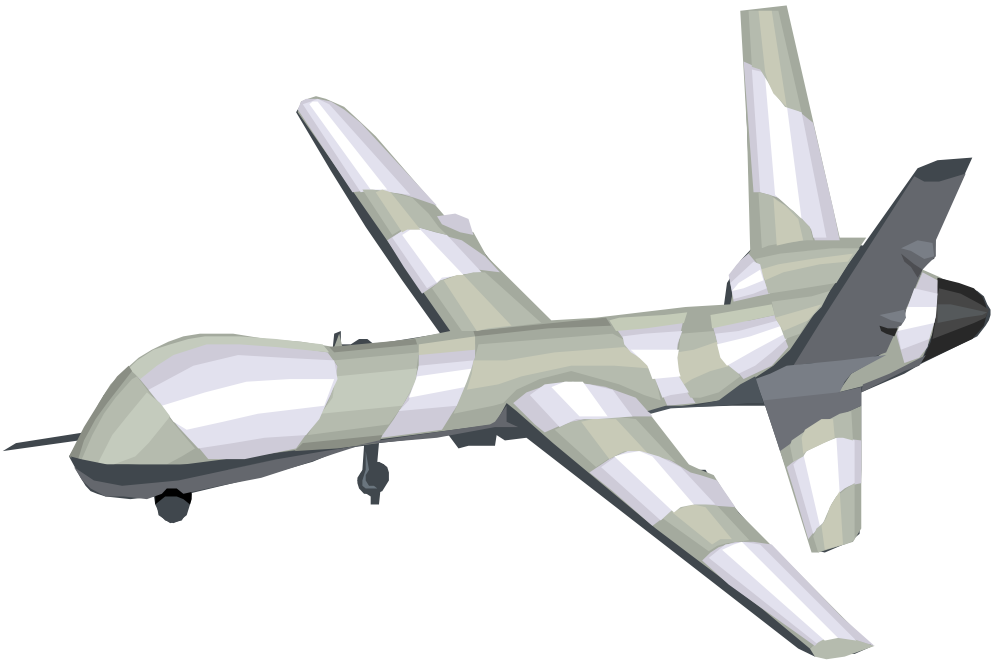
HEADQUARTERS
ATTERBURY – MUSCATATUCK
CENTER FOR COMPLEX OPERATIONS
EDINBURGH, INDIANA 46124-5000

UNMANNED AERIAL SYSTEMS PROCEDURES GUIDE ATTERBURY – MUSCATATUCK

31 JANUARY 2013



ATTERBURY – MUSCATATUCK
CENTER FOR COMPLEX OPERATIONS
UNMANNED AERIAL SYSTEMS
PROCEDURES GUIDE

PREFACE

a. Information herein pertains to all unmanned aviation operations at Atterbury – Muscatatuck Center for Complex Operations (AMCCO).

b. OIC/Operators are responsible for all information in this document.

c. Any conflict between this UAPG and DA, FORSCOM, or Atterbury/Muscatatuck Urban Training Center (MUTC) regulations will be resolved in favor of the more restrictive document. This UAPG takes precedence over unit SOPs.

d. The waiver authority for this UAPG is the DPTMS.

---*ORIGINAL SIGNED*---
DAVID G. RADER II
LTC, AV, INARNG
Aviation Division Chief

ATTERBURY – MUSCATATUCK
CENTER FOR COMPLEX OPERATIONS
UNMANNED AERIAL SYSTEMS
PROCEDURES GUIDE

INDEX

ATTERBURY – MUSCATATUCK
CENTER FOR COMPLEX OPERATIONS
UNMANNED AERIAL SYSTEMS
PROCEDURES GUIDE

1. SCHEDULING

ATTERBURY

a. Written requests for training activities/events are sent to: HQ Camp Atterbury, ATTN: CA-DPTMS, Edinburgh, IN 46124-1096. (812) 526-1170. Requests should arrive NLT 180 days prior to the desired training date(s). Any request made less than 90 days prior to the desired training date(s) will be considered on a case-by-case basis. [For short notice requirements, requests may be faxed to DSN 569-2367 or CML (812) 526-1367.] Submit frequencies utilized by UAS for analysis or provide approved spectrum analysis.

b. Mobilizing units send all training request through their chain of command to the MOC.

c. Requesting organizations/individuals will:

1) Provide signed memo from unit commander indentifying each qualified SO, IO and AO for each requested training period.

2) Provide copy of unit pre-accident plan.

3) Request Day/Night Operational Altitude from Range Control no less than 72 hours prior to operations.

4) Report to Range Control for a Range and Safety Briefing.

5) Report to Himsel Army Airfield flight operations for UA procedures brief.

6) Possess radio communication capable of VHF 126.2, Himsel Tower/Airfield Operations. Following initial contact, other frequencies may be directed depending on radio traffic. (Requesting unit is responsible for providing operators with a radio capable of VHF 126.2 MHz.)

7) Advise Range Control when mission complete and assigned training area is clear of personnel and equipment.

MUSCATATUCK

a. Written requests for training activities/events should be sent to: Muscatatuck Scheduling, (317) 247-3300 ext. 41777, email address mutcscheduling@ng.army.mil. Requests should arrive NLT 180 days prior to the desired training date(s). Any request made less than 60 days prior to the desired training date(s) will be considered on a case-by-case basis. Submit frequencies utilized by UAS for analysis or provide approved spectrum analysis.

b. Mobilizing units should send all training request through their proper chain of command up to the MOC.

c. Requesting organizations/individuals will:

1) Provide signed memo from unit commander indentifying each qualified SO, IO and AO for each requested training period.

2) Provide copy of unit pre-accident plan.

3) Request Day/Night Operational Altitude (detail plan to include dates, time line, and altitude).

4) Coordinate operational altitudes with JPG as needed. (JPG (812) 689-7295 coordination required 30 days in advance)

5) Report to Grizzly Operation for a Range and Safety Briefing NLT 72 hrs prior to mission.

6) Report to Grizzly flight operations for pilot's safety brief NLT 24 hrs prior to mission.

7) Establish radio communication with Grizzly Operations. Following initial contact, other frequencies may be directed depending on radio traffic. (The unit is responsible for providing their operators with a radio capable of radio communications with Grizzly Operations via UHF 236.15, (VHF 139.6 alternate as assigned).

8) Advise Grizzly Operations when the mission has been completed, and the training area is clear of personnel and equipment.

9) Submit completed daily ops report to Grizzly Operations.

2. UAS OPERATIONS

NIGHT/NVD OPS

a. Observers will be in position 30 minutes prior to night UA operations to ensure dark adaptation.

b. NVDs are only used as an aid for observation. Not as primary means.

ATTERBURY

a. UA operators must complete UAS Mission Sheet and provide copy of risk assessment worksheet to operations and receive procedures brief from aviation operations.

b. Advise the Airfield Operations Office or Range Control in the event of an emergency.

c. All units must send representative to daily sync meeting (normally 0800). Representative must have working knowledge of next 36 hours of activity.

d. Clearance for all flights must be approved by Himsel Tower.

e. UA operator may be require to clear all equipment from runway IOT facilitate manned aircraft operations. (Even if UA is airborne!)

f. Maintain radio communications with Himsel Tower and provide 15 minute situation reports (SITREPs).

g. Advise Himsel Tower PRIOR to personnel entering, or driving any vehicle onto the airfield runway or aircraft ramp area.

h. Contact Range Control via radio, or by any other means available, when experiencing loss of radio contact with Tower.

i. Requests for convoy-following/leading training must be specifically approve by range control.

j. Restricted Operation Area (ROA)

1) Issued to Small UAS (SUAS) operators.

