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DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

**CERTIFICATE OF WAIVER OR AUTHORIZATION**

ISSUED TO

Department of Homeland Security – Customs and Border Protection

ADDRESS

1355 Customs Drive  
March ARB, CA 92518

This certificate is issued for the operations specifically described hereinafter. No person shall conduct any operation pursuant to the authority of this certificate except in accordance with the standard and special provisions contained in this certificate, and such other requirements of the Federal Aviation Regulations not specifically waived by this certificate.

OPERATIONS AUTHORIZED

The U.S. Customs and Border Protection using a Predator B UAS(s) in support of their National Security Mission (b) (7)(E) JAS operational area. Generally, CBP operations will be conducted in (b) (7)(E) (b) (7)(E) in the (b) (7)(E) JAS operational area. See Special Provisions.

LIST OF WAIVED REGULATIONS BY SECTION AND TITLE

**STANDARD PROVISIONS**

1. A copy of the application made for this certificate shall be attached and become a part hereof.
2. This certificate shall be presented for inspection upon the request of any authorized representative of the Federal Aviation Administration, or of any State or municipal official charged with the duty of enforcing local laws or regulations.
3. The holder of this certificate shall be responsible for the strict observance of the terms and provisions contained herein.
4. This certificate is nontransferable.

Note-This certificate constitutes a waiver of those Federal rules or regulations specifically referred to above. It does not constitute a waiver of any State law or local ordinance.

**SPECIAL PROVISIONS**

Special Provisions are set forth and attached.

This certificate 2009-WSA-71 is effective from October 1, 2010 through September 30, 2011, and is subject to cancellation at any time upon notice by the Administrator or his/her authorized representative.

BY DIRECTION OF THE ADMINISTRATOR

FAA Headquarters, AJR-36  
(Region)

  
For Ardyth Williams  
(Signature)

September 29, 2010  
(Date)

Air Traffic Manager, Unmanned Aircraft Systems  
(Title)

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## **ATTACHMENT to FAA FORM 7711-1**

**Issued To:** Department of Homeland Security – Customs and Border Protection (CBP)

**Address:** 1355 Customs Drive  
March ARB, CA 92518

**Activity:** Operation of the Predator-B UAS in (b) (7)(E)  
(b) (7)(E) under the jurisdiction of (b) (7)(E)  
(b) (7)(E) generally CBP  
operations will be conducted in (b) (7)(E)  
operational area.

**Purpose:** To prescribe UAS operating requirements (outside of restricted and/or warning area airspace) in the National Airspace System (NAS) for the purpose of training and/or operational flights.

**Dates of Use:** This COA (2009-WSA-71) is valid from October 1, 2010, through September 30, 2011. Should a renewal become necessary, the proponent shall advise the FAA, in writing, no later than 60 days prior to the requested effective date.

### **General Provisions:**

- The review of this activity is based on our current understanding of UAS operations, and the impact of such operations in the NAS, and therefore should not be considered a precedent for future operations. As changes occur in the UAS industry, or in our understanding of it, there may be changes to the limitations and conditions for similar operations.
- All personnel connected with the UAS operation must comply with the contents of this authorization and its provisions.
- This COA will be reviewed and amended as necessary to conform to changing UAS policy and guidance.
- Department of Homeland Security-CBP accepts all liability for operations that occur outside of FAA controlled airspace and is responsible for appropriate coordination. This does not imply that the FAA is aware or authorizes any specific proposed operations that will occur outside FAA jurisdiction.

### **Safety Provisions:**

Unmanned Aircraft (UA) have no on-board pilot to perform see-and-avoid responsibilities, and therefore, when operating outside of restricted areas, special

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provisions must be made to ensure an equivalent level of safety exists for operations had a pilot been on board. In accordance with 14 CFR Part 91, General Operating and Flight Rules, Subpart J-Waivers, 14 CFR 91.903, Policy and Procedures, the following provisions provide acceptable mitigation of 14 CFR 91.113 and must be complied with:

- For the purpose of see-and-avoid, visual observers must be utilized at all times except in Class A airspace, restricted areas, warning areas. The observers may either be ground based or in a chase plane. The UA must remain within a lateral distance of no more than 2.5 NM and 3,000 feet vertically from the visual observer. If the chase aircraft is operating more than 100 ft above/below and or ½ nm laterally, of the UA, the chase aircraft PIC will advise the controlling ATC facility. The distances listed are the maximum, at no time will the UA be operated at a distance beyond the visual line of sight for the visual observer.
- UAS pilots will ensure there is a safe operating distance between manned and unmanned aircraft at all times in accordance with 14 CFR 91.111, *Operating Near Other Aircraft*, and 14 CFR 91.113, *Right-of-Way Rules*. Additionally, UAS operations are advised to operate well clear of all known manned aircraft operations.
- The dropping or spraying of aircraft stores, or carrying of hazardous materials (included ordnance) outside of active Restricted, Prohibited, or Warning Areas is prohibited unless specifically authorized in the Special Provisions of this COA.

#### **Airworthiness Certification Provisions:**

- UA must be shown to be airworthy to conduct flight operations in the NAS.
- Public Use Aircraft must contain one of the following:
  - A civil airworthiness certification from the FAA, or
  - A statement specifying that the Department of Defense Handbook "Airworthiness Certification Criteria" (MIL-HDBK-516), as amended, was used to certify the aircraft or
  - Equivalent method of certification.

#### **Pilot / Observer Provisions:**

- **Pilot Qualifications:** UA pilots interacting with Air Traffic Control (ATC) shall have sufficient expertise to perform that task readily. Pilots must have an understanding of and comply with Federal Aviation Regulations and Military Regulations applicable to the airspace where the UA will operate. Pilots must have in their possession a current (b) (7)(E) [REDACTED] airman medical certificate that has been issued under 14 CFR 67, Medical Standards and Certification, or a military equivalent. 14 CFR 91.17, Alcohol or Drugs, applies to UA pilots.
- Aircraft and Operations Requirements:
  - Flight Below 18,000 Feet Mean Sea Level (MSL).



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- UA operations below 18,000 feet MSL in any airspace generally accessible to aircraft flying in accordance with visual flight rules (VFR) require visual observers, either airborne or ground-based. Use of ATC radar alone does not constitute sufficient collision risk mitigation in airspace where uncooperative airborne operations may be conducted.
- Flights At or Above 18,000 Feet Mean Sea Level (MSL)
  - When operating on an instrument ATC clearance, the UA pilot-in-command must ensure the following:
    1. An ATC clearance has been filed, obtained and followed.
    2. Positional information shall be provide (b) (7)(E)
- **Observer Qualifications:** Observers must have been provided with sufficient training to communicate clearly to the pilot any turning instructions required to stay clear of conflicting traffic. Observers will receive training on rules and responsibilities described in 14 CFR 91.111, *Operating Near Other Aircraft*, 14 CFR 91.113, *Right-of-Way Rules*, cloud clearance, in-flight visibility, and the pilot controller glossary including standard ATC phraseology and communication. Observers must have in their possession a current (b) (7)(E) airman medical certificate that has been issued under 14 CFR 67, Medical Standards and Certification, or a military equivalent. 14 CFR 91.17, Alcohol or Drugs, applies to UA observers.
- **Pilot-in-Command (PIC) –**
  - **Visual Flight Rules (VFR) as applicable:**
    - The PIC is the person directly responsible for the operation of the UA. The responsibility and authority of the pilot in command as described by 14 CFR 91.3 (or military equivalent), applies to the UAS PIC.
    - The PIC operating a UA in line of sight must pass at a minimum the required knowledge test for a commercial pilot certificate, or military equivalent, as stated in 14 CFR 61.125, and must keep their aeronautical knowledge up to date.
    - There is no intent to suggest that there is any requirement for the UAS PIC to be qualified as a crewmember of a manned aircraft.
    - Pilots flying a UA on other than instrument flight plans beyond line of sight of the PIC must possess a minimum of a current commercial pilot certificate, or military equivalent in the category and class, as stated in 14 CFR 61.125.
  - **Instrument Flight Rules (IFR) as applicable:**
    - The PIC is the person directly responsible for the operation of the UA. The responsibility and authority of the pilot in command as described by 14 CFR 91.3 (or military equivalent), applies to the UAS PIC.

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- The PIC must be a certified pilot (minimum of commercial pilot) of manned aircraft (FAA or military equivalent) in category and class of aircraft flown.
- The PIC must also have a current/appropriate instrument rating (manned aircraft, FAA or military equivalent) for the category and class of aircraft flown.
- **Pilot Proficiency – VFR/IFR as applicable:**
  - Pilots will not act as a VFR/ IFR PIC unless they have had three qualified proficiency events within the preceding 90 days.
    - The term “qualified proficiency event” is a UAS-specific term necessary due to the diversity of UAS types and control systems.
    - A qualified proficiency event is an event requiring the pilot to exercise the training and skills unique to the UAS in which proficiency is maintained.
  - Pilots will not act as an IFR PIC unless they have had six instrument qualifying events in the preceding six calendar months (an event that requires the PIC to exercise instrument flight skills unique to the UAS).
- **PIC Responsibilities:**
  - Pilots are responsible for a thorough preflight inspection of the UAS. Flight operations will not be undertaken unless the UAS is airworthy. The airworthiness provisions of 14 CFR 91.7, Civil Aircraft Airworthiness, or the military equivalent, apply.
  - One PIC must be designated at all times and is responsible for the safety of the UA and persons and property along the UA flight path.
  - The UAS pilot will be held accountable for controlling their aircraft to the same standards as the pilot of a manned aircraft. The provisions of 14 CFR 91.13, *Careless and Reckless Operation*, apply to UAS pilots.
- **Pilot/Observer Task Limitations:**
  - Pilots and observers must not perform crew duties for more than one UA at a time.
  - Chase aircraft pilots must not concurrently perform either observer or UA pilot duties along with chase pilot duties.
  - Pilots are not allowed to perform concurrent duties both as pilot and observer.
  - Observers are not allowed to perform concurrent duties both as pilot and observer.

