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Headquarters, U.S. Army Garrison
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Fort Sill, Oklahoma 73503
5 April 2018

Fort Sill Regulation 95-23

AVIATION

UNMANNED AIRCRAFT SYSTEM FLIGHT REGULATIONS

Summary. This regulation, in conjunction with Fort Sill Reg 95-1, establishes local procedures, rules, and assigns responsibilities governing unmanned aircraft system (UAS) operations as required by AR 95-23, Unmanned Aircraft System Flight Regulation.

Applicability. This regulation applies to all UAS organizational element, activities, and agencies (military or civilian) conducting operations at Fort Sill.

Supplementation. Supplementation of this regulation is prohibited without prior approval from the Directorate of Plans, Training, Mobilization, and Security, 455 McNair Avenue Fort Sill, OK 73503.

Suggested Improvements. The proponent of this regulation is the Directorate of Plans, Training, Mobilization, and Security. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to DPTMS.

Distribution. This regulation is distributed solely through the Directorate of Human Resources (DHR), Administrative Services Division (ASD) Homepage at <http://sill-www.army.mil/USAG/publications2012.html>.

*This Regulation supersedes Fort Sill Regulation 95-23, 19 June 2013.

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Chapter 1 Introduction

1-1. Purpose. This regulation establishes procedures and assigns responsibilities governing Unmanned Aircraft Systems (UAS) operations within the Fort Sill Airspace Complex.

1-2. References. References are listed in Appendix A.

1-3. Terms and Abbreviations. Terms and abbreviations used in this regulation are

explained in the glossary.

1-4. Records Management. Records created as a result of processes prescribed by this regulation must be identified, maintained, and disposed of according to AR 25-400-2, The Army Records Information Management System (ARIMS) and DA Pam 25-403, Guide to Recordkeeping in the Army. Record titles and descriptions are available on the Army Records Information Management System's website.

1-5. Use Restrictions.

a. Pursuant to DODI 5200.08, only use photography, aerial video footage or infrared imaging for the express purpose of testing such capabilities on UAS systems. Any other use of the aforementioned photos, footage or imagery is expressly prohibited by law. 18 USC § 797 prohibits anyone from publishing, selling, reproducing or giving away any photograph, imagery or graphic representation of a DOD installation without the express written consent of the Garrison Commander. Furthermore, use of such imagery for the purposes of mapping an installation is also expressly prohibited by law. It is a misdemeanor crime to violate a Defense Property Security Regulation.

b. Under no circumstances will any imagery, footage or photography be allowed that may be used to create 360-degree image of facilities, street views or other imagery that may compromise Fort Sill's physical security. Images include 360-degree views of the covered areas, to include Access Control Points, Barriers, Headquarters Facilities and Community Areas. Imagery of this nature poses an operational risk to our force protection efforts.

c. UAS must be contained within R5601, operations outside of restricted airspace is prohibited.

**Chapter 2
Responsibilities**

2-1. Directors, Commanders, Activity Chiefs, and Project Officers.

a. Ensure that all UAS operations, procedures, and training are IAW AR 95-23, UAS Flight Regulations, FS Reg 385-1 Range Safety, and this regulation.

b. Complete the HQDA Commander's Safety Course, available online at the Army's Combat Readiness Center (CRC): <https://safety.army.mil>.

c. Appoint a Mission Coordinator, (MC) (OIC), and a Range Safety Officer (RSO), IAW FS Reg 385-1 with the following minimum qualifications IAW Para 2-6 of this regulation. Have completed all required training as per FS Reg385-1 and FS Reg 95-23 and be certified by the Battalion Commander or equivalent. A roster must be on file at Range Operations. NOTE: The UAS Mission Coordinator (MC) has overall responsibility for the operation. The RSO will have no other responsibilities.

d. Ensure that an appropriate downed UAS kit is on hand during all UAS flight operations (see FM 3-04.155 Army Unmanned Aircraft System Operations for contents of downed UAS kit).

e. Ensure that an appropriate spill kit is on hand for all UAS flight operations involving UAS with internal combustion engines (see FM 3-04.155 Army Unmanned Aircraft System Operations for contents of downed UAS kit).

f. Define the responsibilities of the mission commander (MC) and delegate decision-making authority to act decisively in case of an emergency or deviation of the UAS from the programmed flight path.

g. Ensure a written UAS mission profile has been coordinated with and approved by the RO before the UAS mission is flown (see Appendix B, UAS Mission Profile Checklist).

h. Develop and maintain a comprehensive written Accident Prevention Plan. The Accident Prevention Plan must be certified annually by a commander with authority under AR 600-20. The Accident Prevention Plan will include the following sections:

(1) Airspace Safety Plan. A written Airspace Safety Plan/SOP (see paragraph 5-3).

(2) Pre-Accident Plan. The unit Pre-Accident Plan should supplement and not duplicate the Fort Sill Reg 385-10, Safety Regulation, and be practiced (crash drill) quarterly.

(3) Recovery Plan. See FM 3-04.155, Army Unmanned Aircraft System Operations, for additional guidance on developing a recovery plan.

