

Unmanned Aerial System (Drone Unit)

606.1 PURPOSE AND SCOPE

The purpose of this policy is to establish guidelines for the use of an unmanned aerial system (UAS) and for the storage, retrieval, and dissemination of images and data captured by the UAS.

606.1.1 DEFINITIONS

Definitions related to this policy include:

Unmanned aerial system (UAS) - An unmanned aircraft of any type that is capable of sustaining directed flight, whether preprogrammed or remotely controlled (commonly referred to as an unmanned aerial vehicle (UAV)), and all of the supporting or attached systems designed for gathering information through imaging, recording, or any other means.

606.2 POLICY

A UAS may be utilized to enhance the department's mission of protecting lives and property when other means and resources are not available or are less effective. Any use of a UAS will be in strict accordance with constitutional and privacy rights and Federal Aviation Administration (FAA) regulations.

606.3 PRIVACY

The use of the UAS potentially involves privacy considerations. Absent a warrant or exigent circumstances, operators and observers should adhere to FAA altitude regulations and shall not intentionally record or transmit images of any location where a person would have a reasonable expectation of privacy (e.g., residence, yard, enclosure). Operators and observers should take reasonable precautions to avoid inadvertently recording or transmitting images of areas where there is a reasonable expectation of privacy. Reasonable precautions can include, for example, deactivating or turning imaging devices away from such areas or persons during UAS operations.

Where there are specific and articulable grounds that the UAS will collect evidence of criminal wrongdoing, the Department shall obtain a search warrant prior to conducting the flight.

606.4 PROGRAM COORDINATOR

The Chief of Police will appoint a program coordinator who will be responsible for the management of the UAS program. The program coordinator shall manage all deployments and uses of the UAS to ensure that officers equipped with UAS devices utilize them in accordance with policy and procedures. The program coordinator will ensure that policies and procedures conform to current laws, regulations, and best practices and will have the following additional responsibilities:

- Coordinating the FAA Certificate of Waiver or Authorization (COA) application process and ensuring that the COA is current.
- Ensuring that all authorized operators and required observers have completed all required FAA and department-approved training in the operation, applicable laws, policies, and procedures regarding use of the UAS.

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- Developing uniform protocol for submission and evaluation of requests to deploy a UAS, including urgent requests made during ongoing or emerging incidents. Deployment of a UAS shall require authorization of the Chief of Police or the authorized designee, depending on the type of mission.
- Developing protocol for conducting criminal investigations involving a UAS, including documentation of time spent monitoring a subject.
- Implementing a system for public notification of UAS deployment.
- Developing an operational protocol governing the deployment and operation of a UAS, including but not limited to safety oversight, use of visual observers, establishment of lost link procedures, and secure communication with air traffic control facilities.
- Developing a protocol for fully documenting all missions.
- Overseeing the maintenance of the UAS and conducting monthly audits of maintenance records. The UAS program manager shall assign a Maintenance Technician within the UAS special assignment to conduct all maintenance associated with the UAS and record keeping of maintenance conducted on the UAS.
- Developing protocols to ensure that all data intended to be used as evidence are accessed, maintained, stored, and retrieved in a manner that ensures its integrity as evidence, including strict adherence to chain of custody requirements. Electronic trails, including encryption, authenticity certificates, and date and time stamping, shall be used as appropriate to preserve individual rights and to ensure the authenticity and maintenance of a secure evidentiary chain of custody.
- Developing protocols that ensure retention and purge periods are maintained in accordance with established records retention schedules.
- Facilitating law enforcement access to images and data captured by the UAS.
- Recommending program enhancements, particularly regarding safety and information security.
- Ensuring that established protocols are followed by monitoring and providing periodic reports on the program to the Chief of Police.
- Auditing flight documentation at regular intervals and documenting the results of the audits to ensure compliance with regulations.
- Publishing an annual report documenting the agency's deployment and use of the UAS device. This report shall be disseminated to the Chief of Police.
- Immediately notify the Chief of Police and Deputy Chief of any crashes or collisions involving the UAS. Conducting an investigation as to the reasons(s) for the crash or malfunction of the UAS or equipment.

