Civil Engineer:	x4954		
Environmental Coordinator:	x2711		
Base Operations:	x3026		
Tyndall AFB Control Tower:	(843) 414-2808		
Weather:	x3016		
Pest Control POC:	x5266, (b) (6)	((b) (6)	(cell)
Pest Control NCOIC:	x5266, MSgt (b) (6)	((b) (6)	(cell)
Public Affairs:	x1110		
Fuels:	x5079		
Transportation:	x4236		
Fire Department:	x3777		

### **MCRD Parris Island SC: DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental Coord:	x3102	Capt (b) (6)	((b) (6)	(cell)
		(b) (6)	((b) (6)	(cell)
HazWaste:	x4698	(b) (6)	((b) (6)	(cell)
AC/S, I&L:	x2511	Col (b) (6)		
Deputy I&L	x3423	(b) (6)		
Pest Control:	x2364			
P.I. Rifle Range:	x3183/3624			
Military Police	x3444			

### **MCAS Beaufort SC: DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental:	x7370	(b) (6)	
Fuels:	x7049/7448/7168		
Airfield Mgr:	x6316		
Trans Alert/VAL:	x7110		
Weather:	x7001/7926/7/9		
Base Security Manager:	x7090		
Provost Marshal Office:	x7209/7967/6335		

### **Beaufort County Mosquito Control:**

(b) (6)	, Director	(843) 255-5800
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# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **JB CHARLESTON, SC/ PARRIS ISLAND, SC**

### **24-27 September 2019**

### **MSN# QZNRK3431267**

**Purpose/Objectives/Benefits:** One C-130 will deploy to JB Charleston, SC from 24-27 Sept 2019. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito and biting midge populations affecting the health and welfare of the personnel of JB Charleston and MCRD Parris Island, SC. Operations for this mission will be conducted from JB Charleston utilizing Night Vision Goggles (NVGs).

#### **1. 910 AW PARTICIPANTS:**

Msn Commander:	Lt Col (b) (6)			
Entomologists:	Lt Col (b) (6)			
Pilots:	Maj (b) (6)	, Lt Col (b) (6)		
Navigators:	Lt Col (b) (6)	, Maj (b) (6)		
Flight Engineer:	MSgt (b) (6)			
Spray Operators:	CMSgt (b) (6)	, TSgt (b) (6)		
Spray Maintenance:	TSgt (b) (6)	(Lead), MSgt (b) (6)	, TSgt (b) (6)	, TSgt (b) (6)
Crew Chiefs:	TSgt (b) (6)	, TSgt (b) (6)		
Comm/Nav:	TSgt (b) (6)			

#### **2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, laptop/Spray datasheet, O <sub>2</sub> hose extensions, NVGs
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system cards

#### **3. SCHEDULE: (All Local Time)**

##### **24 SEP (Tues)**

1500 Showtime

1700 Depart KYNG

1900 Land CHS - PPR: Via GDSS2

##### **25 SEP (Wed) Sunset: 1913L; Civil Twi: 1938L (KCHS)**

1330 In-brief for Charleston (main conference room Bldg. 721)

1600 Weather call/Chemical Load

1630 Calibration

1845 Depart KCHS

2045 Land KCHS

**26 SEP (Thurs) Sunset: 1912L; Civil Twi: 1937L (WX backup)**

1630 In-brief for PI

1600 Weather Call/Chemical load

1630 Calibration

1845 Depart KCHS

2100 Land KCHS

**21 JUN (Fri)**

1000 Depart KCHS

1200 Arrive KYNG

#### **4. SPRAY CONFIGURATION AND PARAMETERS:**

Locations:	MCRD Parris Island and JB Charleston
Acres:	6,700 (Parris Island); 18,500 (JB Charleston)
Chemical:	Trumpet <sup>®</sup> EC (EPA Reg. No. 5481-481); Signal word: Danger
Gallons loaded:	60 gallons (Parris Island); 120 gallons (JB Charleston)
Flow Rate:	4.2 GPM (Parris Island); 6.2 GPM (JB Charleston)
Application Rate:	1.15 oz/ac (Parris Island); 0.85 oz/acre (JB Charleston)
Flush:	Water
Altitude:	300' AGL NVG Operations
Airspeed:	200 Knots Ground Speed
Swath Width:	1,000 feet (Parris Island); 2,000 feet (JB Charleston)
Nozzle/Orientation:	ULV 8003 Tee Jet Flat Fan / Straight Down
Number of Nozzles:	18 (Parris Island); 28 (JB Charleston)
Formulas:	Flow Rate = Gal/Time in Minutes Acreage Sprayed = Total Sec x 338 x Swath Width / 43,560

#### **5. AIR TO GROUND RADIO FREQUENCIES:**

<b>Mt Pleasant Regional:</b>	CTAF 122.8
<b>Charleston AFB Executive:</b>	CTAF 122.8
<b>MCAS Beaufort:</b>	Tower - 119.05/340.2 MCAS TWR Approach - 123.7
<b>Hilton Head Airport:</b>	118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)
<b>Beaufort Co Airport:</b>	122.7 UNI
<b>Spray Ground (CHS):</b>	392.2 UHF; 123.45 VHF
<b>Charleston AFB:</b>	Tower – 850-283-4950/4553 Tower – 133.95 or 263.15 Ground – 121.9 or 259.3 Clearance – 118.05 or 348.7 ATIS – 254.4
<b>Charleston App Control:</b>	N abv 5000' 125.2 / N blw 5000' 120.825 S abv 5000' 124.15 / S blw 5000' 119.775



## 6. TRANSPORTATION:

**JB Charleston AFB:** Vehicle will be at JB Charleston AFB Transportation/Vehicle Ops. Confirmation #30283593.

**3x Minivans** – Aircrew (2), crew chiefs (1)

**2x 6-PAX Truck** – Msn Commander (b) (6), MXS

## 7. LODGING:

Double Tree by Hilton Charleston Charleston – Airport (843) 518-6200

7401 Northwoods Boulevard, North Charleston, SC 29406

\*You should receive a non-A emailed to you, contact the MC if you do not receive.

## 8. CONTACTS:

### **JB Charleston AFB SC: DSN: 673-XXXX; Commercial (843)-963-XXXX**

Wing Commander:	x3418	
MSG Commander:	x2200	
Civil Engineer:	x4956	
Deputy Chief/Civil Engineer:	x4954	
Environmental Coordinator:	x2711	
Base Operations:	x3026	
Tyndall AFB Control Tower:	(843) 414-2808	
Weather:	x3016	
Pest Control NCOIC:	x5266, MSgt (b) (6) (b) (6)	(cell)
Public Affairs:	x1110	
Fuels:	x5079	
Transportation:	x4236	
Fire Department:	x3777	

### **MCRD Parris Island SC: DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental Coord:	x3102 Capt (b) (6), (b) (6)	(cell)
JoAnna Lake x4698 John Stroud	(843) 321-6280 (cell)	
AC/S, I&L:	x2511 Col (b) (6)	
Deputy I&L	x3423 Tim (b) (6)	
Pest Control:	x2364	
P.I. Rifle Range:	x3183/3624	
Military Police	x3444	

### **MCAS Beaufort SC: DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental:	x7370 (b) (6)	
Fuels:	x7049/7448/7168	
Airfield Mgr:	x6316	
Trans Alert/VAL:	x7110	
Weather:	x7001/7926/7/9	
Base Security Manager:	x7090	
Provost Marshal Office:	x7209/7967/6335	

**Beaufort County Mosquito Control: (b) (6)** , Director (843) 255-5800

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **TYNDALL AFB / LANGLEY AFB/CRANEY ISLAND**

### **19-23 August 2019**

### **QZNRK3401231**

**Purpose/Objectives/Benefits:** One C-130 will deploy to Tyndall/Langley AFB from 19-23 August 2019. Mosquito and biting midge control will be conducted at Tyndall AFB and Langley AFB/Craney Island ACE. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito and biting midge populations affecting the health and welfare of the personnel at both installations. Operations for this mission will be conducted from both locations utilizing Night Vision Goggles (NVGs).

#### **1. 910 AW PARTICIPANTS:**

Msn Commander:	Lt Col (b) (6)	
Entomologist :	Lt Col (b) (6)	
Pilots:	Lt Col (b) (6)	Maj (b) (6)
Navigators:	Lt Col (b) (6)	, Capt (b) (6)
Flight Engineer:	TSgt (b) (6)	
Spray Operators:	MSgt (b) (6)	, TSgt (b) (6)
Spray Maintenance:	TSgt (b) (6) (Lead)	
	TSgt (b) (6)	, TSgt (b) (6) , MSgt (b) (6)
Crew Chiefs:	TSgt (b) (6)	, SSgt (b) (6)
Comm/Nav:	MSgt (b) (6)	

#### **2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, laptop/Spray datasheet, O <sub>2</sub> hose extensions, NVGs
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system cards

### **3. SCHEDULE: (All Local Time)**

#### **19 August (Monday)**

1200 Showtime

1400 Depart KYNG

1600 Land KPAM \*Before landing, conduct aerial survey\* Tyndall AFB is on Central Time

PPR: 0819-010E

#### **20 Aug (Tuesday) Sunset: 1919L Civil Twi: 1944L (KPAM)**

1400 In-brief

1500 Weather call/Material Load

1530 Calibration

1845 Depart KPAM

2200 Land KPAM

#### **21 Aug (Wednesday) Sunset: 1949L Civil Twi: 2016L (KLFI)**

1200 Depart KPAM

1500 Land KLFI PPR: 15170-1KO

1700 Weather Call/Product Load

1915 Depart KLFI

2130 Land KLFI

#### **22 Aug (Thursday) (weather day)**

1700 Weather Call/Product Load

1915 Depart KLFI

2130 Land KLFI

#### **23 Aug (Friday)**

1000 Depart KLFI

1130 Land KYNG

### **4. SPRAY CONFIGURATION AND PARAMETERS:** (note these are subject to change)

Locations:	Tyndall AFB and Langley AFB/Craney Island ACE
Acres:	25,500 (Tyndall AFB); 12,105 (Langley and Craney Island)
Chemical:	Trumpet® EC (EPA Reg. No. 5481-481)
	Signal word: Danger
Gallons loaded:	90 gallons (Langley/Craney Island); 200 gallons (Tyndall AFB)
Flow Rate:	6.3 GPM (Langley); 7.1 GPM (Tyndall AFB)
Application Rate:	0.93 oz/ac (Langley); 1.0 oz/acre (Tyndall AFB)
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300' AGL NVG Operations, 150' AGL Day Operations
Airspeed:	200 Knots Ground Speed
Swath Width:	2000 feet (Langley); 2,000 feet (Tyndall AFB)
Nozzle/Orientation:	ULV 8003 Tee Jet Flat Fan / Straight Down
Number of Nozzles:	31
Formulas:	Flow Rate = Gal/Time in Minutes
	Acreage Sprayed = Total Sec x 338 x Swath Width / 43,560

## 5. AIR TO GROUND RADIO FREQUENCIES:

**Tyndall AFB:**  
Tower – 843-238-4950  
Tower – 133.95 or 263.15  
Approach – 120.825 or 379.3 N blw 5000'  
Approach – 119.775 or 317.45 S blw 5000'  
Ground – 121.9 or 259.3  
Clearance – 118.05 or 348.7  
ATIS – 254.4  
PTD – 139.9 or 372.2  
COMD POST – 381.1 (CHECKER OPS)

**Langley AFB:**  
Tower – 125.0 or 253.5  
Norfolk APP – 125.7 or 335.625  
Ground – 121.7 or 275.8  
Clearance – 118.85 or 257.625  
AITS – 270.1  
PTD – 142.3 or 376.2  
COMD POST – 251.25

## 6. TRANSPORTATION:

**Tyndall AFB:** 1 8-pax van at Transportation Confirmation # 30181489; 1300 hours pickup

2 mini vans- Drivers – one from spray maintenance, one from operations  
Enterprise rental cars 15 Ave Panama City - will deliver to Tyndall with 2 hr notice call 850-872-9206  
Confirmation #1308128905  
Confirmation #1308128857

**Langley AFB:** vehicles will be provided by Langley 633CES

## 7. LODGING:

Tyndall Lodging (on base)  
Langley will be contract quarters location TBD

## 8. CONTACTS:

### **TYNDALL AFB FL**

- DSN: 523-XXXX - COMMERCIAL 850-283-XXXX

Wing Commander – Col (b) (6) - 283-2668  
MSG Commander – Col (b) (6) - 283-3226  
Civil Engineer – Lt Col (b) (6) - 283-3283 / Cell (b) (6)  
Deputy Chief/Civil Engineer – Mr. (b) (6) – 283-3283 / Cell (b) (6)  
Environmental Coordinator – (b) (6) – 283-2822 / Cell (b) (6)  
Base Operations- 283-3212  
Tyndall AFB Control Tower – 283-4950  
Weather – 283-1387  
Pest Control POC – (b) (6) - Cell (b) (6)

Public Affairs – 283-4500  
Fuels- 283-2335  
Transportation- 283-8959 / Stand by 850-832-2248  
Fire Department- 283-4777  
Airfield Manager- SMSgt (b) (6) – 283-2291  
Base Operator- 283-1110  
Command Post- 283-2155  
(b) (6) – 283-6465 / Cell (b) (6)  
Public Health- 283-7138

**Langley AFB: DSN: 574-XXXX; Commercial (757) 764-XXXX**

Base Operator	x1110
Wing Commander:	x5321
Command Post:	x5411
Public Affairs:	x5701
Wing Safety:	x5057
Base Operations:	x2504
Base Civil Engineer:	x5342
Weather:	x5908
Lodging (Langley Inn):	x4667 or 757-764-4667
Fire Department:	x3068
Transient Alert	x2539/4517
Langley Control Tower:	x7999
Pest Control Foreman:	x3324
Vehicle Ops	x6446

**Army Corps of Engineers (b) (6) office: (b) (6)**  
**City of Portsmouth Biologist**

# AERIAL SPRAY PLAN

## ARMY CORPS OF ENGINEERS, WILLISTON, ND

## GRAND FORKS AFB, ND

### 28 May – 7 June 2019

**PURPOSE/BENEFIT/OBJECTIVE:** To control nuisance and vector mosquitoes with larvicide in order to improve working conditions and lower risk of vector-borne illness to individuals working and living in and around the Army Corps of Engineers' property, Williston, ND and Grand Forks AFB, ND. Operating out of Minot International Airport (KMOT).

#### 1. 910 AW PARTICIPANTS:

Mission Commander:	Lt Col (b) (6)	(b) (6)	(cell phone)
Pilots: 1 <sup>ST</sup> Week	Lt Col (b) (6)	, Lt Col (b) (6)	, Maj (b) (6)
2 <sup>nd</sup> Week	Maj (b) (6)	, Capt (b) (6)	
Navigators: 1 <sup>st</sup> Week	Lt Col (b) (6)		
2 <sup>nd</sup> Week	Lt Col (b) (6)		
Flight Engineers:	CMSgt (b) (6)	, SMgt (b) (6)	
Spray Operators:	CMSgt (b) (6)	, MSgt (b) (6)	, MSgt (b) (6), TSgt (b) (6)
Entomologists:	Lt Col (b) (6)	(Williston), Lt Col (b) (6)	(Williston)
	Lt Col (b) (6)	(Minot), Lt Col (b) (6)	(Minot)
Spray MX:	TSgt (b) (6)	LEAD (b) (6)	, TSgt (b) (6), TSgt (b) (6)
	, TSgt (b) (6)	, MSgt (b) (6)	, TSgt (b) (6)
	SrA (b) (6)		
MX Specialists:	MSgt (b) (6)	, SSgt (b) (6)	, A1C (b) (6), TSgt (b) (6)
	, A1C (b) (6)	, MSgt (b) (6)	, TSgt (b) (6)
Crew Chiefs:	TSgt (b) (6)	, SSgt (b) (6)	

#### 2. REQUIRED ITEMS:

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, Calibration, Laptop and Spray datasheet, O <sub>2</sub> hose extensions
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system cards

#### 3. TRANSPORTATION:



Enterprise 1825 S Broadway Minot, ND 58701 (701-420-9867) POC: Oh  
Pick-up: 28 May 1500L at airport  
Drop-off: 7 June 0900L at airport

Lt Col (b) (6)	Sedan	Confirm#
Maj (b) (6)/Maj (b) (6)	Minivan	Confirm#
CMSgt (b) (6)	Minivan	Confirm#
TSgt (b) (6)	Minivan	Confirm#
SSgt (b) (6)	Minivan	Confirm#
TSgt (b) (6)	Minivan	Confirm#

Confirmation Numbers: 29865696- 2 6pax truck, 1 15pax van

MAFB Trans Squadron: DSN: 453-3121 COMM:(701) 723-3121  
POC: (b) (6), SrA, USAF  
Vehicle Operations Controller  
5 LRS/LGRDDO

#### **4. SCHEDULE: (All Local Time)**

##### **29 May 2019 Wednesday**

1000 Show KYNG		
1200 Depart KYNG	VADER 22	MI: QENRK9931149 PPR: N/A
1200 Depart KYNG	VADER/SPRAY 05	MI: QENRK3531149 PPR: N/A
1500 Land KMOT		
1500 Land KMOT		

##### **30 May – 1 June (Thur-Sat) and 2-6 June (Sun-Thur)**

Sunrise is 0550L  
0530 Show KMOT and Weather decision  
0530 Load/Mix  
0630 Depart KMOT  
0900 Land KMOT (Multiple sorties each day depending on weather)

##### **1 June (Saturday)**

###### **Spray Plane:**

0500 Show KMOT  
0700 Depart KMOT  
0800 Spray (KRDR)  
1500 Land KMOT

###### **Support Plane: Sat June 1**

1000 Show KYNG  
1200 Depart KYNG  
1500 Land KMOT

###### **Support Plane: Sun June 2**

0800 Show KMOT  
1000 Depart KMOT  
1400 Land KYNG

##### **6 June (Thursday)**

1500 Vader 22 (Support) Arrives PPR: N/A

##### **7 June (Friday )**

1000 Depart KMOT (Vader 05)  
1000 Depart KMOT (Vader 22)

1400 Arrive KYNG (Vader 05)  
1400 Arrive KYNG (Vader 22)

**5. LODGING:**

**OFF BASE** Staybridge Suites  
3009 S Broadway, Minot, ND 5807  
POC: Nicole Carter (701)852-0852 ext. 504

**6. PESTICIDE: Williston**

Trade Name: Vectobac® 12AS (1200 ITU/mg)  
EPA Registration Number: 73049-38  
Formula Sprayed: 2.0 pints of Vectobac in 5 gallons water per acre  
Flush: Water  
Other Additives: 1 gallon Poly Control 2  
Application Rate: 5 gal/acre mix (water with 2.0 pints Vectobac® + 0.05 oz of Poly Control 2)

**7. SPRAY PARAMETERS: Williston**

Aircraft Tail Number: 909105  
Spray System Module and System ID: MASS #5  
Spray System Configuration: SP-3  
Nozzle Type/Size: Rain Drop (LV)  
Nozzle Orientation and Number Used: 12 (6 each side) straight back  
Pressure: 40 psi  
Flow Rate: 233 gallons per minute

**8. APPLICATION PARAMETERS:**

Swath Width: 100 feet  
Spray Release Altitude: 100 feet AGL  
Ground Speed: 200 knots (338 feet per second)

**SPRAY MIXING AND LOADING:** Plan on ~1,900 gallons in the tanks per lift. A full load will consist of 1,800 gal of water in MASS tanks + 75 gal of water in the sump + 90 gal of Vectobac + 0.7 gal of Poly Control 2.

Subsequent loads can be calculated by the following formula:  
Determine the volume remaining in MASS. Add water to 1,800 gallons total. Add Vectobac at 6.4 oz per gallon of water added (e.g., the difference between 1800 and the amount remaining from the previous sortie; Poly Control 2 is added at 0.05 oz per gallon of water added.

**9. SPRAY MIXING AND LOADING: Grand Forks**

**Composition of Each Gallon:**

- (1) 0.375 ounces of Altosid® Liquid Larvicide Concentrate (SR20)
- (2) 0.25 ounces of AirexDC™ drift retardant

(3) Water

**Typical Load:**

- (1) Fill with 450 gallons of water per tank; total water in (4) tanks = 1800 gallons
- (2) Add 1.33 gallons of Altosid<sup>®</sup> per tank (5.32 gallons total)
- (3) Add 0.88 gallons AirexDC<sup>™</sup> per tank (3.52 gallons total) while agitating approximately 15 min
- (4) Total quantity mixed = Approx 1800-1900 gallons

**Final Load for Complete Flush:** Fill tanks with the amount of water necessary for a proper system flush

**Mixing Instructions:**

SHAKE WELL BEFORE USING. Altosid<sup>®</sup> may separate on standing and must be thoroughly agitated prior to dilution.

PRECAUTIONARY STATEMENT: Spray solution should be used within 48 hours; always agitate before spraying.

**10. SPRAY PARAMETERS: Grand Forks**

Location:	All prescribed areas
Chemical:	Altosid <sup>®</sup>
Area to be treated:	Approximately 2,100 acres
Swath Width:	200 feet
Flow Rate:	233 gallons/minute
Application Rate:	2.5 gallons/acre (water with 0.94 oz of Altosid <sup>®</sup> )
Altitude:	100' AGL
Ground Speed:	200 Knots
Flush:	Water
Formulas:	Flow Rate = Gal/Time in Minutes Acreage Sprayed = Total Sec x 338 x Swath Width / 43,560

**11. PARKING PLAN:**

North turn around by guard base at KMOT. 375ft from hydrant to north turn around.

**12. AIR TO GROUND RADIO FREQUENCIES:**

Primary: UHF 392.2; VHF 123.45

**13. CONTACTS:** CONTACTS @ MINOT INTERNATIONAL AIRPORT (KMOT):

Airfield Director: (701) 857-4724 (b) (6)

FBO Avflight Minot: (906)-869-2346 (b) (6)

**INFORMATIONAL N/A FOR THIS MISSION: CONTACT @ ND NATIONAL GUARD (@ KMOT):**

Maj (b) (6)

(b) (6)

Office: (b) (6)

(701) 857-4353 Cell:(b) (6)

**CONTACTS @ KMIB:**

Minot AFB ND: DSN prefix: 453-

Commercial area code and prefix (701) 723 –

Base Operations: x2347 Airfield Manager: x3377/ x3637 FAX: 3637

Security forces for EAL list approval COMM: (701) 723-3011 DSN: X3011

Environmental Officer: x4871

Base Civil Engineer: x2434

Pest Management: x2393

Public Affairs: x6212

Weather: 3-6381/ x3631

Billeting: x6161, x6161 or (701)727-6161

Fire Dept: x2461

Transient Alert: x3153,

Minot AFB Twr – x3330

Minot Int'l Twr (Magic City Twr) (701) 852-2346

Williston Vector control district: (b) (6) (b) (6)

Army Corps of Engineers: (b) (6) (701) 572-6494, office; (b) (6) , cell

Williston ADS 125.925

Minot AFB Transportation Squadron: x3121 or (701) 723-3121



DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION

**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**Tyndall AFB, FL, Langley AFB, and Army Corps of Engineer's Craney Island 19-25 Aug 2019**

**1. MISSION BASICS:**

- a. Installations Sprayed: Tyndall AFB, FL<sup>1</sup>, Craney Island, VA<sup>2</sup>, and Langley AFB VA<sup>3</sup>
- b. Mission Duration: 19-25 Aug 2019
- c. Purpose of Application: Control of nuisance and vector mosquito and biting midge species
- d. Application Dates: 20 Aug<sup>1</sup> & 21 Aug<sup>2,3</sup> 2019
- e. Times of Application (Local): 1905-2040<sup>1</sup>; 1955-2140<sup>2,3</sup>
- f. Acres Treated: 26,800<sup>1</sup>; 8,308<sup>2</sup>; 3,116<sup>3</sup>
- g. Flying Data:
  - (1) Spray sorties/hours: 2/3.3
  - (2) Ferry sorties/hours: 3/6.8
- h. Project Coordinator (Name/Rank, Title, Phone #):
  - (1) Tyndall: Mr. (b) (6) | AFCEC/COSC, DSN 523-6465
  - (2) Craney Island: (b) (6) | Army Corps of Engineers, 757-201-7186; (b) (6) | City of Portsmouth (b) (6)
  - (3) Langley: (b) (6) | 633 CES Pest Control, DSN (b) (6)
- i. Date Spray Map Last Approved: 20 Aug 2019<sup>1</sup>; 1 Aug 2018<sup>2,3</sup>
- j. Installation In-Briefing: (When/Where/Briefer): 20 Aug 2019 Tyndall AFB/Base Operations/Lt Col (b) (6) | (b) (6) | 21 Aug 2019, with collaborators at 633 CES Conference Room via phone from Tyndall AFB by Lt Col (b) (6) |
- k. Mission Identifier: QZNRK3401231

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6) |
- b. **Entomologist:** Lt Col (b) (6) |
- c. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) | Lt Col (b) (6) |
  - (2) Navigators: Lt Col (b) (6) | Capt (b) (6) |
  - (3) Flight Engineer: TSgt (b) (6) |
  - (4) Spray Operators: MSgt (b) (6) | TSgt (b) (6) |
- d. **Maintenance:**
  - (1) Spray Maintenance: MSgt (b) (6) | TSgt (b) (6) | (lead), TSgt (b) (6) | TSgt (b) (6) |
  - (2) Crew Chiefs: TSgt (b) (6) | SSgt (b) (6) |
  - (3) Avionics: MSgt (b) (6) |

**3. PESTICIDE:**

- a. Trade Name: Trumpet® (78% A.I. naled)
- b. EPA Registration Number: Trumpet 5481-481
- c. Additives Used: None
- d. Gallons Pesticide Loaded: 210<sup>1</sup>; 90<sup>2,3</sup>
- e. Gallons Pesticide Applied: 210<sup>1</sup>; 90<sup>2,3</sup>
- f. Name and Amount of Flush Used: 15 gal of water
- g. Application Rate: 1.0 oz/acre<sup>1</sup>; 1.0 oz/acre<sup>2,3</sup>

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 89-9106
- b. Spray System (Modules Used) and System ID #: SP2G; MASS #4
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: 8003 Tee Jet
- e. Nozzle Orientation & Number Used: 34<sup>1</sup> and 33<sup>2,3</sup> nozzles; oriented straight down
- f. Flow Rate: 7.2 gal/min<sup>1</sup>; 7.1 gal/min<sup>2,3</sup>

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2,000 ft
- b. Spray Off-set: 2,000 ft<sup>1</sup>
- c. Spray Release Altitude: 300' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:** Tyndall wind (ground) light and variable, temperature 81F 85% relative humidity; wind (at altitude) 200° @ 7-10 kts, sky clear. Craney Island 230° @5 ground; 230° @ 10-12 (altitude), sky partly cloudy.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations and mosquito surveillance using traps, including traps baited with CO<sub>2</sub>.
  - (2) Results: Adequate coverage through sprayed areas (see attachments 1&2 for flight paths)
- b. Effectiveness:
  - (1) Technique/s Used: Pre- and post-spray surveillance was conducted using CDC traps.
  - (2) Results:

aa. Tyndall AFB: Lt Col (b) (6) and SSgt (b) (6) provided the pre- and post-spray data in Attachment 3. Trap site 9 collected large numbers of mosquitoes prior to sprays and about half as many after the spray. Looking at the map in Attachment 3, Site 9 is near the edge of the spray block and may not be the best location for making a critical analysis of the efficacy of this application. Other trapping locations had equipment failures or were stymied by bad weather. For future sprays, consistent trapping at locations 8 or 2 would also be helpful in our efficacy evaluations. Nonetheless, members operating at Tyndall reported marked reduction in mosquito and midge activity following aerial spraying.



bb. Mr. (b) (6)  
trapping data:

(Langley 663 CES/CEOI) provided the following mosquito

Location	Trap Type	Pre-Spray (20 Aug)	Post-Spray (24 Aug)	% Reduction
Horse Stables	Light trap	0	0	0
B-52	Light trap	240	53	78
Pest Shop	Light trap	43	18	58
WSA	Light trap	70	112	0

Mr. (b) (6) noted that “*Ae. sollicitans* at the B-52 trap site significantly decreased and down at the Pest Shop site as well. However, the WSA trap was higher after the spray the timing of the spray missed a *Psorophora* sp. emergence by one day.”

cc. Mr. (b) (6) (Representing the Army Corps and City of Portsmouth) provided the following data and trap location (see Attachment 4):

Trap Location	% Reduction
Landfill	98.9
High School	100.0
Morro Blvd.	88.0
Knightsbridge Way	70.6
Greenbrook	77.8
Hatton Point	75.5
<b>Total Reduction</b>	<b>85.1</b>

Trap Location	% Reduction
Mayflower	54.0
DeKalb	46.5
Paradise Creek	46.3
Rotunda	75.5
Williams	87.8
<b>Total Reduction</b>	<b>62.0</b>

These data do not represent the best results ever recorded at these locations and aerial sprays generally aim for a target pest reduction > 95%. However, the number of factors and variables present during an application vary tremendously at each location and even during each event. Nonetheless, many reductions were sizeable and in Portsmouth the lower reductions appear to be in the more densely foliated regions. Moving toward the maximum label rate for the insecticide is an option to improve future results.

## 8. REMARKS:

- This was the second application at Tyndall AFB and the first time operations were conducted from their flightline. Tyndall did a great job hosting this activity, there was an excellent turnout for the inbrief and the base supported the operation effectively. Per the consensus at the inbrief, we have scheduled an aircraft for 13-17 April in 2020. Other applications in CY2020 would be on a “requested” basis but could potentially be combined with activities at JB Charleston.
- We appreciate the excellent support received at both bases. A special thanks goes to Mr. (b) (6) and Mr. (b) (6) for vehicle support and to the Langley LRS vehicle operations for their

support while we managed repairs. Likewise, we thank AFCEC at Tyndall for the use of their van and SSgt (b) (6) at Tyndall Ground Transportation for working with us to provide a vehicle.

(b) (6)  
(b) (6) (b) (6)

Digitally signed by  
(b) (6) (b) (6)  
Date: 2019.09.13 16:09:30 -04'00'

(b) (6), Ph.D., Lt Col, USAF  
DoD Certified Pest Management Professional

<sup>1</sup> Tyndall AFB, FL

<sup>2</sup> Army Corps of Engineers, Craney Island, VA

<sup>3</sup> Langley AFB, VA

**Attachment 1. Application over Tyndall AFB, FL on 20 Aug 2019.**



**Attachment 2. Areas sprayed 21 Aug 2019, Langley AFB (north block), Craney Island and City of Portsmouth (south block).**



Attachment 3. 325 OMRS Medical Entomology Surveillance Program. SSgt (b) (6)

13 Aug 19:

Surveillance conducted with Co2-baited light trap.  
Site 9: **2,283**  
Site 8: 442

14 Aug19

Surveillance conducted with Co2-baited light trap.  
Site 9: **637**

19 Aug 19:

Surveillance conducted with Co2-baited light trap.  
Site 9: 40\*  
Site 9: 20\*

One day post-rain storms and flooding. Area still rainy during surveillance. Trap hung under pavillion to try to mitigate interference from weather. Traps malfunctioned and fans stopped spinning.

Aerial Spray Conducted  
20 Aug 19

22 Aug19:

Surveillance conducted with Co2-baited light trap.  
Site 9: **1,304**  
Site 11: 4

28 Aug19:

Traps set out.  
Collection date to be 29 Aug 19  
Site 6  
Site 8  
Site 10



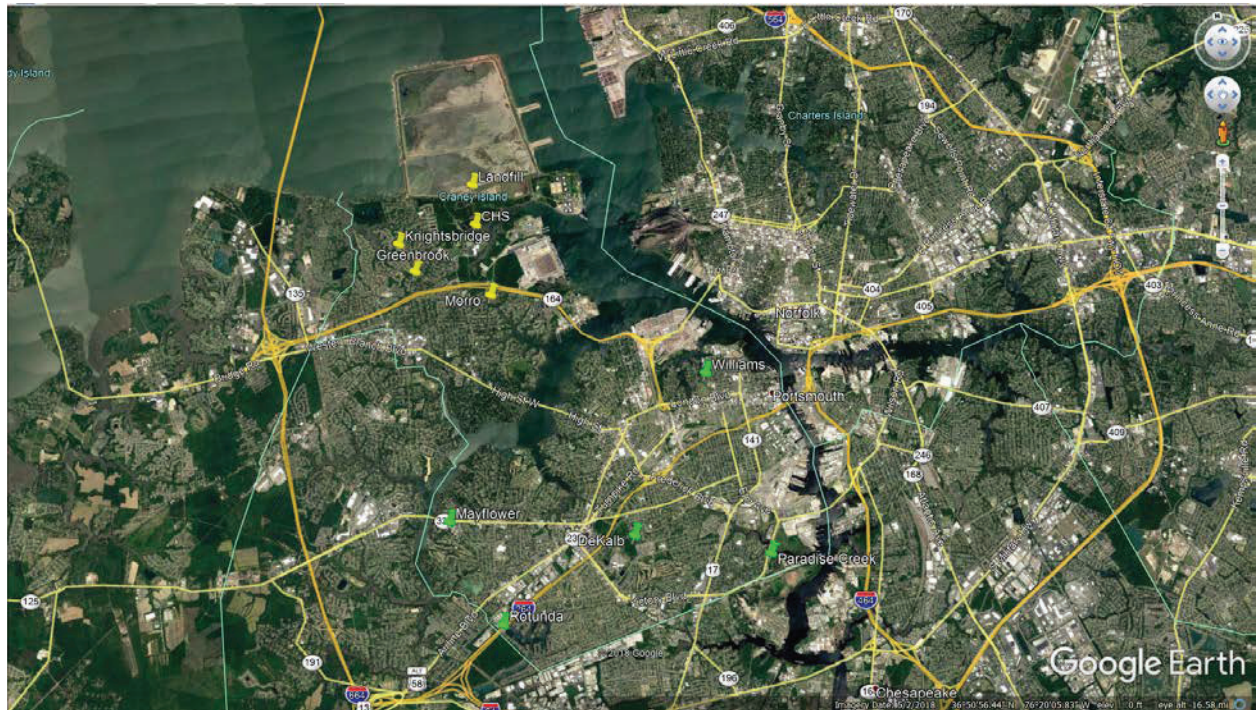
**Legend:**

- Site 1- Base Pool
- Site 2- "Tent City"
- Site 3- Single Amn Dorms
- Site 4- Fam Camp
- Site 6- Running Track
- Site 8- CDC (chapel)
- Site 9- Beach Pavilions
- Site 11- Alt. Beach Site





Attachment 4. Craney Island and City of Portsmouth trap locations. For this map, reference data given in 7.b.(2).cc.





## Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: (b) (6) , Williston/Grand forks May 29th-June 7th

**Aircraft Tail Number:** 89009105

**MASS Number:** 5

**Configuration:** LV/HV

**Boom & Nozzle Type:** Fuselage R Drop

**Chemical in Main Tank:** vectobac,altosid

**Chemical in Flush Tank:** Water

**Total Chemical Loads:** 7

**Total Flush Loads:** 1

**Amount of Liquid Waste Generated:**  
0

**Amount of Solid Waste Generated:** 15  
lbs.

**1. From a maintenance aspect, what training was accomplished on this mission?**

(b) (6) new ART in shop. Trained individual on LV/HV upload procedures w/ load station.

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Communication, personnel cohesion. Cooperation between ops, mx, FBO, Army Guard, Minot Age, Minot Pest Mgmt, Grand Forks Pest Mgmt

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

4. Improved pre/post load communication

**5. How was host base and TA support? Please include details.**

TA support was very good, Army Guard was Excellent for flight line access and forklift availability.

**6. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

Due to Acft issues sprayed Grand forks Sunday instead of Saturday.

**7. Were there any notable observations from a maintenance perspective inflight?**

Needed to add 2 more nozzles after first lift, following lifts were spot on for GPM.

**8. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Coordination was extremely effective in accomplishing this msn.

**9. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

Acft had some MX issues, awmas 5 performed well some minor valve solenoid air leaks. Lodging location was excellent choice.



**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**910 AW -- AERIAL SPRAY UNIT  
CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT  
PARRIS ISLAND MCRD, SC AND JB CHARLESTON, SC 8-11 Sept 2020  
MSN# QZNRK3491252**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island MCRD, SC; JB Charleston, SC
- b. Mission Duration: 8-11 September 2020
- c. Purpose of Application: To control pestiferous populations of mosquitoes (specifically *Aedes taeniorhynchus*) and biting midges (*Culicoides* spp.)
- d. Application Date: 10 September (PI and JB CHS)
- e. Time/s of Application (Zulu): 2052-2240 hrs (Parris Island); 1858-2036 hrs (JB Charleston)
- f. Acres Treated: 8310 acres (Parris Island); 15916 acres (JB Charleston)
- g. Project Coordinator: Mr. (b) (6) DSN (b) (6) (Parris Island); MSgt (b) (6), Spray Coordinator JB Charleston DSN (b) (6)
- h. Date Spray Map Last Approved 10 September 2020 (Parris Island) Spray map digitally signed and submitted; 9 Sept 2020 (JB Charleston)
- i. Date of Waste Generation Letter: 30 October 2007
- j. Installation In-Briefing: (When/Where/Briefer/s): 1300 JB CHS CE building. 9 September 2020. MSgt (b) (6) heading and coordinating inbrief. 910 AW inbrief information completed by Lt Col (b) (6) (M/C) and Lt Col (b) (6); Parris Island inbrief via telecom, 9 September 2020

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Maj (b) (6), Lt Col (b) (6)
  - (2) Navigators: Lt Col (b) (6), Lt Col (b) (6)
  - (3) Flight Engineers: SMSgt (b) (6), TSgt (b) (6)
  - (4) Spray Operators: CMSgt (b) (6), MSgt (b) (6), MSgt (b) (6), SSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: MSgt (b) (6), MSgt (b) (6), TSgt (b) (6), SSgt (b) (6), SrA (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6), SSgt (b) (6)
  - (3) Avionics: MSgt (b) (6)
- d. **Entomologist:** Lt Col (b) (6)

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet® for both locations.

- b. EPA Registration Number: 5481-481 (Trumpet)
- c. Formulation Sprayed: Trumpet (78% naled) (JB Charleston and Parris Island)
- d. Gallons Pesticide Loaded: 165 Gallons total for both locations.
- e. Gallons Pesticide Applied: 165 Gallons Trumpet® (JB Charleston and Parris Island combined)
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 7 gallons HAN
- h. Other Additives Used: None
- i. Application Rate: 0.85 oz/acre (JB Charleston and Parris Island)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 89-9106
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 25 8003 T-jets, oriented straight down
- f. Pressure: 35 p.s.i. nominal
- g. Flow Rate: 6.56 gallons per minute (JB Charleston and Parris Island)
- h. Sorties: 2/3.8 hrs (applications); 2/4.6 hrs (ferry)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000' (JB Charleston and Parris Island)
- b. Spray Off-set: 2000' upwind (Parris Island); 2000' upwind (JB Charleston)
- c. Spray Release Altitude: 300'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: None taken. PMP was aboard aircraft.
  - (2) Release Altitude: 110@4 knots (Parris Island) and 080@)3 knots (JB Charleston); wind conditions light and variable.
- b. Temperature (Degrees Fahrenheit): 73°F (Parris Island); 75°F (JB Charleston); RH 90%
- c. Cloud Cover: High cloud cover (both locations)
- d. Source: Aircraft SCNs Doppler information

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations (Lt Col (b) (6) )
  - (2) Results: Good coverage throughout both sprayed areas
- b. Effectiveness:
  - (1) Technique/s Used: CDC CO2/Light traps deployed before and after spray application

(2) Results: Parris Island (7 locations)

TrapType	TrapBait	TrapPlaced	TrapCollec	SourceName	MALES	FEMALES
	Pre Aerial Spray					
Gravid	Hay or Gra	9/2/2020	9/3/2020	PI Weapons Battalion Cooling Tower	0	3
CDC-LT	CO2	9/2/2020	9/3/2020	PI 4th Battalion Bldg 102	0	4
CDC-LT	CO2	9/2/2020	9/3/2020	PI Crucible. Event #1	0	240
CDC-LT	CO2	9/2/2020	9/3/2020	PI Leatherneck Square (LN2)	0	98
CDC-LT	CO2	9/2/2020	9/3/2020	PI Elliott's Beach	0	3
CDC-LT	CO2	9/2/2020	9/3/2020	PI Golf Course	0	1168
Gravid	Hay or Gra	9/2/2020	9/3/2020	Outdoor Pool	1	40
					1	1556
	Post Aerial Spray					
Gravid	Hay or Gra	9/11/2020	9/12/2020	PI Weapons Battalion Cooling Tower	0	7
CDC-LT	CO2	9/11/2020	9/12/2020	PI 4th Battalion Bldg 102	0	38
CDC-LT	CO2	9/11/2020	9/12/2020	PI Crucible. Event #1	0	109
CDC-LT	CO2	9/11/2020	9/12/2020	PI Leatherneck Square (LN2)	0	4
CDC-LT	CO2	9/11/2020	9/12/2020	PI Elliott's Beach	0	8
CDC-LT	CO2	9/11/2020	9/12/2020	PI Golf Course	0	12
Gravid	Hay or Gra	9/11/2020	9/12/2020	Outdoor Pool	1	4
					1	182
				percent reduction		88.3

(3) Results: JB Charleston (5 locations)

Location	9-Sep-20	14-Sep-20
Marrington Par	164	108
Spillway	4,256	892
Hopper Bridge	5,464	1,436
Golf Course	204	180
SPAWAR	120	76
total	10208	2692
	% reduction	73.6

8. **REMARKS:** Excellent coordination amongst all involved parties made this mission fairly smooth. Despite wind been light and variable, Good control of mosquito and midge populations in both locations was observed both observationally and anecdotally. Average reduction in population at Parris Island was approximately 88%. Average reduction at JB Charleston was approximately 74%, despite the fact that post spray trapping was conducted 4 days after the fact. These numbers are quite reasonable, and suggest the aerial spray was effective in both execution and intent.

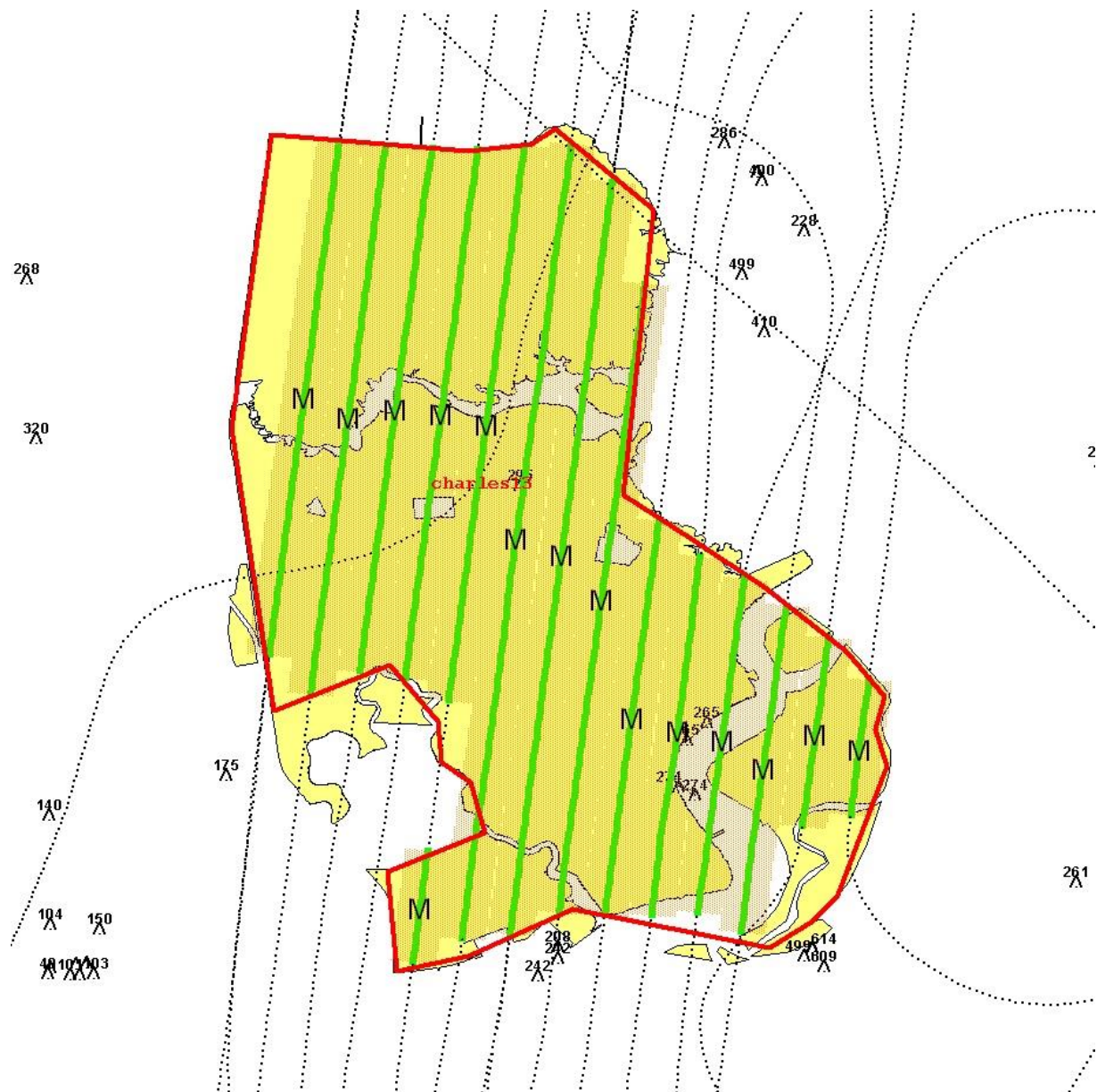
Initial intended application at JB CHS on 9 September was thwarted by aircraft mechanical difficulties with result that actual takeoff time was delayed until the point that diminishing weather conditions prevented application on that evening. Actual applications at both locations (Sept 10) proceeded without any significant functional problem or mishap, and no negative effect on wildlife or other unintended adverse effect was observed. On this mission no eagles were present at Parris Island, which resulted in relatively complete pesticide coverage. No significant loss of efficacy was noted from using 2000' swath width vice the standard 1000' swath width normally employed. Many thanks to Mr. (b) (6) (Parris Island), and MSgt (b) (6) (JB Charleston) for their help in accomplishing this mission. The 910 AW appreciates the levels of support provided by these installations.

(b) (6), Lt Col, USAFR  
**DOD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

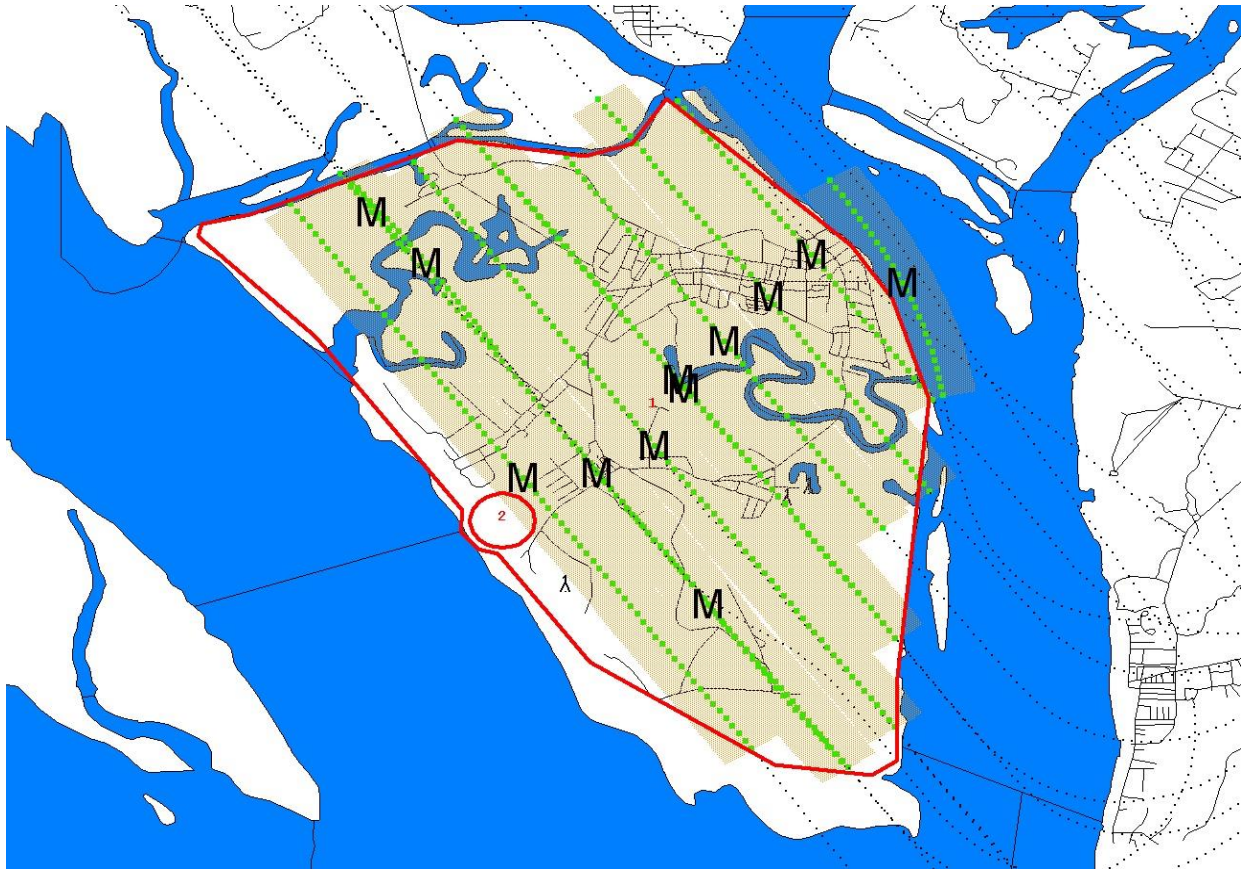
**2 Attachments:**



Attachment 1. Application area JB Charleston, 10 Sept 2020. Green lines represent spray swaths.



**Attachment 2. Application area PI MCRD Sept 10, 2020. Green lines represent spray swaths.**







DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION

CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
MINOT AFB, MINOT, AND WILLISTON, 13-17 JULY 2020

1. MISSION BASICS:

- a. Areas Sprayed: Minot AFB; Minot, Burlington, Williston, and Watford City
- b. Mission Duration: 13-17 July 2020
- c. Purpose of Application: Control of adult nuisance and vector mosquitoes
- d. Application Dates: 14, 16 July 2020
- e. Times of Application (Local): 2150 hrs 14 July – 0055 hrs 15 July (Minot City, Burlington, Minot AFB; 2105 hrs 16 July – 0030 hrs 17 July (Williston and Watford City)
- f. Acres Treated: 20,165 (Minot City); 1,026 (Burlington); 4,924 (Minot AFB); 5,718 (Watford City); 25,335 (Williston) = 57,168 acres
- g. Flying Data:  
(1) Spray sorties/hours: 2/3.1 (14 July) + 3.5 (16 July) = 6.6 hrs  
(2) Ferry sorties/hours: 2/7.3
- h. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) (Minot AFB); (b) (6) (City of Minot); (b) (6) (City of Williston)
- i. Date Spray Map Last Approved: 14 July 2018
- j. Installation In-Briefing: (When/Where/Briefer/s): 14 July 2020 at CES Conference Rm. briefed by Lt Col (b) (6) Capt (b) (6) and Lt Col (b) (6), 5 CES/CC; (b) (6) 5CES/CD, Mr. (b) (6) (Minot Pest Management). Project coordinators and support staff via telephone
- k. Mission Identifier: QZNRK3431195

2. OPERATIONAL:

- a. Mission Commander: Capt (b) (6)
- b. Aircrew:
  - (1) Pilots: Major (b) (6) Maj (b) (6)
  - (2) Navigators: Lt Col (b) (6) Maj (b) (6)
  - (3) Flight Engineer: SMSgt (b) (6)
  - (4) Spray Operators: CMSgt (b) (6) TSgt (b) (6) TSgt (b) (6) SrA (b) (6)
- c. Maintenance:
  - (1) Spray Maintenance: TSgt (b) (6) (Lead), MSgt (b) (6) TSgt (b) (6) SrA (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6) TSgt (b) (6)
  - (3) Avionics: MSgt (b) (6)
- d. Entomologist: Lt Col (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Trumpet® EC (78% A.I. naled); Zenivex (20% etofenprox)
- b. EPA Registration Number: 5481-481 Trumpet® EC (78% A.I. naled); 2724-791 Zenivex
- c. Additives Used: 60 gallons of BVA oil with Zenivex see below
- d. Gallons Pesticide Loaded: 210 gal Trumpet® (14 Jul); 60 gal Zenivex (16 Jul)
- e. Gallons Pesticide Applied: 210 gal gallons Trumpet® (14 Jul); 60 gal Zenivex (16 Jul)
- f. Gallons and Name of Flush Used: 20 gallons H.A.N. (Highly Aromatic Naphtha)
- g. Application Rate: 0.97 oz/acre (14 Jul with Trumpet); 0.25 oz/acre (16 Jul with Zenivex)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 92-3021
- b. Spray System (Modules Used) and System ID #: SP2G, System #1
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: 8003 Tee Jet
- e. Nozzle Orientation & Number Used: 31 nozzles oriented straight down (14 Jul); 15 nozzles (16 Jul)
- f. Nozzle pressure: 38-41 psi
- g. Flow Rate: 7.1 gal/minute (14 Jul); 4.5 gal/min (16 Jul)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: 2000 ft for all areas
- c. Spray Release Altitude: 300' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: calm (14 Jul); 110/2.7 mph
  - (2) Release Altitude: 220@16 kts (14 Jul); 110-120/16 kts (16 Jul)
- b. Temperature (Degrees Fahrenheit): 70-60°F (14 Jul); 79-62°F (16 Jul)
- c. Relative humidity: 45% (14 Jul); 35.4% (16 Jul)
- c. Cloud Cover: Clear
- d. Source: Ground observations and aircraft SCNs

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Application Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations. See Attachment 1 and 2 for areas treated.
  - (2) Results: Adequate coverage throughout the sprayed area
- b. Effectiveness:
  - (1) Technique/s Used: Pre- and post-spray surveillance were conducted using CDC light traps. Human landing counts.
  - (2) Results: Environmental conditions were favorable for effective mosquito control during both applications. However, it is clear from the mosquito trapping data shared by Minot AFB, Minot City, and Williston Vector Control (see below) that these aerial

applications were ineffective in affecting the populations of nuisance mosquitoes, which were surging during the timeframe of these operations. Additional comments are given below in Section 8.

### Mosquito Trap Counts: Minot AFB

PRE SPRAY 13 Jul 20 – Trap (1) 521, Trap (2) No data – downed by wind, Trap (3) No data – battery failure

POST SPRAY 15 Jul 20 – Trap (1) 2212, Trap (2) 1,097 (3) 2,707

City of Minot mosquito counts 2020 July																	
Material type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Moose							12	11	18	no data	146			634	495	432	
Nubbin								15	15	48	137			277	219	no data	

### Williston Vector Control District

Date	Trap	Location	A_vexans	A_dorsalis	Misc	Total_F
15-Jul-20	1	Hagan	13	129	1	143
15-Jul-20	2	West_Acres	6	1	1	8
15-Jul-20	3	WSC	48	6		54
15-Jul-20	4	Wilkinson	1	25	2	28
16-Jul-20	1	Hagan	85			85
16-Jul-20	2	West_Acres	341			341
16-Jul-20	3	WSC	141			141
16-Jul-20	4	Wilkinson	1093			1093
17-Jul-20	1	Hagan	2			2
17-Jul-20	2	West_Acres	39	2		41
17-Jul-20	3	WSC	4			4
17-Jul-20	4	Wilkinson	NA	NA	NA	0
18-Jul-20	1	Hagan		126		126
18-Jul-20	2	West_Acres	166			166
18-Jul-20	3	WSC	87	235	11	333
18-Jul-20	4	Wilkinson		422		422

### 8. REMARKS:

The background to this application was that the Aerial Spray Unit arrived at the end of June (3 weeks prior to this project) to Minot AFB to find low levels of mosquitoes, low enough that an actual application was not flown. The Spray Unit did, however, complete some excellent readiness training not available at home station at that time. Because all travel is currently an “exception to policy” and vector control is considered by most agencies an essential service (the DoD has not issued guidance on vector control), all collaborators considered carefully, the need for mosquito control for this project.

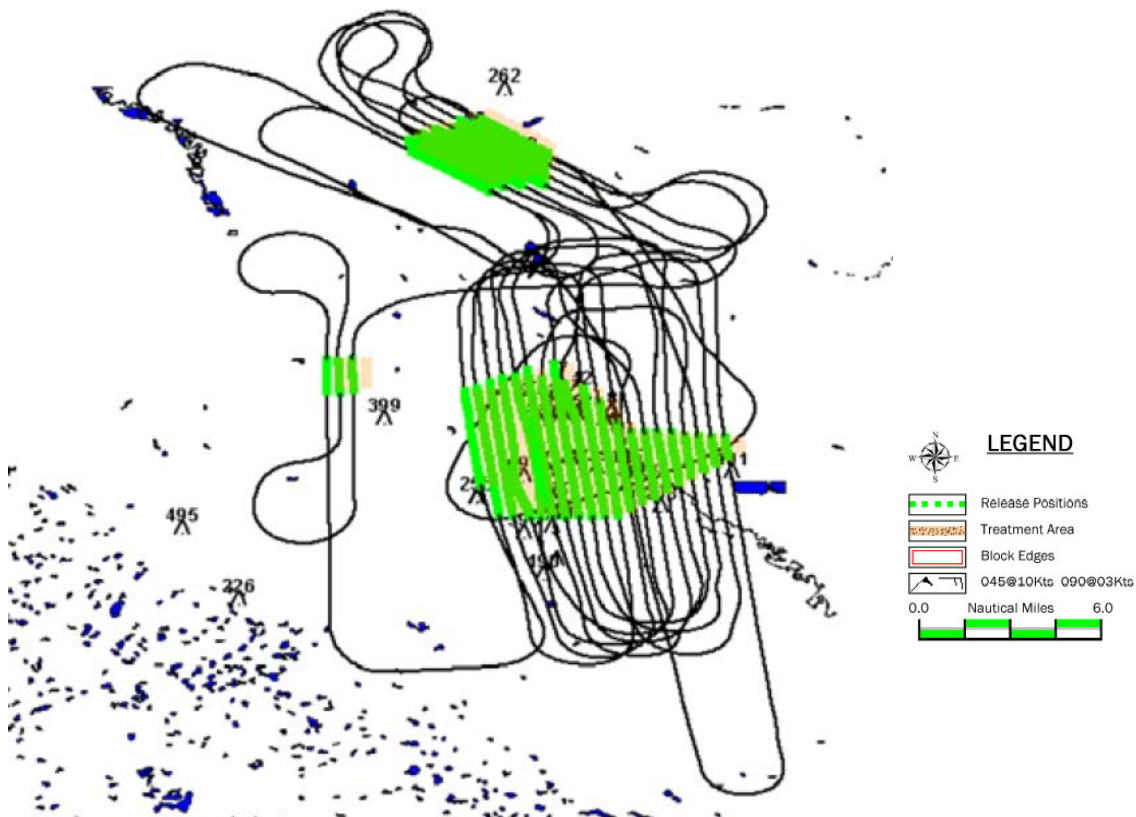
Mosquito trapping data collected in the days leading up to the implementation date of the current project, suggested that mosquito numbers had begun to increase, likely from the significant precipitation which had occurred in the previous two weeks. What was unknown, was that this “mosquito hatch” was merely gaining momentum when the Spray Unit arrived on 13 July. In fact, the data presented above in Section 7.b.(2), shows that mosquitoes even increased in some areas despite the aerial applications. Williston reported better results in some of their areas but over time, those areas also reported large numbers of mosquitoes. With the benefit of hindsight and in a perfect world where staff and aircraft would be available every week, perhaps this application should have been delayed one week or two applications in rapid succession could have been used. In reality, neither of those options are plausible under the current operating structure of the USAF Aerial Spray Program. Since mosquito development is influenced by several factors: including temperature, habitat type, precipitation patterns, etc., it is very difficult to predict the timing of every application for their control. Currently, the recommend course of action is to continue executing effective trapping programs and consult historical data to help predict mosquito abundance and schedule aircraft appropriately.

The Spray Unit would like to thank the 5LRS Vehicle Operations for providing government vehicles to facilitate the spray project. Excellent coordination was experienced between all collaborators with Mr. (b) (6) (5CES) skillfully guiding the interactions between the City of Minot and Williston. It is also worth mentioning that in response to the loss of the ND State Health Department’s trapping program to COVID-19 priorities, the Minot Public Works, with support from Minot AFB (5CES) began trapping and counting mosquitoes daily. This is a significant effort in cooperation between agencies, and also a lot of labor for Minot Public Works! Their results, along with trap data from 5CES, helped support the important science aspects of enumerating the overall mosquito numbers before and after sprays. There are currently no other scheduled aircraft for Minot in FY2020. It is anticipated that the City of Minot and Williston Vector Control will renew their Innovative Readiness Training projects for next year and the Spray Unit has tentatively scheduled visits in late June and mid-July in 2021.

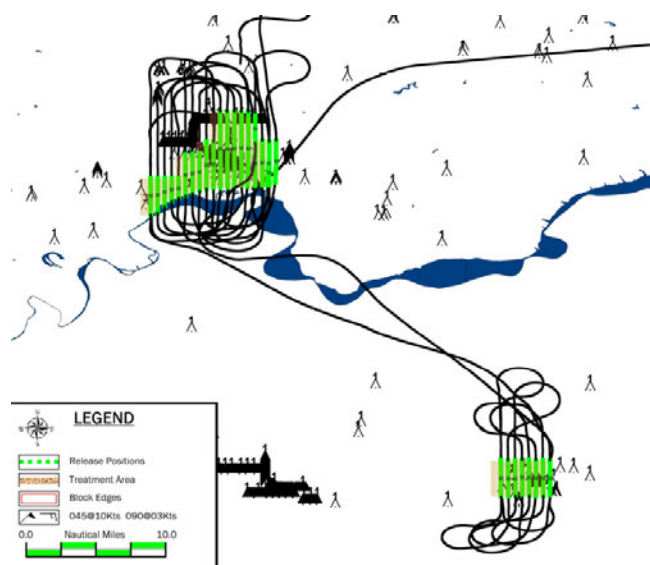
(b) (6) Lt Col, USAF  
DOD Certified Pest Management Professional



**Attachment 1. Area sprayed at Minot AFB, Minot, and Burlington ND, 14 July 2020. Black lines are the path of the spray aircraft. Green lines indicate individual spraying swaths.**



**Attachment 2. Area sprayed at Williston (left) and Watford City (lower right), 16 July 2020. Black lines are the path of the spray aircraft. Green lines indicate individual spraying swaths.**



**SPRAY OPERATIONAL SCHEDULE**  
**UTAH TEST AND TRAINING RANGE (UTTR)**  
**20-26 October 2019**  
**Mission # QZNRK3431293**

**PURPOSE/BENEFIT/OBJECTIVE:** Aerial spray herbicide mission on the Utah Test and Training Range (UTTR) and Dugway Proving Ground to reduce the risk of range fires by controlling cheat grass (*Bromus tectorum*) and other invasive weed species while promoting reestablishment and success of native flora.

**1. 910 AW PARTICIPANTS:**

**Mission Commander:** Lt (b) (6) (b) (6) (cell phone)

**AIRCREW:**

**Pilots:** Lt Col (b) (6)

**Navigators:** Lt Col (b) (6) r

**Flight Engineer:** CMSgt (b) (6)

**Spray Operators:** CMSgt (b) (6), MSgt (b) (6), MSgt (b) (6)

**CERTIFIED APPLICATORS:**

**Entomologists:** Lt Col (b) (6) (In place)

**MAINTENANCE:**

**Spray MX:** MSgt (b) (6) (lead), MSgt (b) (6), TSgt (b) (6), TSgt (b) (6)

**Crew Chiefs:** MSgt (b) (6) (lead), MSgt (b) (6)

**Avionics:** MSgt (b) (6)

**2. REQUIRED ITEMS:**

Msn Commander: MC Laptop Computer

Entomologist: Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer

Navigator: Maps/Map Bag, Validation Map

Spray Operators: PPE, Calibration Tables/Laptop and or Spray datasheet, O<sub>2</sub> hose extensions

Spray Maintenance: Deployment Kit, Support Equipment

Avionics: 2 Multi-band hand-held radios; Wingman system cards

**3. IN-BRIEFING at Hill:**

On arrival on the Forestry Ramp with Mr. (b) (6) and Mr. (b) (6).

Required: MC, Entos, pilots, navs, SM lead.

#### **4. SCHEDULE: (All Local Time)**

##### **PLANNED SEQUENCE OF EVENTS: Hill AFB Tower Control and Runway Hours**

Tower Opens at 0800L

##### **20 October (Sunday)**

0900 Show KYNG

1000 Safety and Arrival brief given in the aircrew briefing room

1100 Depart KYNG    Spray (SP3G)    **Vader22    MI: QZNRK3431293    PPR: MN-2001**

1100 Depart KYNG    Support    **Vader23    MI: QENRK9931293    PPR: MN-2002**

1500 Land KHIF    PPR: MN-2501

1600 Inbrief on the Forestry Ramp: Do not leave until cleared off by MC: see 3. For required party

##### **21 – 25 October (Monday-Friday) Plan on 2 sorties per day Range time is 0800-1300**

0600 Show KHIF

0630 Weather call and mixing begin

0749 Sunrise

0800 Depart KHIF

1300 Land KHIF

**23 October** Call in to Dugway Range Manager prior to 1700 for Dugway range inbrief. (Tel number in 13 Contacts section of plan)

**24 October (25 Oct Backup)** Aircrew call in at 0730 for Dugway range daily activity brief. (telephone number in 13 Contacts section of plan)

##### **26 October (Saturday) Hill Field opens at 0900**

0700 Checked out of billeting

0730 Return vehicles

0900 Depart KHIF

1530 Land KYNG

**\*\*All times are approximated. Actual times and mission details will be updated as appropriate by the Mission Commander.**

#### **5. SPRAY CONFIGURATION:**

Aircraft:	92-3022
System:	SP-3G MASS: 3
Nozzle /Orientation:	Raindrop/Straight Back
Number of nozzles:	Fuselage – 18 nozzles

#### **6. SPRAY LOADING:**

##### **a. In each gallon of mix:**

0.857 ounces of Plateau herbicide (0.67 gallons in 100 gallons of water)

0.71 ounces of Clasp (0.5 gal in 100 gallons)

0.71 ounces of Methylated Seed Oil (0.5 gal in 100 gallons)

125.7 ounces of water

**b. First Load (4 Tanks of 450 gallons each + sump of 75 gallons)**

Fill to 450 gal water/tank. This is done by putting the filler hose into the rear tank with all tanks open to the common sump.

Total water in tanks = 1,800 gal.

75 gal/water in sump

Total water added = 1,875 gallons

Load 12.5 gallons of Plateau; 10 Gal Clasp; 10 Gal MSO, agitating approximately 5-7 min

Total quantity mix 1888 gallons

**c. Subsequent Loads**

Fill with water for a total of 1800 gallons; use “per 100 gallons of water” measurements given above when adding less than 1800 gallons (i.e., residual product in tank when loading). When the MASS is returned empty, load 1800 gallons of water and add: 12.0 gallons Plateau and 10 gallons of Clasp and 10 gallons of MSO.

**7. SPRAY PARAMETERS:**

Location: UTTR – HAT and GAT ranges plus associated targets and 1 lift for Dugway firebreak

Herbicide: Plateau Herbicide (active ingredient: 23.6% Ammonium salt of imazapic)

Area to be treated: 1828 (UTTR and Dugway; see #12 for more information)

Swath Width: 100 feet

Flow Rate: 326 gal/min (we are treating at 46.5 acres/minute)

Application Rate: 7 gal/acre (6 oz of Plateau per acre)

Altitude: 100’ AGL

Ground Speed: 200 Knots

Flush: Water; air purge at end of each sortie to minimize dripping upon return

Formulas: Flow Rate = Gal/Time in Minutes

Acreage Sprayed = Total Sec x 338 x Swath Width / 43560

**8. PARKING PLAN:** Forestry Ramp

**9. AIR TO GROUND RADIO FREQUENCIES:**

**Clover Range:** UHF 285.65 / 275.9 / 361.4 (p)  
VHF 134.1 / 118.45

**Eagle Tower:** 351.0; Mawk 2

**Diddle Knoll:** 398.1 (Primary), 383.2 (Back-up); 134.1 / 118.45

**Spray Inter plane:** 237.05 / 138.375

**Base OPS:** 139.3

**Spray Ground:** 392.2 / 123.45

**Dugway PG Range:** 131.1

**10. TRANSPORTATION:** 2 Natural Resources Office loaner vehicles and 3 rental vehicles

**Pickup: 20 OCT 18 / 1600 / FORESTRY RAMP & ENTERPRISE SLC AIRPORT**

**Dropoff: 26 OCT 19 / 0730 / FORESTRY RAMP & ENTERPRISE SLC AIRPORT**

OPS Os – (4 PAX JEEP) Loaner from Natural Resources

OPS Es – (7 PAX MINIVAN) Enterprise Conf #1311099195 (CMSgt (b) (6))

ENTOs – (SEDAN) Enterprise (Lt Col (b) (6))

SPRAY MX – (7 PAX MINIVAN) Enterprise Conf #1311099221 (MSgt (b) (6))

CREW CHIEFS/AVIONICS – (TRUCK) Loaner from Natural Resources

**Enterprise Rent-A-Car**

776 N Terminal Dr  
Salt Lake City, UT 84122  
(844) 942-0337

**11. LODGING: Billeting Office: Mountain View Inn, 801-777-1844, FAX 801-775-2014  
Base Lodging POC: (b) (6) (Lodging)**

- **10 Aircrew and Support aircrew/support crew chiefs  
HYATT PLACE SALT LAKE CITY/FARMINGTON/STATION PARK  
222 North Union Ave, Farmington, UT 84025  
POC: (b) (6) (b) (6)  
T: 801-683-4444 O: 801-447-4404 F: 801-683-4445**

- **4 Spray MX, 2 Spray Crew Chiefs for the week, 1 Comm Nav  
HAMPTON INN & SUITES SALT LAKE CITY/FARMINGTON  
332 West Park Lane, Farmington, UT 84025  
POC: (b) (6)  
T: 801-451-7999 M: 912-323-2160 F: 912-549-1065**

**Group Name: 910<sup>th</sup> Airlift Wing Aerial Spray**

**12. GENERAL TARGET INFORMATION: Listed by priority**

**UTTR:**

**Block #2019-CO1 - 529 acres  
Block #2019-CO2 – 206 acres  
Block #2019-CO3 – 78 acres  
Block #2019-CO4 – 425 acres  
Block #2019-CO5 – 184 acres  
Block #2019-CO6 - 86 acres**

**Dugway:**

**Defined Firebreaks – 320 acres approx**

**13. CONTACTS: Commercial Prefix (801) 777-XXXX; DSN 777-xxxx  
HILL AFB -**

**Project Coordinator: Mr. (b) (6) 801-775-6972, cell (b) (6)**

Airfield Manager: 777-4168/3592  
Base Operations: 777-1861; FAX: 777-2221  
Billeting: 777-1844  
Weather: 777-2018  
Transit Alert: 777-3885  
C-130 Mx Contact: 777-2478/2229  
Fuels: 777-7423 / 777-7311 available 0900-1800 daily after hours contact CP  
Supply: 777-5391 (922 OE)  
Hill Motor Pool: 777-1843  
Public Affairs: 777-5201  
Dining Hall: 777-3428  
Breakfast Mon-Fri 0600-0800 Sat-Sun 0900-1300  
Lunch Mon-Fri 1100-1300 Sat-Sun 1030-1300  
Dinner Mon-Fri 1700-1900 Sat-Sun 1730-1900

#### **HQ UTTR**

**(b) (6)** 777-1007; FAX: 9205 Cell Phone # **(b) (6)**  
6066 Cedar Lane, Bldg 1274S

Hill Range Control: 777-9386  
Current OPS: 777-9385  
Range Scheduler: 777-9386  
Eagle Tower: 777-1515/6  
Clover Operations: 777-7575  
Clover DO: 586-3103  
HQ UTTR/Radio Freq Monitor: 777-6715  
HQ UTTR/ Resource Monitor: 775-4257  
Environmental Coordinator: 777-1550; 801-940-0809  
Hill AFB Base OPS: 777-1861  
Entomology: 777-4427  
Weather: 777-1516/63

#### **OASIS RANGE SUPPORT DIRECTORATE:**

Oasis Chief: 777-1546  
North Range Security: 777-1521/2/4

#### **DUGWAY PG: (DSN is 789-xxxx)**

**Project Coordinator: (b) (6)**, Installation Pest Management Coordinator

Tel: **(b) (6)**; Cell: **(b) (6)**

**Dugway Range Manager: (b) (6)**; Tel: **(b) (6)**

**Dugway Airspace Briefing:** 0730 Day of Mission; Tel: 435-831-2202

**Notes:** Call **(b) (6)** afternoon 23 Oct prior to 1700 for Dugway range inbrief. Call in to 0730 Dugway airspace briefing on 24 Oct (25 Oct Backup) for airspace information.

#### **Additional contacts:**

**(b) (6)**, Natural Resource Program Manager as the Co- Coordinator for Dugway. 435-831-3576, cell **(b) (6)**

Alternate DPG NR Contact: **(b) (6)**, DPG Range Restoration Specialist  
801-835-8366

Dugway Range Control: 435-831-5141

Dugway Range Control Manager **(b) (6)**: **(b) (6)**

DPG Range: VHF 131.1

Michael Army Airfield Operations: 435-831-5322



**910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

910 AW/CC:	x1243	
Command Post	x1315	FAX x1161
PA:	x1236	FAX x1022
OG/CC:	x1257/1179	
Safety	x1391	
Base Ops:	x1182	
SOF Desk:	x1069	FAX: x1371
757 AS/DO:	x1793	
757 AS Admin:	x1239	FAX x1657
757 AS Spray Office:	x1638/1111	FAX x1616



**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
LANGLEY AFB/CRANEY ISLAND, 28-31 July 2020**

**1. MISSION BASICS:**

- a. Installations Sprayed: Langley AFB, VA; Craney Island Army Corps of Engineers; Portions of Portsmouth, VA
- b. Mission Duration: 28-31 July 2020
- c. Purpose of Application: Control of nuisance and vector mosquito species at Langley AFB and Craney Island Army Corps of Engineers/Portsmouth, VA
- d. Application Date: 29 July 2020
- e. Times of Application (Zulu): 2355-0230
- f. Acres Treated: 12,090
- g. Flying Data:
  - (1) Spray sorties/hours: 1/2.6
  - (2) Ferry sorties/hours: 2/3.2
- h. Project Coordinator (Name/Rank, Title, Phone #):
  - (1) Langley: (b) (6), CES Pest Control, DSN (b) (6)
  - (2) Craney Island: (b) (6), Army Corps of Engineers, (b) (6)  
(b) (6) City of Portsmouth, (b) (6)
- i. Date Spray Map Last Approved: 29 July 2020
- j. Installation In-Briefing: (When/Where/Briefer/s): 29 August 2018 at CE, briefed by Lt Col (b) (6) and Lt Col (b) (6) AFB CES HQ, 1500 Local time.
- k. Mission Identifier: QZNRK341210

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col Jeffery Shaffer
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6), Capt (b) (6)
  - (2) Navigators: Lt Col (b) (6), Capt (b) (6)
  - (3) Flight Engineer: MSgt (b) (6), SSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6), TSgt (b) (6), SSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: MSgt (b) (6) (Lead), MSgt (b) (6), TSgt (b) (6), TSgt (b) (6), A1C (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6), MSgt (b) (6)
  - (3) Avionics: SrA (b) (6)
- d. **Entomologist (Cat. 11 PMP):** Lt Col (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Trumpet® (a.i. naled)
- b. EPA Registration Number: 5481-481
- c. Additives Used: None
- d. Gallons Pesticide Loaded: 90 total
- e. Gallons Pesticide Applied: 90
- f. Gallons and Name of Flush Used: 7 gallons H.A.N. (Highly Aromatic Naphtha)
- g. Application Rate: 0.95 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 90-9107
- b. Spray System (Modules Used) and System ID #: SP2G
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: 8003 Tee Jet
- e. Nozzle Orientation & Number Used: 29 nozzles oriented straight down
- f. Flow Rate: 6.7 gal/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: 2000' upwind with 3 second offsets to the west
- c. Spray Release Altitude: 300' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Craney Island/Portsmouth: Wind (at altitude) 210° @ 10 kts, Temperature 85°F, Relative Humidity 79%
- b. Langley AFB: Wind (at altitude) 210° @ 10 kts, Temperature 84°F, Relative Humidity 78%

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique(s) Used: GPS system monitoring aircraft flight pattern. Direct field observations.
  - (2) Results: Adequate coverage through sprayed area. See Attachment 1.
- b. Effectiveness:
  - (1) Technique(s) Used: Pre- and post-spray surveillance was conducted using CDC light traps with CO<sub>2</sub>.
  - (2) Pre and post spray trap counts from Langley AFB. Overall average reduction 97.8%

WSA pre spray: 595

WSA post spray: 14

97.6% reduction in trapped mosquitos

Pest Shop pre spray: 430

Pest Shop post spray: 9

98% reduction in trapped mosquitos

(3) Pre and post spray trap counts from Craney Island/Portsmouth (average of 6 traps)

Pre-spray: 2051

Post spray: 20

99% reduction in trapped mosquitos (average)

\*Note that Portsmouth Pest Management Professional was only able to supply overall numbers based on multiple trap locations. Due to recent storm, Portsmouth did not have capacity to separate out species and number from individual traps.