(4) Risk Management Plan/SOP IAW ATP 5-19 consistent with the Mission. This plan must be applied to each UAS mission and be continuously evaluated for effectiveness.

i. Ensure that no UAS is flown outside Restricted Area 5601 (R-5601) or other assigned airspace boundary, or deviates from approved altitude or time restrictions.

j. Ensure a Notice to Airmen (NOTAM) for UAS flights are processed through the AT&A Officer and are published NLT 48 hours prior to the day of flight.

k. Ensure that a Risk Management briefing for each participating Aircraft Operator (AO) is performed IAW AR 95-23 prior to each UAS mission including maintenance test flights.

l. Ensure each Aircraft Operator (AO) receives—

(1) An Range Safety briefing prior to conducting UAS operations at Fort Sill: Airspace POC (580) 442-6191.

(2) Safety and environmental awareness training.

m. Ensure the AO uses only authorized up-link and down-link frequencies. For clarification contact the Fort Sill Frequency Manager (580-442-3407).

2-2. Airfield Manager:

a. Serve as the central point of control and coordination for all activities conducted within the Airfield Operations Area of Henry Post Army Airfield (HPAAF) and Frisco Ridge UAS Training Complex.

b. Review UAS mission profile and deconflict with manned aircraft missions destined to or originating from HPAAF.

c. Coordinate HPAAF safety issues with appropriate installation staff.

d. Approve, control, and monitor access to HPAAF and Frisco Ridge Complex.

e. Provide units with command, control, communications and logistics assistance when operating UAS from the HPAAF.

f. Maintain current airfield diagrams, maps and overlays of the HPAAF and Frisco Range Complex.

g. Conduct FS Reg 95-1 briefings, Airfield Familiarization training and Flight Line Driver training.

h. Perform other administrative and investigative duties and activities related to the safe operation of HPAAF and Frisco Ridge Complex.

2-3. Air Traffic and Airspace Officer.

a. Serve as the approval authority for all UAS missions conducted within the cantonment area, installation ranges including associated restricted airspace. The telephone number for the AT&A Officer is (580) 442-2387 (DSN prefix 639).

b. Coordinate airspace requests with appropriate installation staff and the Department of Army Regional Representative to the FAA.

c. Approve, control, and monitor access into associated airspace.

d. Conduct FS Regulation 95-1 briefings.

e. Perform other administrative and investigative duties and activities related to the scheduling and safe operation of Fort Sill's airspace.

2-4. Installation Range Officer.

a. Serve as the central point of control and coordination for all activities conducted within the installation ranges and training land, including associated restricted airspace.

b. Coordinate range safety issues with appropriate installation staff.

c. Approve, control, and monitor access into the installation training complex, including associated restricted airspace.

d. Maintain current maps and overlays of training complex impact area boundaries, surface danger zone (SDZ) diagrams, and ground hazards.

e. Maintain records of current surface danger areas and airspace zone diagrams, weapon system safety data, firing limitations, and survey data for firing positions.

f. Perform other administrative and investigative duties and activities related to the scheduling and safe operation of ranges, training areas, and airspace.

2-5. Henry Post Army Airfield Air Traffic Control. HPAAF Air Traffic Control (ATC) is responsible for providing control for all airspace activities, and establishes procedures and separation standards between UASs and manned aircraft. The telephone number for HPAAF ATC is (580) 442-2387/DSN 639-2387.

2-6. Mission Coordinator. The UAS Mission Coordinator (MC) has overall responsibility for the operation of a UAS mission. The MC will —

(1) Have completed the Additional Duty Safety Course available online at the Army's Combat Readiness Center (CRC).

(2) Be E-7 or above with experience level to ensure decisive and sound decisions can be made in a timely fashion. RAVEN MC are normally SSG.

(3) Have thorough knowledge of UAS capabilities, limitations, and safety devices of launch, control, and recovery systems.

(4) Have thorough knowledge of this regulation, Fort Sill Airspace Complex, Fort Sill Reg 95-1, and other applicable references.

Chapter 3

Airspace Coordination

3-1. General.

a. Coordination of airspace currently designated by the Federal Aviation Administration (FAA) as restricted for Fort Sill military use is performed in coordination with the Installation Range Officer and AT&A Officer. This coordination is conducted IAW procedures in Fort Sill Regulation 385-1, Post Range Regulation and 95-1.

b. Coordination of airspace not currently designated by the FAA as restricted for Fort Sill military use requires approval of the FAA. Organizations requiring use of airspace not currently designated as restricted for Fort Sill military will contact the AT&A Officer. The AT&A Officer will coordinate with the FAA through the Department of the Army Regional Representative (DAR) to identify actions required to obtain use of the airspace. The minimum time required to obtain approval is six months. Actions classified by the FAA as "Rulemaking Airspace Actions" such as the establishment or modification of a Restricted Area will require in excess of 1 year and funds to complete applicable National Environmental Policy Act or other feasibility studies.

c. The approval and scheduling of the Fort Sill Airspace Complex does not in itself indicate sole occupancy of the airspace. Sole or exclusive use of these areas will be authorized only for emergencies, safety, and/or lack of compatibility of the user's operation with other airspace users.

3-2. Airspace Descriptions.

a. Special Use Airspace (SUA).