606.5 USE OF UAS

The Tewksbury Police Department has adopted the use of UAS to provide an aerial visual perspective in responding to emergency situation and exigent circumstances, and for the following objectives:

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- (a) Situational Awareness: To assist Incident Command in understanding the nature, scale, and scope of an incident and/or for planning and coordinating an effective response.
- (b) Search and Rescue: To assist missing person investigations, Amber alerts, and other search and rescue missions.
- (c) Tactical Deployment: To support the tactical deployment of officers and equipment in emergency situations (e.g., Incident involving hostages, support for tactical operations, and temporary perimeter security situations).
- (d) Visual Perspective: To provide an aerial visual perspective to assist officers in providing direction for crowd control, traffic incident management, and temporary perimeter security.
- (e) Scene Documentation: To document a crime scene, accident scene, or other major scene (e.g., disaster managing, incident response, large scale forensic investigation).
- (f) Provide assistance other town department such as Animal Control, DPW, Fire, Conservation Commission or other department, with tasks directly related to the specific job function of that department.

Only authorized operators who have completed the required training shall be permitted to operate the UAS. No operator shall operate any UAS without a valid license from the FAA. The UAS operator shall inspect and test UAS equipment prior to deployment to verify the proper functioning of all equipment and airworthiness of the devices. The UAS equipment is the responsibility of the assigned officer and will be used with reasonable care to ensure proper functioning. Equipment malfunctions shall be brought to the attention of the UAS Program Coordinator and recorded on the UAS maintenance log.

All deployments will be documented on a form or database designed for that purpose, and all flight time shall be accurately recorded. In addition, each deployment of the UAS shall include information regarding the reason for the flight; time, date, and location of the flight; the name of the supervisor approving the deployment and the staff assigned; and a summary of the activities covered, actions taken, or outcomes from the deployment.

The UAS pilot shall notify, if necessary, any airport in the flight operations area prior to the deployment of the UAS and describe the area of deployment and approximate flight time. The date/time and name of the representative at the FBO (Fixed Base Operator) notified shall be recorded by the UAS pilot on the flight log. Upon the conclusion of UAS operations, the UAS pilot shall again notify the airport and advise that UAS operation has been terminated.

In emergency situation pilots must file FAA request for expedited SGI waiver or authorization for UAS operations.

If the Massachusetts State Police Air Wing is also responding, the responding drone pilot shall be notified at the time of the call-out so he/she can coordinate with MSP Air Wing personnel.

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When reasonably possible and practical, the department may notify the public, via the use of the Code Red Alert System, of UAS operations, except for those instances where officer safety or the investigation could be jeopardized.

The operator may decline, cancel, or terminate any UAS request or mission due to:

- (a) Safety, weather, visibility.
- (b) Type of request beyond the UAS or member's capability.
- (c) Availability.
- (d) Mechanical maintenance of the UAS.
- (e) Determination that use of UAS is not the appropriate resource after operational risk management or resource assessment is completed; or
- (f) Determination that use of the UAS is in violation of this policy, Massachusetts General Laws, or a violation of the U.S. Constitution.

The UAS operator shall be responsible for immediately reporting to the FAA in compliance with Part 107 any crashes or collisions involving the aircraft and shall also immediately notify the OIC who shall notify the UAS Program Coordinator. The UAS Program Coordinator shall without delay notify the Deputy Chief and/or the Chief of Police. The operator and any UAS crew member present during the crash shall complete an incident report and forward it to the UAS Program Coordinator.

In the event a crash or malfunction of equipment that results in a crash of the UAS which causes damage to property or to a person not covered by the Rules of 14 CFR Part 107.9., the operator shall without delay notify the UAS Program Coordinator. The UAS Program Coordinator shall without delay notify the Deputy Chief and/or the Chief of Police. A report regarding the incident shall be completed forthwith and the UAS Program Coordinator shall conduct an investigation as to the reasons for the crash or malfunction of the UAS or equipment.