**8. REMARKS:** Relatively high mosquito counts made this night application a needed intervention with respect to local mosquito control. The Portsmouth Mosquito Control Division monitors insect populations and reported excellent control. Mosquito reductions at Craney Island and Portsmouth (average) approached approximately 99%. Langley AFB also reported good control overall, with average population reductions of about 98%. Calibration of the spray system took a significant amount of time, but provided excellent training for spray operators and MXS personnel. No significant problems were encountered during the actual application. Time spent with calibration activities was well spent as there were no discrepancies between pesticide loaded and amount of pesticide applied. The weather for this application was ideal. Good air movement and low wind speed at altitude undoubtedly facilitated success of mission. There were no reports of adverse non-target environmental effects.

We sincerely appreciate the support received from all sections of Langley AFB and Craney Island/City of Portsmouth personnel. Thanks to aforementioned and additional flight operations support from Langley AFB, this mission proceeded smoothly and with excellent results.

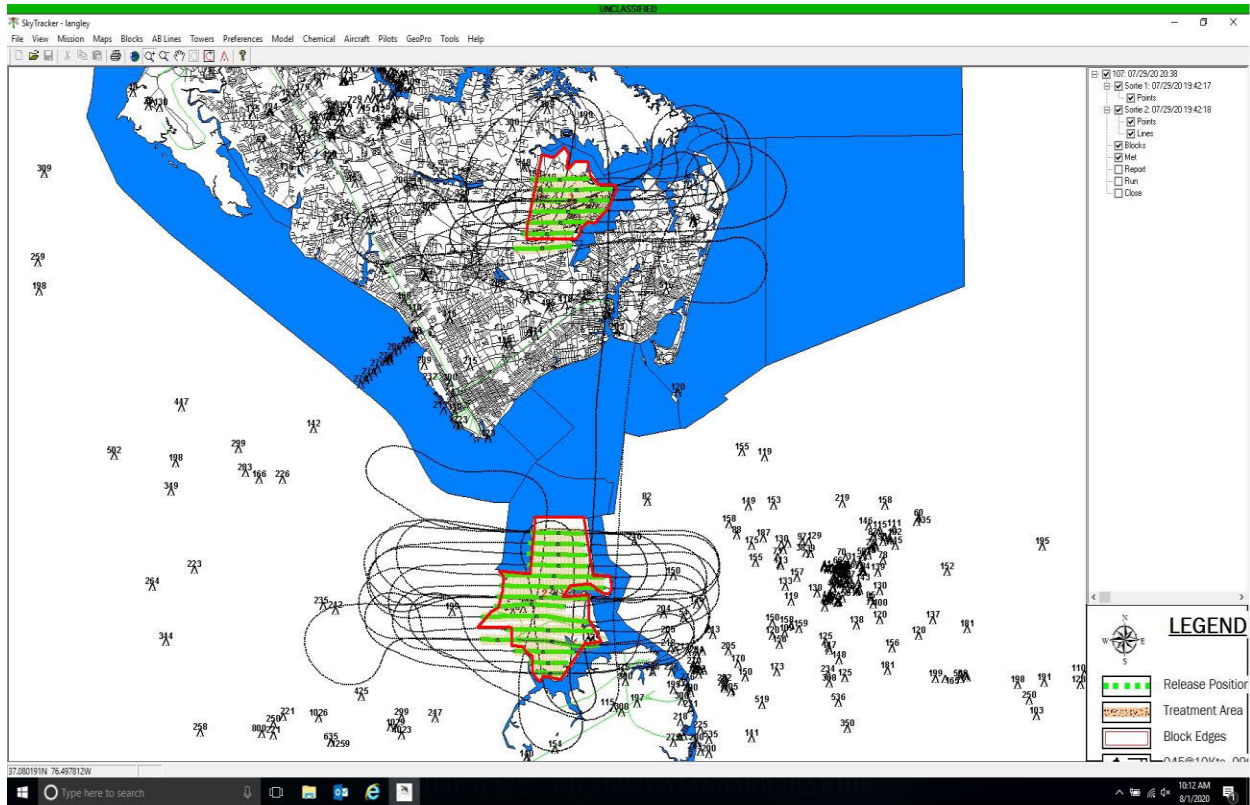
//signed//

(b) (6)

, Lt Col, USAF

**DoD Certified Pest Management Professional**

**Attachment 1. Area sprayed at Langley AFB, Craney Island Army Corps of Engineers, and Portsmouth, 29 July 2020. Green lines indicate individual spray swaths. Spray data from onboard GPS.**



**AERIAL SPRAY PLAN**  
**LANGLEY AFB/CRANEY ISLAND ACE, VA**  
**28-31 July 2020**  
**QZNRK3491210/PPR: 22-08-19-KO**

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Langley AFB and Craney Island Army Corps of Engineers (ACE). Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of members operating at Langley AFB, and Craney Island Army Corps of Engineers.

**1. 910 AW PARTICIPANTS:**

Msn Commander:	Lt Col (b) (6)	(b) (6)
Entomologist:	Lt Col (b) (6)	
Pilots:	Lt Col (b) (6)	, Capt (b) (6)
Navigators:	Lt Col (b) (6)	, Capt (b) (6)
Flight Engineer:	TSgt (b) (6)	, SSgt (b) (6)
Spray Operators:	SMSgt (b) (6)	, SMSgt (b) (6), TSgt (b) (6), SSgt (b) (6)
Spray Maintenance:	MSgt (b) (6)	(Lead) (b) (6)
	MSgt (b) (6)	, TSgt (b) (6), TSgt (b) (6), A1C (b) (6)
Crew Chiefs:	MSgt (b) (6)	, MSgt (b) (6)
Avionics:	SRA (b) (6)	

**2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer, Wingman system mission cards
Navigator:	Maps/Map Bag, Validation Map, iPad window mounts
Spray Operators:	PPE, Laptop and/or Spray datasheet, O <sub>2</sub> hose extensions
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system test cards



**3. SCHEDULE: (All Local Times)**

**28 Jul (Tuesday)**

1700 – Depart KYNG

1815 – Land KLF I PPR: 22-08-19-KO

MX Support Vader 24 PPR: 27-0936-KO

**DO NOT LEAVE UNTIL BRIEFED AND CLEARED OUT BY THE MISSION COMMANDER!**

**29 Jul- 30 Jul (Tuesday-Wednesday) Sunset 2023 Civil Twilight 2053L**

1500– Installation Brief (Tuesday)

1700 – Wx Call/Chemical Load

1730 – MASS Calibration

2000 – Depart KLF I – conduct aerial daytime review of the area begin spraying near twilight

2300 – Land KLF I

**31 Jul (Fri)**

1200 – Depart KLF I

1145 – Support plane will arrive from KYNG

1315 – Land KYNG

**4. SPRAY CONFIGURATION AND PARAMETERS:**

Locations:	Langley AFB (3,783 acres), Craney Island ACE and 3mi buffer area of Portsmouth (8,935 acres)
Acres:	12,718 for both locations to be sprayed in one sortie
Product:	Trumpet® (Naled) (EPA Reg. No. 5481-481)
	Signal word: Danger
Gallons loaded:	90 gallons
Flow Rate:	6.54 GPM
Application Rate:	0.9 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300'
Airspeed:	200 KNTS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet Flat Fan / Straight Down
Number of Nozzles:	30-31

**5. TRANSPORTATION: Pest shop is supposed to have vehicles signed out and at base ops.**

Langley Vehicle Ops POC:	SSgt (b) (6)	(757) 764-5714 Confirmation# 31233750
Sedan	MC/ENTO	
Sedan	Pilots/Navs	
8-PAX VAN	Engs/LMs	
8-PAX VAN	Spray MX	
8-PAX VAN	CC/Avionics	

**6. LODGING:**

Newport News Marriott at City Center: **\*Must wear a mask in public areas within the hotel property.**

740 Town Center Drive

Newport News, VA 23606

POC: (b) (6) (b) (6)

Confirmation numbers in the folder

Langley Billeting: (757) 764-4667/DSN 574-4667 ext 9030 / Non-A's issued  
langleylodging@gmail.com

**7. RADIO FREQUENCIES and COMMUNICATIONS:**

Langley AFB (KLFI):	ATIS – 270.1
(Class D)	Ground – 121.7 / 275.8
	Clearance Delivery – 118.85 / 257.625
	Tower – 125.0 / 253.5
	App/Dep (Norfolk) – 124.9 / 125.7 / 126.05 / 127.9
	Command Post – (Raymond 16) 251.25
	METRO – 239.8
	PTD – 142.3 / 376.2
Felker AAF/Ft	Tower – 126.3 / 269.25; Phone – (757) 878-2058
Eustis (KFAF) (Class D):	Approach (Norfolk) – 125.7
	Base Ops – 134.1; Phone – (757) 878-5828/2584
Newport News/	Tower – 118.7 / 348.6
Williamsburg Intl	Approach (Newport) – 125.7
(KPHF) (Class D)	Departure (Newport) – 124.9
Norfolk NAS/Chambers	Tower – 124.3 / 379.15; Phone – DSN 564-2442
Field (KNGU)	Approach (Norfolk) – 118.9 / 353.7 / 335.625
(Class D Surface-020 MSL,	Base Ops Phone – DSN 262-3419 / Comm 757-322-3419

7. **CONTACTS:**
- Joint Base Langley–Eustis:** **DSN: 574-XXXX; Commercial (757) 764-XXXX**
- Base Operator x1110
- Wing Commander: x5321
- Command Post: x5411
- Public Affairs: x5701
- Wing Safety: x5057
- Base Operations: x2504
- Base Civil Engineer: x5342
- Weather: x5908
- Lodging (Langley Inn): x4667 or 757-764-4667
- Fire Department: x3068
- Transient Alert x2539/4517
- Langley Control Tower: x7999
- Pest Control Foreman: x3324
- Vehicle Ops x6446
- Army Corps of Engineers** (b) (6) **office:** (b) (6)
- City of Portsmouth Biologist** (b) (6) (b) (6) , work cell
- Youngstown ARS:** **DSN: 346-XXXX; Commercial (330) 609-XXXX**
- 910 AW/CC: x1243
- Command Post x1315 FAX x1161
- PA: x1236 FAX x1022
- OG/CC: x1257/1179
- Safety x1391
- Base Ops: x1186
- SOF Desk: x1069 FAX: x1371
- 757 AS/DO: x1793
- 757 AS Admin: x1239 FAX x1657
- 757 AS Spray Office: x1638/1111 FAX x1616
- 910 MXG/CC: x1225
- 910 LG/LGM: x1352
- Maintenance Control: x1348
- Spray Maintenance: x1132/1586
- 910 LG/LGL: x1137



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

14 October 2019

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray on UTTR and Dugway Proving Ground

1. Aerial spray deployment of one C-130 from 20-26 October 2019 to Hill AFB, UT to train aerial spray aircrew, entomologists, and maintenance members to reduce the risk of range fires by controlling cheat grass (*Bromus tectorum*) and other invasive weed species while promoting reestablishment and success of native flora on the Utah Test and Training Range (UTTR) and Dugway Proving Ground.

2. Concept of Operations (All times are local):

- a. 20 October
  - 1100 Depart KYNG (Support aircraft)
  - 1100 Depart KYNG (Spray aircraft)
  - 1400 Land KHIF
  - 1400 Land KHIF
- b. 21-25 October
  - 0800 Depart KHIF for the UTTR
  - 1000 Land KHIF
  - 1100 Depart KHIF for the UTTR
  - 1300 Land KHIF
- c. 25 October
  - 1100 Depart KYNG (Support Aircraft)
  - 1400 Land KHIF (Support Aircraft)
- d. 26 October
  - 0900 Depart KHIF (Support Aircraft)
  - 0900 Depart KHIF (Spray Aircraft)
  - 1500 Land KYNG
  - 1500 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc.  
All changes to the planned itinerary will be coordinated by the mission commander

3. Spray Parameters:

Locations:	Utah Test and Training Range (UTTR) and Dugway
Acres:	1,828
Chemical:	Plateau (Herbicide)
Gallons loaded:	1,800
Flow Rate:	326 GPM
Application Rate:	7 gallons per acre
Flush:	Water
Altitude:	100'
Airspeed:	200 KTS
Swath Width:	100 feet
Nozzle/Orientation:	Raindrop
Number of Nozzles:	18

4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) as the Aircraft Commander. Support at Hill AFB and the UTTR has been completed.

//SIGNED//

(b) (6), MAJOR, USAF  
Chief of Aerial Spray

**AERIAL SPRAY PLAN**  
**LANGLEY AFB/CRANEY ISLAND ACE, VA**  
**25 – 28 AUG 2020**  
**QZNRK3491238/PPR: 171-430-ET**

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Langley AFB and Craney Island Army Corps of Engineers (ACE). Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of members operating at Langley AFB, and Craney Island Army Corps of Engineers.

**1. 910 AW PARTICIPANTS:**

Msn Commander:	Maj (b) (6)	(b) (6)
Entomologist:	Lt Col (b) (6)	
Pilots:	Lt Col (b) (6)	, Lt Col (b) (6)
Navigators:	Lt Col (b) (6)	, Capt (b) (6)
Flight Engineer:	SMSgt (b) (6)	, (b) (6)
Spray Operators:	SMSgt (b) (6)	, MSgt (b) (6), MSgt (b) (6),
	SrA (b) (6)	
Spray Maintenance:	MSgt (b) (6)	(Lead) (b) (6)
	TSgt (b) (6)	, TSgt (b) (6), SSgt (b) (6),
	SrA (b) (6)	
Crew Chiefs:	TSgt (b) (6)	, SrA (b) (6)
Avionics:	TSgt (b) (6)	

**2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer, Wingman system mission cards
Navigator:	Maps/Map Bag, Validation Map, iPad window mounts
Spray Operators:	PPE, Laptop and/or Spray datasheet, O <sub>2</sub> hose extensions
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system test cards



3. **SCHEDULE: (All Local Times)**

**25 Aug (Tuesday)**

1700 – Depart KYNG

1815 – Land KLF I PPR: Vader 04 171-430- ET \* you need to land by 1900 if you have delays at YARS,  
KLF I closes at 1900.

**DO NOT LEAVE UNTIL BRIEFED AND CLEARED OUT BY THE MISSION COMMANDER!**

**26 Aug - 27 Aug (Wednesday-Thursday) Sunset 1943 Civil Twilight 2010L**

1545– Installation Brief (Wednesday)\* Late Airfield OPS is Approved till 2300 lcl.

1630 – Wx Call/Chemical Load

1700 – MASS Calibration

2030 – Depart KLF I – conduct aerial daytime review of the area begin spraying near twilight

2230 – Land KLF I

**28 Aug (Friday)**

1200 – Depart KLF I

\*Quiet hours for retirement ceremony 0800-0900 and also at 1000-1100

1315 – Land KYNG

- Earliest you will be able to start will be 1100 unless you can get permission and be off the deck between the quiet hours for change of command ceremony

4. **SPRAY CONFIGURATION AND PARAMETERS:**

Locations:	Langley AFB (3,783 acres), Craney Island ACE and 3mi buffer area of Portsmouth (8,935 acres)
Acres:	12,718 for both locations to be sprayed in one sortie
Product:	Trumpet® (Naled) (EPA Reg. No. 5481-481)
	Signal word: Danger
Gallons loaded:	90 gallons
Flow Rate:	6.54 GPM
Application Rate:	0.9 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300'
Airspeed:	200 KNTS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet Flat Fan / Straight Down
Number of Nozzles:	28

5. **TRANSPORTATION:**

Enterprise POC:	Enterprise will have 3 minivans and 2 sedans at base ops. (b) (6) <a href="mailto:@erac.com">@erac.com</a> 1004 W Mercury Blvd Hampton, VA 23666 Office # (757) 896-0360
Langley POC:	Mr. (b) (6) (b) (6) He will have the keys or Base OPS desk
Sedan	MC/ENTO Hodor
Minivan	Pilots/Navs (b) (6)
Minivan	Engs/LMs (b) (6)
Minivan	Spray MX (b) (6)
Sedan	CC/Avionics Root

6. **LODGING:**

Newport News Marriott at City Center: \*Must wear a mask in public areas within the hotel property.  
740 Town Center Drive  
Newport News, VA 23606  
POC: (b) (6) (b) (6)  
Confirmation numbers in the folder

Langley Billeting: (757) 764-4667/DSN 574-4667 ext 9030 / Non-A's issued  
langleylodging@gmail.com

7. **RADIO FREQUENCIES and COMMUNICATIONS:**

Langley AFB (KLFI):	ATIS – 270.1
(Class D)	Ground – 121.7 / 275.8
	Clearance Delivery – 118.85 / 257.625
	Tower – 125.0 / 253.5
	App/Dep (Norfolk) – 124.9 / 125.7 / 126.05 / 127.9
	Command Post – (Raymond 16) 251.25
	METRO – 239.8
	PTD – 142.3 / 376.2
Felker AAF/Ft	Tower – 126.3 / 269.25; Phone – (757) 878-2058
Eustis (KFAF) (Class D):	Approach (Norfolk) – 125.7
	Base Ops – 134.1; Phone – (757) 878-5828/2584
Newport News/	Tower – 118.7 / 348.6
Williamsburg Intl	Approach (Newport) – 125.7
(KPHF) (Class D)	Departure (Newport) – 124.9
Norfolk NAS/Chambers	Tower – 124.3 / 379.15; Phone – DSN 564-2442
Field (KNGU)	Approach (Norfolk) – 118.9 / 353.7 / 335.625
(Class D Surface-020 MSL,	Base Ops Phone – DSN 262-3419 / Comm 757-322-3419

7.

**CONTACTS:**

**Joint Base Langley–Eustis:**

Base Operator x1110  
Wing Commander: x5321  
Command Post: x5411  
Public Affairs: x5701  
Wing Safety: x5057  
Base Operations: x2504  
Base Civil Engineer: x5342  
Weather: x5908  
Lodging (Langley Inn): x4667 or 757-764-4667  
Fire Department: x3068  
Transient Alert x2539/4517  
Langley Control Tower: x7999  
Pest Control Foreman: x3324  
Vehicle Ops x6446  
Langley Visitor Center x7770

**DSN: 574-XXXX; Commercial (757) 764-XXXX**

**Army Corps of Engineers  
City of Portsmouth Biologist**

**(b) (6) office: 757-201-7186  
(b) (6) (b) (6) , work cell**

**Youngstown ARS:**

910 AW/CC: x1243  
Command Post x1315 FAX x1161  
PA: x1236 FAX x1022  
OG/CC: x1257/1179  
Safety x1391  
Base Ops: x1186  
SOF Desk: x1069 FAX: x1371  
757 AS/DO: x1793  
757 AS Admin: x1239 FAX x1657  
757 AS Spray Office: x1638/1111 FAX x1616  
910 MXG/CC: x1225  
910 LG/LGM: x1352  
Maintenance Control: x1348  
Spray Maintenance: x1132/1586  
910 LG/LGL: x1137

**DSN: 346-XXXX; Commercial (330) 609-XXXX**



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

02 September 2020

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at JB Charleston and MCRD Parris Island, SC  
Operating out of JB Charleston, SC.

1. Aerial spray deployment of one C-130 from 8-11 September 2020 to JB Charleston, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at MCRD Parris Island and JB Charleston, SC. Operations for this mission will be conducted from JB Charleston.
2. Concept of Operations (All times are local):
  - a. 08 September  
1700 Depart KYNG  
1900 Land KCHS
  - b. 09 September  
1920 Depart KCHS for Aerial Spray of JB Charleston  
2145 Land KCHS
  - c. 10 September  
1900 Depart KCHS for Aerial Spray of MCRD Parris Island  
2100 Land KCHS
  - d. 11 September  
1000 Depart KCHS  
1200 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 18,500 acres over JB Charleston
- b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
- c. Swath Width: 2000ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 0.85 oz/acre of Trumpet EC

- a. Area to be treated: 7,200 acres on MCRD Parris Island
- b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
- c. Swath Width: 1000ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 0.80 oz/acre of Trumpet EC

4. Lt Col (b) (6) will serve as the Mission Commander with Maj (b) (6) as the Aircraft Commander. Support at MCRD Parris Island and JB Charleston has been coordinated.

(b) (6), Maj, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

03 August 2020

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at JB Charleston and MCRD Parris Island, SC  
Operating out of JB Charleston, SC.

1. Aerial spray deployment of one C-130 from 10-14 August 2020 to JB Charleston, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at MCRD Parris Island and JB Charleston, SC. Operations for this mission will be conducted from JB Charleston.

2. Concept of Operations (All times are local):

- a. 10 August  
1700 Depart KYNG  
1900 Land KCHS
- b. 11 August  
1930 Depart KCHS for Aerial Spray of MCRD Parris Island  
2145 Land KCHS
- c. 12 August  
2000 Depart KCHS for Aerial Spray of JB Charleston  
2200 Land KCHS
- d. 13 August  
1930 Depart KCHS (Weather/MX Backup)  
2145 Land KCHS
- e. 14 August  
1000 Depart KCHS  
1200 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.



3. Spray Parameters:

- a. Area to be treated: 18,500 acres over JB Charleston
- b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
- c. Swath Width: 2000ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 0.85 oz/acre of Trumpet EC

- a. Area to be treated: 7,200 acres on MCRD Parris Island
- b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
- c. Swath Width: 1000ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 0.80 oz/acre of Trumpet EC

4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) as the Aircraft Commander. Support at MCRD Parris Island and JB Charleston has been coordinated.

(b) (6), Maj, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

17 August 2020

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Langley AFB, and Craney Island Army Corps of Engineers.

1. Aerial spray deployment of one C-130 to Langley AFB, VA. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of Langley AFB and Craney Island Army Corps of Engineers.

2. Concept of Operations: All times local

- a. 25 August (Tuesday)  
1700 Depart KYNG  
1815 Land KLFI
- b. 26-27 August (Wednesday - Thursday)  
1930 Depart KLFI  
2230 Land KLFI
- c. 28 August (Friday)  
1100 Depart KLFI  
1215 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc.

3. Spray Parameters:

- a. Locations: Langley AFB and Craney Island ACE, VA
- b. Acres: 12,718
- c. Altitude: 300ft AGL for NVG adulticide application
- d. Swath Width: 2,000 feet
- e. Airspeed: 200 KTS
- f. Application Rate: 0.9 oz/acre
- g. Product: Trumpet® (Naled) (EPA Reg. No. 5481-481)

4. Maj (b) (6) will serve as the Mission Commander with Lt Col (b) (6) as the Aircraft Commander.

(b) (6), Maj, USAF  
Chief, Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

17 August 2020

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Langley AFB, and Craney Island Army Corps of Engineers.

1. Aerial spray deployment of one C-130 to Langley AFB, VA. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of Langley AFB and Craney Island Army Corps of Engineers.

2. Concept of Operations: All times local

- a. 25 August (Tuesday)  
1700 Depart KYNG  
1815 Land KLFI
- b. 26-27 August (Wednesday - Thursday)  
1930 Depart KLFI  
2230 Land KLFI
- c. 28 August (Friday)  
1100 Depart KLFI  
1215 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc.

3. Spray Parameters:

- a. Locations: Langley AFB and Craney Island ACE, VA
- b. Acres: 12,718
- c. Altitude: 300ft AGL for NVG adulticide application
- d. Swath Width: 2,000 feet
- e. Airspeed: 200 KTS
- f. Application Rate: 0.9 oz/acre
- g. Product: Trumpet® (Naled) (EPA Reg. No. 5481-481)

4. Maj (b) (6) will serve as the Mission Commander with Lt Col (b) (6) as the Aircraft Commander.

(b) (6), Maj, USAF  
Chief, Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

21 July 2020

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Langley AFB, and Craney Island Army Corps of Engineers.

1. Aerial spray deployment of one C-130 to Langley AFB, VA. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of Langley AFB and Craney Island Army Corps of Engineers.

2. Concept of Operations: All times local

- a. 28 July (Tuesday)  
1700 Depart KYNG  
1815 Land KLFI
- b. 29-30 July (Wednesday - Thursday)  
2000 Depart KLFI  
2300 Land KLFI
- c. 31 July (Friday)  
1200 Depart KLFI  
1315 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc.

3. Spray Parameters:

- a. Locations: Langley AFB and Craney Island ACE, VA
- b. Acres: 12,718
- c. Altitude: 300ft AGL for NVG adulticide application
- d. Swath Width: 2,000 feet
- e. Airspeed: 200 KTS
- f. Application Rate: 0.9 oz/acre
- g. Product: Trumpet® (Naled) (EPA Reg. No. 5481-481)



4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) as the Aircraft Commander.

(b) (6), Maj, USAF  
Chief, Aerial Spray



DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

09 July 2020

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Minot AFB, Minot, Burlington, Williston and Watford City, North Dakota.

1. The 910 AW will deploy one C-130s to Minot AFB, ND to train aerial spray aircrew, pest management personnel, and maintenance members in the control of nuisance and vector mosquitoes. This mosquito adulticide application will also improve working conditions and lower the risk of vector-borne illness for individuals working and living in/around Minot AFB, Minot, Burlington, Williston and Watford City. Aerial spraying performed off DOD installation property will be conducted IAW the Innovative Readiness Training (IRT) Program criteria.

2. Concept of Operations: All times local

- a. 13 July (Monday)  
1700 Depart KYNG  
1930 Land KMIB
- b. 14-16 July (Tuesday – Thursday)  
2130 Depart KMIB  
2330 Land KMIB
- c. 17 July (Friday)  
1400 Depart KMIB  
1830 Land KYNG

Times may vary from scheduled depending upon weather, effectiveness of spray, etc. The mission commander will coordinate all changes to the planned itinerary.

### 3. Spray Parameters:

#### Minot AFB:

- a. Area to be treated: 5,170 acres
- b. Altitude: 300 feet
- c. Swath Width: 2,000 feet
- d. Airspeed: 200 KGS
- e. Application Rate: 0.98 oz/acre Trumpet® EC Insecticide

#### Minot City/Burlington:

- f. Area to be treated: 22,128 acres
- g. Altitude: 300 feet
- h. Swath Width: 2,000 feet
- i. Airspeed: 200 KGS
- j. Application Rate: 0.98 oz/acre Trumpet® EC Insecticide

#### Williston/Watford City:

- k. Area to be treated: 23,622 acres
- l. Altitude: 300 feet
- m. Swath Width: 2,000 feet
- n. Airspeed: 200 KGS
- o. Application Rate: 0.98 oz/acre Zenivex® Insecticide

4. Capt (b) (6) will serve as the Mission Commander. Support required at Minot AFB has been coordinated.

(b) (6), Maj, USAF  
Chief of Aerial Spray



DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

15 June 2020

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Minot AFB, Minot, Burlington, Williston and Watford City, North Dakota.

1. The 910 AW will deploy two C-130s to Minot AFB, ND to train aerial spray aircrew, pest management personnel, and maintenance members in the control of nuisance and vector mosquitoes. This mosquito adulticide application will also improve working conditions and lower the risk of vector-borne illness for individuals working and living in/around Minot AFB, Minot, Burlington, Williston and Watford City. Aerial spraying performed off DOD installation property will be conducted IAW the Innovative Readiness Training (IRT) Program criteria.

2. Concept of Operations: All times local

- a. 22 June (Monday)  
1700 Depart KYNG  
1930 Land KMIB
- b. 23 June – 25 June (Tuesday – Thursday)  
2130 Depart KMIB  
2330 Land KMIB
- c. 26 June (Friday)  
1400 Depart KMIB  
1830 Land KYNG

Times may vary from scheduled depending upon weather, effectiveness of spray, etc. The mission commander will coordinate all changes to the planned itinerary.

### 3. Spray Parameters:

#### Minot AFB:

- a. Area to be treated: 5,170 acres
- b. Altitude: 300 feet
- c. Swath Width: 2,000 feet
- d. Airspeed: 200 KGS
- e. Application Rate: 0.98 oz/acre Trumpet® EC Insecticide

#### Minot City/Burlington:

- f. Area to be treated: 22,128 acres
- g. Altitude: 300 feet
- h. Swath Width: 2,000 feet
- i. Airspeed: 200 KGS
- j. Application Rate: 0.98 oz/acre Trumpet® EC Insecticide

#### Williston/Watford City:

- k. Area to be treated: 23,622 acres
- l. Altitude: 300 feet
- m. Swath Width: 2,000 feet
- n. Airspeed: 200 KGS
- o. Application Rate: 0.98 oz/acre Zenivex® Insecticide

4. Capt (b) (6) will serve as the Mission Commander. Support required at Minot AFB has been coordinated.

(b) (6), Maj, USAF  
Chief of Aerial Spray

**AERIAL SPRAY OPERATIONAL SCHEDULE**  
**MINOT, ND**  
**13-17 July 2020**  
**MSN# QZNRK3431195**

**PURPOSE/BENEFIT/OBJECTIVE:** A C-130 will deploy to Minot AFB (KMIB) from 13-17 July 2020. Aerial Spray flight proficiency training will be accomplished using Night Vision Goggles (NVGs) while providing a beneficial reduction in mosquito populations improving the health and welfare of personnel working and living in and around Minot AFB, Minot, Williston, and Watford City. Aerial applications off DoD property will be in accordance with the Individual Readiness Training (IRT) program.

**1. 910 AW PARTICIPANTS:**

Mission Commander:	<b>Capt</b> (b) (6)	(b) (6)		
Entomologists:	Lt Col (b) (6)			
Pilots:	Maj (b) (6)	, Maj (b) (6)		
Navigators:	Lt Col (b) (6)	, Maj (b) (6)		
Flight Engineer:	MSgt (b) (6)			
Spray Operators:	CMSgt (b) (6)	, TSgt (b) (6)	, TSgt (b) (6)	, SrA (b) (6)
Spray MX:	<b>TSgt</b> (b) (6)	, <b>(Lead)</b>	(b) (6)	
	MSgt (b) (6)	, TSgt (b) (6)	, SrA (b) (6)	
Avionics:	MSgt (b) (6)			
Crew Chiefs:	MSgt (b) (6)	, TSgt (b) (6)		

**2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer, Wingman system mission cards
Navigator:	Maps/Map Bag, Validation Map, iPad window mounts
Spray Operators:	PPE, Laptop and/or Spray datasheet, O <sub>2</sub> hose extensions
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system test cards



### **3. SCHEDULE: (All Local Times)**

#### **13 July (Monday)**

**Sunset 2144L – Civil Twilight 2223L (Minot)**

**Pesticide/Safety brief will be conducted at the aircraft prior to departing YNG**

1500 – Showtime

1700 – Depart KYNG

1935 – Land KMIB PPR: 01-13-JM

#### **14-16 July (Tuesday-Thursday) Sunset/Civil Twilight see above – min change during this period**

0900 – (Tuesday only) -- Inbrief at 5 CES Commanders Conference Room in Bldg. 445

1900 – Weather Call/Pesticide Load/Calibration

2130 – Depart KMIB

0030 – Land KMIB

#### **17 July (Friday)**

0800 – Bus Time

1000 – Depart KMIB

1400 – Land KYNG

(RTB departure time could be later if crew rest following prior night's mission is a factor)

### **4. SPRAY CONFIGURATION AND PARAMETERS:**

<b>Location:</b>	<b>Minot AFB</b>
Acres:	5,170
Chemical:	Trumpet® EC (78% AI Naled)
Gallons to be loaded:	30
Flow Rate:	7.1 GPM
Application Rate:	0.98 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300 feet AGL
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet oriented straight down
Number of Nozzles:	(15 left – 16 right) 31 Total

<b>Location:</b>	<b>Minot City/Burlington</b>
Acres:	22,128
Chemical:	Trumpet® EC (78% AI Naled)
Gallons to be loaded:	180
Flow Rate:	7.1 GPM
Application Rate:	0.98 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300 feet AGL
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet oriented straight down
Number of Nozzles:	(15 left – 16 right) 31 Total

<b>Location:</b>	<b>Williston/Watford</b>
Acres:	23,622
Chemical:	Zenivex + BVA oil (ratio is 1:1)
Gallons to be loaded:	120 (60 Zenivex, 60 BVA)
Flow Rate:	4.5 GPM
Application Rate:	0.32 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300 feet AGL
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet oriented straight down
Number of Nozzles:	(7 left – 8 right) 15 Total

**Flush and Purge procedures per day will be furnished by the Mission Commander**

**5. RADIO FREQUENCIES:**

**Spray Ground:** UHF 392.2; VHF 123.45

**Minot AFB:** Tower – 120.65 VHF or 253.5 UHF  
Ground – 134.0 VHF or 275.8 UHF  
Approach – 119.6 VHF or 363.8 UHF  
ATIS – 278.8 UHF  
Command Post – 321.0 “Raymond 12”  
PTD – 372.2

**6. TRANSPORTATION: Udrives**

Lt Col Breidenbaugh	Sedan
Maj (b) (6)	Minivan
TSgt (b) (6)	Minivan
MSgt (b) (6)	Minivan
TSgt (b) (6)	Minivan
MSgt (b) (6)	6 PAX Truck

**\*We will be parking on the Overflow Parking Apron on the south side of the runway. In order to drive out to the airplane you need to have flight line driving privileges and training from Minot AFB or have an escort. MC will update everyone at the plane before we depart on trans plan.**

Confirmation Numbers: 31215994

MAFB Trans Squadron: POC: (b) (6), SSgt, USAF  
Vehicle Operations Controller  
5 LRS/LGRDDO  
DSN: 453-3121 COMM:(701) 723-3121

**7. LODGING:**

**Staybridge Suites:** POC: (b) (6) email: (b) (6)  
**Location:** 3009 S Broadway, Minot, ND 58701  
Phone: 701.852.0852 ext. 504  
**Confirmation number:** Organization/Group Name: 910 AW

**8. CONTACTS:**

**Minot AFB:**

Base Operations:	DSN prefix 453, commercial 701-723-xxxx	
Environmental Office:	x2347	
Base Civil Engineer:	x4871	
Pest Management:	x2434	
Weather:	x2393 (b) (6)	(b) (6) cell
Billeting:	x6381 or x3631	
Fire Department:	x6161 or 701-727-6161	
Transient Alert	x2461	
Minot Tower	x3153	
AGE flight chief	x3330	
Williston VCD	701-723-2299	
Army Corps of Eng	701-577-4563 (Dr. (b) (6) )	
Minot City	701-572-6469 ((b) (6) , Lead Natural Resource Spc)	
	701-833-7677 ((b) (6) )	
	701-857-4140 ((b) (6) , office)	

**AERIAL SPRAY OPERATIONAL SCHEDULE**  
**MINOT, ND**  
**22-26 June 2020**  
**MSN #s QZNRK3431174 & QZNRK3432174**

**PURPOSE/BENEFIT/OBJECTIVE:** Two C-130s will deploy to Minot AFB from 22-26 June, 2020. Aerial Spray flight proficiency training will be accomplished on Night Vision Goggles (NVGs) while providing a beneficial reduction in mosquito populations improving the health and welfare of personnel working and living in and around Minot AFB, Minot, Williston, and Watford City. Additional training over the Army Corps lands is also anticipated but with no spraying. Aerial spraying of the cities will be in accordance with the Individual Readiness Training (IRT) program.

**1. 910 AW PARTICIPANTS:**

Mission Commander:	Capt (b) (6)	(b) (6)
Entomologists:	Lt Col (b) (6)	, Lt Col (b) (6)
Pilots:	Lt Col (b) (6)	, Lt Col (b) (6), Lt Col (b) (6), Lt Col (b) (6), Lt Col (b) (6)
Navigators:	Lt Col (b) (6)	Lt Col (b) (6), Lt Col (b) (6), Maj (b) (6)
Flight Engineer:	CMSgt (b) (6)	, MSgt (b) (6)
Spray Operators:	CMSgt (b) (6)	, SMSgt (b) (6), SMSgt (b) (6); MSgt (b) (6); TSgt (b) (6)
Spray MX:	TSgt (b) (6)	, (Lead) (b) (6) MSgt (b) (6), MSgt (b) (6), SSgt (b) (6), Amn (b) (6)
Avionics:	MSgt (b) (6)	
Engine:	TSgt (b) (6)	
Instruments:	MSgt (b) (6)	
Crew Chiefs:	TSgt (b) (6)	, TSgt (b) (6), SSgt (b) (6)

**2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer, Wingman system mission cards
Navigator:	Maps/Map Bag, Validation Map, iPad window mounts
Spray Operators:	PPE, Laptop and/or Spray datasheet, O <sub>2</sub> hose extensions, NVGs
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system test cards

### **3. SCHEDULE: (All Local Times)**

#### **22 June (Monday)**

**Sunset 2149L – Civil Twilight 2231L (Minot); 2158 sunset – civil tw 2240L (Williston)**

**Pesticide/Safety brief will be conducted at the aircraft prior to departing YNG**

1500 – Showtime

1700 – Depart KYNG

1935 – Land KMIB                      Vader 07 PPR: 02-22-JR                      Vader 23 PPR: 03-22-JR

#### **23-25 June (Tuesday-Thursday) Sunset/Civil Twilight see above – no change during this period**

0900 – (Tuesday only) -- Inbrief at 5 CES Commanders Conference Room in Bldg. 445

1900 – Weather Call/Pesticide Load/Calibration

2130 – Depart KMIB

0030 – Land KMIB

#### **26 June (Friday)**

0800 – Bus Time

1000 – Depart KMIB

1400 – Land KYNG

(RTB departure time could be later if crew rest following prior night's mission is a factor)

### **4. SPRAY CONFIGURATION AND PARAMETERS:**

<b>Location:</b>	<b>Minot AFB</b>
Acres:	5,170
Chemical:	Trumpet® EC (78% AI Naled)
Gallons to be loaded:	30
Flow Rate:	7.1 GPM
Application Rate:	0.98 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300 feet AGL
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet oriented straight down
Number of Nozzles:	(15 left – 16 right) 31 Total

<b>Location:</b>	<b>Minot City/Burlington</b>
Acres:	22,128
Chemical:	Trumpet
Gallons to be loaded:	180
Flow Rate:	7.1 GPM
Application Rate:	0.98 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300 feet AGL
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet oriented straight down
Number of Nozzles:	(15 left – 16 right) 31 Total

<b>Location:</b>	<b>Williston/Watford</b>
Acres:	23,622
Chemical:	Zenivex + BVA oil (ratio is 1:1)
Gallons to be loaded:	120 (60 Zenivex, 60 BVA)
Flow Rate:	4.5 GPM
Application Rate:	0.32 oz/acre Zenivex (+ 0.32 BVA) = 0.64 oz/acre total
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300 feet AGL
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet oriented straight down
Number of Nozzles:	15 total: 7 left, 8 right

**Flush and Purge procedures per day will be furnished by the Mission Commander**

**7. RADIO FREQUENCIES:**

<b>Spray Ground:</b>	UHF 392.2; VHF 123.45
<b>Minot AFB:</b>	Tower – 120.65 VHF or 253.5 UHF Ground – 134.0 VHF or 275.8 UHF Approach – 119.6 VHF or 363.8 UHF ATIS – 278.8 UHF Command Post – 321.0 “Raymond 12” PTD – 372.2

**8. TRANSPORTATION:**

MIB Vehicle Ops POC:	A1C Kaipo Freitas, 701-723-3121 Confirmation Number: # 31119415
U-Drive (Sedan):	MC/Entomologist
U-Drive (Sedan):	Pilots and Navigators Crew 1
U-Drive (Sedan):	Engineers and Spray Operators Crew 1
U-Drive (Sedan):	Pilots and Navigators Crew 2
U-Drive (Mini Van):	Engineers and Spray Operators Crew 2
U-Drive (6 Truck):	Spray MX
U-Drive (6 Truck):	Avionics. Engine, Instrument
U-Drive (15 PAX VAN):	Crew Chiefs

**9. LODGING:**

<b>MAFB Billeting:</b>	701-248-7000, DSN 453-6161 ext. 3012 Group reservations
<b>Staybridge Suites:</b>	POC: (b) (6) email: (b) (6) @minotsbs.com
Location:	3009 S Broadway, Minot, ND 58701 Phone: 701.852.0852 ext. 504
Confirmation number:	Organization/Group Name: 910 AW



**10. CONTACTS:**

**Minot AFB:**

DSN prefix 453, commercial 701-723-xxxx

Base Operations:	x2347
Environmental Office:	x4871
Base Civil Engineer:	x2434
Pest Management:	x2393 (Mr. (b) (6) ) (b) (6) cell
Weather:	x6381 or x3631
Billeting:	x6161 or 701-727-6161
Fire Department:	x2461
Transient Alert	x3153
Minot Tower	x3330
AGE flight chief	701-723-2299
Williston VCD	701-577-4563 (Dr. (b) (6) )
Army Corps of Eng	701-572-6469 ((b) (6) , Lead Natural Resource Spc)
Minot City	701-833-7677 ((b) (6) )
	701-857-4140 (b) (6) , office)

**AERIAL SPRAY OPERATIONAL SCHEDULE**  
**JB CHARLESTON, SC/ PARRIS ISLAND, SC**  
**08-11 SEPTEMBER 2020**  
**MSN# QZNRK3491252**

**Purpose/Objectives/Benefits:** One C-130 will deploy to JB Charleston, SC from 08-11 September 2020. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito and biting midge populations affecting the health and welfare of the personnel of JB Charleston and MCRD Parris Island, SC. Operations for this mission will be conducted from JB Charleston utilizing Night Vision Goggles (NVGs).

**1. 910 AW PARTICIPANTS:**

Msn Commander:	Lt Col (b) (6)				
Entomologists:	Lt Col (b) (6)				
Pilots:	Lt Col (b) (6)		, Maj (b) (6)		
Navigators:	Lt Col (b) (6)		, Lt Col (b) (6)		
Flight Engineer:	MSgt (b) (6)		, TSgt (b) (6)		
Spray Operators:	CMSgt (b) (6)		, MSgt (b) (6)	, MSgt (b) (6)	
	SSgt (b) (6)				
Spray Maintenance:	MSgt (b) (6)	(Lead)			
	MSgt (b) (6)		, TSgt (b) (6)	, SSgt (b) (6)	, SrA (b) (6)
Crew Chiefs:	MSgt (b) (6)		, SSgt (b) (6)		
Comm/Nav:	TSgt (b) (6)				

**2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, laptop/Spray datasheet, O <sub>2</sub> hose extensions, NVGs
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system cards

### **3. SCHEDULE: (All Local Time)**

#### **08 SEP (Tues)**

1500 Showtime  
1700 Depart KYNG  
1900 Land KCHS

#### **09 SEP (Wed) Sunset: 1935L; Civil Twi: 2000L (KCHS)**

1300 Inbrief for CHS  
(telecom for PI at this time)  
1600 Weather call/Chemical Load  
1630 Calibration  
1920 Depart KCHS  
2145 Land KCHS

#### **10 SEP (Thur) Sunset: 1936L; Civil Twi: 2001L (PI)**

1600 Weather Call/Chemical load  
1630 Calibration  
1900 Depart KCHS  
2100 Arrive KCHS

#### **11 SEP (Fri)**

1000 Depart KCHS  
1200 Arrive KYNG

### **4. SPRAY CONFIGURATION AND PARAMETERS:**

Locations:	MCRD Parris Island and JB Charleston
Acres:	7,200 (Parris Island); 18,500 (JB Charleston)
Chemical:	Trumpet® EC (EPA Reg. No. 5481-481)
	Signal word: Danger
Gallons loaded:	45 gallons (Parris Island); 120 gallons (JB Charleston)
Flow Rate:	2.9 GPM (Parris Island); 6.4 GPM (JB Charleston)
Application Rate:	0.80 oz/ac (Parris Island); 0.85 oz/acre (JB Charleston)
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300' AGL NVG Operations, 150' AGL Day Operations
Airspeed:	200 Knots Ground Speed
Swath Width:	1,000 feet (Parris Island); 2,000 feet (JB Charleston)
Nozzle/Orientation:	ULV 8003 Tee Jet Flat Fan / Straight Down
Number of Nozzles:	14 (Parris Island); 29 (JB Charleston)
Formulas:	Flow Rate = Gal/Time in Minutes Acreage Sprayed = Total Sec x 338 x Swath Width / 43,560

## **5. AIR TO GROUND RADIO FREQUENCIES:**

**Mt Pleasant Regional:** CTAF 122.8  
**Charleston AFB Executive:** CTAF 122.8  
**MCAS Beaufort:** Tower - 119.05/342.875 MCAS TWR  
Approach - 123.7/125.125  
**Hilton Head Airport:** 118.975 Tower/CTAF (tower open until 0100 hrs Z)  
**Beaufort Co Airport:** 122.7 UNI  
**Spray Ground (CHS):** 392.2 UHF; 123.45 VHF

**Charleston AFB:** Tower – 126.0 or 239.0  
Ground – 121.9 or 348.6  
Clearance – 127.325 or 291.65  
ATIS – 124.75  
APP – 120.7 or 306.925

## **6. TRANSPORTATION:**

**JB Charleston AFB:** Vehicle will be on the ramp. Pest shop is handling them.

**1x 15-PAX Van** – Maintenance

**1x 15-PAX Van** – E's

**1x 8-PAX Van** – O's

**1x 3-PAX Truck** – MC & Entomologists

**Budget Rental- In Case you need to rent a car.**

**CHARLESTON, SC APO,CHS**

**5501 PORSCHE BLVD BUILDING 300,**

**CHARLESTON INTL AIRPORT**

**NORTH CHARLESTON, SC 29418 US**

**843-552-1771**

## **7. LODGING:**

Double Tree by Hilton Charleston Charleston – Airport (843) 518-6200

7401 Northwoods Boulevard, North Charleston, SC 29406

\*Non-A's e-mailed out

## **8. CONTACTS:**

<b>JB Charleston AFB SC:</b>	<b>DSN: 673-XXXX; Commercial (843)-963-XXXX</b>
Wing Commander:	x3418
MSG Commander:	x2200
Civil Engineer:	x4956
Deputy Chief/Civil Engineer:	x4954
Environmental Coordinator:	x2711
Base Operations:	x3026
Tyndall AFB Control Tower:	(843) 414-2808
Weather:	x3016

Pest Control NCOIC:	x5266, (b) (6)	(b) (6)	(cell)
Public Affairs:	x1110		
Fuels:	x5079		
Transportation:	x4236		
Fire Department:	x3777		

**MCRD Parris Island SC: DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental Coord:	x3066 (b) (6)	(b) (6)	(cell)
	(b) (6)	(b) (6)	(cell)
HazWaste:	x4698 (b) (6)	(b) (6)	(cell)
AC/S, I&L:	x2511		
Environmental Manager	x3423 Maj (b) (6)	(b) (6)	(cell)
Pest Control:	x2364		
P.I. Rifle Range:	x3183/3624		
Military Police	x3444		

**Beaufort County Mosquito Control:**

(b) (6)	, Director	(b) (6)
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SMI	Date	Location
SM20-1	1-5 Oct 2019	Homestead, FL
SM20-2	20-25 Oct 2019	Hill UTTR/Dugway, UT
SM20-3	4-10 Nov 2019	Joliet Range, IL
SM20-4	3-7 Feb 2020	Camp Blanding, FL
SM20-5	24-26 Feb 2020	Spray Refresher Tampa, FL
SM20-6	9-20 Mar 2020	Hill UTTR, UT
SM20-7	13-17 Apr 2020	MCRD Parris Island, SC/Tyndall AFB, FL
SM20-8	11-15 May 2020	MCRD Parris Island/JB Charleston, SC
SM20-9	1-12 Jun 2020	Williston ACE, ND
SM20-10	15-19 Jun 2020	NSB King's Bay, FL/JB Charleston, SC
SM20-11	22-26 Jun 2020	Minot/Williston, ND
SM20-12	13-17 Jul 2020	Minot/Williston, ND
SM20-13	28-31 Jul 2020	Langley AFB/Craney Island, VA
SM20-14	17-21 Aug 2020	Homestead, FL
SM20-15	25-28 Aug 2020	Langley AFB/Craney Island, VA
SM20-16	8-11 Sep 2020	JB Charleston, SC/Parris Island
SM20-17	14-25 Sep 2020	Mountain Home, ID

	No active pest control	training without pest control is not captured in th
	planned or in progress	
	COVID-19 Cancelled	

totals<sup>1</sup> This column includes water used as a carrier for the product



## FY20 Spray Missions

Target Pest	Product	Acres	oz/ acre	gal/ acre	Gal of product	Gal total <sup>1</sup>	Spray Sorties
Cancelled by user							
Cheatgrass	Plateau	1,803	N/A	6.7	80.6	12,034	9
Cancelled by user							
Cancelled by OG							
Training only							
Halogeton							
Mosquitoes/Midges							
Mosquitoes/Midges							
Mosquitoes							
Mosquitoes/Midges							
Training only no pests							
Mosquitoes	Trumpet/Zenivex	57,168	0.98/0.32	N/A	330	330	2
Mosquitoes	Trumpet	12,090	0.95	N/A	90	90	1
Cancelled by user							
Mosquitoes	Trumpet	12,896	0.96	N/A	97	90	1
Mosquitoes	Trumpet	24,226	0.85/0.80	N/A	165	165	3
Cheatgrass	Panoramic	3,050	6	326		19979	13
		111,233			763	32,688	29

is document

Ferry Sorties	Flush Sorties	Support Sorties	Spray Hours	Ferry Hours	Flush Hours	Support Hours	Total Hours
							0
2	0	4	11	10	0.0	19.7	40.7
							0
							0
							0
							0
							0
							0
							0
							0
							0
							0
2	0	0	6.6	7.3	0	0	13.9
2	0	0	2.6	3.2	0	0	5.8
							0
3	0	0	2.5	4.5	0	0	7
2	0	0	3.8	4.6	0	0	8.4
2	0	6	13.2	10.8	0	38.3	62.3
							0
							0
13	0	10	39.7	40.4	0	58	138.1

**910 AW AERIAL SPRAY UNIT  
CERTIFIED PEST MANAGEMENT PROFESSIONAL'S  
POST-MISSION REPORT  
MOUNTAIN HOME AFB, SAYLOR CREEK RANGE, ID  
14-25 September 2020**

**1. MISSION BASICS:**

- a. Installation Sprayed: Mountain Home AFB, Saylor Creek Range, ID
- b. Mission Duration: 14-25 Sep 2020
- c. Purpose of Application: Herbicide application to control cheat grass to suppress range fires and promote native flora
- d. Application Dates and Times (Local): See attachment 1
- e. Acres Treated: 3060
- f. Flying Data:
  - (1) Spray Sorties/Hours: 13 sorties; 13.2 hours
  - (2) Ferry Sorties/Hours (2) 10.6 hours
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6), Natural Resource Manager, (b) (6)
- h. Date Spray Map Last Approved: 14 Sept 2020
- i. Installation In-Briefing: (When/ Briefer/s): Mr. (b) (6) (Mt Home), Lt Col (b) (6), Lt Col (b) (6), Maj (b) (6); 14 Sep 2020 at CBRNE training center, Mt Home AFB
- j. Mission Identifier: QZNRK3491258

**3. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) (14-20); Lt Col (b) (6) (19-25), Maj (b) (6) (14-20), Capt (b) (6) (14-20), Capt (b) (6) (19-25)
  - (2) Navigator: Lt Col (b) (6) (19-25), Maj (b) (6) (14-20), Maj (b) (6) (19-25), Maj (b) (6) (14-20)
  - (3) Flight Engineers: CMSgt (b) (6) (14-20), SMSgt (b) (6) (19-25)
  - (4) Spray Operators: SMSgt (b) (6) (14-20), SMSgt (b) (6), MSgt (b) (6), TSgt (b) (6), SSgt (b) (6), SrA (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) (lead), MSgt (b) (6), MSgt (b) (6) Bryant, TSgt (b) (6), SrA (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6), SrA (b) (6)
  - (3) Specialists: MSgt (b) (6), SSgt (b) (6), TSgt (b) (6), SrA (b) (6) (b) (6) SrA (b) (6), TSgt (b) (6), MSgt (b) (6), SrA (b) (6) (b) (6), TSgt (b) (6), SrA (b) (6)
- d. **Entomologist:** Lt Col (b) (6)

**4. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Panoramic® 2SL (23% AI, imazapic ammonium);
- b. EPA Registration Number: Panoramic® 2SL: 81927-19
- c. Gallons Pesticide Loaded: See attachment 1
- d. Gallons Pesticide Applied: See attachment 1
- e. Gallons and Name Diluent Used: 12.5 Gallons Panoramic diluted to 1800-1900 gallons water
- f. Other Additives Used: 8 - 9 gallons of Clasp® per sortie; average load 1800-1900 gallons; 10 Gallons total Pro-tank used on 2 sorties (18 and 24 Sept, respectively)
- g. Application Rate Averages: 6.67 gal/acre finish spray (5.85 oz/acre AI)

**APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 022
- b. Spray System (Modules Used) and System ID #: SP-3G MASS 3
- c. Nozzle Type/Orientation: Raindrop/Straight back
- d. Number of Nozzles: 18 Total; 9 left, 9 right
- e. Pressure: 40 p.s.i. average
- f. Flow Rate: 306 gallons/minute average

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 100'
- b. Spray Off-set: Weather dependent. No off-set when flown into the wind
- c. Spray Release Altitude: 100'
- d. Ground Speed: 200 KTS

**6. WEATHER OBSERVATIONS:** Overall favorable; Ground wind speed below 6 knots during application; RH above 40%

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

**a. Deposition Pattern:**

- (1) Techniques Used: Visual observation from PMP on range

**b. Effectiveness**

- (1) Techniques Used: Vegetation measurement, visual observations
- (2) Results: Will be determined in the spring of 2021

**8. REMARKS:**

This mission continues the mitigation of the invasive weed, cheat grass, in order to suppress range fires and promote the reestablishment of native flora, particularly native bunch grasses and sagebrush.

Unfortunately, spray activities were last conducted September 2016. Planned operations were hampered by hurricane relief deployment (910 AW) in 2017 for Hurricane Harvey, and were further hampered by operational i.e., exercise activities, at Mt Home AFB in 2018 and 2019.

The majority of the sorties were flown with a headwind or tailwind with less than a 45% crosswind component and all applications were observed as possible from the target by a certified applicator, verifying proper deposition. A significant factor in operations was the prevalence of a remarkable amount of smoke and haze from wildfires along CONUS west coast. Most notably, spray operations from same had to be shut down 18 September due to visibility minimums for spray operations were not met.

Despite limitations, 910 AW was able to complete approximately 95% of target herbicide application goals, while maintaining adequate overall coverage and deposition of Herbicide active ingredient. Original plan was to apply 7 gallons of finish spray/acre, and 6.0 oz of active ingredient diluted in the same volume. Ultimately on average the application rate was 6.67 gallons finish spray per acre and 5.58 oz active ingredient per acre. That's pretty damn good, all things considered. Application area is graphically rendered in Attachment 2.

Obviously, effectiveness of application of herbicide will need to be determined in spring 2021 by Mt Home Natural Resources Management. Expectation is that application will be highly beneficial, especially considering the application rate of herbicide was increased from years prior.

Special thanks to Mr. (b) (6) (NR), MUO Airfield operations, fire department, TA and range support. Coordination was generally great with all parties. Mr. (b) (6) arranged transportation for all aircrew, and TSgt (b) (6) made sure the 910AW was in compliance with MHAFB

requirements. We always appreciate the support. Best suggestion for more efficient application is to open Mt Home airfield and range control on the weekends for aerial spray activities if possible.

This continues to be an excellent training/real world mission, and I expect benefits to Mt Home AFB/Saylor Creek Range will benefit equally. We (910AW) would like to thank the personnel at Mountain Home AFB for the excellent support the 910AW received.

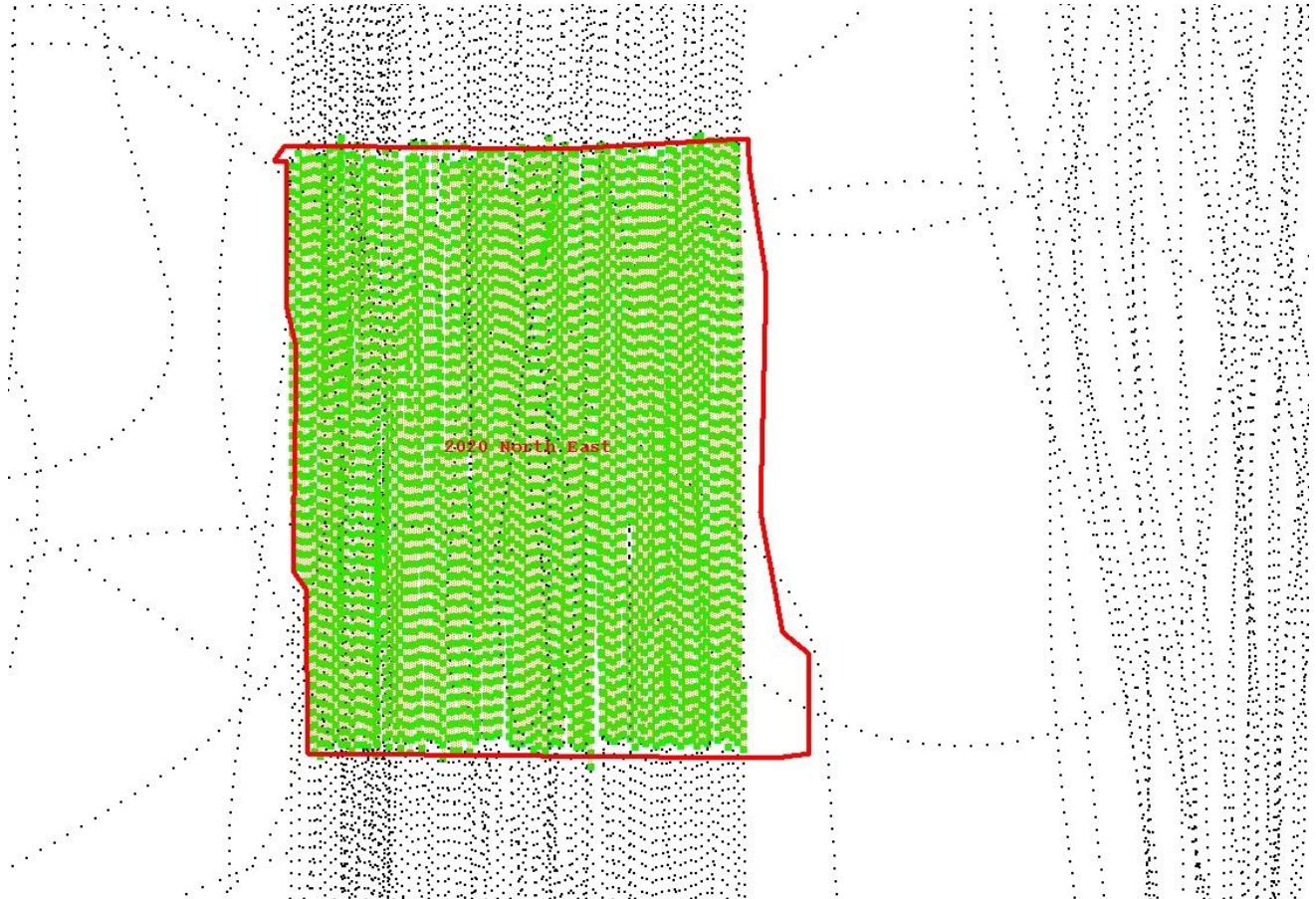
Lt Col (b) (6) , USAFR  
910 AW/757 AS  
Youngstown ARS

**Attachment 1. Summary Spray Chart****SPRAY OPERATIONS SUMMARY FOR SAYLOR CREEK RANGE  
14-25 September 2020**

<b>DATE Sep</b>	<b>SORTIE #</b>	<b>TIME OF APPLICATION</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>GALLONS OF PESTICIDE LOADED/ SPRAYED</b>		<b>FLYING HOURS</b>
15	1	0715-0910	334	1850	12.5	12.5	1.9
16	2	0716-0820	268	1845	12.5	12.5	1.1
16	3	0902-0933	140	925	12.5	6.8	0.5
17	4	0711-0758	276	1820	6.0	12.8	0.8
17	5	0840-0921	192	1261	12.5	8.5	0.7
18	6	0716-0750	16	110	4.0	1.2	0.6
21	7	0715-0815	246	1587	11.0	10.5	1.0
21	8	0855-0953	270	1855	8.5	12.5	1.0
22	9	0705-0826	260	1844	10.5	12.5	1.4
23	10	0720-0818	260	1827	12.5	12.5	1.0
23	11	0845-0945	272	1829	12.5	12.5	1.0
23	12	1015-1118	261	1839	12.5	12.5	1.1
24	13	0730-0835	255	1829	12.5	12.5	1.1
Totals			3,060	20,421		139.8	13.2



**Attachment 2. Map of application on Saylor Creek Range, ID 15-24 September 20. The red line outlines the spray block; green lines are individual application swaths.**





# AERIAL SPRAY OPERATIONAL SCHEDULE

## SAYLOR CREEK RANGE / MOUNTAIN HOME AFB, ID

### 14-25 SEPT 2020

### QZNRK3491258

**Purpose/Objectives/Benefits:** One C-130 will deploy to Mountain Home, ID from 14-25 September 2020. Aerial Spray flight proficiency training will be accomplished on Saylor Creek Bombing Range, ID while providing a beneficial herbicide treatment to prevent fire hazards, inhibit annual re-growth of cheat grass, and allow native vegetation to establish and be competitive.

#### 1. 910 AW PARTICIPANTS:

<b>Msn Commander:</b>	Lt Col (b) (6)	(b) (6)
Entomologist:	Lt Col (b) (6)	
Pilots:	Lt Col (b) (6)	(14-20)
	Lt Col (b) (6)	(19-25), Maj (b) (6) (14-20), Capt (b) (6) (14-20), Capt (b) (6) (19-25)
Navigator:	Lt Col (b) (6)	(19-25 Sep), Maj (b) (6) (14-20 Sep), Maj (b) (6) (19-25), Maj (b) (6) (14-20)
Flight Engineer:	CMSgt (b) (6)	(14-20), SMSgt (b) (6) (19-25)
Spray Operators:	SMSgt (b) (6)	(14-20), SMSgt (b) (6), MSgt (b) (6), TSgt (b) (6), SSgt (b) (6)
	SrA (b) (6)	
Spray Maintenance:	TSgt (b) (6)	(LEAD), MSgt (b) (6), MSgt (b) (6), TSgt (b) (6)
	SrA (b) (6)	
Crew Chiefs:	MSgt (b) (6)	
	SrA (b) (6)	
Specialists:	MSgt (b) (6)	, SSgt (b) (6), TSgt (b) (6), SrA (b) (6), SrA (b) (6), TSgt (b) (6), MSgt (b) (6), SrA (b) (6), TSgt (b) (6), SrA (b) (6)
Comm Package:	TSgt (b) (6)	, TSgt (b) (6) (14-20), SSgt (b) (6) (19-25), SSgt (b) (6) (19-25), SSgt (b) (6) (14-20), SrA (b) (6), Mr. (b) (6) (14-20)

#### 2. REQUIRED ITEMS

Msn Commander:	MC Laptop Computer
Entomologist:	PCM Card, Pest Safety Binder, VHF, Radios, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, Calibration Tables/Laptop and or Spray datasheet, O2 hose extensions, wireless headsets
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand held radios; Wingman system cards

### **3. SCHEDULE: (Local Times)**

#### **14 Sept (Mon) Deploy to KMUO**

0900 Show KYNG

1100 Support aircraft depart KYNG MI – QANRK0231258

PPR: XO-1401 Vader 21

1100 Spray aircraft depart KYNG MI – QZNRK3491258

PPR: XO-1402 Vader 22

1515 Support aircraft land KMUO

1515 Spray aircraft land KMUO – **Expect Parking Row 10 for Spray Aircraft**

#### **15-18 Sept (Tues-Fri) Spray Sorties** Range: Tues-Thurs 0730L - 0930L Fri 0730L-1000L

0430 Show KMUO/WX decision/load

0710 Depart KMUO

0730-0930 Range Time Tues-Thurs, 0730-1000 Range time Fri

1000 Land KMUO

#### **19 Sept (Sat) Support Aircraft**

0700 Show KYNG

Call DSN: 728-2222

0900 Depart KYNG

MI – QANRK0231263

PPR: 240-01MD Vader 23

1315 Land **KBOI @ Jackson Jet Center**

#### **20 Sept (Sun) Support Aircraft**

0700 Show KBOI

0900 Depart KBOI

1600 Land KYNG

#### **21-24 Sept (Mon-Thurs) Spray Sorties** Range: 0730L - 0930L

0430 Show KMUO/WX decision/load

0710 Depart KMUO

0730-0930 Range Time, We also have range time on Friday if we need one more day to spray.

1000 Land KMUO

#### **24 Sept (Thurs) Support Aircraft**

0900 Show KYNG

One week out max for PPR's

1100 Depart KYNG

Call DSN: 728-2222

1445 Land KMUO

PPR: XX Vader XX

#### **25 Sept (Fri) Redeploy to YNG**

0700 Show KMUO

0900 Spray aircraft depart KMUO

0900 Support aircraft depart KMUO

1600 Spray aircraft land KYNG

1600 Support aircraft land KYNG

### **4. AIRCRAFT & SPRAY CONFIGURATION:**

System:	SP-3G MASS: 3
Nozzle /Orientation:	Raindrop/Straight Back
Number of nozzles:	Fuselage – 18 nozzles

## **5. SPRAY MIXING AND LOADING:**

Entomologist will determine quantity to load and work with the local pest managers to determine the application rate. System will be calibrated after the chemical is loaded. Please see entomologist for final flow spray parameters as these numbers are subject to change depending on user requirements

### **a. In each gallon of mix:**

0.57 ounces of Panoramic® 2SL herbicide (0.44 gal in 100 gal of water)

0.32 ounces of Pro Tank (2 pints in 100 gal)

0.64 ounces of Clasp® (0.5 gal in 100 gal)

126.5 ounces of water

### **b. First Load (4 Tanks of 450 gal each + sump of 75 gal)**

Fill to 450 gal water/tank using the pump on the water tanker truck. This is done by putting the filler hose into the rear tank with all tanks open to the common sump.

Total water in tanks = 1,800 gal.

75 gal/water in sump

Total water added = 1,875 gal

Load 8.3 gal of Panoramic®; add 4.7 gal of Pro Tank, and 9 gal of Clasp® while agitating approximately 5-7 min

Total quantity mix 1888 gal

### **c. Subsequent Loads**

Fill with water for a total of 1800 gal; use “per 100 gal of water” measurements given above.

When the MASS is returned empty load 1800 gal of water and add: 8.1 gal of Panoramic®; 4.5 gal of Pro Tank, and 9 gal of Clasp®.

## **6. SPRAY PARAMETERS:**

Location:	All prescribed areas
Chemical:	Panoramic® 2SL (active ingredient: 23% imazapic ammonium)
Area to be treated:	3,216 acres
Swath Width:	100 feet
Flow Rate:	326 gal/min (we are treating at 46.5 acres/minute)
Application Rate:	7 gal/acre (4 oz of Panoramic® per acre)
Altitude:	100' AGL
Ground Speed:	200 Knots
Flush:	Water

## **7. RADIO FREQUENCIES: \* Confirm these Freqs at the inbrief.**

**Mt Home AFB:** ACC COMD POST 311.0/321.0

**Saylor Creek Range:**(Cowboy Control): 236.05

If Cowboy Control isn't up, contact MUO APP on 124.8/259.1

Sagebrush Control: 251.2, Paradise MOA: 272.7/236.05/225.55

Owyhee MOA: 392.2/266.35, Bruneau/Sheep Creek MOA: 251.875

**Air to Ground:** Confirm Freq with Entomologist.

**10. TRANSPORTATION: 366 LRS U-Drives**

**Confirmation # 31360446**

- (1) Sedan (MC 1<sup>st</sup> week/MC 2<sup>nd</sup> Week)
- (1) Sedan Comm (b) (6) )
- (1) Truck not a 4X4 (b) (6) )
- (1) 8 PAX VAN: O's (1<sup>st</sup> week (b) (6) /2<sup>nd</sup> week (b) (6) )
- (1) 8 PAX VAN: E's (b) (6) )
- (1) 15 PAX VAN Spray MX: (b) (6)
- (1) 15 PAX VAN Specialists: (b) (6) )

**11. LODGING:**

**Mountain Home Inn**

1180 US-20, Mountain Home, ID 83647

(208) 587-9743 POC: (b) (6) (208) 587-7300 (b) (6)

Spray MX/ MX/ COMM/ (b) (6) / (b) (6) are staying at this hotel.

\* Aircrew and CC's on the support planes on 14-15 and 24-25 September will also be staying at this hotel. Spray MX will need to give the aircrew/CC's a ride to the hotel and back to the flight line in the morning.

\* On the 19<sup>th</sup> of September, someone from COMM will have to drive up to Boise International Airport to pick up your swap out members at Jackson Jet Center.

\* The MC will need to pick up MSgt (b) (6) and take him to the hotel in Mt. Home on Saturday.

\* Sunday morning 20<sup>th</sup> of September, someone from Comm will have to drive your members headed back to KYNG up to Jackson Jet Center at KBOI.

**Spring Hill Suites by Marriott Boise Parkcenter \* OPS is staying in Boise**

424 E Parkcenter Blvd, Boise, ID 83706

(208) 342-1044n POC (b) (6) (208) 433-5127 (b) (6)

\* OPS Aircrew and (b) (6) will be staying here.

\* On the swap out weekend of 19-20 September, someone will need to pick up and drop off the aircrew at Jackson Jet Center at Boise International Airport.

**12. CONTACTS: MT Home AFB, ID: DSN: 728-XXXX ; Com (208) 828-XXXX**

Civil Engineer:	x2831	
Base Ops:	x2222	
Transit Alert:	x2252	
Range Operations:	x2985	Mr. (b) (6) Cell (b) (6)
NR Mgr/Spray Project POC	x1784	(b) (6)
Entomology:	x6300	
Environmental Mgmt:	x6351	
Lodging:	x5200	FAX x4797
Transportation:	x2215	208-828-2215 FAXx1619
Weather:	x6303	
Fire Dept:	x6292	
Wing Safety	x2065	
Visiting Unit Coordinator:	x1449	
Wing Plans:	x4049	
Public Affairs:	x6800	



# AERIAL SPRAY MISSION REPORT

MISSION # 07NPK 3431293 ACFT CC (b) (6) MSN CC (b) (6)

PEST Cheat Grass CHEMICAL PLATEAU DILUENT \_\_\_\_\_

ACFT # 022 MASS # 3 # OF NOZZLES 18 TIPS raindrop

\*Contact AFRC Command Center Daily with Mission start date, end date, Operation name, daily number sorties, and total mission sorties 1 800-223- 1784 ext 70680 or DSN: 497-0680

PILOTS (b) (6) (b) (6)

NAVS (b) (6)

FLT ENG (b) (6)

SPRAY LM (b) (6) (b) (6) (b) (6)

## FERRY DATA

DATE	TAKEOFF	LAND	TIME	INTINERARY	REASON FOR STOP
20 OCT 19	1500Z	2028	5.3	YNG - HIF	DEPLOY
26 OCT 19	1515Z	2000	4.7	HIF - YNG	REDEPLOY

FERRY SORTIES/TIME 2 , 10.0 SPRAY (TNG) SORTIES/TIME: 9 , 11.0

TRAINING DATA: NAME \_\_\_\_\_ CONFIGURATION PROFILES AND # \_\_\_\_\_

PILOT \_\_\_\_\_

COPILOT \_\_\_\_\_

NAVIGATOR \_\_\_\_\_

FE \_\_\_\_\_

SPRAY LM (b) (6) (b) (6) \_\_\_\_\_

QUALIFICATION FLT: NAME/DATE \_\_\_\_\_

SPRAY DATA			TARGET DATA								WEATHER DATA		
T/O	LAND	TIME	ON TARGET TIME	OFF TARGET TIME	ALT/ AGL	SPRAY ON TIME	PASS SWATH	ACRES	QUANTITY LOADED	QUANTITY SPRAYED	STAB CLASS	WIND	CLOUD CLOVER

DATE 21 OCT 19

TARGET UTR BLOCK 1

SUNRISE:

SUNSET:

1	1510	1610	1.0	1525	1550	100	N/A	N/A	N/A	1850	N/A	—	040/3	BKN
2	1650	1749	.9	1703	1725	100	3+15	2.5	151	"	825	—	310/A	BKN

1.9

3+15 2.5 151 1850 825

DATE 22 OCT 19

TARGET UTR Block 1-2-3-4

SUNRISE:

SUNSET:

1	1425	1525	1.0	1440	1510	100	5+26	4	253	1806	1692	—	140/5	CLR
2	1610	1715	1.1	1625	1700	100	5+39	5	263	1800	1736	—	280/5	CLR
3	1755	1910	1.3	1810	1855	100	5+20	6	248	1800	1696		220/13	CLR

3.4

16+25 15 764 5406 5124

DATE 23 OCT 19

TARGET UTR Block 4

SUNRISE:

SUNSET:

	1410	1525	1.2	1425		100	5+21	5	249	1800	1747	—	315/18	CLR

1.2

5+21 5 249 1800 1747

DATE 24 OCT

TARGET UTR Block 5-6 - DUSWAY

SUNRISE:

SUNSET:

1	1415	1545	1.5	1430	1525	100	5+38	8	262	1800	1768	—	020/10	CLR
2	1705	1830	1.4	1720	1810	100	5+37	4	261	1800	1743	—	015/10	CLR
3	1930	2105	1.6	2000	2045	100	2+30	3	116	881	827	—	300/A	CLR

4.5

13+45 15 639 4481 4338

DATE

TARGET

SUNRISE:

SUNSET:


GRAND  
TOTAL

11.0

38+46 37.5 1803 13537 12,044

910 AW 0-85

\*Contact AFRC Command Center Daily with Mission start date, end date, Operation name, daily number sorties, and total mission sorties 1 800-223- 1784 ext 70680 or DSN: 497-0680

# AERIAL SPRAY FLOW RATE DATA

10/21	SWATH	GALLONS	TIME	FLOW RATE
BLOCK 1	X			
	X	786	2+55	269
	X	825	3+15	253
10/22	X	820	2+33	321
BLOCK 1-2	X	1268	3+58	319
LIFT 1	X	1692	5+26	311
LIFT 2	X	464	1+26	323
	X	926	2+52	323
BLOCK 2	X	1287	3+59	323
	X	1589	5+06	311
LIFT 2	X	1736	5+39	307
LIFT 3	X	574	1+48	318
BLOCK 3	X	1059	3+35	323
	X	873	2+43	321
	X	694	2+10	320
BLOCK 4	X	1524	4+43	323
125	X	1696	5+20	318
10/23	X	542	1+39	328
BLOCK 4	X	893	2+43	328
	X	1248	3+48	328
	X	1597	4+53	327
	X	1747	5+21	326
10/24	23	259	+49	317
BLOCK 5	24	514	1+37	317
	25	-	-	-
	26	1003	3+11	315
BLOCK 6	27	1198	3+47	315
	28	-	-	-
	29	1583	5+01	315
LIFT 1	30	1768	5+38	313
LIFT 2	5	203	+37	329
	6	413	1+13	

10/24	SWATH	GALLONS	TIME	FLOW RATE
DUGWAY	1	920	2+49	
	2	1319	4+05	
	3			
	4	1743	5+37	310
2	5	827	2+30	
	6	-	-	
	7	-	-	
3	8			
DONE	9			
	10			
	11			
	12			
	13			
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	30			



**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
GRAND FORKS AFB, ND, 1 – 4 JUNE 2021**

**1. MISSION BASICS:**

- a. Installation Sprayed: Grand Forks AFB, ND
- b. Mission Duration: 1 – 4 June 2021
- c. Purpose of Application: Control of nuisance and vector mosquito species through application of larvicide
- d. Application Dates: 2 June 2021
- e. Times of Application (Local):
  - (1) Sortie 1: 0715-0810
  - (2) Sortie 2: 0955-1100
  - (3) Sortie 3: 1145-1300
- f. Acres Treated: 1,041
- g. Flying Data:
  - (1) Spray sorties/hours: 3/3.3
  - (2) Flush sorties/hours: 0/0
  - (3) Ferry sorties/hours: 2/6.6
  - (4) Training sorties/hours: 1/1.0
- h. Project Coordinator (Name/Rank, Title, Phone #): SSgt (b) (6) [redacted], Pest Management, DSN (b) (6)
- i. Date Spray Map Last Approved: 1 June 2021
- j. Installation In-Briefing: (When/Where/Briefer/s): 1 June 2021 at 319 CE, briefed by Lt Col (b) (6) [redacted]

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6) [redacted]
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) [redacted] (A/C), Capt (b) (6) [redacted]
  - (2) Navigator: Maj (b) (6) [redacted]
  - (3) Flight Engineer: TSgt (b) (6) [redacted]
  - (4) Spray Operators: SMSgt (b) (6) [redacted], SSgt (b) (6) [redacted]
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) [redacted] (lead), TSgt (b) (6) [redacted], TSgt (b) (6) [redacted], SSgt (b) (6) [redacted], SrA (b) (6) [redacted]
  - (2) Crew Chiefs: TSgt (b) (6) [redacted], SrA (b) (6) [redacted]
  - (3) Comm/Nav: TSgt (b) (6) [redacted]
- d. **Entomologist:** Lt Col (b) (6) [redacted]

**3. PESTICIDE:**

- a. Trade Name: Altosid® Liquid Larvicide Concentrate (SR20)
- b. EPA Registration Number: 2724-446
- c. Formulation Sprayed: 0.41 ounces Altosid® per gallon with water
- d. Other Additives Used: None
- e. Gallons Pesticide Mix Loaded: 2,095
- f. Gallons Pesticide Mix Applied: 2,095
- g. Gallons and Name of Flush Used: 10 gal water
- h. Application Rate: 2.0 gal/acre mixed formulation, 0.82 oz/acre active ingredient (Altosid®)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 89-9106
- b. Spray System (Modules Used) and System ID #: MASS SP2G
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: R-20 raindrop nozzles
- e. Nozzle Orientation & Number Used: 12 nozzles oriented straight back
- f. Flow Rate: 187 gallons per minute.