2) ROA location and description will be NOTAM'd and tagged on AWOS recording

k. Himsel launch/recovery corridor

1) As required for UA operating from Himsel AAF.

2) Corridor is defined as: Grids 8257, 8557, 8254 & 8554.

3) When activated by Himsel tower, manned aircraft will remain laterally outside the defined box until UA reports climbing safely above 2000 feet MSL.

l. East TUAS Ops Facility launch/recovery corridor

1) As required for UA operation from East TUAS Ops Facility (former landfill)

2) Corridor is defined as: Training Areas 2, 3 & ASP depicted blast area.

3) When activated by Himsel tower, manned aircraft will remain laterally outside the defined box until UA reports climbing safely above 2000 feet MSL.

m. Coordinating Altitude

1) Coordinating Altitude during UA OPS is 1700 feet.

2) Manned aircraft maintain 1500 feet MSL and below.

3) UA maintain 2000 feet and above.

MUSCATATUCK

a. UA operators must complete UAS Mission Sheet, provide copy of risk assessment worksheet to operations and receive procedures brief from aviation operations.

b. UA OIC must assign two (2) qualified UA operators to act as elevated observers (VO) anytime UA is airborne. Observers must be in position ten minutes before any UA operation can occur. Observers must have radio communication capability and a back-up to transmit and receive UA GCS and Grizzly Operations (Back-up may be cell phone.)

c. UAS must comply with COA and remain in specified airspace.

d. Advise Grizzly Operations and/or Jeff Tower in the event of an emergency.

e. All units must send representative to daily sync meeting (normally 0800). Representative must have working knowledge of next 36 hours of activity.

f. Clearance for all flights must be approved by Grizzly Operations or Jeff Tower, as appropriate.

g. Maintain radio communications with Grizzly Ops or Jeff Tower, as appropriate, and provide 15 minute situation reports (SITREPs).

h. Requests for convoy-following/leading training must be specifically approve by Grizzly Ops or Jeff Range, as appropriate.

3. LOST LINK/DISORIENTED PROCEDURES:

a. If UA fails to respond to commands, comply with appropriate COA. Operator must immediately notify Himsel Tower/Range Control/Grizzly Ops/Jeff Tower, as appropriate, of UA loss link, last known position, heading, airspeed, altitude and continue attempts to regain control of UA.

b. Command/direct UA to assigned Lost Link/Loiter point (AUTO LAND, if able).

c. If at Atterbury, remain within R3401 (if possible), advise Himsel Tower and/or Range Control if UA is re-linked/landed.

d. If at Muscatatuck, remain within R3403 or COA approved airspace (if possible), advise Grizzly Ops and/or Jeff Tower if UA is re-linked/landed.

e. Upon notification of a UA that is no longer controlled by the operator, Grizzly Ops and/or Jeff Tower will ‘check fire’ Ranges and broadcast an advisory on appropriate frequencies to notify all airspace users of the errant UA and execute pre-accident plan.

f. Prepare DA Form 2397U – UAS Accident Report.

4. LOST COMMUNICATION WITH TOWER:

a. Upon losing communication with Himsel Tower/Range Control/Grizzly Ops/Jeff Tower, as appropriate, Land the UA IMMEDIATELY! Use any means available to re-establish contact.

b. No aircraft will continue training unless positive radio communication can be maintained.

5. AIR NATIONAL GUARD

ATTERBURY

a. When scheduling airspace for UA operations, coordination with ANG may be required to ensure operational safety.

b. Contact Range Control at 812-526-1351. Crosscheck requested training times versus ANG block time scheduled for the period of training you are requesting. If conflicts exist, requesting unit must coordinate de-confliction with ANG (812-526-1114).

c. During ANG operational times, UA must receive specific permission from ANG tower before operating south of 53 gridline or above 2500 feet MSL.

d. At no time will UA operators lose contact with Himsel Tower during the radio coordination with the Airguard.

e. All UAS operators at Range 36 must complete a facility request with CA-DPTMS.

MUSCATATUCK

a. When scheduling airspace for UA operations, MUTC or R3403, coordination with ANG will be required.

b. Contact Jeff Range at 812-689-7295. Crosscheck requested training times versus ANG block time scheduled for the period of training you are requesting. If conflicts exist, requesting unit must coordinate de-confliction with ANG.

c. UA must receive specific permission from Jeff tower before commencing flight operations within R3403.

6. WEATHER REQUIREMENTS. Weather requirements will be in accordance with AR 95-23, chapter 5. For local reference only: AWOS KOVO-812-346-5041; 11II-812-526-1745.

7. ACCIDENT AND INCIDENT REPORTING. In addition to requirements in AR 95-23, AR 385-10 and DA Pamphlet 385-40 provide the initial report of all UAS accidents or incidents to the appropriate DAR within 24 hours.

a. UAS accident reporting applies to all UAS (including small UAS).

b. Small UAS (under 20 pounds) accident reporting is addressed in AR 95-23.

c. DA Form 2397-U (Unmanned Aircraft System Accident Report) is required for all UAS aviation accidents, regardless of the class. Investigation and submission of form 2397-U will be in accordance with AR 385-10.

Appendix A

INSTALLATION SUPPORT UNIT
CAMP ATTERBURY
JOINT MANEUVER TRAINING CENTER
PO BOX 5000
Edinburgh, Indiana 46124-5000

CAJMTC-DPTMS-AV 01 January 2013

MEMORANDUM FOR RECORD

SUBJECT: Unmanned aircraft (UA) operations at Range 36

1. All UA operations at Camp Atterbury will schedule with CA-DPTMS scheduling; receive a range brief from CA-DPTMS range control; and receive a UA procedures brief from CA-DPTMS aviation division.

2. Exception to policy:

a. Air National Guard Detachment 1 may operate UA at range 36 whenever the ANG tower and airspace are active. Provide DPTMS aviation division: name of UA, frequencies used, maximum altitude and lost link procedure.

b. During airspace inactive periods, UA operations at Range 36 are permitted with a pre-arranged Restricted Operations Area (ROA) established and published by CA-DPTMS aviation division. UA operators must maintain line of sight and ensure UA remains within the boundaries of Range 36. Provide DPTMS aviation division: name of UA, frequencies used, maximum altitude and lost link procedure. Manned aircraft will be permitted operations south of gridline 53, but will remain outside Range 36 plus 1KM buffer.

c. All UAS operators at Range 36 must complete a facility request with AMMCO or DPTMS scheduling.

3. Point of contact is LTC Dave Rader at 812-526-1355 or david.rader@us.army.mil.

FOR THE COMMANDER

DAVID G. RADER II
LTC, AV, INARNG
Aviation Division Chief

APPENDIX B

CAIN TUAS COA OPERATIONS

TUAS Operations at CAIN will be IAW applicable Certificate of Authorization (COA).