(1) SUA is airspace designated by the FAA with specific vertical and lateral limits, established for the purpose of containing hazardous activities or activity that could be hazardous to nonparticipating aircraft. Limitation on nonparticipating aircraft may range from absolute exclusion to complete freedom of use within certain areas, depending upon activity being conducted.

(2) The Fort Sill Airspace Complex SUA consists of Restricted Area 5601 (R-5601) and various Military Operations Areas (MOA) as described in FAA Order 7400.8 and Fort Sill Reg 95-1.

(3) R-5601 is further divided into sub-compartments. Maps and descriptions of R-5601 and its subcomponents are depicted in FS Regulation 95-1.

b. Restricted Operations Zones (ROZ).

(1) Range Operations establishes ROZs to further divide R-5601 in order to more effectively manage the installation ranges, training land, and associated airspace.

(2) Maps and descriptions of established ROZs are depicted in figure 3-2.

(3) Additional ROZs may be established by coordinating with the Range Officer and the AT&A Officer.

c. UASs will not operate in the Fort Sill Airspace Complex without prior coordination with, and approval from, the Installation Range Officer, the AT&A Officer, and clearance from ATC.

3-3. Joint Use of Airspace.

a. The procedures for coordinating joint use of airspace for UAS operations is the same as for joint use of training land in FS Reg 385-1.

b. Multiple UAS platoons may conduct training utilizing the same launch and recovery area and SUA provided the following minimum conditions are met:

(1) All units have approved requests in RFMSS for training areas and airspace used.

(2) Units must have conducted coordination and agree on site location(s), frequency usage, and other established de-confliction standards and procedures deemed appropriate.

(3) Units will not conduct launches or recoveries within 30 minutes of the other platoon at the same site (i.e., if a platoon launches at 0800, then the next platoon must wait until 0830 before it may launch; this provides time separation at the launch and recovery site).

(4) UASs will maintain at least 1,000 ft. horizontal and/or 500 ft. vertical separation from each other during the mission.

(5) Prior to conducting a climb or descent, the UAS platoon will coordinate with the other platoon(s) to ensure they are clear of the designated climb/descent routes.

3-4. Coordination.

a. Requirements for use of, or projects that could affect use of, the Fort Sill Airspace Complex outside of R-5601 must be given sufficient lead time to permit the necessary action by the AT&A Officer in coordination with the DAR working with the FAA. Non-rule making actions, such as establishment of a temporary Military Operations Area, will require 6 months or longer. Rulemaking airspace actions such as the establishment or modification of a Restricted Area will require in excess of 1 year

and funds to complete applicable environmental or other feasibility studies.

b. UAS operations within the Fort Sill airspace complex require detailed planning and coordination to ensure that no conflicts will arise with existing airspace usage. All requests must include a completed Fort Sill UAS Mission Profile Checklist (see Appendix B). Airspace reservations will be given on a priority basis, and use of airspace will not begin prior to or extend beyond the scheduled time.

c. The approval and scheduling of the Fort Sill Airspace Complex does not in itself indicate sole occupancy of the airspace. Sole or exclusive use of these areas will be authorized only for emergencies, safety, and/or lack of compatibility of the user's operation with other airspace users.

3-5. Operations in Restricted Area (R-5601).

a. All UAS/UAV require an airworthiness release issued by the Army prior to any flight activities on Fort Sill.

b. When cleared to operate in R-5601, UASs must not fly outside R-5601 unless approved by the AT&A Officer and cleared by ATC.

c. In addition to airspace approval, use of R-5601 for UAS operations requires scheduling through Range Operations. See Fort Sill Reg 385-1, Post Range Regulation.

d. Use of R-5601 for the purpose of UAS operations does not restrict manned aircraft from entering R-5601; therefore, airspace de-confliction must occur by measures such as all parties (AO, ATC, and pilots) maintaining lateral and/or vertical distance separation.

d. Parachute operations will not occur in the area of R-5601 that is active for UAS operations.

3-6. Fort Sill Field Site Operations.

a. Use of a Fort Sill training area as a UAS launch and recovery site requires coordination and scheduling with Range Operations and the AT&A Officer. Multiple launches and recoveries may be performed during the approved time frame.

b. UAS launches and recoveries will be conducted to remain in R-5601.

c. Small or mini-type UAS can launch from a field site provided radio communications or instant phone communication exists (prior coordinated number) between Fort Sill ARAC/Range Operations and the launch site during the duration of training. A restricted Operating Zone and a NOTAM are required for these operations.

d. No Shadow, or similar, or larger type UAS can launch from a field site except for the Frisco Ridge UAS training complex.

e. The unit will conduct a thorough site survey prior to conducting flight operations. The survey will include, but is not limited to,--

(1) Hazards that can affect the UAS operation.

(2) Suitability of landing surface.

(3) Establishment of a ROZ in coordination with the AT&A Officer
(See Figure 3-2).

f. The using unit is responsible for requesting approval of any site improvements; these include, but are not limited to, Digging permits (PW), if leveling a landing site, or removing brush (see FS Reg 385-1).