**Standard Provisions:** These provisions are applicable to all operations unless indicated otherwise in the Special Provisions section.

- The UA PIC will maintain direct two-way communications with ATC and have the ability to maneuver the UA per their instructions, unless specified otherwise in the Special Provisions section. The PIC shall comply with all ATC instructions and/or clearances.

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- If equipped, the UA shall operate with an operational mode (b) (7)(E) transponder, with (b) (7)(E) or mode (b) (7)(E) transponder (preferred) set to an ATC assigned squawk.
- If equipped, the UA shall operate with (b) (7)(E)
- (b) (7)(E)
- (b) (7)(E)
- (b) (7)(E)
- (b) (7)(E)
- (b) (7)(E)
- (b) (7)(E)
- Operations outside of restricted areas, warning areas, prohibited areas (designated for aviation use) and/or (b) (7)(E) airspace may (b) (7)(E) (b) (7)(E) in the Special Provisions section.
- (b) (7)(E)
- Operations conducted under VFR rules shall operate at appropriate VFR altitudes for direction of flight (14 CFR 91.159).
- The UA PIC or chase plane PIC (whichever is applicable) will notify ATC of any in flight emergency or aircraft accident as soon as practical.
- (b) (7)(E)
- 
- 
- A copy of this COA will be maintained on site by the PIC or designated representative.
- The Department of Homeland Security – Customs and Border Protection and/or its representatives, is responsible at all times for collision avoidance with non-participating aircraft and the safety of persons or property on the surface with respect to the UAS.

### **Special Provisions:**

1. In the event of a lost link, the UAS pilot (b) (7)(E)

- a. See specific lost link procedures in attachment #3.

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- b. If lost link occur (b) (7)(E)  
[REDACTED]
  - c. (b) (7)(E)  
[REDACTED]
  - d. When outside of restricted/warning area (b) (7)(E)  
[REDACTED]
  - e. (b) (7)(E)  
[REDACTED]
2. All operations outside of Warning areas, Restricted areas, (b) (7)(E) and (b) (7)(E)  
(b) (7)(E)  
[REDACTED]
3. The CBP Predator B UAS Area of Responsibility (AOR) is defined in attachment #1. This operational area includes (b) (7)(E)  
[REDACTED]
4. CBP operations shall be conducted under:
- a. (b) (7)(E)  
[REDACTED]
  - b. (b) (7)(E)  
[REDACTED]
5. Visual observers must be positioned within 2.5 nautical miles laterally and 3000 feet vertically to exercise see-and-avoid responsibilities required by 14 CFR 91.113, *Right-of-Way Rules: except Water Operations*.

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6. All climb and descent transitions to/from (b) (7)(E) [REDACTED]
7. Launch and recovery of the UA shall only be accomplished (b) (7)(E) [REDACTED]
8. Altitude Assignment:
  - a. The CBP UAS shall be assigned (b) (7)(E) [REDACTED]
  - b. Altitude Assignments other than (b) (7)(E) [REDACTED]
    - 1) (b) (7)(E) [REDACTED]
    - 2) (b) (7)(E) [REDACTED]
    - 3) (b) (7)(E) [REDACTED]
    - 4) (b) (7)(E) [REDACTED]

\*An altitude change request from CBP to ATC that will take them into (b) (7)(E) indicates prior approval has been obtained from the appropriate using agency(ies).

9. ATC clearances into the UAS AOR as defined in attachment # (b) (7)(E) [REDACTED]
10. (b) (7)(E) [REDACTED]



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(b) (7)(E)

11. Use of (b) (7)(E) airspace (Attachment 2):

- a. An ATC clearance into (b) (7)(E)
- b. (b) (7)(E)
- c. (b) (7)(E)
- d. Lost Link / Emergency procedures: In the event of a lost link or emergency the Pilot (b) (7)(E)

(b) (7)(E)

12. The following requirements pertain to operations in airspace under the jurisdiction of (b) (7)(E)

a. (b) (7)(E)

b. (b) (7)(E)

c. (b) (7)(E)

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- d. (b) (7)(E) [REDACTED]
- e. (b) (7)(E) [REDACTED]
- f. (b) (7)(E) [REDACTED]
- g. (b) (7)(E) [REDACTED]
- h. (b) (7)(E) [REDACTED]
- i. (b) (7)(E) [REDACTED]
- j. ATC Frequency Assignments: (b) (7)(E) [REDACTED]
- k. Lost Link/Lost Communications:
  - 1) Loss of Command Link:
    - a) (b) (7)(E) [REDACTED]
    - b) (b) (7)(E) [REDACTED]
    - c) (b) (7)(E) [REDACTED]

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d) (b) (7)(E)

e) Lost Communications between Pilot and ATC: (b) (7)(E)

I. Emergency Procedures:

1) Emergency: loss of a critical system, engine and/or electrical failure.

(b) (7)(E)

2) (b) (7)(E)

13. (b) (7)(E) Operations:

a. (b) (7)(E)

b. Observers (b) (7)(E)

c. (b) (7)(E)

1) Departure: (b) (7)(E)

2) (b) (7)(E)

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(b) (7)(E)

- 3) The (b) (7)(E) with the UAS in accordance with the provisions of this COA. Once the UAS has entered (b) (7)(E)

14. Communications Requirements: Any visual observer, radar monitor, or sensor operator charged with providing collision avoidance for the UA must have direct communication with the UA pilot.

15. Lost Communications. CBP shall provide the specific procedures by as defined in Attachment #3 segment that will be utilized in the event of lost communications between the UAS pilot and ATC.

16. Radar/Sensor Observer. The radar/sensor operator must be thoroughly familiar with and possess operational experience with the equipment being utilized for observation and detection of other aircraft for collision avoidance purposes. The CBP shall utilize the (b) (7)(E) whose responsibilities shall include monitoring the (b) (7)(E) (b) (7)(E) as defined in Attachment #1, (b) (7)(E)

17. Flight Planning Requirements: CBP shall file (b) (7)(E)

18. COA Bridge Operations.

a. (b) (7)(E)

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- b. The UA shall adhere to approved LLPs, DCPs and FTPs for the appropriate COA and associated segments where UA flight is being conducted.
  - c. CBP shall provide (b) (7)(E) [REDACTED]
19. Coordination: CBP shall contact (b) (7)(E) [REDACTED] ATC to immediately contact the PIC should radio communications be lost.
20. (b) (7)(E) UAS Operations. Commencing October 21, 2010, CBP is authorized to operate (b) (7)(E) [REDACTED] in the AOR as depicted in Attachment 4 and when the following provisions are met:
- a. (b) (7)(E) [REDACTED]
  - b. (b) (7)(E) [REDACTED]
  - c. (b) (7)(E) [REDACTED]
  - d. CBP shall flight plan and fly (b) (7)(E) [REDACTED]
  - e. (b) (7)(E) [REDACTED]
  - f. (b) (7)(E) [REDACTED]
  - g. (b) (7)(E) [REDACTED]
21. UAS (b) (7)(E) [REDACTED] restriction does not apply if the following criteria are met:
- a. UAS launch and recovery operations shall take place (b) (7)(E) [REDACTED]



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- b. (b) (7)(E) [REDACTED]
  - c. The appropriate number of ground observers shall be in place and have communications with the appropriate controlling agency and Ground Control Station in order to meet the 2.5mile/3000 ft. visual requirement.
  - d. (b) (7)(E) [REDACTED]
  - e. For operations that will depart or arrive (b) (7)(E) the Ground Observer must (b) (7)(E) [REDACTED]
  - f. All ground observers shall undergo additional training (b) (7)(E) [REDACTED]
  - g. (b) (7)(E) [REDACTED]
  - h. The UA shall operate (b) (7)(E) [REDACTED]
  - i. (b) (7)(E) [REDACTED]
22. During the hours that (b) (7)(E) [REDACTED]
23. (b) (7)(E) [REDACTED]
24. Contingency Operations.
- a. Lost Link Points (LLP) are (b) (7)(E) [REDACTED]

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(b) (7)(E)

b. A Divert/Contingency Point (DCP) is (b) (7)(E)

1) For local operations, the DC (b) (7)(E)

2) For transit and/or mission operations that are being conducted in (b) (7)(E)

c. Flight termination i (b) (7)(E)

1) The location of the FTP is based (b) (7)(E)

2) FTPs (b) (7)(E)

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3) (b) (7)(E)

CBP assumes full risk and all liability

(b) (7)(E)

4)

d. In the event of a contingency divert or flight termination (b) (7)(E)

e. In the event of a contingency divert or flight termination (b) (7)(E)

25. CBP will ensure that Crew Resource Management (CRM) training is completed by all crew members before flying operational or training missions. The course must consist of initial training, as well as CRM recurrent training during every recurrent training cycle, not to exceed a 12 month interval between initial training and recurrent training or between subsequent recurrent training sessions.