1. In addition to provisions outlined in COA, procedures below must be followed:

48 hours prior to UA operations, Himsel operations must file FAA NOTAM (877-487-6867) and local NOTAMs with KBAK (812-379-9942), K3FK (317-736-8359) and KGEZ (317-392-8210) stating COA UA activities, altitudes, DTG and start/stop times.

a. Himsel Ops:
   1) 120 mins prior **and** completion of ops, contact ZID MOS (317-247-2242.)
   2) Ensure COA Communication/coordination requirements completed.
   3) Ensure visual observers stationed before any UAS ops commence.
   4) For local weather reference only: AWOS Himsel (812-526-1745.)
   5) Complete/submit monthly recording and reporting (operational report form.)
   6) In the event of an accident/incident, initiate the Himsel UA Pre-accident Plan.
   7) Review incident/accident/mishap reporting.
   8) Maintain launch/recovery logs.

b. Himsel Tower transmit UA Ops radio call on 126.2 MHz:
   1) Before UAS may launch or begin recovery procedures.
   2) Anytime manned aircraft is sighted or heard.
   3) Radio call is require only when UA is within or expected to enter COA airspace.

c. UA operators:
   1) Possess complete copy of appropriate COA and UAPG.
   2) Receive UAPG Brief. (Sign-in sheet) Ensure pre-takeoff briefing is completed.
   3) Submit completed Risk Assessment Worksheet.
   4) Ensure UA remains within restricted airspace or assigned COA operations area and specified altitude limits.
   5) All observers/operators utilize NVDs for night operations (SS-SR).
   6) Receive launch/recovery permission from Himsel Tower.
   7) Transmit 15 minute situation reports (SITREP) to Himsel Tower whenever UA is airborne.
   8) Report when entering or exiting COA airspace.
   9) UA must receive specific permission to enter COA airspace.
   10) Complete daily recording and reporting (operational report form.)

d. Visual Observers:
   1) Possess primary radio communication and back-up (back-up may be a cell phone)
   2) Physically located at elevated observation platform ten minutes before UA operations may commence.
   3) Transmit initial “ready” radio call to Himsel Tower once in observer position before any UA may launch.
   4) Transmit 15 minute radio checks to Himsel Tower anytime a UA is airborne.
   5) Notify Himsel Tower immediately if any manned aircraft is sighted or heard.
   6) If manned/unmanned aircraft collision appears imminent, order UAS to land immediately.

e. UA Ops radio call: “Attention all aircraft, notice to airmen, unmanned aircraft operations in progress within 1 mile north of northeast corner of restricted area between 1000ft and 2000ft MSL. Any traffic in the area, please advise.”

ATTERBURY – MUSCATATUCK
CENTER FOR COMPLEX OPERATIONS
UNMANNED AERIAL SYSTEMS
PROCEDURES GUIDE

APPENDIX C

MUTC SUAS COA OPERATIONS

SUAS Operations at MUTC will be IAW applicable Certificate of Authorization (COA).

1. In addition to provisions outlined in COA, procedures below must be followed:

48 hours prior to UA operations, Grizzly operations must file FAA NOTAM (877-487-6867) and local NOTAMs with KOVO (812-346-5223), Brush Creek (812-458-6969), KGEZ (317-392-8210) and JPG Tower (812-689-7295) stating COA UA activities, altitudes, DTG and start/stop times.

a. Grizzly Ops:
   1) 120 mins prior **and** completion of ops, contact ZID MOS (317-247-2242.)
   2) Ensure COA Communication/coordination requirements completed.
   3) Ensure visual observers stationed before any UAS ops commence.
   4) For local weather reference only: AWOS KOVO (812-346-5041.)
   5) Complete/submit monthly recording and reporting (operational report form.)
   6) In the event of an accident/incident, initiate the Grizzly UA Pre-accident Plan.
   7) Review incident/accident/mishap reporting.
   8) Maintain launch/recovery logs.

b. Grizzly Ops transmit CTAF radio call on 122.7 MHz:
   1) Before UAS may launch.
   2) Anytime new manned aircraft is sighted or heard.
   3) Anytime new manned aircraft announces intentions on CTAF for North Vernon.
   4) At top and bottom of every hour.

c. UA operators:
   1) Possess complete copy of appropriate COA and UAPG.
   2) Receive UAPG Brief. (Sign-in sheet) Ensure pre-takeoff briefing is completed.
   3) Submit completed Risk Assessment Worksheet.
   4) Ensure UA remains within assigned COA operations area and specified altitude limits.
   5) All observers/operators utilize NVDs for night operations (SS-SR).
   6) Receive launch/recovery permission from Grizzly Ops.
   7) Transmit 15 minute situation reports (SITREP) to Grizzly Ops whenever UA is airborne.
   8) Complete daily recording and reporting (operational report form.)

d. Visual Observers:
   1) Possess primary radio communication and back-up (back-up may be a cell phone)
   2) Physically located at elevated observation platform ten minutes before UA operations may commence.
   3) Transmit initial “ready” radio call to Grizzly Ops once in observer position before any UA may launch.
   4) Transmit 15 minute radio checks to Grizzly Ops anytime a UA is airborne.
   5) Notify Grizzly OPS immediately if any manned aircraft is sighted or heard.
   6) If manned/unmanned aircraft collision appears imminent, order UAS to land immediately.

e. CTAF radio call: “North Vernon traffic, notice to airmen, unmanned aircraft operations in progress vicinity water tower 3 miles east of airport below 700ft (or as authorized by COA) AGL, North Vernon.”

APPENDIX D

MUTC TUAS COA OPERATIONS

TUAS Operations at MUTC will be IAW applicable Certificate of Authorization (COA).

1. In addition to provisions outlined in COA, procedures below must be followed:

48 hours prior to UA operations, Grizzly operations must file FAA NOTAM (877-487-6867) and local NOTAMs with KOVO (812-346-5223), Brush Creek (812-458-6969), KGEZ (317-392-8210) and JPG Tower (812-689-7295) stating COA UA activities, altitudes, DTG and start/stop times.

a. Grizzly Ops:
   1) 120 mins prior **and** completion of ops, contact ZID MOS (317-247-2242.)
   2) Ensure COA Communication/coordination requirements completed.
   3) Ensure visual observers stationed before any UAS ops commence.
   4) For local weather reference only: AWOS KOVO (812-346-5041.)
   5) Complete/submit monthly recording and reporting (operational report form.)
   6) In the event of an accident/incident, initiate the Grizzly UA Pre-accident Plan.
   7) Review incident/accident/mishap reporting.
   8) Maintain launch/recovery logs.

b. Grizzly Ops transmit CTAF radio call on 122.7 MHz:
   1) Before UAS may enter COA airspace.
   2) Anytime new manned aircraft is sighted or heard.
   3) Anytime new manned aircraft announces intentions on CTAF for North Vernon.
   4) At top and bottom of every hour.

c. UA operators:
   1) Possess complete copy of appropriate COA and UAPG.
   2) Receive UAPG Brief. (Sign-in sheet) Ensure pre-takeoff briefing is completed.
   3) Submit completed Risk Assessment Worksheet.
   4) Ensure UA remains within restricted airspace or assigned COA operations area and specified altitude limits.
   5) Maintain dual GCAs/split site ops and BPT conduct control station transfer, as required.
   6) All observers/operators utilize NVDs for night operations (SS-SR).
   7) Receive launch/recovery permission from JPG Tower.
   8) Transmit 15 minute situation reports (SITREP) to Grizzly Ops and JPG Tower whenever UA is airborne.
   9) Complete daily recording and reporting (operational report form.)

d. Visual Observers:
   1) Possess primary radio communication and back-up (back-up may be a cell phone)
   2) Physically located at elevated observation platform ten minutes before UA operations may commence.
   3) Transmit initial “ready” radio call to Grizzly Ops once in observer position before any UA may launch.
   4) Transmit 15 minute radio checks to Grizzly Ops anytime a UA is airborne.
   5) Notify Grizzly OPS immediately if any manned aircraft is sighted or heard.
   6) If manned/unmanned aircraft collision appears imminent, order UAS to return to restricted airspace immediately and land.

e. CTAF radio call: “North Vernon traffic, notice to airmen, unmanned aircraft operations in progress vicinity water tower 3 miles east of airport between 2800ft to 3800ft MSL(or as authorized by COA), North Vernon.”