Use of vision enhancement technology (e.g., thermal and other imaging equipment not generally available to the public) is permissible in viewing areas only where there is no protectable privacy interest or when in compliance with a search warrant or court order. In all other instances, legal counsel should be consulted.

UAS operations shall only be conducted in accordance with the Tewksbury Police Department's [Certificate of Waiver or Authorization](#) issued by the FAA.

606.6 PROHIBITED USE

The UAS video surveillance equipment shall not be used:

- To conduct random surveillance activities.
- To target a person based solely on actual or perceived characteristics such as race, ethnicity, national origin, religion, sex, sexual orientation, gender identity or expression, economic status, age, cultural group, or disability.
- To harass, intimidate, or discriminate against any individual or group.

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- To conduct personal business of any type.

The UAS shall not be weaponized.

606.7 ACCESS TO AND RETENTION OF UAS DATA

All UAS data shall be securely downloaded at the completion of each mission. The UAS certified operator will record information on the file that shall include the date, time, location, and case reference numbers or other identifiers and identity of the UAS personnel involved in the mission.

The UAS equipment and all data, images, video, and metadata captured, recorded, or otherwise produced by the equipment is the sole property of the Tewksbury Police Department and shall only be distributed in accordance with department policy. Data collected by the UAS shall be retained as provided in the established records retention schedule.

Officers shall not edit, alter, erase, duplicate, share, or otherwise distribute any UAS data without prior authorization and approval of the Chief of Police, the Deputy Chief or the UAS Program Coordinator. All access to the UAS data must be specifically authorized by the UAS Program Coordinator or their designee and all access is to be audited to ensure that only authorized users are accessing the data for legitimate and authorized purposes.

606.8 MAINTENANCE AND STORAGE

The UAS shall have a regular maintenance schedule in place that is in accordance with the recommendations set forth by the UAS manufacture, DJI, for the specific aircraft, payload, intelligent batteries, and firmware. Maintenance to the UAS and accessories shall be recorded in a digital maintenance log with restricted access to UAS personnel and the Chief of Police or their designee.

The UAS and all equipment shall be stored in a locked hard case in the Tactical Room unless specifically assigned to an officer. Access to the case will be granted to all agency personnel with UAS responsibility.

606.9 QUALIFICATIONS AND TRAINING

All UAS operators must hold a valid Remote Pilot Certificate issued by the FAA. All UAS operators must complete the recertification every two years. In addition, all personnel who are assigned to deploy the UAS must complete an agency approved training program to ensure proper use and operation of the UAS.

Additional training may be required at periodic intervals to ensure the continued effective use, operation, proper calibration, and performance of the equipment to incorporate changes.

All agency personnel with UAS responsibility, including command, shall also be trained in local and federal laws and regulations, as well and this policy governing the use of UAS.