26. The UA PIC shall hold, at a minimum (b) (7)(E) certificate or equivalent.

**NOTAM:** A (b) (7)(E) Notice to Airmen (b) (7)(E)

- Name and Address of pilot filing NOTAM request
- Location, Altitude or the operating Area
- Time and nature of the activity

(b) (7)(E)

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**Incident / Accident and Normal Reporting Provisions:** The following information is required to document routine and unusual occurrences associated with UAS activities in the NAS.

- The proponent for the COA shall provide the following information to [Donald.E.Grampp@faa.gov](mailto:Donald.E.Grampp@faa.gov) on a monthly basis:
  - Number of flights conducted under this COA.
  - Pilot duty time per flight.
  - Unusual equipment malfunctions (hardware/software).
  - Deviations from ATC instructions.
  - Operational/coordination issues.
  - All periods of loss of link (telemetry, command and/or control)
- The following shall be submitted via email, COA On-line or phone (202-385-4542, cell 443-569-1732) to [Donald.E.Grampp@faa.gov](mailto:Donald.E.Grampp@faa.gov) **within 24 hours and prior to any additional flight under this COA:**
  - All accidents or incidents involving UAS activities, including lost link.
  - Deviations from any provision contained in the COA.

This COA does not, in itself, waive any Federal Aviation Regulation (FAR) nor any state law or local ordinance. Should the proposed operation conflict with any state law or local ordinance, or require permission of local authorities or property owners, it is the responsibility of the Department of Homeland Security – Customs and Border Protection to resolve the matter. (b) (7)(E)

The Department of Homeland Security – Customs and Border Protection is hereby authorized to operate the Predator B Unmanned Aircraft System UAS in the operations area depicted in "Activity" above and Attachment 1 below.

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## Attachment 1

(b) (7)(E)

## Area of Responsibility (AOR), Perimeter Descriptions

**Full UAS Operational area as defined** as Waypoints (1) thru (40) to point of beginning (1). Points (2) thru (17) (b) (7)(E) of the AOR are coincidental with (b) (7)(E)

Waypoint	Latitude	Longitude	Waypoint	Latitude	Longitude	Waypoint	Latitude	Longitude
1	(b) (7)(E)	(b) (7)(E)	21	(b) (7)(E)	(b) (7)(E)	41	(b) (7)(E)	(b) (7)(E)
2			22			42		
3			23			43		
4			24			44		
5			25			45		
6			26			46		
7			27			47		
8			28			48		
9			29			49		
10			30			50		
11			31			51		
12			32			52		
13			33			53		
14			34			54		
15			35			55		
16			36			56		
17			37			57		
18			38			58		
19			39			59		
20			40			60		



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## Attachment 1 (cont'd)

Segment Perimeters:

(b) (7)(E)

o point of beginning

(b) (7)(E)

to point of beginning

(b) (7)(E)

point of beginning

(b) (7)  
(E)

to point of beginning

(b) (7)  
(E)

to point of beginning.

(b) (7)  
(E)

o point of beginning

(b) (7)(E)

o point of beginning.

(b) (7)  
(E)

o point of beginning

(b) (7)(E)

o point of beginning

(b)  
(7)(E)

to point of beginning

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## Attachment 1 (cont'd)

(b) (7)  
(E)

to point of beginning

(b) (7)  
(E)

point of beginning

(b)  
(7)(E)

o point of beginning

(b)  
(7)(E)

o point of beginning

(b) (7)  
(E)

point of beginning

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Attachment 1 (cont'd)

(b) (7)(E)



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## Attachment 2

(b) (7)(E)



NOTE: (b) (7)(E)



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### Attachment 3

## **EMERGENCY PROCEDURES**

**Emergency Termination:** Unable to sustain flight and return to base

In the event of Flight Termination, the PIC (b) (7)(E)

- (b) (7)(E)
- (b) (7)(E)
- (b) (7)(E)
- (b) (7)(E)

*Note: As with manned aircraft operations, the UA may not be able to proceed in a controlled fashion to the flight termination location.*

**Lost Link:** Loss of command uplink, downlink, or both links between the ground control station and the UA

- In the event of a Lost Link condition, the PIC (b) (7)(E)
- (b) (7)(E)
- (b) (7)(E)
- (b) (7)(E)
- (b) (7)(E)
- (b) (7)(E)

(b) (7)(E)



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### Attachment 3 (cont'd)

- (b) (7)(E) [REDACTED]
- (b) (7)(E) [REDACTED]
- (b) (7)(E) [REDACTED] the PIC shall coordinate with ATC  
(and (b) (7)(E) as required) (b) (7)(E) [REDACTED],  
(b) (7)(E) [REDACTED]
- (b) (7)(E) [REDACTED]

**Lost Communications:** Loss of radio communications between the PIC and ATC

(b) (7)(E) [REDACTED]

In the event of Lost Radio Communications between the PIC and ATC, the PIC (b) (7)(E) [REDACTED]

- (b) (7)(E) [REDACTED]
- (b) (7)(E) [REDACTED]

Attachment 3 (cont'd)

(b) (7)  
(E)

[illegible]


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## Attachment 4

(b) (7)(E)



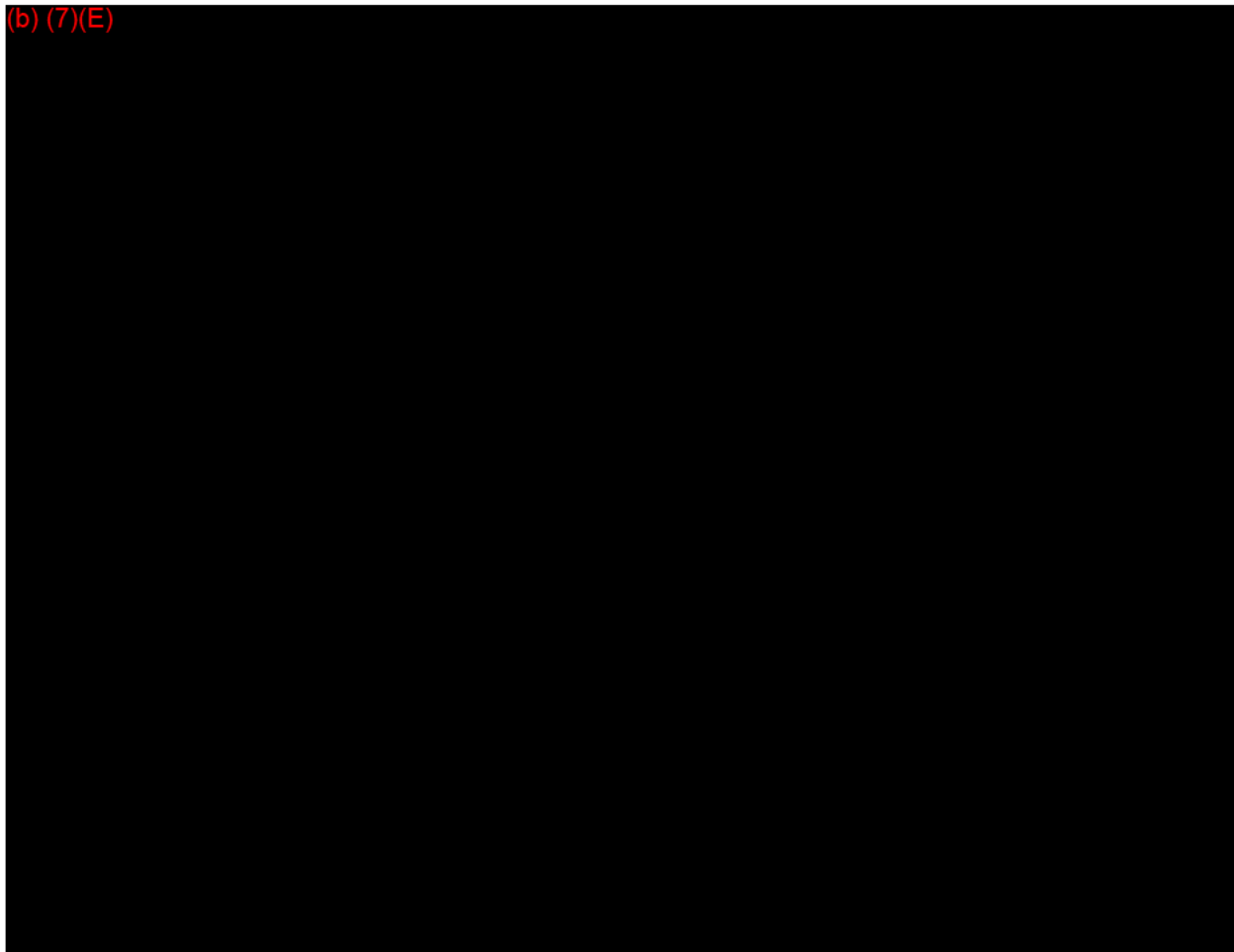
(b) (7)(E) UAS Operations (b) (7)(E)



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## Attachment 4 (cont'd)

(b) (7)(E)

**(b) (7)(E) OPERATIONS FTPs AND LLPs**

	<b>FTP</b>	<b>LOST LINK</b>
(b) (7)(E)	(b) (7)(E)	(b) (7)(E)
(b) (7)(E)	(b) (7)(E)	(b) (7)(E)

