



**DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 147TH RECONNAISSANCE WING
14657 SNEIDER STREET
HOUSTON TX 77034-5586**

23 September 2010

MEMORANDUM FOR Fort Polk Army Airfield (PAAF) Manager

FROM 147 RW/OG

SUBJECT: Letter of Procedure – 147 RW RPA Operations at PAAF

1. PURPOSE: This Letter of Procedure provides general operating procedures for the coordination and control of the 147 RW MQ-1 RPA at Ft Polk Army Airfield within the associated Class D airspace and Restricted Area R-3804A/B. The 147 RW operations will be a Launch and Recovery Element used in support of GREEN FLAG East exercises and unit driven continuation training.
2. SCOPE: The procedures outlined herein are for use in the coordination and control of the MQ1 RPA operating within the Fort Polk AAF Class D airspace and within Restricted Area R-3804A/B. The operations conducted by the 147 RW will be limited to launch and recovery operations to and from Restricted Area R-3804A/B as well as continuation training flights within the Polk Army Airfield traffic patterns.
3. RESPONSIBILITIES:
 - a. Polk ATC: Provide radar and/or visual observation of RPA and maintain radio communications at all times with RPA pilots while RPA is airborne. Provide de-confliction between RPA and non-participating aircraft while in Class D airspace. Provide advisory calls to manned aircraft concerning RPA location. Pass Joint Operations Center (JOC) Airspace Command and Control (AC2) instructions to RPA pilots.
 - b. Joint Operations Center (JACC [548 CTS]): Provide de-confliction measures for RPA during JRTC/GREEN FLAG East rotations. Coordinate and direct airspace de-confliction between RPA and all other rotational airspace users (Close Air Support [CAS], Air Mobility Command [AMC], Army Aviation, etc.) inside restricted airspace. Publish RPA coordination measures in the Airspace Control Order (ACO). Publish RPA sorties in the Air Tasking Order (ATO).
 - c. 548th Combat Training Squadron: Ensure all air and ground personnel operating under the GREEN FLAG EAST purview are briefed and comply with the procedures outlined herein.
 - d. 147th Reconnaissance Wing: Develop and publish RPA mission schedule ICW the 548 CTS GREEN FLAG EAST schedule and the JRTC Operations Group. Coordinate non-GREEN FLAG East missions with 548 CTS/JRTC Airspace and Range Manager. Request Notice to Airmen (NOTAMS) for RPA operations through Polk Army Airfield Operations. Ensure each

RPA is Mode C transponder equipped and operational during all flights. Serve as subject matter experts for MQ-1 RPA operations.

e. RPA Mission Commander (MC): Direct the execution of all phases of RPA missions. Immediately advise ATC and the JACC [548 CTS] of possible conflicts, problems, delays or cancellations with both air and ground RPA operations. Receive a range brief prior from 548 CTS/JRTC Airspace and Range Manager to all non-rotation missions. Comply with all instructions from ATC.

f. Polk Range Control: Coordinate non-rotational mission with 147 RW mission planners, ATC and the 548 CTS/JRTC Airspace and Range Manager. Provide access to R3804A through R3804B corridor at 2,500 feet MSL. This corridor is above all direct fire and the highest mitigation of risk has been considered.

4. PROCEDURES:

a. General:

i. The RPA pilot-in-command is ultimately responsible for the vehicle operation and flight path and the avoidance of all other aircraft. To ensure this, the pilot shall maintain continuous two-way communications with Polk ATC and ground observer or chase aircraft (if applicable). If two-way communications cannot be maintained with each mentioned element, RPA operations shall be terminated. The RPA pilot will comply with UAS / RPA instructions outlined in the JRTC Aviation Procedures Guide (APG).

ii. The “see-and-avoid” method of visual separation shall be used by utilizing a ground observer (SOF) at all times within the Ft Polk Class D airspace IAW the FAA COA.

iii. The RPA shall illuminate all lights at all times during operations. Operations shall be cancelled if any lights are inoperative.

iv. All pilots in command of the RPA shall possess military pilot certificates appropriate to the class of vehicle being flown.

v. All flights will be conducted in VFR weather conditions, as specified in FAR Part 91 and Chapter 3 of the JRTC Aviation Procedures Guide. The RPA shall adhere to basic VFR visibility and cloud clearance requirements at all times. In the case of inadvertent weather entry, the RPA will coordinate with the appropriate range control entity for any climbs/descents if needed. Recovery back to the field will be initiated prior to the field conditions deteriorating below VFR as there are no IFR recovery procedures for the MQ1 RPA to Polk Airfield.

b. Operations:

i. Ground Ops: Normal launch procedures include coordination with Polk Army Airfield Ground Control for clearance to start and/or taxi and Control Tower for clearance to takeoff from the runway. The RPA will squawk the pre-assigned code obtained from Ft Polk ATC. A ground observer (SOF) will be stationed in a position that he/she can monitor the RPA at all times while in the Class D airspace and will have continuous radio contact with the RPA pilot.