Attachments

Tewksbury PD FAA Certification of Authorization.pdf

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION	
CERTIFICATE OF WAIVER OR AUTHORIZATION	
ISSUED TO Public Agency – Tewksbury Police Department	Part 91
Tewksbury Police Department 918 Main Street Tewksbury, MA 01876	
This certificate is issued for the operations specifically described hereinafter. No person shall conduct any operation pursuant to the authority of this certificate except in accordance with the standard and special provisions contained in this certificate, and such other requirements of the Federal Aviation Regulations not specifically waived by this certificate.	
OPERATIONS AUTHORIZED Operation of small Unmanned Aircraft System(s) (sUAS) weighing less than 55 pounds and operating at speeds of less than 87 kts. (100 mph) in Class G airspace at or below 400 feet Above Ground Level (AGL) and in Class B and D airspace in accordance with UAS Facility Map (UASFM) altitudes within the Massachusetts Counties of Essex and Middlesex, under the jurisdiction of Hanscom Airport Traffic Control Tower (BED ATCT), Lawrence FAA Contract Tower (LWM FCT), Beverly FAA Contract Tower (BVY FCT) and Boston Airport Traffic Control Tower (BOS ATCT) and Boston Terminal Radar Approach Control (A90 TRACON). See Special Provisions and Attachments.	
LIST OF WAIVED REGULATIONS BY SECTION AND TITLE 14 CFR §91.113(b) (TBVLOS)	
STANDARD PROVISIONS	
1. A copy of the application made for this certificate shall be attached and become a part hereof. 2. This certificate shall be presented for inspection upon the request of any authorized representative of the Federal Aviation Administration, or of any State or municipal official charged with the duty of enforcing local laws or regulations. 3. The holder of this certificate shall be responsible for the strict observance of the terms and provisions contained herein 4. This certificate is nontransferable.	
Note-This certificate constitutes a waiver of those Federal rules or regulations specifically referred to above. It does not constitute a waiver of any State law or local ordinance.	
SPECIAL PROVISIONS	
Special Provisions Nos. A thru H, inclusive, and Air Traffic Control Special Provisions are set forth on the reverse side hereof.	
The certificate is effective from November 10, 2021 to November 9, 2023, inclusive, and is subject to cancellation at any time upon notice by the Administrator or his/her authorized representative.	
BY DIRECTION OF THE ADMINISTRATOR	
<u>FAA Eastern Service Center</u> (Region)	EARL P NEWALU JR For Matthew Cathcart (Signature)
	Digitally signed by EARL P NEWALU JR Date: 2021.11.05 07:14:04 -04'00'
	<u>Acting Manager, Operations Support Group</u> (Title)

Purpose: To prescribe UAS operating requirements in the National Airspace System (NAS) for the purpose of Public Aircraft Operations. The holder of this COA will be referred herein as the “Proponent”.

Public Aircraft

1. A public aircraft operation is determined by statutes, 49 USC §40102(a) (41) and §40125.
2. All public aircraft flights conducted under a COA must comply with the terms of the statute.
3. All flights must be conducted per the declarations submitted in the application, and as specified in the following Special Provisions.
4. This COA provides an alternate means of complying with 14 CFR §91.113(b) for unmanned aircraft operations.
5. All operations will be conducted in compliance with Title 14 CFR §91 and the conditions of the authorization issued herein. If the operator cannot adhere to any of these requirements, a separate FAA Form 7711-2 waiver application may be required.

SPECIAL PROVISIONS

A. General.

1. All personnel connected with the UAS operation must read and comply with the contents of this authorization and its provisions.
2. A copy of the COA including the special limitations must be immediately available to all operational personnel at each operating location whenever UAS operations are conducted.
3. This authorization may be canceled at any time by the Administrator, the person authorized to grant the authorization, or the representative designated to monitor a specific operation. As a general rule, this authorization may be canceled when it is no longer required, there is an abuse of its provisions, or when unforeseen safety factors develop. Failure to comply with the authorization is cause for cancellation. The proponent will receive a written notice of cancellation.
4. During the time this COA is approved and active, a site safety evaluation/visit may be accomplished to ensure COA compliance, assess any adverse impact on ATC or airspace, and ensure this COA is not burdensome or ineffective. Deviations, accidents/incidents/mishaps, complaints, etc., will prompt a COA review or site visit to address the issue. Refusal to allow a site safety evaluation/visit may result in cancellation of the COA.

Note: This section does not pertain to agencies that have other existing agreements in place with the FAA.

5. Radiofrequency spectrum authorization is independent of the COA process and requires the proponent to obtain Federal Communications Commission (FCC) equipment certification (47 CFR Part 2, Subpart J and 47 CFR Part 87, Subpart D) and frequency licenses (47 CFR Part 87) in the Aeronautical Radionavigation, Aeronautical Mobile (Route), or Aeronautical Mobile Services, as appropriate, for the control link, ATC radios, transponders, detect and avoid systems, and navigation systems used to support this COA. For systems operating exclusively below 400 feet, and within visual line of sight, the control link equipment may be licensed under 47 CFR Part 15 (Radio Frequency Devices). Equipment licensed under 47 CFR Part 5 (Experimental) does not provide the protection necessary for NAS operations.