APPENDIX E

ATTERBURY – MUSCATATUCK
CENTER FOR COMPLEX OPERATIONS
UNMANNED AERIAL SYSTEMS
PROCEDURES GUIDE
UAS CONSIDERATIONS

1.) UAS Considerations
    a. Approximate size of the UAS?
    b. Frequencies used? Approved spectrum analysis? Potential interference civilian R/C operations? Transponder?
    c. Requestor possesses appropriate voice transceiver?
        1) (CA -126.2 VHF) (MUTC -236.15 UHF)
    d. UAS launched/recovery procedures?
        1) Runway requirements, if any?
        2) Special equipment, if any?
        3) Time required to set-up/tear-down equipment?
    e. Lost link procedure?
        1) Altitude?
        2) Return point?
        3) Emergency/auto land profile?
    f. UAS Operations logistical requirements?
        1) Tent/hangar required to service or store the UAS? Surface requirements?
        2) Tent/TOC for UAS Command and Control? Surface requirements?
        3) Electrical requirements? Generators?
        4) 'Port-a-johns'?
    g. Type of training conducted?
        1) Flight levels/altitudes UA operates?
        2) Day/Night/NVD?
        3) Multiple UAs? How many?
        4) Maneuver area required for UA operation? _____ Mile(s) radius?
        5) Typical flight pattern or route?
        6) Typical flight duration?
        7) Reconnaissance only? Laser Designation? Payloads? Weaponized?
        8) Call Signs?
2.) Manned Aircrew Considerations (Non-participating manned aircraft)
    a. Call sign of UAS?
    b. Approximate Size?
    c. Launch/Recovery procedures?
    d. What Altitude and location will UAS operate?
    e. What times?
    f. ROZ in effect during takeoff and landings? How long?
    g. Lost Link Procedures/attitudes/return point?

APPENDIX F

UAS Mission Form

Unit/Call Sign (State or Base):_____

Training Areas used: _____

Location of Launch: _____

Type & Number of UAs: _____Total Weight w/Payload_____

Lost Link/Loiter Point:_____

Highest Altitude Requested: _____

On-Site OIC/IOs/VOs: _____

_____

Cell phone: _____Number Personnel Training_____

.

Start/Stop Dates_____Times of Operations_____

All launch/recoveries of UA must be requested through Himsel Tower on 126.2 or Grizzly Operations on 236.15. Units are required to maintain communications with Himsel tower/Grizzly Ops and check-in every 15 minutes with a status call, i.e. 'Operations Normal'. In the event radio communications cannot be establish, other means of communications must be utilized and UA must land immediately!

.

Date: _____Operations Initials: _____OIC Initials: _____

APPENDIX G

Received Operator Brief/UAPG & COA Possession

Unit _____ Date _____

	Rank/Name	Signature
1	OIC	
2	NCOIC	
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		

APPENDIX H

**UAS COMBINED MISSION BRIEFING AND RISK ASSESSMENT WORKSHEET
FOR OPERATIONS AT MUSCATATUCK URBAN TRAINING CENTER**

DATE	UNIT	TAIL #	MSN #	MISSION TYPE			CONTROLLING AGENCY	FREQUENCY
AC (SEAT) A or P	**AO (SEAT) A or P**	**EO**	**IO**	**SO**	**UT**	**CREW CHIEF**	**MSN CODE (A,C,F,S,R,D,T,X)**	**FLIGHT CONDITIONS**
/	/							DAY NIGHT SIM
*Weather briefings WILL be obtained from Air Force Wx 15th OWS @ 618-256-9755								
Circle the appropriate risk level for each section below. The combined risk value will be the highest level circled.								

WEATHER	L	M	H	EH
CEILING (FT) Minimum 1000'	1000	N/A	N/A	N/A
VISIBILITY (SM) Minimum 3 miles	3 Miles	N/A	N/A	N/A
RAIN / SNOW	NONE	LIGHT	N/A	N/A
TEMPERATURE (Degrees C)	-20 to 50 C	N/A	N/A	< -20 or >50 C
TURBULANCE	LIGHT	N/A	N/A	N/A
FORECASTED ICING	N/A	N/A	N/A	N/A
FIGHTER MANAGEMENT	**L**	**M**	**H**	**EH**
HOURS OF REST	> 10	8-10	< 8	N/A
LENGTH OF DUTY DAY	< 12	12-14	> 14	N/A
EXTENSIONS IN PAST 24 HRS	N/A	2 HRS	4 HRS	N/A
CREW EXPERIENCE	**L**	**M**	**H**	**EH**
AIRCREW	RL 1	RL 2 / RL 3	N/A	N/A
GROUND CREW AVAILABLE	≥ 1	NONE	N/A	N/A
THUNDERSTORMS / LIGHTENING	**L**	**M**	**H**	**EH**
T-STORMS	ISOLATED 1-2%	FEW 3-10%	SCATTERED > 11%	N/A

*FLIGHT ACTIVITY IS NOT AUTHORIZED WHEN T-STORMS ARE OBSERVED WITHIN 5 NM OF MUTC, OR REPORTED BY THE NORTH VERNON AIRPORT AWOS.

ADDITIONAL HAZARDS / RISK MITIGATION / MISSION REMARKS	NOTES
	Supervision of an IO/SO will mitigate operator experience by one risk level. The IO/SO will be designated as AC when assigned

BRIEFING APPROVAL		
AC INITIALS	**BREIFING OFF / NCO INITIALS**	**RISK ASSESSMENT VALUE (RAV)**

MISSION APPROVAL AUTHORITY (AR 95-23)		
MISSION COORDINATOR		
COMPANY COMMANDER	LOW	
BATTALION COMMANDER	MODERATE	
BRIGADE COMMANDER	HIGH	
GENERAL OFFICER	EXT HIGH	

MISSION BRIEF BACK			
MISSION STATUS (circle one)	MISSION COMPLETE	NOT COMPLETED	CANCELLED
REMARKS:			

IAW AR 95-23, DA Form 5484 will be retained in the unit files with the corresponding RAW for 30 days.

APPENDIX H1

MISSION SCHEDULE/BRIEF

For use of the form, see AR 95-1; the proponent agency is DCS, G-3/5/7.

DATE*	AC#*	PC*	PI*	CREWMEMBERS*	FLIGHT* COND	MISSION*	ETD /* ETE	INITIALS		RAV*	MS*	REMARKS
								PC	BRIEFER			

LEGEND

FLIGHT CONDITION		MS		* MANDATORY FOR ALL FLIGHTS
1. DAY	4. IMC/SIM IMC	MISSION STATUS	CX-CANCELED	
2. NIGHT	5. MULTI A/C	MC-MSN COMPLETE		
3. ND	6. TERRAIN FLT	NC-NOT COMPLETE AS BRIEFED; SEE REMARKS		

DA FORM 5484, JAN 2006 PREVIOUS EDITIONS ARE OBSOLETE. APD PE v1.00

APPENDIX I

Daily & Monthly Operations Report Form (on-line)

Due within 5 business days after end of reporting month

Monthly Operational Report Form

Month/Year:*
(mm/yyyy)

COA #:*
(2009-CSA-12-COA)

Proponent:*
(DHS/CBP; University of Arizona)

Type Aircraft:*
(Make / Model / Series)

Total Number of Flights Conducted:*
(A flight during which any portion is conducted in the NAS must be counted only once, regardless of how many times it may enter and leave special use airspace between takeoff and landing.)