**355TH WING AND DEPARTMENT OF HOMELAND SECURITY, U.S.  
CUSTOMS AND BORDER PROTECTION**

**UNMANNED AIRCRAFT SYSTEM LETTER OF PROCEDURE**

**Effective Date: July 15, 2008**

**Subject: Unmanned Aircraft System Use of the (b) (7)(E)**

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This letter establishes procedures between the 355th Wing (355 WG) and Department of Homeland Security (DHS), U.S. Customs and Border Protection (CBP) in support of CBP Predator-B Unmanned Aircraft Systems (UAS) operating (b) (7)(E) (b) (7)(E) UAS Area of Responsibility (AOR)", which will hereafter be referred to in this document as the "AOR". This AOR includes (b) (7)(E) (b) (7)(E) also referred to in this document as the (b) (7)(E) Segments of the AOR. This letter of procedure (LOP) is in effect during (b) (7)(E) The FAA-issued Certificate of Authorization (COA) for CBP Predator-B operations (b) (7)(E) (b) (7)(E) supplements this LOP. Reference authority documents include, but are not limited to, the following:

- a. FAA Order 7610.4, Special Military Operations
- b. Current (b) (7)(E) and 355 WG Letter of Agreement
- c. DoD FLIGHT INFORMATION PUBLICATION (FLIP) AP/1A, Area Planning, Special Use Airspace, North and South America
- d. DoD FLIGHT INFORMATION PUBLICATION (FLIP) AP/1B, Area Planning, Military Training Routes, North and South America
- e. Department of Transportation, FAA Advisory Circular, AC 91-57, Model Aircraft Operating Standards, dated June 9, 1981
- f. DHS-DoD Request for Assistance Agreement, dated September 28, 2005
- g. Current FAA Certificate of Authorization Issued to Department of Homeland Security, U.S. Customs and Border Protection for Operations (b) (7)(E) (b) (7)(E)
- h. Current UAS Supplement to the Aviation Operations Handbook
- j. Current (b) (7)(E) and Department of Homeland Security, U.S. Customs and Border Protection Unmanned Aircraft System Letter of Procedure
- k. Current CBP Air and Marine Operations Center Unmanned Aircraft Systems Procedures Letter

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**SENSITIVE SECURITY INFORMATION**

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**1. CANCELLATION.** 355 WG and DEPARTMENT OF HOMELAND SECURITY, US CUSTOMS AND BORDER PROTECTION (DHS US CBP) UNMANNED AIRCRAFT SYSTEM LETTER OF PROCEDURE, dated April 1, 2006.

**2. IDENTIFICATION OF AGENCIES FOR PURPOSES OF THIS DOCUMENT**

a. Office of Primary Responsibility for operations during scheduled military flying (b) (7)(E) is the 355th Operations Support Squadron (355 OSS), Airspace Management office (OSOA) at DSN (b) (7)(E) or commercial (b) (7)(E)

b. Scheduling Agency for the (b) (7)(E) is the 355 OSS, Scheduling office (OSOSO) at DSN (b) (7)(E) or commercial at (b) (7)(E)

c. Controlling Agency for the (b) (7)(E) (b) (7)(E) however, air traffic control service is not provided to (b) (7)(E). All aircraft, including the CBP UAS, will exercise real-time airspace de-confliction on the appropriate discrete frequency (see Attachment 2).

d. The CBP (b) (7)(E) will assume radar monitoring responsibility as soon as radar contact is established. (b) (7)(E) will ensure the UA remains (b) (7)(E)

e. U.S. Customs and Border Protection (b) (7)(E) exercises CBP UAS tactical control.

f. Mission scheduling and operational support to CBP UAS operations is provided by the CBP UAS (b) (7)(E) detachment located at the UAS operating site, hereafter referred to as (b) (7)(E)

g. The assigned CBP Command Duty Officer (CDO) located at the CBP UAS operating site is the primary point of contact for the safe, effective execution of each CBP UAS mission. The CDO can be reached at (b) (7)(E)

h. All operations will be conducted in accordance with (IAW) the reference authority documents cited on page one. .

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**3. RESPONSIBILITIES:**

a. The (b) (7)(E) Lead Operations Specialist (b) (7)(E)

(1) Provide 355 OSS a schedule of CBP UAS flight activity (b) (7)(E)

(2) Provide the 355<sup>th</sup> flying schedule to the CDC (b) (7)(E)

(3) (b) (7)(E)

b. (b) (7)(E) shall provide training, in coordination with the GA-ASI Site Team Leader, for first responders to any UAS mishap, to include training on any unique CBP UAS operating or handling characteristics, and hazardous materials

c. The Pilot in Command (PIC) for each flight (b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

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(b) (7)(E)

(7) Maintain Lost Link mission routing and initial Lost Link parameters as described in paragraph 6 (Lost Link Procedures) (b) (7)(E)

(b) (7)(E)

d. 355 OSS/OSOSO (b) (7)(E)

(1) Coordinate with (b) (7)(E) for desired airspace use by the CBP UA.

(2) Schedule (b) (7)(E) airspace as appropriate for military flying operations and provide (b) (7)(E) online access to a daily, weekly, and monthly military flight schedule, with updates as appropriate (b) (7)(E)

(3) Advise other scheduled military users (b) (7)(E)

(4) (b) (7)(E)

e. The (b) (7)(E)

(1) Confirm that the UAS radios and transponder are operational (b) (7)(E)

(2) (b) (7)(E)

(3) Ensure that the PIC operates the U (b) (7)(E)

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(b) (7)(E)

(4) (b) (7)(E)

#### 4. GENERAL PROCEDURES

a. CBP UA flight operations (b) (7)(E) Segments of the AOR may (b) (7)(E) as permitted by a COA. Although the AOR defines (b) (7)(E)

b. All navigation systems (b) (7)(E) transponder equipment (b) (7)(E) Air Traffic Control (ATC) and (b) (7)(E) radio communication systems, and the UAS command link will be operational prior to takeoff. The UAS will operate (b) (7)(E)

5. (b) (7)(E)

a. Published vertical limit (b) (7)(E)

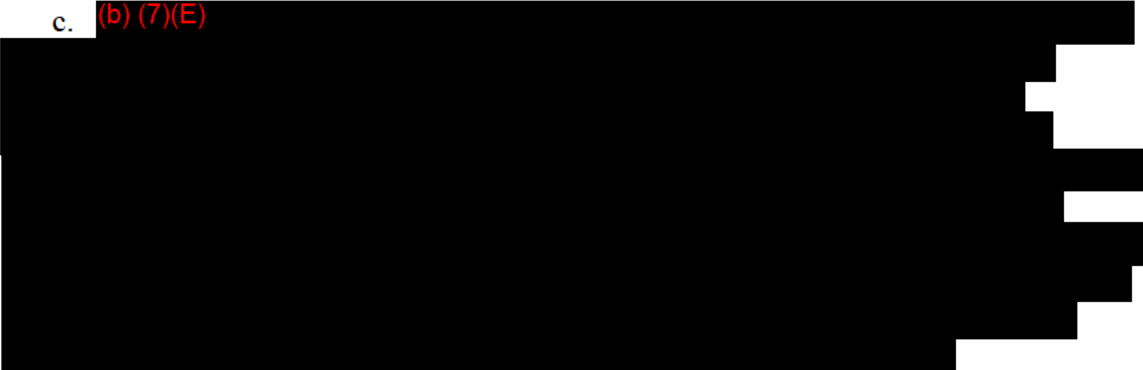
b. (b) (7)(E)

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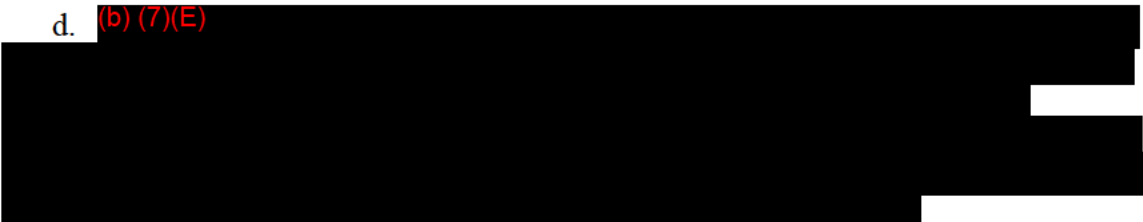
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c. (b) (7)(E)




d. (b) (7)(E)




e. (b) (7)(E)



(1) (b) (7)(E)



(2) (b) (7)(E)



(b) (7)(E)



## 6. LOST LINK PROCEDURES:

Different flight profiles exist for lost link procedures depending on the location of the UA when a Lost Link condition arises. The lost link procedures are as follows:

- a. When a loss of aircraft command link occurs, the PIC (b) (7)(E)

[REDACTED]

- b. The (b) (7)(E)

[REDACTED]

## 7. LOST COMMUNICATIONS PROCEDURES:

The UA will (b) (7)(E) IAW COA procedures.

## 8. TRANSPONDER FAILURE:

If the UAS transponder fails, the PIC (b) (7)(E)

[REDACTED]

## 9. EMERGENCIES:

- a. For any UAS emergency situation, the UAS (b) (7)(E)

[REDACTED]

- b. In the event that a normal recover (b) (7)(E)

[REDACTED]

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(b) (7)(E)

c. If the UA (b) (7)(E)

d. Flight Termination. In the event of a flight termination (b) (7)(E)

e. UAS Mishap (b) (7)(E)

## 10. ADMINISTRATION:

a. CBP will coordinate any proposed changes to the COA (b) (7)(E)

355 WG prior to implementation.

b. The 355 WG will coordinate any proposed changes to the 355 WG (b) (7)(E) Letter of Agreement affecting CBP UAS operations (b) (7)(E) Segments of the (b) (7)(E) UAS AOR prior to implementation.

c. The (b) (7)(E) shall initiate a joint review of this LOP (b) (7)(E) following commencement of CBP UAS operations (b) (7)(E) Segments of the (b) (7)(E) UAS AOR, and every (b) (7)(E) thereafter to determine the need for revision/modifications. This does not preclude proposed amendments to this LOP made by any signatory party at

## SENSITIVE SECURITY INFORMATION

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any time; such amendments shall be effective upon written approval by all parties below.

d. Financial liability rests with DHS for any expenses related to a CBP UAS mishap, reclamation, and subsequent investigation.