ii. Operations within Polk Army Airfield (PAAF) Class D: The Class D airspace extends from the surface to 2,800 feet MSL. After takeoff, the RPA shall proceed to point LRS east of the airfield (15RVQ825345) while climbing to 2,500 feet MSL. Tower shall frequency change RPA to TALATHA Radio as required. Upon entering R3804A, the RPA can climb to coordinated mission altitude. TALATHA Radio will monitor the RPA to IP4 and advise the JACC [548 CTS] and/or Range Control of RPA departure.

iii. Range Procedures: Departing LRS, the RPA will normally proceed to IP4 (described in Table 1) climbing to 3,000 feet MSL. TALATHA Radio will advise JOC and/or Range Control of the RPA departure. Once reaching IP4, the RPA will climb to the assigned altitude, normally 8,000 to 9,000 feet MSL. De-confliction with other aircraft will be handled by the JOC (JACC [548 CTS]) during GREEN FLAG East exercises. At all times, the RPA will remain within the restricted area. The RPA SOF will be located in the Tower all times to assist with watching for hazardous weather.

The following are standard procedural points used for RPA airspace coordination/de-confliction.

Table 1

<i>ID</i>	<i>Coordinates</i>	EFFECTED LEVEL	SIZE	LOCATION
IP1	15RVQ900440	3,000 MSL – 17,999 MSL	1 km	North of FP 700
IP2	15RWQ020450	3,000 MSL – 17,999 MSL	1 km	Concrete Bunker
IP3	15RWQ080380	3,000 MSL – 17,999 MSL	1 km	Jetertown
IP4	15RVQ940350	3,000 MSL – 17,999 MSL	1 km	Holly Springs/Bivouac Rd
IP5	15RVQ897387	3,000 MSL – 17,999 MSL	1 km	Iron Triangle

iv. Recovery to Pattern: The RPA shall proceed to IP4, descend to 3,000 MSL and advise TALATHA Radio that they are RTB. TALATHA Radio shall notify the JOC or Range Control of RTB. The RPA will depart IP4 and proceed to point LRS while descending to 2,500 feet MSL. TALATHA Radio shall frequency change the RPA to Polk Tower. RPA will orbit LRS until Class D is available for recovery. Polk Tower shall provide instructions for the RPA to enter the pattern for RWY 15 or RWY 33 as appropriate.

v. Traffic Pattern: The traffic pattern for the runway will be to the west: right traffic on RWY 15 and left traffic on RWY 33. The traffic pattern direction can be changed by Ft Polk Tower at anytime. The SOF will be positioned in a location on the airfield that allows 100% visual observation of the RPA while in Class D airspace, as well as assist the crew with notification of RPA height above touchdown, landing and go-around calls.

vi. Lost Link: In the event of a lost uplink in the restricted area, the RPA will fly a pre-programmed flight profile that will ensure the RPA orbits at its current location for 30 minutes at its current altitude. If link is not regained, the RPA will fly direct to IP4 and establish itself in a three mile orbit and remain there until uplink is restored. In the event of a lost uplink while in Class D airspace, the RPA will turn toward the center of the airfield and continue direct to IP4,

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climb to 2,500 feet MSL and orbit. At all times, the RPA will continue to squawk the Mode 3 code assigned and will remain within Class D or restricted airspace. The RPA pilot will notify JOC (JACC [548 CTS]), TALATHA Radio, the SOF and Tower as applicable of the lost link condition.

vii. Frequency Usage: The 147 RW will utilize published frequencies. All radio communication with Polk ATC will be performed using standard phraseology IAW FAA Order 7110.65. Non-standard communications is not required.

viii. Call Signs: Call sign for GCS/Aircraft: Texan 01

c. CAS Specific Range Procedures and Separation Measures:

i. Upon visual contact with RPA, all other aircraft are to maintain “well clear,” defined as 500’ slant range, IAW Air Force Instruction (AFI) 11-202 Volume 3, General Flight Rules, Chapter 5, paragraph 5.3.

ii. When visual contact cannot be maintained, USAF air controllers, the supported brigade G/S3, and S/G2 or Analysis and Control Element (ACE), will determine lateral and/or vertical separation restrictions. Lateral separation will be NLT two kilometers. Altitude separation will be NLT 1,000 feet. At a minimum, lateral and/or vertical separation will take into account the CAS target location, CAS aircraft run-in line, CAS aircraft egress route, and RPA target/mission requirements. Separation instructions will be passed to the RPA mission commander (MC) via AC2 or directly to the MC when the controlling shelter is collocated with rotational unit’s TOC.

iii. If no de-confliction plan is communicated, ROZ separation outlined above applies.

iv. CAS aircraft will not commence attack until JTAC advised that RPA is clear.

v. RPA will observe standard fixed-wing radio contact with Polk ATC prior to departure and remain in contact for the duration of flight. ATC will be notified immediately upon deviation from planned flight routes, loss of control link or other equipment malfunction related to operation of the UAS and the intended action.

5. TIMEFRAME: This Letter of Agreement will be effective 1 October 2010 and remain in effect until changed by a consensus of the parties listed below (or their replacements). The point of contact for this action is [REDACTED]

[REDACTED] Exemption 6

[REDACTED] Exemption 6
JRTC Operations Group

[REDACTED] Exemption 6
Airfield Division
DPTMS

[REDACTED] Exemption 6
USAF
548 CTS

[REDACTED] Exemption 6
TXANG
147th Operations Group