B. Operations.

1. The UA must be operated within visual line of sight (VLOS) of the Pilot in Command (PIC) and the person manipulating the flight controls at all times except as specified in a Special Provision C. This requires the PIC to be able to use human vision unaided by any device other than corrective lenses. Although the remote PIC and person manipulating the controls must maintain the capability to see the UA, using one or more Visual Observers (VO) allows the remote PIC and person manipulating the controls to conduct other mission-critical duties (such as checking displays) while still ensuring situational awareness of the UA.
2. Must yield right of way to other aircraft, manned or unmanned.
3. First-person view camera cannot satisfy “see-and-avoid” requirement but can be used as long as the visual requirement is satisfied in other ways.
4. Small unmanned aircraft means an unmanned aircraft weighing less than 55 pounds on

takeoff, including everything that is on board or otherwise attached to the aircraft.

5. The operator is responsible for reviewing the published UASFM at <http://udds-faa.opendata.arcgis.com/> prior to each flight to ensure that no changes have been made to the map, i.e., altitude changes, airspace modifications, etc. If the operator needs to operate at an altitude that is not in accordance with the published UASFM, the operator must apply for a new Certificate of Authorization requesting that altitude.
6. The groundspeed of the UAS may not exceed 87 knots (100 miles per hour).
7. The minimum flight visibility, as observed from the location of the control station must be no less than 3 statute miles. For purposes of this section, flight visibility means the average slant distance from the control station at which prominent unlighted objects may be seen and identified by day and prominent lighted objects may be seen and identified by night.
8. The minimum distance of the small unmanned aircraft from clouds must be no less than:
 - a. 500 feet below the cloud.
 - b. 2,000 feet horizontally from the cloud.
9. No person may act as a remote pilot in command or VO for more than one unmanned aircraft at one time unless otherwise authorized as a separate provision.
10. No operations from a moving vehicle or watercraft unless the operation is over a sparsely populated area and the PIC and VO are co-located.
11. Lost link must remain within visual line of sight of the PIC and VO unless operating in accordance with Special Provision C (page 4).
12. The remote pilot in command may deviate from the requirements of this rule in response to an in-flight emergency.
13. Requests to operate in an area outside the approved operating area of this authorization should be limited to emergency/life threatening operations. Coordinate these flights through the Special Government Interest (SGI) process by calling the SOSOC at (202) 267-8276, or email: 9-ATOR-HQ-SOSOC@faa.gov.

C. Tactical Beyond Visual Line of Sight (TBVLOS)

1. In extreme emergency situations, and to safeguard human life The Proponent has been authorized a waiver from the requirements of 14 CFR 91.113(b) and 14 CFR 91.119 (b) under the following provisions:
 - a. The operator must not operate any higher than 50 feet above or greater than 400 feet laterally of the nearest obstacle. Combination of 50 feet above obstacle must not exceed 400 feet AGL or depicted UASFM value.
 - b. The UAS must remain within 1500 feet from the PIC.
 - c. PIC will return to VLOS operations as soon as practical or upon termination of the threat.

D. Notice to Airmen (NOTAM).

1. A Distant (D) NOTAM must be issued prior to conducting UAS operations not more than 72 hours in advance, but not less than 24 hours for UAS operations prior to the operation for routine operations. This requirement may be accomplished:

- a. Through the operator's local base operations or (D) NOTAM issuing authority, or
- b. By contacting the NOTAM Flight Service Station at 1-877-4-US-NTMS (1-877-487-6867). The issuing agency will require:
 - (1) Name and contact information of the pilot filing the (D) NOTAM request
 - (2) Location, altitude and operating area
 - (3) Time and nature of the activity.
2. The area of operation defined in the (D) NOTAM must only be for the actual area to be flown for each day defined by a point and the minimum radius required to conduct the operation.
3. Operator must cancel (D) NOTAMs when UAS operations are completed or will not be conducted.
4. For first responders only. Due to the immediacy of some emergency management operations, the (D) NOTAM notification requirement may be issued as soon as practical before flight and if the issuance of a (D) NOTAM may endanger the safety of persons on the ground, it may be excluded. If the (D) NOTAM is not issued, the proponent must be prepared to provide justification to the FAA upon request.