(b) (6), (b) (7)(C)

USAF

(b) (6), (b) (7)(C)

355th Fighter Wing

Date: 18 JUL 08

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

Air Operations

Tucson Air Branch

Date: 7-31-08

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

AMOC  
Riverside, California

Date: 7-31-08

3 Attachments:

1. Aircraft Separation Agreement
2. (b) (6), (b) (7)(C) MOA Subdivisions
3. Predator-B Characteristics/Onboard Equipment

SENSITIVE SECURITY INFORMATION

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## ATTACHMENT ONE

## Aircraft Separation Agreement

The 355 Fighter Wing and Department of Homeland Security jointly assume the responsibilities for the separation of U.S. Customs and Border Protection unmanned aircraft and military aircraft operating in the (b) (7)(E) portion of the (b) (7)(E) IAS AOR. The AOR shall be defined in the COA. This agreement is applicable whenever the (b) (7)(E) is active.

(b) (6), (b) (7)(C)

USAF

(b) (6), (b) (7)(C)

355th Fighter Wing

Date: 12 Jul 08

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

Air Operations  
Air Branch

Date: 7-31-08

(b) (6), (b) (7)(C)

Riverside, California

Date: 7-31-08

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## ATTACHMENT TWO

355<sup>th</sup> WING (355 WG) AND DEPARTMENT OF HOMELAND SECURITY, US CUSTOMS AND BORDER PROTECTION (DHS US CBP)  
UNMANNED AIRCRAFT SYSTEM LETTER OF PROCEDURE

(b) (7)(E)

### MOA SUBDIVISIONS

(b) (7)(E)

————— Departure expect (b) (7)  
..... Recovery expect (E)

#### MOA ALTITUDES

(b) (7)(E)

(b) (7)(E)

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**ATTACHMENT THREE****Predator-B Characteristics / Onboard Equipment**

1. Cruise speed is (b) (7)(E) knots indicated airspeed (KIAS), and maximum dash speed is (b) (7)(E). The service ceiling is (b) (7)(E) MSL. Endurance speed is (b) (7)(E).
2. The PIC has direct UAS control (b) (7)(E).
3. On-board equipment and capabilities:
  - a. The UAS is equipped with (b) (7)(E) GPS systems.
  - b. The UAS has the capability for (b) (7)(E). If the control link from the GCS is lost, the UAS (b) (7)(E).
  - c. The UAS has (b) (7)(E) transponder (b) (7)(E) and will (b) (7)(E).
  - d. The UAS System (b) (7)(E).
  - e. (b) (7)(E).
  - f. The UAS will normally be equipped with (b) (7)(E). Additionally, it may also carry (b) (7)(E) Synthetic Aperture Radar with (b) (7)(E).

**SENSITIVE SECURITY INFORMATION**

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g. There are no explosive charges, radioactive materials, or security-classified components onboard the UAS. However, airframe composite fibers, petroleum-products, battery acid, and some sensor components do pose a respiratory hazard to personnel, following a mishap.

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**56<sup>TH</sup> FIGHTER WING, AND DEPARTMENT OF HOMELAND SECURITY, U.S.  
CUSTOMS AND BORDER PROTECTION**

**UNMANNED AIRCRAFT SYSTEM LETTER OF PROCEDURE (LOP)**

**Effective Date:**

**Subject: UAS Operations in the** (b) (7)(E)

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This letter establishes procedures between the 56<sup>th</sup> Fighter Wing (56FW) and Department of Homeland Security (DHS), U.S. Customs and Border Protection (CBP) in support of CBP Predator-B Unmanned Aircraft Systems (UASs) operating (b) (7)(E)

(b) (7)(E) UAS Area of Responsibility (AOR)”, which will hereafter be referred to in this document as the “AOR”. This AOR includes (b) (7)(E)

(b) (7)(E) the AOR. This letter of procedure (LOP) is in effect during (b) (7)(E)

The FAA-issued Certificate of Authorization (COA) for CBP Predator-B operations (b) (7)(E) (b) (7)(E) supplements this LOP. Reference authority documents include, but are not limited to, the following:

- a. FAA Order 7610.4, Special Military Operations
- b. DoD FLIGHT INFORMATION PUBLICATION (FLIP) AP/1A, Area Planning, Special Use Airspace, North and South America
- c. DoD FLIGHT INFORMATION PUBLICATION (FLIP) AP/1B, Area Planning, Military Training Routes, North and South America
- d. DHS-DoD Request for Assistance Agreement, dated September 28, 2005
- e. Current FAA Certificate of Authorization Issued to Department of Homeland Security, U.S. Customs and Border Protection for Operations (b) (7)(E) (b) (7)(E) to the CBP Aviation Operations Handbook (AOH), November 2006
- f. Current (b) (7)(E) and Department of Homeland Security, U.S. Customs and Border Protection Unmanned Aircraft System Letter of Procedure
- g. Current CBP Air and Marine Operations Center Unmanned Aircraft Systems Procedures Letter

## 1. IDENTIFICATION OF AGENCIES FOR PURPOSES OF THIS DOCUMENT

- a. Office of Primary Responsibility for operations during scheduled military flying (b) (7)(E) (b) (7)(E) is the 56th Range Management Office (RMO).
- b. Scheduling Agency for the (b) (7)(E) is the 56th RMO.
- c. Controlling Agency for (b) (7)(E) however, air traffic control service is not provided to (b) (7)(E). The 56th RMO Range Operations Coordination Center (ROCC) will maintain real-time situational awareness of the airspace during scheduled military operations.
- d. The CBP (b) (7)(E) will assume flight-following responsibility as soon as radar contact is established with the UA. (b) (7)(E) will ensure that the UA remains within the (b) (7)(E) (b) (7)(E) (b) (7)(E).
- e. U.S. Customs and Border Protection (b) (7)(E) exercises CBP UAS tactical control.
- f. Mission scheduling and operational support to CBP UAS operations is provided by the CBP UAS (b) (7)(E) detachment located at the UAS operating site, hereafter referred to as (b) (7)(E).
- g. The assigned CBP Command Duty Officer (CDO) located at the CBP UAS operating site is the primary point of contact for the safe, effective execution of each CBP UAS mission.
- h. All operations will be conducted in accordance with (IAW) the reference authority documents cited on page one.

## 2. RESPONSIBILITIES:

- a. The (b) (7)(E) Lead Operations Specialist shall:
  1. Coordinate with 56th RMO for airspace to support/de-conflict UA operations.

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2. Provide 56th RMO a schedule of CBP UA flight (b) (7)(E) [REDACTED]
  3. Plan CBP UAS flight activity (b) (7)(E) [REDACTED] the maximum extent that the UAS mission allows.
- b. (b) (7)(E) [REDACTED] shall:
1. Coordinate with the 56th RMO so that any mishaps resulting from CBP UAS operations are initially responded to in accordance with (IAW) appropriate mishap plans and procedures. Each agency will initiate respective mishap plans.
  2. Provide training, in coordination with the GA-ASI Site Team Leader, for first responders to any UAS mishap on military land, to include training on any unique CBP UAS operating or handling characteristics, and hazardous materials.
- c. The GA-ASI Pilot in Command (PIC) for each flight (b) (7)(E) [REDACTED]
1. (b) (7)(E) [REDACTED]
  2. (b) (7)(E) [REDACTED]
  3. (b) (7)(E) [REDACTED]
  4. (b) (7)(E) [REDACTED]
  5. (b) (7)(E) [REDACTED]

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(b) (7)(E)

6.

(b) (7)(E)

7. Maintain Lost Link mission routing and initial Lost Link parameters as described in paragraph 5 (Lost Link Procedures). (b) (7)(E)

8.

(b) (7)(E)

d. The

(b) (7)(E)

1. Confirm that the UAS radios and transponder are operational (b) (7)(E)

2.

(b) (7)(E)

3.

(b) (7)(E)

4.

(b) (7)(E)

5. Ensure that the PIC operates the UA (b) (7)(E)

(b) (7)(E)

6.