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 200'
- b. Spray Off-set: None
- c. Spray Release Altitude: 100' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. See Attachment 1.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations.
  - (2) Results: Adequate coverage through sprayed area (Attachment 2)
- b. Effectiveness:
  - (1) Technique/s Used: Larval sampling for treatment justification.
  - (2) Results: Because of the nature of the pesticide used (insect growth hormone), larvae are not immediately killed but instead die in the pupal stage. Therefore, post-treatment sampling must occur after the treated larvae have pupated. Pupae are then collected and observed for emergence of adults. This generally will take a week or more; as such, results cannot be determined at this time.

**8. REMARKS:**

- a. Due to recent weather conditions, many of the proposed treatment blocks were found to be lacking water and therefore unsuitable for mosquito breeding. Because treatment of these areas would not result in reduction of mosquito numbers, they were not treated as originally



planned. Additionally, it was determined that the 321 acre pond area in the southeast only required treatment along the drainage ditches on the east, west, and south edges of the block. The rest of the spray block consists of deep water where mosquitoes typically do not breed. Attachment 2 shows the areas originally planned to be treated and those that were actually treated.

- b. Weather conditions during application were ideal for the larvicide application. There were no significant issues observed during this treatment for control of larval mosquitoes.
- c. We would like to thank the Air Wing for a very nice reception at Grand Forks. In particular, we would like to thank SSgt (b) (6) for his support in ensuring items such as available water supply, vehicles, public affairs notification, and the scheduled inbrief were arranged prior to the spray team's arrival. This mission would not have been possible without this support.

(b) (6), Lt Col, USAF  
**DOD CERTIFIED PEST MANAGEMENT  
PROFESSIONAL**



**Attachment 1: Ground weather observations for Grand Forks AFB, ND during spray operations, 2 June 2021.**

DATE June	Sortie	Time (local)	Wind (mph)	Wind Direction	Relative Humidity (%)	Temp (°F)	Conditions
2	1	0750	7.1	172°	62	62	Clear
2	2	1053	10.0	150°	55	76	Clear
2	3	1251	8.2	186°	52	83	Clear

**Attachment 2. Areas sprayed at Grand Forks AFB, 2 June 2021. Red outlines are the proposed spray blocks, green lines are the actual spray application.**





**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND**

26 February 2021

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757AS/DOS  
3976 King Graves Rd  
Vienna, Ohio 44473-0910

SUBJECT: Concept of Operations for Aerial Spray at the Utah Test and Training Range

1. Aerial spray flight proficiency training will be accomplished on Targets 21, 23, 24, and Nord LZ at the Utah Test and Training Range (UTTR). Spray sorties will apply Krovar to control vegetation (i.e., *Halogeton*) growth aiding bombing mission test evaluations and unexploded ordnance recovery. Two aerial spray-configured and one support C-130 will be available from 8-19 March 2021 for the requested spray mission. A swap out Mission is scheduled over the weekend to maximize aircrew training over the two week period.

2. Concept of Operations:

ALL TIMES LOCAL

a. 8 March (Monday)

1000 Vader 24 departs (Support) KYNG  
1015 Vader 07 departs KYNG  
1030 Vader 08 departs KYNG  
1330 Vader 24 lands KHIF  
1345 Vader 07 lands KHIF  
1400 Vader 08 lands KHIF

b. 9-12 March (Tuesday - Friday)

0800 Spray 07 departs KHIF  
0830 Spray 08 departs KHIF  
1200 Spray 07 lands KHIF  
1230 Spray 08 lands KHIF

c. 13 March (Saturday)

0900 Vader 24 departs KHIF  
1530 Vader 24 lands KYNG

d. 14 March (Sunday)

1000 Vader 24 departs KYNG  
1330 Vader 24 lands KHIF

e. 15-18 March (Monday – Thursday)

0800 Spray 07 departs KHIF

0830 Spray 08 departs KHIF

1200 Spray 07 lands KHIF

1230 Spray 08 lands KHIF

f. 18 March (Thursday)

1000 Support aircraft departs KYNG

1330 Support aircraft lands KHIF

g. 19 March (Friday)

0900 Vader 07 departs KHIF

0910 Vader 08 departs KHIF

0920 Vader 24 departs KHIF

0920 Support aircraft departs KHIF

1530 Vader 07 lands KYNG

1540 Vader 08 lands KYNG

1550 Vader 24 lands KYNG

1600 Support aircraft lands KYNG

3. Spray parameters:

Herbicide: Krovar 1DF®

Application rate: 22.5 gal/acre (10 lbs Krovar in 22.4 gal of water)

Acreage: 1,700 acres (Targets 21, 23+24)

Ground speed: 200 knots (337.55 ft/sec)

Spray altitude: 100 feet AGL

Swath width: 35 feet

4. Lt Col (b) (6) (8-13 Mar) and Maj (b) (6) (14-19 Mar) will serve as the mission commanders.

5. Aircraft Commanders:

Lt Col (b) (6)

Lt Col (b) (6)

Lt Col (b) (6)

Lt Col (b) (6)

6. Support required at both Hill AFB and the UTTR has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
MINOT AFB, MINOT, AND WILLISTON, 12-16 JULY 2021**

**1. MISSION BASICS:**

- a. Areas Sprayed: Minot AFB; Minot, Burlington, and Williston ND
- b. Mission Duration: 12-16 July 2021
- c. Purpose of Application: Control of adult nuisance and vector mosquitoes
- d. Application Dates: 14, 15 July 2021
- e. Times of Application (Zulu): 0296-0558 hrs 14 July (Minot City, Burlington, Minot AFB); 0231-0506 hrs 15 July (Williston)
- f. Acres Treated: 26,552 (Minot City, Burlington, Minot AFB); 17,505 (Williston) = 44,057 acres total
- g. Flying Data:
  - (1) Spray sorties/hours: 3.2 (14 July); 2.4 (15 July) = 5.6 hrs
  - (2) Ferry sorties/hours: 2/7.0
- h. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) (Minot AFB); (b) (6) (City of Minot); (b) (6) (City of Williston)
- i. Date Spray Map Last Approved: 13 July 2021
- j. Installation In-Briefing: (When/Where/Briefer/s): 13 July 2021 at CES Ready Rm, briefed by Lt Col (b) (6) /Lt Col (b) (6) (YARS) and 5 CES/CC; Ms. (b) (6) , 5CES/CD, Mr. (b) (6) (Minot Pest Management). (b) (6) , (b) (6) (City of Minot); (b) (6) (Williston) via telephone
- k. Mission Identifier: QZNRK7571193

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
  - (1) Pilots: Lt Col (b) (6) , Maj (b) (6)
  - (2) Navigators: Lt Col (b) (6) , Lt Col (b) (6)
  - (3) Flight Engineer: SMSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6) , SSgt (b) (6) , SSgt (b) (6) (b) (6) SrA (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) (Lead), MSgt (b) (6) , MSgt (b) (6) , SrA (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6) , TSgt (b) (6)
  - (3) Avionics: TSgt (b) (6)
- d. **Entomologist:** Lt Col (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Trumpet® EC (78% A.I. naled) (Minot, Minot AFB, Burlington); Zenivex (20% etofenprox) (Williston)
- b. EPA Registration Number: 5481-481 Trumpet® EC (78% A.I. naled); 2724-791 Zenivex
- c. Additives Used: 45 gallons of BVA oil with Zenivex see below
- d. Gallons Pesticide Loaded: 210 gal Trumpet® (14 Jul); 45 gal Zenivex (15 Jul)
- e. Gallons Pesticide Applied: 210 gal gallons Trumpet® (14 Jul); 45 gal Zenivex + BVA oil (15 Jul)
- f. Gallons and Name of Flush Used: 20 gallons H.A.N. (Highly Aromatic Naphtha)
- g. Application Rate: 0.98 oz/acre (14 Jul with Trumpet); 0.32 oz/acre (15 Jul with Zenivex)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 89-0106
- b. Spray System (Modules Used) and System ID #: SP2G, System #1
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: 8003 Tee Jet
- e. Nozzle Orientation & Number Used: 31 nozzles oriented straight down (14 Jul); 15 nozzles (15 Jul)
- f. Nozzle pressure: 41 psi
- g. Flow Rate: 7.1 gal/minute (14 Jul); 4.5 gal/min (16 Jul)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: 2000 ft Minot and Minot AFB; 4000 ft Williston
- c. Spray Release Altitude: 300' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 140@3 (14 Jul); 160@10 (July 15)
  - (2) Release Altitude: 135@8 kts (14 Jul); 160/16 kts (15 Jul)
- b. Temperature (Degrees Fahrenheit): 71°F (14 Jul); 75°F (15 Jul)
- c. Relative humidity: 61% (14 Jul); 50% (15 Jul)
- c. Cloud Cover: Clear
- d. Source: Ground observations and aircraft SCNs

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Application Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations. Note that GPS logs for this series of applications are not available as GPS shutdown procedure failed to record readily viewed data.
  - (2) Results: Adequate coverage throughout the sprayed area
- b. Effectiveness:
  - (1) Technique/s Used: Pre- and post-spray surveillance were conducted using CDC light traps.
  - (2) Results: Environmental conditions were reasonably favorable for effective mosquito control during both applications. Minot AFB and City of Minot reported good control at both locations. Williston reported short-term suppression, followed by significant resurgence in mosquito populations shortly thereafter.

## Mosquito Trap Counts: Minot AFB

Pre spray cumulative trap count: 493 (July 12)

Post spray cumulative trap count: 17 (July 15)

Percent reduction: 96.5%

7	2	↓	ON	NO	7	↓	ON	CO <sub>2</sub>	1	↓	ON	CO <sub>2</sub>	5	↓	ON	CO <sub>2</sub>	3	↓	ON	CO <sub>2</sub>	1	↓	ON	NO	7	8	9	6	5	6	7	76	74	72	68	66	66	70	
8	-				-				-				-				-				-																	No Trapping Due to Weather	
9	-				-				-				-				-				-																		
10	-				-				-				-				-				-																		
11	-				-				-				-				-				-																		
12	52	↑	ON	ICE	60	↑	ON	ICE	352	↑	ON	ICE	1	↓	ON	ICE	5	↑	ON	ICE	23	↑	ON	YES	16	14	10	9	8	8	11	82	79	76	72	70	68	75	Dry Ice All Traps - <1/4 Full
13	-				-				-				-				-				-																	No Trapping Due to A.S.	
14	-				-				-				-				-				-																	No Trapping Due to A.S.	
15	0	↓	ON	ICE	0	↓	ON	ICE	6	↓	ON	ICE	10	↓	ON	ICE	0	↓	ON	ICE	1	↓	ON	ICE	12	14	9	7	8	10	10	89	87	84	78	76	76	82	Dry Ice All Traps - <1/4 Full

## Mosquito Trap Counts: City of Minot/Burlington

Pre spray cumulative trap count: 157 (July 14)

Post spray cumulative trap count: 5 (July 16)

Percent reduction: 96.8%

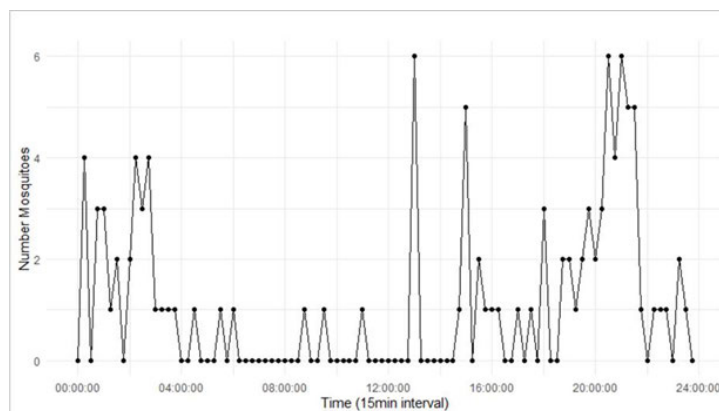
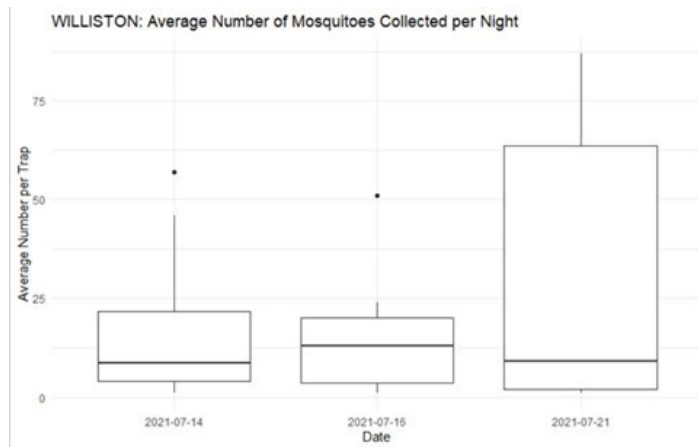
Mosquito counts 2021 July																																		
Material type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				Total
Moose	284	159				992	67	88				66	107	100	13	3			253	239	309	281					1192	472						4625
Nubbin																																		0
Souris	51	36				168	36	52				147	50	57	94	2			188	96	42	65					1387	137						2608
																																		0
																																		0
																																		0
Total per day	335	195	0	0	0	1160	103	140	0	0	0	213	157	157	107	5	0	0	441	335	351	346	0	0	0	0	2579	609	0	0	0	0	0	0

## Williston Mosquito Trap count and ancillary data:

collection_date	average
2021-07-14 (Pre Spray)	16.37500
2021-07-16 (Post Spray)	14.54545
2021-07-21	31.13333

Cumulative reduction: 11.2%





## 8. REMARKS:

Due to initial drought conditions being experienced in 2021 in the greater North Dakota area and subsequent lack of seasonal flooding in the Yellowstone/Missouri basin, the original expectation of this mission going forward was minimal. However, some significant rainfall events occurred approximately 2 weeks prior to scheduled application, and users indicated there was a justifiable need based mosquito trapping data to proceed on planned timetable.

Based on pre and post-spray trapping results, the efforts were tangible for all locations with some caveats. Mosquito reduction at Minot AFB and City of Minot were 96.5 and 96.8% respectively, and seem to have effectively suppressed populations for a significant amount of time, although trap data from City of Minot would definitely suggest that as expected, the mosquito populations were coming back with a vengeance 2 weeks post application. Based on City of Minot's analysis of their historical and current mosquito trap data, they suggest a June application might not be nearly as critical as an August application. This observation has been noted, and the 2022 schedule has been tentatively modified to support those observations.

Application at Williston location was much more ambiguous. Conditions at the time of application were not ideal, but also they were not out of reasonable application limits. Looking at the hard pre/post spray data would suggest that effectiveness based on trap data was 11.2%. Director of Mosquito Control at Williston acknowledged this in personal communication. Dr. (b) (6) (Director) indicated that there was a significant suppression of mosquito populations immediately post-application, but based on his data he thought population resurgence might be due to massive amounts of mosquito immigration from outlying areas or potentially the physical characteristics of pesticide of choice (Zenivex) were perhaps not suitable in that particular situation due to relatively low specific gravity of the compound. Analysis and choice for future activities and material will be investigated by Dr.(b) (6), based on the needs of the Williston Mosquito control division.

We (910AW), very much appreciate coordination between all collaborators on this mission. Thanks to Mr. (b) (6) (5CES) for facilitating the logistics of mission between the City of Minot and Williston. Many thanks to Mr. (b) (6) and Mr. (b) (6) (City of Minot), for instigating a mosquito monitoring program to compensate for the loss of monitoring by the ND state health organization. For our organization that information is hugely important. Finally, thanks to Dr. (b) (6) at Williston for his comprehensive analysis of ongoing needs and subsequent results.

There currently are no other scheduled spray missions for Minot and environs in FY2021. It is anticipated that the City of Minot and Williston Vector Control will renew their Innovative Readiness Training projects for next year. The Spray Unit has tentatively scheduled Minot missions in mid-July and mid-August 2022. These will be confirmed by user input.

(b) (6), Lt Col, USAF  
**DOD Certified Pest Management Professional**



**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT  
TYNDALL AFB, FL AND JB CHARLESTON, SC, 14 – 18 JUNE 2021**

**1. MISSION BASICS:**

- a. Installation Sprayed: Tyndall AFB, FL; JB Charleston, SC
- b. Mission Duration: 14 – 18 June 2021
- c. Purpose of Application: Control of nuisance and vector mosquito species through application of adulticide
- d. Application Dates: 15 June 2021 (Tyndall AFB); 17 June 2021 (JB Charleston)
- e. Times of Application (Zulu):
  - (1) Tyndall AFB; 15 June 2021: 0150 – 0250
  - (2) JB Charleston; 17 June 2021: 2300 – 0018
- f. Acres Treated:
  - (1) Tyndall AFB: 25,854
  - (2) JB Charleston: 18.405
- g. Flying Data:
  - (1) Spray sorties/hours: 2/5.5
  - (2) Flush sorties/hours: 0/0
  - (3) Ferry sorties/hours: 2/4.0
- h. Project Coordinator (Name/Rank, Phone #):
  - (1) Tyndall AFB: TSgt (b) (6), DSN 523-2811
  - (2) JB Charleston: MSgt (b) (6), DSN 673-5266
- i. Date Spray Maps Last Approved: 11 June 2021 (Tyndall AFB); 15 June 2021 (JB Charleston)
- j. Installation In-Briefing: (When/Where/Briefer/s):
  - (1) Tyndall AFB: 15 June 2021 via teleconference, briefed by Lt Col (b) (6) and Lt Col (b) (6)
  - (2) JB Charleston: 15 June 2021 at CE, briefed by Lt Col (b) (6) and Lt Col (b) (6)

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) (A/C), Capt (b) (6)
  - (2) Navigators: Lt Col (b) (6), Capt (b) (6)
  - (3) Flight Engineer: MSgt (b) (6)
  - (4) Spray Operators: MSgt (b) (6), SSgt (b) (6), SrA (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) (lead), TSgt (b) (6), TSgt (b) (6), SSgt (b) (6), SrA (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6), SrA (b) (6), (b) (6)

- (3) Comm/Nav: MSgt (b) (6)  
d. **Entomologist:** Lt Col (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Trumpet® EC (78% a.i. naled)
- b. EPA Registration Number: 5481-481
- c. Additives Used: None
- e. Gallons Pesticide Loaded: 345
- f. Gallons Pesticide Applied:
  - (1) Tyndall AFB: 225
  - (2) JB Charleston: 120
- g. Gallons and Name of Flush Used: 10 gal highly aromatic naptha (HAN)
- h. Application Rate:
  - (1) Tyndall AFB: 1.1 ounces per acre
  - (2) JB Charleston: 0.83 ounces per acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 90-9108
- b. Spray System (Modules Used) and System ID #: MASS 4, SP2G
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: 8003 Tee Jet Flat Fan
- e. Nozzle Orientation & Number Used:
  - (2) Tyndall AFB: 29 nozzles oriented straight down
  - (2) JB Charleston: 25 nozzles oriented straight down
- f. Flow Rate:
  - (1) Tyndall AFB: 8.1 gallons per minute
  - (2) JB Charleston: 6.0 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 200'
- b. Spray Off-set: 2,000'
- c. Spray Release Altitude:
  - (1) JB Charleston: 150' AGL
  - (2) Tyndall AFB: 300' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Tyndall AFB: Wind (ground) 240° @ 10 mph; wind (altitude) 235° @ 12 mph; temperature 85°; relative humidity 72%
- b. JB Charleston: Wind (ground) 190° @ 6 mph; wind (altitude) 180° @ 6 mph; temperature 84°; relative humidity 46%

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations.
  - (2) Results: Adequate coverage through sprayed area (Attachments 2 and 3)
- b. Effectiveness:
  - (1) Technique/s Used: CDC light trap surveillance for treatment justification.
  - (2) Results: Pre- and Post-treatment surveillance results for JB Charleston are listed in attachment 1. Tyndall AFB results are currently pending.

**8. REMARKS:**

- a. Pre-treatment surveillance at JB Charleston revealed extremely high populations of salt marsh mosquitoes, *Ochlerotatus taeniorhynchus* and *Ochlerotatus sollicitans*. Because these are mosquitoes that are active earlier in the day than many species of mosquitoes, the aerial adulticide treatment was conducted in the early evening rather than after sunset to increase efficacy. The timing of application was no more than two hours prior to sunset in accordance with the pesticide label and to minimize non-target effects. Unfortunately, post-treatment surveillance did not indicate a significant reduction in mosquito populations. The reason for this is unclear, however it is recommended that future applications occur at sunset to target a broader range of mosquito behavior.
- b. Weather conditions on both nights were ideal for adulticide application. The spray system was calibrated each day on the ground prior to application, and there were no issues observed during this treatment for control of adult mosquitoes.
- c. We sincerely appreciate the outstanding support received from both JB Charleston and Tyndall AFB. In particular, we would like to thank MSgt (b) (6) , TSgt (b) (6) , and Mr. (b) (6) for their support in making all necessary arrangements prior to the spray team's arrival, and for providing field observational support during the spray applications. We would also like to thank HM3 (b) (6) for conducting pre- and post-treatment surveillance at JB Charleston. This mission would not have been possible without the support of all those involved.

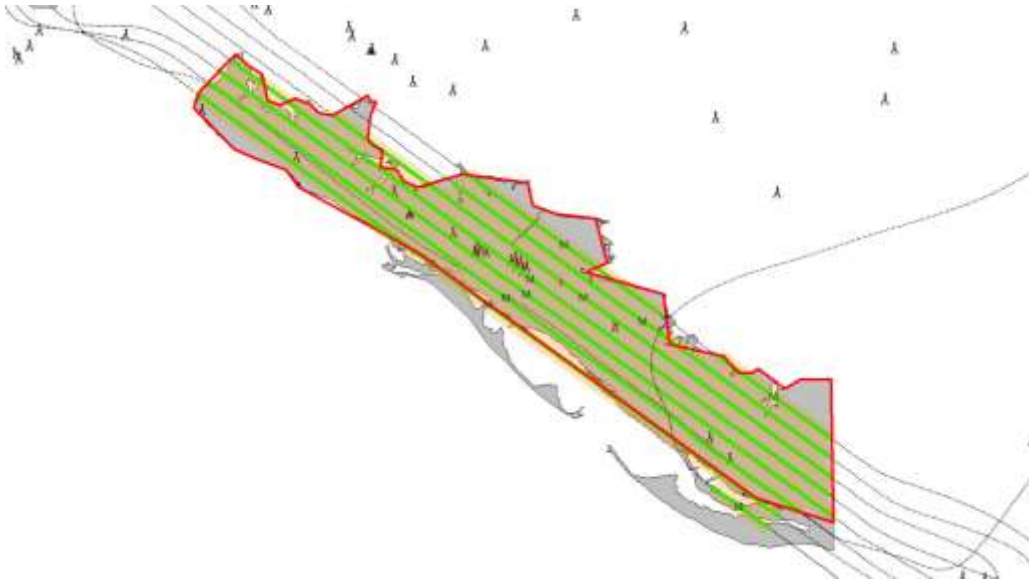
(b) (6) , Lt Col, USAF  
DoD Certified Pest Management Professional

**Attachment 1. Pre- and post-treatment CDC light trap surveillance mosquito counts as reported by JB Charleston preventive medicine personnel.**

<b>Location</b>	<b>Pre-treatment (10 June 2021)</b>	<b>Post-treatment (21 June 2021)</b>
Marrington Park	372	228
Spillway (Water Front Office)	4,492	4,124
Hopper Bridge	6,796	5,228
Golf Course	524	432
NIWC (SPAWAR)	852	532
<b>TOTAL</b>	<b>13,036</b>	<b>10,544</b>



**Attachment 2. Area sprayed at Tyndall AFB, 14 June 2021. Red outline is the proposed spray block, green lines are the actual spray application.**



**Attachment 3. Area sprayed at JB Charleston, 17 June 2021. Red outline is the proposed spray block, green lines are the actual spray application.**





**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
CRANEY ISLAND/PORTSMOUTH, 24-26 AUG 2021**

**1. MISSION BASICS:**

- a. Installations Sprayed: Craney Island Army Corps of Engineers; Portions of Portsmouth, VA
- b. Mission Duration: 24-26 August 2021
- c. Purpose of Application: Control of nuisance and vector mosquito species at Craney Island Army Corps of Engineers/Portsmouth, VA
- d. Application Date: 25 August 2021
- e. Times of Application (Zulu): 1935-2125
- f. Acres Treated: 8,757
- g. Flying Data:
  - (1) Spray sorties/hours: 1/1.8
  - (2) Ferry sorties/hours: 2/2.8
- h. Project Coordinator (Name/Rank, Title, Phone #):
  - (1) Langley: (b) (6), CES Pest Control, DSN (b) (6)
  - (2) Craney Island: (b) (6), Army Corps of Engineers, (b) (6)  
(b) (6), City of Portsmouth, 757-227-0222
- i. Date Spray Map Last Approved: 24 August 2021
- j. Installation In-Briefing: (When/Where/Briefer/s): 25 August 2021 (Tele-brief), briefed by Lt Col (b) (6) and Lt Col (b) (6) with representatives from Langley AFB and City of Portsmouth
- k. Mission Identifier: QZNRK7571236

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6), Capt (b) (6)
  - (2) Navigators: Lt Col (b) (6), Capt (b) (6)
  - (3) Flight Engineer: SMSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6), SMSgt (b) (6), SSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: MSgt (b) (6) (Lead), MSgt (b) (6), TSgt (b) (6), TSgt (b) (6), SrA (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6), SrA (b) (6)
  - (3) Avionics: TSgt (b) (6)
- d. **Entomologist (Cat. 11 PMP):** Lt Col (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Trumpet® (a.i. naled)
- b. EPA Registration Number: 5481-481
- c. Additives Used: None
- d. Gallons Pesticide Loaded: 60 total
- e. Gallons Pesticide Applied: 60
- f. Gallons and Name of Flush Used: 7 gallons H.A.N. (Highly Aromatic Naphtha)
- g. Application Rate: 0.86 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 90-9105
- b. Spray System (Modules Used) and System ID #: SP2G
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: 8003 Tee Jet
- e. Nozzle Orientation & Number Used: 24 nozzles oriented straight down
- f. Flow Rate: 6.4 gal/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: 2000' upwind
- c. Spray Release Altitude: 300' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Craney Island/Portsmouth: Wind (at altitude) 130° @ 8 kts, Temperature 85°F, Relative Humidity 79%; Wind 120 @ 2 (Ground)

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique(s) Used: GPS system monitoring aircraft flight pattern. Direct field observations.
  - (2) Results: Adequate coverage through sprayed area. See Attachment 1.
- b. Effectiveness:
  - (1) Technique(s) Used: Pre- and post-spray surveillance was conducted using CDC light traps with CO<sub>2</sub>.
  - (2) Pre and post spray trap counts from Craney Island/Portsmouth (average of 7 traps)
    - Pre-spray: 2271
    - Post spray: 118
    - 94.6%** reduction in pre and post spray trapped mosquitos (average)

**Specific trap data presented below:**

Spray Date - 08/25/21											
Pre Spray		% Reduction	Post Spray		% Reduction	Pre Spray		% Reduction	Post Spray		% Reduction
8/23/2021	8/26/2020		8/23/2021	8/26/2020		8/23/2021	8/26/2020		8/23/2021	8/26/2020	
<b>Landfill</b>		99.6	<b>High School</b>		100.0	<b>Morro Blvd.</b>		100.0	<b>Hatton Point</b>		76.5
<i>Oc. sollicitans</i>	941		18	0		2	0		0	0	
<i>Ae. vexans</i>	0		0	0		2	0		1	0	
<i>Ae. taeniorhynchus</i>	2		5	0		0	0		0	0	
<i>Ps. columbiae</i>	73		3	0		134	2		0	2	
<i>Ps. ferox</i>	0		3	0		34	4		2	1	
<i>Cx. Spp</i>	5		1	0		1	0		2	1	
<i>An. Spp</i>	1		0	0		4	0		0	2	
<i>Ae. albopictus</i>	0		12	0		51	0		43	8	
<i>Cs. melanura</i>	5		1	0		20	4		308	70	
<b>Total Trap Count</b>	1027		47	0		258	10		358	84	
<b>Knightsbridge Way</b>		100.0	<b>Greenbrook</b>		100.0	<b>APM</b>		100.0			97.8
<i>Oc. sollicitans</i>	10		3	0		2	0				
<i>Ae. vexans</i>	0		1	0		0	0				
<i>Ae. taeniorhynchus</i>	6		4	0		1	0				
<i>Ps. columbiae</i>	0		4	0		4	0				
<i>Ps. ferox</i>	12		103	0		132	0				
<i>Cx. Spp</i>	0		2	0		2	0				
<i>An. Spp</i>	0		0	0		2	0				
<i>Ae. albopictus</i>	24		60	1		29	2				
<i>Cs. melanura</i>	7		38	2		3	4				
<b>Total Trap Count</b>	70		242	4		269	6				

Trap Location	% Reduction
Landfill	98.9
High School	100.0
Morro Blvd.	96.1
Knightsbridge Way	94.3
Greenbrook	98.3
APM	97.8
Hatton Point	76.5
<b>Total Reduction</b>	<b>94.6</b>

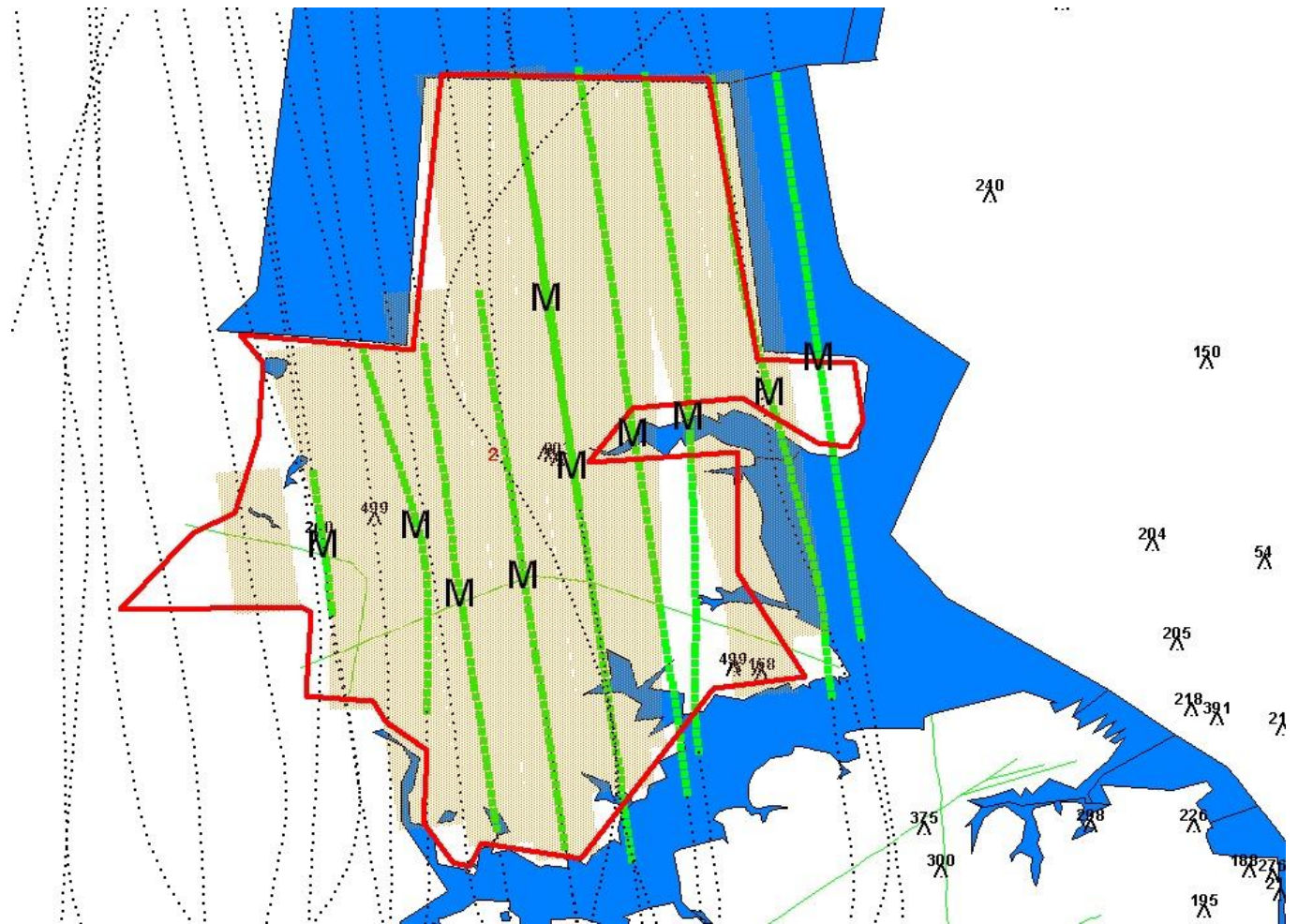
**8. REMARKS:** Relatively high mosquito counts at Craney Island and City of Portsmouth made this night application a needed intervention with respect to local mosquito control. The Portsmouth Mosquito Control Division monitors insect populations and reported excellent control. No significant problems were encountered during the actual application. Time spent with calibration activities was well spent as there were no discrepancies between pesticide loaded and amount of pesticide applied. The weather for this application was ideal. Good air movement and low wind speed at altitude undoubtedly facilitated success of mission. There were no reports of adverse non-target environmental effects. Portsmouth Mosquito control subsequently reported increasing mosquito populations 4 days post spray. Observations from Portsmouth Public works suggest that on dredge spoil the application might have been at latter end of adult mosquito life-cycle.

We sincerely appreciate the support received from all sections of Langley AFB and Craney Island/City of Portsmouth personnel. This mission proceeded smoothly and with excellent results.

(b) (6) , Lt Col, USAF  
DoD Certified Pest Management Professional



**Attachment 1. Area sprayed Craney Island Army Corps of Engineers and Portsmouth, 25 Aug 2021.**  
**Green lines indicate individual spray swaths. Grey areas indicate expected ground dispersment.**  
**Application adjusted for 2000' offset for local wind conditions. Spray data from onboard GPS.**





# AERIAL SPRAY MISSION REPORT

MISSION # QZNRK3491279 ACFT CC (b) (6) MSN CC (b) (6)

PEST Mosquito CHEMICAL TRUMPET DILUENT NAPTHA

ACFT # 923023 MASS # 4 # OF NOZZLES 28 TIPS Tee Jet Flat Fan

\*Contact AFRC Command Center Daily with Mission start date, end date, Operation name, daily number sorties, and total mission sorties 1 800-223- 1784 ext 70680 or DSN: 497-0680

PILOTS (b) (6) / (b) (6)

NAVS (b) (6) / (b) (6)

FLT ENG (b) (6)

SPRAY LM (b) (6) / (b) (6) / (b) (6)

## FERRY DATA

DATE	TAKEOFF	LAND	TIME	INTINERARY	REASON FOR STOP
5 OCT 20	2045	2245	2.0	KYNG - KCHS	PRE PO
8 OCT 20	1355	1555	2.0	KCHS - KYNG	RTB, MSN COMPLETE

FERRY SORTIES/TIME 2 1 4.0

SPRAY (TNG) SORTIES/TIME: 1 1 1.9

TRAINING DATA: NAME CONFIGURATION PROFILES AND #

PILOT (b) (6)

COPILOT (b) (6)

NAVIGATOR (b) (6) / (b) (6)

FE (b) (6)

SPRAY LM (b) (6) / (b) (6) / (b) (6)

QUALIFICATION FLT: NAME/DATE

(b) (6) / NVC SPRAY / 7 OCT 20

SPRAY DATA			TARGET DATA								WEATHER DATA		
T/O	LAND	TIME	ON TARGET TIME	OFF TARGET TIME	ALT/ AGL	SPRAY ON TIME	PASS SWATH	ACRES	QUANTITY LOADED	QUANTITY SPRAYED	STAB CLASS	WIND	CLOUD CLOVER

DATE 7 Oct 2020 TARGET SUNRISE: 0719 SUNSET: 1857

2155	2350	1.9	2200	2327	300	20+02	16	18654	120	120		256/12	5CT
				2336									

1.9

20+02 16 18654 120 120

DATE TARGET SUNRISE: SUNSET:


DATE TARGET SUNRISE: SUNSET:


DATE TARGET SUNRISE: SUNSET:


DATE TARGET SUNRISE: SUNSET:


GRAND  
TOTAL

1.9

20+02 16 18654 120 120

910 AW 0-85

\*Contact AFRC Command Center Daily with Mission start date, end date, Operation name, daily number sorties, and total mission sorties 1 800-223- 1784 ext 70680 or DSN: 497-0680

## AERIAL SPRAY MISSION REPORT

MISSION # \_\_\_\_\_ ACFT CC \_\_\_\_\_ MSN CC \_\_\_\_\_

PEST \_\_\_\_\_ CHEMICAL \_\_\_\_\_ DILUENT \_\_\_\_\_

ACFT # \_\_\_\_\_ MASS # \_\_\_\_\_ # OF NOZZLES \_\_\_\_\_ TIPS \_\_\_\_\_

**\*Contact AFRC Command Center Daily with Mission start date, end date, Operation name, daily number sorties, and total mission sorties 1 800-223- 1784 ext 70680 or DSN: 497-0680**

PILOTS \_\_\_\_\_

NAVS \_\_\_\_\_

FLT ENG \_\_\_\_\_

SPRAY LM \_\_\_\_\_

### FERRY DATA

DATE	TAKEOFF	LAND	TIME	INTINERARY	REASON FOR STOP

FERRY SORTIES/TIME \_\_\_\_\_ / \_\_\_\_\_ SPRAY (TNG) SORTIES/TIME: \_\_\_\_\_ / \_\_\_\_\_

TRAINING DATA:      NAME      CONFIGURATION PROFILES AND #

PILOT \_\_\_\_\_

COPILOT \_\_\_\_\_

NAVIGATOR \_\_\_\_\_

FE \_\_\_\_\_

SPRAY LM \_\_\_\_\_

QUALIFICATION FLT: NAME/DATE \_\_\_\_\_

SPRAY DATA			TARGET DATA								WEATHER DATA		
T/O	LAND	TIME	ON TARGET TIME	OFF TARGET TIME	ALT/ AGL	SPRAY ON TIME	PASS SWATH	ACRES	QUANTITY LOADED	QUANTITY SPRAYED	STAB CLASS	WIND	CLOUD CLOVER

DATE 7 OCT 2020 TARGET SUNRISE: 0719 SUNSET: 1857

7155	2350	1.9	2100	2327	300	20+02	16	1864	120	120		256/12	5 CT
				2336									

DATE TARGET SUNRISE: SUNSET:


DATE TARGET SUNRISE: SUNSET:


DATE TARGET SUNRISE: SUNSET:


DATE TARGET SUNRISE: SUNSET:


GRAND  
TOTAL

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910 AW 0-85

\*Contact AFRC Command Center Daily with Mission start date, end date, Operation name, daily number sorties, and total mission sorties 1 800-223- 1784 ext 70680 or DSN: 497-0680

# AERIAL SPRAY FLOW RATE DATA

SWATH	GALLONS	TIME	FLOW RATE
1/8			
2/9			
3/10			
4/11			
5/12			
6/13			
7/1			
1/8	20	172	6.98
2/9	38	331	6.89
3/10	55	475	6.95
4/11	71	613	6.95
5/12	86	750	6.88
6/13	104	904	6.90
7/14	122	1062	6.89
15	126	1094	6.91
8/16	132	1202	6.59
9/17			
10/18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

SWATH	GALLONS	TIME	FLOW RATE
1			
2			
3			
4			
5			
6			
7			
8			
9			
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14			
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> use



DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

27 January 2021

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

SUBJECT: Capability and Concept of Operations for NAS Jacksonville, FL

1. One C-130 will be available 1-5 February 2021 to exploring the efficacy of ultra-low volume larviciding on the Florida Army National Guard's Camp Blanding Joint Training Center. The aircraft will operate from Jacksonville Naval Station, FL and use the SP2 configuration with VectoBac WDG larvicide. A second C-130 will accompany with an SP3 configuration for currency and proficiency training. This mission will provide real-world training for aerial spray aircrew, entomologists and maintenance personnel.

2. Concept of Operations:

a. 1 February (Monday)

1300 Show KYNG

1500 Depart KYNG

1730 Land KNIP

b. 2-4 February (Tues-Thurs)

0800 Depart KNIP

1200 Land KNIP

c. 5 February (Friday)

0700 Show KNIP

0900 Depart KNIP

1130 Land KYNG

3. Test aircraft will be SP2 configured with ULV booms, and the training aircraft will be an SP3 configuration.

4. Lt Col (b) (6) will serve as mission commander.

5. Lt Col (b) (6) and Lt Col (b) (6) will act as aircraft commanders.

6. Support required at Jacksonville Naval Air Station, FL has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

31 August 2021

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at JB Charleston, SC

1. Aerial spray deployment of one C-130 from 6-9 September 2021 to JB Charleston, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards at JB Charleston, SC.

2. Concept of Operations (All times are local):

- a. 6 Sept  
1500 Depart KYNG  
1700 Land KCHS
- b. 7 Sept  
1300 Installation brief for CHS  
1600 Weather call/Chemical Load  
1700 Calibration  
1915 Depart KCHS  
2115 Land KCHS
- c. 8 Sept (WX/MX Backup)  
1600 Weather Call/Chemical load  
1700 Calibration  
1915 Depart KCHS  
2115 Arrive KCHS
- d. 9 Sept  
1000 Depart KCHS  
1200 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 18,500 acres over JB Charleston
- b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
- c. Swath Width: 2000ft
- d. Groundspeed: 200 Knots
- e. Application Rate: 0.85 oz/acre of Trumpet EC

4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) serving as the Aircraft Commander. Support at JB Charleston has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

05 May 2021

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at JB Charleston, SC

1. Aerial spray deployment of one C-130 from 10-13 May 2021 to JB Charleston, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards at JB Charleston, SC.

2. Concept of Operations (All times are local):

- a. 10 May  
1200 Depart KYNG  
1400 Land KCHS
- b. 11 May  
1300 Installation brief for CHS  
1630 Weather call/Chemical Load  
1700 Calibration  
1945 Depart KCHS  
2145 Land KCHS
- c. 12 May (WX/MX Backup)  
1630 Weather Call/Chemical load  
1700 Calibration  
1945 Depart KCHS  
2145 Arrive KCHS
- d. 13 May  
1000 Depart KCHS  
1200 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 18,500 acres over JB Charleston
  - b. Altitude: 300' AGL NVG operations, 150' AGL Day operations
  - c. Swath Width: 2000ft
  - d. Groundspeed: 200 Knots
  - e. Application Rate: 0.85 oz/acre of Trumpet EC
4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) serving as the Aircraft Commander. Support JB Charleston has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

08 June 2021

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at JB Charleston, SC and Tyndall AFB, FL

1. Aerial spray deployment of one C-130 from 14-18 June 2021 to JB Charleston, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards at JB Charleston, SC and Tyndall AFB, FL.

2. Concept of Operations (All times are local):

- a. 14 June  
1500 Depart KYNG  
1700 Land KCHS
- b. 15 June (Aerial Application at KCHS)  
1300 Installation brief for CHS  
1700 Weather call/Chemical Load  
1730 Calibration  
2015 Depart KCHS  
2215 Land KCHS
- c. 16 June (Aerial Application at KPAM)  
1600 Weather Call/Chemical load  
1700 Calibration  
1900 Depart KCHS (local Eastern Time)  
2030 Arrive KPAM (local Eastern Time) - Arrive KPAM @ 1930 LCL Central  
2130 Depart KPAM (local Eastern Time) - Depart KPAM @ 2030 LCL Central  
2300 Arrive KCHS (local Eastern Time)
- d. 17 June (WX/MX Backup)  
TBD Depart KCHS  
TBD Arrive KCHS
- e. 18 June  
0900 Depart KCHS  
1000 Land KWRB for static display  
1200 Depart KWRB  
1400 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 18,500 acres at JB Charleston, 25,000 acres at Tyndall AFB
  - b. Altitude: 300' AGL NVG operations
  - c. Swath Width: 2000ft
  - d. Groundspeed: 200 Knots
  - e. Application Rate: 1.0 oz/acre of Trumpet EC
4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) serving as the Aircraft Commander. Support JB Charleston has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

20 July 2021

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Langley AFB, and Craney Island Army Corps of Engineers.

1. Aerial spray deployment of one C-130 to Langley AFB, VA. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of Langley AFB and Craney Island Army Corps of Engineers.

2. Concept of Operations: All times local

- a. 27 July (Tuesday)  
1500 Depart KYNG  
1615 Land KLFI
- b. 28-29 July (Wednesday - Thursday)  
2000 Depart KLFI  
2300 Land KLFI
- c. 30 July (Friday)  
1200 Depart KLFI  
1315 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc.

3. Spray Parameters:

- a. Locations: Langley AFB and Craney Island ACE, VA
- b. Acres: 12,718
- c. Altitude: 300ft AGL for NVG adulticide application
- d. Swath Width: 2,000 feet
- e. Airspeed: 200 KTS
- f. Application Rate: 0.9 oz/acre
- g. Product: Trumpet® (Naled) (EPA Reg. No. 5481-481)

4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) as the Aircraft Commander.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND**

08 July 2021

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Minot AFB, Minot, Burlington, Williston and Watford City, North Dakota.

1. The 910 AW will deploy one C-130 to Minot AFB, ND to train aerial spray aircrew, pest management personnel, and maintenance members in the control of nuisance and vector mosquitoes. This mosquito adulticide application will also improve working conditions and lower the risk of vector-borne illness for individuals working and living in/around Minot AFB, Minot, Burlington, Williston and Watford City. Aerial applications performed off DOD installation property will be conducted IAW the Innovative Readiness Training (IRT) Program criteria.

2. Concept of Operations: All times local

- a. 12 July (Monday)  
1500 Depart KYNG  
1730 Land KMIB
- b. 13-15 July (Tuesday – Thursday)  
2130 Depart KMIB  
2330 Land KMIB
- c. 16 July (Friday)  
1200 Depart KMIB  
1630 Land KYNG

Times may vary from scheduled depending upon weather, effectiveness of spray, etc. The mission commander will coordinate all changes to the planned itinerary.

### 3. Spray Parameters:

#### Minot AFB:

- a. Area to be treated: 5,170 acres
- b. Altitude: 300 feet
- c. Swath Width: 2,000 feet
- d. Airspeed: 200 KGS
- e. Application Rate: 0.98 oz/acre Trumpet® EC Insecticide

#### Minot City/Burlington:

- f. Area to be treated: 22,128 acres
- g. Altitude: 300 feet
- h. Swath Width: 2,000 feet
- i. Airspeed: 200 KGS
- j. Application Rate: 0.98 oz/acre Trumpet® EC Insecticide

#### Williston/Watford City:

- k. Area to be treated: 23,622 acres
- l. Altitude: 300 feet
- m. Swath Width: 2,000 feet
- n. Airspeed: 200 KGS
- o. Application Rate: 0.98 oz/acre Zenivex® Insecticide

4. Lt Col (b) (6) will serve as the Mission Commander. Support required at Minot AFB has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

17 August 2021

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Langley AFB, and Craney Island Army Corps of Engineers.

1. Aerial spray deployment of one C-130 to Langley AFB, VA. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of Langley AFB and Craney Island Army Corps of Engineers.

2. Concept of Operations: All times local

- a. 24 August (Tuesday)  
1700 Depart KYNG  
1815 Land KLFI
- b. 25-26 August (Wednesday - Thursday)  
1915 Depart KLFI  
2145 Land KLFI
- c. 27 August (Friday)  
1200 Depart KLFI  
1315 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc.

3. Spray Parameters:

- a. Locations: Langley AFB and Craney Island ACE, VA
- b. Acres: 12,718
- c. Altitude: 300ft AGL for NVG adulticide application
- d. Swath Width: 2,000 feet
- e. Airspeed: 200 KTS
- f. Application Rate: 0.9 oz/acre
- g. Product: Trumpet® (Naled) (EPA Reg. No. 5481-481)

4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) as the Aircraft Commander.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

05 April 2021

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Tyndall AFB.

1. One C-130 will deploy to Tyndall AFB from 12-15 April 2021. Mosquito and biting midge control will be conducted at Tyndall AFB. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito and biting midge populations affecting the health and welfare of the personnel at the installation.

2. Concept of Operations (All times are local):

- a. 12 April  
1200 Depart KYNG  
1400 Land KPAM
- b. 13 April  
1845 Depart KPAM for Aerial Application at Tyndall Air Force Base  
2130 Land KPAM
- c. 14 April (WX/MX Backup)  
1845 Depart KPAM for Aerial Application at Tyndall Air Force Base  
2130 Land KPAM
- d. 15 April  
1000 Depart KPAM (Weather Backup)  
1400 Land KYNG

Times may change from schedule depending upon weather, effectiveness of spray, etc.  
The mission commander will coordinate all changes to the planned itinerary.

3. Spray Parameters:

- a. Area to be treated: 25,500 acres over at Tyndall AFB
- b. Altitude: 300' AGL NVG operations
- c. Swath Width: 2000ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 1.05 oz/acre of Trumpet® EC

4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) as the Aircraft Commander. Support at Tyndall AFB has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray



DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

25 May 2021

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-0910

SUBJECT: Capability and Concept of Operations for Aerial Spray at Grand Forks AFB, ND

1. One C-130 will deploy to Grand Forks AFD, ND from 1-4 June for a requested Aerial Spray larvicide mission helping to control nuisance and vector species of mosquitoes reducing the negative impact these organisms generate on outdoor activities. The mission will also provide training for aerial spray aircrew, pest management personnel, and maintenance members.
2. Schedule of Events (All Times Local):
  - a. 1 June  
1200 Depart KYNG  
1400 Land KRDR
  - b. 2-3 June (Multiple application sorties)  
0700 Depart KRDR  
1100 Land KRDR
  - c. 4 June  
0900 Depart KRDR  
1300 Land KYNG
3. Spray Parameters:
  - a. Area: 2,100 Acres
  - b. Altitude: 100 feet AGL
  - c. Swath Width: 200 feet
  - d. Flow Rate: 233 gallons/minute
  - e. Application Rate: 2.5 gallons/acre (water with 0.94 oz of Altosid®)
  - f. Ground Speed: 200 knots
4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) as the Aircraft Commander.
5. Support at Grand Forks AFB, ND has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray

# AERIAL SPRAY MISSION REPORT

MISSION # QZNRK3431287 ACFT CC LTCOL (b) (6) MSN CC LTCOL (b) (6)

PEST Weeds CHEMICAL Plateau Herbicide DILUENT

ACFT # 105 MASS # 3 # OF NOZZLES 18 TIPS Raindrop/Start Back

\*Contact AFRC Command Center Daily with Mission start date, end date, Operation name, daily number sorties, and total mission sorties 1 800-223- 1784 ext 70680 or DSN: 497-0680

PILOTS LTCOL (b) (6) , CAPT (b) (6)

NAVS LTCOL (b) (6)

FLT ENG MSGT (b) (6)

SPRAY LM MSGT (b) (6) , SMSGT (b) (6) , SRA (b) (6)

## FERRY DATA

DATE	TAKEOFF	LAND	TIME	INTINERARY	REASON FOR STOP
13 OCT 20	1405Z	2025Z	(6.3)	KYNG-KHIF	PRE-POSITION
17 OCT 20	1500Z	1915Z	4.3	KHIF-KYNG	DE-POSITION

FERRY SORTIES/TIME 2 , 10.6 SPRAY (TNG) SORTIES/TIME: 6 , 9.1

TRAINING DATA: NAME CONFIGURATION PROFILES AND #

PILOT \_\_\_\_\_  
 COPILOT \_\_\_\_\_  
 NAVIGATOR \_\_\_\_\_  
 FE \_\_\_\_\_  
 SPRAY LM \_\_\_\_\_

QUALIFICATION FLT: NAME/DATE \_\_\_\_\_

SPRAY DATA			TARGET DATA								WEATHER DATA		
T/O	LAND	TIME	ON TARGET TIME	OFF TARGET TIME	ALT/ AGL	SPRAY ON TIME	PASS SWATH	ACRES	QUANTITY LOADED	QUANTITY SPRAYED	STAB CLASS	WIND	CLOUD CLOVER

DATE 14 OCT 20 TARGET UTTR (BLOCK #1,5,3) SUNRISE: 0739L SUNSET: 1847L

#1 Z	1420	1545	1.4	1435	1520	100	6+12	5.5	288.6	1843	1743	V/6	CLR
#2	1650	1815	1.4	1704	1754	100	6+33	7.05	289.4	1828	1768	V/6	CLR

2.8

12+45 13.0 579.0 3671 3511

DATE 15 OCT 20 TARGET DUGWAY SUNRISE: 0740L SUNSET: 1846L

#1 Z	1425	1615	1.8	1450	1545	100	6+13	7	289.4	1824	1745	290/8	CLR
#2	1720	1850	1.5	1739	1824	100	6+04	6	281.7	1832	1743	040/4	CLR

3.3

12+17 13 571.1 3666 3488

DATE 16 OCT 20 TARGET DUGWAY SUNRISE: 0741L SUNSET: 1845L

#1 Z	1410	1535	1.4	1432	1505	100	6+30	4	302.6	1815	1704	170/9	CLR
#2	1630	1805	1.6	1651	1737	100	6+00	8	279.3	1818	1740	300/7	CLR

3.0

12+30 12 581.9 3633 3444

DATE	TARGET	SUNRISE:	SUNSET:

DATE	TARGET	SUNRISE:	SUNSET:

GRAND  
TOTAL



910 AW 0-85

\*Contact AFRC Command Center Daily with Mission start date, end date, Operation name, daily number sorties, and total mission sorties 1 800-223- 1784 ext 70680 or DSN: 497-0680

50 sec  
1/43



**AERIAL SPRAY OPERATIONAL SCHEDULE  
FMCA/DOD AAP COURSE  
ST. AUGUSTINE, FL - KSGJ  
9-14 JANUARY 2022**

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# AERIAL SPRAY OPERATIONAL SCHEDULE

## FMCA/DoD AAP COURSE

### ST. AUGUSTINE, FL - KSGJ

### 9-14 JANUARY 2022

### QZNRK7571009

**OBJECTIVE/PURPOSE/BENEFIT:** The 910<sup>th</sup> Aerial Spray Unit will deploy one C-130 to Northeast Florida Regional Airport, FL from 9-14 January 2022 in support of the annual DoD Aerial Spray Applicator (Category 11) Course held in conjunction with Florida Mosquito Control Association (FMCA) annual fly-in.

#### **1. 910 AW PARTICIPANTS:**

Mission Commander:	Lt Col (b) (6)	(b) (6)
Entomologists:	Lt Col (b) (6)	, Lt Col (b) (6), Capt (b) (6)
Pilot:	Lt Col (b) (6)	, Capt (b) (6)
Navigator:	Lt Col (b) (6)	
Flight Engineer:	SMSgt (b) (6)	
Spray Operators:	SMSgt (b) (6)	, TSgt (b) (6)
Spray Maintenance:	TSgt (b) (6)	(Lead) (b) (6)
	MSgt (b) (6)	, SSgt (b) (6),
	SMSgt (b) (6)	, SrA (b) (6)
Crew Chiefs:	MSgt (b) (6)	, SSgt (b) (6)

#### **2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map, Wingman system cards
Spray Operators:	PPE, Calibration Tables/Laptop/Tablet and or Spray datasheet, O <sub>2</sub> hose extensions, wireless headsets.
Spray Maintenance:	Deployment Kit, Support Equipment

### **3. SCHEDULE (All Local Time):**

#### **09 Jan (Sunday)**

1000 Showtime  
1200 Depart KYNG  
1430 Arrive KSGJ

#### **10 Jan (Monday):** DoD spray training begins

0745 Showtime for Entos and Spray course presenters, Anastasia Co MCD, 120 EOC Drive, St. Augustine, FL 32092

#### **11 Jan (Tuesday)**

0800 Showtime at Anastasia MCD for entos and presenters; DoD program to last until 1130; blend into FMCA program after lunch  
1100 Showtime  
1230 Takeoff for local training sortie

#### **12 Jan (Wednesday):** continuing FMCA/DoD program

\*\*\*Aircraft activities WX dependent (MC discretion)

0800 Spray Demonstration at NE Regional Airport in support of FMCA/DoD training event  
0900 Static display on ramp at NE Regional Airport in support of FMCA/DoD training event.

#### **13 Jan (Thursday)**

0800 Showtime for MX and OPS Spray Training at DoD training event

#### **14 Jan (Friday)**

0800 Showtime  
1000 Depart KSGJ  
1230 Land KYNG

### **4. AIRCRAFT & SPRAY CONFIGURATION:**

<b>Chemical:</b>	<b>None; Water only</b>
<b>MASS:</b>	<b>MASS6; SP2</b>
<b>Gallons loaded:</b>	<b>700</b>
<b>Flow Rate:</b>	<b>336 GPM</b>
<b>Application Rate:</b>	<b>8-9 gal/acre</b>
<b>Flush:</b>	<b>N/A</b>
<b>Altitude:</b>	<b>100'</b>
<b>Airspeed:</b>	<b>200 KNTS</b>
<b>Swath Width:</b>	<b>approx 80 feet</b>
<b>Nozzle/Orientation:</b>	<b>R-20 Raindrop</b>
<b>Number of Nozzles:</b>	<b>20</b>
<b>Aircraft:</b>	<b>90-9108</b>
<b>Offset:</b>	<b>None; Fly centerline or entomologist's discretion</b>

**5. TRANSPORTATION:**

**Pick Up/Return:** Atlantic Aviation FBO

**POC:** Steven (904) 825-1695

1. 5-PAX Minivan / (b) (6) : Aircrew Minivan
2. 5-PAX Minivan / (b) (6) : MX Minivan
3. 5-PAX Sedan / (b) (6) : Aircrew Sedan
4. 5-PAX Sedan / (b) (6) : MX Sedan

**6. LODGING:**

**18 rooms reserved- Tax exempt form printed**

Property: Hampton Inn & Suites St. Augustine-Vilano Beach  
Property Address: 95 Vilano Road Saint Augustine, FL 32084  
Property Phone: (904) 827-9797  
Confirmation # 53200928 & 53203043 (9 rooms each #)

**7. CONTACTS:**

**AIR TO GROUND RADIO FREQUENCIES:**

KSGJ UNICOM	122.95
KSGJ Twr	127.625, 269.475
KSGJ Gnd	121.175, 251.125
KSGJ ATIS	119.625
KSGJ Airfield Mgr, (b) (6)	(b) (6)

Parking & security has been coordinated with Atlantic Aviation FBO  
Atlantic Gen Mgr, (b) (6)

**SPRAY OPERATIONAL SCHEDULE**  
**UTAH TEST AND TRAINING RANGE (UTTR)**  
**DUGWAY PROVING GROUNDS (DPG)**  
**18-28 October 2021**  
**Mission # QZNRK7571291**

**PURPOSE/BENEFIT/OBJECTIVE:** Aerial spray herbicide mission on the Utah Test and Training Range (UTTR) and Dugway Proving Ground (DPG) to reduce the risk of range fires by controlling cheat grass (*Bromus tectorum*) and other invasive weed species while promoting reestablishment and success of native flora.

**1. 910 AW PARTICIPANTS:**

**Mission Commander:** Lt Col (b) (6) (b) (6)

**AIRCREW:**

**Pilots:** Lt Col (b) (6) , Capt (b) (6)  
**Navigators:** Lt Col (b) (6)  
**Flight Engineer:** SMSgt (b) (6)  
**Spray Operators:** SMSgt (b) (6) , TSgt (b) (6) , SSgt (b) (6)

**CERTIFIED APPLICATORS:**

**Entomologists:** Lt Col (b) (6) , Lt Col (b) (6) ,  
Lt Col (b) (6) (1<sup>st</sup> week)

**MAINTENANCE:**

**Spray MX:** TSgt (b) (6) (lead) (b) (6)  
SMSgt (b) (6) , MSgt (b) (6) , TSgt (b) (6) ,  
TSgt (b) (6) x, SrA (b) (6) , SrA (b) (6)  
**Crew Chiefs:** TSgt (b) (6) , SrA (b) (6)  
**Avionics:** MSgt (b) (6)  
**Command Post:** SrA (b) (6)

**2. REQUIRED ITEMS:**

Msn Commander: MC Laptop Computer  
Entomologist: Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer  
Navigator: Maps/Map Bag, Validation Map, Operational Wingman system cards  
Spray Operators: PPE, Calibration Tables/Laptop and or Spray datasheet, O<sub>2</sub> hose extensions  
Spray Maintenance: Deployment Kit, Support Equipment  
Avionics: 2 Multi-band hand-held radios; Wingman system test cards

**3. IN-BRIEFING at Hill:**

On arrival on the Forestry Ramp with Mr. (b) (6) , Mr. (b) (6) and representatives from Dugway.  
Required: MC, Entos, pilots, navs, SM lead.

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#### **4. SCHEDULE: (All Local Time)**

**PLANNED SEQUENCE OF EVENTS:** Hill AFB Tower Control and Runway Hours  
Tower Opens at 0800L (weekdays), 0900L (weekends)

##### **18 October (Monday)**

0800 Show KYNG

0810 Safety and Arrival brief given in the aircrew briefing room

1000 Depart KYNG    Spray (SP3G)    **Vader06    MI: QZNRK7571291    PPR: CS-1801**

1000 Depart KYNG    Support    **Vader04    MI: QANRK7571291    PPR: CS-1801**

1400 Land KHIF

1500 In-brief on the Forestry Ramp: Do not leave until cleared off by MC. (see 3. For required party)

##### **19 – 27 October (Wednesday-Wednesday) Plan on 2 sorties per day Range time is 0800-1300**

0600 Show KHIF

0630 Weather call and mixing begin

0730 \*Call into daily Range and Michael Army Airfield daily brief. (571) 616-7941.

Conf ID # 642824612#, make sure to add the #sign at the end.

0749 Sunrise

0800 Depart KHIF

1300 Land KHIF

##### **28 October (Thursday) Hill Field opens at 0800**

0700 Checked out of billeting

0745 Return vehicles

0900 Depart KHIF

1530 Land KYNG

**\*\*All times are approximated. Actual times and mission details will be updated as appropriate by the Mission Commander.**

#### **5. SPRAY CONFIGURATION:**

Aircraft:	89-9106
System:	SP-3G MASS: 3
Nozzle /Orientation:	Raindrop/Straight Back
Number of nozzles:	Fuselage – 18 nozzles

#### **6. SPRAY LOADING:**

##### **a. In each gallon of mix:**

0.93 ounces of Plateau herbicide (0.73 gallons in 100 gallons of water)

0.77 ounces of Clasp (0.6 gal in 100 gallons)

0.77 ounces of Methylated Seed Oil (0.6 gal in 100 gallons)

125.5 ounces of water

##### **b. First Load (4 Tanks of 450 gallons each + sump of 75 gallons)**

Fill to 450 gal water/tank. This is done by putting the filler hose into the rear tank with all tanks open to the common sump.

Total water in tanks and sump = 1,850 gal.

Total water added = 1,850 gallons

Load 13.5 gallons of Plateau; 11 Gal Clasp; 11 Gal MSO, agitating approximately 5-7 min

Approximate total quantity mix 1888 gallons

**c. Subsequent Loads**

Fill with water for a rough total of 1850 gallons; use “per 100 gallons of water” measurements given above when adding less than 1800 gallons (i.e., residual product in tank when loading). When the MASS is returned empty, load 1800 gallons of water and add: 13.5 gallons Plateau, 11 gallons of Clasp and 11 gallons of MSO.

**7. SPRAY PARAMETERS:**

Location: UTTR – HAT range plus multiple lifts for Dugway firebreak  
Herbicide: Plateau Herbicide (active ingredient: 23.6% Ammonium salt of imazapic)  
Area to be treated: TBD UTTR; Approximately 1500 Dugway  
Swath Width: 100 feet  
Flow Rate: 300 gal/min (we are treating at 46.5 acres/minute)  
Application Rate: 6.45 gal/acre (6 oz of Plateau per acre)  
Altitude: 100’ AGL  
Ground Speed: 200 Knots  
Flush: Air purge at end of each sortie to minimize dripping upon return  
Formulas: Flow Rate = Gal/Time in Minutes  
Acreage Sprayed = Total Sec x 338 x Swath Width / 43560

**8. PARKING PLAN: Forestry Ramp**

**9. AIR TO GROUND RADIO FREQUENCIES:**

**Clover Range:** UHF 285.65 / 275.9 / 361.4 (p)  
VHF 134.1 / 118.45  
**Eagle Tower:** 351.0; Mawk 2  
**Diddle Knoll:** 398.1 (Primary), 383.2 (Back-up); 134.1 / 118.45  
**Base OPS:** 139.3  
**Spray Ground:** 392.2 / 123.45 You can talk to Keeli or Robbie on this Freq or Clover.  
**Dugway PG Range:** P-126.2 S-131.1

- 10. TRANSPORTATION: 6 PAX Truck and 7 PAX van from the environmental shop. 5 sedans from enterprise.**  
Mr. (b) (6) will have the 6 PAX truck and 7 PAX Van from the environmental shop at the forestry ramp when the crews land. All members going to the in-brief can ride with Lt Col (b) (6) in his rental car. After in-brief someone will have to take Lt Col (b) (6) to enterprise. Crew will use 7 PAX van to drop off members that need to pick up rental cars and return to base to pick up support crew.

OPS Os – (Enterprise Sedan) (b) (6)  
OPS Es – (Enterprise Sedan) (b) (6)  
OPS Es – (7 PAX Van) (b) (6)  
SPRAY MX – (Enterprise Sedan) (b) (6)  
SPRAY MX – (6 PAX Truck) (b) (6)  
CREW CHIEFS/AVIONICS – (Enterprise Sedan) (b) (6)  
MC – (Enterprise Sedan) (b) (6)

**11. LODGING: Home2 Suites by Hilton**

803 Heritage Park Blvd, Layton, UT 84041

**POC:** (b) (6)

**T:** 801-820-9222 **O:** 801-820-9222

- Support aircrew/support crew chiefs are staying at this hotel.

**Group Name: 910<sup>th</sup> Airlift Wing Aerial Spray, Non-A’s e-mailed out**



12. **GENERAL TARGET INFORMATION: Listed by priority**  
**UTTR and Dugway: Contact ENTO for current information**

13. **CONTACTS:** Commercial Prefix (801) 777-XXXX; DSN 777-xxxx  
**HILL AFB -**

**Project Coordinator: Mr. (b) (6) (b) (6) , cell (b) (6)**

Airfield Manager: 777-4168/3592

Base Operations: 777-1861; FAX: 777-2221

Billeting: 777-1844

Weather: 777-2018

Transit Alert: 777-3885

C-130 Mx Contact: 777-2478/2229

Fuels: 777-7423 / 777-7311 available 0900-1800 daily after hours contact CP

Supply: 777-5391 (922 OE)

Hill Motor Pool: 777-1843

Public Affairs: 777-5201

#### **HQ UTTR**

**(b) (6)**

FAX: 9205

6066 Cedar Lane, Bldg 1274S; **(b) (6)** @us.af.mil

Hill Range Control: 777-9386

Current OPS: 777-9385

Range Scheduler: 777-9386

Eagle Tower: 777-1515/6

Clover Operations: 777-7575

Clover DO: 586-3103

HQ UTTR/Radio Freq Monitor: 777-6715

HQ UTTR/ Resource Monitor: 775-4257

Environmental Coordinator: 777-1550; 801-940-0809

Hill AFB Base OPS: 777-1861

Entomology: 777-4427

Weather: 777-1516/63

#### **OASIS RANGE SUPPORT DIRECTORATE:**

Oasis Chief: 777-1546

North Range Security: 777-1521/2/4

#### **DUGWAY PG: (DSN is 789-xxxx)**

**Project Coordinator: (b) (6)** , Installation Pest Management Coordinator

Tel: **(b) (6)** ; Cell: **(b) (6)**

**Dugway Range Manager: (b) (6)** ; Tel: **(b) (6)**

#### **Additional contacts:**

**(b) (6)** , Natural Resource Program Manager as the **Overall NR Project Coordinator**  
for Dugway. 435-831-3576, cell **(b) (6)**

Alternate DPG NR Contact: **(b) (6)** , DPG Range Restoration Specialist

**(b) (6)**

Dugway Range Control: 435-831-5141

Dugway Range Control Manager **(b) (6)** : **(b) (6)**

DPG Range: VHF P-126.2, S-131.1

Michael Army Airfield Operations: POC **(b) (6)** : **(b) (6)**



**AERIAL SPRAY OPERATIONAL SCHEDULE  
JB CHARLESTON, SC/TYNDALL AFB, FL  
13-17 JUNE 2022**

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# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **JB CHARLESTON, SC/TYNDALL AFB, FL**

### **13-17 JUNE 2022**

### **MSN# QZNRK3401164**

**Purpose/Objectives/Benefits:** One C-130 will deploy to JB Charleston, SC from 13-17 June 2022. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito and biting midge populations affecting the health and welfare of the personnel of JB Charleston and Tyndall AFB, FL. Operations for this mission will be conducted from JB Charleston utilizing Night Vision Goggles (NVGs).

#### **1. 910 AW PARTICIPANTS:**

Msn Commander:	<b>Maj</b> (b) (6)	(b) (6)
Entomologists:	Lt Col (b) (6)	, Capt (b) (6)
Pilots:	Lt Col (b) (6)	, Capt (b) (6)
Navigators:	Lt Col (b) (6)	, Lt Col (b) (6)
Flight Engineer:	CMSgt (b) (6)	
Spray Operators:	SMSgt (b) (6)	, SMSgt (b) (6), TSgt (b) (6)
Spray Maintenance:	<b>TSgt</b> (b) (6)	<b>(Lead)</b> (b) (6)
	TSgt (b) (6)	, SSgt (b) (6), SrA (b) (6)
Crew Chiefs:	MSgt (b) (6)	, SrA (b) (6)
Comm/Nav:	MSgt (b) (6)	

#### **2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map, Operational Wingman System Cards
Spray Operators:	PPE, Laptop/Spray Datasheet, O <sub>2</sub> Hose Extensions, NVGs
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band Hand-held Radios; Wingman System Test Cards

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### **3. SCHEDULE: (All Local Time)**

#### **13 JUNE (Mon)**

1000 Showtime  
1200 Depart KYNG  
1400 Land KCHS

#### **14 JUNE (Tues) Sunset: 2029L; Civil Twi: 2058L (KCHS)**

1200 Inbrief for CHS; Inbrief may be limited to essential personnel only  
1700 Weather call/Chemical Load  
1800 Calibration  
2015 Depart KCHS  
2215 Land KCHS

#### **15 JUNE (Wed) Sunset: 1945L; Civil Twi: 2012L (KPAM)**

1600 Weather Call/Chemical load  
1700 Calibration  
1900 Depart KCHS (local Eastern Time)  
2030 Arrive KPAM (local Eastern Time) - Arrive KPAM @ 1930 LCL Central  
2130 Depart KPAM (local Eastern Time) - Depart KPAM @ 2030 LCL Central  
2300 Arrive KCHS (local Eastern Time)

#### **16 JUNE (Thurs) (WX/MX Backup)**

Timeline and training TBD by Mission Commander

#### **17 JUNE (Fri)**

0900 Depart KCHS  
1100 Arrive KYNG

### **4. SPRAY CONFIGURATION AND PARAMETERS:**

Locations:	JB Charleston, Tyndall AFB
Acres:	18,500 (JB Charleston), 25,000 (Tyndall AFB)
Product:	Trumpet <sup>®</sup> EC (EPA Reg. No. 5481-481)
	Signal word: Danger
Gallons loaded:	120 gallons (JB Charleston), 210 gallons (Tyndall AFB)
Flow Rate:	6.2 GPM JBCHS, 7.8 GPM Tyndall AFB
Application Rate:	0.85 oz/acre JB Charleston, 1.07 oz/acre Tyndall AFB
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300' AGL NVG Operations
Airspeed:	200 Knots Ground Speed
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet Flat Fan / Straight Down
Number of Nozzles:	30 for JB Charleston, 36 for Tyndall AFB
Formulas:	Flow Rate = Gal/Time in Minutes Acreage Sprayed = Total Sec x 338 x Swath Width / 43,560

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5. **AIR TO GROUND RADIO FREQUENCIES:**

**Charleston AFB:** Tower – 126.0 or 239.0  
Ground – 121.9 or 348.6  
Clearance – 127.325 or 291.65  
ATIS – 124.75  
APPR – 119.3/120.7 or 306.925/379.925

**Mt Pleasant Regional:** CTAF 122.7  
**Charleston Executive:** CTAF 122.8  
**Spray Ground (CHS):** 392.2 UHF; 123.45 VHF

**Tyndall AFB:** Tower – 850-238-4950/4553  
Tower – 133.95 or 263.15  
Approach – 120.825 or 379.3 N blw 5000'  
Approach – 119.775 or 317.45 S blw 5000'  
Ground – 121.9 or 259.3  
Clearance – 118.05 or 348.7  
ATIS – 254.4  
PTD – 139.9 or 372.2  
COMD POST – 381.3 (CHECKER OPS)

6. **TRANSPORTATION:**

**JB Charleston AFB:**  
1x 3-PAX Truck – Maintenance (MSgt (b) (6))  
1x 6-PAX Truck – Spray Maintenance (TSgt (b) (6))  
1x Sedan – Aircrew E's (SMSgt (b) (6)) Rental Car\*  
1x Sedan – Aircrew O's (Capt (b) (6)) Rental Car\*  
1x 3-PAX Truck – MC (Maj (b) (6))  
1x Rental Car- (on Capt (b) (6) orders)

Budget Rental- In Case you need to rent a car.  
5500 International Blvd, Charleston, SC, 29418, United States  
Charleston Intl Airport (CHS)  
843-552-1771

7. **LODGING:**

Holiday Inn Express & Suites Charleston  
POC: (b) (6) (b) (6)  
3025 W Montague Ave, North Charleston, SC 29418  
\*Rate is \$141.26, this is under the on base rate of \$150. We will not have Non-A's, so anyone on AT will not get per diem.