3-7. Frisco Ridge UAS Training Complex Operations.

a. Use of a Frisco Ridge UAS training complex as a UAS launch and recovery site requires coordination and scheduling with Range Operations and the AT&A Officer. The paved surface is 2901' X 75' with and has a 100' X 400' access taxiway, (See Figure 3-1). Multiple launches and recoveries may be performed during the approved time frame. Approval of use does not guarantee exclusive access, other units may be granted shared use of the facility.

b. UAS launches and recoveries will be conducted to remain in R-5601.

c. Small or mini-type UAS can launch from Frisco Ridge UAS training complex provided radio communications or instant phone communication exists (prior coordinated number) between Fort Sill ARAC and the launch site during the duration of training.

d. The unit will conduct a thorough site survey prior to conducting flight operations. The survey will include, but is not limited to,--

(1) Hazards that can affect the UAS operation.

(2) Suitability of landing surface.

(3) Establishment of a ROZ (if needed) coordination with the AT&A Officer
(See Figure 3-2).

3-6. Henry Post Army Airfield UAS Training Complex Operations.

a. Use of HPAAF as a UAS Launch and recovery site requires coordination and

scheduling with the HPAAF Manager and the AT&A Officer. The runway paved surface is 5000' X 150' width and has three Taxiway intersections. Multiple launches and recoveries may be performed during the approved time frame. Approval of use does not guarantee exclusive access, other units and manned aircraft flight operations may be granted shared use of the facility.

b. UAS launches and recoveries will be conducted to remain in R-5601H or as approved by the AT&A Officer.

c. UAS can launch and recover to HPAAF when R5601H is active. Radio communications or instant phone communications must exist (prior coordinated number) between Fort Sill ARAC and the launch site during the duration of the flight.

d. During non-tower hours, HPAAF will be an uncontrolled airport and shall be treated as such, especially regarding communications which are performed IAW the Aeronautical Information Manual (AIM). Clear communication between all MC's/PIC is essential for safe traffic pattern operations.

e. The MC will provide the Airfield Manager with a mission profile brief and hazard risk assessment for review prior to authorizing use of HPAAF for launch and/or recovery of UAS aircraft.

f. All unit personnel participating in UAS flight operations at HPAAF must complete the Airfield Familiarization training provided by the Airfield Manager. Operations shall be conducted IAW the HPAAF Airfield Operations Manual (AOM).