Total Aircraft Operational Hours:*
(Expressed in hours and tenths of hours.)

Total Ground Control Station Operational Hours:*
(Include LRE operations. Expressed in hours and tenths of hours.)

For Each Flight: Date, Flight Number (for that day), Aircraft Operational Hours, GCS Operational Hours and Pilot Duty Time per PIC:*
09/13/2011:
Flt. 1; 2.0hrs; 3.0hrs; 0.8hrs PIC1, 1.5hrs PIC2
Flt. 2; 4.0hrs; 5.0hrs; 1.8hrs PIC1, 2.7hrs PIC2
Flt. 3; 6.0hrs; 7.0hrs; 2.8hrs PIC1, 3.7hrs PIC2

Total # of Deviations from ATC Instructions and/or Letters of Agreement / Procedures:*

Total # of Loss of Communication events (with either observer or ATC):*

Total duration of Loss of Communication events (with either observer or ATC):*

Total # of Lost Link events:*
(Control, aircraft performance and health monitoring, or communications per aircraft per flight.)

Total duration of Lost Link events:*

Number and duration of Loss of Communication (with either observer or ATC) and Lost Link Events:*
List the date, event type and duration for each event; for example:
09/13/2011; Lost Link; 1min 45sec
09/13/2011; Lost Link; 2min 11sec
09/27/2011; Loss of ATC Comm; 44sec

Total # of Equipment Malfunctions:*
(Hardware/software affecting either the aircraft or the ground control station.)

Describe any other Operational / Coordination issues:*

APPENDIX I1

Daily Operational Report Form

Date (mm/dd/yyyy)	
COA # (2009-CSA-1Z-COA)	
Proponent (CAP, University, ETC.)	
Type Aircraft (make, model, series)	
Total # of Flights Conducted (A flight during which any portion is conducted in the NAS must be counted only once, regardless of how times it may enter and leave special use Airspace between takeoff and landing)	
Total Aircraft Operational Hrs (Expressed in hrs and tenths of hrs)	
Total Ground Control Station Operational Hrs (Include LRE operations, expressed in hrs and tenths of hrs)	
For Each Flight : Date, Flight Number(for that day), Aircraft Operational Hrs, GCS Operational Hrs, and Pilot Duty Time per PIC 09/13/2011: Flt. 1; 2. Ohrs; 3. Ohrs; 0. Ohrs; PIC1, 1.5 hrs PIC2 Flt. 2; 4. Ohrs: 5. Ohrs; 1. Ohrs; PIC1, 2.7 hrs PIC2 Flt. 3: 6. Ohrs; 7. Ohrs; 2. Ohrs; PIC1, 3.7 hrs PIC2	
Total # of Deviations from ATC instructions and / or Letters of Agreement / Procedures	
Total #of loss of communication events (with either observer or ATC)	
Total duration of loss of communication events (with either observer or ATC)	
Total # of lost link events (control, aircraft performances and health monitoring or communications per aircraft per flight	
Total duration of lost link events	
Number and duration of loss communication (with either observer or ATC) and lost link events List the date, event type, and duration for each event	
Total # of Equipment Malfunctions (hardware/software affecting aircraft or ground control)	
Describe any other operational/coordination issues	

APPENDIX I2

Monthly Operational Report Form

Date (mm/yyyy)	
COA # (2009-CSA-1Z-COA)	
Proponent (CAP, University, ETC.)	
Type Aircraft (make, model, series)	
Total # of Flights Conducted (A flight during which any portion is conducted in the NAS must be counted only once, regardless of how times it may enter and leave special use Airspace between takeoff and landing)	
Total Aircraft Operational Hrs (Expressed in hrs and tenths of hrs)	
Total Ground Control Station Operational Hrs (Include LRE operations, expressed in hrs and tenths of hrs)	
For Each Flight : Date, Flight Number(for that day), Aircraft Operational Hrs, GCS Operational Hrs, and Pilot Duty Time per PIC 09/13/2011: Flt. 1; 2. Ohrs; 3. Ohrs; 0. Ohrs; PIC1, 1.5 hrs PIC2 Flt. 2; 4. Ohrs: 5. Ohrs; 1. Ohrs; PIC1, 2.7 hrs PIC2 Flt. 3: 6. Ohrs; 7. Ohrs; 2. Ohrs; PIC1, 3.7 hrs PIC2	
Total # of Deviations from ATC instructions and / or Letters of Agreement / Procedures	
Total #of loss of communication events (with either observer or ATC)	
Total duration of loss of communication events (with either observer or ATC)	
Total # of lost link events (control, aircraft performances and health monitoring or communications per aircraft per flight	
Total duration of lost link events	
Number and duration of loss communication (with either observer or ATC) and lost link events List the date, event type, and duration for each event	
Total # of Equipment Malfunctions (hardware/software affecting aircraft or ground control)	
Describe any other operational/coordination issues	

APPENDIX J

UNMANNED AIRCRAFT SYSTEM ACCIDENT REPORT *(UASAR)*
Use for all UAS Aviation Accidents
For use of this form, see DA Pamphlet 385-40; the proponent agency is OCSA

REQUIREMENTS CONTROL SYMBOL
CSOCS-309

1. ACCIDENT CASE INFORMATION	a. Date *(YYYYMMDD)*	b. Time *(Local)*	c. UA Tail Number			
2. ACCIDENT CLASS/ CATEGORY	a. Classification ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F	b. Category ☐ Flight ☐ Flight Related ☐ Aircraft Ground	**3. UAS MTDS**			
4. PERIOD OF DAY ☐ Dawn ☐ Day ☐ Dusk ☐ Night	**5. AIRCRAFT INVOLVED**	a. Number of Aircraft Involved	b. In Flight/Mid-Air Collision ☐ Yes ☐ No ☐ Unknown	**6. NEAREST MILITARY INSTALLATION**		
7. ACCIDENT LOCATION	a. ☐ On-Post ☐ Off-Post	b. ☐ On Airfield ☐ Not on Airfield	c. City	d. State	e. Country	f. Grid and/or Lat/Long

8. ORGANIZATION INVOLVED

a. Unit Designation	b. Unit Identification Code (UIC)	c. Home Station	d. Army Headquarters

9. ACCOUNTABLE ORGANIZATION *(If same as block 8 leave blank)*

a. Unit Designation	b. Unit Identification Code (UIC)	c. Home Station	d. Army Headquarters

10. ACCIDENT COST DATA	a. UA Total Loss ☐ Yes ☐ No	b. UA Damage or replacement Cost *(Excluding Man-hours)* $	c. Number of Man-Hours	d. Man-Hours Cost $	e. Other UAS Sub-System Cost $
f. Other Damage Cost-Military $	g. Other Damage Cost-Civilian $	h. Injury/Occupational Illness $	i. Total Cost *(This UAS)* $	j. Total Cost *(All Aircraft)* $	