## 8. CONTACTS:

### **JB Charleston AFB SC:**

**DSN: 673-XXXX COMMERCIAL 843-963-XXXX**

Wing Commander:	x3418
MSG Commander:	x2200
CE Commander:	x4956
Deputy Base Civil Engineer:	x4954
<b>Environmental Coordinator:</b>	<b>x2271</b>
Base Operations:	x3024
Command Post	x8400
Charleston AFB Control Tower:	(843) 414-2808/2809
Weather:	x3011/3016
Pest Control NCOIC – MSgt (b) (6) :	x5266, (b) (6) (cell)
Public Affairs:	x5608
Fuels:	x5079
Transportation/Vehicle Ops:	x4236
Fire Department:	x3777/3778/3118

### **TYNDALL AFB FL**

**DSN: 523-XXXX COMMERCIAL: 850-283-XXXX**

Wing Commander (Col (b) (6) ):	523-2668
MSG Commander (Col (b) (6) ):	523-4000
Civil Engineer (Lt Col (b) (6) ):	523-2959/cell: (b) (6)
Deputy Chief/Civil Engineer (Mr. (b) (6) ):	283-3283 / Cell (b) (6)
Environmental Coordinator ((b) (6) ):	283-2822 / Cell (b) (6)
Base Operations:	283-3212
Tyndall AFB Control Tower:	283-4950
Weather:	283-1387
Pest Control POC ((b) (6) ):	Cell (b) (6)
Public Affairs:	283-4500
Fuels:	283-2335
Transportation:	283-8959 / Stand by 850-832-2248
Fire Department:	283-4777
Airfield Manager (SMSgt Jennifer Herr):	283-2291
Base Operator:	283-1110
Command Post:	283-2155
Pest Management SME (b) (6) ):	283-6465 / Cell (b) (6)
Public Health:	283-7138



# AERIAL SPRAY OPERATIONAL SCHEDULE

## TYNDALL AFB

### 12-15 April 2022

### QZNRK3401102

**Purpose/Objectives/Benefits:** One C-130 will deploy to Tyndall AFB from 12-15 April 2022. Mosquito control will be conducted at Tyndall AFB. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel on the installation. Operations for this mission will be conducted utilizing Night Vision Goggles (NVGs).

#### 1. 910 AW PARTICIPANTS:

Msn Commander:	Capt (b) (6)	(b) (6)
Entomologist:	Lt Col (b) (6)	
Pilots:	Lt Col (b) (6)	, Lt Col (b) (6)
Navigators:	Lt Col (b) (6)	, Capt (b) (6)
Flight Engineer:	CMSgt (b) (6)	
Spray Operators:	SMSgt (b) (6)	, SMSgt (b) (6) , TSgt (b) (6)
Spray Maintenance:	MSgt (b) (6) (Lead)	((b) (6)
	TSgt (b) (6)	, TSgt (b) (6) , SrA (b) (6)
Crew Chiefs:	TSgt (b) (6)	, SrA (b) (6)
Comm/Nav:	TSgt (b) (6)	

#### 2. REQUIRED ITEMS:

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map, Operational Wingman cards
Spray Operators:	PPE, laptop/Spray datasheet, O <sub>2</sub> hose extensions, NVGs
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system test cards

### **3. SCHEDULE: (All Local Time)**

#### **12 April (Tuesday)**

1100 Showtime

1300 Depart KYNG

1430 Land KPAM Tyndall AFB is on Central Time  
PPR: 0412-01KB – Parking at LSA

#### **13 April (Wednesday) Sunset: 1908L Civil Twi: 1933L (KPAM)**

1300 Installation Brief @ Bldg 36234 – 101 Mississippi Road (MC, Ento, & Spray MX Lead)

1600 Base Flying Ops Brief @ Airfield Operations (MC, Entos, Pilots and Navs)  
Weather Call/Product Load

1630 Calibration

1845 Depart KPAM

2030 Land KPAM

#### **14 April (Thursday) Sunset: 1909L Civil Twi: 1933L (KPAM) WX/MX Backup**

1600 Weather Call/Product Load

1630 Calibration

1845 Depart KPAM

2030 Land KPAM

#### **15 April (Friday)**

0900 Depart KPAM

1230 Land KYNG

### **4. SPRAY CONFIGURATION AND PARAMETERS:** (note these are subject to change)

Locations:	Tyndall AFB
Acres:	25,500
Chemical:	Trumpet® EC (EPA Reg. No. 5481-481)
	Signal word: Danger
Gallons loaded:	210 gallons
Flow Rate:	7.62 GPM
Application Rate:	1.05 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300' AGL NVG Operations
Airspeed:	200 Knots Ground Speed
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet Flat Fan / Straight Down
Number of Nozzles:	34-35 (distributed evenly both sides as possible)
Formulas:	Flow Rate = Gal/Time in Minutes Acreage Sprayed = Total Sec x 338 x Swath Width / 43,560

**5. AIR TO GROUND RADIO FREQUENCIES:**

**Tyndall AFB:** Tower – 850-238-4950/4553  
Tower – 133.95 or 263.15  
Approach – 120.825 or 379.3 N blw 5000'  
Approach – 119.775 or 317.45 S blw 5000'  
Ground – 121.9 or 259.3  
Clearance – 118.05 or 348.7  
ATIS – 254.4  
PTD – 139.9 or 372.2  
COMD POST – 381.3 (CHECKER OPS)

**6. TRANSPORTATION:**

**U-drives (325<sup>th</sup> LRS Vehicle Dispatch)**

6-Pax Truck, 7-Pax Van, 8-Pax Van, 5-Pax Sedan

Transportation Confirmation # 33077645; will be prepositioned on the Flight Line  
(850) 283-9340, (850) 283-8959

**7. LODGING:**

Holiday Inn – Panama City Beach

POC: (b) (6), VP of Sales; (b) (6), (b) (6) (b) (6)

11127 Front Beach Road, Panama City Beach, FL 32407

(850) 230-4080

\* Contract hotel with Sand Dollar Inn – Non-As to issued by AF lodging, submit tax exempt at checkin

**8. CONTACTS:**

**TYNDALL AFB FL**

**DSN: 523-XXXX COMMERCIAL: 850-283-XXXX**

Wing Commander – Col (b) (6) – (b) (6)

MSG Commander – Col (b) (6) – (b) (6)

Civil Engineer – Lt Col (b) (6) – (b) (6) /cell: (b) (6)

Deputy Chief/Civil Engineer – Mr. (b) (6) – (b) (6) / Cell (b) (6)

Environmental Coordinator – (b) (6) – (b) (6) / Cell (b) (6)

Base Operations – 283-3212

Tyndall AFB Control Tower – 283-4950

Weather – 283-1387

Pest Control POC – (b) (6) – Cell (b) (6)

Public Affairs – 283-4500

Fuels – 283-2335

Transportation – 283-8959 / Stand by 850-832-2248

Fire Department – 283-4777

Airfield Manager – SMSgt (b) (6) – (b) (6)

Base Operator – 283-1110

Command Post – 283-2155

(b) (6) – (b) (6) / Cell (b) (6)

Public Health – 283-7138



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

28 September 2021

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Capability and Concept of Operations for Aerial Spray at Mountain Home AFB and Saylor Creek Bombing Range, ID

1. Aerial spray deployment of one C-130 from 4-15 October 2021 in response to an aerial spray request to aid fire prevention on Saylor Creek Bombing Range located near Mountain Home AFB, ID. Herbicide will be applied to target cheat grass while allowing native fire resistant vegetation (sagebrush) to re-establish and become competitive. During the operation aerial spray flight proficiency training will be accomplished while providing real-world training for aerial spray entomologists and maintenance personnel.

2. Concept of Operations (All times are local)

- a. 4 Oct (Mon)
  - 1000 Support aircraft departs KYNG
  - 1010 Spray aircraft departs KYNG
  - 1400 Spray aircraft lands KMUO
  - 1410 Support aircraft lands KMUO
- b. 5-8 Oct (Tues-Fri) Spray Sorties
  - 0700 Depart KMUO
  - 0900 Support aircraft RTB to YNG
  - 1115 Land KMUO
- c. 9 Oct (Sat)
  - 1000 Swap out aircraft departs KYNG
  - 1400 Swap out aircraft lands KBOI
- d. 10 Oct (Sun)
  - 0900 Swap out aircraft departs KBOI
  - 1600 Swap out aircraft lands KYNG
- e. 12-14 Oct (Tues-Thurs) Spray Sorties
  - 0700 Depart KMUO
  - 1115 Land KMUO

- f. 15 Oct (Fri) Redeployment
  - 0900 Spray aircraft depart KMUO
  - 0910 Support aircraft depart KMUO
  - 1600 Spray aircraft land KYNG
  - 1610 Support aircraft land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: approx. 3,004 acres
- b. Altitude: 100' AGL for herbicide application
- c. Swath Width: 100ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 4 oz/acre of Panoramic® 2SL (active ingredient: 23% imazapic ammonium)

4. Lt Col (b) (6) and Lt Col (b) (6) will serve as the Mission Commanders.  
Lt Col (b) (6) and Lt Col (b) (6) will be the Aircraft Commanders. Required support at Mountain Home AFB and Saylor Creek has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT  
MCRD PARRIS ISLAND AND JB CHARLESTON, SC, 6 – 9 SEPTEMBER 2022**

**1. MISSION BASICS:**

- a. Installation Sprayed: MCRD Parris Island, SC; JB Charleston, SC
- b. Mission Duration: 6 – 9 September 2022
- c. Purpose of Application: Control of nuisance and vector mosquito species through application of adulticide
- d. Application Date: 7 September 2022
- e. Times of Application (Zulu):
  - (1) MCRD Parris Island: 0015 – 0045
  - (2) JB Charleston: 0215 – 0315
- f. Acres Treated:
  - (1) MCRD Parris Island: 7,263
  - (2) JB Charleston: 17,707
- g. Flying Data:
  - (1) Spray sorties/hours: 3/3.4
  - (2) Flush sorties/hours: 0/0
  - (3) Ferry sorties/hours: 2/4.0
- h. Project Coordinator (Name/Rank, Phone #):
  - (1) MCRD Parris Island: Mr (b) (6), DSN (b) (6)
  - (2) JB Charleston: MSgt (b) (6), DSN (b) (6)
- i. Date Spray Maps Last Approved:
  - (1) MCRD Parris Island: 6 September 2022
  - (2) JB Charleston: 7 September 2022
- j. Installation In-Briefing: (When/Where/Briefer/s): 7 September 2022 at JB Charleston CE, briefed by Maj (b) (6), Lt Col (b) (6), and Capt (b) (6)

**2. OPERATIONAL:**

- a. **Mission Commander:** Maj (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) (A/C), Capt (b) (6)
  - (2) Navigators: Lt Col (b) (6) Maj (b) (6)
  - (3) Flight Engineer: SMSgt (b) (6), SrA (b) (6)
  - (4) Spray Operators: SMSgt (b) (6), MSgt (b) (6), SSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: MSgt (b) (6) (lead), MSgt (b) (6), SSgt (b) (6), TSgt (b) (6), SSgt (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6), SrA (b) (6)

- (3) Comm/Nav: MSgt (b) (6)  
d. **Entomologist:** Lt Col (b) (6) (DoD certification NJ-1142-15-0221, AA 010-03-0221)

**3. PESTICIDE:**

- a. Trade Name: Trumpet® EC (78% a.i. naled)
- b. EPA Registration Number: 5481-481
- c. Additives Used: None
- e. Gallons Pesticide Loaded: 199
- f. Gallons Pesticide Applied:
  - (1) MCRD Parris Island: 59
  - (2) JB Charleston: 140
- g. Gallons and Name of Flush Used: 10 gal highly aromatic naptha (HAN)
- h. Application Rate: 1.02 ounces per acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 90-9108
- b. Spray System (Modules Used) and System ID #: MASS 4, SP2G
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: 8003 Tee Jet Flat Fan
- e. Nozzle Orientation & Number Used: 26 nozzles oriented straight down
- f. Flow Rate: 7.4 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 200'
- b. Spray Off-set: 2,000'
- c. Spray Release Altitude: 300' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. MCRD Parris Island: Wind (ground) 280° @ 5 kts; wind (altitude) 317° @ 9 kts; temperature 84°; relative humidity 84%
- b. JB Charleston: Wind (ground) 230° @ 4 kts; wind (altitude) 275° @ 5 kts; temperature 84°; relative humidity 69%

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations.
  - (2) Results: Adequate coverage through sprayed area (attachments 1 and 2)
- b. Effectiveness:
  - (1) Technique/s Used: CDC light trap surveillance for treatment justification.
  - (2) Results: Pre- and Post-treatment surveillance results for JB Charleston and MCRD Parris Island are listed in attachment 3 and 4.

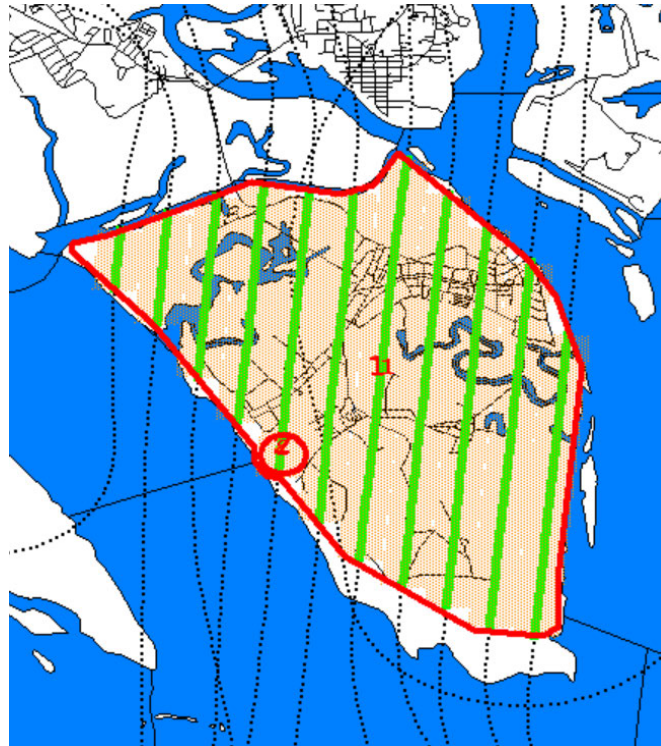


**8. REMARKS:**

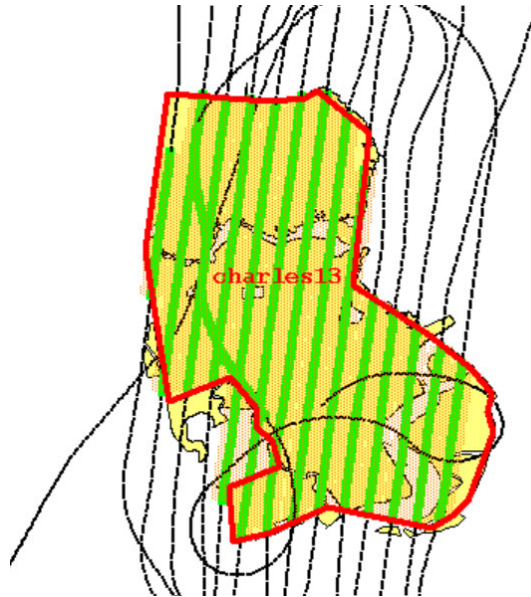
- a. Pre-treatment surveillance at JB Charleston revealed extremely high populations of salt marsh mosquitoes, *Ochlerotatus taeniorhynchus*. Post-treatment surveillance indicates excellent control of these mosquitoes.
- b. Pre- and post-treatment surveillance at MCRD Parris Island may not accurately reflect the level of control reached at this location. Pre-treatment surveillance occurred on 24 August, and it is expected that population numbers may have been higher immediately prior to the treatment based on anecdotal information. Post-treatment, traps were placed on MCRD Parris Island on 7 September, the night of the spray, and collected on 8 September. While the traps showed large numbers of mosquitoes, particularly at the Crucible Aid Station, it was reported that all were dead presumably from the spray application. It was also reported that mosquitoes were extremely active when traps were set and little mosquito activity was noted when traps were collected on 8 September.
- c. Weather conditions were ideal for adulticide application. The spray system was calibrated on the ground prior to application, and there were no issues observed during this treatment for control of adult mosquitoes.
- d. We sincerely appreciate the outstanding support received from both JB Charleston and MCRD Parris Island. In particular, we would like to thank MSgt (b) (6) , Mr. (b) (6) and Mr. (b) (6) for their support in making all necessary arrangements prior to the spray team's arrival, and for providing field observational support during the spray applications. This mission would not have been possible without the support of all those involved.

(b) (6) , Lt Col, USAF  
DoD Certified Pest Management Professional

**Attachment 1. Area sprayed at MCRD Parris Island, 7 September 2022. Red outline is the proposed spray block, green lines are the actual spray application.**



**Attachment 2. Area sprayed at JB Charleston, 7 September 2022. Red outline is the proposed spray block, green lines are the actual spray application.**



**Attachment 3. Pre- and post-treatment CDC light trap surveillance mosquito counts as reported by JB Charleston preventive medicine personnel.**

<b>Location</b>	<b>Pre-treatment (6 Sept 2022)</b>	<b>Post-treatment (9 Sept 2022)</b>
Marrington Park	182	26
Spillway (Water Front Office)	576	6
Hopper Bridge	312	82
Golf Course	75	2
<b>TOTAL</b>	<b>1,145</b>	<b>116</b>

**Attachment 4. Pre- and post-treatment CDC light trap surveillance mosquito counts as reported by MCRD Parris Island preventive medicine personnel.**

<b>Location</b>	<b>Pre-treatment (24 Aug 2022)</b>	<b>Post-treatment (8 Sept 2022)</b>
Leatherneck Square	200	0
Golf Course	0 (net issue)	65
Crucible Aid Station	175	1,632
Rifle Range Cooling Tower	172	150
4 <sup>th</sup> Bn/DI School Parade Deck	0 (battery issue)	40
<b>TOTAL</b>	<b>547</b>	<b>1,887</b>



**AERIAL SPRAY OPERATIONAL SCHEDULE  
CAMP BLANDING MASS CONFIGURATION TRAINING  
JACKSONVILLE NAS, FL  
7 – 10 November 2021**

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**AERIAL SPRAY OPERATIONAL SCHEDULE**  
**CAMP BLANDING MASS CONFIGURATION TRAINING**  
**JACKSONVILLE NAS, FL**  
**7 – 10 November 2021**  
**QZNRK7571311**

**OBJECTIVE/PURPOSE/BENEFIT:** One C-130 will deploy to NAS Jacksonville, FL where the 910<sup>th</sup> Aerial Spray Unit will be conducting swath characterization on Camp Blanding Joint Training Center in order to compare various configurations of the Modular Aerial Spray System to optimize control of larval mosquito vectors of disease. The aircraft will operate from NAS Jacksonville, FL and use the SP2 system. This mission will also provide real-world training for aerial spray aircrew, entomologists, and maintenance personnel with the goal of mission readiness for interrupting virus transmission.

## 1. 910 AW PARTICIPANTS:

**Msn Commander:** Maj (b) (6) ((b) (6))

**Entomologist:** Lt Col (b) (6)

**Pilots:** Lt Col (b) (6) , Maj (b) (6)

**Navigators:** Lt Col (b) (6)

**Flight Engineers:** CMSgt (b) (6)

**Spray Operators:** SMSgt (b) (6) , SSgt (b) (6)

**Spray Maintenance:** TSgt (b) (6) (LEAD) (b) (6)  
MSgt (b) (6) , TSgt (b) (6) , SrA (b) (6)

**Crew Chiefs:** TSgt (b) (6) , MSgt (b) (6)

**Avionics:** MSgt (b) (6)

## 2. REQUIRED ITEMS:

Ms n Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map, Wingman system operational cards, Stratus
Spray Operators:	PPE, Calibration Tables/Laptop/Tablet and or Spray datasheet, O <sub>2</sub> hose extensions, wireless headsets.
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios, Wingman system test cards



**3. SCHEDULE (All Local Time):**

**PPR: 11-07-01**

**07 Nov (Sunday)**

1330 Depart KYNG

1600 Land KNIP/Safety brief for MXS and test aircrew

**08 Nov (Monday)** 0645 Sunrise

0645 Showtime and weather decision

0700 Loading

0815 Ento ground crew onsite at Camp Blanding for setup of cards

0845 Spray Aircraft Departs KNIP for sortie at Camp Blanding

1200 Spray Aircraft Lands KNIP

**09 Nov (Tuesday)** 0646 Sunrise

0645 Showtime and weather decision

0815 Ento ground crew onsite at Camp Blanding for setup of cards

0845 Spray Aircraft Departs KNIP for sortie at Camp Blanding

1200 Spray Aircraft Lands KNIP

**10 Nov (Wednesday) WX Backup** 0647 Sunrise \* If needed will fly in AM before departing to YNG

0800 Show

1200 SP2 Depart for KYNG

\* Runway MX from 0800-1200. If you can be off the deck before 0800 you can depart.

1430 SP2 Lands KYNG

\*\*\*Note\*\*\* Scheduled Range times are 0800-1700 Monday-Wednesday.

\*\*\*Note\*\*\* Timelines may be adjusted by the MC to facilitate the test plan.

**4. AIRCRAFT & SPRAY CONFIGURATION:**

**Aircraft:** 92-3024

**System:** MASS: #2 SP2G (2-Module System) with fuselage booms; ULV booms spraying LV configuration.

**Nozzle/Orientation (Weinberg LZ test, 8 Nov):** (30) 8020 nozzles oriented straight down

**Number of Nozzles (Weinberg LZ test, 9 Nov):** (9) 8070 nozzles oriented straight down

**Offset:** TBD by PMP

**5. SPRAY LOADING:**

**Weinberg LZ tests: Approximately 60 GPM Water Only:**

**Amount of Water:** 700 Gallons; Should suffice for entire training period

**Where:** Parking location

**Furnished by Installation:** No hazardous waste disposal at this facility

**6. SPRAY PARAMETERS:**

Location (3-4 Feb): Camp Blanding – Weinberg LZ

Chemical: Water

Adjuvant: N/A

Area to be treated: Nominally 232 acres/60 second pass; 4-6 passes total

Swath Width: 500 feet nominal  
 Flow Rate: 60 GPM  
 Application Rate: N/A  
 Altitude: 200' AGL operations  
 Ground Speed: 200 Knots  
 Flush: None required; air purge only  
 Formulas: Flow Rate = acres per minute x gal/acre  
 Acreage Sprayed = Total Sec x acres per minute  
 Acres per minute = [(speed in knots) x (swath width)]/430.15

7. **TRANSPORTATION:** Enterprise (904) 778-0598  
 7945 Blanding Boulevard, Jacksonville, FL, 32244  
 Cars: (b) (6)  
 Minivans: (b) (6)  
 Reservation numbers: 4V7DYN, 4V7BMR, 4V7XG9, 4V7LHH, 4V84HS  
 Transportation to vehicles provided by LT (b) (6), NECE Duty Officer: (904) 314-0242

8. **LODGING:**  
**Will be quarters ON base. 15 rooms reserved. Confirmation# 31120806407**  
 Property: Navy Gateway Inns and Suites  
 Property Address: Jacksonville NAS, 6800 Roosevelt Blvd, Jacksonville, Florida 32212  
 Property Phone: 904-542-3138/904-772-6000  
 Group Name: 757 Airlift Squadron  
 POC: (b) (6) [@navy.mil](mailto:(b) (6)@navy.mil)

9. **CONTACTS:**

**AIR TO GROUND RADIO FREQUENCIES:**

NIP Ops	134.775	310.2
NIP Twr	125.15	340.2
NIP Gnd	128.6	336.4
ATIS	124.35	290.425
PMSV	343.5	
Blanding Range Control	134.10	277.45 squawk 4000 upon entering
Keystone Field (42J)	122.7	
Spray ground	392.2/123.45	

**Naval Air Station Jacksonville, FL (NAS JAX) DSN: 942-XXXX; COM: (904) 542-XXXX**

PPR Air Field OPS	DSN 942-3176	(904) 542-3176
Base OPS	DSN 942-2511	(904) 542-2511
Tower:	DSN 942-2511 OPS will transfer	

**Camp Blanding, FL DSN: 822-XXXX; COM: (904) 682-4XXX**

Chief (b) (6)	(b) (6)	CB Training Center
SGT (b) (6)	(b) (6)	Mr. (b) (6)
Range Operations: (904) 682-3121 Radio Room * Call each morning for a brief		
Airspace:	x4050	



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

05 November 2021

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Capability and Concept of Operations for NAS Jacksonville, FL

1. One C-130 will deploy to NAS Jacksonville, FL from 7-10 November 2021 where the 910th Aerial Spray Unit will be conducting swath characterization on Camp Blanding Joint Training Center in order to compare various configurations of the Modular Aerial Spray System to optimize control of larval mosquito vectors of disease. The aircraft will operate from NAS Jacksonville, FL and use the SP2 system. This mission will also provide real-world training for aerial spray aircrew, entomologists, and maintenance personnel with the goal of mission readiness for interrupting virus transmission.

2. Concept of Operations:

- a. 7 November (Sunday)
  - 1130 Show KYNG
  - 1330 Depart KYNG
  - 1600 Land KNIP
- b. 8-9 November (Monday-Tuesday)
  - 0645 Showtime and weather decision
  - 0700 Loading
  - 0815 Entomologist ground crew onsite at Camp Blanding for setup of cards
  - 0845 Spray aircraft departs KNIP for sortie at Camp Blanding
  - 1200 Spray aircraft lands KNIP
- c. 10 November (Wednesday)
  - 0600 Show KNIP
  - 0800 Depart KNIP
  - 1030 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. The mission commander will coordinate all changes to the planned itinerary.

### 3. Spray Parameters

Location:	Camp Blanding – Weinberg LZ
Chemical:	Water
Adjuvant:	N/A
Area to be treated:	Nominally 232 acres/60 second pass; 4-6 passes total
Swath Width:	500 feet nominal
Flow Rate:	60 GPM
Application Rate:	N/A
Altitude:	200' AGL operations
Ground Speed:	200 Knots
Flush:	None required; air purge only

4. Maj (b) (6) will serve as mission commander with Lt Col (b) (6) as the Aircraft Commander. Support required at NAS Jacksonville has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND**

01 March 2022

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757AS/DOS  
3976 King Graves Rd  
Vienna, Ohio 44473-0910

SUBJECT: Concept of Operations for Aerial Spray at the Utah Test and Training Range

1. Aerial spray flight proficiency training will be accomplished on Targets 21, 23, 24, and Nord LZ at the Utah Test and Training Range (UTTR). Spray sorties will apply Krovar and Plateau to control vegetation (i.e., *Halogeton*) growth aiding bombing mission test evaluations and unexploded ordnance recovery. One aerial spray configured and one support C-130 will be available from 7-18 March 2022 for the requested spray mission. A swap out mission is scheduled over the weekend to maximize aircrew training over the two week period.

2. Concept of Operations:

ALL TIMES LOCAL

a. 7 March (Monday)

1000 Vader 07 departs KYNG (SP-1/Support)  
1015 Vader 23 departs KYNG (SP-3)  
1330 Vader 07 lands KHIF  
1345 Vader 23 lands KHIF

b. 8-11 March (Tuesday - Friday)

0800 Spray 23 departs KHIF (Actual Spray)  
0900 Spray 07 departs KHIF (Training)  
1030 Spray 07 lands KHIF  
1200 Spray 23 lands KHIF

c. 12 March (Saturday)

0900 Vader 07 departs KHIF  
1530 Vader 07 lands KYNG

d. 13 March (Sunday)

1000 Vader 07 departs KYNG  
1330 Vader 07 lands KHIF

- e. 14-17 March (Monday – Thursday)  
0800 Spray 23 departs KHIF (Actual Spray)  
0900 Spray 07 departs KHIF (Training)  
1030 Spray 07 lands KHIF  
1200 Spray 23 lands KHIF

- f. 18 March (Friday)  
0900 Vader 23 departs KHIF (SP-3)  
0915 Vader 07 departs KHIF (SP-1/Support)  
1600 Vader 23 lands KYNG  
1615 Vader 07 lands KYNG

3. Spray parameters:

Herbicide: Krovar 1DF® / Plateau  
Flow rate: 366 Gallons/Minute / 335 Gallons/Minute  
Acreage: 900 Acres / 800 Acres (Targets 21, 23+24)  
Ground speed: 200 knots (337.55 ft/sec)  
Spray altitude: 100 feet AGL  
Swath width: 35 Feet / 80 Feet

4. Lt Col (b) (6) (7-13 Mar) and Capt (b) (6) (14-18 Mar) will serve as the mission commanders.

5. Aircraft Commanders:

Lt Col (b) (6)  
Lt Col (b) (6)  
Lt Col (b) (6)

6. Support required at both Hill AFB and the UTTR has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray



DEPARTMENT OF THE AIR FORCE  
757 AIRLIFT SQUADRON  
AERIAL SPRAY OPERATIONS  
3976 King Graves Rd Unit 26  
Vienna OH 44473-5932

20 January 2022

**MEMORANDUM FOR:**

910 AW CC/ 910 OG CC/ 757 DO CC  
ARMED FORCES PEST MANAGEMENT BOARD (AFPMB)

**FROM:** 757 AS/DOS (Lt Col (b) (6) )

**SUBJECT:** Aerial Application Pest Control Course (AAP-001), FMCA/DoD fly-in, Anastasia Mosquito Control District, Florida.

1. The DoD Aerial Application Pest Control Course (AAP-001) was taught in conjunction with Florida Mosquito Control (FMCA) Fly-In event, hosted by FMCA and Anastasia Mosquito Control District, St John's County, FL. This course provided certification training in Aerial Application Pest Control (Category 11) as required by the Environmental Protection Agency in accordance with DoD training requirements. Eight DoD personnel (students) attended and completed the course. Four attended for initial certification, and 4 attended for re-certification. In addition, all 910 AW Pest Management Professionals received 14 total hours of Continuing Educational Credits (CEU's) to maintain or achieve Florida State Pesticide Applicator Certification.

**2. COURSE STAFF:**

a. 910<sup>th</sup> Airlift Wing:

Lt Col (b) (6) , Course Director & Instructor  
Lt Col (b) (6) , Course Instructor  
Capt (b) (6) , Course Instructor  
Lt Col (b) (6) , Course Instructor  
SMSgt (b) (6) , Public Affairs, Course Instructor  
Lt Col (b) (6) , Navigator and Course Instructor  
Capt (b) (6) , Pilot and Course Instructor  
TSgt (b) (6) , Spray Maintenance

b. Mission plan with crew complement is attached (Attachment 2). There were no significant deviations between plan and operational activity. That of course is a genuine testament to the effectiveness of Aerial Spray mission planners and non-DoD collaborators.



**3. STUDENTS:** A breakdown of the student composition follows:

a. Certification Status:

- (1) Initial = 4
- (2) Re-certification = 4

b. Attendee Organizations:

- (1) US Air Force/ANG = 3
- (2) US Army = 2
- (3) US Navy/Marines = 3

**4. COMMENTS:**

- a. The spray training course (AAP-001, EPA Category 11) is an annual exercise the 910AW spray group completes in order to allow DoD personnel to maintain EPA/DoD proficiency in the legal application of pesticides on DoD installations per the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) of 1974, which is effectively the law of the land regarding pest control activities.

For the last 10 years, the 910<sup>th</sup> spray group has organized our annual spray course in conjunction with FMCA-Fly In event on roughly a one in three year basis. FMCA Fly-in is an annual event sponsored by the Florida Mosquito Control association, such that aerial mosquito control applicators, largely from Florida, Louisiana, and Texas congregate to share regulatory and operational issues that affect collective mosquito control activities, as well as shared general knowledge regarding aerial application of pesticides for the same. The purpose of DoD participation in this event is to ensure that the DoD is conversing with our non-military potential partners to stay “up to speed” if a contingency, such as hurricane or other arises, and use the opportunity to train DoD personnel, with ancillary goal of reminding the industry at large regarding DoD capabilities.

From my (AAP-001 Course director and Mission Commander) perspective, this event was entirely successful. The general schedule went off as planned with very little deviation with respect to schedule. Aircrew successfully completed demonstration and local training. DoD pest management personnel were all successfully accredited for Cat 11 certification. 910AW Aerial Spray PMP's received Continuing Education Units (CEU's) to maintain Florida licensure for potential contingencies in the state of Florida. Best of all, it was actually kind of fun (personal observation).

- b. **Course Schedule:** A copy of the Course Schedule is included as **Attachment 1**. The schedule was designed to complete all necessary training/information as prescribed by Cat 11 certification guidelines in DoDI 4150.07, while also incorporating DoD schedule into FMCA general training schedule. All planned training segments of course were accomplished, largely due to alacrity and support of collaborators, instructors and aircrew.

- c. **Flying activities:** This year our training was somewhat limited to task and function. Normally, the aerial spray class conducts a flight demonstration for participants, followed by a field exercise with expectation that it will reinforce concepts regarding swath characterization. The later mentioned concept was accomplished, but as NE Regional Airport is a highly controlled location, a significant amount of coordination had to be completed. The functional goal in working with Airport Authority was to have participants present to view spray activities in a controlled location, while instructors placed test cards on taxiway/runway (this was coordinated by NE Regional airfield ops and ground/tower). Thanks to coordination from St. John's airport authority, all proceeded smoothly with good communication. Analysis of demonstration/testing was completed in a later open forum session.

Additional flying activities not directly associated with FMCA/DoD spray course included a pilot check ride (Capt (b) (6)) with an over-water proficiency sortie.

4. **Participation:** All students and staff participated actively, and successfully completed the mapping exercise and the final exam. The mapping exercise counted for 20 percent of the student's score and the final exam counted for 80 percent of the student's score. All participants passed both portions of testing with minimum grade of 70 percent, with course average being in the mid-90 percent range. Recommendations for certification were sent to command specific certifying authorities. DoD Pesticide applicator certifications are valid for 3 years.
5. **ACKNOWLEDGEMENTS:** Thanks go to all the 910 AW Course Instructors, spray MXS, spray office, and aircrew for their willingness to help and participate. Huge thanks to Messrs (b) (6) and (b) (6) representing FMCA for ultimately organizing this event. Also, I wish to sincerely acknowledge personnel at Anastasia Mosquito Control District (specifically Dr. (b) (6) and Dr. (b) (6)), as well as Mr. (b) (6) and his crew at NE Regional Airport (St. John's Airport Authority). This event (in entirety) would not have happened without their input and assistance.

(b) (6)  
(b) (6)

(b) (6), Lt Col, USAFR  
Course Director

Digitally signed by  
(b) (6) (b) (6)  
Date: 2022.01.20 14:51:38 -05'00'

## Attachment 1. 2022 Cat 11 Aerial Spray Course Schedule.

	2022 FMCA Fly-In/DoD Aerial Spray Training			
	St. Augustine, FL 10-13 Jan 2022			
	Start of DoD Aerial Spray Course			
Monday, 10 January				
Time	Description	Instructor/Presenter	Affiliation	
0800-0805	Course Overview/Orientation	(b) (6)	US Air Force	
0805-0930	Overview and General Principles	(b) (6)	US Air Force	
0930-1000	Meteorological Effects	(b) (6)	US Air Force	
1000-1130+	Aerial Spray Math and Practice	(b) (6)	US Air Force	
1200-1330	Lunch (not provided)			
1330-1415	Public Affairs	(b) (6)	US Air Force	
1415-1500	Swath Characterization	(b) (6)	US Air Force	
1500-1530	C-130 Logistics	(b) (6)	US Air Force	
1530-1600	Contracts	(b) (6)	US Air Force	
Tuesday, 11 January				
0800-0830	Legal Aspects	(b) (6)	US Air Force	
0830-0900	Map Preparation	(b) (6)	US Air Force	
0900-0945	Environmental Aspects/Mosquito Biology	(b) (6)	US Air Force	
0945-1015	USAF Spray Systems	MXS (speaker TBD)	US Air Force	
1015-1130	Field Exercise (if applicable)/Map Preparation	All USAF personnel	US Air Force	
1130 onward	Lunch and general registration for FMCA course begins			
Tuesday, 11-13 January				
	FMCA/DoD General Session: Lunch provided	Various	Various	
**In General session	These are DoD presentation items in General Session			
Time to be determined	Pesticides and safety considerations	(b) (6)	US Air Force	
	Hurricane Delta overview	(b) (6)	US Air Force	
	Aerial spray and IPM	(b) (6)	US Air Force	
	DoD Pilots perspective	(b) (6)	US Air Force	
	DoD Category 11 training participants only:			
Thursday, 13 January				
1000-1030	Course Review/Exam Review	(b) (6)	US Air Force	
1000-1035	Break			
1035-1200	Exam			

**Attachment 2.** Operational plan and participants.

**AERIAL SPRAY OPERATIONAL SCHEDULE  
FMCA/DoD AAP-001 AERIAL SPRAY COURSE  
ST. AUGUSTINE, FL - KSGJ  
9-14 JANUARY 2022  
QZNRK7571009**

**OBJECTIVE/PURPOSE/BENEFIT:** The 910<sup>th</sup> Aerial Spray Unit will deploy one C-130 to Northeast Florida Regional Airport, FL from 9-14 January 2022 in support of the annual DoD Aerial Spray Applicator (Category 11) Course is held in conjunction with Florida Mosquito Control Association (FMCA) annual fly-in. Completion will result in required DoD Pesticide Applicator Certification for DoD PMP's and applicators, discussions on current status of Aerial Spray in DoD and civilian sector, and currency training for aircrew, including check ride and over-water proficiency.

**1. 910 AW PARTICIPANTS:**

Mission Commander:	Lt Col (b) (6)	(b) (6)
Entomologists:	Lt Col (b) (6), Lt Col (b) (6), Capt (b) (6)	
Pilot:	Lt Col (b) (6), Capt (b) (6)	
Navigator:	Lt Col (b) (6)	
Flight Engineer:	SMSgt (b) (6)	
Spray Operators:	SMSgt (b) (6), TSgt (b) (6)	
Spray Maintenance:	TSgt (b) (6) (Lead) (b) (6) MSgt (b) (6), SSgt (b) (6), SMSgt (b) (6), SrA (b) (6)	
Crew Chiefs:	MSgt (b) (6), SSgt (b) (6)	

**2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map, Wingman system cards
Spray Operators:	PPE, Calibration Tables/Laptop/Tablet and or Spray datasheet, O <sub>2</sub> hose extensions, wireless headsets.
Spray Maintenance:	Deployment Kit, Support Equipment

### 3. SCHEDULE (All Local Time):

#### 09 Jan (Sunday)

1000 Showtime  
1200 Depart KYNG  
1430 Arrive KSGJ

#### 10 Jan (Monday): DoD spray training begins

0745 Showtime for Entos and Spray course presenters, Anastasia Co MCD, 120 EOC Drive, St. Augustine, FL 32092

#### 11 Jan (Tuesday)

0800 Showtime at Anastasia MCD for entos and presenters; DoD program to last until 1130; blend into FMCA program after lunch  
1100 Showtime  
1230 Takeoff for local training sortie

#### 12 Jan (Wednesday): continuing FMCA/DoD program

\*\*\*Aircraft activities WX dependent (MC discretion)

0800 Spray Demonstration at NE Regional Airport in support of FMCA/DoD training event  
0900 Static display on ramp at NE Regional Airport in support of FMCA/DoD training event.

#### 13 Jan (Thursday)

0800 Showtime for MX and OPS Spray Training at DoD training event

#### 14 Jan (Friday)

0800 Showtime  
1000 Depart KSGJ  
1230 Land KYNG

### 4. AIRCRAFT & SPRAY CONFIGURATION:

<b>Chemical:</b>	<b>None; Water only</b>
<b>MASS:</b>	<b>MASS6; SP2</b>
<b>Gallons loaded:</b>	<b>700</b>
<b>Flow Rate:</b>	<b>336 GPM</b>
<b>Application Rate:</b>	<b>8-9 gal/acre</b>
<b>Flush:</b>	<b>N/A</b>
<b>Altitude:</b>	<b>100'</b>
<b>Airspeed:</b>	<b>200 KNTS</b>
<b>Swath Width:</b>	<b>approx 80 feet</b>
<b>Nozzle/Orientation:</b>	<b>R-20 Raindrop</b>
<b>Number of Nozzles:</b>	<b>20</b>
<b>Aircraft:</b>	<b>90-9108</b>
<b>Offset:</b>	<b>None; Fly centerline or entomologist's discretion</b>

### 5. TRANSPORTATION:

**Pick Up/Return:** Atlantic Aviation FBO

**POC:** Steven (904) 825-1695

1. 5-PAX Minivan / (b) (6)      Aircrew Minivan
2. 5-PAX Minivan / (b) (6)      : MX Minivan
3. 5-PAX Sedan / (b) (6)      : Aircrew Sedan
4. 5-PAX Sedan / (b) (6)      : MX Sedan

6. **LODGING:**

**18 rooms reserved- Tax exempt form printed**

Property: Hampton Inn & Suites St. Augustine-Vilano Beach  
Property Address: 95 Vilano Road Saint Augustine, FL 32084  
Property Phone: (904) 827-9797  
Confirmation # 53200928 & 53203043 (9 rooms each #)

7. **CONTACTS:**

**AIR TO GROUND RADIO FREQUENCIES:**

KSGJ UNICOM	122.95
KSGJ Twr	127.625, 269.475
KSGJ Gnd	121.175, 251.125
KSGJ ATIS	119.625
KSGJ Airfield Mgr, (b) (6)	(b) (6)
Parking & security has been coordinated with Atlantic Aviation FBO	
Atlantic Gen Mgr, (b) (6)	



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND (AFRC)**

04 January 2022

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757AS/DOS  
3976 King Graves Rd  
Vienna Ohio 44473-5946

SUBJECT: Capability and Concept of Operations for DoD Aerial Spray Applicator (Category 11) Course

1. One C-130 is available 9-14 January 2022 to support the annual DoD Aerial Spray Applicator (Category 11) Course in conjunction with the Florida Mosquito Control Association (FMCA) Fly-In. The aircraft will operate from Northeast Florida Regional Airport (KSGJ), FL and use the SP2 configuration. This mission will fly a spray characterization test, and support a static display.

2. Concept of Operations:

- a. 09 January (Sunday)  
1000 Showtime  
1200 Depart KYNG  
1430 Land KSGJ
- b. 10 January (Monday)  
0745 Showtime for Entos and Spray course presenters
- c. 11 January (Tuesday)  
0745 Showtime for Entos and Spray course presenters  
0800 Spray Demonstration at NE Regional Airport in support of FMCA/DoD training event  
0900 Static display on ramp at NE Regional Airport in support of FMCA/DoD training event
- d. 12 January (Wednesday)  
0600 Weather call/Showtime  
0800 Weather call/Showtime  
0900 Takeoff for local training sortie
- e. 13 January (Thursday)  
0800 Showtime for MX and OPS Spray Training at DoD training event
- f. 14 January (Friday)  
0800 Showtime  
1000 Depart KSGJ  
1230 Land KYNG

The mission commander will coordinate all changes to the planned itinerary.



3. Aircraft will be SP2G configured with LV booms installed.
4. Capt (b) (6) will serve as mission commander with Lt Col (b) (6) as the Aircraft Commander. Support required at Northeast Florida Regional Airport has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT  
TYNDALL AFB 12-15 April 2022**

**1. MISSION BASICS:**

- a. Installation Sprayed: Tyndall AFB, FL
- b. Mission Duration: 12-15 April 2022
- c. Purpose of Application: Control of nuisance and vector mosquito species through application of adulticide
- d. Application Date: 13 April 2022
- e. Times of Application (Zulu): 2340-0130
  
- f. Acres Treated: 26616
- g. Flying Data:
  - (1) Spray sorties/hours: 1/1.8
  - (2) Ferry sorties/hours: 2/5.1
- h. Project Coordinator (Name/Rank, Phone #): 2<sup>nd</sup> Lt (b) (6) (b) (6); (b) (6)  
(AFCEC) (b) (6)
- i. Date Spray Maps Last Approved: 13 April 2022 (Approved by Tyndall CE CC Maj (b) (6))
- j. Installation In-Briefing: (When/Where/Briefer/s): 1300 13 April 2022 at Tyndall CE;  
Capt (b) (6), Lt Col (b) (6), Lt Col (b) (6), Capt (b) (6), MSgt (b) (6).

**2. OPERATIONAL:**

- a. **Mission Commander:** Capt (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) (A/C), Lt Col (b) (6)
  - (2) Navigators: Lt Col (b) (6), Capt (b) (6)
  - (3) Flight Engineer: CMSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6), SMSgt (b) (6), TSgt (b) (6)
- c. **Spray Maintenance:**
  - (1) MSgt (b) (6) (lead), TSgt (b) (6), TSgt (b) (6), SrA (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6), SrA (b) (6)
  - (3) Comm/Nav: TSgt (b) (6)
- d. **Entomologist:** Lt Col (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Trumpet<sup>®</sup> EC (78% a.i. naled)
- b. EPA Registration Number: 5481-481
- c. Additives Used: None
- e. Gallons Pesticide Loaded: 225
- f. Gallons Pesticide Applied:  
(1) Tyndall AFB: 225
- g. Gallons and Name of Flush Used: 10 gal highly aromatic naptha (HAN)
- h. Application Rate: 1.08 ounces per acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 90-9107
- b. Spray System (Modules Used) and System ID #: MASS 4, SP2G
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: 8003 Tee Jet Flat Fan
- e. Nozzle Orientation & Number Used: 38 Straight down
- f. Flow Rate: 7.83 gallons per minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: None laterally (headwind component)
- c. Spray Release Altitude: 300' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Tyndall AFB: Wind (ground) 130° @ 8 mph (average with gusts); wind (altitude 300 AGL) 150° @ 19 mph; temperature 75°; relative humidity 72%

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations.
  - (2) Results: Adequate coverage through sprayed area (Attachment 1). Significant undesired headwind/tailwind component, although within spray parameters.
- b. Effectiveness:
  - (1) Technique/s Used: CDC light trap surveillance for treatment justification.
  - (2) Results: Good control based on trap counts (Attachment 2). Overall mosquito population reduction was 98.2%

**REMARKS:**

- a. Weather conditions on spray application date was not ideal because of higher than desired wind speed. However conditions were within specification for aerial application of pesticide.
- b. Apparently good results from mosquito adulticide spray. Pre and post spray trap counts suggested 98.2% control of mosquito population. Be aware that local temperatures dropped significantly during the application period, so that may have had a significant impact on mosquito activity and post-spray mosquito trap counts. No adverse environmental effects were reported from Tyndall AFB personnel.
- c. We sincerely appreciate the support received from Tyndall AFB. Specifically from Lt (b) (6) MSgt (b) (6) MSgt (b) (6), Mr (b) (6) , and support from Tyndall Pest Control Shop.

(b) (6)  
(b) (6)

Digitally signed by  
(b) (6) (b) (6)  
Date: 2022.05.10 11:51:37  
-04'00'

(b) (6) , Lt Col, USAF  
DoD Certified Pest Management Professional

**Attachment 1.** Visual representation of area sprayed at Tyndall AFB. Red outline is designated spray block. Green and yellow indicate application of material 13 April 2022. Minimal offset was applied due to prevailing winds aloft.



**Attachment 2.** Pre and post spray trap counts from various locations at Tyndall AFB. Overall reduction 98.2%

#### Tyndall Apr 2022 mosquito trapping results

Date	Location	Trap count
4/13/22 (pre spray)	Lodging	18
4/13/22 (pre spray)	Running Track	145
4/13/22 (pre spray)	Dorms	2
4/13/22 (pre spray)	Base Housing	8
<b>Total:</b>		<b>173</b>
4/25/22 (post spray)	Lodging	0
4/18/22 (post spray)	Running Track	0
4/25/22 (post spray)	Dorms	3
4/18/22 (post spray)	Base Housing	0
<b>Total:</b>		<b>3</b>
<b>Pre/Post spray reduction</b>		<b>98.2%</b>



**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONALS' POST-MISSION REPORT  
UTAH TEST AND TRAINING RANGE AND DUGWAY PROVING GROUND  
18-28 OCT 2021**

**1. MISSION BASICS:**

- a. Installations Sprayed: Utah Test and Training Range (UTTR); Dugway Proving Ground (DPG)
- b. Mission Duration: 18-28 October 2021
- c. Purpose of Application: Habitat restoration and development of firebreaks with a focus on cheat grass management and native species recovery on the UTTR and DPG
- d. Application Dates: See Attachment 1
- e. Times of Application (Local): See Attachment 1
- f. Acres Treated: 1,030 (509 UTTR + 521 DPG)
- g. Flying Data:
  - (1) Spray sorties/hours: 4/5.3
  - (2) Ferry sorties/hours: 2/10.1
  - (3) Support sorties/hours: 4/20.4
- h. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) /Natural Resources Manager/DSN (b) (6) ; (b) (6) /Natural Resources/(b) (6)
- i. Date Spray Map Last Approved: 18 Oct 2021
- j. Installation In-Briefing: (When/Where/Briefer/s): 18 Oct 2021/USDA Forest Service Forestry Ramp/Lt Col (b) (6) /Lt Col (b) (6) /Lt Col (b) (6) ; Mr. (b) (6) , Ms. (b) (6) , Mr. (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Entomologists (certified applicators): Lt Col (b) (6) , Lt Col (b) (6)
- c. Aircrew:
  - Pilots: Lt Col (b) (6) , Capt (b) (6)
  - Navigators: Lt Col (b) (6)
  - Flight Engineer: SMSgt (b) (6)
  - Spray Operators: SMSgt (b) (6) , TSgt (b) (6) , SSgt (b) (6)
- d. Maintenance:
  - Spray Maintenance: TSgt (b) (6) (lead), SMSgt (b) (6) , MSgt (b) (6), TSgt (b) (6) , TSgt (b) (6), SrA (b) (6), SrA (b) (6)
  - Crew Chiefs: TSgt (b) (6) , SrA (b) (6)
  - Avionics: MSgt (b) (6)
- e. SARM: SrA (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Plateau Herbicide (active ingredient: 23.6% Ammonium salt of imazapic)
- b. EPA Registration Number: 241-365
- c. Formulation Sprayed: 6.2 oz/acre Plateau + 6 oz/acre of MSO in 6.5 gallons of water
- d. Gallons Pesticide Mix Loaded and applied: 6,986
- e. Gallons of pesticide used: 53 gal of Plateau
- f. Gallons and Name of Flush Used: 200 gal water
- g. Other Additives Used: 44 gal of methylated seed oil (MSO)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99106
- b. Spray System (Modules Used) and System ID #: 3
- c. Spray System Configuration: 3-Module System/ UHV Fuselage Booms
- d. Nozzle Type/Size: LV Fuselage
- e. Nozzle Orientation & Number Used: 18 – raindrop nozzles, oriented straight back.
- f. f. Pressure: 40 p.s.i.
- g. Flow Rate: 300 gallons per minute.

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 100'
- b. Spray Off-set: None
- c. Spray Release Altitude: 100' AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. 20 Oct – 1<sup>st</sup> sortie: Winds light and variable  
22 Oct – 1<sup>st</sup> sortie: Winds light and variable; similar during 2<sup>nd</sup> sortie  
28 Oct – 1<sup>st</sup> sortie: calm

**7. SPRAY MONITORING (Pe- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique Used: Visual observations by ground party of approximate 100 ft swath on all passes (see Attachment 3)
  - (2) Results: Good coverage throughout spray area
- b. Effectiveness:
  - (1) Techniques Used: thorough analysis of weed emergence in spring by environmental staff at DPG
  - (2) Results: will be determined this spring by range personnel

**8. REMARKS:** This is the fifth application of Plateau specifically for firebreaks/fire suppression and habitat restoration on the Utah Test and Training Range (UTTR). This year included the second application for the same on the Dugway Proving Ground (DPG). While the application last October (2020) has been successful in discouraging the growth of cheat grass and thus lowering the incidence of range fires, a secondary invasive exotic, Russian thistle had a tremendous year on both locations but more so on the UTTR.



Discussions were continued regarding new herbicide formulations, strategies for qualifying or even quantifying weed suppression, and even the potential to use some resources potentially available at DPG for analysis of droplet size and drift of spray clouds. The outcome of such discussions are highly dependent on funding, something that has been difficult to secure this year. Nonetheless, with ever tightening budgets, it underscores the need for continued partnerships between the Air Force and Army, hopefully sharing resources will, in turn, be a force-multiplier, supporting operational objectives such as efficacious sprays and leading to less fire on ranges and restored fire-resistant native vegetation on these installations.

(b) (6)

, Lt Col, USAF

**DOD Certified Pest Management Professional**

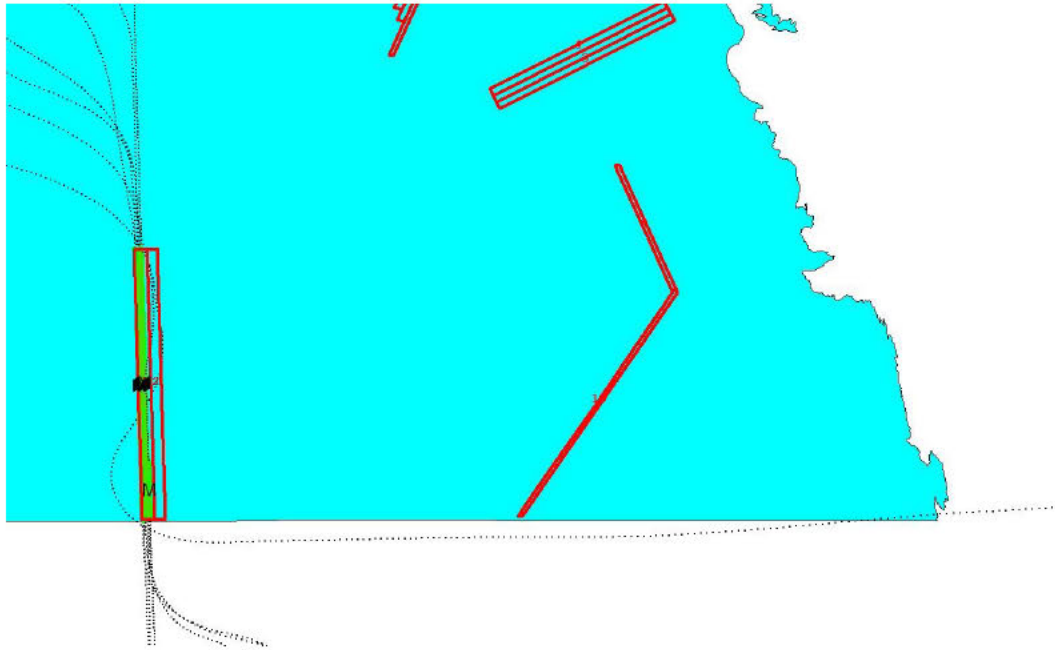
Attachment 1: Summary Spray Chart

**20-28 October 2021**

**SPRAY OPERATIONS SUMMARY FOR UTAH TEST AND TRAINING RANGE**

<b>DATE Oct</b>	<b>SORTIE #</b>	<b>TIMES</b>	<b>TARGET</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>FLYING HOURS</b>
20	1	0808-0910	UTTR – HAG/GAT	238	1619	1.0
22	2	0812-0925	DPG-Stark Rd	256	1760	1.2
22	3	1022-1150	DPG	265	1800	1.5
28	4	0739-0914	UTTR-Oasis	271	1807	1.6
Totals				1,030	6,986	5.3

Attachment 2. GPS track recording for applications on the UTTR 28 October 2021.



Attachment 3. GPS track recordings for applications on the Dugway Proving Ground on 22 October 2021.





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

13 September 2022

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Capability and Concept of Operations for Aerial Spray at Mountain Home AFB and  
Juniper Butte Bombing Range, ID

1. Aerial spray deployment of one C-130 from 19-30 September 2022 in response to an aerial spray request to aid fire prevention on Juniper Butte Bombing Range located near Mountain Home AFB, ID. Herbicide will be applied to target cheat grass while allowing native fire-resistant vegetation (sagebrush) to re-establish and become competitive. During the operation aerial spray flight proficiency training will be accomplished while providing real-world training for aerial spray entomologists and maintenance personnel.

2. Concept of Operations (All times are local)

- a. 19 Sep (Mon)
  - 1200 Support aircraft departs KYNG
  - 1210 Spray aircraft departs KYNG
  - 1600 Spray aircraft lands KMUO
  - 1610 Support aircraft lands KMUO
- b. 20-23 Sep (Tues-Fri) Spray Sorties
  - 0700 Depart KMUO
  - 0900 Support aircraft RTB to YNG
  - 1115 Land KMUO
- c. 24 Sep (Sat)
  - 1300 Swap out aircraft departs KYNG
  - 1700 Swap out aircraft lands KBOI
- d. 25 Sep (Sun)
  - 0900 Swap out aircraft departs KBOI
  - 1600 Swap out aircraft lands KYNG
- e. 26-29 Sep (Tues-Thurs) Spray Sorties
  - 0700 Depart KMUO
  - 1115 Land KMUO

- f. 30 Sep (Fri) Redeployment
  - 0900 Spray aircraft depart KMUO
  - 0910 Support aircraft depart KMUO
  - 1600 Spray aircraft land KYNG
  - 1610 Support aircraft land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 3,005 acres
- b. Altitude: 100' AGL for herbicide application
- c. Swath Width: 100ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 6 oz/acre of Panoramic® 2SL (active ingredient: 23% imazapic ammonium)

4. Lt Col (b) (6) and Maj (b) (6) will serve as the Mission Commanders. Lt Col (b) (6) and Lt Col (b) (6) will be the Aircraft Commanders. Required support at Mountain Home AFB and Juniper Butte Range has been coordinated.

(b) (6) Lt Col, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT JB  
LANGLEY-EUSTIS/CRANEY ISLAND ACE, VA, 23-26 AUGUST 2022**

**1. MISSION BASICS:**

- a. Installation Sprayed: Craney Island, 3 mi buffer area of Portsmouth, Langley AFB
- b. Mission Duration: 23-26 August 2022
- c. Purpose of Application: Control of nuisance and vector mosquito species through application of adulticide
- d. Application Dates: 24 August 2022
- e. Times of Application: 2012 EDT, 0012 Zulu
- f. Acres Treated: 12,139
- g. Flying Data:
  - 1) Spray sorties/hours: 1/1.6
  - 2) Ferry sorties/hours: 2/2.6
- h. Project Coordinator (Name/Rank, Phone #):
  - 1) (b) (6), Assistant Director, Dept. of Public Works, Portsmouth, VA, (b) (6)
  - 2) (b) (6) Pest Management Supervisor, JBLE-Langley, DSN 764-3324
- i. Date Spray Maps Last Approved: 24 August 2022
- j. Installation In-Briefing: (When/Where/Briefer/s):
  - 1) 24 August 2022 at the CE conference room, briefed by Maj (b) (6), Capt (b) (6), Maj (b) (6), TSgt (b) (6) from the 910<sup>th</sup> Airlift Wing.
  - 2) Mr. (b) (6) (telephone), Mr. (b) (6), Mr. (b) (6), and Mr. (b) (6) were representatives from Langley AFB and Craney Island/Portsmouth.

**2. OPERATIONAL:**

- a. **Mission Commander:** Maj (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6), Lt Col (b) (6)
  - (2) Navigators: Maj (b) (6), Capt (b) (6)
  - (3) Flight Engineer: SMSgt (b) (6), SSgt (b) (6)
  - (4) Spray Operators: CMSgt (b) (6), SMSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6), MSgt (b) (6), TSgt (b) (6), SrA (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6), SSgt (b) (6)

- (3) Avionics: SSgt (b) (6)  
d. **Entomologist**: Capt (b) (6) (VA Cert. # 158493-G; Exp. 06/30/2023)

**3. PESTICIDE:**

- a. Trade Name: Trumpet® EC (78% a.i. naled)
- b. EPA Registration Number: 5481-481
- c. Additives Used: None
- e. Gallons Pesticide Loaded: 90 gal
- f. Gallons Pesticide Applied: 90 gal
- g. Gallons and Name of Flush Used: 10 gal highly aromatic naptha (HAN)
- h. Application Rate: 0.97 oz/gal

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 89-9106
- b. Spray System (Modules Used) and System ID #: MASS 4, SP2G
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: 8003 Tee Jet Flat Fan
- e. Nozzle Orientation & Number Used: 26 nozzles oriented straight down
- f. Flow Rate: 7.0 gal/min calibrated

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: 2000'
- c. Spray Release Altitude: 300 AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Langley AFB: wind (ground) 090°@6 Knots reported at 1814
- b. Weather station in spray block: wind (ground) 145°@ 3 knots, gusts up to 6 knots, 85°F, 56.5% relative humidity reported at 1840
- c. Weather at altitude
  - 1) Langley: 140-181@10-12 knots during aerial survey; 120-125@6-8 knots during the spray application
  - 2) Craney/Portsmouth: 0-359@10-12 knots during aerial survey. Swirling winds noted but in general were out of easternly direction; 125-147@5-8 knots during spray application



**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - 1) Technique/s Used: GPS system monitoring aircraft flight pattern.
  - 2) Results: Adequate coverage through sprayed area (Attachments 1)
- b. Effectiveness:
  - 1) Technique/s Used: CDC light trap surveillance for treatment justification.
  - 2) Results: Pre- and Post-treatment surveillance results were conducted

**8. REMARKS:**

- A. Pre-treatment surveillance reported by Mr. (b) (6) and Mr. (b) (6) revealed high populations of mosquitoes present in the area over the past several weeks, adulticide was highly needed to control the mosquitoes. Mr. (b) (6) reported 85 – 100% reduction in adult mosquito captures 24 h after the spray mission. Mr. (b) (6) reported 65 - 95% reduction in mosquito captures.
- B. Weather conditions on 24 August were ideal for adulticide application. The spray system was calibrated on the ground prior to application, and there were no issues observed during this treatment for control of adult mosquitoes. There were cross winds averaging 6 knots and a maximum 12 knots was observed at altitude. Winds were predicted during the preflight in-brief to be at a 090 heading, thus a 0/180 swath direction was chosen. However, during spray applications the wind direction was variable at altitude and was observed between 120° to 180° during. The decision was made on the plane by the entomologist to adjust the spray on/off timing by 5 seconds to account for the change in wind patterns to reduce drift outside the northern edge and into the southern end of the block.
- C. We sincerely appreciate the outstanding support received from Mr. (b) (6) and Mr. (b) (6) for their support in making all necessary arrangements prior to the spray team's arrival, and for providing field observational support during the spray applications.
- D. We sincerely thank the folks from Mr. (b) (6) pest shop for their assistance with rental vehicles. Those individuals have not toured the spray C-130 previously and would be interested in a tour and learning more about the system and our spray operation. We propose to invite Mr. (b) (6) pest shop, and others, to view the spray system during the next mission in the area.

(b) (6) , Capt, USAF  
DoD Certified Pest Management Professional

**Attachment 1. Area sprayed at during the JB Langley-Eustis/Craney Island ACE, VA mission on 24 August 2022. The light green areas are the two spray blocks sprayed by the C-130 aircraft. The spray block is outlined in black. There was a 2000' off-set to account for the wind direction and speed and allow for the product to drift into the spray block.**





**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT JB  
LANGLEY-EUSTIS/CRANEY ISLAND ACE, VA, 26-29 JULY 2022**

**1. MISSION BASICS:**

- a. Installation Sprayed: Craney Island and 3 mi buffer area of Portsmouth
- b. Mission Duration: 26-29 July 2022
- c. Purpose of Application: Control of nuisance and vector mosquito species through application of adulticide
- d. Application Dates: 27 July 2022
- e. Times of Application: 2038 EDT, 0038 Zulu
- f. Acres Treated: 9311
- g. Flying Data:
  - (1) Spray sorties/hours: 1/1.7
  - (2) Ferry sorties/hours: 2/2.7
- h. Project Coordinator (Name/Rank, Phone #):
  - (1) (b) (6), Assistant Director, Dept. of Public Works, Portsmouth, VA, (b) (6)
  - (2) (b) (6), Pest Management Supervisor, JBLE-Langley, DSN 764-3324
- i. Date Spray Maps Last Approved: 20 July 2022
- j. Installation In-Briefing: (When/Where/Briefer/s):
  - (1) 27 July 2022 via teleconference, briefed by Lt Col (b) (6), Capt (b) (6), Mr. (b) (6)

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) (A/C), Lt Col (b) (6)
  - (2) Navigators: Lt Col (b) (6), Maj (b) (6), Maj (b) (6)
  - (3) Flight Engineer: MSgt (b) (6), MSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6), TSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: SrA (b) (6) (lead), TSgt (b) (6), TSgt (b) (6), SSgt (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6), SrA (b) (6)

- (3) Avionics: SrA (b) (6)  
d. **Entomologist**: Capt (b) (6)

**3. PESTICIDE:**

- a. Trade Name: Trumpet<sup>®</sup> EC (78% a.i. naled)
- b. EPA Registration Number: 5481-481
- c. Additives Used: None
- e. Gallons Pesticide Loaded: 60
- f. Gallons Pesticide Applied: 60
- g. Gallons and Name of Flush Used: 10 gal highly aromatic naptha (HAN)
- h. Application Rate: 0.86 oz/gal

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 92-3024
- b. Spray System (Modules Used) and System ID #: MASS 4, SP2
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: 8003 Tee Jet Flat Fan
- e. Nozzle Orientation & Number Used: 25 nozzles oriented straight down
- f. Flow Rate: 6.2 GPM

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off-set: 4,000'
- c. Spray Release Altitude: 300 AGL
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Langley AFB: wind (ground) 270°@7 Knots reported at 1800
- b. Weather station in spray block: wind (ground) 221°@ 1.3 Knots, gusts up to 6 Knots, 85°F, 75.5% relative humidity reported at 1940

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

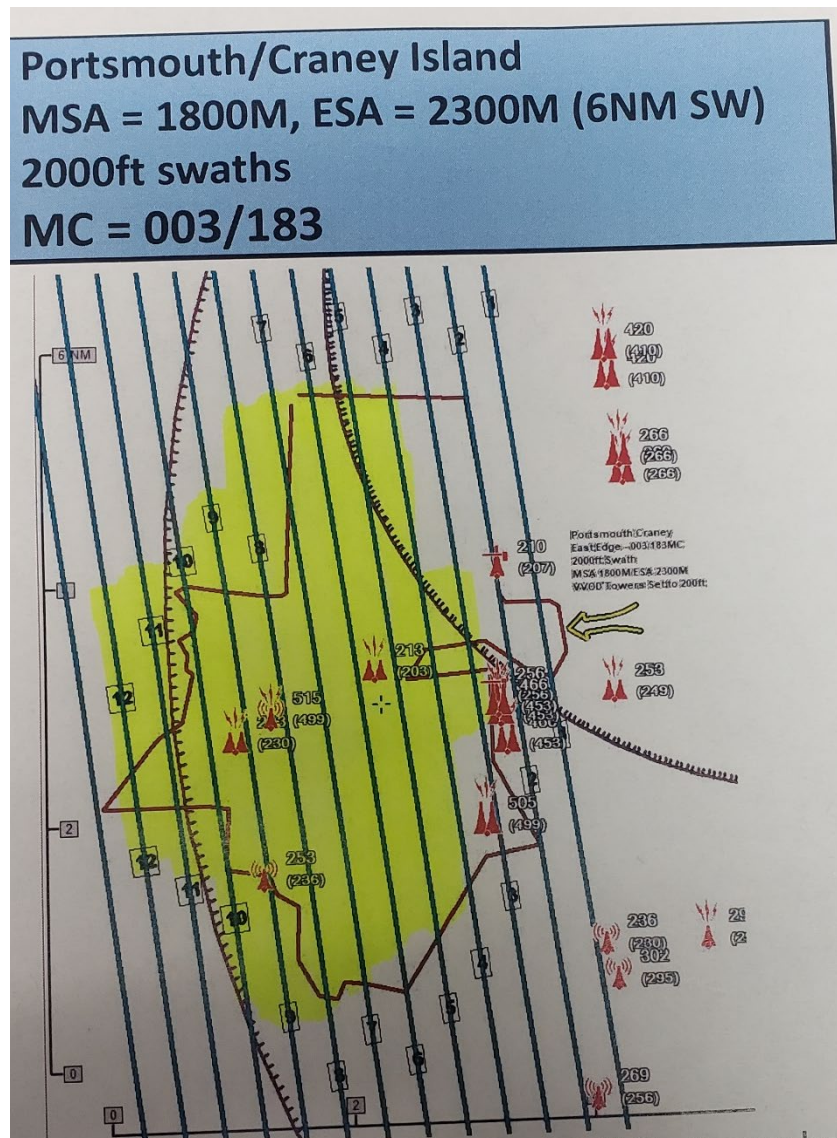
- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern.
  - (2) Results: Adequate coverage through sprayed area (Attachments 1)
- b. Effectiveness:
  - (1) Technique/s Used: CDC light trap surveillance for treatment justification.
  - (2) Results: Pre- and Post-treatment surveillance results were conducted; Results pending; Verbal feedback from Portsmouth Public works indicated excellent results with positive public feedback.

**8. REMARKS:**

- a. Pre-treatment surveillance reported by (b) (6) revealed high populations of mosquitoes present in the area. Weather conditions over the weeks prior to the mission were ideal for mosquito growth and development. (b) (6) stated during the in brief that there were multiple broods coming off at varying timeframes and the adulticide was highly needed to control the mosquitoes.
- b. Weather conditions on 27 July 2022 were ideal for adulticide application. The spray system was calibrated on the ground prior to application, and there were no issues observed during this treatment for control of adult mosquitoes. There were cross winds ranging from 4-12 knots at altitude noted during the aerial survey and an offset of 4000' was used to account for spray drift.
- c. Spray data from the aircraft GPS system was corrupted resulting in the loss of usable GPS location information. The area spray was estimated and depicted from the navigator's swath depictions (attachment 1) and the swaths flown by the aircraft.
- d. We sincerely appreciate the outstanding support received from (b) (6) and (b) (6) for their support in making all necessary arrangements prior to the spray team's arrival, and for providing field observational support during the spray applications. This mission would not have been possible without the support of all those involved.



**Attachment 1. Area sprayed at Craney Island and 3 mi buffer area of Portsmouth, 27 July 2022. The red outline is the proposed spray block, the lines transecting the spray block are the spray swaths, and the highlighted swaths are the approximate spray application area.**





**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT  
MINOT AFB, MINOT, AND BURLINGTON, ND, 11 – 14 JULY 2022**

**1. MISSION BASICS:**

- a. Areas Sprayed: Minot AFB, city of Minot, and Burlington, ND
- b. Mission Duration: 11 – 14 July 2022
- c. Purpose of Application: Control of adult nuisance and vector mosquitoes
- d. Application Date: 13 July 2022
- e. Time of Application (Zulu): 0315 – 0526 hrs
- f. Acres Treated: 26,894
- g. Flying Data:
  - (1) Spray sorties/hours: 2.8
  - (2) Ferry sorties/hours: 2/7.5
- h. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) (Minot AFB); (b) (6) (b) (6) (City of Minot)
- i. Date Spray Map Last Approved: 12 July 2022
- j. Installation In-Briefing: (When/Where/Briefer/s): 12 July 2021 at CES Ready Rm, briefed by Lt Col (b) (6) /Lt Col (b) (6) /Lt Col (b) (6) (YARS), (b) (6) (Minot AFB Pest Management), (b) (6) ten, (b) (6) (City of Minot)
- k. Mission Identifier: QZNRK3431192

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) , Lt Col (b) (6)
  - (2) Navigators: Lt Col (b) (6) , Maj (b) (6)
  - (3) Flight Engineers: CMSgt (b) (6) , TSgt (b) (6)
  - (4) Spray Operators: SMSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: SSgt (b) (6) (Lead), TSgt (b) (6) , SSgt (b) (6) , SrA (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6) , SrA (b) (6)
  - (3) Avionics: TSgt (b) (6)
- d. **Entomologists:** Lt Col (b) (6) (DoD cert AF-126-08-0821, ND cert 10024793), Lt Col (b) (6) (DoD cert NJ-1142-15-0221, ND cert 10080398)



**3. PESTICIDE:**

- a. Trade Name: Trumpet® EC (78% a.i. naled)
- b. EPA Registration Number: 5481-481
- c. Additives Used: None
- d. Gallons Pesticide Loaded: 210 gal
- e. Gallons Pesticide Applied: 210 gal gallons
- f. Gallons and Name of Flush Used: 20 gallons H.A.N. (Highly Aromatic Naphtha)
- g. Application Rate: 1.0 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 92024
- b. Spray System (Modules Used) and System ID #: SP2G, System #4
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: 8003 Tee Jet
- e. Nozzle Orientation & Number Used: 32 nozzles oriented straight down
- f. Nozzle pressure: 40 psi
- g. Flow Rate: 7.3 gal/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 ft
- b. Spray Off-set: 2000 ft
- c. Spray Release Altitude: 300 ft AGL
- d. Ground Speed: 200 kts (338 feet/second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 160@7 kts
  - (2) Release Altitude: 150@17 kts
- b. Temperature (Degrees Fahrenheit): 69°F
- c. Relative humidity: 70%
- c. Cloud Cover: Clear
- d. Source: Ground observations and aircraft SCNs

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. **Application Pattern:**
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations. Note that GPS logs for this series of applications are not available as GPS shutdown procedure failed to record readily viewed data.
  - (2) Results: Adequate coverage throughout the sprayed area
- b. **Effectiveness:**
  - (1) Technique Used: Pre- and post-spray surveillance were conducted using CDC light traps.
  - (2) Results: Environmental conditions were favorable for effective mosquito control during the application. Minot AFB and the city of Minot both reported good control. Results are listed in attachment 1.

## 8. REMARKS:

Overall, the application went well with the system consistently delivering the proper flow rate for even coverage at the desired application rate. On 12 July, there was a small leak in the MASS system. However, this was quickly remedied with the replacement of a small part and the application was conducted the following night. The system was calibrated on the ground prior to application and no adverse effects to the environment or wildlife were noted during or following the spray.

Based on pre- and post-application trapping results, mosquito populations were successfully reduced. Mosquito reduction at Minot AFB and the city of Minot were 96% and 85% respectively. It is of note that these results are based on a single day of trapping pre-application for Minot AFB and post-application for both areas. It would be expected that additional days of trapping would yield similar results. Previous years' observations have suggested that August application may be even more critical. An additional spray mission is currently scheduled for 8 through 12 August 2022 and will include the city of Williston.

We (910AW), very much appreciate coordination between all collaborators on this mission. We sincerely thank Mr. (b) (6) (5CES), and Mr. (b) (6) and Mr. (b) (6) (City of Minot), for their efforts in making this mission possible as well as providing mosquito collection data from before and after the application. This information is critical to ensuring that spray missions successfully meet expectations regarding control of mosquito populations.

In addition to the upcoming August 2022 mission, it is anticipated that the cities of Minot and Williston will be treated again next year through the Innovative Readiness Training program. The Spray Unit has tentatively scheduled Minot missions to include both areas as well as Minot AFB in mid-July and mid-August 2023.