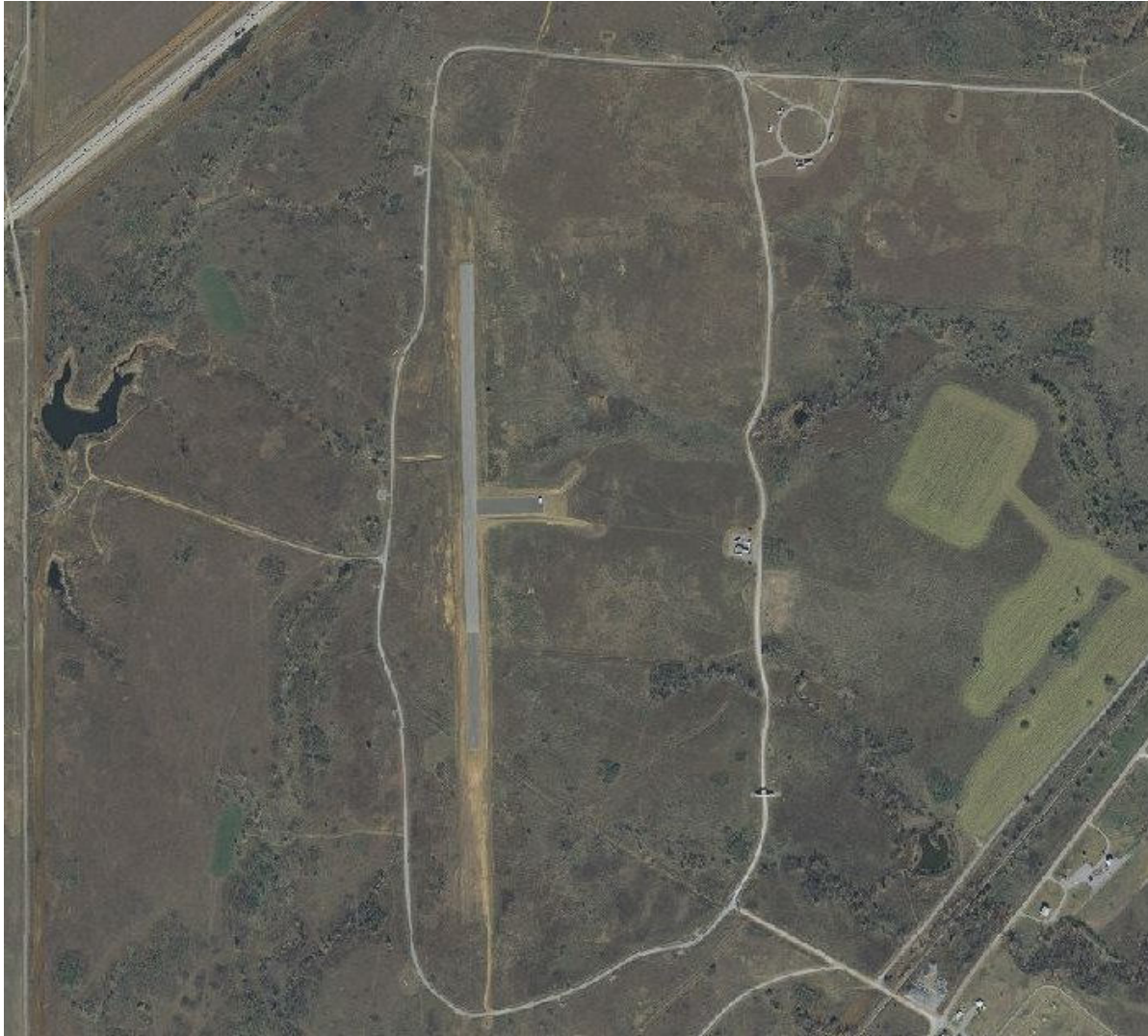


Figure 3-1. Frisco Ridge UAS Training Complex

Chapter 4 Flight Procedures and Rules

4-1. General Flight Procedures.

a. The MC will be present during a UAS flight mission to monitor the effectiveness of the Safety Risk Management Plan, to include maintenance test flights.

b. To provide separation between UAS and manned aircraft the following altitude restrictions apply unless otherwise authorized by the AT&A Officer and cleared by ATC:

(1) Small UASs, such as the Raven, operating in R-5601 will normally be cleared to fly at a maximum altitude of 2000 feet Above Ground Level (AGL) unless otherwise approved by the AT&A Officer. Manned aircraft (jets and helicopters) will operate no lower than 500 feet above (coordinating altitude) the maximum altitude assigned to the UAS.

(2) Large UASs, such as the Gray Eagle and Shadow will normally operate at an assigned altitude between 6,000 feet to 10,000 feet Mean Sea Level (MSL). Manned aircraft (jets and helicopters) will operate no lower than 500 feet above or 1,000 feet below the assigned UAS altitude.

c. The Shadow, or similar, UAS AO is required to maintain radio communication with Range operations and ATC. If radio communication with ATC is lost, the AO will call ATC at (580) 442-2004/1882 to report lost radio communication and the UAS will be recovered via the approved recovery route and altitude.

d. UAS operations may be conducted in conjunction with artillery/mortar and/or close air support within R-5601 provided separation coordination has been completed with, and approved by, Range Operations and the AO assumes responsibility to ensure separation from artillery/weapon firing.

e. UASs equipped with a transponder must have it on and set to the code issued by ATC prior to launch. If the transponder fails to function after launch the UAS will be recovered immediately via the approved recovery route and altitude.

f. UASs with programmable guidance systems will be programmed to proceed to an AT&A Officer approved recovery site. NOTE: The route and altitude the UAS will use during Lost-Link procedures must be approved by the AT&A Officer and known by ATC prior to the mission.

g. Return Instructions. To aid in the recovery of any UAS, mark the UAS with instructions to return it to U.S. Army personnel at Fort Sill by calling (580) 442-2387. Figure 4-1 is an example of a sticker that may be created and placed on each UAS while operating at Fort Sill.



Figure 4-1

4-2. Weather Requirements.

h. Flight Weather Planning. The MC will obtain departure airfield/airport, enroute, destination airfield/airport, and alternate airfield/airport (if required) weather information before takeoff. If the weather during the mission deteriorates below the weather minimums shown below, the mission will be aborted and the UAS will return for recovery. ATC will exercise appropriate control to separate the UAS from other aircraft during a weather related recovery. The following weather restrictions apply:

(1) Flight into Icing Conditions. UASs will not be flown into known or forecasted severe or moderate icing conditions. If a flight is to be made into known or forecasted light icing conditions, the UAS must be equipped with adequate operational de-icing or anti-icing equipment.

(2) Flight into Turbulence. UASs will not be intentionally flown into known or forecasted extreme turbulence or into known severe turbulence. UASs will not be intentionally flown into forecasted severe turbulence unless commanders have established clearance procedures IAW AR 95-23.

(3) UAS Flights. UASs will not be flown unless the weather forecast and existing conditions will permit flight under Visual Flight Rules (VFR) and the following weather minimums must be met for the entire mission:

a. At the launch and recovery site the cloud ceiling must not be lower than 1500 feet, and the horizontal visibility must be at least 3 miles.

b. During launch, enroute, and recovery, be able to fly the UAS without getting closer to clouds than 1,000 feet from above or below and 2,000 feet horizontally, and have 3 miles flight visibility.

c. Flight Weather Briefing and Current Observation. A Flight Weather Briefing and Current Observation for Fort Sill may be obtained as follows:

(1) Weather Briefings. UASs are categorized into five groups according to their maximum gross takeoff weight, normal operating altitude, and speed. Small UASs (Groups 1 & 2) receive 'general' weather support (i.e. area forecasts) not tailored to specific missions. Large UASs (Groups 3-5) receive 'direct' weather support IAW

AFMAN 15-129V2 (4.2.2.). Weather support and services are available by contacting Operating Location 'E', 3d Weather Squadron (the AF Weather Station on HPAAF), located in Airfield Operations, Bldg P-4907.

a. Group 1 and 2 UASs (i.e. RQ-11B Raven, gasoline engine Micro-Air Vehicles, etc.) receive 'general' weather support by accessing Operating Location 'E', 3d Weather Squadron's Mission Execution Forecast (MEF) product (See Figure 4-1) . Refer to FS Reg 115-9, paragraph 4-2, for further information on the description, format, and delivery method of the MEF.