(b) (7)(E)

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7. Ensure the 56<sup>th</sup> RMO ROCC is advised of UA status (b) (7)(E) (b) (7)(E)

e. 56<sup>th</sup> RMO shall:

1. Schedule (b) (7)(E) airspace as appropriate for military flying operations and provide (b) (7)(E) a daily, weekly, and monthly military flight schedule, with updates as appropriate (b) (7)(E)
2. Publish a "Military Range Notice to Airmen (NOTAM)" to inform all (b) (7)(E)
3. Advise other scheduled military users (b) (7)(E)

f. 56<sup>th</sup> RMO ROCC shall:

1. Maintain situational awareness of the UA position and advise military flights as required.
2. Approve UA access (b) (7)(E)
3. Approve access (b) (7)(E) on a non-conflicting basis with military (b) (7)(E)
4. Coordinate with military users for required airspace necessary for UA mission execution. Communicate directly with either the UA PIC or (b) (7)(E)
5. Notify (b) (7)(E) when the 56<sup>th</sup> RMO ROCC (b) (7)(E)

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### 3. GENERAL PROCEDURES

- a. CBP UA flight operations (b) (7)(E) Segments of the AOR may occur (b) (7)(E) as permitted by a COA. Although the AOR defines a (b) (7)(E) the UA will normally operate (b) (7)(E) (b) (7)(E) The UA may operate (b) (7)(E) UA operations will be conducted (b) (7)(E) on the altimeter setting of (b) (7)(E) inches of mercury.
- b. All navigation systems (b) (7)(E) transponder equipment (b) (7)(E) Air Traffic Control (ATC) and (b) (7)(E) radio communication systems, and the UAS command link will be operational prior to takeoff. The UAS will operate with (b) (7)(E) (b) (7)(E)

### 4. (b) (7)(E)

(b) (7)(E)

- a. (b) (7)(E) Segment UA Entry/Exit Points. The UAS will operate (b) (7)(E) (b) (7)(E)

1. Entry and exit will be at a (b) (7)(E) depending on direction of flight, entry into this airspace (b) (7)(E) (b) (7)(E)

### 5. (b) (7)(E)


- a. (b) (7)(E)

(b) (7)(E)



b. (b) (7)(E) Segment UA Entry/Exit Points.

1. Entry and exit will be (b) (7)(E) depending on  
direction of flight, entry into this airspace will be (b) (7)(E)



(b) (7)(E)

airspace coordination, and advisories.

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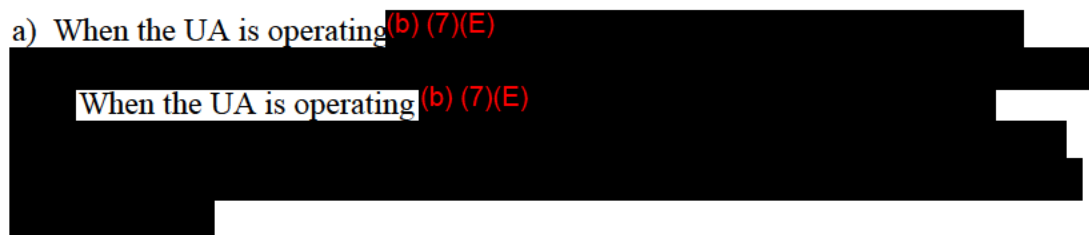
(b) (7)(E)



c. Separation/de-confliction methods that may be used between military and CBP UAS aircraft operating in the (b) (7)(E) Segments of the AOR:

1. Scheduling of specific airspace between CBP UAS and 56<sup>th</sup> RMO.

a) When the UA is operating (b) (7)(E)



When the UA is operating (b) (7)(E)

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- b) When (b) (7)(E) [REDACTED]  
[REDACTED] n these cases, the UA may operate (b) (7)(E) [REDACTED]  
[REDACTED]

- c) (b) (7)(E) [REDACTED]  
[REDACTED]

2. 56<sup>th</sup> RMO ROCC, UAS PIC, and military pilot-to-pilot de-conflictio (b) (7)(E) [REDACTED]  
[REDACTED]

## 5. LOST LINK PROCEDURES

Different flight profiles exist for lost link procedures depending on the location of the UA when a Lost Link condition arises. The Lost Link procedures are as follows:

- a. When a loss of aircraft command link occurs, the PIC (b) (7)(E) [REDACTED]  
(b) (7)(E) [REDACTED]

- b. During the Lost Link emergency, the PIC (b) (7)(E) [REDACTED]  
(b) (7)(E) [REDACTED]

- c. The (b) (7)(E) [REDACTED] will provide flight-following updates (b) (7)(E) [REDACTED]  
(b) (7)(E) [REDACTED]

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## 6. LOST COMMUNICATIONS PROCEDURES

The UA will (b) (7)(E) LAW COA procedures

## 7. TRANSPONDER FAILURE

If the UAS transponder fails, the PIC (b) (7)(E)  
(b) (7)(E)

## 8. EMERGENCIES

- a. For any UAS emergency situation (b) (7)(E) the UAS PIC (b) (7)  
(b) (7)(E)

- b. Flight Termination. In the event that a normal recovery (b) (7)(E) (or alternate recovery airfield) cannot be realized, poses too high a risk, or the airworthiness of the UA for a normal recovery is in doubt (e.g., bird-strike, lightning, or structural damage), the PIC (b) (7)(E)

- c. If the UA cannot maintain (b) (7)(E)  
(b) (7)(E)

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- d. UA Mishap (b) (7)(E)  
(b) (7)(E)

1. If the UA crashes (b) (7)(E)  
(b) (7)(E)

2. If the UA crashes (b) (7)(E)

## 9. ADMINISTRATION

- a. CBP will coordinate any proposed changes to the COA (b) (7)(E)  
(b) (7)(E) prior to FAA implementation.
- b. The 56<sup>th</sup> RMO will coordinate any proposed changes to the 56th FW (b) (7)(E)  
(b) (7)(E) Letter of Agreement affecting CBP UAS operations (b) (7)(E)  
(b) (7)(E) UAS AOR prior to implementation.
- c. The (b) (7)(E) shall initiate a joint review of this LOP (b) (7)(E)  
(b) (7)(E) following commencement of CBP UAS operations (b) (7)(E)  
(b) (7)(E) CBP UAS AOR, and (b) (7)(E)  
thereafter to determine the need for revision/modifications. This does not preclude  
proposed amendments to this LOP made by any signatory party at any time; such  
amendments shall be effective upon written approval by all parties below.

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- d. Financial liability rests with the DHS for any expenses related to a CBP UAS mishap, reclamation, and subsequent investigation. DHS will reimburse all support required by the 56th RMO and contract personnel. A semi-annual review will be conducted to determine if there is any cost associated with the support provided.

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

56th Fighter Wing

USAF

DATE: 30 Jul 08

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

Air Operations  
CBP Air and Marine, Tucson

DATE: 08-07-08

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

Range Management Office

DATE: 30 July 2008

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

AMOC  
Riverside, California

DATE: 7-31-08

#### 4 ATTACHMENTS:

1. Aircraft Separation Agreement

(b) (7)(E)

2. [REDACTED]
3. Predator B Characteristics / Onboard Equipment

(b) (7)(E)



## ATTACHMENT ONE

## Aircraft Separation Agreement

The Department of Defense and Department of Homeland Security jointly assume the responsibilities for the separation of U.S. Customs and Border Protection unmanned aircraft operating in the (b) (7)(E)

UAS AOR and military aircraft operating (b) (7)(E)

(b) (7)(E) UAS AOR shall be defined in the COA. This agreement is applicable whenever the (b) (7)(E)

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

USAF

(b) (6), (b) (7)(C) 56th Fighter Wing

(b) (6), (b) (7)(C)

Range Management Office

DATE: 30 Jul 08

DATE: 30 July 2008

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

(b) (6), (b) (7) (b) (6), (b) (7)(C)  
(C)

(b) (6), (b) (7)(C)

Riverside, California

8-7-08

DATE: 7-31-08

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**ATTACHMENT TWO**

(b) (7)(E)



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**ATTACHMENT THREE****Predator-B Characteristics / Onboard Equipment**

**Note: The following is provided as a basic description of the CBP UAS Predator B system. On-board equipment/payloads and capabilities may vary slightly between aircraft.**

1. Cruise speed is (b) (7)(E) knots indicated airspeed (KIAS), and maximum dash speed is (b) (7)(E). The service ceiling is (b) (7)(E) MSL. Endurance speed is (b) (7)(E).
2. The PIC has direct UAS control for (b) (7)(E).
3. On-board equipment and capabilities:
  - a) The UAS is equipped with (b) (7)(E) GPS systems.
  - b) The UAS has the capability for (b) (7)(E). If the control link from the GCS is lost, the UAS will fly (b) (7)(E)."
  - c) The UAS has (b) (7)(E) and will (b) (7)(E).
  - d) The UAS System (b) (7)(E).
  - e) (b) (7)(E).

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- f) The UAS will normally be equipped with (b) (7)(E) [REDACTED]  
(b) (7)(E) [REDACTED] Additionally, it may also carry (b) (7)(E) [REDACTED] Synthetic Aperture  
Radar with (b) (7)(E) [REDACTED]  
[REDACTED]
- g) There are no explosive charges, radioactive materials, or security-classified components onboard the UAS. However, airframe composite fibers, petroleum-products, battery acid, and some sensor components do pose a respiratory hazard to personnel, following a fire.

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**ATTACHMENT FOUR**

**CBP UAS AOR**

(b) (7)(E)

(b) (7)(E)

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(b) (7)(E)

**Operational Area, Perimeter Descriptions**

**Full UAS Operational area as defined as Waypoints (1) thru (40) to point of beginning (1). Points (2) thru (17) (b) (7)(E) the AOR are (b) (7)(E)**  
 (b) (7)(E)

Waypoint	Latitude	Longitude	Waypoint	Latitude	Longitude	Waypoint	Latitude	Longitude
1	(b) (7)(E)	(b) (7)(E)	21	(b) (7)(E)	(b) (7)(E)	41	(b) (7)(E)	(b) (7)(E)
2			22			42		
3			23			43		
4			24			44		
5			25			45		
6			26			46		
7			27			47		
8			28			48		
9			29			49		
10			30			50		
11			31			51		
12			32			52		
13			33			53		
14			34			54		
15			35			55		
16			36			56		
17			37			57		
18			38			58		
19			39			59		
20			40					

**SENSITIVE SECURITY INFORMATION**

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Segment Perimeters:

(b) (7)(E)

to point of beginning

(b) (7)(E)

point of beginning

(b) (7)(E)

to point of beginning

(b) (7)  
(E)

to point of beginning.