(b) (6), Lt Col, USAF  
DoD Certified Pest Management Professional

**Attachment 1: Female mosquitoes collected pre- and post-application****CDC Light Trap Collections By Date**

	6 Jul 22	11 Jul 22	12 Jul 22	13 Jul 22	14 Jul 22	15 Jul 22
Missile Ave, Minot AFB	124	--	--	--	--	5
Moose Site, City of Minot	44	105	36	24	1	--
Souris Site, City of Minot	12	56	22	10	6	--
TOTAL	180	161	58	34	7	5

**Pre-Application vs. Post-Application Collection Summary**

	Pre-Application Avg.	Post-Application Avg.	% Reduction
Missile Ave, Minot AFB	124	5	96%
Moose Site, City of Minot	52	1	98%
Souris Site, City of Minot	25	7	72%



**DEPARTMENT OF THE AIR FORCE  
757AS/AERIAL SPRAY UNIT  
YOUNGSTOWN AIR RESERVE STATION**

**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT  
MINOT AFB, MINOT, AND BURLINGTON, ND, 8-12 August 2022**

**1. MISSION BASICS:**

- a. Areas Sprayed: Minot AFB, city of Minot, and Burlington, ND
- b. Mission Duration: 12 – 18 August 2022
- c. Purpose of Application: Control of adult nuisance and vector mosquitoes
- d. Application Date: 14 Aug 2022
- e. Time of Application (local): 2140-2315 hrs
- f. Acres Treated: 23,374 (5,146 MAFB; 1,209 Burlington; 17,019 Minot)
- g. Flying Data:
  - (1) Spray sorties/hours: 1/2.6
  - (2) Ferry sorties/hours: 3/10.3
- h. Project Coordinator (Name/Rank, Title, Phone #): (b) (6) (Minot AFB); (b) (6) (City of Minot)
- i. Date Spray Map Last Approved: 13 Aug 2022
- j. Installation In-Briefing: (When/Where/Briefer/s): 13 Aug at CES Ready Rm, briefed by Lt Col (b) (6) /Lt Col (b) (6) (YARS), (b) (6) (Minot AFB Pest Management), (b) (6), (b) (6) (City of Minot)
- k. Mission Identifier: QZNRK3431220

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6), Maj (b) (6)
  - (2) Navigators: Lt Col (b) (6), Maj (b) (6)
  - (3) Flight Engineers: CMSgt (b) (6), SSgt (b) (6)
  - (4) Spray Operators: CMSgt (b) (6), SMSgt (b) (6), MSgt (b) (6), SSgt (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6) (Lead), SSgt (b) (6), TSgt (b) (6), SSgt (b) (6), SrA (b) (6)
  - (2) Crew Chiefs: TSgt (b) (6), SrA (b) (6)
  - (3) Avionics: MSgt (b) (6)
- d. **Entomologist:** Lt Col (b) (6) (DoD cert A-500-00-0522, ND cert 10006504),

**3. PESTICIDE:**

- a. Trade Name: Trumpet® EC (78% a.i. naled)
- b. EPA Registration Number: 5481-481
- c. Additives Used: None
- d. Gallons Pesticide Loaded: 210 gal
- e. Gallons Pesticide Applied: 196 gallons
- f. Gallons and Name of Flush Used: no flush
- g. Application Rate: 1.07 oz/acre

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 92024
- b. Spray System (Modules Used) and System ID #: SP2G, System #4
- c. Spray System Configuration: 2-Module System/Fuselage Booms
- d. Nozzle Type/Size: 8003 Tee Jet
- e. Nozzle Orientation & Number Used: 32 nozzles oriented straight down
- f. Nozzle pressure: 40 psi
- g. Flow Rate: 7.3 gal/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000 ft
- b. Spray Off-set: 2000 ft
- c. Spray Release Altitude: 300 ft AGL
- d. Ground Speed: 200 kts (338 feet/second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 060-080@3-5 kts
  - (2) Release Altitude: 090-100@9-14 kts
- b. Temperature (Degrees Fahrenheit): 67°F
- c. Relative humidity: 70%
- c. Cloud Cover: Clear
- d. Source: Ground observations and aircraft SCNs

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. **Application Pattern:**
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations.
  - (2) Results: Adequate coverage throughout the sprayed area
- b. **Effectiveness:**
  - (1) Technique Used: Pre- and post-spray surveillance were conducted using CDC light traps.
  - (2) Results: Environmental conditions were favorable for effective mosquito control during the application.

## 8. REMARKS:

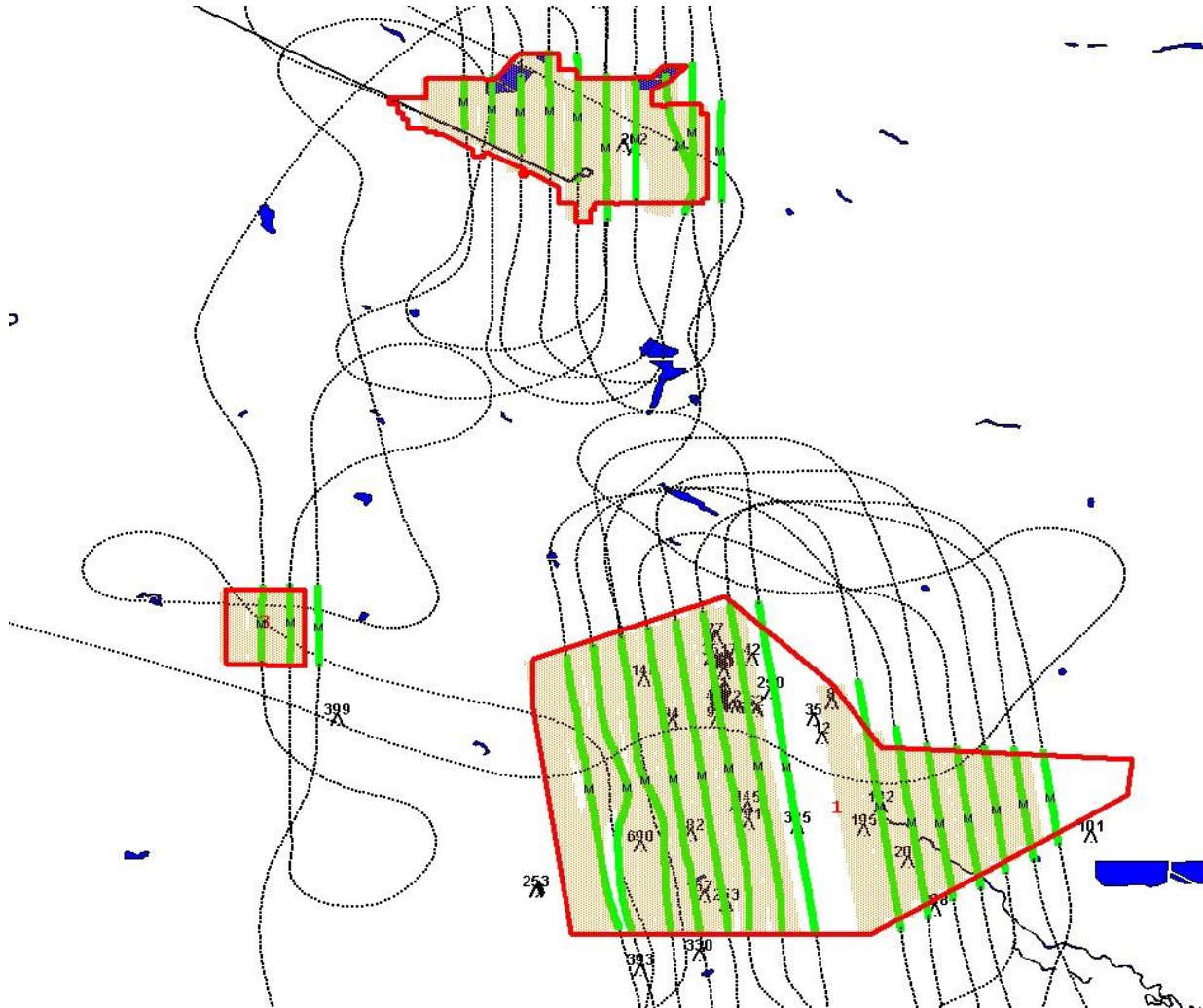
Overall, the application went well with the system consistently delivering the proper flow rate for even coverage over Minot AFB, then Burlington, and finally, for most of the application over the City of Minot. However, when the application was approximately 90% completed, a bird strike occurred. The crew decided to halt spraying and while there appeared to be no immediately recognized mechanical issues, the prudent course of action was return to the field and conduct a visual inspection. After inspecting the aircraft, it was decided that spray operations could not continue. The damage to the aircraft also meant that there would be no application for Williston ND, this trip. The system was calibrated on the ground prior to application and no adverse effects to the environment or wildlife were noted during or following the spray, the bird strike notwithstanding.

Pre-spray trapping by Minot AFB and the City of Minot, indicated moderate to high collections of mosquitoes (approximately 50 females per trap). *Culex tarsalis*, the primary West Nile virus vector in North Dakota is likely the most abundant mosquito at this time of the year. Thus, the need for an application to control mosquitoes was substantiated. At the time that this report was written, post-application mosquito trap numbers have not been received. However, based on the environmental conditions, and the relatively good coverage shown in Attachment 1, it is expected that the application gave good control. This is the last training spray mission for Minot this year.

The Air Force Aerial Spray Unit very much appreciates coordination between all collaborators on this mission. We sincerely thank Minot Public Health, Mr. (b) (6) (5CES), and Mr. (b) (6) and Mr. (b) (6) (City of Minot), for their efforts in making this mission possible as well as providing mosquito collection data. This information is critical to ensuring that spray missions successfully meet expectations regarding control of mosquito populations.

(b) (6) , Lt Col, USAF  
DoD Certified Pest Management Professional

**Attachment 1: Spray blocks, flight path, and application coverage for 14 August 2022, over Minot AFB, Burlington, and City of Minot. Wind was predominately from the east and the offset was 2,000 ft. Therefore, while it may appear that the aircraft was spraying outside of the boundaries, this is to allow for wind direction and drift as directed by the Wingman GPS system.**







**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND**

08 June 2022

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at JB Charleston, SC and Tyndall AFB, FL

1. Aerial spray deployment of one C-130 from 13-17 June 2022 to JB Charleston, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards at JB Charleston, SC and Tyndall AFB, FL.

2. Concept of Operations (All times are local):

- a. 13 June  
1200 Depart KYNG  
1400 Land KCHS
- b. 14 June (Aerial Application at KCHS)  
1200 Installation brief for CHS  
1700 Weather call/Chemical Load  
1800 Calibration  
2015 Depart KCHS  
2215 Land KCHS
- c. 15 June (Aerial Application at KPAM)  
1600 Weather Call/Chemical load  
1700 Calibration  
1900 Depart KCHS (local Eastern Time)  
2030 Arrive KPAM (local Eastern Time) - Arrive KPAM @ 1930 LCL Central  
2130 Depart KPAM (local Eastern Time) - Depart KPAM @ 2030 LCL Central  
2300 Arrive KCHS (local Eastern Time)
- d. 16 June (WX/MX Backup)  
Timeline and training TBD by Mission Commander
- e. 17 June  
0900 Depart KCHS  
1100 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc.  
All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 18,500 acres at JB Charleston, 25,000 acres at Tyndall AFB
  - b. Altitude: 300' AGL NVG operations
  - c. Swath Width: 2000ft
  - d. Groundspeed: 200 Knots
  - e. Application Rate: 0.85 oz/acre JB Charleston, 1.07 oz/acre Tyndall AFB of Trumpet EC
4. Capt (b) (6) will serve as the Mission Commander with Lt Col (b) (6) serving as the Aircraft Commander. Support JB Charleston has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

31 August 2022

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at JB Charleston and MCRD Parris Island, SC.

1. Aerial spray deployment of one C-130 from 6-9 September 2022 to JB Charleston, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at MCRD Parris Island and assigned personnel at JB Charleston, SC. Operations for this mission will be conducted from JB Charleston.

2. Concept of Operations (All times are local):

- a. 6 September  
1200 Depart KYNG  
1400 Land KCHS
- b. 7 September  
1900 Depart KCHS for Aerial Spray of JB Charleston & MCRD Parris Island  
2200 Land KCHS
- c. 8 September (WX/MX Backup)  
1900 Depart KCHS for Aerial Spray of JB Charleston & MCRD Parris Island  
2200 Land KCHS
- d. 9 September  
1000 Depart KCHS  
1200 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Locations: MCDR Parris Island & JB Charleston, SC
- b. Acreage: 6,500 (Parris Island); 18,500 (JB Charleston); 25,000 total acres
- c. Altitude: 300' AGL NVG operations
- d. Swath Width: 2000ft
- e. Airspeed: 200 KGS
- f. Application Rate: 0.92 oz/acre of Trumpet EC
- g. Product: Trumpet® EC (Naled) (EPA Reg. No. 5481-481)

4. Maj (b) (6) will serve as the Mission Commander with Lt Col (b) (6) serving as the Aircraft Commander. Support at JB Charleston has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

19 July 2022

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Langley AFB, and Craney Island Army Corps of Engineers.

1. Aerial spray deployment of one C-130 to Langley AFB, VA. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of Langley AFB and Craney Island Army Corps of Engineers.

2. Concept of Operations: All times local

- a. 26 July (Tuesday)  
1200 Depart KYNG  
1315 Land KLFI
- b. 27-28 July (Wednesday - Thursday)  
2000 Depart KLFI for Langley/Craney Island Spray  
2300 Land KLFI
- c. 29 July (Friday)  
1200 Depart KLFI  
1315 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc.

3. Spray Parameters:

- a. Locations: Craney Island and 3mi buffer area of Portsmouth, VA
- b. Acres: 8,935
- c. Altitude: 300ft AGL for NVG adulticide application
- d. Swath Width: 2,000 feet
- e. Airspeed: 200 KTS
- f. Application Rate: 0.86 oz/acre
- g. Product: Trumpet® (Naled) (EPA Reg. No. 5481-481)

4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) as the Aircraft Commander.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray



DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

1 August 2022

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Minot AFB, Minot, Burlington, Williston and Watford City, North Dakota.

1. The 910 AW will deploy one C-130 to Minot AFB, ND to train aerial spray aircrew, pest management personnel, and maintenance members in the control of nuisance and vector mosquitoes. This mosquito adulticide application will also improve working conditions and lower the risk of vector-borne illness for individuals working and living in/around Minot AFB, Minot, Burlington and Williston. Aerial applications performed off DOD installation property will be conducted IAW the Innovative Readiness Training (IRT) Program criteria.

2. Concept of Operations: All times local

- a. 08 August (Monday)  
1200 Depart KYNG  
1430 Land KMIB
- b. 09-11 August (Tuesday – Thursday)  
2130 Depart KMIB  
2330 Land KMIB
- c. 12 August (Friday)  
1200 Depart KMIB  
1630 Land KYNG

Times may vary from scheduled depending upon weather, effectiveness of spray, etc. The mission commander will coordinate all changes to the planned itinerary.



### 3. Spray Parameters:

#### Minot AFB:

- a. Area to be treated: 5,170 acres
- b. Altitude: 300 feet
- c. Swath Width: 2,000 feet
- d. Airspeed: 200 KGS
- e. Application Rate: 0.98 oz/acre Trumpet® EC Insecticide

#### Minot City/Burlington:

- f. Area to be treated: 22,128 acres
- g. Altitude: 300 feet
- h. Swath Width: 2,000 feet
- i. Airspeed: 200 KGS
- j. Application Rate: 0.98 oz/acre Trumpet® EC Insecticide

#### Williston:

- k. Area to be treated: 19,800 acres
- l. Altitude: 300 feet
- m. Swath Width: 2,000 feet
- n. Airspeed: 200 KGS
- o. Application Rate: 0.98 oz/acre Imperium® Insecticide

4. Lt Col (b) (6) will serve as the Mission Commander. Support required at Minot AFB has been coordinated.

(b) (6), Maj, USAF  
Assistant Chief of Aerial Spray



DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

05 July 2022

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Minot AFB, and Minot, North Dakota.

1. The 910 AW will deploy one C-130 to Minot AFB, ND to train aerial spray aircrew, pest management personnel, and maintenance members in the control of nuisance and vector mosquitoes. This mosquito adulticide application will also improve working conditions and lower the risk of vector-borne illness for individuals working and living in/around Minot AFB, and Minot. Aerial applications performed off DOD installation property will be conducted IAW the Innovative Readiness Training (IRT) Program criteria.

2. Concept of Operations: All times local

- a. 11 July (Monday)  
1200 Depart KYNG  
1430 Land KMIB
- b. 12-13 July (Tuesday – Wednesday)  
2130 Depart KMIB  
2330 Land KMIB
- c. 14 July (Thursday)  
1200 Depart KMIB  
1630 Land KYNG

Times may vary from scheduled depending upon weather, effectiveness of spray, etc. The mission commander will coordinate all changes to the planned itinerary.

### 3. Spray Parameters:

#### Minot AFB:

- a. Area to be treated: 5,170 acres
- b. Altitude: 300 feet
- c. Swath Width: 2,000 feet
- d. Airspeed: 200 KGS
- e. Application Rate: 0.98 oz/acre Trumpet® EC Insecticide

#### Minot City/Burlington:

- f. Area to be treated: 22,128 acres
- g. Altitude: 300 feet
- h. Swath Width: 2,000 feet
- i. Airspeed: 200 KGS
- j. Application Rate: 0.98 oz/acre Trumpet® EC Insecticide

4. Lt Col (b) (6) serve as the Mission Commander with Lt Col (b) (6) serving as the Aircraft Commander. Support required at Minot AFB has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

28 September 2021

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Capability and Concept of Operations for Aerial Spray at Mountain Home AFB and Saylor Creek Bombing Range, ID

1. Aerial spray deployment of one C-130 from 4-15 October 2021 in response to an aerial spray request to aid fire prevention on Saylor Creek Bombing Range located near Mountain Home AFB, ID. Herbicide will be applied to target cheat grass while allowing native fire resistant vegetation (sagebrush) to re-establish and become competitive. During the operation aerial spray flight proficiency training will be accomplished while providing real-world training for aerial spray entomologists and maintenance personnel.

2. Concept of Operations (All times are local)

- a. 4 Oct (Mon)
  - 1000 Support aircraft departs KYNG
  - 1010 Spray aircraft departs KYNG
  - 1400 Spray aircraft lands KMUO
  - 1410 Support aircraft lands KMUO
- b. 5-8 Oct (Tues-Fri) Spray Sorties
  - 0700 Depart KMUO
  - 0900 Support aircraft RTB to YNG
  - 1115 Land KMUO
- c. 9 Oct (Sat)
  - 1000 Swap out aircraft departs KYNG
  - 1400 Swap out aircraft lands KBOI
- d. 10 Oct (Sun)
  - 0900 Swap out aircraft departs KBOI
  - 1600 Swap out aircraft lands KYNG
- e. 12-14 Oct (Tues-Thurs) Spray Sorties
  - 0700 Depart KMUO
  - 1115 Land KMUO

- f. 15 Oct (Fri) Redeployment
  - 0900 Spray aircraft depart KMUO
  - 0910 Support aircraft depart KMUO
  - 1600 Spray aircraft land KYNG
  - 1610 Support aircraft land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: approx. 3,004 acres
- b. Altitude: 100' AGL for herbicide application
- c. Swath Width: 100ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 4 oz/acre of Panoramic® 2SL (active ingredient: 23% imazapic ammonium)

4. Lt Col (b) (6) and Lt Col (b) (6) will serve as the Mission Commanders.  
Lt Col (b) (6) and Lt Col (b) (6) will be the Aircraft Commanders. Required support at Mountain Home AFB and Saylor Creek has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

16 August 2022

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Langley AFB, and Craney Island Army Corps of Engineers.

1. Aerial spray deployment of one C-130 to Langley AFB, VA. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of Langley AFB and Craney Island Army Corps of Engineers.

2. Concept of Operations: All times local

- a. 23 August (Tuesday)  
1200 Depart KYNG  
1315 Land KLFI
- b. 24-25 August (Wednesday - Thursday)  
1915 Depart KLFI  
2145 Land KLFI
- c. 26 August (Friday)  
1200 Depart KLFI  
1315 Land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc.

3. Spray Parameters:

- a. Locations: Langley AFB and Craney Island ACE, VA
- b. Acres: 12,718
- c. Altitude: 300ft AGL for NVG adulticide application
- d. Swath Width: 2,000 feet
- e. Airspeed: 200 KTS
- f. Application Rate: 0.9 oz/acre
- g. Product: Trumpet® (Naled) (EPA Reg. No. 5481-481)

4. Maj (b) (6) will serve as the Mission Commander with Lt Col (b) (6) as the Aircraft Commander.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

05 April 2022

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Tyndall AFB.

1. One C-130 will deploy to Tyndall AFB from 12-15 April 2022. Mosquito and biting midge control will be conducted at Tyndall AFB. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito and biting midge populations affecting the health and welfare of the personnel at the installation.

2. Concept of Operations (All times are local):

- a. 12 April  
1300 Depart KYNG  
1430 Land KPAM
- b. 13 April  
1845 Depart KPAM for Aerial Application at Tyndall Air Force Base  
2030 Land KPAM
- c. 14 April (WX/MX Backup)  
1845 Depart KPAM for Aerial Application at Tyndall Air Force Base  
2030 Land KPAM
- d. 15 April  
0900 Depart KPAM  
1230 Land KYNG

Times may change from schedule depending upon weather, effectiveness of spray, etc.  
The mission commander will coordinate all changes to the planned itinerary.

3. Spray Parameters:

- a. Area to be treated: 25,500 acres over at Tyndall AFB
- b. Altitude: 300' AGL NVG operations
- c. Swath Width: 2000ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 1.05 oz/acre of Trumpet® EC

4. Capt (b) (6) will serve as the Mission Commander with Lt Col (b) (6) as the Aircraft Commander. Support at Tyndall AFB has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray



**AERIAL SPRAY OPERATIONAL SCHEDULE  
MINOT, ND  
8-12 August 2022  
MSN# QZNRK3431220**

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# AERIAL SPRAY OPERATIONAL SCHEDULE

## MINOT, ND

### 8-12 August 2022

### MSN# QZNRK3431220

**PURPOSE/BENEFIT/OBJECTIVE:** A C-130 will deploy to Minot AFB (KMIB) from 8-12 August 2022. Aerial Spray flight proficiency training will be accomplished using Night Vision Goggles (NVGs) while providing a beneficial reduction in mosquito populations improving the health and welfare of personnel working and living in and around Williston, Minot AFB and Minot. Aerial applications off DoD property will be in accordance with the Individual Readiness Training (IRT) program.

#### 1. 910 AW PARTICIPANTS:

Mission Commander:	Lt Col (b) (6)				
Entomologists:	Lt Col (b) (6)				
Pilots:	Lt Col (b) (6)	, Maj (b) (6)			
Navigators:	Lt Col (b) (6)	, Maj (b) (6)			
Flight Engineer:	CMSgt (b) (6)	, SSgt (b) (6)			
Spray Operators:	MSgt (b) (6)	, SSgt (b) (6)	, SMSgt (b) (6)		, CMSgt (b) (6)
Spray MX:	TSgt (b) (6)	(Lead)	(b) (6)		
	TSgt (b) (6)	, TSgt (b) (6)	, SSgt (b) (6)		, SSgt (b) (6)
Avionics:	MSgt (b) (6)				
Crew Chiefs:	TSgt (b) (6)	, SrA (b) (6)			

#### 2. REQUIRED ITEMS:

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer, Wingman system mission cards
Navigator(s):	Maps/Map Bag, Validation Map, iPad window mounts, Operational Wingman Cards
Spray Operators:	PPE, Laptop and/or Spray datasheet, O <sub>2</sub> hose extensions
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system test cards

#### 3. SCHEDULE: (All Local Times)

**8 August (Monday)**

**Sunset 2145L – Civil Twilight 2226L (Minot)**

**Pesticide/Safety brief will be conducted at the aircraft prior to departing YNG**

0900 – Showtime

1100 – Depart KYNG

1535(1435 local) – Land KMIB PPR: 01-08-JR

**9-11 August (Tuesday-Thursday) Sunset/Civil Twilight see above – min change during this period**

1600 -- Inbrief at UCC Conference Room in Bldg. 445 (9 July)

1900 – Weather Call/Pesticide Load/Calibration

2130 – Depart KMIB **MC will make final call depending on area to be sprayed due to WX factors.**  
0030 – Land KMIB

**12 July (Friday)**

0800 – Bus Time

1000 – Depart KMIB

1400 – Land KYNG

(RTB departure time could be later if crew rest following prior night's mission is a factor)

**4. SPRAY CONFIGURATION AND PARAMETERS:**

<b>Location:</b>	<b>Minot AFB</b>
Acres:	5,170
Chemical:	Trumpet® EC (78% AI Naled)
Gallons to be loaded:	30
Flow Rate:	7.1 GPM
Application Rate:	0.98 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300 feet AGL
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet oriented straight down
Number of Nozzles:	(15 left – 16 right) 31 Total

<b>Location:</b>	<b>Minot City/Burlington</b>
Acres:	22,128
Chemical:	Trumpet® EC (78% AI Naled)
Gallons to be loaded:	180
Flow Rate:	7.1 GPM
Application Rate:	0.98 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300 feet AGL
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet oriented straight down
Number of Nozzles:	(15 left – 16 right) 31 Total

**Flush and Purge procedures per day will be furnished by the Mission Commander**

<b>Location:</b>	<b>City of Williston</b>
Acres:	15,000
Chemical:	Imperium
Gallons to be loaded:	90
Flow rate:	5.5 GPM
Application Rate:	0.76 oz/acre
Flush:	Water
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jets orientated straight down.
Number of Nozzles:	(10 right – 10 left) 20-21 total

5. **RADIO FREQUENCIES:**

**Spray Ground:** UHF 392.2; VHF 123.45

**Minot AFB:** Tower – 120.65 VHF or 253.5 UHF  
Ground – 134.0 VHF or 275.8 UHF  
Approach – 119.6 VHF or 363.8 UHF  
ATIS – 278.8 UHF  
Command Post – 321.0 “Raymond 12”  
PTD – 372.2

6. **TRANSPORTATION:**

Call Vehicle Ops for trans to Enterprise: (701) 723-3121  
Trans Confirmation #s to and from enterprise 8/12 Aug: 33435988, 3345994  
Enterprise 1825 S Broadway, Minot ND 58701

Lt Col Haagsma	Sedan 2055363715
Maj Toy	Minivan 2055363658
SSgt Weisen	Minivan 2055363668
TSgt Sherman	Minivan 2055363691
SrA Clayton	Minivan 2055363727

7. **LODGING: OFF BASE!!** Minot Info on here just in case.

**Candlewood Suites:** 900 37<sup>th</sup> Avenue SW, Minot, ND 58701  
POC: Becky (701) 858-7700  
**Sakakawea Inn Coord:** POC: (b) (6) email: (b) (6)  
**Location:** 173 Summit Dr. Minot AFB, ND 58705  
Phone: 701-723-6161

8. **CONTACTS:**

<b>Minot AFB:</b>	DSN prefix 453, commercial 701-723-xxxx
Base Operations:	x2347
Environmental Office:	x4871
Base Civil Engineer:	x2434
Pest Management:	x2393 (Mr. (b) (6) ) (b) (6) cell
Weather:	x6381 or x3631
Billeting:	x6161 or 701-727-6161
Fire Department:	x2461
Transient Alert	x3153
Minot Tower	x3330
AGE flight chief	701-723-2299
Williston VCD	701-609-4390 (Dr. (b) (6) )
Army Corps of Eng	701-552-1033 ((b) (6) )
Minot City	701-833-7677 ((b) (6) )
	701-857-4140 ((b) (6) , office)



**AERIAL SPRAY OPERATIONAL SCHEDULE  
MINOT, ND  
11-14 July 2022  
MSN# QZNRK3431192**

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# AERIAL SPRAY OPERATIONAL SCHEDULE

## MINOT, ND

### 11-14 July 2022

### MSN# QZNRK3431192

**PURPOSE/BENEFIT/OBJECTIVE:** A C-130 will deploy to Minot AFB (KMIB) from 11-14 July 2022. Aerial Spray flight proficiency training will be accomplished using Night Vision Goggles (NVGs) while providing a beneficial reduction in mosquito populations improving the health and welfare of personnel working and living in and around Minot AFB and Minot. Aerial applications off DoD property will be in accordance with the Individual Readiness Training (IRT) program.

#### 1. 910 AW PARTICIPANTS:

Mission Commander:	Lt Col (b) (6)		(b) (6)
Entomologists:	Lt Col (b) (6)	, Lt Col (b) (6)	
Pilots:	Lt Col (b) (6)	, Lt Col (b) (6)	
Navigators:	Lt Col (b) (6)	, Maj (b) (6)	
Flight Engineer:	TSgt (b) (6)		
Spray Operators:	SMSgt (b) (6)	, TSgt (b) (6)	, TSgt (b) (6)
Spray MX:	SSgt (b) (6)	, (Lead)	(b) (6)
	TSgt (b) (6)	, SSgt (b) (6)	, SrA (b) (6)
Avionics:	TSgt (b) (6)		
Crew Chiefs:	TSgt (b) (6)	, SrA (b) (6)	

#### 2. REQUIRED ITEMS:

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer, Wingman system mission cards
Navigator(s):	Maps/Map Bag, Validation Map, iPad window mounts, Operational Wingman Cards
Spray Operators:	PPE, Laptop and/or Spray datasheet, O <sub>2</sub> hose extensions
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system test cards

### **3. SCHEDULE: (All Local Times)**

#### **11 July (Monday)**

**Sunset 2145L – Civil Twilight 2226L (Minot)**

**Pesticide/Safety brief will be conducted at the aircraft prior to departing YNG**

1000 – Showtime

1200 – Depart KYNG

1535 – Land KMIB PPR: 01-11-KC

#### **12-13 July (Tuesday-Wednesday) Sunset/Civil Twilight see above – min change during this period**

1530 – (Tuesday 12th only) -- Inbrief at UCC Conference Room in Bldg. 445

1900 – Weather Call/Pesticide Load/Calibration

2130 – Depart KMIB MC will make final call depending on area to be sprayed due to WX factors.

0030 – Land KMIB

#### **14 July (Thursday)**

0800 – Bus Time

1000 – Depart KMIB

1400 – Land KYNG

(RTB departure time could be later if crew rest following prior night's mission is a factor)

### **4. SPRAY CONFIGURATION AND PARAMETERS:**

<b>Location:</b>	<b>Minot AFB</b>
Acres:	5,170
Chemical:	Trumpet® EC (78% AI Naled)
Gallons to be loaded:	30
Flow Rate:	7.1 GPM
Application Rate:	0.98 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300 feet AGL
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet oriented straight down
Number of Nozzles:	(15 left – 16 right) 31 Total

<b>Location:</b>	<b>Minot City/Burlington</b>
Acres:	22,128
Chemical:	Trumpet® EC (78% AI Naled)
Gallons to be loaded:	180
Flow Rate:	7.1 GPM
Application Rate:	0.98 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300 feet AGL
Airspeed:	200 KGS
Swath Width:	2,000 feet
Nozzle/Orientation:	ULV 8003 Tee Jet oriented straight down
Number of Nozzles:	(15 left – 16 right) 31 Total

**Flush and Purge procedures per day will be furnished by the Mission Commander**

5. **RADIO FREQUENCIES:**

**Spray Ground:** UHF 392.2; VHF 123.45

**Minot AFB:** Tower – 120.65 VHF or 253.5 UHF  
Ground – 134.0 VHF or 275.8 UHF  
Approach – 119.6 VHF or 363.8 UHF  
ATIS – 278.8 UHF  
Command Post – 321.0 “Raymond 12”  
PTD – 372.2

6. **TRANSPORTATION:** U-Drives Confirmation Number: 33347937

Lt Col (b) (6)	Sedan
Lt Col (b) (6)	Minivan
SMSGT (b) (6)	Minivan
SrA (b) (6)	6 PAX Truck
Crew Chiefs	Minivan

Coordination POC:	SSgt (b) (6)	(b) (6)
Vehicle Ops:	(701) 723-3121	

7. **LODGING: OFF BASE!!** Minot Info on here just incase.

**Candlewood Suites:** 900 37<sup>th</sup> Avenue SW, Minot, ND 58701  
POC: Becky (701) 858-7700

Sakakawea Inn Coord: POC: Victoria Long email: Victoria.Long.5@us.af.mil  
Location: 173 Summit Dr. Minot AFB, ND 58705  
Phone: 701-723-6161

8. **CONTACTS:**

<b>Minot AFB:</b>	DSN prefix 453, commercial 701-723-xxxx
Base Operations:	x2347
Environmental Office:	x4871
Base Civil Engineer:	x2434
Pest Management:	x2393 (Mr. (b) (6) ) (b) (6) cell
Weather:	x6381 or x3631
Billeting:	x6161 or 701-727-6161
Fire Department:	x2461
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AGE flight chief	701-723-2299
Williston VCD	701-609-4390 (Dr. (b) (6) )
Army Corps of Eng	(b) (6) ((b) (6) )
Minot City	(b) (6) ((b) (6) ) , office)

# SPRAY OPERATIONAL SCHEDULE

## UTAH TEST AND TRAINING RANGE MISSION

### 7-18 March 2022

**PURPOSE/BENEFIT/OBJECTIVE:** Aerial spray herbicide mission controlling halogeton and cheatgrass on Targets 21, 23, and 24 on the Utah Test and Training Range (UTTR) to improve bombing mission test evaluations and unexploded ordnance recovery.

#### 1. 910 AW PARTICIPANTS:

<b>Mission Commander:</b>	<b>Lt Col (b) (6)</b>	<b>(week 1)</b>	<b>(b) (6)</b>	<b>(cell phone)</b>
	<b>Capt (b) (6)</b>	<b>(week 2)</b>	<b>(b) (6)</b>	<b>(cell phone)</b>

#### 1<sup>st</sup> HALF AIRCREW:

<b>Pilots:</b>	Lt Col (b) (6), Lt Col (b) (6), Lt Col (b) (6), Lt Col (b) (6), Lt Col (b) (6), Capt (b) (6), Capt (b) (6)
<b>Navigators:</b>	Lt Col (b) (6), Lt Col (b) (6), Maj (b) (6), Capt (b) (6)
<b>Flight Engineers:</b>	CMSgt (b) (6), SMSgt (b) (6), SrA (b) (6)
<b>Spray Operators:</b>	SMSgt (b) (6), TSgt (b) (6), TSgt (b) (6), SrA (b) (6)

#### 2<sup>nd</sup> HALF AIRCREW:

<b>Pilots:</b>	Lt Col (b) (6), Lt Col (b) (6), Lt Col (b) (6), Lt Col (b) (6), Lt Col (b) (6), Capt (b) (6), Capt (b) (6)
<b>Navigators:</b>	Lt Col (b) (6), Maj (b) (6), Capt (b) (6)
<b>Flight Engineers:</b>	CMSgt (b) (6), SMSgt (b) (6)
<b>Spray Operators:</b>	SMSgt (b) (6), TSgt (b) (6), TSgt (b) (6), SrA (b) (6)

#### MISSION SUPPORT:

<b>Entomologists:</b>	<b>Both Weeks:</b> Lt Col (b) (6), Capt (b) (6)
<b>SARMS/ARMS:</b>	<b>Both Weeks:</b> SMSgt (b) (6)
	<b>First Week:</b> MSgt (b) (6)
	<b>Second Week:</b> SSgt (b) (6)

<b>Command Post:</b>	<b>Both Weeks:</b> SrA (b) (6)
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<b>AFE:</b>	<b>First Week:</b> TSgt (b) (6)
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#### MAINTENANCE:

<b>Commander:</b>	Lt Col (b) (6) (1 <sup>st</sup> week)
<b>MX NCOIC:</b>	SMSgt (b) (6)
<b>Specialists:</b>	QA – MSgt (b) (6)
	AGE – TSgt (b) (6)
	COMM/NAV – TSgt (b) (6)
	INST – MSgt (b) (6)
	E/E – SSgt (b) (6) (1 <sup>ST</sup> week), SrA (b) (6)
	HYDRO – SMSgt (b) (6), MSgt (b) (6)

**Crew Chiefs:** **ENGINES** – SMSgt (b) (6) (1<sup>st</sup> week), MSgt (b) (6) (2<sup>nd</sup> Week),  
**Spray MX:** TSgt (b) (6) SrA (b) (6)  
**FUELS** – SrA (b) (6)  
 MSgt (b) (6) TSgt (b) (6) SrA (b) (6), SrA (b) (6)  
 SMSgt (b) (6) (ADVON), MSgt (b) (6) (LEAD),  
 TSgt (b) (6) (ADVON), TSgt (b) (6) (ADVON), SrA (b) (6)  
 (ADVON), SSgt (b) (6)

**COMM:** **Both Weeks:** TSgt (b) (6) , SrA (b) (6) , TSgt (b) (6)  
**First Week:** SSgt (b) (6) , SSgt (b) (6)  
**Second Week:** TSgt (b) (6) , SSgt (b) (6)

## 2. **REQUIRED ITEMS:**

Msn Commander: MC Laptop Computer  
 Entomologist: Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer  
 Navigator: Maps/Map Bag, Validation Map, Operational Wingman cards  
 Spray Operators: PPE, Calibration Tables/Laptop and or Spray datasheet,  
 O<sub>2</sub> hose extensions  
 Spray Maintenance: Deployment Kit, Support Equipment  
 Avionics: 2 Multi-band hand-held radios; Wingman system test cards

3. **IN-BRIEFING at Hill:** 1430-1500 L or ASAP at forestry ramp (for entomologists, MXS, and MC): Note: Mr. (b) (6) will be primary POC for Hill/UTTR spray activities. Most aspects of inbrief have been pre-coordinated.

## 4. **SCHEDULE: (All Local Time)**

**PLANNED SEQUENCE OF EVENTS:** Hill AFB Tower Control and Runway Hours  
 Tower Opens at 0800L (Engine start typical at 0745 make engine start call in the blind)

### **NOTES:**

1. Scheduling reflects no weather or maintenance delays. In the event of weather or maintenance delays, the missions will be adjusted as required. ALL TIMES SUBJECT TO ADJUSTMENT BY MISSION COMMANDER
2. DUTY DAY FOR CIVILIANS WILL BE AS REQUIRED WITHIN CREW REST CONSTRAINTS.
3. ALL MX & OPS PERSONNEL WILL REMAIN ON DUTY UNTIL AIRCRAFT IS PRE-FLIGHT COMPLETE AND RELEASED BY THE MISSION COMMANDER.

### **7 March (Monday)**

**0700-0715 SHOW for ALL aircrew and Pax** - Bag Drop for Chalk 1 Pax at Aerial Port  
 0745 All Chalk 1 & 2 personal report to Base Ops/Aircrew Briefing Rm for safety and arrival brief. MC will release you.

Chalk 2 crew and MEPs will floor load their personal bags

**0830 ALL Chalk 1 Pax report back to Aircrew Briefing room for accountability** - TC  
 Capt (b) (6)

**0845 Chalk 1 PAX bus to aircraft**

1000 Depart KYNG Support (SP1) Vader 07 MI: QZNRK3431066 PPR: 22XD023

1015 Depart KYNG    Spray   (SP3) Vader 23   MI: QZNRK3432066   PPR: 22XD023  
1330 Land KHIF first aircraft

**8-11 March (Tuesday-Friday) Range Time 0800-1400L**

**Aircraft will generally plan on 2 sorties per day.**

0600 Show KHIF

0630 Aircraft Released by MX, weather call, and begin mixing product

0700 Chemical Load first Aircraft

0745 Engine Start

0800 First Takeoff

**\*\*Weekend applications are currently unavailable due to range closure.**

**12 March (Swap out departs KHIF to KYNG)**

0630 Checked out of hotel

0700 Bus (rental car) time from hotel to Hill

0900 Depart KHIF

1530 Land KYNG    (Vader 07, MI: QZNRK3431071, PPR: Not RQ'd)

**13 March (Swap out departs KYNG to KHIF)**

0800 Show at Bldg 407

1000 Depart KYNG

1330 Land KHIF    (Vader 07, MI: QZNRK3431072, PPR: 22XD024)

**14-17 March (Monday-Thursday) Range time 0800-1400L**

**Each aircraft will plan on 2 sorties per day.**

0600 Show KHIF

0630 Aircraft Released by MX, weather call, and begin mixing product

0700 Chemical Load first Aircraft

0745 Engine Start

0800 First Takeoff

**18 March (Friday) All personnel**

0600 Everyone checked out of hotel

0630 Rental vehicles depart for Hill forestry ramp with **ALL MEMBERS**

0710 Return Rental vehicles to Enterprise

0730 Bus from Enterprise to Hill

0900 Depart KHIF

1600 Land KYNG

**\*\*All times are approximated. Actual times and mission details will be by the Mission Commander.**

**5. SPRAY CONFIGURATION: SP3G**

Spray 23 - MASS #2

MASS Modules SP3 configurations

UHV Fuselage booms (Bell nozzles) oriented straight back (Krovar)

HV Fuselage booms (R-20 nozzles) oriented straight back (Plateau)

**6. SPRAY LOADING:**

### **Sequence for Loading full SP3 tank (1800 Gallons) mix for PLATEAU**

Fill water to 900 gallon mark.  
Add 18.75 (19) gallons Plateau  
Add 0.5 gallons Foam Fighter  
Add 9 gallons Clasp incrementally while mixing and adding  
remaining water (to 1800 gallons)

For Partial tank fill of Plateau, **please follow rough mixing ratios:**

100 gallon increment of finish spray mix is:  
1.0 Gallon Plateau  
0.5 Gallons Clasp  
4 oz Foam Fighter

### **Sequence for Loading 1,000 Gallon Mixing Tank: (KROVAR); note: this will be accomplished in external mixing tanks prior to aircraft upload.**

Fill with water up to 750 Gallon Mark, and then add:  
450 Pounds of Krovar I DF®  
4.0 Gallons of Clasp®  
15 oz of FTF Defomer®  
200 Ounces (1.5 gallons) Hi-Light® Dye  
Add Water to 1,000 Gallon Mark and Agitate for 30 Minutes  
Add from mixing tanks to spray tanks as appropriate for sortie

## **7. SPRAY PARAMETERS:**

**Location:** UTTR targets

Area to be treated: Approx 1,700 Acres (Targets 21, 23+24);

Expect 800 Acres to be treated with Plateau, and 900 Acres to be treated with Krovar. Spray  
MXS can accommodate both types of materials with various boom configurations

User will determine location of application; expectation is Krovar application on east side of  
targets, and Plateau application on West side of targets, however this is subject to change if  
operationally unfeasible.



**a. Plateau application:**

Swath width: 80 feet  
Flow rate: 335 Gallons/Minute  
Altitude: 100 Feet AGL  
Ground Speed: 200 Knots (337.55 ft/sec)  
Flush: 100 gallons water and subsequent air purge  
Nozzles: 18-20 R20 nozzles orientated straight back

**b. Krovar application:**

Swath Width: 35 Feet  
Flow Rate: 366 Gallons/Minute  
Altitude: 100 Feet AGL  
Ground Speed: 200 Knots (337.55 ft/sec)  
Flush: 2x full system rinse if possible; Air purge after each sortie  
Nozzles: HV Bell nozzles, orientation straight back  
Formulas: Flow Rate = Gal/Time in Minutes  
Acreage Sprayed = Total Sec x 338 x Swath Width / 43,560

**8. PARKING PLAN:** Forestry Ramp and Building 777

**9. AIR TO GROUND RADIO FREQUENCIES:**

**Clover North Range:** VHF 118.45 UHF 285.65  
**Clover South Range:** VHF 134.1 UHF 363.5  
**Eagle Range:** UHF 309.2  
**Diddle Knoll:** Provided after In-Brief  
**Spray Inter plane:** Provided after In-Brief  
**Command Post:** UHF 381.3 Call in as CONVOY  
**Base OPS:** UHF 371.95  
**Spray Ground:** Provided after In-Brief

**10. TRANSPORTATION:** Enterprise (801)-593-6007 Option #4 for counter  
865 W 1000 N LAYTON, UT 84041-4833  
POC: Brittne Tingey – Branch Manager

		Reserved by	For use by
1	OPS 1 Sedan	(b) (6)	AFE
2	OPS 2 Sedan	(b) (6)	Crew
3	OPS 3 Sedan	(b) (6)	FE's
4	OPS 4 Sedan	(b) (6)	SARM/HARM/CP
5	OPS 5 Sedan	(b) (6)	1st Shirt (1 week)
6	OPS 1 SUV	(b) (6)	ENTO's(airport)
7	OPS 1 Minivan	(b) (6)	Crew
8	OPS 2 Minivan	(b) (6)	MC
9	OPS 3 Minivan	(b) (6)	Crew
10	OPS 4 Minivan	(b) (6)	LM's

- |    |                |         |          |
|----|----------------|---------|----------|
| 11 | MX 1 Sedan     | (b) (6) | (1 week) |
| 12 | MX 2 Sedan     | (b) (6) |          |
| 13 | MX 3 Sedan     | (b) (6) |          |
| 14 | MX 3 Sedan     | (b) (6) |          |
| 15 | MX 1 Minivan   | (b) (6) | (ADVON)  |
| 16 | MX 2 Minivan   | (b) (6) |          |
| 17 | MX 3 Minivan   | (b) (6) |          |
| 18 | Comm 1 Minivan | (b) (6) |          |
| 19 | IGI 1 Sedan    | (b) (6) | (1week)  |

**Transportation to and from Hill:**

Ground Trans support (801) 777-1843:

CONFIRMATION NUMBER: In folder

Bags (Arr): Hill Trans to provide (1) stake bed truck. Bags to be delivered to hotel.

Personnel (Arr): Rental vehicles pre-positioned on forestry ramp by ADVON.

All personnel to be transferred to hotels via rental vehicle.

Thursday 17 March: Bag drop by 1200 for all personnel at forestry ramp.

Personnel (Dep)

0630 on Fri – **Rental vehicles depart with all personnel on trip to take all members to the aircraft and then return rental cars to Enterprise.**

0730 on Fri – Pickup for rental car drivers at Enterprise

**11. LODGING: 37 Rooms Everyone except MX main body**

**HYATT PLACE SALT LAKE CITY/FARMINGTON/STATION PARK**

222 North Union Ave, Farmington, UT 84025

**POC:** (b) (6) (b) (6)

**T:801-477-4807**

**T: 801-683-4444 F: 801-447-4403**

**18 Rooms MX main body**

**HAMPTON INN & SUITES SALT LAKE CITY/FARMINTON**

332 Park Ln, Farmington, UT 84025

**POC:** (b) (6)

**\_C: (b) (6)**

**T: 801-451-7999**

**12. GENERAL TARGET INFORMATION:**

**Target 21:**

Dimensions: 4,980' X 7,770'

Acreage: 888

Aircraft Loads: Variable; material and swath width dependent

Sorties: Variable; material and swath width dependent

Passes: Variable; material and swath width dependent

Spray-On Time/Pass: 22 Seconds

Spray Heading: 005/185

**Target 23 / 24:**

Dimensions: 16,675' X 1,657  
Acreage: 635  
Aircraft Loads: Variable; swath width dependent  
Sorties: Variable; swath width dependent  
Passes: Variable; swath width dependent  
Spray-On Time/Pass: 46 Seconds  
Spray Heading: 003/183

**SEQUENCING:**

- Target sequencing is determined by UTTR personnel based upon EOD clearance schedule and airspace scheduling.
- Spray ops aircraft must stay south of Base Leg Knoll during turns on north run on Target 21. Coordination with range control is essential to assure that this portion of the range is released for air operations.

**Spraying Priorities: Target 21, Modified Target 23/24**

**Once the above areas are complete: northeast side of Target 22**

**13. CONTACTS:** The commercial area code for listings below is 801-777-XXXX unless otherwise indicated. DSN is 777-XXXX, 775-XXXX, and 586-XXXX.

**HILL AFB**

Airfield Manager:	777-4168/3592		
Base Operations:	777-1861; FAX: 777-2221		
AMOPS	777-1861		
KHIF Tower	777-3745		
Billeting:	777-1844		
Sponsor:	586-5886, Cell (b) (6)	MSgt (b) (6)	514 <sup>th</sup> FTS
Weather:	777-2018		
Transit Alert:	777-3886		
C-130 Mx Contact:	777-2478		
Fuels:	777-7423/777-7311 available 0900-1800 daily, after hrs contact CP		
Supply:	777-5391 (922 OE)		
Hill Motor Pool:	777-1843		
Public Affairs:	777-5201		
Dining Hall:	777-3428		

**HQ UTTR**

(b) (6) 586-1007; Cell (b) (6)  
6066 Cedar Lane, Bldg 1274S  
Hill Range Control: 777-9386  
Current OPS: 777-9385  
Range Scheduler: 777-9386  
Eagle Tower: 777-1515/6  
Clover Operations: 777-7575  
Clover DO: 586-3103  
HQ UTTR/Radio Freq Monitor: 777-6715  
HQ UTTR/Resource Monitor: 775-4257  
Environmental Coordinator: 777-1550; 801-940-0809  
Hill AFB Base OPS: 777-1861  
Pest management POC:  
(b) (6) (b) (6) ; Mobile: (b) (6)  
Weather: 777-1516/63

**OASIS RANGE SUPPORT DIRECTORATE:**

Oasis Chief: 777-1546  
North Range Security: 777-1521/2/4

**910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

910 AW/CC: x1243  
Command Post x1315 FAX x1161  
PA: x1236 FAX x1022  
OG/CC: x1257/1179  
Safety x1391  
Base Ops: x1182  
SOF Desk: x1069 FAX: x1371  
757 AS/DO: x1793

**AERIAL SPRAY OPERATIONAL SCHEDULE**  
**JB CHARLESTON, SC/ PARRIS ISLAND, SC**  
**6-9 September 2022**  
**MSN# QZNRK3401249**

**Purpose/Objectives/Benefits:** One C-130 will deploy to JB Charleston, SC from 6-9 August 2022. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito and biting midge populations affecting the health and welfare of the personnel of JB Charleston and MCRD Parris Island, SC. Operations for this mission will be conducted from JB Charleston utilizing Night Vision Goggles (NVGs).

**1. 910 AW PARTICIPANTS:**

Msn Commander:	Maj (b) (6)						
Entomologists:	Lt Col (b) (6)						
Pilots:	Lt Col (b) (6)		, Capt (b) (6)				
Navigators:	Lt Col (b) (6)		, Maj (b) (6)				
Flight Engineer:	SMSgt (b) (6)		, SrA (b) (6)				
Spray Operators:	SMSgt (b) (6)		, MSgt (b) (6)		, SSgt (b) (6)		
Spray Maintenance:	MSgt (b) (6)	(Lead)					
	MSgt (b) (6)		, SSgt (b) (6)		, TSgt (b) (6)		, SSgt
	(b) (6)						
Crew Chiefs:	TSgt (b) (6)		, SrA (b) (6)				
Avionics:	MSgt (b) (6)						

**2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, laptop/Spray datasheet, O <sub>2</sub> hose extensions, NVGs
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system cards

### **3. SCHEDULE: (All Local Time)**

#### **6 Sept (Tues)**

1300 Showtime

1500 Depart KYNG

1700 Land CHS - **PPR: Via GDSS2**

#### **7 Sept (Wed) Sunset: 1938L; Civil Twi: 2003L (KCHS/PI)**

1400 Inbrief for Charleston/PI; PI will attend via telecon

1600 Weather call/Chemical Load

1630 Calibration

1845 Depart KCHS

2200 Land KCHS

#### **8 Sept (Thurs) Sunset: 1937L; Civil Twi: 2002L (WX Backup)**

1600 Weather Call/Chemical load

1630 Calibration

1845 Depart KCHS

2200 Arrive KCHS

#### **9 Sept (Fri)**

1000 Depart KCHS

1200 Arrive KYNG

### **4. SPRAY CONFIGURATION AND PARAMETERS:**

Locations:	MCRD Parris Island and JB Charleston
Acres:	6,500 (Parris Island); 18,500 (JB Charleston); 25,000 acres total
Chemical:	Parris Island: Trumpet <sup>®</sup> EC (EPA Reg. No. 5481-481) JB Charleston: Trumpet <sup>®</sup> EC (EPA Reg. No. 5481-481) Signal word: Danger
Gallons loaded:	60 gallons (Parris Island); 120 gallons (JB Charleston); 180 gallons total
Flow Rate:	6.7 GPM (Parris Island); 6.7 GPM (JB Charleston)
Application Rate:	0.92 oz/acre; Max label rate for Trumpet is 1.2 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300' AGL NVG Operations, 150' AGL Day Operations
Airspeed:	200 Knots Ground Speed
Swath Width:	2,000 feet (Parris Island); 2,000 feet (JB Charleston)
Nozzle/Orientation:	ULV 8003 Tee Jet Flat Fan / Straight Down
Number of Nozzles:	31 (Parris Island and JB Charleston)
Formulas:	Flow Rate = Gal/Time in Minutes Acreage Sprayed = Total Sec x 338 x Swath Width / 43,560

### **5. AIR TO GROUND RADIO FREQUENCIES:**

**Mt Pleasant Regional:** CTAF 122.8

**Charleston AFB Executive:** CTAF 122.8

**MCAS Beaufort:** Tower - 119.05/340.2 MCAS TWR  
 Approach - 123.7

**Hilton Head Airport:** 118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)

**Beaufort Co Airport:** 122.7 UNI

**Spray Ground (CHS):** 392.2 UHF; 123.45 VHF

**Charleston AFB:** Tower – 850-283-4950/4553  
 Tower – 133.95 or 263.15  
 Ground – 121.9 or 259.3  
 Clearance – 118.05 or 348.7  
 ATIS – 254.4

**Charleston App Control:** N abv 5000’ 125.2 / N blw 5000’ 120.825  
 S abv 5000’ 124.15 / S blw 5000’ 119.775

## 6. TRANSPORTATION:

**JB Charleston AFB:** Vehicle will be at JB Charleston AFB Transportation/Vehicle Ops. Confirmation #33519147.

**1x Sedan - MC**  
**1x 15-PAX Van – Capt Zimmerman (O’s)**  
**1x 15-PAX Van – SPX MX/Avionics**  
**1x 12-PAX Van – SRA Murch (E’s)**  
**1x 3-Pax Truck – Crew Cheifs**

**Budget Rental \*in case additional is needed**  
**CHARLESTON,SC APO,CHS**  
**5501 PORSCHE BLVD BUILDING 300,**  
**CHARLESTON INTL AIRPORT**  
**NORTH CHARLESTON, SC 29418 US**  
**843-552-1771**

## 7. LODGING:

Double Tree Hotel & Suites Charleston North  
 7401 Northwoods Boulevard, North Charleston, SC 29406  
 POC: (b) (6) (843) 518-6200

## 8. CONTACTS:

**JB Charleston AFB SC:** **DSN: 673-XXXX; Commercial (843)-963-XXXX**

Wing Commander:	x3418		
MSG Commander:	x2200		
Civil Engineer:	x4956		
Deputy Chief/Civil Engineer:	x4954		
Environmental Coordinator:	x2711		
Base Operations:	x3026		
Tyndall AFB Control Tower:	(843) 414-2808		
Weather:	x3016		
Pest Control POC:	x5266, (b) (6)		
Pest Control NCOIC:	x5266, MSgt (b) (6)	(b) (6)	mobile)



Public Affairs:	x1110
Fuels:	x5079
Transportation:	x4236
Fire Department:	x3777

**MCRD Parris Island SC: DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental Coord:	x3066 (b) (6)	(b) (6)	(cell)
	X3799 (b) (6)	(b) (6)	(cell)
HazWaste:	x4698 (b) (6)		
AC/S, I&L:	x4410 Mr. (b) (6)		
ENV DIV DIR	x3423 Ms. (b) (6)		
Pest Control:	x2364		
P.I. Rifle Range:	x3183/3624		
Military Police	x3444		

**Beaufort County Mosquito Control:**

Director	(b) (6)
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**AERIAL SPRAY PLAN**  
**JB LANGLEY-EUSTIS/CRANEY ISLAND ACE, VA**  
**23-26 August 2022**  
**QZNRK3491235/PPR: 181245RC**

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Joint Base Langley-Eustis and the Army Corps of Engineers' (ACE) Craney Island Dredged Material Management Area. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of members operating at Joint Base Langley-Eustis, and Craney Island, VA.

**1. 910 AW PARTICIPANTS:**

Msn Commander:	Maj (b) (6)	(b) (6)
Entomologist:	Capt (b) (6)	
Pilots:	Lt Col (b) (6)	, Lt Col (b) (6)
Navigators:	Maj (b) (6)	, Capt (b) (6)
Flight Engineer:	SMSgt (b) (6)	, SSgt (b) (6)
Spray Operators:	CMSgt (b) (6)	, SMSgt (b) (6)
Spray Maintenance:	TSgt (b) (6)	(Lead) (b) (6)
	MSgt (b) (6)	, TSgt (b) (6), SrA (b) (6)
Crew Chiefs:	MSgt (b) (6)	, SSgt (b) (6)
Avionics:	SSgt (b) (6)	

**2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer, Wingman system mission cards
Navigator:	Maps/Map Bag, Validation Map, iPad Window Mounts, Operational Wingman Cards
Spray Operators:	PPE, Laptop and/or Spray datasheet, O <sub>2</sub> hose extensions
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system test cards

**3. SCHEDULE: (All Local Times)**

**23 Aug (Tuesday)**

1200 – Depart KYNG

1315 – Land KLFI PPR: 181245RC

**DO NOT LEAVE UNTIL BRIEFED & CLEARED OFF BY THE MISSION COMMANDER!**

**24-25 Aug (Wednesday-Thursday) Sunset 1946, Civil Twilight 2013 – Moon will have already set**

1400 – Installation Brief – (b) (6) ((b) (6) mobile); ((b) (6) work), (b) (6)

((b) (6) mobile); ((b) (6) work)

Bldg 328, CE Conference Room

1700 – Wx Call/Chemical Load

1730 – MASS Calibration

1930 – Depart KLFI – conduct aerial daytime review of the area begin spraying near twilight

2230 – Land KLFI

**26 Aug (Friday)**

1200 – Depart KLFI

1315 – Land KYNG

**4. SPRAY CONFIGURATION AND PARAMETERS:**

Locations: Joint Base Langley-Eustis (3,783 acres), Craney Island and 3mi buffer area of Portsmouth (8,070 acres)

Acres: 11,854 for both locations to be sprayed in one sortie

Product: Trumpet® (Naled) (EPA Reg. No. 5481-481)

Signal word: Danger

Gallons loaded: 90 gallons

Flow Rate: 7.04 GPM

Application Rate: 0.97 oz/acre

Flush: Highly Aromatic Naptha (HAN)

Altitude: 300'

Airspeed: 200 KTS

Swath Width: 2,000 feet

Nozzle/Orientation: ULV 8003 Tee Jet Flat Fan / Straight Down

Number of Nozzles: 32-33

**5. TRANSPORTATION:**

Enterprise 3 minivans 2 sedans (757) 896-0360

1004 W Mercury Blvd Hampton, VA 23666

We will get a ride there to pick them up.

Sedan MC/ENTO SMSgt (b) (6) needs to rent

Sedan CC/Avionics MSgt (b) (6)

Minivan Pilots/Nav Maj (b) (6)

Minivan Engs/LMs SMSgt (b) (6)

Minivan Spray MX SrA (b) (6)

**6. LODGING:**

Langley Billeting: 70 Nealy Ave, Langley AFB, VA 23665  
(757) 764-4667/DSN 574-4667 ext 9030  
Group res ext. (b) (6)  
Group Printed Conf#'s

**7. RADIO FREQUENCIES and COMMUNICATIONS:**

Langley AFB (KLFI): (Class D)	ATIS – 270.1 Ground – 121.7 / 275.8 Clearance Delivery – 118.85 / 257.625 Tower – 125.0 / 253.5 / 236.6 App/Dep (Norfolk) – 124.9 / 125.7 / 126.05 / 127.9 Command Post – (Raymond 16) 251.25 METRO – 239.8 PTD – 142.3 / 376.2
Felker AAF/Ft Eustis (KFAF) (Class D):	Tower – 126.3 / 269.25; Phone – (757) 878-2058 Approach (Norfolk) – 125.7 Base Ops – 134.1; Phone – (757) 878-5828/2584
Newport News/ Williamsburg Intl (KPHF) (Class D)	Tower – 118.7 / 348.6 Approach (Newport) – 125.7 Departure (Newport) – 124.9
Norfolk NAS/Chambers Field (KNGU) (Class D Surface-020 MSL,	Tower – 124.3 / 379.15; Phone – DSN 564-2442 Approach (Norfolk) – 118.9 / 353.7 / 335.625 Base Ops Phone – DSN 262-3419 / Comm 757-322-3419

7. **CONTACTS:**

**Joint Base Langley–Eustis:**

Base Operator	x1110
Wing Commander:	x5321
Command Post:	x5411
Public Affairs:	x5701
Wing Safety:	x5057
Base Operations:	x2504
Base Civil Engineer:	x5342
Weather:	x5908
Lodging (Langley Inn):	x4667 or 757-764-4667
Fire Department:	x3068
Transient Alert	x2539/4517
Langley Control Tower:	x7999
Pest Control Foreman:	x3324
Vehicle Ops	x6446
POL	x4105 *TA not avail for local sorties, contact for fuel
MOC	x5445 *TA not avail for local sorties

**Army Corps of Engineers**

(b) (6) office: 757-201-7186

**City of Portsmouth Biologist**

(b) (6) (b) (6) , work; (b) (6) mobile

**Youngstown ARS:**

**DSN: 346-XXXX; Commercial (330) 609-XXXX**

910 AW/CC:	x1243	
Command Post	x1315	FAX x1161
PA:	x1236	FAX x1022
OG/CC:	x1257/1179	
Safety	x1391	
Base Ops:	x1186	
SOF Desk:	x1069	FAX: x1371
757 AS/DO:	x1793	
757 AS Admin:	x1239	FAX x1657
757 AS Spray Office:	x1638/1111	FAX x1616
910 MXG/CC:	x1225	
910 LG/LGM:	x1352	
Maintenance Control:	x1348	
Spray Maintenance:	x1132/1586	
910 LG/LGL:	x1137	

**AERIAL SPRAY PLAN**  
**JB LANGLEY-EUSTIS/CRANEY ISLAND ACE, VA**  
**26-29 July 2022**  
**QZNRK3491207/PPR: 201226JW**

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Joint Base Langley-Eustis and the Army Corps of Engineers' (ACE) Craney Island Dredged Material Management Area. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of members operating at Joint Base Langley-Eustis, and Craney Island, VA.

**1. 910 AW PARTICIPANTS:**

Msn Commander:	Lt Col (b) (6)	(b) (6)
Entomologist:	Capt (b) (6)	
Pilots:	Lt Col (b) (6)	, Lt Col (b) (6)
Navigators:	Lt Col (b) (6)	, Maj (b) (6)
Flight Engineer:	MSgt (b) (6)	, MSgt (b) (6)
Spray Operators:	SMSgt (b) (6)	, TSgt (b) (6)
Spray Maintenance:	SrA (b) (6)	(Lead) (b) (6)
	TSgt (b) (6)	, TSgt (b) (6) , SSgt (b) (6)
Crew Chiefs:	MSgt (b) (6)	, SrA (b) (6)
Avionics:	SrA (b) (6)	

**2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer, Wingman system mission cards
Navigator:	Maps/Map Bag, Validation Map, iPad Window Mounts, Operational Wingman Cards
Spray Operators:	PPE, Laptop and/or Spray datasheet, O <sub>2</sub> hose extensions
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system test cards

**3. SCHEDULE: (All Local Times)**

**26 Jul (Tuesday)**

1200 – Depart KYNG

1315 – Land KLF I PPR: 201226JW

**DO NOT LEAVE UNTIL BRIEFED & CLEARED OFF BY THE MISSION COMMANDER!**

**27-28 Jul (Wednesday-Thursday) Sunset 2018, Civil Twilight 2047**

1500 – Installation Brief (Telecon) with (b) (6) ((b) (6) mobile); ((b) (6) work)

1700 – Wx Call/Chemical Load

1730 – MASS Calibration

2000 – Depart KLF I – conduct aerial daytime review of the area begin spraying near twilight

2300 – Land KLF I

**29 Jul (Friday)**

1200 – Depart KLF I

1315 – Land KYNG

**4. SPRAY CONFIGURATION AND PARAMETERS:**

Locations: Craney Island and 3mi buffer area of Portsmouth (8,935 acres)

Acres: 8935

Product: Trumpet® (Naled) (EPA Reg. No. 5481-481)

Signal word: Danger

Gallons loaded: 60 gallons

Flow Rate: 6.30 GPM

Application Rate: 0.86 oz/acre

Flush: Highly Aromatic Naptha (HAN)

Altitude: 300'

Airspeed: 200 KNTS

Swath Width: 2,000 feet

Nozzle/Orientation: ULV 8003 Tee Jet Flat Fan / Straight Down

Number of Nozzles: 30-31

**5. TRANSPORTATION:**

Langley Vehicle Ops (Sra (b) (6)) – 3 Minivans: (757) 764-5714 Confirmation# 33403303

Enterprise: 1 Truck: 1004 W Mercury Blvd (757) 896-0360 Confirmation# 2055143549

Enterprise: 1 Sedan: 1004 W Mercury Blvd (757) 896-0360 Confirmation# 2055145827

Sedan MC/ENTO Capt (b) (6)

8-PAX VAN Pilots/Navs Maj (b) (6)

8-PAX VAN Engs/LMs TSgt (b) (6)

8-PAX VAN Spray MX SrA (b) (6)

6-PAX Truck CC/Avionics MSgt (b) (6)



6. **LODGING:**

Langley Billeting: 70 Nealy Ave, Langley AFB, VA 23665  
(757) 764-4667/DSN 574-4667 ext 9030  
Group res ext. (b) (6)  
Group # 20130307639

7. **RADIO FREQUENCIES and COMMUNICATIONS:**

Langley AFB (KLFI):	ATIS – 270.1
(Class D)	Ground – 121.7 / 275.8
	Clearance Delivery – 118.85 / 257.625
	Tower – 125.0 / 253.5 / 236.6
	App/Dep (Norfolk) – 124.9 / 125.7 / 126.05 / 127.9
	Command Post – (b) (6) 16) 251.25
	METRO – 239.8
	PTD – 142.3 / 376.2
Felker AAF/Ft	Tower – 126.3 / 269.25; Phone – (757) 878-2058
Eustis (KFAF) (Class D):	Approach (Norfolk) – 125.7
	Base Ops – 134.1; Phone – (757) 878-5828/2584
Newport News/	Tower – 118.7 / 348.6
Williamsburg Intl	Approach (Newport) – 125.7
(KPHF) (Class D)	Departure (Newport) – 124.9
Norfolk NAS/Chambers	Tower – 124.3 / 379.15; Phone – DSN 564-2442
Field (KNGU)	Approach (Norfolk) – 118.9 / 353.7 / 335.625
(Class D Surface-020 MSL,	Base Ops Phone – DSN 262-3419 / Comm 757-322-3419

7. **CONTACTS:**

<b>Joint Base Langley–Eustis:</b>	<b>DSN: 574-XXXX; Commercial (757) 764-XXXX</b>
Base Operator	x1110
Wing Commander:	x5321

Command Post:	x5411
Public Affairs:	x5701
Wing Safety:	x5057
Base Operations:	x2504
Base Civil Engineer:	x5342
Weather:	x5908
Lodging (Langley Inn):	x4667 or 757-764-4667
Fire Department:	x3068
Transient Alert	x2539/4517
Langley Control Tower:	x7999
Pest Control Foreman:	x3324
Vehicle Ops	x6446
POL	x4105 *TA not avail for local sorties, contact for fuel
MOC	x5445 *TA not avail for local sorties

<b>Army Corps of Engineers</b>	<b>(b) (6)</b>	<b>office: 757-201-7186</b>	
<b>City of Portsmouth Biologist</b>	<b>(b) (6)</b>	<b>757-418-3844, work; (b) (6)</b>	<b>mobile</b>

<b>Youngstown ARS:</b>	<b>DSN: 346-XXXX; Commercial (330) 609-XXXX</b>
910 AW/CC:	x1243
Command Post	x1315      FAX x1161
PA:	x1236      FAX x1022
OG/CC:	x1257/1179
Safety	x1391
Base Ops:	x1186
SOF Desk:	x1069      FAX: x1371
757 AS/DO:	x1793
757 AS Admin:	x1239      FAX x1657
757 AS Spray Office:	x1638/1111      FAX x1616
910 MXG/CC:	x1225
910 LG/LGM:	x1352
Maintenance Control:	x1348
Spray Maintenance:	x1132/1586
910 LG/LGL:	x1137

**910 AW AERIAL SPRAY UNIT  
CERTIFIED PEST MANAGEMENT PROFESSIONAL'S  
POST-MISSION REPORT  
MOUNTAIN HOME AFB, SAYLOR CREEK RANGE, ID  
4-15 October 2021**

**1. MISSION BASICS:**

- a. Installation Sprayed: Mountain Home AFB, Saylor Creek Range, ID
- b. Mission Duration: 4-15 October 2021
- c. Purpose of Application: Herbicide application to control cheat grass to suppress range fires and promote native flora
- d. Application Dates and Times (Local): See attachment 1
- e. Acres Treated: 2420
- f. Flying Data:
  - (1) Spray Sorties/Hours: 11 sorties; 9.4 hours
  - (2) Ferry Sorties/Hours:
    - (a) Spray aircraft 92023: 2 ferries; 10.1 hrs
    - (b) Support aircraft: 6 ferries; 27.2 hrs
- g. Project Coordinator (Name/Rank, Title, Phone #): Hodge Echeverria, Natural Resource , Manager, 728-1784
- h. Date Spray Map Last Approved: 4 October 2021
- i. Installation In-Briefing: (When/ Briefer/s): 4 October 2021: Lt Col (b) (6) , Lt Col (b) (6) , Lt Col (b) (6) . Lt Col (b) (6) , Lt Col (b) (6) , Lt Col (b) (6) . Mr. (b) (6) , Mt Home AFB Fire department
- j. Mission Identifier: QZNTK7571277

**3. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6) (4-10); Lt Col (b) (6) (11-15)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6) , Lt Col (b) (6) (4-10); Lt Col (b) (6) , Capt (b) (6) (11-15)
  - (2) Navigator: Lt Col (b) (6) (4-10); Maj (b) (6) (11-15)
  - (3) Flight Engineers: CMSgt (b) (6) (4-10); SMSgt (b) (6) (11-15)
  - (4) Spray Operators: MSgt (b) (6) , TSgt (b) (6) (4-10); MSgt (b) (6) , MSgt (b) (6) , SSgt (b) (6) (remainder)
- c. **Maintenance:**
  - (1) Spray Maintenance: MSgt (b) (6) (lead), MSgt (b) (6) , TSgt (b) (6) , SrA (b) (6)
  - (2) Crew Chiefs: SMSgt (b) (6) (4-10), TSgt (b) (6) , SSgt (b) (6)
  - (3) COMM: Maj (b) (6) (4-10), MSgt (b) (6) , TSgt (b) (6) , TSgt (b) (6) , SSgt (b) (6) , SrA (b) (6)
- d. **Entomologists:** Capt (b) (6) (4-10), Lt Col (b) (6) (4-10), Lt Col (b) (6) (11-15)

**4. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Panoramic® 2SL
- b. EPA Registration Number: Panoramic® 2SL: 81927-19
- c. Gallons Pesticide Loaded: See attachment 1
- d. Gallons Pesticide Applied: See attachment 1
- e. Gallons and Name Diluent Used: See attachment 1 (total spray – gallons of pesticide = gallons water)
- f. Other Additives Used: None

g. Application Rate: 7.0 gal/acre water; (4.0 oz/acre AI)

**APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 92023
- b. Spray System (Modules Used) and System ID #: SP-3G MASS 3
- c. Nozzle Type/Orientation: Raindrop/Straight back
- d. Number of Nozzles: 18 Total; 9 left, 9 right
- e. Pressure: 40 p.s.i.
- f. Flow Rate: 329 gallons/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 100'
- b. Spray Off-set: Weather dependent. No off-set when flown into the wind
- c. Spray Release Altitude: 100'
- d. Ground Speed: 200 KTS

**6. WEATHER OBSERVATIONS:** Acceptable for all spray treatment regimens encountered.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

**a. Deposition Pattern:**

- (1) Techniques Used: Visual observation from PMP on range
- (2) Results: See remarks

**b. Effectiveness**

- (1) Techniques Used: Vegetation measurement, visual observations
- (2) Results: Will be determined in the spring of 2022

**8. REMARKS:**

This mission continues the mitigation of the invasive weed, cheat grass, in order to suppress range fires and promote the reestablishment of healthy native flora, particularly native bunch grasses and sagebrush.

The majority of the sorties were flown with a headwind or tailwind with less than a 45% crosswind component and all applications were observed from the target by a certified applicator, verifying proper deposition. A few minor issues were encountered with spray system (5 October), but they were rapidly ameliorated by Spray MXS. Precipitation events and generally poor weather cancelled several sorties during late in first week and early second week of application. However, approximately 85% of objective (Attachment 2) was completed. User stated that it is possible to complete remainder with ground equipment.

Of particular note is that 2020 application was highly successful with respect to cheatgrass control. Perhaps an unintended consequence is the proliferation of Russian thistle (Tumbleweeds) in same area. There is no quantitative data to support causality at this time, but similar project at UTTR reported the same. This phenomenon may be a product of pervasive drought conditions at both locales, or by release of Russian thistle (and seedbank) due to cheatgrass control. At this point it is too early to tell. Would possibly recommend alternate pesticide chemistry (i.e., different chemical or a tank mix) to simultaneously control cheatgrass and Russian thistle. Mr. (b) (6) (UTTR Natural resources) has been investigating this concept, and will report earliest in anticipation of 2022 herbicide application activities.

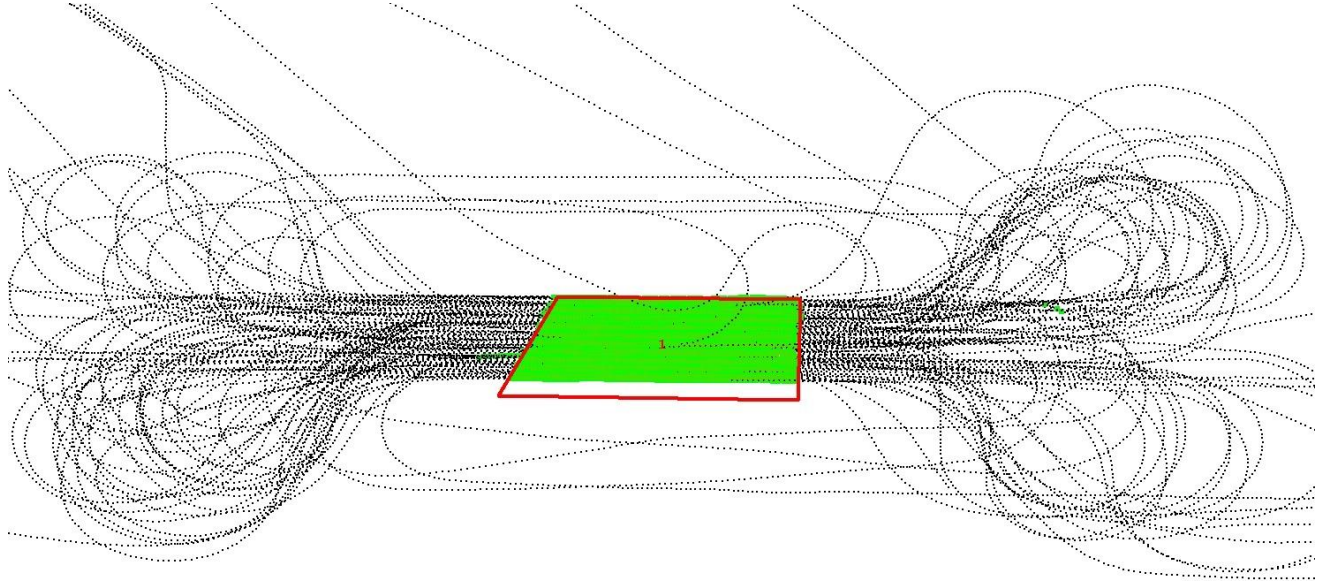
MUO Airfield operations, fire department, POL, RAPCON, and TA support was outstanding during the entire mission. This continues to be an excellent training/real world mission and we would like to thank the personnel at Mountain Home AFB for the support received.