11. GENERAL DATA	a. Mission	a(1). Type Mission	a(2). Aircraft Mode ☐ Single-ship ☐ Multi-ship ☐ Manned/Unmanned Teaming	a(3). Level of Interoperability (LOI) ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ NA	
a(4). Simultaneous UA Operation? ☐ Yes ☐ No *(If Yes, specify number & MTDS)*		b. Flight Plan ☐ Military ☐ Civil ☐ Operation's Log	c. Flight Rules ☐ VFR ☐ IFR		
d. Mission/ Training	d(1). At what level was mission/training conducted? ☐ Bde ☐ Bn ☐ Co ☐ Plt ☐ Sqd ☐ Team ☐ Crew	d(2). Who approved the mission/training? Rank & Position:			
d(3). Was a mission brief completed? ☐ Yes ☐ No	d(4). Who was in charge during the mission? Rank & Position:	d(5). Who was the senior leader present during the mission/training? Rank & Position:			
e. Risk Management (RM)	e(1). RM Performed? ☐ Yes ☐ No	e(2). Who performed the RM? Rank & Position:	e(3). RM Approved? ☐ Yes ☐ No	e(4). Who accepted risks? Rank & Position:	
e(5). What was the level of the risk *after* controls applied? ☐ Low ☐ Moderate ☐ High ☐ Extremely High		e(6). How was the RM process communicated? *(Check all that apply.)* ☐ Worksheet ☐ Verbal Brief ☐ Order ☐ Not Communicated			
e(7). Accident event identified/considered during RM process? *If yes, complete blocks 11a(7)a thru 11e(7)d)* ☐ Yes ☐ No		e(7)a. What was the level of the identified risk? ☐ Low ☐ Moderate ☐ High ☐ Extremely High			
e(7)b. Was the control measure(s) applied? ☐ Yes ☐ No	e(7)c. Who was responsible for implementing the controls? Rank & Position:		e(7)d. Was the potential for accident event accepted as residual risk? ☐ Yes ☐ No		
f. Digital Source Collector (DSC)	f(1). DSC installed? *(If yes, enter type of DSC)* ☐ Yes ☐ No	f(2). Data captured and preserved? *(If yes, specify storage location)* ☐ Yes ☐ No			
g. Fire ☐ None ☐ Inflight ☐ Postcrash ☐ Other *(Specify)*	h. Hazardous Material Spillage *If yes & a Class A, B or C accident, attach DA Form 2397-6)* ☐ Yes ☐ No	i. Did accident occur while on an exercise or at a training facility/center? *(If yes, enter the name)* ☐ Yes ☐ No			

12. SUMMARY *(Attach a continuation sheet(s) as needed)*

DA FORM 2397-U, FEB 2010

PAGE 1 OF 3
APD PE v1.00ES

13. FLIGHT DATA	Flight Duration	Phase of Operation *(Enter max of 3 codes from Table 3-4 of DA Pam 385-40 or specify the phase if there is no code for it in the table)*	Altitude MSL	Altitude AGL	Airspeed KIAS	UA Weight	UA Overgross Weight for Conditions Yes	No	**14. TYPE EVENTS** *(Enter max of 3 codes from Appendix F table F-3 of DA Pam 385-40 or specify the type event which best describes the accident/incident event if there is no code for it in the table.)*
a. At Emergency/ Onset	Hours Tenths						☐	☐	
b. At Impact/Acdt or Termination	Hours Tenths						☐	☐	
c. Flight Ctrl Malfunction	Check all that apply: ☐ Human ☐ Environmental ☐ Materiel ☐ Hardware ☐ Software ☐ Component/Part ☐ Not Applicable								

15. ACCIDENT CAUSE FACTORS *(For blocks 15a-c, D=definite, S=Suspected, U=Undetermined and N=No/None)*	a. Human Factors *(Check box D, S, U or N. If D or S, complete blocks 15a(1)(a)-(e))* ☐D ☐S ☐U ☐N
a(1). System Inadequacies *(Enter max of 3 codes in each block below from table B-5 (Additional codes in table B-1) DA Pam 385-40 or if there is no code in the table, write in that which best describes the failure)*	

a(1)a. Support Failure	a(1)b. Standards Failure	a(1)c. Training Failure	a(1)d. Leader Failure
a(1)e. Individual Failure	b. Materiel Factors *(Check box D, S, U or N. If D or S, complete blocks 15b(1)-(2))* ☐D ☐S ☐U ☐N	b(1). Type *(Check all that apply.)* ☐ Component/Part ☐ Hardware ☐ Software	

b(2). Component and Part *(Part that initiated failure/malfunction)*

	UAS Subsystem *(UA, GCS, GDT, TALS, etc.)*	Major Component	Part
a. Nomenclature			
b. Type, Design, and Series			
c. Part Number			
d. NSN/ Manufacturer's Number			
e. Manufacturer's Code			
f. Serial Number			
g. Cause of Failure/ Malfunction		☐ Materiel ☐ Maintenance ☐ Design ☐ Manufacture	*(Enter the applicable Failure Codes (max 2) using table 1-2, DA Pam 738-751 (TAMMS-Aviation))*

c. Environmental Factors *(Check box D, S, U or N, as appropriate.)* ☐D ☐S ☐U ☐N	c(1). General *(Check all that apply.)* ☐ VMC ☐ IMC ☐ Icing ☐ Turbulence	c(2). Weather Conditions *(Enter max of 3 codes from Appendix F table 3-26 of DA Pam 385-40 or specify the weather condition if there is no code for it in the table.)*
c(3). Environmental Signal Factors ☐ Uplink ☐ Downlink ☐ Interference ☐ E[3] ☐ NA ☐ Other *(Specify)*		
c(4). Other Environmental Factors *(Enter max of 3 codes from Appendix F table 3-27 of DA Pam 385-40 or specify the weather condition if there is no code for it in the table.)*		

16. LOSS OF LINK *(Check box D, S, U or N. If D or S, complete blocks 16 a-d)* ☐D ☐S ☐U ☐N	a. Type of Link Lost ☐ Uplink ☐ Downlink ☐ Unknown	b. Type of Link ☐ LOS ☐ BLOS ☐ C-Band ☐ Ku-Band ☐ Other *(Specify)*
c. UA distance from the GCS at time of LOL	d. LOL Factors *(Check all that apply.)* ☐ Human ☐ Environment ☐ Materiel ☐ Hardware ☐ Software ☐ Component/Part	

17. TAKE OFF/LANDING DATA *(Complete block 17a if accident occured during take-off phase and block 17b if during landing phase.)*

a. Take-Off (T/O) Phase	a(1). T/O Method ☐ ATLS ☐ Launcher ☐ Manual	a(2). T/O Accident Factors *(Check all that apply.)* ☐ Human ☐ Environment ☐ Materiel ☐ Hardware ☐ Software ☐ Component/Part
b. Landing Phase	b(1). Landing Method ☐ ATLS ☐ TALS ☐ FTS ☐ Manual	b(2). Landing Accident Factors *(Check all that apply.)* ☐ Human ☐ Environment ☐ Materiel ☐ Hardware ☐ Software ☐ Component/Part

