

Mutual Aid Box Alarm Systems

Unmanned Aircraft Systems Program (UAS)

Personnel Roles, Responsibilities and Qualifications

OVERVIEW

This document contains the definitions, qualification standards, and training requirements for personnel acting as crewmembers and administrators in the MABAS UAS Program.

ADMINISTRATIVE PERSONNEL

Administrative personnel perform support functions such as program reporting, asset coordination, and provide general guidance to crewmembers. Administrative personnel do not act in the capacity of flight crewmembers. The following personnel shall be considered administrative personnel, arranged in order of descending command chain.

A. UAS Section Chief

The UAS Section Chief is the person that manages the MABAS UAS Program readiness and compliance at the MABAS-Illinois level.

Duties include:

1. Maintaining the crewmember roster and supporting training logs for any persons eligible to act as crewmembers on a MABAS UAS operation.
2. Maintaining any MABAS-wide special authorization or waiver by the FAA.
3. Acting as a single point of contact with the FAA.
4. Updating, promulgating, and enforcing the MABAS UAS procedure and guideline.

B. UAS Division Supervisor

The UAS Division Supervisor is the person that manages the MABAS UAS Program readiness and regulatory compliance at the MABAS division level.

Duties include:

1. Maintaining the crewmember roster and supporting training logs, for any persons eligible to act as crewmembers on a MABAS UAS operation for the division to which they are assigned.
2. Establishing and maintaining divisional FAA authorizations or waivers.
3. Ensuring all operations conducted are in accordance with the MABAS UAS procedure and guideline.
4. Responsible for maintaining divisional UAS airworthiness to include maintenance logs.
5. Reporting pertinent crewmember and response information to the UAS Section Chief, and acting under the guidance of the UAS Section Chief.

C. Agency UAS Coordinator

The Agency UAS Coordinator is the person that manages the MABAS UAS Program readiness and regulatory compliance at the departmental level (if applicable).

Duties include:

1. Maintaining the crewmember roster and supporting training logs for any persons eligible to act as crewmembers on a MABAS UAS operation.
2. Establishing and maintaining localized FAA authorizations or waivers.
3. Ensuring all operations conducted are in accordance with the MABAS UAS guideline.

4. Responsible for maintaining departmental owned UAS airworthiness to include maintenance logs.
5. Reporting pertinent crewmember and response information to the Division (X) UAS Team Leader and acting under his guidance.

OPERATIONS PERSONNEL

Operations personnel are personnel that act in an operational on-scene role to support the UAS operation, but who do not act in the capacity of a flight crewmember. Operations personnel are responsible for logistics, implementation of technology, tactics, and information required to support the flight crew in the successful completion of the operation.

A. UAS Tactical Group Supervisor (UAS Coordinator)

The UAS Tactical Group Supervisor (UAS Coordinator) is an operations role that manages deconfliction of multiple air assets during operations that require the response of multiple UAS.

Duties include:

1. Interfacing between local Incident Command and responding air assets.
2. Coordinating local air operations.
3. Establishing Temporary Flight Restrictions (TFRs), authorizing, controlling, and separating air operations within the TFRs.
4. Establishing and maintaining safe landing sites on the fire ground or incident scene.
5. This crewmember may be assigned the duties of the Incident Air Tactical Group Supervisor and/or the Air Operations Branch Director.
 - a. When acting as Air Tactical Group Supervisor and/or the Air Operations Branch Director, he is responsible for controlling and separating manned air traffic as well as receiving any necessary pre-flight authorizations.
 - b. Coordinating with the FAA Special Operations Support Center on-scene when required.

B. UAS Technical Specialist

The UAS Technical Specialist is a data logistics role that provides technical support to the UAS team, acts to interface information between flight crew and Incident Command (IC), and may be responsible for assisting the flight crew in the management of communications systems and off-aircraft data recording and relay equipment.

Duties include:

1. Ensures that off-aircraft data recording and streaming equipment is operational at pre-flight, in-flight, and post-flight to achieve the mission objectives.
2. Responsible for radiofrequency coordination between Incident Command (IC), UAS Tactical Group Supervisor and flight crew.
3. Performs preflight and post-flight safety and security checks of onboard data gathering and streaming equipment.
4. Communicates safety, hazards, needs, and concerns relating to data gathering and streaming equipment to the flight crew.
5. Maintains the flow of streamed data while the aircraft is in flight.
6. Coordinates between Incident Command (IC) and flight crew to ensure pertinent data is captured.
7. Assists Incident Command (IC) in extracting actionable insights from live data.
8. Ensures that backup recording devices are operational before launch.
9. Checks data recorded, creates backup copy, and forwards original to designated operations and planning authorities.
10. Ensure well-documented chain of custody of information gathered from the aircraft.

FLIGHT CREW

Flight crewmembers are any personnel who perform duty operating the UAS during flight time ^[1]. The Remote Pilot in Command (RPIC) is the only required crewmember for the operation of the UAS. However, it is strongly recommended that divisions and agencies include additional flight crew to promote safety and efficacy of operations. Flight crews operating under the MABAS UAS Program report directly to their Commanding Administrator.

A. Remote Pilot in Command (RPIC)

The person that has been found to be properly qualified to exercise the privileges of Remote Pilot, and is directly responsible for the operation of the small unmanned aircraft, if operating a public aircraft as determined by the AHJ ^[2], ^[3].

Duties include:

1. Operation of the UAS in accordance with applicable regulations under 14 CFR § 107.19 and 14 CFR § 91.3.
2. Directly responsible for, and is the final authority as to, the operation of that aircraft.
3. Conducting pre-flight, in-flight, and post-flight procedures.
4. Maintaining safety of flight operations.
5. Acting in accordance with any MABAS authorization or waiver.