Lt Col (b) (6), USAFR  
Pest Management Professional  
910 AW/757

**Attachment 1. Summary Spray Chart****SPRAY OPERATIONS SUMMARY FOR SAYLOR CREEK RANGE  
5-14 October 2021**

<b>DATE Oct</b>	<b>SORTIE #</b>	<b>TIME OF APPLICATION</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>GALLONS OF PESTICIDE LOADED/ SPRAYED</b>		<b>FLYING HOURS</b>
5	1	0740-0820	0	0	11	0	0.7
5	2	0830-0930	284	1850	0	11	1.0
5	3	1016-1105	237	1740	11	11	0.8
6	4	0733-0826	239	1820	11	11	0.9
7	5	0728-0808	225	1698	11	11	0.7
7	6	0845-0931	234	1767	11	11	0.8
7	7	1008-1154	240	1782	11	11	0.8
8	8	0750-0910	254	1840	11	11	1.2
13	9	0731-0841	251	1850	11	11	0.8
13	10	0743-0827	214	1625	11	11	0.8
14	11	0913-1010	242	1826	11	11	0.9
Totals			2420	17,798	99	99	9.4

**Attachment 2. Map of application on Saylor Creek Range, ID 5-14 October 2021. The red line outlines the spray block; green lines are individual application swaths.**







DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND



910 AW AERIAL SPRAY UNIT  
CERTIFIED PEST MANAGEMENT PROFESSIONAL'S  
POST-MISSION REPORT  
MOUNTAIN HOME AFB, JUNIPER BUTTE RANGE  
19 September – 1 October 2022

1. MISSION BASICS:

- a. Installation Sprayed: Mountain Home AFB, Juniper Butte Range, ID
- b. Mission Duration: 19 September – 1 October 2022
- c. Purpose of Application: Herbicide application to control cheat grass to suppress range fires and promote native flora
- d. Application Dates and Times (Local): See attachment 1
- e. Acres Treated: 2,321
- f. Flying Data:
  - (1) Spray Sorties/Hours: 13 sorties; 10.9 hours
  - (2) Ferry Sorties/Hours:
    - (a) Spray aircraft 92-3022: 1 ferry; 5.9 hrs
    - (b) Support aircraft: 6 ferries; 22.4 hrs
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6), Natural Resource Manager, DSN (b) (6)
- h. Date Spray Map Last Approved: 19 September 2022
- i. Installation In-Briefing: (When/ Briefer/s): 19 September 2022, briefed by Lt Col (b) (6), Lt Col (b) (6), Capt (b) (6), and MSgt (b) (6)
- j. Mission Identifier: QZNRK3431262

2. OPERATIONAL:

- a. **Mission Commander:** Lt Col (b) (6) (19 – 24); Maj (b) (6) (25 – 1)
- b. **Aircrew:**
  - (1) Pilots: Lt Col (b) (6), Maj (b) (6) (19 – 24); Lt Col (b) (6) (25 – 1)
  - (2) Navigator: Maj (b) (6) (19 – 24); Lt Col (b) (6) (25 – 1)
  - (3) Flight Engineers: TSgt (b) (6), SSgt (b) (6) (19 – 24); SMSgt (b) (6), TSgt (b) (6) (25 – 1)
  - (4) Spray Operators: CMSgt (b) (6), SMSgt (b) (6), TSgt (b) (6) (19 – 24); SMSgt (b) (6), TSgt (b) (6) (25 – 1)
- c. **Maintenance:**
  - (1) Spray Maintenance: MSgt (b) (6) (lead), MSgt (b) (6), TSgt (b) (6), SSgt (b) (6), SrA (b) (6)
  - (2) Crew Chiefs: MSgt (b) (6), SrA (b) (6)
  - (3) Avionics: MSgt (b) (6)
- d. **Entomologists:** Capt (b) (6) (19 – 24), DoD pesticide applicator certification #AA-001-21-0121/#AA-029-0920; Lt Col (b) (6) (25 – 1), DoD pesticide applicator certification #NJ-1142-15-0221/#AA-010-03-0221

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Panoramic® 2SL
- b. EPA Registration Number: 66222-141-81927
- c. Gallons Pesticide Loaded: See attachment 1
- d. Gallons Pesticide Applied: See attachment 1
- e. Gallons and Name Diluent Used: See attachment 1 (total spray – gallons of pesticide = gallons water)
- f. Other Additives Used: 82.5 gal Clasp® drift control agent
- g. Application Rate: 7.1 gal/acre water (6.2 oz/acre AI)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 92-3022
- b. Spray System (Modules Used) and System ID #: SP-3G MASS 3
- c. Nozzle Type/Orientation: Raindrop/Straight back
- d. Number of Nozzles: 22 Total; 11 left, 11 right
- e. Pressure: 32 p.s.i.
- f. Flow Rate: 328 gallons/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 100'
- b. Spray Off-set: None
- c. Spray Release Altitude: 100'
- d. Ground Speed: 200 KTS

**6. WEATHER OBSERVATIONS:** Acceptable for all spray treatment regimens encountered.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

**a. Deposition Pattern:**

- (1) Techniques Used: Visual observation from PMP on range and in the aircraft
- (2) Results: See remarks

**b. Effectiveness**

- (1) Techniques Used: Vegetation measurement, visual observations
- (2) Results: Will be determined in the spring of 2023

**8. REMARKS:**

This mission was the first aerial spray application of Juniper Butte Range. The purpose was to control cheat grass, an invasive weed, for range fire suppression and to support habitat restoration initiatives. Previous applications in the nearby area utilized a lower application rate of 4.0 ounces per acre. It was decided to slightly increase the application rate for this mission with the expectation that increased control will be obtained with minimal additional cost.

Sorties were flown with a headwind or tailwind with less than a 45% crosswind component and all applications were observed either from the target or from the aircraft by a certified applicator, verifying proper deposition. Over 75% of the spray block was successfully treated (Attachment 2). However, due to a Time Compliance Technical Order (TCTO) regarding a potential issue with the aircraft's props, the

aircraft was unable to fly the final sorties and the southern end of the spray block was left untreated. Excess mixed spray material remaining at TCTO safety shutdown was disposed of by Natural Resource personnel and Mt Home AFB Hazmat disposal under contractual obligations.

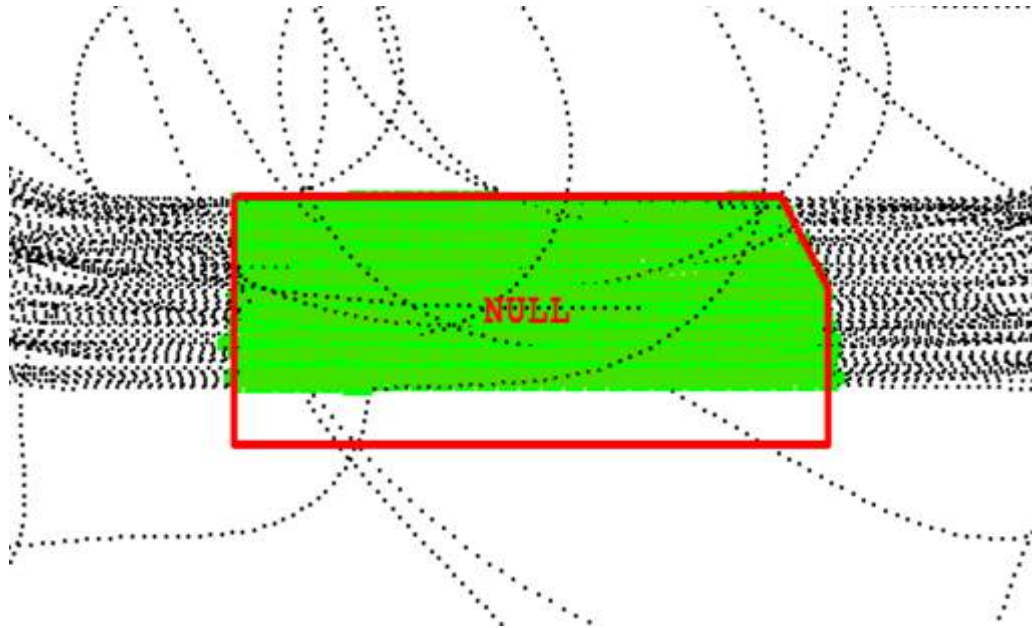
MUO Airfield operations, fire department, POL, RAPCON, and TA support was outstanding during the entire mission. This was an excellent training/real world mission and we would like to thank the personnel at Mountain Home AFB for the support received.

Lt Col (b) (6), USAF  
Certified Pest Management Professional

**Attachment 1. Summary Spray Chart****SPRAY OPERATIONS SUMMARY FOR JUNIPER BUTTE RANGE  
19 September – 1 October**

<b>DATE Sept</b>	<b>SORTIE #</b>	<b>TIME OF APPLICATION (LOCAL)</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>GALLONS OF PESTICIDE LOADED/ SPRAYED</b>		<b>FLYING HOURS</b>
20	1	0804 – 0840	112	780	12	4.5	0.7
21	2	0728 – 0735	20	90	4.5	1	0.5
21	3	0931 – 1009	257	1735	0	11	1.1
22	4	0724 – 0747	210	1539	10.5	10.5	0.9
22	5	0853 – 0918	235	1714	12	12	0.9
23	6	0735 – 0809	235	1719	12	12	1.0
23	7	0931 – 1000	245	1770	12	12	1.0
26	8	0745 – 0825	253	1763	12	12	1.1
26	9	N/A	0	0	12.5	0	0.4
26	10	1000 – 1030	259	1777	0	12.5	1.0
27	11	N/A	0	0	0	0	0.3
27	12	0751 – 0827	243	1720	12.5	12.5	1.0
27	13	0930 – 1000	252	1788	12.5	12.5	1.0
Totals			2,321	16,395	112.5	112.5	10.9

**Attachment 2. Map of application on Juniper Butte Range, ID, 19 September – 1 October 2022. The red line outlines the spray block; green lines are individual application swaths.**



# AERIAL SPRAY OPERATIONAL SCHEDULE

## SAYLOR CREEK RANGE / MOUNTAIN HOME AFB, ID

### 4-15 OCTOBER 2021

#### QZNRK7571277

**Purpose/Objectives/Benefits:** One C-130 will deploy to Mountain Home, ID from 4-15 September 2021. Aerial Spray flight proficiency training will be accomplished on Saylor Creek Bombing Range, ID while providing a beneficial herbicide treatment to prevent fire hazards, inhibit annual re-growth of cheat grass, and allow native vegetation to establish and be competitive.

#### 1. 910 AW PARTICIPANTS: 1<sup>st</sup> week 4-10, 2<sup>nd</sup> week 9-15

<b>Msn Commander:</b>	<b>Lt Col (b) (6)</b>	<b>1<sup>st</sup> week</b>	<b>((b) (6))</b>
	<b>Lt Col (b) (6)</b>	<b>2<sup>nd</sup> week</b>	<b>((b) (6))</b>
<b>Entomologist:</b>	<b>Lt Col (b) (6)</b>		
1 <sup>st</sup> week	<b>Capt (b) (6)</b>		
2 <sup>nd</sup> week	<b>Lt Col (b) (6)</b>		
<b>Pilots:</b> 1 <sup>st</sup> week	<b>Lt Col (b) (6)</b>	<b>, Lt Col (b) (6)</b>	
2 <sup>nd</sup> week	<b>Lt Col (b) (6)</b>	<b>, Capt (b) (6)</b>	
<b>Navigator:</b> 1 <sup>st</sup> week	<b>Lt Col (b) (6)</b>		
2 <sup>nd</sup> week	<b>Maj (b) (6)</b>		
<b>Flight Engineer:</b> 1 <sup>st</sup> week	<b>CMSgt (b) (6)</b>		
2 <sup>nd</sup> week	<b>SMSgt (b) (6)</b>		
<b>Spray Operators:</b> 1 <sup>st</sup> week	<b>MSgt (b) (6)</b>	<b>, TSgt (b) (6)</b>	
2 <sup>nd</sup> week	<b>MSgt (b) (6)</b>	<b>, MSgt (b) (6)</b>	<b>, SSgt (b) (6)</b>
<b>Spray Maintenance:</b>	<b>MSgt (b) (6)</b>	<b>(LEAD)</b>	<b>(b) (6)</b>
	<b>MSgt (b) (6)</b>	<b>, TSgt (b) (6)</b>	<b>, TSgt (b) (6)</b>
	<b>, SrA (b) (6)</b>		
<b>Crew Chiefs:</b> Both weeks	<b>TSgt (b) (6)</b>	<b>, SSgt (b) (6)</b>	
1 <sup>st</sup> week	<b>SMSgt (b) (6)</b>		
<b>Avionics:</b> 1 <sup>st</sup> week	<b>MSgt (b) (6)</b>		
2 <sup>nd</sup> week	<b>MSgt (b) (6)</b>		
<b>Comm Package:</b>	<b>MSgt (b) (6)</b>	<b>, TSgt (b) (6)</b>	<b>TSgt (b) (6)</b>
	<b>SSgt (b) (6)</b>	<b>, SrA (b) (6)</b>	
1 <sup>st</sup> week	<b>Maj (b) (6)</b>		

#### 2. REQUIRED ITEMS

<b>Msn Commander:</b>	MC Laptop Computer
<b>Entomologist:</b>	PCM Card, Pest Safety Binder, VHF, Radios, Laptop Computer
<b>Navigator:</b>	Maps/Map Bag, Validation Map, Operational Wingman cards
<b>Spray Operators:</b>	PPE, Calibration Tables/Laptop and or Spray datasheet, O2 hose extensions, wireless headsets
<b>Spray Maintenance:</b>	Deployment Kit, Support Equipment
<b>Avionics:</b>	2 Multi-band hand held radios; Wingman system test cards

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### **3. SCHEDULE: (Local Times)**

#### **4 Oct (Mon) Deploy to KMUO**

0800 Show KYNG

1000 Support aircraft depart KYNG MI – QANRK7571277

PPR: DA-3002 Vader 23

1000 Spray aircraft depart KYNG MI – QZNRK7571277

PPR: DA-3001 Vader 24

1415 Support aircraft land KMUO

1415 Spray aircraft land KMUO

#### **5-8 Oct (Tues-Fri) Spray Sorties Range: Tues-Fri 0700L - 0900L**

0430 Show KMUO/WX decision/load

0640 Depart KMUO

0700-0900 Range Time Tues-Fri

0930 Land KMUO

#### **9 Oct (Sat) Support Aircraft**

0800 Show KYNG

1000 Depart KYNG

MI – QANRK7571282

1415 Land KBOI @ Jackson Jet Center

#### **10 Oct (Sun) Support Aircraft**

0700 Show KBOI

0900 Depart KBOI

1600 Land KYNG

#### **11-14 Oct (Tues-Thurs) Spray Sorties Range: 0700L - 0900L Monday is a holiday**

0430 Show KMUO/WX decision/load

0640 Depart KMUO

0700-0900 Range Time

0930 Land KMUO

#### **14 Oct (Thurs) Support Aircraft MI – QANRK7571287**

0800 Show KYNG

1000 Depart KYNG

1345 Land KMUO

One week out max for PPR's

Call DSN: 728-2222

PPR: XX Vader XX

#### **15 Oct (Fri) Redeploy to YNG**

0700 Show KMUO

0900 Spray aircraft depart KMUO

0900 Support aircraft depart KMUO

1600 Spray aircraft land KYNG

1600 Support aircraft land KYNG

### **4. AIRCRAFT & SPRAY CONFIGURATION:**

System:	SP-3G MASS: 3
Nozzle /Orientation:	Raindrop/Straight Back
Number of nozzles:	Fuselage – 18 nozzles



## **5. SPRAY MIXING AND LOADING:**

Entomologist will determine quantity to load and work with the local pest managers to determine the application rate. System will be calibrated after the chemical is loaded. Please see entomologist for final flow spray parameters as these numbers are subject to change depending on user requirements

### **a. In each gallon of mix:**

0.57 ounces of Panoramic® 2SL herbicide (0.44 gal in 100 gal of water)

0.32 ounces of Pro Tank (2 pints in 100 gal)

0.64 ounces of Clasp® (0.5 gal in 100 gal)

126.5 ounces of water

### **b. First Load (4 Tanks of 450 gal each + sump of 75 gal)**

Fill to 450 gal water/tank using the pump on the water tanker truck. This is done by putting the filler hose into the rear tank with all tanks open to the common sump.

Total water in tanks = 1,800 gal.

75 gal/water in sump

Total water added = 1,875 gal

Load 8.3 gal of Panoramic®; add 4.7 gal of Pro Tank, and 9 gal of Clasp® while agitating approximately 5-7 min

Total quantity mix 1888 gal

### **c. Subsequent Loads**

Fill with water for a total of 1800 gal; use “per 100 gal of water” measurements given above.

When the MASS is returned empty load 1800 gal of water and add: 8.1 gal of Panoramic®; 4.5 gal of Pro Tank, and 9 gal of Clasp®.

## **6. SPRAY PARAMETERS:**

Location:	Northern Block
Chemical:	Panoramic® 2SL (active ingredient: 23% imazapic ammonium)
Area to be treated:	3,004 acres
Swath Width:	100 feet
Flow Rate:	326 gal/min (we are treating at 46.5 acres/minute)
Application Rate:	7 gal/acre (4 oz of Panoramic® per acre)
Altitude:	100' AGL
Ground Speed:	200 Knots
Flush:	Water

## **7. RADIO FREQUENCIES: \* Confirm these Freqs at the inbrief.**

**Mt Home AFB:** ACC COMD POST 311.0/321.0

**Saylor Creek Range:**(Cowboy Control): 134.1/236.05

If Cowboy Control is not up, contact MUO APP on 124.8/259.1

**Air to Ground:** Confirm Freq with Entomologist.

**8. TRANSPORTATION: 366 LRS U-Drives**

**Confirmation # 32294302**

- (1) Sedan – Mission Commander
- (1) Sedan – Avionics & Crew Chiefs
- (1) 6 PAX Truck (not a 4X4) – Entos
- (1) 8 PAX VAN – Aircrew O's
- (1) 8 PAX VAN – Aircrew E's
- (1) 15 PAX VAN – Spray MX
- (1) 15 PAX VAN – Comm

**9. LODGING:**

**Best Western Foothills Inn**

1080 US-20, Mountain Home, ID 83647

(208) 587-8477 POC: (b) (6) (208) 599-1030 (b) (6)

\*Spray MX, Crew Chiefs, Avionics, Comm

**Hampton Inn and Suites**

3175 Foothills Ave, Mountain Home, ID 83647

(208) 587-8477 POC: (b) (6) (208) 599-1030 (b) (6)

\* Aircrew and CC's on the support planes on and 1-5 October and 14-15 October will also be staying at this hotel.

**10. CONTACTS: MT Home AFB, ID: DSN: 728-XXXX; Com (208) 828-XXXX**

Civil Engineer:	x2831	
Base Ops:	x2222	
Transit Alert:	x2252	
Range Operations:	x2985	Mr. (b) (6) Cell (b) (6)
NR Mgr/Spray Project POC	x1784	(b) (6)
Entomology:	x6300	
Environmental Mgmt:	x6351	
Lodging:	x5200	FAX x4797
Transportation:	x2215	208-828-2215 FAXx1619
Weather:	x6303	
Fire Dept:	x6292	
Wing Safety	x2065	
Visiting Unit Coordinator:	x1449	
Wing Plans:	x4049	
Public Affairs:	x6800	

# AERIAL SPRAY OPERATIONAL SCHEDULE

## SAYLOR CREEK RANGE / MOUNTAIN HOME AFB, ID

### 19-30 Sept 2022

### QZNRK3431262

**Purpose/Objectives/Benefits:** One C-130 will deploy to Mountain Home, ID from 19-30 September 2022. Aerial Spray flight proficiency training will be accomplished on Saylor Creek Bombing Range, ID while providing a beneficial herbicide treatment to prevent fire hazards, inhibit annual re-growth of cheat grass, and allow native vegetation to establish and be competitive.

#### 1. 910 AW PARTICIPANTS: 1<sup>st</sup> week 19-25, 2<sup>nd</sup> week 24-30

<b>Msn Commander:</b>	<b>Lt Col (b) (6)</b>	<b>1<sup>st</sup> week</b>	<b>(b) (6)</b>
	<b>Maj (b) (6)</b>	<b>2<sup>nd</sup> week</b>	<b>(b) (6)</b>
Entomologist: 1 <sup>st</sup> week	Capt (b) (6)		
2 <sup>nd</sup> week	Lt Col (b) (6)		
Pilots: 1 <sup>st</sup> week	Lt Col (b) (6)	, Maj (b) (6)	
2 <sup>nd</sup> week	Lt Col (b) (6)	, Lt Col (b) (6)	
Navigator: 1 <sup>st</sup> week	Maj (b) (6)		
2 <sup>nd</sup> week	Lt Col (b) (6)		
Flt Engineer: 1 <sup>st</sup> week	TSgt (b) (6)	, SSgt (b) (6)	
2 <sup>nd</sup> week	TSgt (b) (6)	, SMSgt (b) (6)	, SSgt (b) (6)
Spray Operators: 1 <sup>st</sup> week	CMSgt (b) (6)	, TSgt (b) (6)	, SMSgt (b) (6)
	Mitchell, SSgt (b) (6)		
2 <sup>nd</sup> week	CMSgt (b) (6)	, TSgt (b) (6)	, SMSgt (b) (6)
Spray Maintenance:	<b>MSgt (b) (6)</b>	<b>(LEAD)</b>	<b>(b) (6)</b>
	MSgt (b) (6)	, TSgt (b) (6)	, SSgt (b) (6)
		, SrA Bradley Waterbury	
Crew Chiefs: Both weeks	MSgt (b) (6)	, SrA (b) (6)	
Avionics: Both Weeks	MSgt (b) (6)		

#### 2. REQUIRED ITEMS

Msn Commander:	MC Laptop Computer
Entomologist:	PCM Card, Pest Safety Binder, VHF, Radios, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map, Operational Wingman cards
Spray Operators:	PPE, Calibration Tables/Laptop and or Spray datasheet, O2 hose extensions, wireless headsets
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand held radios; Wingman system test cards

### **3. SCHEDULE: (Local Times)**

#### **19 Sep (Mon) Deploy to KMUO**

1000 Show KYNG

1200 Support aircraft depart KYNG **MI – QANRK9931262** **PPR: MM-19-01**

1210 Spray aircraft depart KYNG **MI – QZNRK3431262** **PPR: MM-19-02**

1600 Support aircraft land KMUO

1610 Spray aircraft land KMUO

#### **20-23 Sep (Tues-Fri) Spray Sorties** Range: Tues-Fri 0730L - 1100L

0500 Show KMUO/WX decision/load

0700 Depart KMUO

0730-1130 Range Time Tues-Fri

1130 Land KMUO (unless extended range time approved)

#### **24 Sep (Sat) Support Aircraft** **KBOI Jackson Jet Center – North Side or airport** **(208) 383-3300**

1100 Show KYNG

1300 Depart KYNG

**MI – QANRK9931267**

1700 Land KBOI

#### **25 Sep (Sun) Support Aircraft**

0700 Show KBOI

0900 Depart KBOI

1600 Land KYNG

#### **26-29 Sep (Mon-Thurs) Spray Sorties** Range: Mon-Thurs 0730L - 1100L

0500 Show KMUO/WX decision/load

0700 Depart KMUO

0730-1100 Range Time

1130 Land KMUO (unless extended range time approved)

#### **29 Sep (Thurs) Support Aircraft** **MI – QANRK9931272**

One week out max for PPR's

0800 Show KYNG

Call DSN: 728-2222

0900 Depart KYNG

**PPR: XX Vader XX**

1345 Land KMUO

#### **30 Sep (Fri) Redeploy to YNG**

0700 Show KMUO

0900 Spray aircraft depart KMUO

0910 Support aircraft depart KMUO

1600 Spray aircraft land KYNG

1610 Support aircraft land KYNG

### **4. AIRCRAFT & SPRAY CONFIGURATION:**

System:	SP-3G MASS: 3
Nozzle /Orientation:	Raindrop/Straight Back
Number of nozzles:	Fuselage – 18-19 nozzles

## **5. SPRAY MIXING AND LOADING:**

Entomologist will determine quantity to load and work with the local pest managers to determine the application rate. Please see entomologist for final flow spray parameters as these numbers are subject to change depending on user requirements

### **a. In each gallon of mix:**

0.86 ounces of Panoramic® 2SL herbicide (0.67 gal in 100 gal of water)

0.64 ounces of Clasp® (0.5 gal in 100 gal)

126.5 ounces of water

### **b. First Load (4 Tanks of 450 gal each + sump of 75 gal)**

Fill to 450 gal water/tank using the pump on the water tanker truck. This is done by putting the filler hose into the rear tank with all tanks open to the common sump.

Total water in tanks = 1,800 gal.

75 gal/water in sump

Total water added = 1,875 gal

Load 12.5 gal of Panoramic®; and 9 gal of Clasp® while agitating approximately 5-7 min

Total quantity mix 1888 gal

### **c. Subsequent Loads**

Fill with water for a total of 1800 gal; use “per 100 gal of water” measurements given above if MASS returned with partial load. When the MASS is returned empty load 1800 gal of water and add: 12.5 gal of Panoramic®; and 9 gal of Clasp®.

**d.** Pro-tank cleaning agent can be added every 4<sup>th</sup> load, or as prescribed by Spray MXS personnel. Pro-tank cleaning agent should be added at a rate of 4.5 gallons per approximate 1800 gallon load.

## **6. SPRAY PARAMETERS:**

Location:	Juniper Butte (adjunct range of Mt Home AFB)
Chemical:	Panoramic® 2SL (active ingredient: 23% imazapic ammonium); 6.0 oz/acre A.I.
Area to be treated:	3,005 acres
Swath Width:	100 feet
Flow Rate:	326 gal/min (we are treating at 46.5 acres/minute)
Application Rate:	7 gal/acre (6 oz of Panoramic® per acre with adjuvants)
Altitude:	100' AGL
Ground Speed:	200 Knots
Flush:	Water

## **7. RADIO FREQUENCIES: \* Confirm these Freqs at the inbrief.**

**Mt Home AFB:** ACC COMD POST 311.0/321.0

**Saylor Creek Range:**(Cowboy Control): 134.1/236.05

If Cowboy Control is not up, contact MUO APP on 124.8/259.1

**Air to Ground:** Confirm Freq with Entomologist. 392.2 MHz expected. 123.45 MHz alternate expected.

**8. TRANSPORTATION: 366 LRS U-Drives (and additional rentals)**

**Confirmation # 33365475**

- (1) Sedan – Ento/Mission Commander (Capt(b) (6) will secure rental from Boise Arpt)
- (1) Sedan – Avionics & Crew Chiefs (TMO u-drive)
- (1) 6 PAX VAN -Aircrew O's
- (2) COMP Vans – TBD, based on need
- (1) 8 PAX VAN – Aircrew E's
- (1) 15 PAX VAN – Spray MX
- (1) 15 PAX VAN – Comm

**9. LODGING:**

**Holiday Inn Express Boise – University Area**

475 W. Parkcenter Blvd, Boise, ID 83706

(208) 345-2002 POC (b) (6) [Sales2@dhillionco.com](mailto:Sales2@dhillionco.com) & (b) (6)

**10. CONTACTS: MT Home AFB, ID: DSN: 728-XXXX; Com (208) 828-XXXX**

Civil Engineer:	x2831	
Base Ops:	x2222	
Transit Alert:	x2252	
Range Operations:	x2985	Mr. (b) (6) Cell (b) (6)
NR Mgr/Spray Project POC	x1784	(b) (6)
Entomology:	x6300	
Environmental Mgmt:	x6351	
Lodging:	x5200	FAX x4797
Transportation:	x2215	208-828-2215 FAXx1619
Weather:	x6303	
Fire Dept:	x6292	
Wing Safety	x2065	
Visiting Unit Coordinator:	x1449	
Wing Plans:	x4049	
Public Affairs:	x6800	



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND**

28 February 2023

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757AS/DOS  
3976 King Graves Rd  
Vienna, Ohio 44473-0910

SUBJECT: Concept of Operations for Aerial Spray at the Utah Test and Training Range

1. Aerial spray flight proficiency training will be accomplished on Targets 21, 23, 24, and Nord LZ at the Utah Test and Training Range (UTTR). Spray sorties will apply Krovar and Plateau to control vegetation (i.e., *Halogeton*) growth aiding bombing mission test evaluations and unexploded ordnance recovery. Two aerial spray configured C-130s will be available from 6-17 March 2023 for the requested spray mission.

2. Concept of Operations:

ALL TIMES LOCAL

a. 6 March (Monday)

1000 Vader 21 departs KYNG (MASS, SP-3)  
1015 Vader 22 departs KYNG (EMASS)  
1330 Vader 21 lands KHIF  
1345 Vader 22 lands KHIF

b. 7-10 March (Tuesday - Friday)

0800 Spray 21 departs KHIF  
0900 Spray 22 departs KHIF  
1030 Spray 21 lands KHIF  
1200 Spray 22 lands KHIF

c. 12-16 March (Monday – Thursday)

0800 Spray 21 departs KHIF  
0900 Spray 22 departs KHIF  
1030 Spray 21 lands KHIF  
1200 Spray 22 lands KHIF

d. 18 March (Friday)

0900 Vader 21 departs KHIF (MASS, SP-3)  
0915 Vader 22 departs KHIF (EMASS)  
1600 Vader 21 lands KYNG  
1615 Vader 22 lands KYNG



3. Spray parameters:

Herbicide: Krovar 1DF® / Plateau

Flow rate: 366 Gallons/Minute / 335 Gallons/Minute

Acreage: 900 Acres / 800 Acres (Targets 21, 23+24)

Ground speed: 200 knots (337.55 ft/sec)

Spray altitude: 100 feet AGL

Swath width: 35 Feet / 80 Feet

4. Lt Col (b) (6) (6-12 Mar) and Lt Col (b) (6) (13-17 Mar) will serve as the mission commanders.

5. Aircraft Commanders:

Lt Col (b) (6)

Lt Col (b) (6)

Lt Col (b) (6)

Lt Col (b) (6)

Lt Col (b) (6)

Maj (b) (6)

Maj (b) (6)

6. Support required at both Hill AFB and the UTTR has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray

# SPRAY OPERATIONAL SCHEDULE

## UTAH TEST AND TRAINING RANGE MISSION

### 6-17 March 2023

**PURPOSE/BENEFIT/OBJECTIVE:** Aerial spray herbicide mission controlling halogeton and cheatgrass on Targets 21, 23, and 24 on the Utah Test and Training Range (UTTR) to improve bombing mission test evaluations and unexploded ordnance recovery. New EMASS will also be utilized and function tested.

#### 1. 910 AW PARTICIPANTS:

<b>Mission Commander:</b>	Lt Col (b) (6)	(week 1)	(b) (6)	(cell phone)
	Lt Col (b) (6)	(week 2)	(b) (6)	(cell phone)

#### AIRCREW

<b>Pilots:</b>	Lt Col (b) (6), Lt Col (b) (6), Lt Col (b) (6), Lt Col (b) (6), Lt Col (b) (6), Lt Col (b) (6), Maj (b) (6), Maj (b) (6), Capt (b) (6)
<b>Navigators:</b>	<b>First Week Only:</b> Capt (b) (6), Capt (b) (6) Lt Col (b) (6), Lt Col (b) (6), Maj (b) (6), Capt Eric Wolf <b>Second Week Only:</b> Lt Col (b) (6)
<b>Flight Engineers:</b>	CMSgt (b) (6), SMSgt (b) (6), MSgt (b) (6), TSgt (b) (6) (ADVON), TSgt (b) (6), SSgt (b) (6), SSgt (b) (6)
<b>Spray Operators:</b>	CMSgt (b) (6), SMSgt (b) (6), SMSgt (b) (6), TSgt (b) (6), TSgt (b) (6), MSgt (b) (6), MSgt (b) (6), MSgt (b) (6), SSgt (b) (6), SSgt (b) (6), TSgt (b) (6), SrA (b) (6)

#### MISSION SUPPORT

<b>Entomologists:</b>	<b>Both Weeks:</b> Col (b) (6), Lt Col (b) (6) <b>First Week:</b> Capt (b) (6)
<b>SARMS/ARMS:</b>	TSgt (b) (6), SSgt (b) (6)
<b>Command Post:</b>	SSgt (b) (6)
<b>AFE:</b>	TSgt (b) (6), SSgt (b) (6)
<b>1<sup>st</sup> Sergeants:</b>	SMSgt (b) (6), MSgt (b) (6)
<b>COMM:</b>	MSgt (b) (6), TSgt (b) (6), TSgt (b) (6), SSgt (b) (6)

## **MAINTENANCE**

**Specialists:** SMSgt (b) (6), SMSgt (b) (6), MSgt (b) (6),  
MSgt (b) (6), MSgt (b) (6), MSgt (b) (6),  
, TSgt (b) (6), TSgt (b) (6), TSgt (b) (6),  
, SSgt (b) (6), MSgt (b) (6), SSgt  
(b) (6), SrA (b) (6), SrA (b) (6), SrA  
(b) (6), MSgt (b) (6), SrA (b) (6), TSgt  
(b) (6), TSgt (b) (6)

**Spray MXS:** SMSgt (b) (6) (ADVON), TSgt (b) (6)  
(ADVON), TSgt (b) (6) (ADVON), SSgt (b) (6)  
(ADVON), MSgt (b) (6), TSgt (b) (6), SSgt  
(b) (6), SrA (b) (6)

## **2. REQUIRED ITEMS:**

Msn Commander: MC Laptop Computer  
Entomologist: Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop  
Computer  
Navigator: Maps/Map Bag, Validation Map, Operational Wingman cards  
Spray Operators: PPE, Calibration Tables/Laptop and or Spray datasheet,  
O<sub>2</sub> hose extensions  
Spray Maintenance: Deployment Kit, Support Equipment  
Avionics: 2 Multi-band hand-held radios; Wingman system test cards

- 3. IN-BRIEFING at Hill:** 1430L or ASAP at forestry ramp (for entomologists, MXS, and MC):  
Note: Mr. (b) (6) will be primary POC for Hill/UTTR, with Mr.  
(b) (6) and Mr. (b) (6) for spray activities. Most aspects of inbrief  
have been pre-coordinated.

## **4. SCHEDULE: (All Local Time)**

**PLANNED SEQUENCE OF EVENTS:** Hill AFB Tower Control and Runway Hours  
Tower Opens at 0800L (Engine start typical at 0745 make engine start call in the blind)

### **NOTES:**

1. In the event of weather or maintenance delays, the missions will be adjusted as required.  
ALL TIMES SUBJECT TO ADJUSTMENT BY MISSION COMMANDER
2. DUTY DAY FOR CIVILIANS WILL BE AS REQUIRED WITHIN CREW REST  
CONSTRAINTS.
3. ALL MX & OPS PERSONNEL WILL REMAIN ON DUTY UNTIL AIRCRAFT IS  
PRE-FLIGHT COMPLETE AND RELEASED BY THE MISSION COMMANDER.

**6 March (Monday)**

**0700-0730 Bag Drop for Chalk 3 Pax at Aerial Port, Bldg 413**

Chalk 1 & 2 Aircrew and MEPs will floor load their personal bags

**0800 SHOW for ALL aircrew and Pax** - report to Bldg 407 Aircrew Briefing Rm for safety and arrival brief. MC will release you.

**0900 ALL Chalk 3 Pax report back to Aircrew Briefing room for accountability/briefings** - TC Lt Col Stroney

**0930 Chalk 3 PAX bus to aircraft**

1000 Depart KYNG Spray (EMASS) **Vader 21 MI: QZNRK3431065 PPR: 23-BD005**

1015 Depart KYNG Spray (SP3) **Vader 22 MI: QZNRK3432065 PPR: 23-BD005**

1030 Depart KYNG Support (CP5) **Dobbins MI:**

1400 Land KHIF first aircraft

**7-10 March (Tuesday-Friday) Range Time 0800-1200L**

**Aircraft will generally plan on 2 sorties per day.**

0600 Show KHIF

0630 Aircraft Released by MX, weather call, and begin mixing product

0700 Chemical Load first Aircraft

0745 Engine Start

0800 First Takeoff

**\*\*Weekend applications are currently unavailable due to range closure.**

**13-16 March (Monday-Thursday) Range time 0800-1200L**

**Each aircraft will plan on 2 sorties per day.**

0600 Show KHIF

0630 Aircraft Released by MX, weather call, and begin mixing product

0700 Chemical Load first Aircraft

0745 Engine Start

0800 First Takeoff

**17 March (Friday) All personnel**

0600 Everyone checked out of hotel

0630 Rental vehicles depart for Hill forestry ramp with **ALL MEMBERS**

0710 Return Rental vehicles to Enterprise

0730 Bus from Enterprise to Hill

0900 Depart KHIF

1600 Land KYNG

**\*\*All times are approximated. Actual times and mission details will be by the Mission Commander.**

## **5. SPRAY CONFIGURATION: SP3G MASS (Legacy); 2.0 EMASS (new)**

### **MASS #2 (Legacy System)**

MASS Modules SP3 configuration

HV Fuselage booms (R-20 nozzles) oriented straight back (Plateau)

UHV Fuselage booms (Bell nozzles) oriented straight back (Krovar)

### **EMASS (2.0)**

UHV Fuselage booms (R-240 nozzles) oriented straight back (Plateau)

UHV Fuselage booms (Bell nozzles) oriented straight back (Krovar)

## **6. SPRAY LOADING:**

**Sequence for Loading full SP3 tank (1800 Gallons) mix for PLATEAU assuming external mixing tanks (trailers) will be utilized with expectation all mixing will be external**

Fill water to 750 gallon mark.

Add 18.75 (19) gallons Plateau

Add 0.5 gallons Foam Fighter

Add 5 gallons Clasp incrementally while mixing and adding remaining water (to 1000 gallons) in external mix tanks.

For Partial tank fill of Plateau, **please follow rough mixing ratios:** Note that this should be unnecessary for external tank mixing scenario.

100 gallon increment of finish spray mix is:

1.0 Gallon Plateau

0.5 Gallons Clasp

4 oz Foam Fighter

Sequence for Loading EMASS tanks (3200 Gallons Max; 1150 gallons each tank, UHV mode)

**Sequence for Loading 1,000 Gallon Mixing Tank: (KROVAR); note: this will be accomplished in external mixing tanks prior to aircraft upload.**

Fill with water up to 750 Gallon Mark, and then add:

450 Pounds of Krovar I DF<sup>®</sup>

4.0 Gallons of Clasp<sup>®</sup>

15 oz of FTF Defomer<sup>®</sup>

200 Ounces (1.5 gallons) Hi-Light<sup>®</sup> Dye

Add Water to 1,000 Gallon Mark and Agitate for 10 Minutes

Add from mixing tanks to spray tanks as appropriate for sortie

## 7. SPRAY PARAMETERS:

**Location:** UTTR targets

Area to be treated: Approx 1,700 Acres (Targets 21, 23+24); Priority is target 24.

Expect majority of acreage to be treated with Plateau, with approximately 3600 gallons finish mix to use Krovar (if available). Spray MXS can accommodate both types of materials with various boom configurations for legacy spray system or EMASS.

User will determine location of application; expectation is Krovar application will be made to eliminate current inventory of product, and perhaps provide a benchmark for application effectiveness.

### **a. Plateau application: (legacy MASS)**

Swath width: 80 feet  
Flow rate: 335 Gallons/Minute  
Altitude: 100 Feet AGL  
Ground Speed: 200 Knots (337.55 ft/sec)  
Flush: 100 gallons water and subsequent air purge  
Nozzles: 20-22 R20 nozzles orientated straight back

### **b. Krovar application: (legacy MASS)**

Swath Width: 35 Feet  
Flow Rate: 366 Gallons/Minute  
Altitude: 100 Feet AGL  
Ground Speed: 200 Knots (337.55 ft/sec)  
Flush: 2x full system rinse if possible; Air purge after each sortie  
Nozzles: HV Bell nozzles, orientation straight back  
Formulas: Flow Rate = Gal/Time in Minutes  
Acreage Sprayed = Total Sec x 338 x Swath Width / 43,560

### **c. Plateau application: (EMASS)**

Swath width: 80 feet  
Flow rate: 335 Gallons/Minute  
Altitude: 100 Feet AGL  
Ground Speed: 200 Knots (337.55 ft/sec)  
Flush: 100 gallons water and subsequent air purge  
Nozzles: 26 R240 nozzles orientated straight back

### **d. Krovar application: (EMASS)**

Swath Width: 35 Feet  
Flow Rate: 366 Gallons/Minute  
Altitude: 100 Feet AGL  
Ground Speed: 200 Knots (337.55 ft/sec)  
Flush: 2x full system rinse if possible; Air purge after each sortie  
Nozzles: HV Bell nozzles, orientation straight back  
Formulas: Flow Rate = Gal/Time in Minutes  
Acreage Sprayed = Total Sec x 338 x Swath Width / 43,560

8. **PARKING PLAN:** Forestry Ramp and Building 777

9. **AIR TO GROUND RADIO FREQUENCIES:**

**Clover North Range:** VHF 118.45 UHF 285.65  
**Clover South Range:** VHF 134.1 UHF 363.5  
**Eagle Range:** UHF 309.2  
**Diddle Knoll:** Provided after In-Brief  
**Spray Inter plane:** Provided after In-Brief  
**Command Post:** UHF 381.3 Call in as CONVOY  
**Base OPS:** UHF 371.95  
**Spray Ground:** Provided after In-Brief

10. **TRANSPORTATION:** Enterprise (801)-593-6007 Option #4 for counter  
865 W 1000 N LAYTON, UT 84041-4833  
POC: (b) (6), Branch Manager C: 801-695-8480

	Vehicle ID	Reserved by	For use by
1	Range vehicle	(b) (6)	Entos (range activities)
2	Support vehicle	(b) (6) (1st week only)	Ento (on AT orders)
3	OPS O Minivan 1	(b) (6)	O aircrew
4	OPS O Minivan 2	(b) (6)	O aircrew
5	OPS Sedan 1	(b) (6)	Mission CC
6	OPS Sedan 2	(b) (6)	Duty Crew
7	OPS O Minivan 3	(b) (6)	O aircrew
8	OPS E Minivan 1	(b) (6)	E aircrew
9	OPS E Minivan 2	(b) (6)	E aircrew
10	OPS E Minivan 3	(b) (6)	E aircrew
11	HARMS Sedan	(b) (6)	HARMS/CP/AFE
12	Comm Sedan	(b) (6)	Comm
13	1 <sup>st</sup> Sergeants	(b) (6)	1 <sup>st</sup> Sergeant transpo
14	MX Minivan 1	(b) (6)	MX specialists
15	MX Minivan 2	(b) (6)	MX specialists
16	MX Minivan 3	(b) (6)	MX specialists
17	MX Sedan	(b) (6)	Crew Chiefs
18	Spray MX Minivan 1	(b) (6)	Spray MX
19	Spray MX Minivan 2	(b) (6)	Spray MX

**Transportation to and from Hill:**

Ground Trans support (801) 777-1843:

CONFIRMATION NUMBERS: In Mission Commander folder

**Monday, 6 March:**

Bags (Arr): Hill Trans to provide (1) stake bed truck. Bags to be delivered to hotels.

Personnel (Arr): Rental vehicles pre-positioned on forestry ramp by ADVON.

All personnel to be transferred to hotels via rental vehicle.



**Thursday, 16 March:** Bag drop by 1200 for all personnel at forestry ramp.

**Friday, 17 March:** Personnel (Dep)

0630 – **Rental vehicles depart hotels with all personnel for drop off at forestry ramp and then return rental cars to Enterprise.**

0730 – Pickup for rental car drivers at Enterprise

**11. LODGING: All rooms except 11 from MX main body**

**COURTYARD BY MARRIOTT SALT LAKE CITY/LAYTON**

1803 Woodland Park Drive, Layton, UT 84041

**POC:** (b) (6) , <sup>(b) (6)</sup> **T:** (b) (6)

**T:** 801-819-9636

**11 Rooms MX main body**

**HILTON GARDEN INN SALT LAKE CITY/LAYTON**

762 West Heritage Park Blvd, Layton, UT 84041

**POC:** (b) (6) , (b) (6) (b) (6) **T:** 801-416-8899

**Rooms list:** TSgt (b) (6) , SSgt (b) (6) , MSgt (b) (6) , SSgt (b) (6) , SrA (b) (6) , SrA (b) (6) , SrA (b) (6) , MSgt (b) (6) , SrA (b) (6)s, TSgt (b) (6) , TSgt Ritenour

**12. GENERAL TARGET INFORMATION:**

**Target 21:**

Dimensions: 4,980' X 7,770'

Acreage: 888

Aircraft Loads: Variable; material and swath width dependent

Sorties: Variable; material and swath width dependent

Passes: Variable; material and swath width dependent

Spray-On Time/Pass: 22 Seconds

Spray Heading: 005/185

**Target 23 / 24:**

Dimensions: 16,675' X 1,657

Acreage: 635

Aircraft Loads: Variable; swath width dependent

Sorties: Variable; swath width dependent

Passes: Variable; swath width dependent

Spray-On Time/Pass: 46 Seconds

Spray Heading: 003/183

**SEQUENCING:**

- Target sequencing is determined by UTTR personnel based upon EOD clearance schedule and airspace scheduling.
- Spray Ops aircraft must stay south of Base Leg Knoll during turns on north run on Target 21. Coordination with range control is essential to assure that this portion of the range is released for air operations.
- Spraying Priorities: Target 21, Modified Target 23/24  
Once the above areas are complete: northeast side of Target 22

### 13. CONTACTS:

#### **HILL AFB**

The commercial area code for listings below is 801-777-XXXX unless otherwise indicated.

DSN is 777-XXXX, 775-XXXX, and 586-XXXX.

Airfield Manager:	777-4168/3592
Base Operations:	777-1861; FAX: 777-2221
AMOPS:	777-1861
KHIF Tower:	777-3745
Billeting:	777-1844
Sponsor, MSgt (b) (6)	586-5886, Cell (b) (6) (b) (6) (b) (6)
Weather:	777-2018
Transit Alert:	777-3886
C-130 Mx Contact:	777-2478
Fuels:	777-7423/777-7311 available 0900-1800 daily, after hrs contact CP
Supply:	777-5391 (922 OE)
Hill Motor Pool:	777-1843
Public Affairs:	777-5201
Dining Hall:	777-3428

#### **HQ UTTR**

UTTR Operations Chief, (b) (6)	:	(b) (6) (b) (6); Cell (b) (6) (b) (6) (b) (6)
		6066 Cedar Lane, Bldg 1274S
Hill Range Control:		777-9386
Current OPS:		777-9385
Range Scheduler:		777-9386
Eagle Tower:		777-1515/6
Clover Operations:		777-7575
Clover DO:		586-3103
HQ UTTR/Radio Freq Monitor:		777-6715
HQ UTTR/Resource Monitor:		775-4257
Environmental Coordinator:		777-1550; 801-940-0809
Hill AFB Base OPS:		777-1861
Pest management POC, (b) (6)	:	586-8297; Mobile: (b) (6) (b) (6) (b) (6)
(b) (6)	:	777-4427
Weather:		777-1516/63

#### **OASIS RANGE SUPPORT DIRECTORATE:**

Oasis Chief:	777-1546
North Range Security:	777-1521/2/4

#### **910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

910 AW/CC:	x1243	
Command Post	x1315	FAX x1161
PA:	x1236	FAX x1022
OG/CC:	x1257/1179	
Safety	x1391	
Base Ops:	x1182	
SOF Desk:	x1069	FAX: x1371
757 AS/DO:	x1793	

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **MCDR PARRIS ISLAND, SC**

### **11-14 April 2023**

### **QZNRK3401101**

**Purpose/Objectives/Benefits:** Aerial spray deployment of one C-130 during 11-14 April 2023 to MCAS Beaufort, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at MCRD Parris Island. NVG sorties will be flown at 300' AGL.

#### **1. 910 AW PARTICIPANTS:**

Msn Commander:	Lt Col (b) (6)	(b) (6)
Entomologist:	Lt Col (b) (6)	(b) (6)
Pilots:	Lt Col (b) (6)	(A/C), Capt (b) (6)
Navigators:	Capt (b) (6)	, Capt (b) (6)
Flight Engineer:	SMSgt (b) (6)	, SSgt (b) (6)
Spray Operators:	CMSgt (b) (6)	, SMSgt (b) (6), SMSgt (b) (6)
	TSgt (b) (6)	
Spray Maintenance:	TSgt (b) (6)	(Lead) (b) (6)
	MSgt (b) (6)	, TSgt (b) (6), SSgt (b) (6),
	SSgt (b) (6)	, SrA (b) (6)
Crew Chiefs:	MSgt (b) (6)	, TSgt (b) (6)
Comm/Nav:	TSgt (b) (6)	

#### **2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map, Operational Wingman Cards
Spray Operators:	PPE, laptop/Spray datasheet, O <sub>2</sub> hose extensions, NVG's
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system test cards

### **3. SCHEDULE: (All Local Time)**

#### **11 April (Mon) PPR# 101-01**

1000 Showtime  
1200 Depart KYNG  
1400 Land KNBC

#### **12 April (Tues) Sunset: 1949L; Civil Twilight: 2015L**

1400 Installation brief at Parris Island  
1500 Weather Call/Chemical Load  
1600 Calibration  
1930 Depart KNBC  
2130 Land KNBC

#### **13 April (Thurs) Sunset: 1950L; Civil Twilight: 2015L WX/MX Backup**

1630 Weather Call/Chemical Load  
1730 Calibration (if needed)  
1930 Depart KNBC  
2130 Land KNBC

#### **14 Apr (Fri)**

1000 Depart KNBC  
1200 Land KYNG

### **4. AIRCRAFT & SPRAY CONFIGURATION:**

**Aircraft:** AF92-3022

**System:** EMASS

**Nozzle/Orientation:** 10 rotary atomizers, straight back

### **5. SPRAY LOADING:**

Entomologist will determine quantity to load and work with the local pest managers to determine the application rate. System will be calibrated after the chemical is loaded. Please see entomologist for final flow spray parameters as these numbers are subject to change depending on user requirements.

**How Much Pesticide:** approx. 45 gallons for Parris Island

**Where:** Aircraft parking location

**When:** 1500 after wx call. \*\*Calibration will be performed prior to spraying

**Furnished by Installation:**

Pesticide and support vehicle  
Hazardous Waste Disposal

- **TO LEAVE/ENTER FLIGHT LINE CALL BASE OPERATIONS (843) 228-7301 OR 7302**

**6. SPRAY PARAMETERS:**

Location: MCRD Parris Island, SC  
Chemical: Trumpet – insecticide (Naled)  
Area to be treated: Approx 6,000 acres Parris Island  
Swath Width: 1,000 feet Parris Island  
Flow Rate: 3.2 GPM  
Application Rate: 0.95-1.0 oz/acre or as determined by entomologist  
Altitude: 300' AGL NVG operations  
Ground Speed: 200 Knots  
Flush: H.A.N. (Highly Aromatic Naphtha), flush and air purge as applicable  
Formulas: Flow Rate = Gal/Time in Minutes  
Acreage Sprayed = Total Sec x 338 x Swath Width / 43560

**7. AIR TO GROUND RADIO FREQUENCIES:**

Beaufort Tower: 119.05/340.2 MCAS TWR  
Beaufort Approach: 123.7  
Hilton Head Airport: 118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)  
Beaufort Co Airport: 122.7 UNI  
Spray Ground: 392.2 UHF; 123.45 VHF

**8. TRANSPORTATION:**

**Parris Island:** Will provide (2) vehicles for transportation to and from quarters and for messing. Vehicles will be at Base Operations at MCAS Beaufort.

**1x U Drive (Van)** – Enlisted Aircrew

**1x U Drive (Van)** – Spray MX

**[Enterprise Rental: 239 Robert Smalls Pkwy, Beaufort, SC 29906 (843) 524-0494. Fax x9627]**

**1x Rental (Sedan)** – Mission Commander/Entomologist (Lt Col (b) (6)) Conf # 1978618720

**1x Rental (Sedan)** – Officer Aircrew (Capt (b) (6)) Conf # 1978618815

**1x Rental (Sedan)** – Crew Chiefs/Avionics (MSgt (b) (6)) Conf # 1978618894

**9. LODGING:**

(23 Rooms secured under 910<sup>th</sup> Aerial Spray Team including 2 rooms for PA)

DoubleTree by Hilton Savannah Airport

50 Yvette Johnson Hagins Dr, Savannah, GA 31408

(912) 965-9595

Other lodging options in the Beaufort area:

Holiday Inn and Suites (843) 379-3100/Fax 3101

Comfort Inn and Suites (843) 379-9400

Quality Inn (843) 524-2144/Fax 1704

Hampton Inn (843) 986-0600 (FAX 0494)

Parris Island Billeting DSN: 335-2744 (FAX: 3815); (843) 228-3960

## **CONTACTS:**

### **MCRD Parris Island, SC: DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental Coord:	x3066 (b) (6)	; Cell (b) (6)
AC/S, I&L:	x2511	
Deputy I&L	x4410 (b) (6)	, IV
Pest Control:	x2364 (b) (6)	, (b) (6)
P.I. Motor Pool:	x2233 (b) (6)	
P.I. Rifle Range:	x3183/3624	
Military Police	x3444	

### **MCAS Beaufort, SC: DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental, (b) (6)	:	x7370
Fuels:		x7049/7448/7168
Airfield Mgr, (b) (6)	:	x6316
Trans Alert/VAL:		x7110
Weather:		x7001/7926/7/9
Base Security Manager:		x7090
Provost Marshal Office:		x7209/7967/6335

### **Beaufort County Mosquito Control:**

(b) (6), Director (b) (6)

### **910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

910 AW/CC:	x1243	
Command Post	x1315	FAX x1161
PA:	x1236	FAX x1022
OG/CC:	x1257/1179	
Safety	x1391	
Base Ops:	x1182	
SOF Desk:	x1069	FAX: x1371
757 AS/DO:	x1793	
757 AS Admin:	x1239	FAX x1657
757 AS Spray Office:	x1638/1111	FAX x1616
910 MXG/CC:	x1225	
910 LG/LGM:	x1352	
Maintenance Control:	x1348	
Spray Maintenance:	x1132/1586	



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

4 April 2023

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at MCRD Parris Island, SC

1. Aerial spray deployment of one C-130 from 11-14 April 2023 to MCAS Beaufort, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards to recruits at MCRD Parris Island. NVG aerial spray sorties are conducted at 300' AGL.

2. Concept of Operations (All times are local):

- a. 11 April (Tuesday)  
1200 Depart KYNG  
1400 Land KNBC
- b. 12 April (Wednesday)  
1400 Installation brief at MCRD Parris Island  
1630 Weather call/Chemical load  
1730 Calibration of EMASS  
1930 Depart KNBC  
2130 Land KNBC
- c. 13 April (Thursday) WX/MX Backup  
1630 Weather call/Chemical load  
1730 Calibration of EMASS  
1930 Depart KNBC  
2130 Land KNBC
- d. 14 April (Friday)  
1000 Depart KNBC  
1200 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.



3. Spray Parameters:

- a. Area to be treated: 6,000 acres on Parris Island.
- b. Altitude: 300' AGL NVG operations
- c. Swath Width: 1,000ft
- d. Groundspeed: 200 KIAS
- e. Chemical: Trumpet – insecticide (Naled)
- f. Application Rate: 0.95-1.0 oz/acre

4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) serving as the Aircraft Commander. Support at MCRD Parris Island and MCAS Beaufort has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray

**SPRAY OPERATIONAL SCHEDULE**  
**UTAH TEST AND TRAINING RANGE (UTTR)**  
**DUGWAY PROVING GROUNDS (DPG)**  
**11-21 October 2022**  
**Mission # QZNRK7571291**

**PURPOSE/BENEFIT/OBJECTIVE:** Aerial spray herbicide mission on the Utah Test and Training Range (UTTR) and Dugway Proving Ground (DPG) to reduce the risk of range fires by controlling cheat grass (*Bromus tectorum*) and other invasive weed species while promoting reestablishment and success of native flora.

**1. 910 AW PARTICIPANTS:**

**Mission Commander:** Lt Col (b) (6) : (b) (6)

**AIRCREW:**

**Pilots:** Lt Col (b) (6) , Capt (b) (6)

**Navigators:** Maj (b) (6)

**Flight Engineer:** MSgt (b) (6)

**Spray Operators:** SMSgt (b) (6) , TSgt (b) (6) , SSgt (b) (6)

**CERTIFIED APPLICATORS:**

**Entomologist:** Lt Col (b) (6) ; (b) (6)

**MAINTENANCE:**

**Spray MX:** TSgt (b) (6) (lead) (b) (6)

SMSgt (b) (6) , MSgt (b) (6) , TSgt (b) (6) ,

TSgt (b) (6) , SrA (b) (6) , SrA (b) (6)

**Crew Chiefs:** MSgt (b) (6) , SrA (b) (6)

**Avionics:** MSgt (b) (6)

**Command Post:** SrA (b) (6)

**2. REQUIRED ITEMS:**

Msn Commander: MC Laptop Computer

Entomologist: Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer

Navigator: Maps/Map Bag, Validation Map, Operational Wingman system cards

Spray Operators: PPE, Calibration Tables/Laptop and or Spray datasheet, O<sub>2</sub> hose extensions

Spray Maintenance: Deployment Kit, Support Equipment

Avionics: 2 Multi-band hand-held radios; Wingman system test cards

**3. IN-BRIEFING at Hill:**

On arrival on the Forestry Ramp with Mr. (b) (6) , Mr. (b) (6) and representatives from Dugway.

Required: MC, Entos, pilots, navs, SM lead.

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#### 4. **SCHEDULE: (All Local Time)**

##### **PLANNED SEQUENCE OF EVENTS:** Hill AFB Tower Control and Runway Hours

Tower Opens at 0800L (weekdays), 0900L (weekends)

##### **11 October (Tuesday)**

0800 Show KYNG

0810 Safety and Arrival brief given in the aircrew briefing room

1000 Depart KYNG    Spray (SP3G)    **Vader06    MI: QZNRK7571291    PPR: CS-1801**

1000 Depart KYNG    Support    **Vader04    MI: QANRK7571291    PPR: CS-1801**

1400 Land KHIF

1500 In-brief on the Forestry Ramp: Do not leave until cleared off by MC. (see 3. For required party)

##### **12 – 20 October (Wednesday-Thursday) Plan on 2 sorties per day Range time is 0800-1300**

0600 Show KHIF

0630 Weather call and mixing begin

0730 \*Call into daily Range and Michael Army Airfield daily brief. (571) 616-7941.

Conf ID # 642824612#, make sure to add the #sign at the end.

0749 Sunrise

0800 Depart KHIF

1300 Land KHIF

##### **21 October (Friday) Hill Field opens at 0800**

0700 Checked out of billeting

0745 Return vehicles

0900 Depart KHIF

1530 Land KYNG

**\*\*All times are approximated. Actual times and mission details will be updated as appropriate by the Mission Commander.**

#### 5. **SPRAY CONFIGURATION:**

Aircraft: 89-9106

System: SP-3G MASS: 3

Nozzle /Orientation: Raindrop/Straight Back

Number of nozzles: Fuselage – 21 nozzles

#### 6. **SPRAY LOADING:**

##### **a. In each gallon of mix:**

0.93 ounces of Plateau herbicide (0.73 gallons in 100 gallons of water)

0.77 ounces of Methylated Seed Oil (0.6 gal in 100 gallons)

125.5 ounces of water

##### **b. First Load (4 Tanks of 450 gallons each + sump of 75 gallons)**

Fill to 450 gal water/tank. This is done by putting the filler hose into the rear tank with all tanks open to the common sump.

Total water in tanks and sump = 1,850 gal.

Total water added = 1,850 gallons

Load 13.5 gallons of Plateau; 11 Gal Clasp; 11 Gal MSO, agitating approximately 5-7 min

Approximate total quantity mix 1888 gallons

##### **c. Subsequent Loads**

Fill with water for a rough total of 1850 gallons; use “per 100 gallons of water” measurements given above when adding less than 1800 gallons (i.e., residual product in tank when loading). When the MASS is returned empty, load 1800 gallons of water and add: 13.5 gallons Plateau, and 11 gallons of MSO.

**7. SPRAY PARAMETERS:**

Location: UTTR – HAT range plus multiple lifts for Dugway firebreak  
Herbicide: Plateau Herbicide (active ingredient: 23.6% (Ammonium salt of imazapic))  
Area to be treated: TBD UTTR; TBD Dugway  
Swath Width: 100 feet  
Flow Rate: 300 gal/min (treating at 46.5 acres/minute)  
Application Rate: 6.45 gal/acre (6 oz of Plateau per acre)  
Altitude: 100’ AGL  
Ground Speed: 200 Knots  
Flush: Air purge at end of each sortie  
Formulas: Flow Rate = Gal/Time in Minutes  
Acreage Sprayed = Total Sec x 338 x Swath Width / 43560

**8. PARKING PLAN: Forestry Ramp**

**9. AIR TO GROUND RADIO FREQUENCIES:**

Clover Range: UHF 285.65 / 275.9 / 361.4 (p)  
VHF 134.1 / 118.45  
Eagle Tower: 351.0; Mawk 2  
Diddle Knoll: 398.1 (Primary), 383.2 (Back-up); 134.1 / 118.45  
Base OPS: 139.3  
Spray Ground: 392.2 / 123.45 You can talk to Keeli or Robbie on this Freq or Clover.  
Dugway PG Range: P-126.2 S-131.1

- 10. TRANSPORTATION: 6 PAX Truck and 7 PAX van from the environmental shop. 5 sedans from enterprise.**  
Mr. Lawrence will have the 6 PAX truck and 7 PAX Van from the environmental shop at the forestry ramp when the crews land. All members going to the in-brief can ride with Lt Col Breidenbaugh in his rental car. After in-brief someone will have to take Lt Col Haagsma to enterprise. Crew will use 7 PAX van to drop off members that need to pick up rental cars and return to base to pick up support crew.

OPS Os – (Enterprise Sedan) (b) (6)  
OPS Es – (Enterprise Sedan) (b) (6)  
OPS Es – (7 PAX Van) (b) (6)  
SPRAY MX – (Enterprise Sedan) (b) (6)  
SPRAY MX – (6 PAX Truck) (b) (6)  
CREW CHIEFS/AVIONICS – (Enterprise Sedan) (b) (6)  
MC – (Enterprise Sedan) (b) (6)

**11. LODGING: Home2 Suites by Hilton**

803 Heritage Park Blvd, Layton, UT 84041

POC: (b) (6)

T: (b) (6) O: (b) (6)

- Support aircrew/support crew chiefs are staying at this hotel.

**Group Name: 910<sup>th</sup> Airlift Wing Aerial Spray, Non-A’s e-mailed out**

- 12. GENERAL TARGET INFORMATION: Listed by priority  
UTTR and Dugway: Contact ENTO for current information**

**13. CONTACTS:** Commercial Prefix (801) 777-XXXX; DSN 777-xxxx

**HILL AFB -**

**Project Coordinator:** Mr. (b) (6) (b) (6), cell (b) (6)

Airfield Manager: 777-4168/3592

Base Operations: 777-1861; FAX: 777-2221

Billeting: 777-1844

Weather: 777-2018

Transit Alert: 777-3885

C-130 Mx Contact: 777-2478/2229

Fuels: 777-7423 / 777-7311 available 0900-1800 daily after hours contact CP

Supply: 777-5391 (922 OE)

Hill Motor Pool: 777-1843

Public Affairs: 777-5201

**HQ UTTR**

Kipper Odom: 777-1007; FAX: 9205

6066 Cedar Lane, Bldg 1274S; (b) (6) (b) (6)

Hill Range Control: 777-9386

Current OPS: 777-9385

Range Scheduler: 777-9386

Eagle Tower: 777-1515/6

Clover Operations: 777-7575

Clover DO: 586-3103

HQ UTTR/Radio Freq Monitor: 777-6715

HQ UTTR/ Resource Monitor: 775-4257

Environmental Coordinator: 777-1550; 801-940-0809

Hill AFB Base OPS: 777-1861

Entomology: 777-4427

Weather: 777-1516/63

**OASIS RANGE SUPPORT DIRECTORATE:**

Oasis Chief: 777-1546

North Range Security: 777-1521/2/4

**DUGWAY PG: (DSN is 789-xxxx)**

**Project Coordinator:** (b) (6), Installation Pest Management Coordinator

Tel: (b) (6); Cell: (b) (6)

(b) (6)

**Dugway Range Manager:** (b) (6); Tel: (b) (6)

**Additional contacts:**

(b) (6), Natural Resource Program Manager as the **Overall NR Project Coordinator** for Dugway. (b) (6), cell (b) (6)

Alternate DPG NR Contact: (b) (6), DPG Range Restoration Specialist

(b) (6)

Dugway Range Control: 435-831-5141

Dugway Range Control Manager (b) (6); (b) (6)

DPG Range: VHF P-126.2, S-131.1

Michael Army Airfield Operations: POC (b) (6); (b) (6)

**910 AW AERIAL SPRAY UNIT POST-MISSION REPORT  
MINOT AFB, CITY OF MINOT, AND WILLISTON, N.D. – ADULT  
MOSQUITO CONTROL 15-19 July, 2019**

**1. MISSION BASICS:**

- a. Installation Sprayed: Minot AFB and Cities of Minot, Burlington, and Williston, ND
- b. Mission Duration: 15-19 July 2019
- c. Purpose of Application: Control adult nuisance and vector mosquitoes
- d. Application Dates: 16-17 July 2019
- e. Time of Application (Local): 9:40-11:35 (16 July)  
9:35-11:45 (17 July)
- f. Acres Treated: 28,011 (16 July)  
12,338 (17 July)
- g. Project Coordinator/s (Name/Rank, Title, Phone #):
  - (b) (6), Minot AFB Pest Management Shop, DSN 362-4289
  - (b) (6), City of Minot Public Works, 701-833-7677
  - (b) (6), City of Williston
- h. Date Spray Map Last Approved: 16 July 2019
- i. Date of Waste Generation Letter: 22 June 2004
- j. Installation In-Briefing: (When/Where/Briefer/s): Minot AFB CE, Lt Col (b) (6),  
Lt Col (b) (6), Lt Col (b) (6)

**2. OPERATIONAL:**

- a. Mission Commander: Lt Col (b) (6)
- b. Certified PMP/s (Category 11): Lt Col (b) (6), Lt Col (b) (6)
- c. Aircrew:
  - 1) Pilots: Lt Col (b) (6), Maj (b) (6)
  - 2) Navigators: Lt Col (b) (6), Lt Col (b) (6)
  - 3) Flight Engineers: MSgt (b) (6)
  - 4) Spray Operators: CMSgt (b) (6), MSgt (b) (6), MSgt (b) (6); TSgt (b) (6)
- d. Safety Briefer: Lt Col (b) (6)
- e. Spray Maintenance: TSgt (b) (6) (lead), TSgt (b) (6), TSgt (b) (6), TSgt (b) (6)
- f. Spray Ground Monitors: Lt Col (b) (6)
- g. Crew Chief: (b) (6), SSgt (b) (6)
- h. Avionics: MSgt (b) (6)
- i. Flying Data:
  - (1) Spray Sorties/Hours: 2/4.6
  - (2) Ferry Sorties/Hours: 2/6.4

**3. PESTICIDES:**

- a. Applied at Minot AFB and City of Minot:
  - 1) Trade Name (% Active Ingredient): Trumpet® EC (78% AI naled)
  - 2) EPA Registration Number: Trumpet® EC 59639-90-5481
  - 3) Gallons Pesticide Loaded: 210 gal Trumpet® (16 July)
  - 4) Gallons Pesticide Applied: 210 gal Trumpet® (16 July)
  - 5) Gallons and Name of Flush Used: 5 Gallon HAN
  - 6) Other Additives Used: none
  - 7) Application Rate: 0.98 oz/acre Trumpet®

b. Applied in Williston:

- 1) Trade Name (% Active Ingredient): Imperium (2% AI deltamethrin)
- 2) EPA Registration Number: 432-1534
- 3) Gallons Pesticide Loaded: 90 gal Imperium (17 July)
- 4) Gallons Pesticide Applied: 90 gal Imperium (17 July)
- 5) Gallons and Name of Flush Used: 5 Gallon HAN
- 6) Other Additives Used: none
- 7) Application Rate: 1.0 oz/acre Imperium

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Type (Tail Number): 99105
- b. Spray System (Modules Used) and System ID #: 3
- c. Spray System Configuration: 2-Module System/Stainless Steel ULV fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 31 straight down (16 July)  
26 straight down (17 July)
- f. Pressure (PSI): 40 PSI
- g. Flow Rate: 7.1 GPM (16 July)  
7.3 GPM (17 July)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 2000'
- b. Spray Off Set: None
- c. Spray Release Altitude: 300 feet
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed): 248° @ 7-9 knots (16 July)  
180-240° @ 4-7 knots (17 July)
- b. Temperature: 62-65 °F (16 July)  
60-65 °F (17 July)
- c. Relative Humidity: 79% (16 July)  
87% (17 July)
- d. Cloud Cover: Partly Cloudy
- e. Source: National Weather Service

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Minot AFB conducted adult mosquito trapping to monitor mosquito densities on base.
  - 1) Technique/s Used: Mosquito traps
    - A) Results: Minot AFB: Pre-spray trap count (1 trap): 243.  
Post-spray count 4000+.
- b.. City of Minot conducted adult mosquito trapping to monitor mosquito densities.
  - 1) Technique/s Used: Mosquito traps
    - A) Results: Pre-spray trap count (2 traps): 1512; 907. Post-spray counts 803; 778.  
Reductions of 47 and 15% respectively.



c. City of Williston conducted adult mosquito trapping to monitor mosquito densities.

1) Technique Used: Mosquito traps

A) Results: (mosquito numbers)

	<u>Pre spray</u>	<u>Post spray</u>
Trap #2	43	86
Trap #3	4	5
Trap #5	68	397
Trap #6	17	4
Trap #7	11	28

Comment: Weather conditions in Minot affected the flight times for Williston. Therefore only part of Williston was effectively sprayed. It was noted that many of the Williston mosquito traps were on the border of the spray block and may not have been reached because of the limited spray conditions.

2) Technique: Efficacy Field test:

Mosquito cages were placed in a test field and in an untreated site.

A) Results (% mortality)

<u>Treated cages</u>	<u>Untreated cages</u>
97%	3%

Comment: The Imperium mosquito control product was very effective in controlling the mosquitoes placed in test cages. Unofficial pre and post spray landing rates taken at the test site demonstrated high efficacy of the control product. Drift analysis of the spray droplets demonstrated effective droplet density and volume 3500' downwind from the flight path.

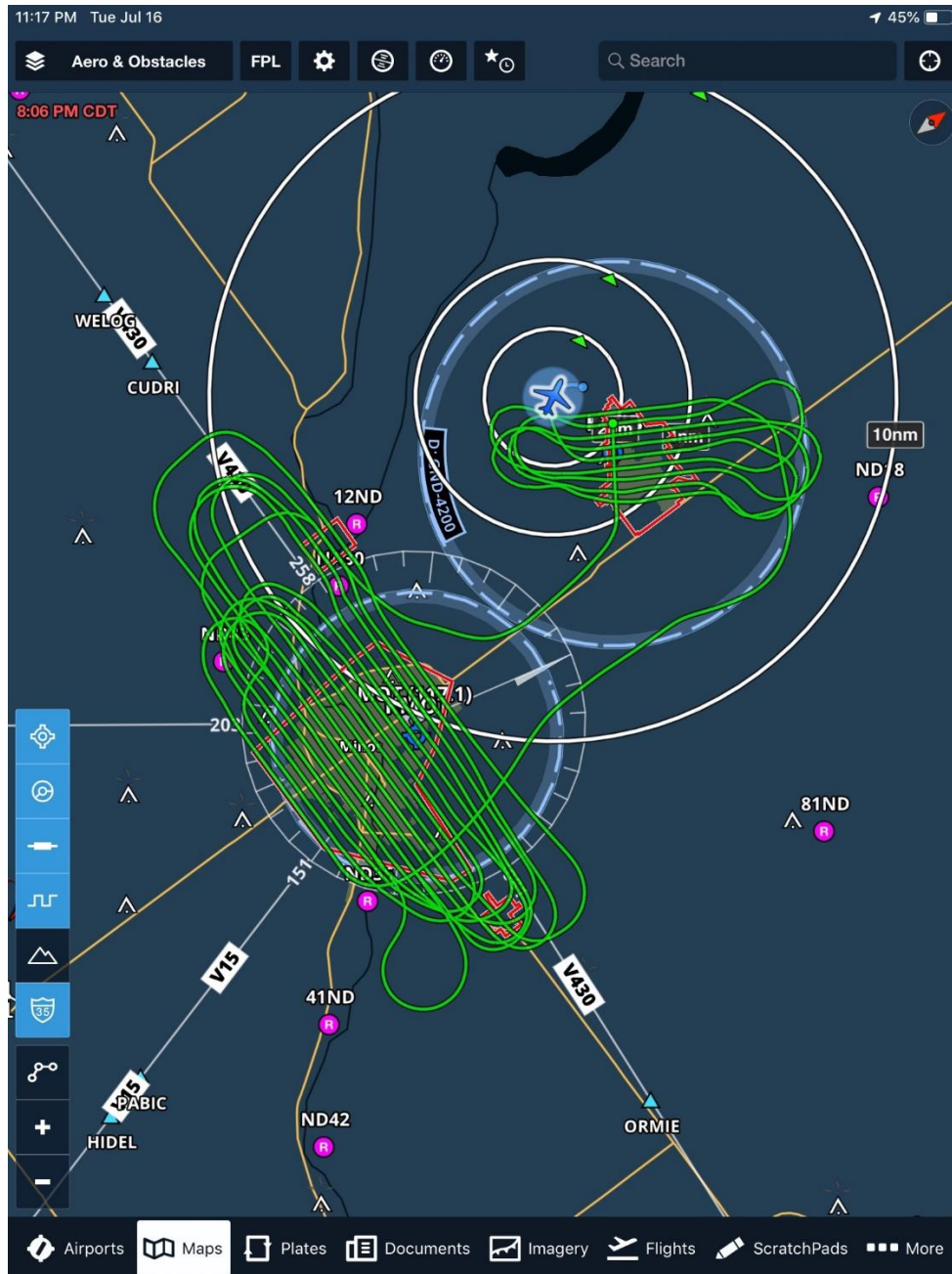
**8. REMARKS:** Meteorological conditions were good during the City of Minot and Minot AFB applications, with a moderate winds assuring good coverage. The City of Williston tested Imperium insecticide, a new formulation of deltamethrin developed for aerial mosquito control. The results from the field trial of Imperium in Williston demonstrated good results. Many thanks to (b) (6) (Minot AFB), (b) (6) (City of Minot), and (b) (6) (City of Williston) for their support.