DA FORM 2397-U, FEB 2010

PAGE 2 OF 3
APD PE v1.00ES

18. TYPE OF STRIKE

☐ Wire ☐ Bird ☐ Tree ☐ Object ☐ Lighting ☐ Antenna ☐ N/A ☐ Other *(Specify)*

19. PERSONNEL DATA *(Complete for each crew member with access to flight controls, personnel injured/occupational illness, personnel having a contributing role in the accident; use additional forms if needed.)*

a. Name *(Last, First, MI)*	(1) SSN	(2) Grade	(3) Gender ☐ Male ☐ Female	(4) Duty	(5) SVC	(6) UIC *(Assigned)*	(7) Contributing Role ☐ D ☐ S ☐ U ☐ N	(8) On Fit Ctfs ☐ Yes ☐ No	(9) Lab Test ☐ Pos ☐ Neg ☐ Not Required
(10) Activity (a) Hrs Slept / (b) Hrs Worked / (c) Hrs Flown	(11) Individual Status (a) RL ☐ 1 ☐ 2 ☐ 3 ☐ Msn Prep ☐ Msn Qual (b) FAC ☐ 1 ☐ 2 ☐ 3 ☐ NA *(SUAS Operators)* (c) Redeployed Date *(YYYYMMDD)*					(12) Injury/Occupational Illness *(If "yes" complete and attach DA Form 2397-9)* ☐ Yes ☐ No		(13) MTDS Flt Hrs	(14) Total Flt Hrs
b. Name *(Last, First, MI)*	(1) SSN	(2) Grade	(3) Gender ☐ Male ☐ Female	(4) Duty	(5) SVC	(6) UIC *(Assigned)*	(7) Contributing Role ☐ D ☐ S ☐ U ☐ N	(8) On Fit Ctfs ☐ Yes ☐ No	(9) Lab Test ☐ Pos ☐ Neg ☐ Not Required
(10) Activity (a) Hrs Slept / (b) Hrs Worked / (c) Hrs Flown	(11) Individual Status (a) RL ☐ 1 ☐ 2 ☐ 3 ☐ Msn Prep ☐ Msn Qual (b) FAC ☐ 1 ☐ 2 ☐ 3 ☐ NA *(SUAS Operators)* (c) Redeployed Date *(YYYYMMDD)*					(12) Injury/Occupational Illness *(If "yes" complete and attach DA Form 2397-9)* ☐ Yes ☐ No		(13) MTDS Flt Hrs	(14) Total Flt Hrs
c. Name *(Last, First, MI)*	(1) SSN	(2) Grade	(3) Gender ☐ Male ☐ Female	(4) Duty	(5) SVC	(6) UIC *(Assigned)*	(7) Contributing Role ☐ D ☐ S ☐ U ☐ N	(8) On Fit Ctfs ☐ Yes ☐ No	(9) Lab Test ☐ Pos ☐ Neg ☐ Not Required
(10) Activity (a) Hrs Slept / (b) Hrs Worked / (c) Hrs Flown	(11) Individual Status (a) RL ☐ 1 ☐ 2 ☐ 3 ☐ Msn Prep ☐ Msn Qual (b) FAC ☐ 1 ☐ 2 ☐ 3 ☐ NA *(SUAS Operators)* (c) Redeployed Date *(YYYYMMDD)*					(12) Injury/Occupational Illness *(If "yes" complete and attach DA Form 2397-9)* ☐ Yes ☐ No		(13) MTDS Flt Hrs	(14) Total Flt Hrs

20. FINDINGS AND RECOMMENDATIONS *(See instructions in DA Pam 385-40, para 2-24, for writing findings and recommendations. Use additional sheets if needed)*

USACRC use only								
Duty		Role		Failure/error Code	SI 1	RM 1	RM 2	RM 3
Phase of OP		Task/part no.			SI 2	RM 1	RM 2	RM 3

21. LIST OF ATTACHMENTS *(ECOD/ACOD, CCAD, PQDR, DA Forms 2397-series, etc.)*

22. BOARD PRESIDENT/ASO/POC *(Name, Signature, and Date)*	a. Grade	b. Branch	Address and Tel No. *(DSN and Com)*
	E-Mail		

23. COMMAND REVIEW *(Only required for class A, B & C)*

Reviewer	Organization	Name *(Last, First, MI)*	Rank	Comments	Signature
a. Unit Commander				☐ Concur ☐ Non-concur	
b. Reviewing Official				☐ Concur ☐ Non-concur	
c. Approving Authority				☐ Concur ☐ Non-concur	
d. DA Review	USACR/SC			Approved for entry into ASMIS *(YYYYMMDD)*	

DA FORM 2397-U, FEB 2010

PAGE 3 OF 3
APD PE v1.00ES

APPENDIX K

Atterbury

UA Loiter/Loss Link Points

a. EJ 806567 (vic Smith DZ)
b. EJ 794535 (vic Area 702)
c. EJ 844551 (vic Larkin DZ)
d. EJ 855553 (vic East TUAS OPS Facility)
e. EJ 864560 (vic Kleiber DZ)

Muscatatuck

UA Loiter/Loss Link Points

a. LZ Holland (NE)
1) N39 03.19 W085 30.58
2) 16S FJ 28957 23733
b. LZ Bataan (E)
1) N39 02.87 W085 32.50
2) 16S FJ 27120 24100
c. LZ Saber (SE)
1) N39 02.56 W085 31.97
2) 16S FJ 26970 22530
d. LZ Snyder (SW)
1) N39 02.68 W085 32.14
2) 16S FJ 26730 22750
e. LZ Clemens (NW)
1) N39 03.18 W085 32.05
2) 16S FJ 26840 23680

Jefferson Proving Grounds

UA Loiter/Loss Link Point

c. N39 00.59 W085 26.09

Appendix L

Abbreviations

AC
Aircraft commander
AD
Airworthiness Directive
AGL
Above ground level
AO
Aircraft operator
APART
Annual proficiency and readiness test
AR
Army regulation
ARMS
Aviation Resource Management Survey
ARNG
Army National Guard
ASA
Aviation safety action
ATC
Air traffic control
ATM
Aircrew training manual
ATP
Aircrew Training Program
CAFRS
Centralized Aviation Flight Records System
CAIN
Camp Atterbury, Indiana
CFR
Code of Federal Regulations
CG
Commanding general
COA
Certificate of authorization
CTAF
Common Traffic Advisory Frequency
CVR
Cockpit voice recorder
DA
Department of the Army
DAR
Department of the Army Representative
DES
Directorate of Evaluation and Standardization
DOD
Department of Defense
DOTD
Directorate of Training and Doctrine
DRU
Direct Reporting Unit
DSC
Digital source collector
EO
External operator
ETA
Estimated time of arrival
FAA
Federal Aviation Administration
FAR
Federal aviation regulation
FDR
Flight data recorder
FLIP
Flight information publication
FM
Field manual
FOIA
Freedom of Information Act
FTG
Flight training guide
GCS
Ground control station
GPS
Global Positioning System
IATF
Individual aircrew training folder
IFR
Instrument flight rules
IFRF
Individual flight records folder
IKTP
Initial key personnel training
IMC
Instrument meteorological conditions
IO
Instructor operator
MC
Mission coordinator
MOS
Military occupational specialty
MQ
Mission qualified
MT
Master trainer
MTDS
Mission, type, design, and series
MUTC
Muscatatuck Urban Training Complex
NCO
Noncommissioned officer
NGB
National Guard Bureau
NOTAM
Notice to Airman
PO
Payload operator
POI
Program of instruction
PM
Project manager
RAW
Risk assessment worksheet
RL
Readiness level
SAAO
State Army aviation officer
SB
Supply bulletin
SME
Subject matter expert
SOF
Safety of flight
SOP
Standing operating procedure
SO
Standardization instructor operator
SP
Standardization instructor pilot
S–PART
Semiannual proficiency and readiness test
SUA
Special use airspace
SUAS
Small Unmanned Aircraft System
TB
Technical bulletin
TM
Technical manual
TRADOC
U.S. Army Training and Doctrine Command
UA
Unmanned aircraft
UAC
Unmanned aircraft crewmember
UAS
Unmanned Aircraft System
U.S.
United States
USAASA
U.S. Army Aeronautical Services Agency
USSOCOM
U.S. Special Operations Command
UT
Unit trainer
VFR
Visual flight rules
VMC
Visual meteorological condition
VO
Visual observer
ZID
Indianapolis Radar Center

Terms

Aeronautical information manual

A manual that provides the aviation community with basic flight information and ATC procedures for use in the National Airspace System of the United States. It also contains items of interest to operators and aircrew members concerning health and medical facts, factors affecting flight safety, a operator and/or controller glossary of terms used in the Air Traffic Control System, and information on safety, accident, and hazard reporting.