E. Reporting Requirements.

1. Documentation of all operations associated with UAS activities is required regardless of the airspace in which the UAS operates.
2. The Proponent must submit the number of flights on a monthly basis through the COA Application Processing System (CAPS).

F. Night small UAS Operations.

Small UAS operations may be conducted at night, as defined in 14 CFR § 1.1, provided:

1. All operations under the approved COA must use one or more VOs;
2. Prior to conducting operations that are the subject of the COA, the PIC and VO must be trained to recognize and overcome visual illusions caused by darkness, and understand physiological conditions which may degrade night vision. This training must be documented and must be presented for inspection upon request from the Administrator or an authorized representative;
3. The sUA must be equipped with lighted anti-collision lighting visible from a distance of no less than 3 statute miles. The intensity of the anti-collision lighting may be reduced if, because of operating conditions, it would be in the interest of safety to do so. Additionally, in order to comply with § 91.209, the aircraft must have position lighting that enables determination of location altitude, attitude, and direction of flight.

G. Minimum Safe Altitude Operations.

A waiver from the requirements of 14 CFR 91.119(b) and (c) is approved as follows:

1. The ground speed of the small UAS must not exceed 100 mph/87 knots.
2. Except for those operations where it is necessary to safeguard human life, no person may operate a small unmanned aircraft over a human being unless that human being is:
 - a. Directly participating in the operation of the small unmanned aircraft; or

- b. Located under a covered structure or inside a stationary vehicle that can provide reasonable protection from a falling small unmanned aircraft

Note: People “directly participating in the operation of the small unmanned aircraft” may include qualified non-crewmembers, as defined in § 49 USC 40125.

3. For those operations where it is necessary to operate over a human being in order to safeguard human life, the remote pilot in command must not operate any lower or in proximity to human beings necessary to accomplish the operation.

H. Special Use Airspace.

1. Coordination and de-confliction between Military Training Routes (MTR) and Special Use Airspace (SUA) is the operator’s responsibility. When identifying an operational area the operator must evaluate whether an MTR or SUA will be affected. In the event the UAS operational area overlaps an MTR or SUA, the operator will contact the scheduling agency as soon as practicable in advance to coordinate and de-conflict. Approval from the scheduling agency is required for regulatory SUA, but not for MTR’s and non-regulatory SUA. If no response to coordination efforts, the operator must exercise extreme caution and remain vigilant of all MTRs and/ or non-regulatory SUAs.
2. Scheduling agencies for MTRs are listed in the Area Planning AP/1B Military Planning Routes North and South America. If unable to gain access to AP/1B contact the FAA at email address mail to: 9-AJV-115-UASOrganization@faa.gov with the IR/VR routes affected and the FAA will provide the scheduling agency information. Scheduling agencies for SUAs are listed in the FAA JO 7400.10.

Air Traffic Control Special Provisions.

A. Coordination Requirements.

1. Unless otherwise directed the ATC contact phone numbers are as follows:
 - a. BED ATCT – (781) 372-5515
 - b. BOS ATCT - (617) 567-6675
 - c. LWM FCT - (978) 683-5510
 - d. BVY FCT - (978) 922-1881
 - e. A90 TRACON – (603) 594-5551
2. For operations in Class G airspace, or in accordance with UAS Facility Map (UASFM) altitudes within Class B and D airspace, the issuance of the (D) NOTAM will serve as notification to ATC. The Cancelling of the (D) NOTAM will serve as notification to ATC that operations are complete.
3. For emergency response operations in Class B and D airspace above UASFM altitudes, request a Special Government Interest (SGI) at (202) 267-8276, 9-ATOR-HQ-SOSC@faa.gov.
4. Pilot/operator must be accessible for direct real-time coordination purposes for the duration of UA operations. Direct real-time coordination information, to include primary and backup methods, as well as the name of the POC must be provided in the (D) NOTAM when filed.
5. ATC may delay, limit, prohibit or terminate UAS operations when the safety of manned aircraft operations is a concern.
6. Operations within 5 NM of airports with Class E Surface Areas with no UAS Facility Map

(UASFM) must be coordinated with the ATC facility with jurisdiction over the operations area.