//signed//

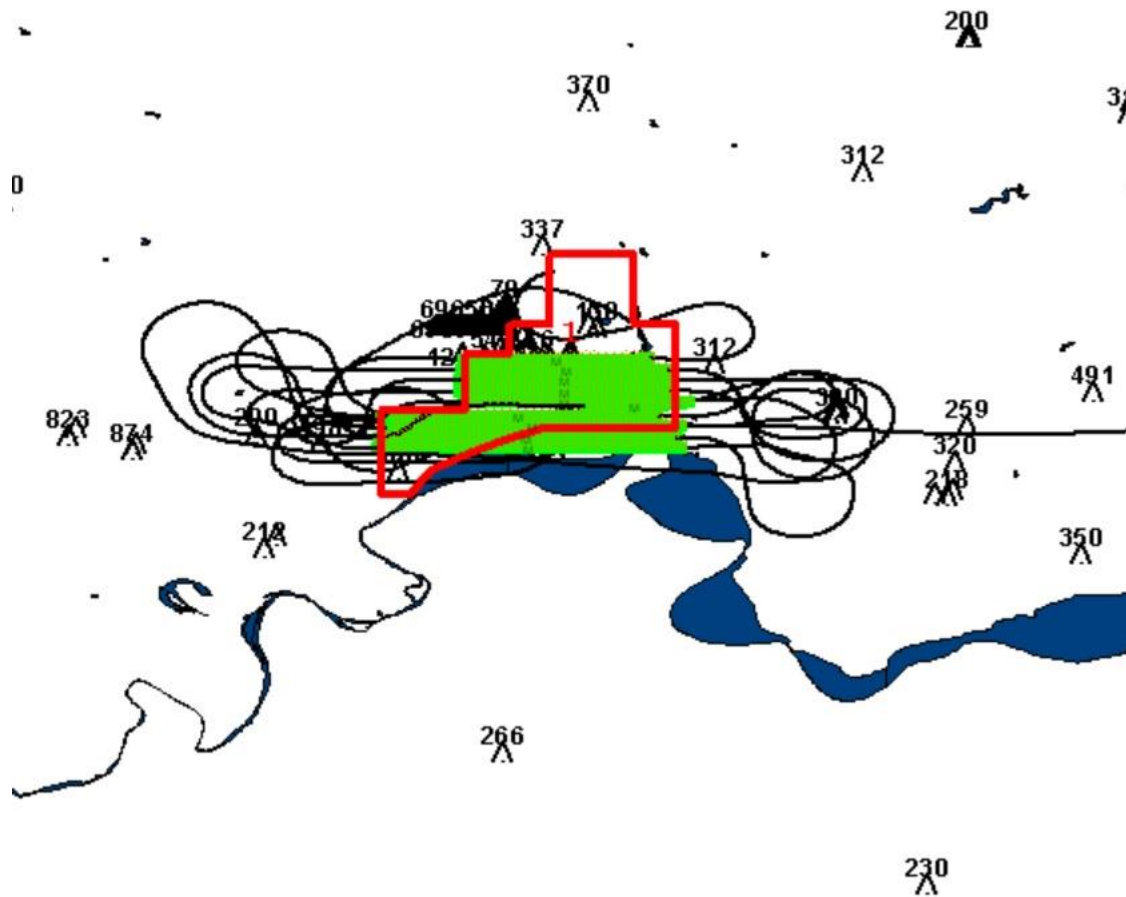
Lt Col (b) (6), USAFR

**DoD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

**Attachment 1.** Image shows Minot AFB, City of Minot, and City of Burlington spray blocks (red) and pesticide application swaths (green) during application on 16 July 2019.



Attachment 2. Image shows City of Williston spray block (red) and pesticide application swaths (green) during application on 17 July 2019.



# AERIAL SPRAY OPERATIONAL SCHEDULE

## Minot, MAFB, & Williston, ND

17-21 July 2023

MI: QZNRK3431198

AFRC IRT#:14-08-EMASS1

PPR: 01-17-IL

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions and lower risk of vector-borne illness to individuals working and living in and around Minot AFB and the cities of Minot and Williston ND. Aerial Spraying of the cities of Minot and Williston will be in accordance with the IRT program.

### 1. 910 AW PARTICIPANTS:

Msn Commander:	Lt Col (b) (6)	(b) (6)
Entomologist:	Lt Col (b) (6)	, Lt (b) (6) (b) (6)
Pilots:	Lt Col (b) (6)	, Lt Col (b) (6) , Maj (b) (6)
Navigator:	Lt Col (b) (6)	
Flight Engineer:	SSgt (b) (6)	
Spray Operators:	CMSgt (b) (6)	, SMSgt (b) (6) TSgt (b) (6)
Spray Maintenance:	SSgt (b) (6)	(Lead) (b) (6)
	TSgt (b) (6)	, SSgt (b) (6) , SrA (b) (6) ,
	SrA (b) (6)	, SSgt (b) (6)
Crew Chiefs:	TSgt (b) (6)	, SSgt (b) (6)
Avionics:	MSgt (b) (6)	

### 2. REQUIRED ITEMS:

Msn Commander:	Mission Folder, Laptop
Entomologist:	Wind Gauge, Compass, Pest Safety Binder, Project Notebook
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, Calibration Tables/Laptop and or Spray datasheet, O2 hose extensions
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand held radios

### 3. SCHEDULE: (All Local Times)

**17 July (Monday):** PPR: 01-17-IL

1000: Show KYNG

1200: Depart KYNG

1430: Land KMIB

**18-20 July (Tues-Thurs):** Sunset 2141, Twilight 2220 (Minot)

1500: In brief 18 June; Minot AFB CES; Williston with participate with tele-con.

1700: Showtime/WX decision

1730: Load

2100: Takeoff KMIB (subject to change dependent upon location)

2330: Land

**21 July (Friday)**

1000: Crew show

1200: Depart KMIB

1630: Land KYNG

### **3. AIRCRAFT & SPRAY CONFIGURATION:**

Aircraft: 89-9105  
System: EMASS Single pallet with Rotary Atomizers  
Nozzle/Orientation: ULV MicronAir electric atomizers, oriented straight back  
Number of Nozzles: 10 nozzles for all locations

### **4. SPRAY MIXING AND LOADING:**

Entomologist will determine quantity to load and work with the local pest managers to determine the application rate. 160 gal of Trumpet is needed for Minot City and Burlington and 40 for MAFB at 0.97 oz/acre of Trumpet insecticide applied, with total of 210 gallons of Trumpet (7 barrels). Williston will use approximately 120 gal (60 gal Zenivex and 60 gal 13 BVA oil). EMASS system is suitably calibrated for Trumpet and Zenivex/BVA oil with appropriate viscosity coefficients entered into EMASS computer.

### **5. SPRAY PARAMETERS:**

#### **Location: Minot AFB & City of Minot**

Chemical: Trumpet  
Area to be treated: Minot City (22,133 acres) MAFB (5,169 acres)/ 27,302 acres total  
Swath Width: 2,000'  
Flow Rate: 7.2 gal/min for 2,000' swath (Trumpet ® EC Concentrate - 78% naled)  
Application Rate: 0.98 oz/acre Trumpet  
Altitude: 300' NVG operation  
Ground Speed: 200 Knots  
Flush: HAN, with subsequent air purge

#### **Location: Williston/Watford City**

Chemical: Zenivex E20  
Area to be treated: 17.832 acres Williston/ 5,794 acres Watford; Total: 23,626 acres  
Swath Width: 2,000'  
Flow Rate: 4.65 gal/minute (1:1 BVA 13: Zenivex E20)  
Application Rate: 0.0038 lbs/acre A.I. Etofenprox (0.32 oz/acre), (0.64 oz /acre 1:1 dilution); 60 gallons Zenivex and 60 gallons BVA-13 oil.  
Altitude: 300' (NVG operation)  
Ground Speed: 200 Knots  
Flush: HAN, with subsequent air purge

### **6. RADIO FREQUENCIES:**

MAFB Twr: 120.65, 236.6, 253.5;  
Minot Intl: 118.2, 251.125 or Unicom 122.95  
Williston: 122.8 CTAF/UNICOM  
Spray Gnd: VHF 123.45 UHF 392.2

### **7. TRANSPORTATION:**

Minot Vehicle Ops: 701-723-3176 / 701-723-3121/ DSN 453-3121  
3 Minivans Confirmation # 34351571  
8 Pax van, 6 Pax pickup (bus will transport from A/C to vehicle ops at 1300)

### **8. LODGING:**

Hawthorn Suites by Wyndham Minot  
800 37th Ave SW, Minot, ND 58701  
(701) 858-7300  
Non- A's to be emailed to aerial spray shop

## 9. CONTACTS:

### **Minot AFB (KMIB) DSN prefix: 453- Commercial area code and prefix (701) 723 -**

Command Post	x3101		
Safety	x3468		
Base Operations:	x2347		
Airfield Manager:	x3377	FAX: 3637	
Environmental Officer:	x4871		
Base Civil Engineer:	x2434		
Pest Management:	x2393	(b) (6)	mobile: (b) (6)
Public Affairs:	x6212		
Vehicle Operations:	x3121	(vehicleoperations@us.af.mil)	
Weather:	x6385		
Billeting:	x6161	(b) (6)	(b) (6)
Fire Dept:	x2461		
Transient Alert:	x3153		
Minot AFB Twr	x3330		
AGE Flight Chief:	MSgt	(b) (6)	(b) (6)

### **910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

910 AW/CC:	x1243	Pending	
Command Post	x1315	FAX x1161	
PA:	x1236	FAX x1022	
OG/CC:	x1257/1179		
Safety	x1391		
Base Ops:	x1182		
SOF Desk:	x1069	FAX: x1371	
757 AS/DO:	x1793		
757 AS Admin:	x1239	FAX x1657	
757 AS Spray Office:	x1638/1111	FAX x1616	
910 MXG/CC:	x1225		
910 LG/LGM:	x1352		
Maintenance Control:	x 1348		
Spray Maintenance:	x1132/1586		
910 LG/LGL:	x1137		

### **Minot International Airport (KMOT)**

Magic City Twr:	(701) 852-2346
Afld Director:	(701) 857-4724
Asst Director/Security:	(701) 857-4725

### **Williston Vector Control District:**

(b) (6)	(Foreman)	(b) (6)	mobile	
(b) (6)		(b) (6)	mobile	
(b) (6)		(b) (6)	mobile; (b) (6)	work
(b) (6)	(vector control board)	(b) (6)	mobile	

### **City of Minot Public works/IRT:**

(b) (6)	(b) (6)	(work); (b) (6)	(mobile)
(b) (6)	(b) (6)	(work); (b) (6)	(mobile)

# AERIAL SPRAY OPERATIONAL SCHEDULE

Minot, MAFB, & Williston, ND

17-21 July 2023

MI: QENRK3531195

AFRC IRT#:14-08-MASS1

PPR: 01-17-IL

**Purpose/Objectives and Proposed Benefits:** To control nuisance and vector mosquitoes in order to improve working conditions and lower risk of vector-borne illness to individuals working and living in and around Minot AFB and the cities of Minot and Williston ND. Aerial Spraying of the cities of Minot and Williston will be in accordance with the IRT program.

## 1. 910 AW PARTICIPANTS:

Msn Commander:	Lt Col (b) (6)	(b) (6)
Entomologist:	Lt Col (b) (6)	, Lt (b) (6) (b) (6)
Pilots:	Lt Col (b) (6)	, Lt Col (b) (6)
Navigator:	Lt Col (b) (6)	
Flight Engineer:	SSgt (b) (6)	
Spray Operators:	CMSgt (b) (6)	, SMSgt (b) (6) , TSgt (b) (6)
Spray Maintenance:	SSgt (b) (6) (Lead)	((b) (6)
	TSgt (b) (6)	, SSgt (b) (6) , SrA (b) (6) , SrA (b) (6)
	(b) (6) SSgt (b) (6)	
Crew Chiefs:	TSgt (b) (6)	, SSgt (b) (6)
Avionics:	MSgt (b) (6)	

## 2. REQUIRED ITEMS:

Msn Commander:	Mission Folder, Laptop
Entomologist:	Wind Gauge, Compass, Pest Safety Binder, Project Notebook
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, Calibration Tables/Laptop and or Spray datasheet, O2 hose extensions
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand held radios

## 3. SCHEDULE: (All Local Times)

**17 July (Monday):** PPR: 01-17-IL

0900: Show KYNG

1100: Depart KYNG

1335: Land KMOT

**18-20 July (Tues-Thurs):** Spray sorties Sunset 2147 (Minot) 2155 (Williston)

1500: In brief 18 June; Minot AFB CES; Williston with participate with tele-con.

1700: Showtime/WX decision

1730: Load

1930: Takeoff KMOT (subject to change dependent upon location)

2200: Land



**21 July (Friday)**

1030: Crew show

1230: Depart KMOT

1630: Land KYNG

**3. AIRCRAFT & SPRAY CONFIGURATION:**

Aircraft: 89-9106

System: EMASS Single pallet with Rotary Atomizers

Nozzle/Orientation: ULV MicronAir electric atomizers, oriented straight back

Number of Nozzles: 10 nozzles for all locations

**4. SPRAY MIXING AND LOADING:**

Entomologist will determine quantity to load and work with the local pest managers to determine the application rate. 160 gal of Trumpet is needed for Minot City and Burlington and 40 for MAFB at 0.97 oz/acre of Trumpet insecticide applied, with total of 210 gallons of Trumpet (7 barrels). Williston will use approximately 120 gal (60 gal Zenivex and 60 gal 13 BVA oil). EMASS system is suitably calibrated for Trumpet and Zenivex/BVA oil with appropriate viscosity coefficients entered into EMASS computer.

**5. SPRAY PARAMETERS:****Location: Minot AFB & City of Minot**

Chemical: Trumpet

Area to be treated: Minot City (22,600 acres) MAFB (5,000 acres)

Swath Width: 2,000'

Flow Rate: 7.0 gal/min for 2,000' swath (Trumpet ® EC Concentrate - 78% naled)

Application Rate: 0.97 oz/acre Trumpet

Altitude: 300' NVG operation

Ground Speed: 200 Knots

Flush: HAN, with subsequent air purge

**Location: Williston**

Chemical: Zenivex E20

Area to be treated: 32,000 acres

Swath Width: 2,000'

Flow Rate: 4.65 gal/minute (1:1 BVA:Zenivex E20)

Application Rate: 0.0037 lbs/acre A.I. Etofenprox (0.32 oz/acre), (0.64 oz /acre 1:1 dilution)

Altitude: 300' (NVG operation)

Ground Speed: 200 Knots

Flush: HAN, with subsequent air purge

**6. RADIO FREQUENCIES:**

MAFB Twr: 120.65, 236.6, 253.5;

Minot Intr'l: 118.2, 251.125 or Unicom 122.95

Williston: 122.8 CTAF/UNICOM

Spray Gnd: VHF 123.45 UHF 392.2

**7. TRANSPORTATION:**

Minot Vehicle Ops: 701-723-3176 / DSN 453-3121

2 six pax trucks and 2 eight pax vans Confirmation # 23195723

2 additional vehicles from ND Guard

## 8. LODGING:

Sleep Inn in Minot, ND  
2400 10th St SW, Minot, ND 58701  
(701) 837-3100  
Non- A's to be emailed to aerial spray shop

## 9. CONTACTS:

### **Minot AFB (KMIB) DSN prefix: 453- Commercial area code and prefix (701) 723 -**

Command Post	x3101	
Safety	x3468	
Base Operations:	x2347	
Airfield Manager:	x3377	FAX: 3637
Environmental Officer:	x4871	
Base Civil Engineer:	x2434	
Pest Management:	x2393	(b) (6) mobile: (b) (6)
Public Affairs:	x6212	
Vehicle Operations:	x3121	(vehicleoperations@us.af.mil)
Weather:	x6385	
Billeting:	x6161	(b) (6) (701)727-6161
Fire Dept:	x2461	
Transient Alert:	x3153	
Minot AFB Twr	x3330	
AGE Flight Chief:	MSgt (b) (6)	701-723-2299

### **910 AW, Youngstown ARS OH: DSN: 346-XXXX; COM (330) 609-XXXX**

910 AW/CC:	x1243	Col (b) (6)
Command Post	x1315	FAX x1161
PA:	x1236	FAX x1022
OG/CC:	x1257/1179	
Safety	x1391	
Base Ops:	x1182	
SOF Desk:	x1069	FAX: x1371
757 AS/DO:	x1793	
757 AS Admin:	x1239	FAX x1657
757 AS Spray Office:	x1638/1111	FAX x1616
910 MXG/CC:	x1225	
910 LG/LGM:	x1352	
Maintenance Control:	x 1348	
Spray Maintenance:	x1132/1586	
910 LG/LGL:	x1137	

### **Minot International Airport (KMOT)**

Magic City Twr:	(701) 852-2346
Afld Director:	(701) 857-4724
Asst Director/Security:	(701) 857-4725

### **Williston Vector Control District:**

(b) (6)	(Foreman)	(b) (6)	mobile
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(b) (6)	(b) (6)	mobile; (b) (6)	work
(b) (6)	(vector control board) (b) (6)	mobile	

**City of Minot Public works/IRT:**

(b) (6)	(b) (6)	(work); (b) (6)	(mobile)
(b) (6)	(b) (6)	(work); (b) (6)	-4140 (mobile)



DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND



30 August 2023

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at JB Charleston/MCRD Parris Island, SC

1. Aerial spray deployment of one C-130 from 5-7 Sep 2023 to JB Charleston, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards at JB Charleston/MCRD Parris Island.

2. Concept of Operations (All times are local):

a. 5 Sep (Aerial Application at KCHS/PI)

1300 Depart KYNG  
1500 Land KCHS  
1515 Weather call/Chemical load  
1530 Inbrief  
1600 Calibration  
1900 Depart KCHS  
2200 Land KCHS

b. 6 Sep (WX B/U)

1530 Weather call/Chemical Load  
1600 Calibration  
1900 Depart KCHS  
2200 Land KCHS

c. 7 Sep

1000 Showtime  
1200 Takeoff KCHS  
1400 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc.  
All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 18,500 acres JB Charleston, 6000 acres PI
- b. Altitude: 300' AGL NVG operations
- c. Swath Width: 2000ft
- d. Groundspeed: 200 Knots
- e. Application Rate: 0.85 oz/acre of Trumpet EC

4. Lt Col (b) (6) will serve as the Mission Commander with Maj (b) (6) serving as the Aircraft Commander. Support at JB Charleston has been coordinated.

(b) (6), Capt, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

05 June 2023

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at JB Charleston, SC,

1. Aerial spray deployment of one C-130 from 13-16 June 2023 to JB Charleston, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards at JB Charleston.

2. Concept of Operations (All times are local):

- a. 13 Jun  
1200 Depart KYNG  
1400 Land KCHS
- b. 14 Jun (Aerial Application at KCHS)  
1100 Installation brief for CHS  
1600 Weather call/Chemical Load  
1630 Calibration  
2015 Depart KCHS  
2230 Land KCHS
- c. 15 Jun (WX/MX Backup)  
1600 Weather call/Chemical Load  
1630 Calibration  
2015 Depart KCHS  
2230 Land KCHS
- d. 16 Jun  
1000 Depart KCHS  
1200 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 18,500 acres
- b. Altitude: 300' AGL NVG operations
- c. Swath Width: 2000ft
- d. Groundspeed: 200 Knots
- e. Application Rate: 0.85 oz/acre of Trumpet EC

4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) serving as the Aircraft Commander. Support at JB Charleston has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

09 May 2023

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at JB Charleston, SC, MCRD Parris Island, SC and Tyndall AFB, FL

1. Aerial spray deployment of one C-130 from 15-19 May 2023 to JB Charleston, SC to train aerial spray aircrew, entomologists, and maintenance members in control of mosquitoes and biting midges which negatively impact outdoor training activities and create health hazards at JB Charleston, SC, MCRD Parris Island, SC and Tyndall AFB, FL.

2. Concept of Operations (All times are local):

- a. 15 May  
1200 Depart KYNG  
1400 Land KCHS
- b. 16 May (Aerial Application at KCHS/Parris Island)  
1100 Installation brief for CHS  
1600 Weather call/Chemical Load  
1630 Calibration  
1930 Depart KCHS  
2230 Land KCHS
- c. 17 May (Aerial Application at KPAM)  
1600 Weather Call/Chemical load  
1630 Calibration (if required)  
1845 Depart KCHS (local Eastern Time)  
2015 Arrive KPAM (local Eastern Time) - Arrive KPAM @ 1915 LCL Central  
2145 Depart KPAM (local Eastern Time) - Depart KPAM @ 2045 LCL Central  
2315 Arrive KCHS (local Eastern Time)
- d. 18 May (WX/MX Backup)  
Timeline and training TBD by Mission Commander
- e. 19 May  
1000 Depart KCHS  
1200 Land KYNG

Times and spray locations may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 18,500 acres at JB Charleston; 6,000 acres at MCRD Parris Island;  
25,000 acres at Tyndall AFB
- b. Altitude: 300' AGL NVG operations
- c. Swath Width: 2000ft
- d. Groundspeed: 200 Knots
- e. Application Rate: 0.85 oz/acre JB Charleston/Parris Island  
1.07 z/acre Tyndall AFB of Trumpet EC

4. Capt (b) (6) will serve as the Mission Commander with Lt Col (b) (6) serving as the Aircraft Commander. Support at JB Charleston has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray



DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

09 August 2023

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Langley AFB, and Craney Island Army Corps of Engineers.

1. Aerial spray deployment of one C-130 to Langley AFB, VA. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of Langley AFB and Craney Island Army Corps of Engineers.

2. Concept of Operations: All times local

- a. 21 July (Monday)  
1200 Depart KYNG  
1315 Land KLFI
- b. 22-23 July (Tuesday - Wednesday)  
2000 Depart KLFI for Langley/Craney Island Spray  
2300 Land KLFI
- c. 24 July (Thursday)  
1200 Depart KLFI  
1315 Land KYNG

Times may vary from scheduled depending upon weather, effectiveness of spray, etc. The mission commander will coordinate all changes to the planned itinerary.

3. Spray Parameters:

- a. Locations: Langley AFB / Craney Island and 3mi buffer area of Portsmouth
- b. Acres: 3,873 / 8,070 (11,943 total acreage)
- c. Altitude: 300ft AGL for NVG adulticide application
- d. Swath Width: 2,000 feet
- e. Airspeed: 200 KTS
- f. Application Rate: 0.96 oz/acre
- g. Product: Trumpet® (Naled) (EPA Reg. No. 5481-481)

4. Capt (b) (6) will serve as the Mission Commander with Lt Col (b) (6) as the Aircraft Commander.

(b) (6), Capt, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

20 July 2023

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Langley AFB, and Craney Island Army Corps of Engineers.

1. Aerial spray deployment of one C-130 to Langley AFB, VA. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel of Langley AFB and Craney Island Army Corps of Engineers.

2. Concept of Operations: All times local

- a. 25 July (Tuesday)  
1200 Depart KYNG  
1315 Land KLFI
- b. 26-27 July (Wednesday - Thursday)  
2000 Depart KLFI for Langley/Craney Island Spray  
2300 Land KLFI
- c. 28 July (Friday)  
1200 Depart KLFI  
1315 Land KYNG

Times may vary from scheduled depending upon weather, effectiveness of spray, etc. The mission commander will coordinate all changes to the planned itinerary.

3. Spray Parameters:

- a. Locations: Langley AFB / Craney Island and 3mi buffer area of Portsmouth
- b. Acres: 3,873 / 8,070 (11,943 total acreage)
- c. Altitude: 300ft AGL for NVG adulticide application
- d. Swath Width: 2,000 feet
- e. Airspeed: 200 KTS
- f. Application Rate: 0.96 oz/acre
- g. Product: Trumpet® (Naled) (EPA Reg. No. 5481-481)

4. Lt Col (b) (6) will serve as the Mission Commander with Maj (b) (6) as the Aircraft Commander.

(b) (6) Lt Col, USAF  
Chief of Aerial Spray



DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

11 July 2023

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Minot AFB, and Minot, North Dakota.

1. The 910 AW will deploy one C-130 to Minot AFB, ND to train aerial spray aircrew, pest management personnel, and maintenance members in the control of nuisance and vector mosquitoes. This mosquito adulticide application will also improve working conditions and lower the risk of vector-borne illness for individuals working and living in/around Minot AFB, City of Minot, and Williston, ND. Aerial applications performed off DOD installation property will be conducted IAW the Innovative Readiness Training (IRT) Program criteria.

2. Concept of Operations: All times local

- a. 17 July (Monday)  
1200 Depart KYNG  
1430 Land KMIB
- b. 18-20 July (Tuesday – Thursday)  
2100 Depart KMIB  
Conduct aerial applications at Minot AFB, City of Minot and/or Williston, Watford City  
2330 Land KMIB
- c. 21 July (Friday)  
1200 Depart KMIB  
1630 Land KYNG

Times may vary from scheduled depending upon weather, effectiveness of spray, etc. The mission commander will coordinate all changes to the planned itinerary.



### 3. Spray Parameters:

#### Minot AFB/Minot City & Burlington:

- a. Area to be treated: 5,169/22,133 acres (27,302 acres total)
- b. Altitude: 300 feet
- c. Swath Width: 2,000 feet
- d. Airspeed: 200 KGS
- e. Application Rate: 0.98 oz/acre Trumpet® EC Insecticide

#### Williston/Watford City:

- f. Area to be treated: 17,832/5,794 acres (23,626 acres total)
- g. Altitude: 300 feet
- h. Swath Width: 2,000 feet
- i. Airspeed: 200 KGS
- j. Application Rate: 0.0038 lbs/acre A.I. Etofenprox (0.32 oz/acre),  
(0.64 oz /acre 1:1 dilution)  
60 gallons Zenivex and 60 gallons BVA-13 oil

4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) serving as the Aircraft Commander. Support required at Minot AFB has been coordinated.

(b) (6) Lt Col, USAF  
Chief of Aerial Spray



DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND

11 July 2023

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations for Aerial Spray at Minot AFB, and Minot, North Dakota.

1. The 910 AW will deploy one C-130 to Minot AFB, ND to train aerial spray aircrew, pest management personnel, and maintenance members in the control of nuisance and vector mosquitoes. This mosquito adulticide application will also improve working conditions and lower the risk of vector-borne illness for individuals working and living in/around Minot AFB, City of Minot, and Williston, ND. Aerial applications performed off DOD installation property will be conducted IAW the Innovative Readiness Training (IRT) Program criteria.

2. Concept of Operations: All times local

- a. 17 July (Monday)  
1200 Depart KYNG  
1430 Land KMIB
- b. 18-20 July (Tuesday – Thursday)  
2100 Depart KMIB  
Conduct aerial applications at Minot AFB, City of Minot and/or Williston, Watford City  
2330 Land KMIB
- c. 21 July (Friday)  
1200 Depart KMIB  
1630 Land KYNG

Times may vary from scheduled depending upon weather, effectiveness of spray, etc. The mission commander will coordinate all changes to the planned itinerary.

### 3. Spray Parameters:

#### Minot AFB/Minot City & Burlington:

- a. Area to be treated: 5,169/22,133 acres (27,302 acres total)
- b. Altitude: 300 feet
- c. Swath Width: 2,000 feet
- d. Airspeed: 200 KGS
- e. Application Rate: 0.98 oz/acre Trumpet® EC Insecticide

#### Williston/Watford City:

- f. Area to be treated: 17,832/5,794 acres (23,626 acres total)
- g. Altitude: 300 feet
- h. Swath Width: 2,000 feet
- i. Airspeed: 200 KGS
- j. Application Rate: 0.0038 lbs/acre A.I. Etofenprox (0.32 oz/acre),  
(0.64 oz /acre 1:1 dilution)  
60 gallons Zenivex and 60 gallons BVA-13 oil

4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) serving as the Aircraft Commander. Support required at Minot AFB has been coordinated.

(b) (6) Lt Col, USAF  
Chief of Aerial Spray



**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

24 May 2023

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Concept of Operations of Larvacide Application for Aerial Spray in and around the Army Corps of Engineers' property, Williston, ND and Grand Forks AFB, ND.

1. Aerial spray deployment of one C130 to Williston Basin International Airport, ND from 30 May – 9 June 2023 for the requested larvacide spray over the Army Corps of Engineers' property near Williston, ND and Grand Forks AFB, ND. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of the personnel working on the Army Corps' property, and by extension, the citizens of Williston. While conducting missions out of Williston Basin International Airport, we will also conduct a routine lavarside spray at Grand Forks AFB, ND. Mission objectives provide training for aerial spray aircrew, entomologists, and maintenance personnel in all aspects of the aerial spray mission.

2. Concept of Operations: All times local

- a. 30 May (Tuesday)
  - 1400 Depart KYNG (Support Aircraft)
  - 1400 Depart KYNG (Spray Aircraft)
  - 1700 Land KXWA (Support Aircraft)
  - 1700 Land KXWA (Spray Aircraft)
- b. 31 May – 8 June (Wednesday-Thursday)
  - 0600 Show KXWA
  - 0700 Depart KXWA
  - 1200 Land KXWA
  - (Multiple sorties each day depending on weather)
- c. 9 June (Friday)
  - 1000 Depart KXWA (Spray Aircraft)
  - 1015 Depart KXWA (Support Aircraft)
  - 1430 Land KYNG (Spray Aircraft)
  - 1445 Land KYNG (Support Aircraft)

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

Williston ACE, ND

- a. Area to be treated: 32,594 total acres (application on select areas with larva present)
- b. Altitude: 100 ft for larvicide application
- c. Swath Width: 100 ft
- d. Groundspeed: 200 KIAS
- e. Flow Rate: 326 gals/min
- f. Application Rate: 7 gal/acre mix (water with 2.0 pints Vectobac® + 0.05 oz of Poly Control 2)

Grand Forks AFB, ND

- a. Area to be treated: 2,100 acres
- b. Altitude: 100 ft for larvicide application
- c. Swath Width: 200 ft
- d. Groundspeed: 200 KIAS
- e. Flow Rate: 233 gals/min
- f. Application Rate: 2.5 gal/acre (water with 0.94 oz of Altosid®)

4. Lt Col (b) (6) will serve as the Mission Commander with Lt Col (b) (6) serving as the Aircraft Commander. Support at Williston Basin International Airport has been coordinated.

(b) (6), Lt Col, USAF  
Chief of Aerial Spray

# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **JB CHARLESTON, SC**

### **13-16 June 2023**

### **MSN# QZNRK3402164**

**Purpose/Objectives/Benefits:** One C-130 will deploy to JB Charleston, SC from 13-16 Jun 2023. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito and biting midge populations affecting the health and welfare of the personnel of JB Charleston. Operations for this mission will be conducted from JB Charleston utilizing Night Vision Goggles (NVGs).

#### **1. 910 AW PARTICIPANTS:**

Msn CC/Ento:	Lt Col (b) (6)	(b) (6)
Pilots:	Lt Col (b) (6)	, Maj (b) (6)
Navigators:	Lt Col (b) (6)	, Maj (b) (6)
Flight Engineer:	MSgt (b) (6)	
Spray Operators:	CMSgt (b) (6)	, TSgt (b) (6)
Spray Maintenance:	TSgt (b) (6)	(Lead) (b) (6)
	MSgt (b) (6)	, SSgt (b) (6)
	SrA (b) (6)	, SrA (b) (6)
Crew Chiefs:	TSgt (b) (6)	, TSgt (b) (6)
Comm/Nav:	TSgt (b) (6)	

#### **2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map, Operational Wingman System Cards
Spray Operators:	PPE, Laptop/Spray Datasheet, O <sub>2</sub> Hose Extensions, NVGs
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band Hand-held Radios; Wingman System Test Cards

### **3. SCHEDULE: (All Local Time)**

#### **13 Jun (Tues)**

1000 Showtime  
1200 Depart KYNG  
1400 Land CHS – PPR: via GDSS

#### **14 Jun (Wed) Sunset: 2029L; Civil Twi: 2058L**

##### **1100 Installation Brief??**

1600 Weather call/Chemical Load  
1630 Calibration  
2015 Depart KCHS  
2230 Land KCHS

#### **15 Jun (Thurs) Sunset: 2030L; Civil Twi: 2058L (WX/MX Backup)**

1600 Weather call/Chemical Load  
1630 Calibration  
2015 Depart KCHS  
2230 Land KCHS

#### **16 Jun (Fri)**

1000 Depart KCHS (or as required for crew rest)  
1200 Arrive KYNG

**\*\*All times are approximated. Actual times and mission details will be by the Mission Commander.**

### **4. SPRAY CONFIGURATION AND PARAMETERS:**

Locations:	JB Charleston
Acres:	18,500
Product:	Trumpet® EC (EPA Reg. No. 5481-481)
	Signal word: Danger
Gallons loaded:	120 gallons
Flow Rate:	6.4 GPM
Application Rate:	0.85 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300' AGL NVG Operations
Airspeed:	200 Knots Ground Speed
Swath Width:	2,000 feet
Nozzle/Orientation:	T-jet 8003's, oriented straight down
Number of Nozzles:	30-32 based on calibration results
Formulas:	Flow Rate = Gal/Time in Minutes
	Acreage Sprayed = Total Sec x 338 x Swath Width / 43,560

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5. **AIR TO GROUND RADIO FREQUENCIES:**

<b>Charleston AFB:</b>	Tower – 126.0 or 239.0 Ground – 121.9 or 348.6 Clearance – 127.325 or 291.65 ATIS – 124.75 APPR – 119.3/120.7 or 306.925/379.925
<b>Mt Pleasant Regional:</b>	CTAF 122.7
<b>Charleston Executive:</b>	CTAF 122.8
<b>MCAS Beaufort:</b>	Tower - 119.05/340.2 MCAS TWR Approach - 123.7
<b>Hilton Head Airport:</b>	118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)
<b>Beaufort Co Airport:</b>	122.7 UNI
<b>Spray Ground (CHS):</b>	392.2 UHF; 123.45 VHF
<b>Tyndall AFB:</b>	Tower – 850-238-4950/4553 Tower – 133.95 or 263.15 Approach – 120.825 or 379.3 N blw 5000’ Approach – 119.775 or 317.45 S blw 5000’ Ground – 121.9 or 259.3 Clearance – 118.05 or 348.7 ATIS – 254.4 PTD – 139.9 or 372.2 COMD POST – 381.3 (CHECKER OPS)

6. **TRANSPORTATION:**

**JB Charleston Vehicle Ops Providing:** If requested, a ride to the front gate for the drivers on landing, and a ride back from the gate before departure... Vehicle Ops: (843) 963-4236

-MSgt (b) (6) will be providing a ride for the drivers to Enterprise

Enterprise:  
5500 International Blvd, Charleston, SC, 29418, United States  
Charleston Intl Airport (CHS)  
833-969-2385

Minivan 1: O's	1292452129
Minivan 2: E's	1292452080
Minivan 3: CCs	1292452051
Minivan 4: SPX MX	1292452068
Minivan 5: SPX MX	1292452060
Sedan 1: LTC Haagsma	1292452105
Sedan 2: Avionics	1292452088
Sedan 3: SMSgt Davis	1292452097

7. **LODGING:**

Courtyard by Marriott Charleston-North Charleston  
(843) 572-7490

7465 Northside Dr, North Charleston SC 29420

\*Rate is \$153 + tax, this is under the on base rate of \$175. We will not have Non-A's, so anyone on AT will not get per diem.

8. **CONTACTS:**

**JB Charleston AFB SC:**

**DSN: 673-XXXX      COMMERCIAL 843-963-XXXX**

Wing Commander: x3418

MSG Commander: x2200

CE Commander: x4956

Deputy Base Civil Engineer: x4954

Environmental Coordinator: x2271

Base Operations: x3024

Command Post x8400

Charleston AFB Control Tower: (843) 414-2808/2809

Weather: x3011/3016

Pest Control NCOIC – MSgt (b) (6) : x5266, (b) (6) (cell)

Public Affairs: x5608

Fuels: x5079

Transportation/Vehicle Ops: x4236

Fire Department: x3777/3778/3118

**AERIAL SPRAY OPERATIONAL SCHEDULE**  
**JB CHARLESTON, SC/ PARRIS ISLAND, SC**  
**08-11 SEPTEMBER 2020**  
**MSN# QZNRK3491223**

**Purpose/Objectives/Benefits:** One C-130 will deploy to JB Charleston, SC from 8-11 September 2020. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito and biting midge populations affecting the health and welfare of the personnel of JB Charleston and MCRD Parris Island, SC. Operations for this mission will be conducted from JB Charleston utilizing Night Vision Goggles (NVGs).

**1. 910 AW PARTICIPANTS:**

Msn Commander:	Lt Col (b) (6)				
Entomologists:	Lt Col (b) (6)				
Pilots:	Lt Col (b) (6)	, Maj (b) (6)			
Navigators:	Lt Col (b) (6)	, Lt Col (b) (6)			
Flight Engineer:	MSgt (b) (6)	, TSgt (b) (6)			
Spray Operators:	CMSgt (b) (6)	, MSgt (b) (6)	, MSgt (b) (6)	, SSgt (b) (6)	
	(b) (6)				
Spray Maintenance:	MSgt (b) (6)	(Lead)			
	MSgt (b) (6)	, TSgt (b) (6)	, TSgt (b) (6)	, SrA (b) (6)	
Crew Chiefs:	MSgt (b) (6)	, SSgt (b) (6)			
Comm/Nav:	TSgt (b) (6)				

**2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, laptop/Spray datasheet, O <sub>2</sub> hose extensions, NVGs
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system cards

### **3. SCHEDULE: (All Local Time)**

#### **08 SEP (Tues)**

1500 Showtime  
1700 Depart KYNG  
1900 Land KCHS

#### **09 SEP (Wed) Sunset: 1933L; Civil Twi: 1958L (CHS)**

1300 Inbrief for CHS  
1500 Inbrief for PI  
1530 Weather call/Chemical Load  
1600 Calibration  
1900 Depart KCHS  
2115 Land KCHS

#### **10 SEP (Thur) Sunset: 1931L; Civil Twi: 1956L (PI/KCHS WX BACKUP)**

1500 Weather Call/Chemical load  
1530 Calibration  
1830 Depart KCHS  
2130 Arrive KCHS

#### **11 SEP (Fri)**

1000 Depart KCHS  
1200 Arrive KYNG

### **4. SPRAY CONFIGURATION AND PARAMETERS:**

Locations:	MCRD Parris Island and JB Charleston
Acres:	7,200 (Parris Island); 18,500 (JB Charleston)
Chemical:	Trumpet <sup>®</sup> EC (EPA Reg. No. 5481-481)
	Signal word: Danger
Gallons loaded:	45 gallons (Parris Island); 120 gallons (JB Charleston)
Flow Rate:	2.9 GPM (Parris Island); 6.2 GPM (JB Charleston)
Application Rate:	0.80 oz/ac (Parris Island); 0.85 oz/acre (JB Charleston)
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300' AGL NVG Operations, 150' AGL Day Operations
Airspeed:	200 Knots Ground Speed
Swath Width:	1,000 feet (Parris Island); 2,000 feet (JB Charleston)
Nozzle/Orientation:	ULV 8003 Tee Jet Flat Fan / Straight Down
Number of Nozzles:	13 (Parris Island); 27 (JB Charleston)
Formulas:	Flow Rate = Gal/Time in Minutes Acreage Sprayed = Total Sec x 338 x Swath Width / 43,560

## **5. AIR TO GROUND RADIO FREQUENCIES:**

**Mt Pleasant Regional:** CTAF 122.8  
**Charleston AFB Executive:** CTAF 122.8  
**MCAS Beaufort:** Tower - 119.05/342.875 MCAS TWR  
Approach - 123.7/125.125  
**Hilton Head Airport:** 118.975 Tower/CTAF (tower open until 0100 hrs Z)  
**Beaufort Co Airport:** 122.7 UNI  
**Spray Ground (CHS):** 392.2 UHF; 123.45 VHF

**Charleston AFB:** Tower – 126.0 or 239.0  
Ground – 121.9 or 348.6  
Clearance – 127.325 or 291.65  
ATIS – 124.75  
APP – 120.7 or 306.925

## **6. TRANSPORTATION:**

**JB Charleston AFB:** Vehicle will be on the ramp. Pest shop is handling them.

**1x 15-PAX Van – Maintenance**

**1x 8-PAX Van – E's**

**1x 8-PAX Van – O's**

**1x Sedan – MC & Entomologists**

**Budget Rental- In Case you need to rent a car.**

**CHARLESTON, SC APO, CHS**

**5501 PORSCHE BLVD BUILDING 300,**

**CHARLESTON INTL AIRPORT**

**NORTH CHARLESTON, SC 29418 US**

**843-552-1771**

## **7. LODGING:**

Double Tree by Hilton Charleston Charleston – Airport (843) 518-6200  
7401 Northwoods Boulevard, North Charleston, SC 29406

**\*Non-A's e-mailed out**

## 8. CONTACTS:

### **JB Charleston AFB SC: DSN: 673-XXXX; Commercial (843)-963-XXXX**

Wing Commander:	x3418		
MSG Commander:	x2200		
Civil Engineer:	x4956		
Deputy Chief/Civil Engineer:	x4954		
Environmental Coordinator:	x2711		
Base Operations:	x3026		
Tyndall AFB Control Tower:	(843) 414-2808		
Weather:	x3016		
Pest Control NCOIC:	x5266, MSgt	(b) (6)	(b) (6) (cell)
Public Affairs:	x1110		
Fuels:	x5079		
Transportation:	x4236		
Fire Department:	x3777		

### **MCRD Parris Island SC: DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental Coord:	x3066	(b) (6)	(b) (6) (cell)
		(b) (6)	(b) (6) (cell)
HazWaste:	x4698	(b) (6)	(b) (6) (cell)
AC/S, I&L:	x2511		
Deputy I&L	x3423	(b) (6)	
Pest Control:	x2364		
P.I. Rifle Range:	x3183/3624		
Military Police	x3444		

### **Beaufort County Mosquito Control:**

(b) (6)	, Director	(b) (6)
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**AERIAL SPRAY OPERATIONAL SCHEDULE  
JB CHARLESTON, SC/TYNDALL AFB, FL  
5-7 September 2023**

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# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **JB CHARLESTON, SC/ PARRIS ISLAND**

### **5-7 Sept 2023**

### **MSN#**

**Purpose/Objectives/Benefits:** One C-130 will deploy to JB Charleston, SC from 5-7 Sept 2023. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito and biting midge populations affecting the health and welfare of the personnel of JB Charleston & MCRD Parris Island, SC. Operations for this mission will be conducted from JB Charleston utilizing Night Vision Goggles (NVGs).

#### **1. 910 AW PARTICIPANTS:**

Msn Commander:	Lt Col (b) (6)	((b) (6)	)
Entomologists:	Lt Col (b) (6)	, Lt (b) (6)	(b) (6)
Pilots:	Maj (b) (6)	, Maj (b) (6)	, Lt Col (b) (6)
Navigators:	Maj (b) (6)		
Flight Engineer:	CMSgt (b) (6)		
Spray Operators:	SMSgt (b) (6)	, MSgt (b) (6)	
	TSgt (b) (6)	, SSgt (b) (6)	
Spray Maintenance:	SrA (b) (6)	MSgt (b) (6)	,
	TSgt (b) (6)	, SSgt (b) (6)	,
	SSgt (b) (6)		
Crew Chiefs:	TSgt (b) (6)	, SrA (b) (6)	
Comm/Nav:	SSgt (b) (6)		

#### **2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map, Operational Wingman System Cards
Spray Operators:	PPE, Laptop/Spray Datasheet, O <sub>2</sub> Hose Extensions, NVGs
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band Hand-held Radios; Wingman System Test Cards

#### **3. SCHEDULE: (All Local Time)**

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**5 Sept (Tue) Sunset: 1941/44; Civil Twi: 2006/08L KCHS/PI**

1100 Showtime  
1300 Depart KYNG  
1500 Land CHS – PPR: via GDSS  
1515 Weather Call/ Chemical Load  
1530 Inbrief  
1600 Calibration  
1900 Depart KCHS (CHS survey, PI survey, PI SPX, CHS SPX) (PI Pyro starting 2100)  
2200 Land KCHS

**6 Sept (Wed) WX B/U Sunset: 1940/42L Eastern; Civil Twi: 2005/07L Eastern (KCHS/PI)**

1530 Weather call/Chemical Load  
1600 Calibration  
1900 Depart KCHS  
2200 Land KCHS

**7 Sept (Thurs) Sunset: 1859L Central; Civil Twi: 1923L Central (KPAM)**

1000 Showtime  
1200 Takeoff KCHS  
1400 Land KYNG

**4. SPRAY CONFIGURATION AND PARAMETERS:**

Locations:	JB Charleston, Parris Island.
Acres:	18,500 (JB Charleston); 6,000 (PI); 24,500 acres total
Product:	Trumpet® EC (EPA Reg. No. 5481-481) Signal word: Danger
Gallons loaded:	165 gallons (JB Charleston/PI)
Flow Rate:	6.4 GPM JBCHS/PI
Application Rate:	0.85 oz/acre JB Charleston/PI
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300' AGL NVG Operations (all locations)
Airspeed:	200 Knots Ground Speed
Swath Width:	2,000 feet (all locations)
Nozzle/Orientation:	Rotary atomizers (EMASS)
Number of Nozzles:	10 for all locations; no nozzle VRU restrictions
Formulas:	Flow Rate = Gal/Time in Minutes

$$\text{Acreage Sprayed} = \text{Total Sec} \times 338 \times \text{Swath Width} / 43,560$$

**5. AIR TO GROUND RADIO FREQUENCIES:**

<b>Charleston AFB:</b>	Tower – 126.0 or 239.0 Ground – 121.9 or 348.6
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	Clearance – 127.325 or 291.65
	ATIS – 124.75
	APPR – 119.3/120.7 or 306.925/379.925
<b>Mt Pleasant Regional:</b>	CTAF 122.7
<b>Charleston Executive:</b>	CTAF 122.8
<b>MCAS Beaufort:</b>	Tower - 119.05/340.2 MCAS TWR
	Approach - 123.7
<b>Hilton Head Airport:</b>	118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)
<b>Beaufort Co Airport:</b>	122.7 UNI
<b>Spray Ground (CHS):</b>	392.2 UHF; 123.45 VHF
<b>Tyndall AFB:</b>	Tower – 850-238-4950/4553
	Tower – 133.95 or 263.15
	Approach – 120.825 or 379.3 N blw 5000'
	Approach – 119.775 or 317.45 S blw 5000'
	Ground – 121.9 or 259.3
	Clearance – 118.05 or 348.7
	ATIS – 254.4
	PTD – 139.9 or 372.2
	COMD POST – 381.3 (CHECKER OPS)

#### 6. **TRANSPORTATION:**

**JB Charleston Vehicle Ops Providing: Conf # 34466004**

**1x 6-PAX Truck** – Crew Chiefs

**1x Sedan** – MC

**1x Sedan** – Ento's

**1x 8 PAX Van** – Spray MX

1x 8 PAX Van – Aircrew O's

1x 8 PAX Van – Aircrew E's

1x 8 PAX Van – As Needed

Budget Rental- In Case you need to rent a car.

5500 International Blvd, Charleston, SC, 29418, United States

Charleston Intl Airport (CHS)

843-552-1771

#### 7. **LODGING:**

Residence Inn by Marriott, Charleston Airport

5035 International Blvd, North Charleston, SC 29418

(843) 266-3434

\*Rate is \$133 + tax, this is under the on base rate of \$175. We may not have Non-A's -- in work

#### 8. **CONTACTS:**

**JB Charleston AFB SC:**

**DSN: 673-XXXX COMMERCIAL 843-963-XXXX**

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Wing Commander:	x3418	
MSG Commander:	x2200	
CE Commander:	x4956	
Deputy Base Civil Engineer:	x4954	
Environmental Coordinator:	x2271	
Base Operations:	x3024	
Command Post	x8400	
Charleston AFB Control Tower:	(843) 414-2808/2809	
Weather:	x3011/3016	
Pest Control NCOIC – MSgt (b) (6)	:	x5266, (b) (6) (cell)
Public Affairs:	x5608	
Fuels:	x5079	
Transportation/Vehicle Ops:	x4236	
Fire Department:	x3777/3778/3118	

**MCRD Parris Island SC:**

**DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental Coord:	x3066 (b) (6)	(b) (6)	(cell)
	x3799 (b) (6)	(b) (6)	(cell)
HazWaste:	x4698 (b) (6)		
AC/S, I&L:	x4410 Mr. (b) (6)		
ENV DIV DIR	x3423 Ms. (b) (6)		
Pest Control:	x2364		
P.I. Rifle Range:	x3183/3624		
Military Police	x3444		



**AERIAL SPRAY OPERATIONAL SCHEDULE  
JB CHARLESTON, SC/TYNDALL AFB, FL  
15-19 May 2023**

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# **AERIAL SPRAY OPERATIONAL SCHEDULE**

## **JB CHARLESTON, SC/ PARRIS ISLAND/ TYNDALL AFB, FL**

### **15-19 May 2023**

### **MSN# QZNRK3401135**

**Purpose/Objectives/Benefits:** One C-130 will deploy to JB Charleston, SC from 15-19 May 2023. Aerial Spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito and biting midge populations affecting the health and welfare of the personnel of JB Charleston, MCRD Parris Island, SC, and Tyndall AFB FL. Operations for this mission will be conducted from JB Charleston utilizing Night Vision Goggles (NVGs).

#### **1. 910 AW PARTICIPANTS:**

Msn Commander:	<b>Capt (b) (6)</b>	<b>eff</b>	<b>(b) (6)</b>
Entomologists:	<b>Lt Col (b) (6)</b>		
Pilots:	<b>Lt Col (b) (6)</b>	, <b>Capt (b) (6)</b>	
Navigators:	<b>Lt Col (b) (6)</b>	, <b>Maj (b) (6)</b>	
Flight Engineer:	<b>MSgt (b) (6)</b>	, <b>MSgt (b) (6)</b>	
Spray Operators:	<b>CMSgt (b) (6)</b>	, <b>SMSgt (b) (6)</b>	
	<b>SMSgt (b) (6)</b>	, <b>MSgt (b) (6)</b>	
Spray Maintenance:	<b>TSgt (b) (6)</b>	<b>(Lead)</b>	<b>(b) (6)</b>
	<b>TSgt (b) (6)</b>	, <b>SSgt (b) (6)</b>	
	<b>SSgt (b) (6)</b>	, <b>SrA (b) (6)</b>	, <b>SrA (b) (6)</b>
Crew Chiefs:	<b>TSgt (b) (6)</b>	, <b>TSgt (b) (6)</b>	, <b>SSgt (b) (6)</b>
Comm/Nav:	<b>SSgt (b) (6)</b>		

#### **2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map, Operational Wingman System Cards
Spray Operators:	PPE, Laptop/Spray Datasheet, O <sub>2</sub> Hose Extensions, NVGs
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band Hand-held Radios; Wingman System Test Cards

### **3. SCHEDULE: (All Local Time)**

#### **15 May (Mon)**

1000 Showtime  
1200 Depart KYNG  
1400 Land CHS – PPR: via GDSS

#### **16 May (Tues) Sunset: 2012L Eastern; Civil Twi: 2040L Eastern (KCHS/PI)**

1100 Inbrief for CHS/PI/Tyndall; PI and Tyndall will attend via telecon  
1600 Weather call/Chemical Load  
1630 Calibration  
1930 Depart KCHS  
2230 Land KCHS

#### **17 May (Wed) Sunset: 1929L Central; Civil Twi: 1955L Central (KPAM)**

1600 Weather Call/Chemical load  
1630 Calibration  
1845 Depart KCHS (Eastern Time) Approx 1.5 enroute to KPAM  
2315 Arrive KCHS (Eastern Time)

#### **18 May (Thurs) (WX/MX Backup)**

Timeline and training TBD by Mission Commander

#### **19 May (Fri)**

1000 Depart KCHS (or as required for crew rest)  
1200 Arrive KYNG

### **4. SPRAY CONFIGURATION AND PARAMETERS:**

Locations:	JB Charleston, Parris Island, & Tyndall AFB
Acres:	18,500 (JB Charleston); 6,000 (PI); 25,000 (Tyndall AFB)
Product:	Trumpet <sup>®</sup> EC (EPA Reg. No. 5481-481)
	Signal word: Danger
Gallons loaded:	165 gallons (JB Charleston/PI), 210 gallons (Tyndall AFB)
Flow Rate:	6.4 GPM JBCHS/PI; 7.8 GPM Tyndall AFB
Application Rate:	0.85 oz/acre JB Charleston, 1.07 oz/acre Tyndall AFB
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300' AGL NVG Operations (all locations)
Airspeed:	200 Knots Ground Speed
Swath Width:	2,000 feet (all locations)
Nozzle/Orientation:	Rotary atomizers (EMASS)
Number of Nozzles:	10 for all locations; no nozzle VRU restrictions
Formulas:	Flow Rate = Gal/Time in Minutes

$$\text{Acreage Sprayed} = \text{Total Sec} \times 338 \times \text{Swath Width} / 43,560$$

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5. **AIR TO GROUND RADIO FREQUENCIES:**

<b>Charleston AFB:</b>	Tower – 126.0 or 239.0 Ground – 121.9 or 348.6 Clearance – 127.325 or 291.65 ATIS – 124.75 APPR – 119.3/120.7 or 306.925/379.925
<b>Mt Pleasant Regional:</b>	CTAF 122.7
<b>Charleston Executive:</b>	CTAF 122.8
<b>MCAS Beaufort:</b>	Tower - 119.05/340.2 MCAS TWR Approach - 123.7
<b>Hilton Head Airport:</b>	118.975 Tower, 123.0 CTAF (tower open until 0100 hrs Z)
<b>Beaufort Co Airport:</b>	122.7 UNI
<b>Spray Ground (CHS):</b>	392.2 UHF; 123.45 VHF
<b>Tyndall AFB:</b>	Tower – 850-238-4950/4553 Tower – 133.95 or 263.15 Approach – 120.825 or 379.3 N blw 5000’ Approach – 119.775 or 317.45 S blw 5000’ Ground – 121.9 or 259.3 Clearance – 118.05 or 348.7 ATIS – 254.4 PTD – 139.9 or 372.2 COMD POST – 381.3 (CHECKER OPS)

6. **TRANSPORTATION:**

**JB Charleston Vehicle Ops Providing:** *(Vehicle plan to be finalized 15May)*

**1x 3-PAX Truck – Crew Chiefs**

**1x Sedan – Aircrew E’s (MSgt ) Rental Car\***

**1x Sedan – Aircrew O’s (Capt Hudak) Rental Car\***

**1x 3-PAX Truck – MC (Capt Scheff)**

**1x 8 PAX Van – Spray MX**

Budget Rental- In Case you need to rent a car.

5500 International Blvd, Charleston, SC, 29418, United States

Charleston Intl Airport (CHS)

843-552-1771

7. **LODGING:**

Courtyard by Marriott Charleston-North Charleston

(843) 572-7490

7465 Northside Dr, North Charleston SC 29420

\*Rate is \$153 + tax, this is under the on base rate of \$175. We will not have Non-A’s, so anyone on AT will not get per diem.

## 8. CONTACTS:

### **JB Charleston AFB SC:**

**DSN: 673-XXXX COMMERCIAL 843-963-XXXX**

Wing Commander:	x3418
MSG Commander:	x2200
CE Commander:	x4956
Deputy Base Civil Engineer:	x4954
Environmental Coordinator:	x2271
Base Operations:	x3024
Command Post	x8400
Charleston AFB Control Tower:	(843) 414-2808/2809
Weather:	x3011/3016
Pest Control NCOIC – MSgt (b) (6)	: x5266, (b) (6) (cell)
Public Affairs:	x5608
Fuels:	x5079
Transportation/Vehicle Ops:	x4236
Fire Department:	x3777/3778/3118

### **Tyndall AFB FL**

**DSN: 523-XXXX COMMERCIAL: 850-283-XXXX**

Wing Commander (Col (b) (6))	):	523-2668
MSG Commander (Col (b) (6))	):	523-4000
Civil Engineer (Lt Col (b) (6))	):	523-2959/cell: (b) (6)
Deputy Chief/Civil Engineer ((b) (6))	):	283-3283 / Cell (b) (6)
Environmental Coordinator ((b) (6))	):	283-2822 / Cell (b) (6)
Base Operations:		283-3212
Tyndall AFB Control Tower:		283-4950
Weather:		283-1387
Pest Control POC ((b) (6))	):	Cell (b) (6)
Public Affairs:		283-4500
Fuels:		283-2335
Transportation:		283-8959 / Stand by (b) (6)
Fire Department:		283-4777
Airfield Manager (SMSgt (b) (6))	):	283-2291
Base Operator:		283-1110
Command Post:		283-2155
Pest Management SME (b) (6)	):	283-6465 / Cell (b) (6)
Public Health:		283-7138

**MCRD Parris Island SC:**

**DSN: 335-XXXX; COM: (843) 228-XXXX**

Environmental Coord:	x3066 (b) (6)	(b) (6)	(cell)
	x3799 (b) (6)	(b) (6)	(cell)
HazWaste:	x4698 (b) (6)		
AC/S, I&L:	x4410 Mr. (b) (6)		
ENV DIV DIR	x3423 Ms. (b) (6)		
Pest Control:	x2364		
P.I. Rifle Range:	x3183/3624		
Military Police	x3444		

# AERIAL SPRAY PLAN

## ARMY CORPS OF ENGINEERS, WILLISTON, ND

### GRAND FORKS AFB, ND

**30 May – 9 June 2023**

**QZNRK3401150**

**PURPOSE/BENEFIT/OBJECTIVE:** To control nuisance and vector mosquitoes with larvicide to improve working conditions and lower risk of vector-borne illness to individuals working and living in and around the Army Corps of Engineers' property, Williston, ND and Grand Forks AFB, ND. Operating out of Williston Basin International Airport (KXWA).

#### **1. 910 AW PARTICIPANTS:**

<b>Mission Commander:</b>	Lt Col (b) (6)	(b) (6)
Pilots:	Lt Col (b) (6), Capt (b) (6) (1st week), Capt (b) (6) (2nd week)	
Navigators:	Lt Col (b) (6)	
Flight Engineers:	CMSgt (b) (6), SSgt (b) (6)	
Spray Operators:	CMSgt (b) (6), SMSgt (b) (6), TSgt (b) (6)	
Entomologists:	Lt Col (b) (6)	
SARM:	MSgt (b) (6)	
Spray MX:	SSgt (b) (6) (LEAD) (b) (6) SMSgt (b) (6), TSgt (b) (6), SSgt (b) (6), SrA (b) (6)	
MX Specialists:	MSgt (b) (6), TSgt (b) (6), SSgt (b) (6), SSgt (b) (6), SSgt (b) (6)	
Crew Chiefs:	TSgt (b) (6), SSgt (b) (6)	

#### **2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop
Navigator:	Maps/Map Bag, Validation Map
Spray Operators:	PPE, Calibration, Laptop and Spray datasheet, O <sub>2</sub> hose extensions
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system cards

### 3. TRANSPORTATION:

Enterprise                      14127 Jensen Ln, Williston ND 58801 (located at the airport)  
(833) 445-1508

Lt Col (b) (6)	Sedan	Confirm# 109 551 4924
CMSgt (b) (6)	Minivan	Confirm# 109 551 4874
SMSgt (b) (6)	Minivan	Confirm# 109 551 4893
MSgt (b) (6)	Minivan	Confirm# 109 551 4901
LTC (b) (6) *	Sedan	Confirm# 109 551 4931 ((b) (6) 's Orders)
SSgt (b) (6)	Sedan	
SSgt (b) (6)	SUV	Confirm# 109 551 4954
Capt (b) (6)	Sedan	Confirm# 109 553 5882 (support)
MSgt (b) (6)	Sedan	Confirm# 109 553 5889 (support)

### 4. SCHEDULE: (All Local Time)

#### 30 May (Tues)

1200 Show KYNG  
1400 Depart KYNG      VADER 22      MI: QZNRK3401150      PPR: N/A  
1400 Depart KYNG      VADER/SPRAY 05      MI: QANRK9931150      PPR: N/A  
1700 Land KXWA  
1700 Land KXWA

#### 31 May (Wed) – 8 Jun (Thurs)

Sunrise is 0600L  
0600 Show KXWA and Weather decision  
0630 Load/Mix  
0700 Depart KXWA  
1200 Land KXWA (Multiple sorties each day depending on weather)

#### 8 Jun (Thurs)

1000 Support Aircraft Arrives KXWA

#### 9 Jun (Fri)

1000 Depart KXWA (Spray Aircraft)  
1015 Depart KXWA (Support Aircraft)  
1430 Arrive KYNG (Spray Aircraft)  
1445 Arrive KYNG (Support Aircraft)

### 5. LODGING:

**OFF BASE**                      Hampton Inn and Suites (\$98/ night, Per Diem \$59/\$44.25 day)  
1515 14<sup>th</sup> St W, Williston ND  
(701) 774-5909  
[NYALLA.WARREN@AIMBRIDGE.COM](mailto:NYALLA.WARREN@AIMBRIDGE.COM)

**6. PESTICIDE: Williston**

Trade Name: Vectobac® 12AS (1200 ITU/mg)

EPA Registration Number: 73049-38

Formula Sprayed: 2.0 pints of Vectobac in 7 gallons water per acre.

Flush: Water

Other Additives: Poly Control 2

Application Rate: 7 gal/acre mix (water with 2.0 pints Vectobac® + 0.05 oz of Poly Control 2)

**7. SPRAY PARAMETERS: Williston ACE**

**Aircraft Tail Number:**

Spray System Module and System ID: MASS #2

Spray System Configuration: SP-3

Nozzle Type/Size: Rain Drop (LV) R-20 Raindrop nozzles

Nozzle Orientation and Number Used: 20 (10 each side) straight back

Pressure: 40 psi

Flow Rate: 326 gallons per minute

**8. APPLICATION PARAMETERS: (Williston ACE)**

Swath Width: 100 feet

Spray Release Altitude: 100 feet AGL

Ground Speed: 200 knots (338 feet per second)

**SPRAY MIXING AND LOADING:** Plan on ~1,800 gallons in the tanks per lift. A full load will consist of 1,800 gal of water in MASS tanks + 75 gal of water in the sump + 65.0 gal of Vectobac 12 AS + 1.5 gal of Poly Control 2 (if available).

Subsequent loads can be calculated by the following formula:

Determine the volume remaining in MASS. Add water to 1,800 gallons total. Add Vectobac at 4.6 oz per gallon of water added (e.g., the difference between 1800 and the amount remaining from the previous sortie; Poly Control 2 is added at 0.05 oz per gallon of water added.

**9. SPRAY MIXING AND LOADING: Grand Forks AFB (if applicable)**

**Composition of Each Gallon:**

- (1) 0.375 ounces of Altosid® Liquid Larvicide Concentrate (SR20)
- (2) 0.25 ounces of AirexDC™ drift retardant

**Typical Load:**

- (1) Fill with 450 gallons of water per tank; total water in (4) tanks = 1800 gallons
- (2) Add 1.33 gallons of Altosid® per tank (5.32 gallons total)
- (3) Add 0.88 gallons AirexDC™ per tank (3.52 gallons total) while agitating approximately 15 min
- (4) Total quantity mixed = Approx 1800-1900 gallons

**Final Load for Complete Flush:** Fill tanks with the amount of water necessary for a proper system flush

**Mixing Instructions:**

SHAKE WELL BEFORE USING. Altosid® may separate on standing and must be thoroughly agitated prior to dilution.

PRECAUTIONARY STATEMENT: Spray solution should be used within 48 hours; always agitate before spraying.

**10. SPRAY PARAMETERS: Grand Forks**

Location:	All prescribed areas
Chemical:	Altosid®
Area to be treated:	Approximately 2,100 acres
Swath Width:	200 feet
Flow Rate:	233 gallons/minute
Application Rate:	2.5 gallons/acre (water with 0.94 oz of Altosid®)
Altitude:	100' AGL
Ground Speed:	200 Knots
Flush:	Water
Formulas:	Flow Rate = Gal/Time in Minutes Acreage Sprayed = Total Sec x 338 x Swath Width / 43,560

**11. PARKING PLAN:**

General Aviation Ramp at Williston International Airport; Water supplies within range of ramp.

**12. AIR TO GROUND RADIO FREQUENCIES:**

Primary: UHF 392.2; VHF 123.45

**13. CONTACTS:** CONTACTS @ WILLISTON INTERNATIONAL AIRPORT (KXWA):

Airport Operations (5a – 1a Daily):	701-580-5699
Airfield Director:	701-875-8594 ext.(b) (6) (b) (6)
	Cell(b) (6)
Assistant Airfield Director:	(b) (6)
Pest Management Coordinator:	(b) (6)
Williams County coordinators:	(b) (6)
	(b) (6)
Director Williston ACE:	(b) (6)





**DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND**

12 September 2023

MEMORANDUM FOR HQ AFRC/A3O

FROM: 757 AS/DOS  
3976 King Graves Rd  
Vienna OH 44473-5946

SUBJECT: Capability and Concept of Operations for Aerial Spray at Mountain Home AFB and Saylor Creek Bombing Range, ID

1. Aerial spray deployment of one C-130 from 18-29 September 2023 in response to an aerial spray request to aid fire prevention on Saylor Creek Bombing Range located near Mountain Home AFB, ID. Herbicide will be applied to target cheat grass while allowing native fire-resistant vegetation (sagebrush) to re-establish and become competitive. During the operation aerial spray flight proficiency training will be accomplished while providing real-world training for aerial spray entomologists and maintenance personnel.

2. Concept of Operations (All times are local)

- a. 18 Sep (Mon)
  - 1100 Spray aircraft departs KYNG
  - 1110 Support aircraft departs KYNG
  - 1430 Spray aircraft lands KMUO
  - 1440 Support aircraft lands KMUO
- b. 19-22 Sep (Tues-Fri) Spray Sorties
  - 0700 Depart KMUO
  - 0900 Land KMUO
  - 0900 Support aircraft RTB to YNG (19 Sep)
- c. 23 Sep (Sat)
  - 1300 Swap out aircraft departs KYNG
  - 1700 Swap out aircraft lands KBOI
- d. 24 Sep (Sun)
  - 0900 Swap out aircraft departs KBOI
  - 1630 Swap out aircraft lands KYNG
- e. 25-28 Sep (Tues-Thurs) Spray Sorties
  - 0700 Depart KMUO
  - 0900 Land KMUO
  - 0900 Support aircraft departs KYNG (28 Sep)

1230 Support aircraft lands KMUO (28 Sep)

- f. 29 Sep (Fri) Redeployment
  - 0900 Spray aircraft depart KMUO
  - 0910 Support aircraft depart KMUO
  - 1630 Spray aircraft land KYNG
  - 1640 Support aircraft land KYNG

Times may vary from schedule depending upon weather, effectiveness of spray, etc. All changes to the planned itinerary will be coordinated by the mission commander.

3. Spray Parameters:

- a. Area to be treated: 3,000 acres
- b. Altitude: 100'AGL for herbicide application
- c. Swath Width: 100ft
- d. Groundspeed: 200 KIAS
- e. Application Rate: 6 oz/acre of Panoramic® 2SL (active ingredient: 23% imazapic ammonium)

4. Capt (b) (6) will serve as the Mission Commander for the duration of the mission and Maj (b) (6) will serve as Deputy Mission Commander on the second week. Lt Col (b) (6) and Lt Col (b) (6) will be the Aircraft Commanders. Required support at Mountain Home AFB and Saylor Creek Range has been coordinated.

(b) (6), Capt, USAF  
Chief of Aerial Spray

**AERIAL SPRAY PLAN**  
**JB LANGLEY-EUSTIS/CRANEY ISLAND ACE, VA**  
**21-24 August 2023**  
**QZNRK3491206/PPR:**

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Joint Base Langley-Eustis and the Army Corps of Engineers' (ACE) Crane Island Dredged Material Management Area. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of members operating at Joint Base Langley-Eustis, and Crane Island, VA.

**1. 910 AW PARTICIPANTS:**

Msn Commander:	<b>Capt Nicholas Hudak</b>	(b) (6)
Entomologist:	Lt Col (b) (6)	, 1 <sup>st</sup> Lt (b) (6)
Pilots:	Lt Col (b) (6)	, Lt Col (b) (6)
Navigators:	Maj (b) (6)	, Maj (b) (6)
Flight Engineer:	TSgt (b) (6)	
Spray Operators:	SMSgt (b) (6)	, TSgt (b) (6)
Spray Maintenance:	TSgt (b) (6)	(Lead) (b) (6)
	TSgt (b) (6)	, SSgt (b) (6), SrA Jacob (b) (6), SrA (b) (6)
Crew Chiefs:	TSgt (b) (6)	, SrA (b) (6)
Avionics:	TSgt (b) (6)	

**2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer, Wingman system mission cards
Navigator:	Maps/Map Bag, Validation Map, iPad Window Mounts, Operational Wingman Cards
Spray Operators:	PPE, Laptop and/or Spray datasheet, O <sub>2</sub> hose extensions
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system test cards

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**3. SCHEDULE: (All Local Times)**

**21 Aug (Monday)**

1200 – Depart KYNG

1315 – Land KLFI PPR: 181307IM

**DO NOT LEAVE UNTIL BRIEFED & CLEARED OFF BY THE MISSION COMMANDER!****22 – 23 Aug (Tuesday - Wednesday) Sunset 2025, Civil Twilight 2055**

1500 – (22 Aug) Installation Brief (Langley CE building)

1700 – Wx Call/Chemical Load

1730 – MASS Calibration

2000 – Depart KLFI – conduct aerial daytime review of the area begin spraying near twilight

2300 – Land KLFI

**24 Aug (Thursday)**

1200 – Depart KLFI

1315 – Land KYNG

**4. SPRAY CONFIGURATION AND PARAMETERS:**

Locations:	Langley AFB (3873 acres); Craney Island/Portsmouth (8,070 acres)
Acres:	11,943
Product:	Trumpet® (Naled) (EPA Reg. No. 5481-481)
	Signal word: Danger
Gallons loaded:	90 gallons
Flow Rate:	6.8 GPM
Application Rate:	0.96 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300'
Airspeed:	200 KNTS
Swath Width:	2,000 feet
Nozzle/Orientation:	9-10 ULV Rotary Atomizers (EMASS)

**5. TRANSPORTATION:**

Langley Vehicle Ops – (757) 764-5714 Confirmation# 34436416

Sedan	MC/ENTO
8-PAX VAN	Pilots/Navs
8-PAX VAN	
8-PAX VAN	Spray MX
6-PAX Truck	CC/Avionics

Enterprise:1004 W Mercury Blvd (757) 896-0360 \*Incase we need another car

**6. LODGING:****Holiday Inn Newport News - Hampton**  
980 Omni Blvd, Newport News, VA 23606  
(757) 223-2110**7. RADIO FREQUENCIES and COMMUNICATIONS:**

Langley AFB (KLFI): ATIS – 270.1

(Class D)	Ground – 121.7 / 275.8 Clearance Delivery – 118.85 / 257.625 Tower – 125.0 / 253.5 / 236.6 App/Dep (Norfolk) – 124.9 / 125.7 / 126.05 / 127.9 Command Post – (Raymond 16) 251.25 METRO – 239.8 PTD – 142.3 / 376.2
Felker AAF/Ft Eustis (KFAF) (Class D):	Tower – 126.3 / 269.25; Phone – (757) 878-2058 Approach (Norfolk) – 125.7 Base Ops – 134.1; Phone – (757) 878-5828/2584
Newport News/ Williamsburg Intl (KPHF) (Class D) Norfolk NAS/Chambers Field (KNGU) (Class D Surface-020 MSL,	Tower – 118.7 / 348.6 Approach (Newport) – 125.7 Departure (Newport) – 124.9 Tower – 124.3 / 379.15; Phone – DSN 564-2442 Approach (Norfolk) – 118.9 / 353.7 / 335.625 Base Ops Phone – DSN 262-3419 / Comm 757-322-3419

8. **CONTACTS:**

<b>Joint Base Langley–Eustis:</b>	<b>DSN: 574-XXXX; Commercial (757) 764-XXXX</b>		
Base Operator	x1110		
Wing Commander:	x5321		
Command Post:	x5411		
Public Affairs:	x5701		
Wing Safety:	x5057		
Base Operations:	x2504		
Base Civil Engineer:	x5342		
Weather:	x5908		
Lodging (Langley Inn):	x4667 or 757-764-4667		
Fire Department:	x3068		
Transient Alert	x2539/4517		
Langley Control Tower:	x7999		
Pest Control Foreman:	x3324 Mr. (b) (6)		; mobile (b) (6)
Vehicle Ops	x6446		
POL	x4105	*TA not avail for local sorties, contact for fuel	
MOC	x5445	*TA not avail for local sorties	
<b>Army Corps of Engineers</b>	(b) (6)	<b>office:</b> (b) (6)	
<b>City of Portsmouth Biologist</b>	(b) (6)	(b) (6)	<b>work;</b> (b) (6) <b>mobile</b>

<b>Youngstown ARS:</b>	<b>DSN: 346-XXXX; Commercial (330) 609-XXXX</b>	
910 AW/CC:	x1243	
Command Post	x1315	FAX x1161
PA:	x1236	FAX x1022
OG/CC:	x1257/1179	

Safety	x1391	
Base Ops:	x1186	
SOF Desk:	x1069	FAX: x1371
757 AS/DO:	x1793	
757 AS Admin:	x1239	FAX x1657
757 AS Spray Office:	x1638/1111	FAX x1616
910 MXG/CC:	x1225	
910 LG/LGM:	x1352	
Maintenance Control:	x1348	
Spray Maintenance:	x1132/1586	
910 LG/LGL:	x1137	

**AERIAL SPRAY PLAN**  
**JB LANGLEY-EUSTIS/CRANEY ISLAND ACE, VA**  
**25-28 July 2023**  
**QZNRK3491206/PPR: 181307IM**

**Purpose/Objectives/Benefits:** Aerial application of insecticide to control populations of adult nuisance and disease carrying mosquitoes at Joint Base Langley-Eustis and the Army Corps of Engineers' (ACE) Craney Island Dredged Material Management Area. Aerial spray flight proficiency training will be accomplished while providing a beneficial reduction in mosquito populations affecting the health and welfare of members operating at Joint Base Langley-Eustis, and Craney Island, VA.