B. Payload Operator (PO)

The crewmember responsible for manipulating sensor and non-sensor payloads, gathering and interpreting requisite inflight data, and transmitting the insights gathered from that data to the Incident Commander (IC). The Payload Operator may assist the Remote Pilot in Command (RPIC) in navigation and situational awareness (when requested by the RPIC).

Duties include:

1. Operation of sensor and non-sensor payloads.
2. Gathering and interpreting inflight data.
3. Communication of pertinent information to Incident Commander (IC).
4. Safeguards releasable payloads operations.
5. Ensuring the UAS is within weight and balance limitations.

C. Visual Observer (VO)

A crewmember who assists the Remote Pilot in Command (RPIC) in hazard detection, air traffic and collision avoidance, and fulfills the duties of the crewmember described in 14 CFR § 107.33 – Visual Observer ^[4].

Duties include:

1. Scanning the area to detect air traffic hazards, collisions, or unauthorized persons.
2. Assisting the Remote Pilot in Command (RPIC) with situational awareness.

QUALIFIED NON-CREWMEMBER (QNC)

Any person operating on the incident scene with awareness level training to operate effectively around the UAS flight crew. See the United States Code, 49 U.S.C § 40125: Qualifications for public aircraft status, for more information ^[5].

CREW TRAINING, QUALIFICATIONS AND PREREQUISITES

A. UAS Awareness

Awareness level training shall be completed by all deployable qualified non-crewmembers to operate around the UAS flight crew in the vicinity of UAS assets deployment and any command staff.

Minimum Qualification for:

- Qualified non-crewmember

Prerequisites:

- None

Privileges upon Completion:

- Deploy with UAS assets

B. UAS Operations

Operations level training shall be completed by all operational personnel conducting non-flying crewmember duties during the UAS operation.

Minimum Qualification for:

- Visual Observer
- Payload Operator

Prerequisites:

- Successful completion of UAS Awareness
- Successful completion of Basic Operations Firefighter

Privileges upon Completion:

- Deploy on the UAS team as a sensor operator, payload operator, or visual observer.

C. UAS Technician I

UAS Technician I is the minimum qualification for generalist UAS remote pilots to act as Remote Pilot in Command (RPIC) during a MABAS deployment.

Minimum Qualification for:

- UAS Remote Pilot in Command (RPIC)
- UAS Chief Pilot (UAS Coordinator)

Prerequisites:

- Successful completion of UAS Operations
- Successful completion of advanced Technician Firefighter
- Ten (10) hours total flight time as a non-flying crewmember (PO, VO)

NOTE: While not a prerequisite for UAS Technician I, each RPIC must hold a current Part 107 Remote Pilot Certificate before deployment.

Privileges upon Completion (with current Remote Pilot Certificate):

- Lead the UAS team as Remote Pilot in Command (RPC)
- Directly manipulate the flight controls of the UAS

D. UAS Technician II

UAS Technician II is a UAS Remote Pilot in Command (RPC) with extensive operational and management experience to deconflict multiple UAS operations and the requisite knowledge and experience to be eligible for various endorsements.

Minimum Qualification for:

- Interstate Deployment
- MABAS UAS Team Membership
- UAS Division Supervisor
- UAS Tactical Group Supervisor
- UAS Technical Specialist

NOTE: It is strongly recommended that the UAS Technical Specialist maintain at minimum operations level proficiency in the specialty to which the UAS team will be deployed. For example, it is recommended a UAS Technical Specialist deploying with a UAS team to a HAZMAT incident have completed at least HAZMAT Operations.

Prerequisites:

- Successful completion of UAS Technician I
- Twenty-five (25) hours logged acting as Remote Pilot in Command
- Successful completion of Command and General Staff

Privileges upon Completion:

- Qualify for Interdivisional or Interstate MABAS UAS Teams
- Qualify for mission-specific endorsements
- Mutual aid deployment to incidents with an investigative intent

E. UAS Instructor Endorsement

The UAS Instructor Endorsement is a mission-specific qualification for Remote Pilots who have successfully completed UAS Technician II, and intend to provide flight and ground instruction to MABAS UAS crewmembers, as well as evaluate the performance and grade written and practical tests of MABAS UAS crewmembers to determine their eligibility for advanced qualifications.

Prerequisites:

- Successful completion of UAS Technician II
- One hundred (100) hours flight time as Remote Pilot in Command (RPIC)
- One or more of the following:
 - Fire Instructor II ^[6]
 - FAA Basic Ground Instructor (or higher) ^[7]
 - FAA Sport Pilot Certificate (or higher)

Privileges upon Completion:

- Conduct ground and flight training for MABAS UAS crewmembers
- Administer and grade written and practical tests for MABAS UAS crewmembers
- Administer qualifications to MABAS UAS crewmembers

References:

- [1] 14 CFR § 1.1 - General definitions. Electronic Code of Federal Regulations. Retrieve from ecfr.gov.
- [2] 14 CFR § 107.19 - Remote Pilot in Command. Electronic Code of Federal Regulations. Retrieve from ecfr.gov.
- [3] 14 CFR § 91.3 - General Operating and Flight Rules. Electronic Code of Federal Regulations. Retrieve from ecfr.gov.
- [4] 14 CFR § 107.33 - Visual Observer. Electronic Code of Federal Regulations. Retrieve from ecfr.gov.
- [5] 49 U.S.C § 40125: Qualifications for public aircraft status. The United States Code. Retrieve from law.cornell.edu.
- [6] Program of Institution Course Syllabus. Instructor II. PDF. IFSI. Retrieve from fsi.illinois.edu.
- [7] Chapter 159 Issuance of Ground Instructor Certificate and added ratings. Retrieve from fsims.faa.gov.