(b) (7)  
(E)

to point of beginning

(b) (7)  
(E)

o point of beginning

(b) (7)  
(E)

to point of beginning

(b) (7)(E)

to point of beginning

(b) (7)(E)

to point of beginning

(b) (7)  
(E)

to point of beginning

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(b) (7)  
(E)

point of beginning

(b) (7)(E)

to point of beginning

(b) (7)(E)

point of beginning

(b)  
(7)(E)

o point of beginning

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# Sensitive Security Information



U.S. Customs and  
Border Protection

## **This is a Cover Sheet**

**WARNING:** This record contains Sensitive Security Information that is controlled under 49 CFR parts 15 and 1520. No part of this record may be disclosed to persons without a "need to know", as defined in 49 CFR parts 15 and 1520, except with the written permission of the Administrator of the Transportation Security Administration, or the Secretary of Transportation. Unauthorized disclosure may result in civil penalty or other action. For U.S. Government agencies, public release is governed by 5 U.S.C. 552 and 49 CFR parts 15 and 1520.

**162<sup>ND</sup> FIGHTER WING AND DEPARTMENT OF HOMELAND SECURITY, U.S.  
CUSTOMS AND BORDER PROTECTION**

**UNMANNED AIRCRAFT SYSTEM LETTER OF PROCEDURE**

**Effective Date: 7 February, 2007**

**Subject: Unmanned Aircraft System Use of the (b) (7)(E)**

This letter establishes procedures between the 162<sup>nd</sup> Fighter Wing (162 FW) and Department of Homeland Security (DHS) Customs and Border Protection (CBP) in support of CBP Predator-B Unmanned Aircraft Systems (UASs) operating (b) (7)(E) UAS Area of Responsibility (AOR)" which will hereafter be referred to in this document as the "AOR".

This AOR includes the (b) (7)(E)

(b) (7)(E) also referred to in this document as (b) (7)(E) Segment of the AOR. This letter of procedure (LOP) is in effect during (b) (7)(E)

(b) (7)(E) The FAA-issued Certificate of Authorization (COA) for CBP Predator-B operations (b) (7)(E) supplements this LOP. Reference authority documents include, but are not limited to, the following:

- a. FAA Order 7610.4, Special Military Operations
- b. Current (b) (7)(E) and 162 FW Letter of Agreement
- c. DoD FLIGHT INFORMATION PUBLICATION (FLIP) AP/1A, Area Planning, Special Use Airspace, North and South America
- d. DoD FLIGHT INFORMATION PUBLICATION (FLIP) AP/1B, Area Planning, Military Training Routes, North and South America
- e. Department of Transportation, FAA Advisory Circular, AC 91-57, Model Aircraft Operating Standards, dated June 9, 1981
- f. DHS-DoD Request for Assistance Agreement, dated September 28, 2005
- g. Current FAA Certificate of Authorization Issued to Department of Homeland Security, U.S. Customs and Border Protection for Operations (b) (7)(E)
- h. Current FAA Certificate of Authorization Issued to Department of Homeland Security, U.S. Customs and Border Protection for Operations (b) (7)(E) Airspace
- i. Current (b) (7)(E) UAS Site Operations CBP Standard Operating Procedures
- j. Current (b) (7)(E) and Department of Homeland Security, U.S. Customs and Border Protection Unmanned Aircraft System Letter of Procedure
- k. Current CBP Air and Marine Operations Center Unmanned Aircraft Systems Procedures Letter

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**1. IDENTIFICATION OF AGENCIES FOR PURPOSES OF THIS DOCUMENT**

- a. Office of Primary Responsibility for operations during scheduled military flying (b) (7)(E) is the 162<sup>nd</sup> Operations Group, Supervisor of Flying (SOF) at commercial phone (b) (7)(E)
- b. Scheduling Agency for the (b) (7)(E) is the 162<sup>nd</sup> OG/OSS, Scheduling Office (OSOSO) at commercial phone (b) (7)(E)
- c. Controlling Agency for airspace (b) (7)(E) however, air traffic control service is not provided to military aircraft operating within the activated (b) (7)(E) Participating aircraft, including the CBP UAS, will exercise real-time airspace deconfliction on the appropriate discrete frequency (b) (7)(E)
- d. The CBP (b) (7)(E) will assume flight-following responsibility as soon as radar contact is established. (b) (7)(E) will ensure that the UA remains (b) (7)(E)
- e. U.S. Customs and Border Protection (b) (7)(E) exercises CBP UAS tactical authority.
- f. Mission scheduling and operational support to CBP UAS operations is provided by the CBP UAS (b) (7)(E) detachment located at the UAS operating site, hereafter referred to as the (b) (7)(E)
- g. The assigned CBP Command Duty Officer (CDO) located at the CBP UAS operating site is the primary point of contact for the safe, effective execution of each CBP UAS mission.
- h. All operations will be conducted in accordance with (IAW) the reference authority documents cited on page one.

**2. RESPONSIBILITIES:**

- a. The (b) (7)(E) Lead Operations Specialist shall:

- (1) Provide 162 OG/OSS a schedule of CBP UAS flight activity (b) (7)(E)

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- (2) Plan CBP UAS flight activity (b) (7)(E) (b) (7)(E) to the maximum extent that the UAS mission allows.
- b. (b) (7)(E) shall provide training, in coordination with the GA-ASI Site Team Leader, for first responders to any UAS mishap, to include training on any unique CBP UAS operating or handling characteristics, and hazardous materials.
- c. The GA-ASI Pilot in Command (PIC) for each flight (b) (7)(E)
- (1) (b) (7)(E)
- (2) (b) (7)(E)
- (3) (b) (7)(E)
- (4) (b) (7)(E)
- (5) (b) (7)(E)
- (6) (b) (7)(E)
- (7) Maintain Lost Link mission routing and initial Lost Link parameters as described in paragraph 5 (Lost Link Procedures) (b) (7)(E)

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(b) (7)(E)

(8) (b) (7)(E)

d. 162<sup>nd</sup> OG/OSS (b) (7)(E)

(1) (b) (7)(E)

(2) (b) (7)(E)

(b) (7)(E)

(3) (b) (7)(E)

(b) (7)(E)

e. The (b) (7)(E)

(1) Confirm that the UAS radios and transponder are operational (b) (7)(E)

(b) (7)(E)

(2) (b) (7)(E)

(b) (7)(E)

(3) Ensure that the PIC operates the UA (b) (7)(E)

(b) (7)(E)

(4) (b) (7)(E)

(b) (7)(E)

(5) (b) (7)(E)

(b) (7)(E)

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(b) (7)(E)  
(b) (7)(E)

### 3. GENERAL PROCEDURES

- a. CBP UA flight operations (b) (7)(E) Segment of the AOR may occur (b) (7)(E) as permitted by a COA. Although the AOR defines the UA will normally (b) (7)(E) The UA may operate (b) (7)(E) UA operations will be conducted at (b) (7)(E) on the altimeter setting of (b) (7)(E) inches of mercury.
- b. All navigation systems (b) (7)(E) transponder equipment (b) (7)(E) Air Traffic Control (ATC) and (b) (7)(E) radio communication systems, and the UAS command link will be operational prior to takeoff. The UAS will operate (b) (7)(E)
- c. (b) (7)(E)

### 4. (b) (7)(E)

- a. (b) (7)(E)

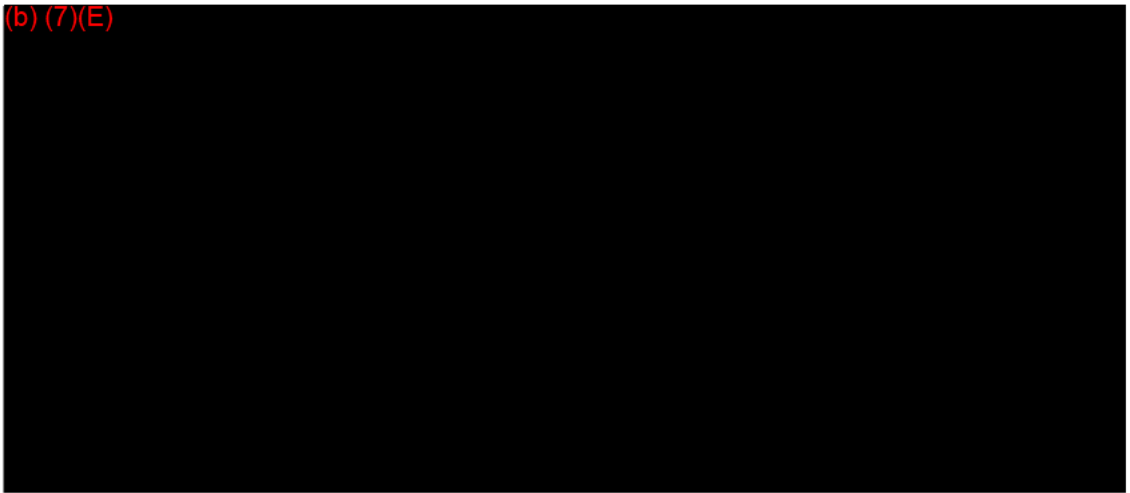
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(b) (7)(E)



b. (b) (7)(E)