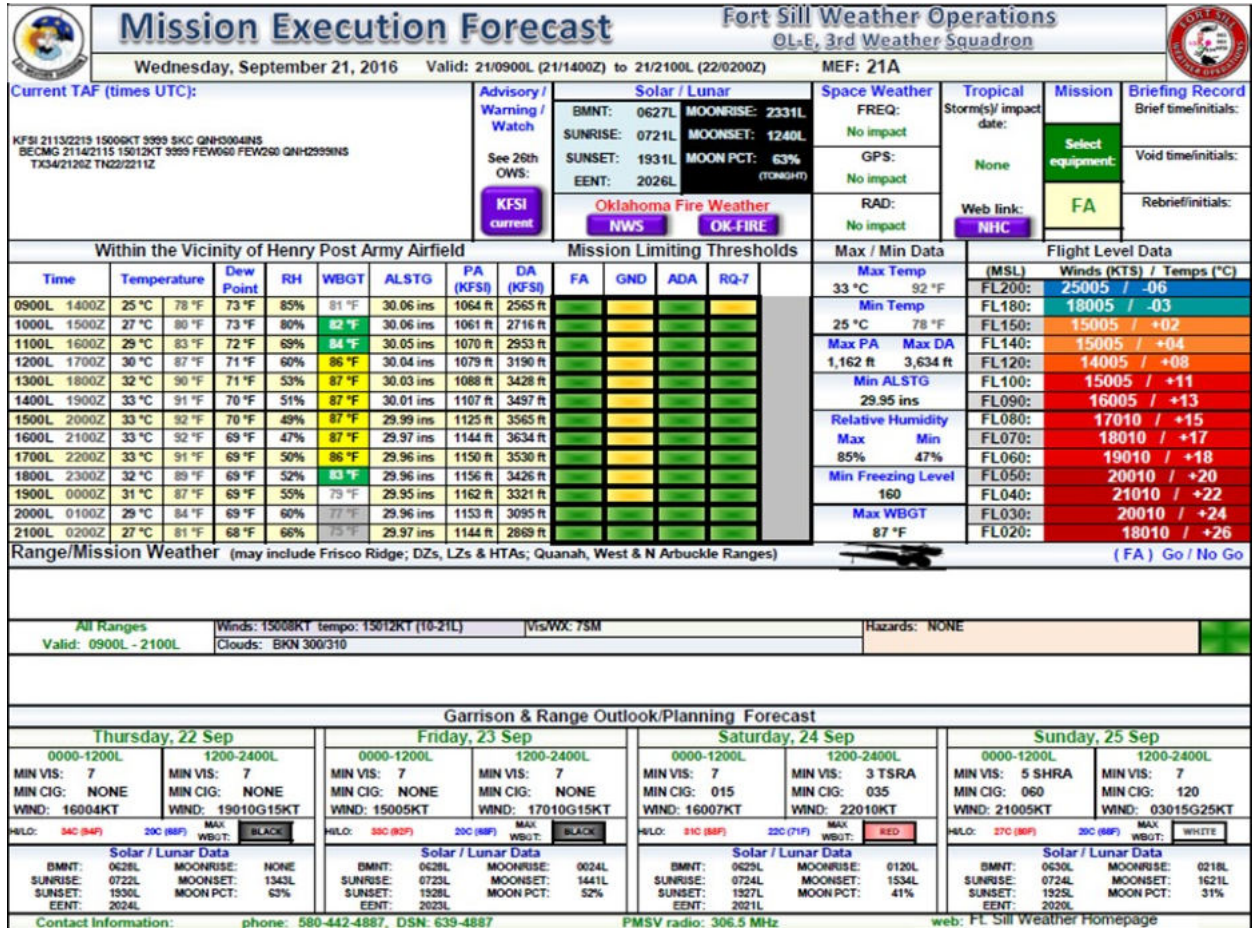


Figure 4-1. Mission Execution Forecast (MEF)

b. Group 3-5 UASs (i.e. RQ-7B Shadow, MQ-1C Gray Eagle, MQ-5B Hunter, etc.) receive 'direct' weather support by contacting Operating Location 'E', 3d Weather Squadron (OL-E, 3 WS). An OL-E, 3 WS forecaster will prepare and present a UAS Mission Weather Product (MWP) and perform Mission-scale Meteorological Watch (MISSIONWATCH) activities for each group 3-5 UAS sortie. . Refer to FS Reg 115-9, paragraph 4-3, for further information on Mission-scale Meteorological Watch (MISSIONWATCH).

4-3. Emergency Procedures.

a. If a mishap occurs or UAS lost-link is suspected during any phase (launch to recovery), the MC will:

(1) Inform ATC and Range Operations of crash site or its last known location, heading, and altitude.