Air traffic

Aircraft and/or air vehicles operating in the air or on an airport surface, exclusive of loading ramps and parking areas.

Aircrew training manual (ATM)

A publication that contains Army training requirements for Army flight crewmembers and programs for qualification, refresher, mission, and continuation training in support of the Aircrew Training Program (ATP), including unmanned aerial vehicle system crewmembers training programs.

Aircrew Training Program (ATP)

Army aviation aircrew standardized training and evaluation program.

Army aircraft and/or unmanned aircraft

Aircraft and/or unmanned aircraft under the jurisdiction of the Department of the Army.

Army aviation standardization

The use of uniform tested procedures and techniques to attain a high level of readiness and professionalism in the operation and employment of Army aircraft and/or unmanned aircraft. This is achieved through standardized publications and training literature, a disciplined instructor operator force, tests, flight checks, and command supervision. Standardization includes aviator cockpit, performance, aircrew teamwork, tactics, maintenance, and safety. For UAS, standardization includes external operator and/or external air vehicle crewmember performance, air vehicle crewmember and/or air vehicle operator, and mission payload operator performance, aircrew teamwork, tactics, maintenance, and safety.

Army safety action team

Standing committee that meets on call to address HQDA-level Safety of Flight and Safety of Use issues, provide coordinated recommendations to the Office of the Chief of Staff, Army, and expedite corrective actions to maximize readiness, safety and training. See AR 385–10 for specific objectives, membership, and procedures.

Aviation safety action messages (ASAM)

Electrically transmitted messages that convey maintenance, technical or general interest information where a low to medium risk safety condition has been determined per AR 385–10. The ASAMs are of a lower priority than SOF messages.

Catastrophic failure

Any failure that leads to the loss of the UA(s).

Command and/or staff aviation officer

A special staff aviator designated by the commander to provide advice or manage aviation assets, aviation standardization, and aviation safety.

Controlled airspace

A generic term that covers the different classification of airspace (Class A, Class B, Class C, Class D, and Class E airspace) and defined dimensions within which air traffic control service is provided to instrumented flight rules flights and to VFR flights in accordance with the airspace classification (see the Aeronautical Information Manual).

Crewmember

Includes all flight and ground crewmembers, and others who perform aircrew duties as listed in this regulation.

Cross-country flight

A flight extending beyond the local flying area or within the local flying area which is planned to terminate at a place other than the place of origin.

External operator (EO)

The UAS crewmember who, in the absence of full automatic takeoff and landing systems, visually controls the UAS flight path, generally during takeoff and/or landing.

Flight crew station
A station in an air vehicle that a flight crewmember occupies to perform his or her flight duty, for example, operator stations specified in operator's manuals. For UAS, a station associated with the in-flight operation of a UAS at which flight controls may be used to control air vehicle flight; for example, air vehicle operator, external operator, or mission payload operator stations specified in the operator's manual.

Flight crewmember
Any instructor pilot, flight examiner, pilot, copilot, flight engineer and/or mechanic, flight navigator, weapon systems operator, bombardier navigator, radar intercept operator, sensory system operator, boom operator, crew chief, loadmaster, remotely operated aircraft operator, UAS operator, defensive and/or offensive system operator, and other flight manual handbook identified crewmember when assigned to their respective crew positions to conduct a military flight or any flight under the contract. For UAS, an AO, EO, IO, MC, PO or SO assigned to duty during the in-flight operation of an aircraft.

Flight surgeon
A medical officer that is a graduate of an approved military course of aviation medicine. References to flight surgeons include aeromedical physician's assistant.

Ground crewmember
The status assigned to Soldiers who have duties directly related to the preparation, launch, recovery and/or maintenance of UAS and/or their mission payload systems but not the in-flight mission.

Installation
For Army Aviation Standardization Program purposes, continental United States Active Army posts, camps, or stations; ARNG states; Army Reserve commands; overseas corps, divisions, independent regiments, groups, and brigades. For other than standardization purposes includes U.S. Army Reserve facilities.

Instructor operator (IO)
A UAS crewmember who conducts training and evaluation of UACs and UAS unit trainers in designated UAS and promotes safety among aircrew members. Training and evaluation include air vehicle operation, qualification, unit employment, visual flight, and crew performance.

Maintenance
The inspection, overhaul, repair, preservation, and/or the replacement of parts, but excludes preventive maintenance.

Maintenance and operations check
Systems check made on the ground through engine run-up and taxiing. Checks made using auxiliary power or testing equipment to simulate, insofar as possible, actual conditions under which the system is to operate. These checks are made to ensure that air vehicle systems or components disturbed during an inspection or maintenance have been repaired or adjusted satisfactorily.

Mission coordinator (MC)
The designated individual tasked with the overall responsibility for the operation and safety of the UAS mission.

National Airspace System
All of the airspace above the surface of the earth over the United States and its possessions.

Night
The time between the end of evening nautical twilight and the beginning of morning nautical twilight converted to local time.

Operational flying
Flying performed by qualified personnel primarily for mission support or training, while serving in assignments in which basic flying skills normally are kept current while performing assigned duties. All flying by qualified members of the Reserve Component not on extended active duty is operational flying.

Remotely operated aircraft
The FAA terminology for unmanned aircraft vehicle systems

Restricted area
Airspace designated in FAR 1 within which the flight of aircraft and/or air vehicles, while not prohibited, is subject to restriction(s).

Safety of flight (SOF) messages
Electrically transmitted messages pertaining to any defect or hazardous condition, actual or potential, that can cause personal injury, death, or damage to aircraft and/or air vehicles, components or repair parts where a medium to high risk safety condition has been determined per AR 385–10.

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 and/or air vehicles. Limitation on nonparticipating aircraft and/or air vehicles may range from absolute exclusion to complete freedom of use within certain areas, depending upon activity being conducted.

Standardization instructor operator
A qualified instructor operator designated by the commander, in writing, to supervise unit standardization programs. Primarily trains and evaluates other SOs and IOs.

Traffic pattern
The traffic flow that is prescribed for aircraft and/or air vehicles landing at, taxiing on, or taking off from an airport or airfield.

Training mission
Missions flown for flight qualification, refresher, or proficiency and/or currency training; ATP requirements, and authorized training exercises.

Unit trainer (UT)
A UAS crewmember designated to instruct in areas of special training to assist in unit training programs and achieve established training standards.

Unmanned aircraft crewmember (UAC)
Flight and/or ground individuals who perform duties controlling the flight of an unmanned aerial vehicle or the operation of its mission equipment as well as preparation, launch, recovery and/or maintenance that is essential to the operation of the UAS.

Unmanned aircraft operator (AO)
The AO controls and/or monitors the actual flight of the UAS from within a GCS, launch and recovery site, portable GCS, or similar device.

Unmanned Aircraft System
Unmanned Aircraft System includes platform, sensors, communication gear, launcher, landing system, ground control station.

UAS control station
A flight deck without external flight environment clues (no direct visual contact with the UAS) used for control of UAS.