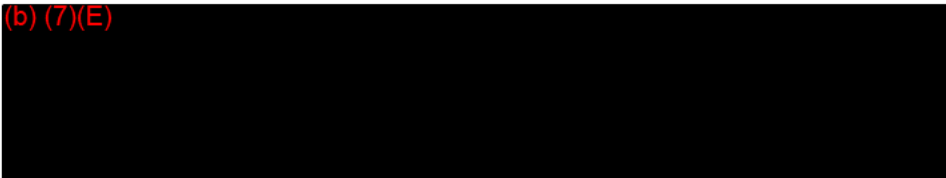
c. (b) (7)(E)




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1. (b) (7)(E)



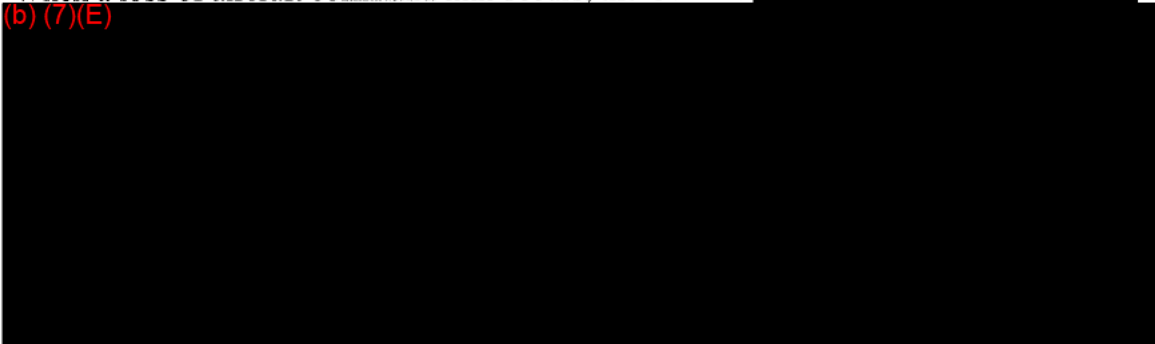
2. (b) (7)(E)



## 5. LOST LINK PROCEDURES:

Different flight profiles exist for lost link procedures depending on the location of the UA when a Lost Link condition arises. The lost link procedures are as follows:

a. When a loss of aircraft command link occurs, the UA PIC (b) (7)(E)



b. The AMOC (b) (7)(E)



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**6. LOST COMMUNICATIONS PROCEDURES:**

The UA will (b) (7)(E) AW COA procedures.

**7. TRANSPONDER FAILURE:**

If the UA transponder fails, the PIC (b) (7)(E)  
(b) (7)(E)

**8. EMERGENCIES:**

- a. For any UAS emergency situation, the UA PIC (b) (7)(E)  
(b) (7)(E)


- b. In the event that a normal recovery (b) (7)(E)  
(b) (7)(E)

- c. If the UA (b) (7)(E)  
(b) (7)(E)

- d. Flight Termination. In the event of a flight termination (b) (7)(E)  
(b) (7)(E)

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- e. UAS Mishap (b) (7)(E)  
(b) (7)(E)
- 

#### 9. ADMINISTRATION:

- a. CBP will coordinate any proposed changes to the COA (b) (7)(E)  
(b) (7)(E) UAS AOR with 162 FW  
prior to FAA implementation.
- b. The 162 FW will coordinate any proposed changes to the 162 FW (b) (7)(E)  
(b) (7)(E) Letter of Agreement affecting CBP UAS operations (b) (7)(E)  
Segment of the (b) (7)(E) UAS AOR prior to implementation.
- c. The (b) (7)(E) shall initiate a joint review of this LOP (b) (7)(E)  
(b) (7)(E) following commencement of CBP UAS operations (b) (7)(E)  
Segment of the (b) (7)(E) UAS AOR, and (b) (7)(E)  
thereafter to determine the need for revision/modifications. This does not preclude  
proposed amendments to this LOP made by any signatory party at any time; such  
amendments shall be effective upon written approval by all parties below.
- d. Financial liability rests with DHS for any expenses related to a CBP UAS mishap,  
reclamation, and subsequent investigation.

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(b) (6), (b) (7)(C)

SENSITIVE SECURITY INFORMATION (SSI)

10

(b) (6), (b) (7)(C)

AZANG

(b) (6), (b) (7)(C)

162<sup>nd</sup> Fighter Wing

DATE: 2-20-07

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

Air Operations  
Tucson Air Branch

DATE: 2-21-07

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

AMOC

California

DATE: 2-20-07

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4 ATTACHMENTS:

1. Aircraft Separation Agreement
2. (b) (7)(E)
3. Predator-B Characteristics / Onboard Equipment
4. (b) (7)(E)

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## ATTACHMENT ONE

## Aircraft Separation Agreement

The Department of Defense and Department of Homeland Security jointly assume the responsibilities for the separation of the U.S. Customs and Border Protection unmanned aircraft and military aircraft operating in the RUBY 1 MOA/ATCAA portion of the U.S. Southern Border CBP UAS AOR. The AOR shall be defined in the COA. This agreement is applicable whenever the RUBY 1 MOA/ATCAA is active.

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

AZANG

(b) (6), (b) (7)(C) 162<sup>nd</sup> Fighter Wing

Date: 2-20-07

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

Air Operations  
Tucson Air Branch

Date: 2-21-07

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C) California

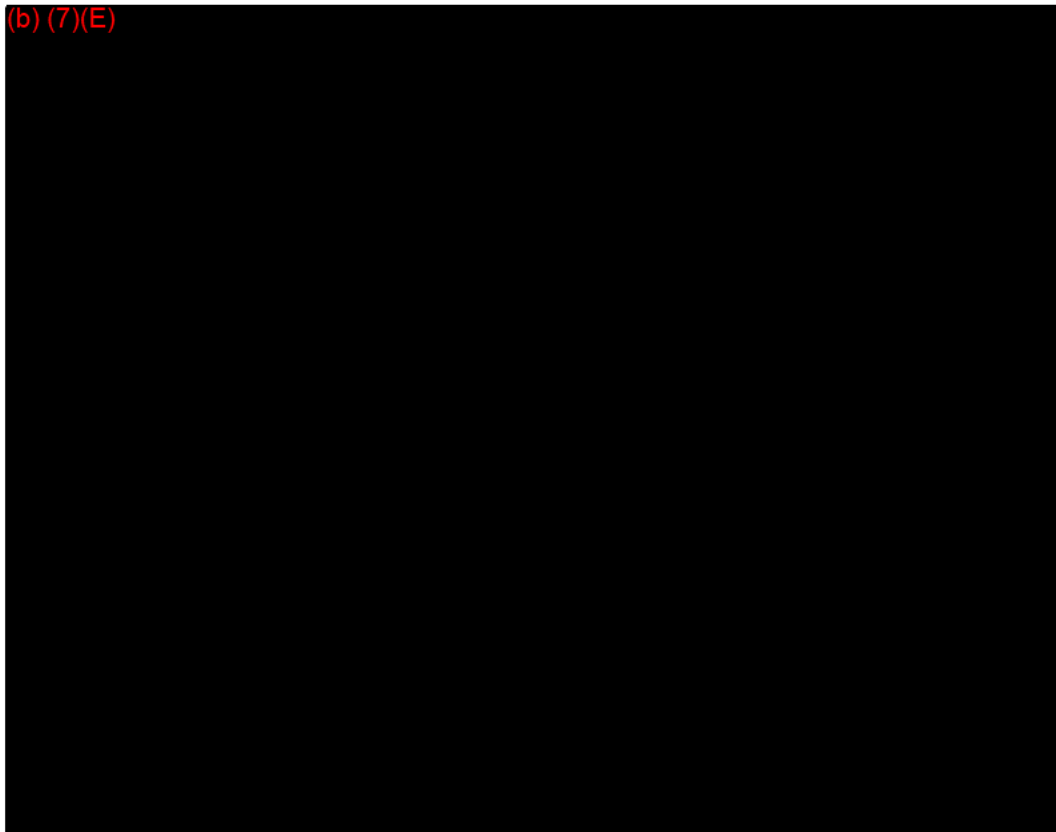
Date: 2-20-07

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**ATTACHMENT TWO**

(b) (7)(E)



(b) (7)(E)

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**ATTACHMENT THREE****Predator-B Characteristics / Onboard Equipment**

1. Cruise speed is (b) (7)(E) knots indicated airspeed (KIAS), and maximum dash speed is (b) (7)(E) KIAS. The service ceiling is (b) (7)(E) MSL. Endurance speed is (b) (7)(E)
2. The PIC has direct UAS control for (b) (7)(E)  
(b) (7)(E)
3. On-board equipment and capabilities:
  - a. The UAS is equipped with (b) (7)(E) GPS systems.
  - a. The UAS has the capability for (b) (7)(E)  
(b) (7)(E)
  - b. The UAS has (b) (7)(E) transponder with (b) (7)(E)  
(b) (7)(E)
  - c. The UAS System (b) (7)(E)  
(b) (7)(E)
  - d. (b) (7)(E)
  - e. The UAS will normally be equipped with (b) (7)(E)  
Additionally, it may also carry (b) (7)(E) Synthetic Aperture Radar with  
(b) (7)(E)

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- f. There are no explosive charges, radioactive materials, or security-classified components onboard the UAS. However, airframe composite fibers, petroleum-products, battery acid, and some sensor components do pose a respiratory hazard to personnel, following a fire.

**SENSITIVE SECURITY INFORMATION**

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## ATTACHMENT FOUR

(b) (7)(E)

CBP UAS AOR

(b) (7)(E)

## SENSITIVE SECURITY INFORMATION

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