(2) DO NOT call 911.

(3) The AO must continue to attempt to regain control of the UAS and if successful inform ATC immediately

b. Range Operations will—

(1) Notify the FSOC/EOC with all reported information.

(2) Notify DES of incidents involving injury to personnel, fire, or significant damage to property or equipment.

c. ATC will—

(1) Notify all agencies via “Crash Phone” of all reported information.

(2) Maintain communications with Range Operations and update information via “Crash Phone” when necessary.

(3) Make appropriate coordination with the FAA.

(4) Depending on the nature of the mishap reported by the AO, ATC may activate the Aircraft Pre-Accident Plan.

d. FSOC/EOC will—

(1) Make notifications to emergency responders (if not already completed).

(2) Notify Fort Sill leadership.

(3) Coordinate with applicable agencies for any applicable SIR/OPREP reports.

(4) Coordinate with any off-post agencies (as necessary).

e. Unit Commander.

(1) Maintain a running log (DA 1594) of all actions taken, agencies notified, and names with times of contact.

(2) Submit Serious Incident Report IAW Fort Sill Regulation 1-8, Reporting Procedures.

(3) Submit UAS incident report using DA Form 2397 (Abbreviated Aviation Accident Report).

Chapter 5

Operations in Public Use Airspace.

5-1. Authorization. All UAS operations in Public Use Airspace require a Certificate of Authorization (COA) from the Federal Aviation Administration (FAA) coordinated through the AT&A Officer and DAR. Public Use Airspace is defined as that airspace that is not restricted or specified for sole use.

5-2. Surveillance Requirements.

a. One or more methods of surveillance will be provided for all UAS operations (i.e., radar, visual, or manned aircraft). The type of surveillance will depend on the mission and type system flown as specified in the COA.

b. Information obtained from the surveillance system such as position, speed, altitude, and heading will be available upon request to the unit safety representative and ATC. Where manual plotting of surveillance information is necessary, the time between plots must be as short as possible.

c. If at any time the position of a UAS becomes unknown, or the UAS fails to respond to programmed "lost link" instructions, the flight will be terminated in time to preclude the possibility of impact outside the approved flight area.

5-3. Safety Factors for Operational Planning.

a. Operational plans for UAS test and training flights must take into consideration the type of system, results to be achieved, and the area in which operations have been approved.

b. The unit must maintain a written Airspace Safety Plan. Each Airspace Safety Plan must take into consideration—

(1) The capability of UASs, such as altitude, range, speed, wind factors, and the amount of guidance which may be commanded to the system (programmed or other), deviations allowable from assigned headings that the UAS may take due to malfunctions, and the type of launch.

(2) The system for flight termination and recovery (i.e., parachute and/or other functions which would affect flight safety).

(3) The methods for obtaining real-time position of the UAS in flight, such as visual, manned chase airplane, radar, telemetry, etc.

(4) The procedures for Area Surveillance IAW paragraph 5-2.

(5) Aerodynamic data used to determine flight safety grids which will include, but not be limited to, glide ratio of the UAS, detailed performance data (including system time delays), location of launch site, intended recovery site, parameters of the flight area, and method of area surveillance (such as visual, manned aircraft, or radar).

Appendix A
References

Section I
Required Publications

AR 95-1
Flight Regulations

AR 95-23
Unmanned Aircraft System Flight Regulations

AR 385-10
The Army Safety Program

Army Policy for Unmanned Aircraft Systems (UAS) on Army Installations, 01AUG17

ATP 3-04.64
Multi-Service Tactics, Techniques, and Procedures for the Tactical Employment of Unmanned Aircraft Systems

Fort Sill Reg 95-1
Flight Regulations

Fort Sill Reg 385-1
Post Range Regulation

Fort Sill Reg 385-10
Safety Regulation

FM 3-04.155
Army Unmanned Aircraft System Operations

TM 1-1550-689-10-1 and TM 1-1550-689-10-1
Technical Manual for Shadow 200 Tactical Unmanned Aircraft System (TUS) (NSN 1550-01-534-3238) (EIC: 60A)

TM 1-1550-695-13&P
Technical Manual Operator and Field Maintenance Manual Including Repair Parts And Special Tools List For Small Unmanned Aircraft System (SUAS) RQ-11B NSN 1550-01-538-9256 (EIC: 60C)

Section II

Related Publications

This section contains no entries

Section III

Other Directives

This section contains no entries.

Section IV

Prescribed Forms

DA Form 2397-AB

Abbreviated Aviation Accident Report (AAAR)

DA Form 5484

Mission Schedule/Brief

DD Form 175

Flight Plan, Military

DD Form 175-1

Flight Weather Briefing

DA Form 2028

Recommended Changes to Publications and Blank Forms

Section V

Referenced Forms

This section contains no entries.

Appendix B

UAS Mission Profile Checklist

The UAS operator must provide as much of the following information as possible to enable the AT&A Officer, Range Operations, Environmental, and Safety Offices at Fort Sill to determine the feasibility of the proposed UAS operation. Also provide any additional information, such as previous feasibility studies that will help determine local feasibility. The UAS operator should anticipate additional specific system related questions and/or requirements to fulfill the needs of the coordinating offices. NOTE: A tabbed folder is recommended.