**1. 910 AW PARTICIPANTS:**

Msn Commander:	Lt Col (b) (6)	(b) (6)
Entomologist:	Lt Col (b) (6)	
Pilots:	Maj (b) (6)	, Maj (b) (6)
Navigators:	Lt Col (b) (6)	, Maj (b) (6)
Flight Engineer:	TSgt (b) (6)	, SSgt (b) (6)
Spray Operators:	SMSgt (b) (6)	, SSgt (b) (6)
Spray Maintenance:	TSgt (b) (6)	(Lead) (b) (6)
	TSgt (b) (6)	, SSgt (b) (6), SrA (b) (6), SrA
	(b) (6)	
Crew Chiefs:	TSgt (b) (6)	, SrA (b) (6)
Avionics:	TSgt (b) (6)	

**2. REQUIRED ITEMS:**

Msn Commander:	MC Laptop Computer
Entomologist:	Kestrel Weather Monitor, Compass, Pest Safety Binder, Laptop Computer, Wingman system mission cards
Navigator:	Maps/Map Bag, Validation Map, iPad Window Mounts, Operational Wingman Cards
Spray Operators:	PPE, Laptop and/or Spray datasheet, O <sub>2</sub> hose extensions
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand-held radios; Wingman system test cards



**3. SCHEDULE: (All Local Times)**

**25 Jul (Tuesday)**

1200 – Depart KYNG

1315 – Land KLFI PPR: 181307IM

**DO NOT LEAVE UNTIL BRIEFED & CLEARED OFF BY THE MISSION COMMANDER!**

**26-27 Jul (Wednesday-Thursday) Sunset 2025, Civil Twilight 2055**

1500 – Installation Brief (Telecon) with (b) (6) ((b) (6) mobile); ((b) (6) work)

1700 – Wx Call/Chemical Load

1730 – MASS Calibration

2000 – Depart KLFI – conduct aerial daytime review of the area begin spraying near twilight

2300 – Land KLFI

**28 Jul (Friday)**

1200 – Depart KLFI

1315 – Land KYNG

**4. SPRAY CONFIGURATION AND PARAMETERS:**

Locations:	Langley AFB (3873 acres); Craney Island/Portsmouth (8,070 acres)
Acres:	11,943
Product:	Trumpet® (Naled) (EPA Reg. No. 5481-481)
	Signal word: Danger
Gallons loaded:	90 gallons
Flow Rate:	6.8 GPM
Application Rate:	0.96 oz/acre
Flush:	Highly Aromatic Naptha (HAN)
Altitude:	300'
Airspeed:	200 KNTS
Swath Width:	2,000 feet
Nozzle/Orientation:	9-10 ULV Rotary Atomizers (EMASS)

**5. TRANSPORTATION:**

Langley Vehicle Ops (SSgt Skallberg) – (757) 764-5714 Confirmation# 34365368

Sedan	MC/ENTO	Lt Col (b) (6)
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8-PAX VAN	Pilots/Navs	Maj (b) (6)
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8-PAX VAN	Spray MX	SSgt (b) (6)
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6-PAX Truck	CC/Avionics	TSgt (b) (6)
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Enterprise:1004 W Mercury Blvd (757) 896-0360 \*Incase we need another car

**6. LODGING:**

**Holiday Inn Newport News - Hampton**

980 Omni Blvd, Newport News, VA 23606

(757) 223-2110

**7. RADIO FREQUENCIES and COMMUNICATIONS:**

Langley AFB (KLFI): (Class D)	ATIS – 270.1 Ground – 121.7 / 275.8 Clearance Delivery – 118.85 / 257.625 Tower – 125.0 / 253.5 / 236.6 App/Dep (Norfolk) – 124.9 / 125.7 / 126.05 / 127.9 Command Post – (Raymond 16) 251.25 METRO – 239.8 PTD – 142.3 / 376.2
Felker AAF/Ft Eustis (KFAF) (Class D):	Tower – 126.3 / 269.25; Phone – (757) 878-2058 Approach (Norfolk) – 125.7 Base Ops – 134.1; Phone – (757) 878-5828/2584
Newport News/ Williamsburg Intl (KPHF) (Class D)	Tower – 118.7 / 348.6 Approach (Newport) – 125.7 Departure (Newport) – 124.9
Norfolk NAS/Chambers Field (KNGU) (Class D Surface-020 MSL,	Tower – 124.3 / 379.15; Phone – DSN 564-2442 Approach (Norfolk) – 118.9 / 353.7 / 335.625 Base Ops Phone – DSN 262-3419 / Comm 757-322-3419

**8. CONTACTS:**

<b>Joint Base Langley–Eustis:</b>	<b>DSN: 574-XXXX; Commercial (757) 764-XXXX</b>
Base Operator	x1110
Wing Commander:	x5321
Command Post:	x5411
Public Affairs:	x5701
Wing Safety:	x5057
Base Operations:	x2504
Base Civil Engineer:	x5342
Weather:	x5908
Lodging (Langley Inn):	x4667 or 757-764-4667
Fire Department:	x3068
Transient Alert	x2539/4517
Langley Control Tower:	x7999
Pest Control Foreman:	x3324 Mr. (b) (6) ; mobile (b) (6)
Vehicle Ops	x6446
POL	x4105 *TA not avail for local sorties, contact for fuel
MOC	x5445 *TA not avail for local sorties
<b>Army Corps of Engineers</b>	<b>(b) (6) office: 757-201-7186</b>
<b>City of Portsmouth Biologist</b>	<b>(b) (6) 757-418-3844, work; (b) (6) mobile</b>

**Youngstown ARS:**

910 AW/CC:

Command Post

PA:

OG/CC:

Safety

Base Ops:

SOF Desk:

757 AS/DO:

757 AS Admin:

757 AS Spray Office:

910 MXG/CC:

910 LG/LGM:

Maintenance Control:

Spray Maintenance:

910 LG/LGL:

**DSN: 346-XXXX; Commercial (330) 609-XXXX**

x1243

x1315

FAX x1161

x1236

FAX x1022

x1257/1179

x1391

x1186

x1069

FAX: x1371

x1793

x1239

FAX x1657

x1638/1111

FAX x1616

x1225

x1352

x1348

x1132/1586

x1137

# AERIAL SPRAY OPERATIONAL SCHEDULE

## SAYLOR CREEK RANGE / MOUNTAIN HOME AFB, ID

### 18-29 Sept 2023

### QZNRK3431261

**Purpose/Objectives/Benefits:** One C-130 will deploy to Mountain Home, ID from 18-29 September 2022. Aerial Spray flight proficiency training will be accomplished on Saylor Creek Bombing Range, ID while providing a beneficial herbicide treatment to prevent fire hazards, inhibit annual re-growth of cheat grass, and allow native vegetation to establish and be competitive.

#### 1. 910 AW PARTICIPANTS: 1<sup>st</sup> week 18-25, 2<sup>nd</sup> week 24-30

<b>Msn Commander:</b>	<b>Capt (b) (6)</b>	<b>(both weeks)</b>	<b>(b) (6)</b>
	<b>Maj (b) (6)</b>	<b>(DMC wk 2)</b>	<b>(b) (6)</b>
Entomologist: 1 <sup>st</sup> week	Capt (b) (6)	, 1 <sup>st</sup> Lt (b) (6)	
2 <sup>nd</sup> week	Lt Col (b) (6)	, Capt (b) (6)	, 1 <sup>st</sup> Lt (b) (6)
Pilots: 1 <sup>st</sup> week	Lt Col (b) (6)	, 1Lt (b) (6)	, Capt (b) (6)
2 <sup>nd</sup> week	Lt Col (b) (6)	1Lt (b) (6)	, Capt (b) (6)
Navigator: 1 <sup>st</sup> week	Maj (b) (6)		
2 <sup>nd</sup> week	Lt Col (b) (6)	, Maj (b) (6)	
Flt Engineer: 1 <sup>st</sup> week	SMSgt (b) (6)	, SSgt (b) (6)	
2 <sup>nd</sup> week	SSgt (b) (6)	, SSgt (b) (6)	
Spray Operators: 1 <sup>st</sup> week	SMSgt (b) (6)	, TSgt (b) (6)	
2 <sup>nd</sup> week	SMSgt (b) (6)	, TSgt (b) (6)	, SSgt (b) (6)
Spray Maintenance:	<b>TSgt (b) (6)</b>	<b>(LEAD)</b>	<b>(b) (6)</b>
	TSgt (b) (6)	, SSgt (b) (6)	, SrA (b) (6)
	SrA (b) (6)		
Crew Chiefs: Both weeks	TSgt (b) (6)	, SSgt (b) (6)	, SrA (b) (6)
Maintenance: Both Weeks	MSgt (b) (6)	, TSgt (b) (6)	, TSgt (b) (6)
	SSgt (b) (6)		

#### 2. REQUIRED ITEMS

Msn Commander:	MC Laptop Computer
Entomologist:	PCM Card, Pest Safety Binder, VHF, Radios, Laptop Computer
Navigator:	Maps/Map Bag, Validation Map, Operational Wingman cards
Spray Operators:	PPE, Calibration Tables/Laptop and or Spray datasheet, O2 hose extensions, wireless headsets
Spray Maintenance:	Deployment Kit, Support Equipment
Avionics:	2 Multi-band hand held radios; Wingman system test cards

#### 3.

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#### **4. SCHEDULE: (Local Times)**

##### **18 Sep (Mon) Deploy to KMUO**

0900 Show KYNG

1100 Spray aircraft depart KYNG    **MI – QZNRK3431261**            **PPR: NK-18-01**

1110 Support aircraft depart KYNG   **MI – QANRK9931261**           **PPR: NK-18-02**

1430 Support aircraft land KMUO

1440 Spray aircraft land KMUO

1500 In-brief with Mt Home personnel at Base Ops; Vehicles will be in place.

##### **19-22 Sep (Tues-Fri) Spray Sorties**   Range: Tues-Fri 0700L - 0900L

0500 Show KMUO/WX decision/load

0700 Depart KMUO

0700-0900 Range Time Tues-Fri

0900 Land KMUO (unless extended range time approved)

0900 Spray Support departs for KYNG

1630 Spray Support lands KYNG

##### **23 Sep (Sat) Support Aircraft**            **KBOI Jackson Jet Center – North Side or airport** **(208) 383-3300**

1100 Show KYNG

1300 Depart KYNG

1630 Land KBOI

##### **24 Sep (Sun) Support Aircraft**

0700 Show KBOI

0900 Depart KBOI

1630 Land KYNG

##### **25-28 Sep (Mon-Thurs) Spray Sorties**   Range: Mon-Thurs 0700L - 0900L

0500 Show KMUO/WX decision/load

0700 Depart KMUO

0700-0900 Range Time Tues-Fri

0900 Land KMUO (unless extended range time approved)

##### **28 Sep (Thurs) Support Aircraft**    **MI – QANRK9931272**            **PPR: NK-28-01**

0800 Show KYNG

0900 Depart KYNG

1230 Land KMUO

##### **29 Sep (Fri) Redeploy to YNG**

0700 Show KMUO

0900 Spray aircraft depart KMUO

0910 Support aircraft depart KMUO

1630 Spray aircraft land KYNG

1640 Support aircraft land KYNG

#### **4. AIRCRAFT & SPRAY CONFIGURATION:**

System:	EMASS Extended
Nozzle /Orientation:	EMASS Raindrop/Straight Back
Number of nozzles:	Fuselage – 20-24 Nozzles

## **5. SPRAY MIXING AND LOADING:**

Entomologist will determine quantity to load and work with the local pest managers to determine the application rate. Please see entomologist for final flow spray parameters as these numbers are subject to change depending on user requirements.

### **a. In each gallon of mix:**

0.86 ounces of Panoramic® 2SL herbicide (0.67 gal in 100 gal of water)  
0.64 ounces of Clasp® (0.5 gal in 100 gal)  
126.5 ounces of water

### **b. First Load (2 tanks. 3000 gallons water nominal EMASS load)**

Half fill each EMASS Tank using the local hydrant or the water tanker truck.

Total water in tanks = 3000 gal.

Total water added = 3000 gal.

Load 20.0 gal of Panoramic®; and 15 gal of Clasp® with recirc agitation.

Total quantity mix 3035 gal

### **c. Subsequent Loads**

Fill with water for a total of 3000 gal; use “per 100 gal of water” measurements given above if MASS returned with partial load.

**d.** Pro-tank cleaning agent can be added every 4<sup>th</sup> load, or as prescribed by Spray MXS personnel. Pro-tank cleaning agent should be added at a rate of 8 gallons per approximate 3000 gallon load.

## **6. SPRAY PARAMETERS:**

Location:	Saylor Creek bombing range
Chemical:	Panoramic® 2SL (active ingredient: 23% imazapic ammonium); 6.0 oz/acre A.I.
Area to be treated:	3835 acres
Swath Width:	100 feet
Flow Rate:	326 gal/min (we are treating at 46.5 acres/minute)
Application Rate:	7 gal/acre (6 oz of Panoramic® per acre with adjuvants)
Altitude:	100' AGL
Ground Speed:	200 Knots
Flush:	Water

## **7. RADIO FREQUENCIES: \* Confirm these Freqs at the inbrief.**

**Mt Home AFB:** ACC COMD POST 311.0/321.0

**Saylor Creek Range:**(Cowboy Control): 134.1/236.05

If Cowboy Control is not up, contact MUO APP on 124.8/259.1

**Air to Ground:** Confirm Freq with Entomologist. 392.2 MHz expected. 123.45 MHz alternate expected.

**8. TRANSPORTATION: 366 LRS U-Drives**  
**Confirmation # 34396770**

(1) Sedan – Entos/MC  
(1) 15 PAX Van – SPX MX / MX  
(1) 8 PAX Van – Aircrew Os  
(1) 8 PAX Van – Aircrew Es  
(1) 8 PAX Van – First Shirt (shuttle as necessary)  
(1) ½ TON Truck – Crew Cheifs  
(1) 15 PAX Van (in MX) -

**9. LODGING:**

**Holiday Inn Express Boise – University Area**

475 W. Parkcenter Blvd, Boise, ID 83706

(208) 780-5202 POC (b) (6) : (b) (6) (b) (6)

**10. CONTACTS: MT Home AFB, ID: DSN: 728-XXXX; Com (208) 828-XXXX**

Civil Engineer:	x2831		
Base Ops:	x2222		
Transit Alert:	x2252		
Range Operations:	x2985	Mr. (b) (6)	Cell (b) (6)
NR Mgr/Spray Project POC	x1784	(b) (6)	
Entomology:	x6300		
Environmental Mgmt:	x6351		
Lodging:	x5200		FAX x4797
Transportation:	x2215	208-828-2215	FAXx1619
Weather:	x6303		
Fire Dept:	x6292		
Wing Safety	x2065		
Visiting Unit Coordinator:	x1449		
Wing Plans:	x4049		
Public Affairs:	x6800		





DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESERVE COMMAND



910 AW AERIAL SPRAY UNIT  
CERTIFIED PEST MANAGEMENT PROFESSIONAL'S  
POST-MISSION REPORT  
MOUNTAIN HOME AFB, SAYLOR CREEK RANGE  
18 – 29 September 2023

1. MISSION BASICS:

- a. Installation Sprayed: Saylor Creek Range, ID
- b. Mission Duration: 18 – 29 September 2023
- c. Purpose of Application: Herbicide application to control cheat grass to suppress range fires and promote native flora
- d. Application Dates and Times (Local): See attachment 1
- e. Acres Treated: 3,321
- f. Flying Data:
  - (1) Spray Sorties/Hours: 8 sorties; 14.9 hours
  - (2) Ferry Sorties/Hours:
    - (a) Spray aircraft 92-3021: 1 ferry; 5.9 hrs
    - (b) Support aircraft: 6 ferries; 31.9 hrs
- g. Project Coordinator (Name/Rank, Title, Phone #): (b) (6), Natural Resource Manager, DSN 728-1784
- h. Date Spray Map Last Approved: 18 September 2023
- i. Installation In-Briefing: (When/ Briefer/s): 18 September 2022, briefed by Capt (b) (6) and Capt (b) (6)
- j. Mission Identifier: QZNRK3431261

2. OPERATIONAL:

- a. Mission Commander: Capt (b) (6)
- b. Aircrew:
  - (1) Pilots: Lt Col (b) (6) (18 – 23), Lt Col (b) (6) (24 – 29), Capt (b) (6), 1Lt (b) (6)
  - (2) Navigator: Lt Col (b) (6), Maj (b) (6) (18 – 23), Maj (b) (6) (24 – 29)
  - (3) Flight Engineers: SMSgt (b) (6) (18 – 23), SSgt (b) (6), SSgt (b) (6) (24 – 29)
  - (4) Spray Operators: SMSgt (b) (6), TSgt (b) (6), SSgt (b) (6) (24 – 29)
- c. Maintenance:
  - (1) Spray Maintenance: TSgt (b) (6) (lead), TSgt (b) (6), SSgt (b) (6), SrA (b) (6), SrA (b) (6)
  - (2) Maintenance: MSgt (b) (6), TSgt (b) (6), TSgt (b) (6), TSgt (b) (6), SSgt (b) (6), SSgt (b) (6), SrA (b) (6)
  - (3) Communications: MSgt (b) (6)
  - (4) First Sergeant: MSgt (b) (6)
- d. Entomologists: Lt Col (b) (6) (24 – 29), DoD pesticide applicator certification #NJ-1142-15-0221/#AA-010-03-0221; Capt (b) (6) (18 – 23), DoD pesticide applicator certification #AA-029-20-0823/#AA-001-21-0823; Capt (b) (6) (22 – 29),

DoD pesticide applicator certification #NJ-012-23/#AA-007-23-0523; 1Lt (b) (6)  
DoD pesticide applicator certification #AF-1351-20-0723/#AA-003-21-0521

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Panoramic® 2SL (23.3% ammonium salt of imazapic)
- b. EPA Registration Number: 66222-141-81927
- c. Gallons Pesticide Loaded: See attachment 1
- d. Gallons Pesticide Applied: See attachment 1
- e. Gallons and Name Diluent Used: See attachment 1 (total spray – gallons of pesticide = gallons water)
- f. Other Additives Used: 140 gal Clasp® drift control agent
- g. Application Rate: 7.2 gal/acre water (6.5 oz/acre AI)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 92-3021
- b. Spray System (Modules Used) and System ID #: SP-3G MASS 3
- c. Nozzle Type/Orientation: Raindrop/Straight back
- d. Number of Nozzles: 22 Total; 11 left, 11 right
- e. Pressure: 32 p.s.i.
- f. Flow Rate: 334 gallons/minute

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 100'
- b. Spray Off-set: None
- c. Spray Release Altitude: 100'
- d. Ground Speed: 200 KTS

**6. WEATHER OBSERVATIONS:** Acceptable for all spray treatment regimens encountered.

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

**a. Deposition Pattern:**

- (1) Techniques Used: Visual observation from PMP on range and in the aircraft
- (2) Results: See remarks

**b. Effectiveness**

- (1) Techniques Used: Vegetation measurement, visual observations
- (2) Results: Will be determined in the spring of 2024

**8. REMARKS:**

The purpose of this mission was to control cheat grass, an invasive weed, for range fire suppression and to support habitat restoration initiatives.

Sorties were flown with a headwind or tailwind with less than a 45% crosswind component and all applications were observed from the target and from the aircraft by a certified applicator. Throughout the mission, wind speed and direction were relatively stable at approximately 5 knots, resulting in what

visually appeared to be excellent deposition. Although limited range time was available, the entirety of the spray block was treated (Attachment 2).

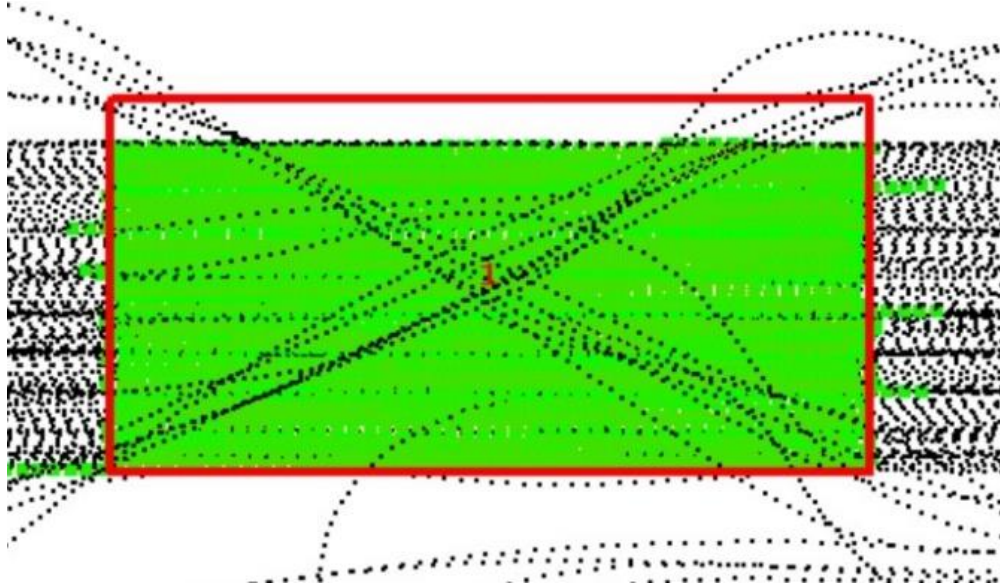
MUO Airfield operations, fire department, POL, RAPCON, and TA support was outstanding during the entire mission. This was an excellent training/real world mission and we would like to thank the personnel at Mountain Home AFB for the support received.

Lt Col (b) (6), USAF  
Certified Pest Management Professional

**Attachment 1. Summary Spray Chart****SPRAY OPERATIONS SUMMARY FOR SAYLOR CREEK RANGE  
18 – 29 September 2023**

<b>DATE Sept</b>	<b>SORTIE #</b>	<b>TIME OF APPLICATION (LOCAL)</b>	<b>ACRES</b>	<b>GALLONS SPRAYED</b>	<b>GALLONS OF PESTICIDE LOADED/ SPRAYED</b>		<b>FLYING HOURS</b>
19	1	0723 – 0831	413	2,878	21	21	1.8
20	2	0718 – 0811	415	3,000	21	21	2.0
21	3	0716 – 0801	414	2,937	21	21	2.0
22	4	0718 – 0815	411	2,914	21	21	2.0
23		No Trt					
24		No Trt					
25	5	0719 – 0821	399	3,054	21	21	1.4
26	6	0717 – 0830	416	3,039	21	21	1.6
27	7	0720 – 0825	422	3,021	21	21	1.6
28	8	0711 – 0906	431	3,029	21	21	2.2
Totals			3,321	23,872	168	168	14.6

**Attachment 2. Map of application on Saylor Creek Range, ID, 18 – 29 September 2023. The red line outlines the spray block; green lines are individual application swaths.**



**910 AW -- AERIAL SPRAY UNIT**  
**CERTIFIED PEST MANAGEMENT PROFESSIONAL'S POST-MISSION REPORT**  
**PARRIS ISLAND MCRD, SC AND JB CHARLESTON, SC 17-21 Jun 2019**

**1. MISSION BASICS:**

- a. Installation Sprayed: Parris Island MCRD, SC; JB Charleston, SC
- b. Mission Duration: 24-27 September 2019
- c. Purpose of Application: To control pestiferous populations of mosquitoes (specifically *Aedes taeniorhynchus*) and biting midges (*Culicoides* spp.)
- d. Application Date: 26 Sept 2019 (Parris Island); 25 Sept 2019 (JB Charleston)
- e. Time/s of Application (Zulu): 2240-0050 hrs (Parris Island); 2255-0135 hrs (JB Charleston)
- f. Acres Treated: 7,533 acres (Parris Island); 18,305 acres (JB Charleston)
- g. Project Coordinator: Capt (b) (6), Environmental, DSN (b) (6) (Parris Island); MSgt (b) (6), Spray Coordinator JB Charleston DSN 673-5266
- h. Date Spray Map Last Approved: 26 Sep 2019 (Parris Island); 25 Sept 2019 (JB Charleston)
- i. Date of Waste Generation Letter: 30 October 2007
- j. Installation In-Briefing: (When/Where/Briefer/s): On Site (Parris Island). Telephone by Lt Col (b) (6); 26 Sept 2019. JB Charleston CE, briefed by MSgt (b) (6), Lt Col (b) (6); 25 Sept 2019.

**2. OPERATIONAL:**

- a. **Mission Commander:** Lt Col (b) (6)
- b. **Aircrew:**
  - (1) Pilots: Maj (b) (6) (A/C), Lt Col (b) (6)
  - (2) Navigators: Lt Col (b) (6); Maj (b) (6)
  - (3) Flight Engineers: SMSgt (b) (6)
  - (4) Spray Operators: CMSgt (b) (6), (b) (6)
- c. **Maintenance:**
  - (1) Spray Maintenance: TSgt (b) (6), MSgt (b) (6), TSgt (b) (6), TSgt Jason Ross
  - (2) Crew Chiefs: TSgt (b) (6), TSgt (b) (6)
  - (3) Avionics: TSgt Elias Rafidi
- d. **Entomologist:** Lt Col (b) (6)

**3. PESTICIDE:**

- a. Trade Name (% Active Ingredient): Trumpet® (78%) Both locations.
- b. EPA Registration Number: 5481-481 (Trumpet)
- c. Formulation Sprayed: Trumpet (78% naled) (JB Charleston and Parris Island)
- d. Gallons Pesticide Loaded: 25 Sept; 120 Gallons (JB Charleston); 26 Sept; 60 Gallons Trumpet® (Parris Island)
- e. Gallons Pesticide Applied: 60 Gallons Dibrom® (Parris Island); 120 Gallons Trumpet® (JB Charleston)
- f. Gallons and Name Diluent Used: n/a
- g. Gallons and Name of Flush Used: 20 gallons water
- h. Other Additives Used: None
- i. Application Rate: 1.15 oz/acre (Parris Island); 0.85 oz/acre (JB Charleston)

**4. APPLICATION EQUIPMENT:**

- a. Aircraft Tail Number: 99105
- b. Spray System (Modules Used) and System ID #: 2
- c. Spray System Configuration: 2-Module System/ ULV Fuselage Booms
- d. Nozzle Type/Size: TeeJet® 8003 Flat Fan
- e. Nozzle Orientation & Number Used: 18 (Parris Island); 29 (JB Charleston) oriented straight down
- f. Pressure: 40 p.s.i. (Parris Island); 40 p.s.i. (JB Charleston)
- g. Flow Rate: 4.2 gallons per minute (Parris Island); 6.2 gallons per minute (JB Charleston)
- h. Sorties: 2/3.8 hrs (application); 2/4.2 hrs (ferry)

**5. APPLICATION PARAMETERS:**

- a. Swath Width Flown: 1000' (Parris Island); 2000' (JB Charleston)
- b. Spray Off-set: none (Parris Island); 1000' (JB Charleston)
- c. Spray Release Altitude: 300'
- d. Ground Speed: 200 Knots (338 Feet/Second)

**6. WEATHER OBSERVATIONS:**

- a. Winds (Direction/Speed):
  - (1) Ground: 220@6 knots (Parris Island); 240@5 knots (JB Charleston)
  - (2) Release Altitude: 220@14 knots (Parris Island) and 240@10 knots (JB Charleston)
- b. Temperature (Degrees Fahrenheit): 73°F (Parris Island); 75°F (JB Charleston)
- c. Cloud Cover: Clear (both locations)
- d. Source: Ground observations and aircraft SCNs

**7. SPRAY MONITORING (Pre- and Post-Treatment):**

- a. Deposition Pattern:
  - (1) Technique/s Used: GPS system monitoring aircraft flight pattern. Direct field observations ((b) (6) )
  - (2) Results: Good coverage throughout both sprayed areas
- b. Effectiveness:
  - (1) Technique/s Used: Light traps deploy before and after spray application
  - (2) Results: Parris Island

Post Spray trapping results have not yet been submitted by Parris island. However, Navy PrevMed comments: Substantial reduction of biting midge and mosquito populations after spray mission. PI environmental reported no adverse environmental effects of spray. This report will be updated upon receipt of additional data.

- (3) Results: JB Charleston (5 locations)

Spill Way: 843 before; 412 after; 51% reduction  
Golf Course: 53 before; 8 after; 85% reduction  
Marrington Trail: 443 before; 13 after; 97% reduction  
Hopper Bridge: 2823 before; 520 after; 81% reduction  
Spawar: 463 before; 23 after; 95% reduction

Totals: 4625 before; 976 after; 78% reduction

No adverse environment effects of spray were noted



**8. REMARKS:** Excellent coordination amongst all involved parties made this mission remarkably smooth. Reasonable control of mosquito and midge populations in both locations was observed both observationally and anecdotally. Application direction was less than ideal for JB Charleston application because aircraft was somewhat limited by air traffic operating out of Charleston International, resulting in only a 25 degree crosswind component (ideal is 90 degrees). This perhaps it the reason that although trap results from JB Charleston were not poor, and ideal spray application would result in reductions greater than 90%.

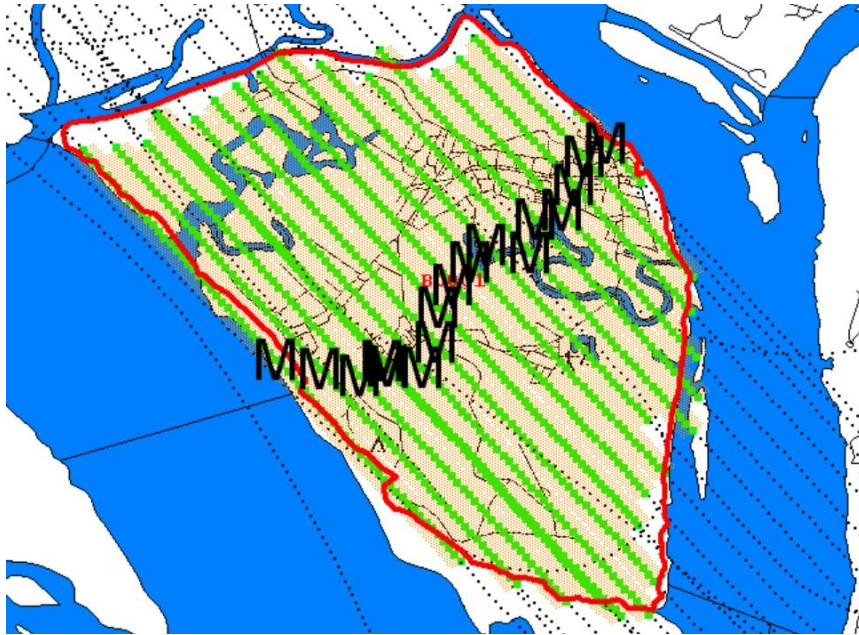
Actual applications at both locations proceeded without any significant functional problem or mishap, and no negative effect on wildlife was observed. On this mission no eagles were present at Parris island, which resulted in complete coverage without buffer zones. Many thanks to Capt (b) (6) and (b) (6) (Parris Island), and MSgt (b) (6) (JB Charleston) for their help in accomplishing this mission.

//signed//

(b) (6), Lt Col, USAFR  
**DOD CERTIFIED PEST MANAGEMENT PROFESSIONAL**

**2 Attachments:**

**Attachment 1. Areas sprayed at Parris Island MCRD 26 Sept 2019.**





# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: MSGT (b) (6) , Hill 14-21 Oct 2018

**Aircraft Tail Number:** 89009104

**MASS Number:** 3

**Configuration:** SPG 3

**Boom & Nozzle Type:** Fuselage, 18  
raindrop ( 9 per side)

**Chemical in Main Tank:** Plateau

**Chemical in Flush Tank:** H2O

**Total Chemical Loads:** 7

**Total Flush Loads:** 1

**Amount of Liquid Waste Generated:**  
0 Gals

**Amount of Solid Waste Generated:**  
10 LBS

## 1. From a maintenance aspect, what training was accomplished on this mission?

We had great training for everyone on this mission, we was able to safely perform Hot Upload training daily, which was only done during the oil spill, and one time since during the all hands spray trainer we had several years ago. This was several of the spray maintainers first time working with the hot uploading. I would like to add, that having once spray MXS person on the panel, on comm, with one spray MXS personal on comm on the ground, made the communication and upload a huge success. The Air Crew was great by keeping the chatter down while we loaded. We also had some hands on troubleshooting with the 4" flow meter not displaying the flow rate while spraying, and the flow control leaking. We R2 the flow control seal, and traced wiring & located the cannon plug to the 4" flow meter was bad.

## 2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.

3. Worked great with the crew chiefs on this trip & communication between the mission commander LT Col (b) (6) and everyone was great!! Teamwork all the way around was a success and the pre planning having the age equipment staged and the fire hydrant certified was a must and worked out perfect.

## 4. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.

MASS 3 system completed the spray mission on time, had to cancel after the first sortie due to the flow control leaking and no flow readings while they were spraying, several hours after the sortie was completed and troubleshooting we squared away the system. We had an incident with the fire

department showing up do to an electric smell, still not 100% sure of the cause, but was stated earlier that the #2 motor smelled & was drawing unusual loads on the amp meter. We disconnected #2 motor. & had them use only motors 1 & 3. No other issues with the spray system. Had an issue with the loadmaster getting spraying with chemical looking into the forward #4 fill , and the loadmaster on the panel ran a motor and did not verify that he was the right tank valve open and the right mix valve open before running the pump. The #4 tank valve was not open like he thought and the number 4 mix valve was open, so it filled the tank he thought he was transferring from. This caused the tank to be overfilled and chemical to get the other loadmaster wet when he looked into the tank.

**5. How was host base and TA support? Please include details.**

Excellent as always.

**6. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

No issues

**7. Were there any notable observations from a maintenance perspective inflight?**

Spray MXS didn't fly

**8. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Yes.

**9. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

Trip was all around a good trip, no issues with the aircraft, or weather.

## Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: (b) (6) , Charleston AFB/Parris Island Oct 3 to Oct 6 2018

**Aircraft Tail Number:** 90009108

**MASS Number:** 4

**Configuration:** ULV

**Boom & Nozzle Type:** Fuselage,8003

**Chemical in Main Tank:**

Trumpet/Dibrom

**Chemical in Flush Tank:** Atsol 150

**Total Chemical Loads:** 1

**Total Flush Loads:** 1

**Amount of Liquid Waste Generated:**  
8 gallons

**Amount of Solid Waste Generated:** 20  
lbs.

**1. From a maintenance aspect, what training was accomplished on this mission?**

Completed flow meter trouble shooting and download training as well as load and calibration proficiency training.

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Excellent communication between load masters, spray maintenance, and entomologists was key to overcoming difficulties with system during loading and calibration.

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

Efficiency of calibration could be improved with improved training of load masters on best practice calibration procedures and system operation.

**4. How was host base and TA support? Please include details.**

Host base and TA support were highly supportive providing required AGE in timely fashion.

**5. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

No issues with chemical.

**6. Were there any notable observations from a maintenance perspective inflight?**

None

**7. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Coordination

**8. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

Aircraft maintenance issues prevented timely mission departure on 03 Oct and led to cancellation of sortie on 05 Oct. Replacement of defective flow meter slowed calibration process on 04 Oct but sortie was not delayed.



# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: (b) (6) , Charleston, May 15-19 2023

**Aircraft Tail Number:** 90-9108

**MASS Number:** EMAS 1

**Configuration:** ULV

**Boom & Nozzle Type:** Atomizers

**Chemical in Main Tank:** Trumpet

**Chemical in Flush Tank:** Atsol

**Total Chemical Loads:** 2

**Total Flush Loads:** 1

**Amount of Liquid Waste Generated:**  
0

**Amount of Solid Waste Generated:** 20  
lbs.

**1. From a maintenance aspect, what training was accomplished on this mission?**

Boom config. Calibration with atomizers for first time. Uploading product from drums in full PPE

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Communication with Maint, Ento, Ops, Base pest control

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

4. Continue to train with new personal

**5. How was host base and TA support? Please include details.**

Both were good when needed

**6. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

None noted

**7. Were there any notable observations from a maintenance perspective inflight?**

First time using atomizers. Slight quantity to overboard discrepancy.

- 8. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Coordination was effective

- 9. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

None

# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: (b) (6) , Charleston, September 5-7, 2023

**Aircraft Tail Number:** 3022

**MASS Number:** EMASS 1

**Configuration:** ULV

**Boom & Nozzle Type:** Atomizers

**Chemical in Main Tank:** Trumpet

**Chemical in Flush Tank:** Atsol

**Total Chemical Loads:** 1

**Total Flush Loads:** 1

**Amount of Liquid Waste Generated:**  
0

**Amount of Solid Waste Generated:** 20  
lbs.

**1. From a maintenance aspect, what training was accomplished on this mission?**

(b) (6)'s first ULV mission with the EMASS. (b) (6) and (b) (6) both got training for system configuration. Clevenger's first time as a trip lead. Clevenger first time sitting at the console for the upload. Feliz's first time watching for leaks with the EMASS.

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Communication between spray ops, Spray mx, Entos, and mx was clear and concise. Not having to calibrate the EMASS allowed us to configure, upload, and spray on Tuesday night.

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

**4.** The areas that we could use room for improvement is experience as a shop and with the EMASS, since we have such a young shop and we're still learning the EMASS

**5. How was host base and TA support? Please include details.**

The host base had everything loaded on a flatbed truck and ready for us before we left home station so we could bring the truck to the plane and upload. TA moved swiftly when we need equipment and when it was time to leave without issue.

**6. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

None were noted

**7. Were there any notable observations from a maintenance perspective inflight?**

Spray mx uploaded 170 gallons of product, but spray ops noted only 146 gallons being sprayed. Spray mx is trouble shooting the issue.

**8. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Coordination was quick and effective allowing the spray mission move swiftly and without issue.

**9. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

The EMASS is having an indication issue either being a tank quantity issue or a flow rate issue. With 24 gallons of product not accounted for.

## Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: (b) (6) , Charleston and Parris Island, SC, 20190617 to 20190621

**Aircraft Tail Number:** 89009105

**MASS Number:** 4

**Configuration:** ULV

**Boom & Nozzle Type:** 8003

**Chemical in Main Tank:** Trumpet,  
Dibrom

**Chemical in Flush Tank:** HAN

**Total Chemical Loads:** 2

**Total Flush Loads:** 2

**Amount of Liquid Waste Generated:**  
0

**Amount of Solid Waste Generated:** 20  
lbs.

1. From a maintenance aspect, what training was accomplished on this mission?

(b) (6) received training on all ULV processes and procedures.

2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.

Coordination with Charleston pest management was instrumental in mission completion

3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.

4. None

5. How was host base and TA support? Please include details.

Host base support was excellent.

6. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.

No issues or changes.

7. Were there any notable observations from a maintenance perspective inflight?

Flow rate fluctuated on first sortie.

**8. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Coordination was highly effective.

**9. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

Clearer communication between load masters in regards to pressure relief adjustment procedures would aid in flow rate fluctuation minimization

# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead : TSgt (b) (6) , Charleston JB ,

30-31 Aug 2016

**Aircraft Tail Number:** 89009103

**MASS Number:** MASS 1

**Configuration:** ULV

**Boom & Nozzle Type:** Fuselage, ULV TEE  
JET 8003'S

**Chemical in Main Tank:** TRUMPET

**Chemical in Flush Tank:** Atsol-150

**Total Chemical Loads:** 1

**Total Flush Loads:** 1

**Amount of Liquid Waste Generated:**  
0 GAL

**Amount of Solid Waste Generated:**  
10 LBS

## 1. From a maintenance aspect, what training was accomplished on this mission?

Proficiency training on ULV chemical upload and Calibration was accomplished for all spray maintainers.

## 2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.

Constant communication from LtCol (b) (6) , as to nozzle count, chemical quantity and load time was appreciated. The MASS and booms performed at a very high level thanks to the diligence of (b) (6) and her extra attention to the booms in between missions and (b) (6) for the extra time spent with me to fine tune the ULV pressure system and flow. The extra time spent by both of these individuals was key to the system producing to a very close tolerance.

## 3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.

**Due** to the short notice nature of this emergency mission, there were a few items missed. One item was the Passenger manifest which was my responsibility, another was the Crew Chiefs not being put on the crew orders. Both of these would have been caught had there been a concept brief as normal.



**4. How was host base and TA support? Please include details.**

The host pest shop manager, (b) (6), was accommodating as he always is, he ensured we had everything that we needed.

**5. Where there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

No issues with the chemical at all. All four barrels were in good shape. 120Gals of Trumpet were loaded and sprayed, K-Factor .250, 28 8003 nozzles, flow rate of 6.3 GPM

**6. Where there any notable observations from a maintenance perspective inflight?**

Spray MX did not go on flight. However the Operators were happy with the system and its operation.

**7. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Yes good communication around.

**8. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

The only point that caused a delay was the lack of load master availability for the system calibration.

# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead : TSgt (b) (6) , Charleston JB ,

10-13 Sept 2015

**Aircraft Tail Number:** 89009105

**MASS Number:** MASS 1

**Configuration:** ULV

**Boom & Nozzle Type:** Fuselage, ULV TEE  
JET 8003'S

**Chemical in Main Tank:** TRUMPET

**Chemical in Flush Tank:** Atsol-150

**Total Chemical Loads:** 1

**Total Flush Loads:** 1

**Amount of Liquid Waste Generated:**  
0 GAL

**Amount of Solid Waste Generated:**  
10 LBS

**1. From a maintenance aspect, what training was accomplished on this mission?**

Proficiency training on ULV chemical upload and Calibration was accomplished for all spray maintainers.

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Constant communication from LtCol (b) (6) , as to nozzle count, chemical quantity and load time was appreciated.

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

The lack of enough vehicles for the entire crew was the only hindrance to the trip.

**4. How was host base and TA support? Please include details.**

The host pest shop manager, (b) (6) , was accommodating as he always is, he ensured we had everything that we needed.

**5. Where there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

No issues with the chemical at all. All three barrels was in good shape. 120Gals of Trumpet were loaded and sprayed, K-Factor .250, 27 8003 nozzles, flow rate of 6.3 GPM

**6. Where there any notable observations from a maintenance perspective inflight?**

Spray MXS did not go on flight. However the Operators were happy with the system and its operation.

**7. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Yes good communication around.

**8. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

The mission went very well

# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** TSgt (b) (6) - Hill AFB - UTTR/Dugway October 2023

**Aircraft Tail Number:** 9106

**MASS Number:** EMASS 1

**Configuration:** UHV

**Boom & Nozzle Type:** Fuselage  
Raindrop - R240 13-16 (14 used)

**Chemical in Main Tank:**  
Panoramic/Plateau - MSO(mineral oil)

**Chemical in Flush Tank:** Water

**Total Chemical Loads:** 6

**Total Flush Loads:** 1

**Amount of Liquid Waste Generated:**  
3 Gals

**Amount of Solid Waste Generated:** 5  
LBS

**1. From a maintenance aspect, what training was accomplished on this mission?**

SSgt (b) (6), TSgt (b) (6), SrA (b) (6), and TSgt (b) (6) all had training on EMASS loading, config, deconfig, HMI input, and air bottle refill.

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Communication between the Mission commander and Aerial spray was consistent, clear and concise. Communication between aerial spray and maintenance personnel was clear and determined where each member was needed to execute mission in timely manner.

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

All aspects of mission were successful.

**4. How was host base and TA support? Please include details.**

TA was extremely helpful with all maintenance needs. Any equipment they did have that we needed, they got to us in a timely manner. Fire Dept was quick to bring water when requested but fire hydrant was used primarily. All needs were met.

**5. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

No issues or changes to chemical uploads and sorties. Water was loaded in morning to prevent freezing. Product was loaded in morning as well.

**6. Were there any notable observations from a maintenance perspective inflight?**

No observations were noted.

**7. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Coordination between Aerial Spray and aircrew as well as Mission Commander went well.

**8. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

Mission was a success ! No issues noted.

# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: (b) (6)

, Hill AFB, UTTR 7-18 Mar 2022

**Aircraft Tail Number:** 92003023

**MASS Number:** 2

**Configuration:** HV

**Boom & Nozzle Type:** Raindrop& Bell

**Chemical in Main Tank:** Plateau& Krovar

**Chemical in Flush Tank:** Water

**Total Chemical Loads:** 6

**Total Flush Loads:** 1

**Amount of Liquid Waste Generated:**  
0

**Amount of Solid Waste Generated:** 0  
lbs.

**1. From a maintenance aspect, what training was accomplished on this mission?**

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Communication, personnel cohesion. Cooperation between ops, mx, Hill Pest management personnel.

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

**4.** The trip was attempted during an extremely cold time. We need more natural heat.

**5. How was host base and TA support? Please include details.**

As always, (b) (6) and his crew in Pest Management were available to assist with any need or want. (b) (6), despite being new was instrumental in gaining access to flightline buildings and requisition of gate access cards. Communicating early with (b) (6) aided in receiving all of the needed AGE plus a warehouse tug for AGE movements.

**6. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

The product itself was good.

**7. Were there any notable observations from a maintenance perspective inflight?**

The time of year was not conducive to spray operations in Utah. The weather was extremely cold causing the first week sorties to be canceled and the system valves to operate very slowly even after direct heating with NGH heaters for lengthy periods of time. Multiple valve gaskets froze and began to seep fluids during spray operations. The Flush pump froze and distorted the casing causing a major water seep.

**8. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Coordination was great amongst the whole group, the weather takes all the fault.

**9. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

POC for AGE is (b) (6) : (b) (6) ,(b) (6) (b) (6)



# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: (b) (6) , Hill AFB, UTTR 6-17 Mar 2023

**Aircraft Tail Number:**

92003022/92003021

**MASS Number:** MASS 3 / EMASS 1

**Configuration:** HV / UHV(EMASS)

**Boom & Nozzle Type:** Fuselage R Drop /  
Bell Nozzles

**Chemical in Main Tank:** Plateau / Krovar

**Chemical in Flush Tank:** Water

**Total Chemical Loads:** 3 / 7

**Total Flush Loads:** 4

**Amount of Liquid Waste Generated:**  
0

**Amount of Solid Waste Generated:** 0  
lbs.

**1. From a maintenance aspect, what training was accomplished on this mission?**

From Spray Maintenance aspect, we had a lot of new maintainers as well as a new system, so training on the mission at Hill, our job, and training on the EMASS happened daily.

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Communication, personnel cohesion. Cooperation between ops, mx, and as usual, Hill Pest Mgmt. (b) (6) has been our Pest Mgmt contact for years and is now retiring. His replacement is (b) (6) and will be great for us in this position. With the amount of folks being trained and the new EMASS, everyone having patients and being flexible was key.

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

4. Improvement will come in the form of experience in doing this mission with all our new folks.

**5. How was host base and TA support? Please include details.**

Advon team reported TA support was very good, availability of all requested equipment was met prior to arrival as well as during.

**6. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

As part of the verification process for the EMASS, we did use plateau at first and then switched to Krovar. Continued discussion on the use of Drift retardant as well as Defoamer in the EMASS needs to happen.

**7. Were there any notable observations from a maintenance perspective inflight?**

No observations were made on the maintenance side of both systems.

**8. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Coordination was extremely effective in accomplishing this msn. I will say as we always do, the freezing weather is not a help in any way and I'll continue to say that we are lucky that we haven't had a bad system failure as a result of bad weather.

**9. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

As we all discussed with the EMASS and the foaming issue, I believe there is still room for discussion on all ends as well as with a potential call with Battelle. I'm sure that everyone still has questions and scenarios, and I think we need to put them on paper and schedule a date/time that we can all have this conversation (to include Battelle). Again, having so many folks getting trained from maintenance / loads, I have to say from what I saw, everyone did an awesome job, and it is always great to see when we put our heads together what we can accomplish. Mission success.

# Aerial Spray Maintenance Post-Mission Report

**Location and Dates:** Langley AFB, 3-6 Aug 2015

**Aircraft Tail Number:** 89009105

**MASS Number:** MASS 4

**Configuration:** ULV

**Boom & Nozzle Type:** ULV 8003

**Chemical in Main Tank:** Trumpet

**Chemical in Flush Tank:** Atosol 150

**Total Chemical Loads:** 1

**Total Flush Loads:** 0

**Amount of Liquid Waste Generated:**  
0Gal

**Amount of Solid Waste Generated:**  
5Lbs

## 1. From a maintenance aspect, what training was accomplished on this mission?

Currency was maintained for ULV chemical upload, as well as system calibration.

## 2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.

Despite MASS 4 returning home from the prior mission with severe cross contaminated chemical buildup throughout the tank all plumbing and both booms, the system ran flawlessly and we only experienced 2 clogged nozzles during the calibration. This is attributed to the diligent hard work of the entire spray maintenance flight, with an extra thank you to (b) (6) , (b) (6) and (b) (6) for their extra attention in areas not required to be inspected during an after mission inspection, but most importantly the thorough in tank cleaning.

## 3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.

The final spray plan had us spraying Dibrom. Upon receipt of the chemical, it was discovered that we had 3EA 30gal barrels of Trumpet. One of which had a cut in the bottom of the drum, which was repaired using PIG putty by spray maintenance personnel.

**4. How was host base and TA support? Please include details.**

Langley AFB's motor pool was very accommodating in bring us a new u-drive-it when the van we had become unusable. They drove the new vehicle to us. The ACFT external power unit had issues staying online, when called TA was quick to have a new unit delivered to us.

**5. Where there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

As stated, the chemical was different from what was on the mission plan.

Flow rate was 5.1 GPM, K-Factor 0.250, 22 open nozzle sites

**6. Where there any notable observations from a maintenance perspective inflight?**

No maintenance personnel flew during the spray.

**7. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

The coordination of the site in-brief and chemical load/calibration could have been offset more. All worked out well however, with a weather cancel on the first day.

**8. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead- TSgt (b) (6)

- Langley July 25-28

**Aircraft Tail Number:** 9105

**MASS Number:** EMASS 1

**Configuration:** ULV

**Boom & Nozzle Type:** Fuselage  
Atomizers

**Chemical in Main Tank:** Trumpet

**Chemical in Flush Tank:** Atsol 150

**Total Chemical Loads:** 1

**Total Flush Loads:** 1

**Amount of Liquid Waste Generated:**  
0 Gals

**Amount of Solid Waste Generated:** 5  
LBS

**1. From a maintenance aspect, what training was accomplished on this mission?**

(b) (6) , (b) (6) , (b) (6) , (b) (6) , (b) (6) all had training on EMASS loading, config, and deconfig.

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Communication between the Mission commander and Aerial spray was consistent, clear and concise. Communication between aerial spray and maintenance personnel was clear and determined where each member was needed to execute mission in timely manner.

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

All aspects of mission were successful.

**4. How was host base and TA support? Please include details.**

TA was very helpful with all maintenance needs. Any equipment they did have that we needed, they got to us in a timely manner.

**5. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

No issues or changes to chemical uploads and sorties.

**6. Were there any notable observations from a maintenance perspective inflight?**

No observations were noted.

**7. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Coordination between Aerial Spray and aircrew as well as Mission Commander went well.

**8. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

Mission was a success ! No issues noted.

# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: Thomas Neiswanger, Tyndall AFB, 12-15 Apr 2021

**Aircraft Tail Number:** 92003023

**MASS Number:** 4

**Configuration:** ULV

**Boom & Nozzle Type:** Fuselage TJet  
8003

**Chemical in Main Tank:** Trumpet EC

**Chemical in Flush Tank:** HAN

**Total Chemical Loads:** 1

**Total Flush Loads:** 0

**Amount of Liquid Waste Generated:**  
0

**Amount of Solid Waste Generated:** 10  
lbs.

## 1. From a maintenance aspect, what training was accomplished on this mission?

The beginnings of trip lead and management training for TSgts (b) (6) and (b) (6). They were invited into the installation in-brief to gain understanding of the tasks required prior to our arrival on station such as trapping and bug counting area mapping and flight planning. SrA (b) (6) received refreshing on all aspects of the ULV mission with regards to system configuration, chemical upload and calibration.

## 2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.

Communication with the MC is paramount to success and LT Col (b) (6) ensures requirements are understood with plenty of time to accommodate. Pest management delivered the product loaded on a stake bed to Base Ops rather than make us find them somewhere else on base.

## 3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.

4. I would be remiss if I didn't mention the GOVs that survived hurricane Michael we are still being issued: multiple dash lights flash off and on while driving brakes require a lot of forethought to stop properly, switches hanging out of the door panels, etc.

## 5. How was host base and TA support? Please include details.

TA support was very good, they removed the power cart from the ACFT during Eng start rather than MX having to pull it clear of the wing..



**6. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

No.

**7. Were there any notable observations from a maintenance perspective inflight?**

Began system calibration with 34 open nozzle, resulting in nearly 11.5 GPM. Nozzles were progressively removed until we ended up with 24 open nozzles to obtain the desired 7.6 GPM spray rate.

**8. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Coordination was extremely effective in accomplishing this msn.

**9. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

Flow rate indicated 8.7 with actual flow rate of 7.6, may need to adjust KFactor. Direct read analog pressure gauge read 38-40PSI while the Digital read 82PSI. Normally the direct read gauge would be trusted; however, while loading the product the digital gauge read 44, direct 0 and when the spray line valves were opened pressure escaped through the booms and the digital gauge then read 3 PSI.

# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: TSgt (b) (6) , Location: Mayport NAS

8-12 Dec 2015

**Aircraft Tail Number:** 89009105

**MASS Number:** MASS 2

**Configuration:** LV

**Boom & Nozzle Type:** Fuselage, ULV TEE  
JET 8020'S

**Chemical in Main Tank:** VectoBac WDG

**Chemical in Flush Tank:** H2O

**Total Chemical Loads:** 1

**Total Flush Loads:** 0

**Amount of Liquid Waste Generated:**  
0 GAL

**Amount of Solid Waste Generated:**  
10 LBS

## 1. From a maintenance aspect, what training was accomplished on this mission?

Being that this mission was to test VectoBac WDG as a viable product, able to be sprayed from the MASS at the required pressure , flow rate and achieve the proper swath and droplet size, we received a greater knowledge of what this MASS could produce, using a mix of the LV system mode, with a ULV boom setup. We also learned how the product mixed into water, as well as the mixing of the dye required to I.D. the product on marking cards.

## 2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.

The ability to have Lt Col (b) (6) and SMSgt (b) (6) , in shop working out the calibration with H2O (as close as possible, due to the much higher than normal ULV volume of 60 GPM), for multiple days prior to mission departure. Also the ability and willingness of AS maintenance flight to think outside the box to make the mission a success, it couldn't have happened without the great understanding and knowledge of the separated system mode capabilities, and the intuitiveness to make them work together to achieve for this unconventional mission!

## 3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.

The ability to mix the product more thoroughly and efficiently can be reached by using the venturi inductor. The inability to adapt the venturi into a closed loop with the MASS and the small

amount of product required for the mission did not warrant the development of a separate mixing/loading system. I would suggest utilizing the mixing trailers that are forward stationed at Hill AFB for any future, larger quantity missions of the same product.

**4. How was host base and TA support? Please include details.**

Support was accommodating to point that was required of them. We were not on station for them in any way, therefore their support consisted of delivering and retrieving the AGE and marshaling the aircraft in and out. We loaded the water for mixing and flushing prior to leaving home station due to not being able to get any there. The Air terminal staff was accommodating and allowed us all to relax in the terminal while waiting for the aircraft to return.

**5. Where there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

200Lbs of product was mixed into 110Gal of H<sub>2</sub>O. The product was a fine granule, yet dense and light, which made it float on top of the water. The product had to be pushed below the water surface to get the it into suspension and allow the mixing process to happen.

**6. Where there any notable observations from a maintenance perspective inflight?**

Spray MXS did not go on flight. However the Operators were happy with the system and its operation.

**7. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Yes good communication around.

**8. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

Upon return to home station, we inspected the inside of the MASS tank prior to beginning the clean-up procedures. We found small clumps of unmixed product laying on the tank bottom. The theory is the clumps are a result of our inability to effectively and thoroughly mix the product from the start, and not the chemical coming out of suspension. The clumps were quickly broken up and mixed into the water that was introduced directly into the tank through the aft filler port. After approximately 500 Gal of water(added 100Gal, mixed and recirculated and finally run through the spray valve and boom feed line), there was little to no sign of the VectoBac WDG remaining in the MASS, however there remains pink hue to any water run through the MASS due to the marking dye.

# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: (b) (6) /Minot July 16-20 2018

**Aircraft Tail Number:** 90009107

**MASS Number:** 1

**Configuration:** ULV

**Boom & Nozzle Type:** Fuselage,

**Chemical in Main Tank:** Trumpet

**Chemical in Flush Tank:** Atsol 150

**Total Chemical Loads:** 2

**Total Flush Loads:** 1

**Amount of Liquid Waste Generated:**  
5 Gal

**Amount of Solid Waste Generated:** 25  
lbs.

**1. From a maintenance aspect, what training was accomplished on this mission?**

Sgt (b) (6) new TR in shop. Trained individual on ULV upload/calibration procedures. There was also download training with all members on the trip.

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Communication, personnel cohesion. Cooperation between ops, mx and Minot pest mngmt.

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

No room for improvement.

**4. How was host base and TA support? Please include details.**

TA support was very good, no noted issues.

**5. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

After the in-brief it was checked to see if there was all the chemical. It was noted that we were missing from 6 barrels which were eventually found and did show up to try to complete the mission.

**6. Were there any notable observations from a maintenance perspective inflight?**

No noted issues with system in flight.

**7. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Coordination was extremely effective in accomplishing this msn.

**8. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

Acft broke 9for an eng problem. We had to have an MRT fly out thurs to fix the airplane. We had to download the chemical because the airplane broke. Plane was fixed on thurs allowing us to arrive at home on time.

## Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: TSGT (b) (6)

**Aircraft Tail Number:** 9107

**MASS Number:** 1

**Configuration:** LV

**Boom & Nozzle Type:** Fuselage,

**Chemical in Main Tank:** Trumpet

**Chemical in Flush Tank:** Naphtha

**Total Chemical Loads:** 2

**Total Flush Loads:** 1

**Amount of Liquid Waste Generated:**  
0 Gals

**Amount of Solid Waste Generated:**  
20LBS

**1. From a maintenance aspect, what training was accomplished on this mission?**

All personnel on this trip were trained and qualified

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Communication between the Mission commander and Aerial spray went well.

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

The calibration process went way over needed amount of time. Resulting in extra time spent in Tyvek in the heat and humidity.

**4. How was host base and TA support? Please include details.**

Ta was on point and helpful the entire time.

**5. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

The primary load for Minot City and Minot Base was changed to a higher amount (6 drum to 7 drums) and the Williston trip did not happen, but was also changed from the original amount to less (9 drums to 6 drums). System break prevented the Williston mission from taking place.

**6. Were there any notable observations from a maintenance perspective inflight?**

No Aerial Spray Maintainers were on the Flights.

**7. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

All coordination went well

**8. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

During calibration it seemed as though miss-communication in the adjusting process of the pressure and flow was observed. Note: Flush and purge was no completed due to system break in between sorties. 3 gal of good chemical was downloaded back into a barrel.



## Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: TSGT (b) (6) , MinotAFB-Williston, ND, July 15-18, 2019

**Aircraft Tail Number:** 9105

**MASS Number:** 4

**Configuration:** ULV

**Boom & Nozzle Type:** Fuselage,

**Chemical in Main Tank:**

Trumpet/Imperium

**Chemical in Flush Tank:** Atsol

**Total Chemical Loads:** 2

**Total Flush Loads:** 0

**Amount of Liquid Waste Generated:**  
0 Gals

**Amount of Solid Waste Generated:**  
20LBS

**1. From a maintenance aspect, what training was accomplished on this mission?**

New chemical training was accomplished for all Aerial Spray maintainers including SDS familiarization, new chemical handling procedures and PPE usage.

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Communication between the Mission commander and Aerial spray was consistent, clear and concise. Communication within aerial spray maintenance was clear and concise once clear expectations were established.

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

The only improvement on the maintenance side would be the vehicle choosing. The maintenance crew should have had more than a two door Ford Ranger for three people. Separating the avionics troop from the crew chiefs.

**4. How was host base and TA support? Please include details.**

TA was very helpful with all maintenance needs.

**5. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

50% of the barrels of Imperium had loose bungs which could have been a factor in a slow chemical load.

**6. Were there any notable observations from a maintenance perspective inflight?**

No Aerial Spray Maintainers were on the Flights.

**7. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

All coordination went well

**8. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

The lighting delay was the only hitch in the entire trip. Despite the delay we still managed to get that sortie in but with less chemical than originally planned.

# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** TSgt (b) (6)

- Hill AFB - UTTR/Dugway October 2023

**Aircraft Tail Number:** 9106

**MASS Number:** EMASS 1

**Configuration:** UHV

**Boom & Nozzle Type:** Fuselage  
Raindrop - R240 13-16

**Chemical in Main Tank:**  
Panoramic/Plateau - MSO(mineral oil)

**Chemical in Flush Tank:** Water

**Total Chemical Loads:** 7

**Total Flush Loads:** 1

**Amount of Liquid Waste Generated:**  
3 Gals

**Amount of Solid Waste Generated:** 5  
LBS

**1. From a maintenance aspect, what training was accomplished on this mission?**

SSgt (b) (6), TSgt (b) (6), SrA (b) (6), and TSgt (b) (6) all had training on EMASS loading, config, deconfig, HMI input, and air bottle refill.

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Communication between the Mission commander and Aerial spray was consistent, clear and concise. Communication between aerial spray and maintenance personnel was clear and determined where each member was needed to execute mission in timely manner.

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

All aspects of mission were successful.

**4. How was host base and TA support? Please include details.**

TA was extremely helpful with all maintenance needs. Any equipment they did have that we needed, they got to us in a timely manner. Fire Dept was quick to bring water when requested but fire hydrant was used primarily. All needs were met.

**5. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

No issues or changes to chemical uploads and sorties. Water was loaded in morning to prevent freezing. Product was loaded in morning as well.

**6. Were there any notable observations from a maintenance perspective inflight?**

No observations were noted.

**7. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Coordination between Aerial Spray and aircrew as well as Mission Commander went well.

**8. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

Mission was a success ! No issues noted.

# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: (b) (6) , Oklahoma/Tinker, June 17-24 2023

**Aircraft Tail Number:** 90-9108

**MASS Number:** EMASS 1

**Configuration:** UHV

**Boom & Nozzle Type:** Bell/RA20

**Chemical in Main Tank:** Water

**Chemical in Flush Tank:** None

**Total Chemical Loads:** 4

**Total Flush Loads:** 0

**Amount of Liquid Waste Generated:**  
0

**Amount of Solid Waste Generated:** 0  
lbs.

**1. From a maintenance aspect, what training was accomplished on this mission?**

EMASS loading from hydrant, Boom reconfiguration, Air bottle refill, HMI config, Tank quantity troubleshooting

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Communication, personnel cohesion. Cooperation between ops, mx, Base ops, APS. Proximity to hydrant.

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

**4.** Rental car drop off and pick up location had limited hours. No GOV available due to exercise. Wasn't allowed to store bins/equipment near plane/on ramp.

**5. How was host base and TA support? Please include details.**

TA support was very good, Base ops was ok other than allowing us to have equipment nearby

**6. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

Sprayed water for testing purposes on decon effectiveness. Switched from bell nozzles and Raindrops

**7. Were there any notable observations from a maintenance perspective inflight?**

HMI lost GPS signal during flight one time, Stopped logging data, RTB to troubleshoot, loads had to write data by hand. Quantity discrepancy vs HMI sprayed overboard

**8. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Coordination was extremely effective in accomplishing this msn.

**9. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

Acft had no major issues to stop/slow mission. Rental car/GOV needs to be done better like other locations, Enterprise hours of operation limited on weekends. Lodging location was excellent choice but had to use Valet only.

## Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: (b) (6) , Paris Island, April 10-14 2023

**Aircraft Tail Number:** 90-9108

**MASS Number:** EMAS 1

**Configuration:** ULV

**Boom & Nozzle Type:** Atomizers

**Chemical in Main Tank:** NONE

**Chemical in Flush Tank:** None

**Total Chemical Loads:** 0

**Total Flush Loads:** 0

**Amount of Liquid Waste Generated:**  
0

**Amount of Solid Waste Generated:** 0  
lbs.

- 1. From a maintenance aspect, what training was accomplished on this mission?**

Boom config

- 2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Mission Failed due to no product available

- 3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**
- 4.** No product available. Hotel was an hour away
- 5. How was host base and TA support? Please include details.**

Both were good when needed

- 6. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

Product was not available

- 7. Were there any notable observations from a maintenance perspective inflight?**

We never loaded product. Did not fly



- 8. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Coordination was effective

- 9. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

No product available

# Aerial Spray Maintenance Post-Mission Report

**Location and Dates:** Parris Island SC, 19-22 Apr 2016

**Aircraft Tail Number:** 89009105

**MASS Number:** MASS 4

**Configuration:** ULV

**Boom & Nozzle Type:** ULV 8003

**Chemical in Main Tank:** Dibrom

**Chemical in Flush Tank:** Atsol 150/  
HAN

**Total Chemical Loads:** 1

**Total Flush Loads:** 0

**Amount of Liquid Waste Generated:**  
0Gal

**Amount of Solid Waste Generated:**  
10Lbs

**1. From a maintenance aspect, what training was accomplished on this mission?**

Currency was maintained for ULV chemical upload/ download, as well as system calibration.

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Working closely with the AMVAC chemical representatives before and during this mission should prove to be profitable in discovering why we are finding a thick and sticky red substance in the MASS.

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

The only area that could be improved is lodging closer to the base and our aircraft.

**4. How was host base and TA support? Please include details.**

As we continue to adjust to the new security at Beaufort MCAS the Marines in Base Ops are very accommodating in escorting us in and out of the secure location as well as on and off of the visiting aircraft parking ramp

**5. Where there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

The chemical was good and had been verified by AMVAC prior to maintenance arriving for the load. Approximately 10 gallons of Dibrom was downloaded and the barrel was marked, AMVAC Rep is planning to meet us the next time we are at Parris Island to Check the chemical prior to uploading.

Flow rate was 3.2 GPM, K-factor .250, 14EA 8003 nozzle sites open

**6. Where there any notable observations from a maintenance perspective inflight?**

No maintenance personnel flew during the spray.

**7. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

All coordination was sufficient.

**8. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead : Tsgt (b) (6) / Parris Island, SC / 5-7 Apr 2016

**Aircraft Tail Number:** 90009108

**MASS Number:** MASS 4

**Configuration:** ULV

**Boom & Nozzle Type:** Fuselage, ULV TEE  
JET 8003'S

**Chemical in Main Tank:** Dibrom

**Chemical in Flush Tank:** Atsol-150

**Total Chemical Loads:** 1

**Total Flush Loads:** 1

**Amount of Liquid Waste Generated:**  
0 GAL

**Amount of Solid Waste Generated:**  
5 LBS

**1. From a maintenance aspect, what training was accomplished on this mission?**

No training was required, just maintained currency in different loading and calibrating positions.

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Communication between Aircrew/ MC and Spray Maint was awesome.

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

The biggest problem having to get on and off the Flight line. We were stranded due to the fact they only had 1 escort. The same problem occurred when trying to get back out to the plane. We told base ops we needed a lite cart when we landed info didn't get passed along. We also wrote it down on acft requirements paper when we landed. Lodging had no phones a cell coverage was week.

**4. How was host base and TA support? Please include details.**

TA DID NOT GET US A LITE CART.

**5. Where there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

. For calibration we had 13 total nozzles open, K-Factor was .250 and flow rate was 2.7 @ 40 psi.

**6. Where there any notable observations from a maintenance perspective inflight?**

No notable observations

**7. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

All coordination and communication was great for this mission. No problems

**8. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

None

# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: TSgt (b) (6) , Salina KS,

24-29 October 2016

**Aircraft Tail Number:** 89009104

**MASS Number:** MASS 3

**Configuration:** HV

**Boom & Nozzle Type:** Fuselage,  
Raindrop

**Chemical in Main Tank:** Milestone

**Chemical in Flush Tank:** Water

**Total Chemical Loads:** 9

**Total Flush Loads:** 1

**Amount of Liquid Waste Generated:**  
0 GAL

**Amount of Solid Waste Generated:**  
0 LBS

**1. From a maintenance aspect, what training was accomplished on this mission?**

Proficiency training on HV chemical upload and mixing was accomplished for all spray maintainers.

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Constant communication from Lt Col (b) (6) , as to nozzle count, chemical quantity and load time was appreciated. The assistance received from the additional maintenance package also kept the mission running smoothly.

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

The only item needing improvement would involve having the hotel aware of our tax-exempt status.

**4. How was host base and TA support? Please include details.**

The F.B.O. personnel was very friendly and helpful, the fire Dept kept our mission on track by having the water tanker on standby as the aircraft was taxing into spot, enabling us to load and mix very quickly.

**5. Where there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

No issues with the chemical at all. 36 raindrop nozzles used

**6. Where there any notable observations from a maintenance perspective inflight?**

Spray MXS did not go on flight. However the Operators were happy with the system and its operation.

**7. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Yes good communication around.

**8. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

The mission was effected by high winds three separate days.



## Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: (b) (6) , Williston/Grand forks May 29th-June 7th

**Aircraft Tail Number:** 89009105

**MASS Number:** 5

**Configuration:** LV/HV

**Boom & Nozzle Type:** Fuselage R Drop

**Chemical in Main Tank:** vectobac,altosid

**Chemical in Flush Tank:** Water

**Total Chemical Loads:** 7

**Total Flush Loads:** 1

**Amount of Liquid Waste Generated:**  
0

**Amount of Solid Waste Generated:** 15  
lbs.

1. **From a maintenance aspect, what training was accomplished on this mission?**

(b) (6) new ART in shop. Trained individual on LV/HV upload procedures w/ load station.

2. **What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Communication, personnel cohesion. Cooperation between ops, mx, FBO, Army Guard, Minot Age, Minot Pest Mgmt, Grand Forks Pest Mgmt

3. **What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

4. Improved pre/post load communication

5. **How was host base and TA support? Please include details.**

TA support was very good, Army Guard was Excellent for flight line access and forklift availability.

6. **Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

Due to Acft issues sprayed Grand forks Sunday instead of Saturday.

7. **Were there any notable observations from a maintenance perspective inflight?**

Needed to add 2 more nozzles after first lift, following lifts were spot on for GPM.

**8. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Coordination was extremely effective in accomplishing this msn.

**9. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

Acft had some MX issues, awmas 5 performed well some minor valve solenoid air leaks. Lodging location was excellent choice.

## Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: (b) (6) , Tyndall AFB and Langley AFB, 20190819 to 20190825

**Aircraft Tail Number:** 89009106

**MASS Number:** 4

**Configuration:** ULV

**Boom & Nozzle Type:** 8003

**Chemical in Main Tank:** Trumpet

**Chemical in Flush Tank:** Water

**Total Chemical Loads:** 2

**Total Flush Loads:** 2

**Amount of Liquid Waste Generated:**  
0

**Amount of Solid Waste Generated:** 20  
lbs.

- 1. From a maintenance aspect, what training was accomplished on this mission?**

Members received training on water flush processes and procedures.

- 2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Coordination with pest management was instrumental in mission completion

- 3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

- 4.** Transportation and quality of transportation at both locations could be improved. Defective vehicles at both locations presented multiple avoidable challenges.

- 5. How was host base and TA support? Please include details.**

Host base support was excellent at both Tyndall and Langley.

- 6. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

No issues or changes.

- 7. Were there any notable observations from a maintenance perspective inflight?**

No in flight issues

**8. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Coordination was very effective.

**9. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

Hydraulic leak was noted on aircraft right wing during scheduled departure on 20190823. Scheduled departure was cancelled in order to coordinate repair of hydraulic leak locally with home station support.

# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: (b) (6) , Tyndall AFB, FL, 12-15 April 2022

**Aircraft Tail Number:** 90009107

**MASS Number:** 4

**Configuration:** ULV

**Boom & Nozzle Type:** Fuselage 8003 Tee  
Jet

**Chemical in Main Tank:** Trumpet EC

**Chemical in Flush Tank:** Atsol 150

**Total Chemical Loads:** 1

**Total Flush Loads:** 0

**Amount of Liquid Waste Generated:**  
0

**Amount of Solid Waste Generated:** 5  
lbs.

**1. From a maintenance aspect, what training was accomplished on this mission?**

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Communication, personnel cohesion. Cooperation between ops, mx, Tyndall Entos, Tyndall CE personnel ensuring everything we needed was taken care of.

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

**4.** None

**5. How was host base and TA support? Please include details.**

TA support was very good, we had everything we needed.

**6. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

We did have one partial 30gal drum of Trumpet that had not been marked as good/bad. It was still sealed so I decided to load it as well. I have briefed our shop the importance of ensuring that all drums be marked with the appropriate markings so we are never unsure of chemical being loaded. We loaded 7-30gal drums and one partial of 10gal of Trumpet EC.

**7. Were there any notable observations from a maintenance perspective inflight?**

System had some pressure issues that loadmasters fixed by opening the top set of filters.

**8. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Coordination was extremely effective in accomplishing this msn.

**9. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

Lodging location was excellent choice. Thank you to all for a successful mission.

# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: (b) (6)

Tyndall/PI 15-18 APR 2019

**Aircraft Tail Number:** 89009104

**MASS Number:** 4

**Configuration:** ULV

**Boom & Nozzle Type:** Fuselage,

**Chemical in Main Tank:**

Trumpet/dibrom

**Chemical in Flush Tank:** Atsol 150

**Total Chemical Loads:** 2

**Total Flush Loads:** 1

**Amount of Liquid Waste Generated:**  
0

**Amount of Solid Waste Generated:** 15  
lbs.

**1. From a maintenance aspect, what training was accomplished on this mission?**

(b) (6) was on his first spray mission. Trained individual on ULV upload/calibration procedures. All aspects of the different positions on a ULV mission.

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Communication, personnel cohesion. Cooperation between ops, mx and Charleston pest mgmt.

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

Better support from the transportation in the vehicle situation and initial pickup

**4. How was host base and TA support? Please include details.**

TA support was very good, no noted issues.

**5. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

Tyndall changed both amount used from 8 barrels to 7. Also changing the spray parameters. Questions on the dibrom being used or new.

**6. Were there any notable observations from a maintenance perspective inflight?**



No noted issues with system in flight, Spray loads were extremely capable on this msn.

**7. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Coordination was extremely effective in accomplishing this msn. Also giving the great training opportunity for aerial spray maint. New employee

**8. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

Earlier coordination for room accommodations would be greatly appreciated for status information

## Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead: TSGT (b) (6) , Williston, ND, 29 May to June 6, 2018

**Aircraft Tail Number:** 9108

**MASS Number:** 5

**Configuration:** LV

**Boom & Nozzle Type:** Fuselage,

**Chemical in Main Tank:** Vectobac

**Chemical in Flush Tank:** Water

**Total Chemical Loads:** 2

**Total Flush Loads:** 0

**Amount of Liquid Waste Generated:**  
0 Gals

**Amount of Solid Waste Generated:**  
20LBS

**1. From a maintenance aspect, what training was accomplished on this mission?**

(b) (6) , (b) (6) , and (b) (6) were all trained on Vectobac mission and load station operation. (b) (6) was trained on leading edge removal and installation as well as APU operation. Other members were fully qualified on all tasks.

**2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.**

Communication between the Mission commander and Aerial spray was consistent, clear and concise. Communication within aerial spray maintenance was clear and concise once clear expectations were established.

**3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.**

Communication expectations within aerial spray maintenance could have been better established from the lead at the beginning of the mission. Transportation to and from the hotel and rental cars was very disorganized. A second bus or a truck for baggage would have been beneficial. Personnel waited at the aircraft for 2 hours for transportation to the hotel after initial bus left. No second bus was provided despite being promised.

**4. How was host base and TA support? Please include details.**

TA was very helpful with all maintenance needs.

**5. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

The primary load for Williston was not changed. Pest management failed to provide drift retardant.

**6. Were there any notable observations from a maintenance perspective inflight?**

No Aerial Spray Maintainers were on the Flights.

**7. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

All coordination went well

**8. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

Prior to first sortie a leak was identified at the spray valve. Spray valve was rebuilt which eliminated the leak. During the first sortie issues were identified with pressure indication and flush pump operation. Upon landing the pressure transducer was replaced. No fault could be found with flush pump. Bird strike to left leading edge between #1 and #2 engines was identified after second sortie. Damage required removal of leading edge for evaluation which resulted in cancelation of final 2 days of mission.

# Aerial Spray Maintenance Post-Mission Report

**Trip Lead, Location and Dates:** Lead- SSgt (b) (6) ; Williston, ND; 30 May - 6 June 2023

**Aircraft Tail Number:** 9108

**MASS Number:** 5

**Configuration:** LV

**Boom & Nozzle Type:** Fuselage, raindrop

**Chemical in Main Tank:** Vectobac

**Chemical in Flush Tank:** Water

**Total Chemical Loads:** 19

**Total Flush Loads:** 1

**Amount of Liquid Waste Generated:**  
0 Gals

**Amount of Solid Waste Generated:**  
20LBS

## 1. From a maintenance aspect, what training was accomplished on this mission?

(b) (6), (b) (6), (b) (6), and (b) (6) were all trained on Vectobac mission and load station operation. Zachery Wilson led first trip and was trained on coordination with entomologist and mission commander.

## 2. What went well or aided in making this trip/mission a success? Please include details ex. Personnel, communication, equipment, etc.

Communication between the Mission commander and Aerial spray was consistent, clear and concise. Communication between aerial spray and maintenance personnel was clear and determined where each member was needed to execute mission in timely manner.

## 3. What areas was there room for improvement? Please include details ex. Personnel, communication, equipment, etc.

When returning to Williston International Airport, it is vital that YARS supplies their own SGNC Nitrogen cart. For this mission, we were forced to borrow a SGNC from Minot AFB, taking valuable time from both flight crew and aerial spray personnel. Power carts are available at next door airport, but often kick off and do not work very well. If any LOX is needed, it would have to be acquired from Minot as well. It is needed that support plane bring all needed AGE for future missions. When returning, it is also vital to bring a minimum of 10 sets of 50ft 4in fire hose line. The fire hydrant is approximately 350ft away from aircraft parking spot, including a fence halfway through which required to dig a hole under the fence to run the fire hose line under that.

**4. How was host base and TA support? Please include details.**

TA was very helpful with all maintenance needs. Any equipment they did have that we needed, they got to us in a timely manner.

**5. Were there issues or changes to chemical? Please include details ex. Containers, quality of chemical, switch, etc.**

No issues or changes to chemical uploads and sorties.

**6. Were there any notable observations from a maintenance perspective inflight?**

No Aerial Spray Maintainers were on the Flights.

**7. Was coordination of aircrew, aircraft, weather details, and training sufficient to optimize mission effectiveness? Please include details.**

Coordination between Aerial Spray and aircrew as well as Mission Commander went well.

**8. Any other information that affected the mission/trip that needs to be mentioned. Please include details ex. Aircraft, system, weather, etc.**

MASS 2 should have been more prepared. During first sortie, it was found that the vent line on the aft of MASS 2 had a valve left open, causing product to leak under tank 3 & 4 and onto ramp after banking in flight with full load caused product to go into vent line. Pig-mat was also not installed under catwalk, hindering ability to quickly spot any leaks should they occur. After mission was complete, it was neglected to run water through ground loading station before disconnection hose lines.