- B-1.** General description of system to include dimensions, weights, and picture(s).
- B-2.** Description of planned mission and flight profiles at Fort Sill, to include launch and recovery site, mission area, route and altitude to and from mission area, mission altitude, and return home (Lost-Link) route and altitude.
- B-3.** Performance data to include climb rate, turn capability, cruise speed, normal and maximum mission altitudes, glide ratio, takeoff and landing distances, and maximum speed, fuel endurance and range.
- B-4.** System flight history data including number of flights, flight hours, system reliability, number of accidents, and types of accidents.
- B-5.** Description of command/control system to include subsystem block diagram, effective range (RF link analysis), frequencies, and personnel required to operate the system.
- B-6.** Description of pre-takeoff checks and procedures to verify the UAS control system functions correctly.
- B-7.** What type of information is available to the pilot such as map displays, telemetry data, etc., for the UAS mission?
- B-8.** What happens if the control signal is lost (loss of carrier) (link loss) or if control system does not respond to commands? Does the control system possess automatic reversion or "return home" modes?
- B-9.** Description of the Flight Termination/Recovery System, including an Auto Recovery System if applicable.
- B-10.** Meteorological restrictions on operations.
- B-11.** A Flight Controllers Manual or operating procedures as applicable.
- B-12.** Response to typical in-flight emergencies such as loss of engine.

B-13. Identify any classified equipment, hazardous systems, chemicals, pyrotechnics, etc., on the system.

B-14. A copy of a risk analysis/assessment on the UAS system.

B-15. A risk assessment IAW FM 100-14 for the mission to be flown. NOTE: If the intent is to fly over soldiers we require a risk assessment specifically addressing this requirement.

B-16. Pilots certification (who certifies/licenses), hours of time with the system, number of flights.

B-17. Environmental assessment documents pertinent to the system and/or operation.

B-18. What type of fuel is used, what is the systems fuel capacity, how much fuel will be stored on site and how will it be stored.

B-19. Safety area and/or ROZ around the system during launch and/or recovery.

Glossary

Section I Abbreviations

AGL

Above Ground Level

ARAC

Army Radar Approach Control

ARIMS

Army Records Information Management System

ASD

Administrative Services Division

AT&A

Air Traffic and Airspace

ATC

Air Traffic Control

AO

Aircraft Operator

COA

Certificate of Authorization

CRC

Combat Readiness Center

DAR

Department of the Army Regional Representative (to the FAA)

DD

Department of Defense

DHR

Directorate of Human Resources

DPTMS

Directorate of Plans, Training, Mobilization, and Security

EP

External Pilot

FAA

Federal Aviation Administration

FSIASO

Fort Sill Installation Aviation Safety Officer

HPAAF

Henry Post Army Airfield

HQDA

Headquarters, Department of the Army

IFR

Instrument Flight Rules

MC

Mission Commander

MOA

Military Operations Area

MSL

Mean Sea Level

NCO

Noncommissioned Officer

ROA

Remotely Operated Aircraft

ROZ

Restricted Operation Zone

SUAS

Small Unmanned Aircraft System (Raven, TACMAV, etc.)

TALS

Tactical Automated Landing System

TUAS

Tactical Unmanned Aircraft System (SHADOW, HUNTER, etc.)

UAS

Unmanned Aircraft System

VFR

Visual Flight Rules

Section II

Terms

Airspace Complex. The airspace under control of the Army Radar Approach Control (ARAC) to include R-5601, MOAs, and Public Use Airspace within approximately 40 nautical miles of Fort Sill, OK.

Airspace Safety Plan. A written plan that describes the overall Safety Risk Management Plan to include: normal and emergency operations, methods of control and surveillance of the UAS, and communications with Range Operations and ATC.

Air Traffic and Airspace (AT&A) Officer. The individual responsible for supervision and enforcement of applicable FAA and Army regulations governing use of the airspace and conduct of activities within the purview of AR 95-2 (580) 442-2387/ DSN 639-2387.

Coordinating Altitude. A procedural airspace control method used to separate fixed and rotary wing aircraft by determining an altitude below which fixed-wing aircraft will normally not fly, and above which rotary-wing aircraft will normally not fly. The coordinating altitude is normally specified in the Airspace Control Plan and may include a buffer zone for small altitude deviations.

Special Use Airspace (SUA). Airspace designated by the FAA with specific vertical and lateral limits, established for the purpose of containing hazardous activities or activity that could be hazardous to nonparticipating aircraft. Limitations on nonparticipating aircraft may range from absolute exclusion to complete freedom of use within certain areas, depending upon the activity being conducted.

UAS Mission Profile. A detailed description of a UAS mission from launch to recovery to include UAS operating characteristics and limitations, launch and recovery site requirements, and airspace requirements.

Section III

Special Abbreviations and Terms

UAS Designations

Reference Appendix B to ATP 3-04.64 for complete list.



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Commanding

DISTRIBUTION
Fort Sill Internet
30th ADA Bde
31st ADA Bde
75th FA Bde
428th FA Bde
434th FA Bde
MEDDAC
DENTAC
U.S. Army Garrison