7. For operations within a 0.5 NM radius of non-controlled airports, heliports, or water landing areas notification must be made to the appropriate airport management.
8. If a review of NOTAMs during preflight actions reveals another proponent operating in all, or part of, the intended operating area, the proponent must de-conflict the intended operating area from the active operating area by contacting that proponent.

B. Communication Requirements.

1. When operations are in Class B and D airspace, the PIC must monitor the appropriate ATC frequency as assigned for situational awareness. However, ATC may require two-way frequency communications on a case-by-case basis.
2. For operations within 5 NM of any closed tower, non-towered airport, helipad or water landing area the PIC must monitor and coordinate as necessary on the appropriate UNICOM/CTAF frequency.
3. If direct two-way communication is not required, Air Traffic Control Special provisions will be used in lieu of maintaining direct two-way Communications.
4. The PIC will at all times have a telephone available as backup for communications with ATC.

C. Procedural Requirements.

1. This COA does not authorize flight within the NOTAM'ed military UAS flight restricted areas, authorized under CFR 14 Part 99.7 or in Temporary Flight Restriction (TFR) Airspace.
2. The proponent must be familiar with and comply with 18 U.S. Code § 795 – “Photographing and sketching defense installations”.
3. Operations may be impacted, limited or denied in Class B and D airspace on a case-by-case basis.
4. For operations within Class B and D airspace, the maximum altitude of operations will be as indicated on the UASFM.
5. The UASFM may change over the life of this COA and it is the responsibility of the UAS Operator to maintain the most up to date version of those maps. The UASFM maps can be found at “<https://udds-faa.opendata.arcgis.com/>”.
6. For coordination of operations above the altitudes indicated in the UASFM, contact Special Government Interest (SGI) at (202) 267-8276, 9-ATOR-HQ-SOSC@faa.gov.
7. When notified by ATC, the PIC must be able to terminate the operation within 2 minutes of notification.
8. It is the responsibility of the proponent to comply with all Federal, State and Local requirements when operating over publicly owned or controlled land and waterways. (i.e. National Parks, National Seashore, etc...)

D. UAS Operational Anomalies.

1. Lost Link Procedures: ATC does not need to be notified provided the PIC complies with the following provisions:

- a. In the event that the data link is lost for at least three (3) seconds: The aircraft will execute the flight controller fail safe mode and climb to an altitude not exceeding the upper limits of the approved COA to attempt to re-establish Link.
 - b. If link cannot be established for a period of 30 seconds:
 - (1) The PIC must notify any ground assets that could be affected.
 - (2) The VO must be instructed to note bearing and approximate distance to commence recovery operations.
 - (3) The aircraft will fly back to the home point and land.
 - c. The UA will remain within the defined incident perimeter.
 - d. The UA will not interfere with the traffic pattern nor arrival/departure procedure of airports within the defined incident perimeter.
 - e. The PIC will notify the appropriate ATC facility within 15 minutes of the end of the flight.
2. Loss of Sight: If a VO loses sight of the UA, unless operating in accordance with Special Provision C (page 4), the PIC must be notified immediately. If the UA is visually reacquired promptly, the mission may continue. If not, the PIC must immediately terminate the operation and notify the appropriate ATC facility within 15 minutes of the end of the flight.
 3. Loss of Communication between the PIC and VO: The PIC will execute lost link procedures. If communications are reestablished, the mission may resume. If communication cannot be promptly re-established, the flight must be terminated and the appropriate ATC facility notified no more than 15 minutes of the end of the flight.
 4. Fly Away/Loss of Control: In the event of a fly-away, the PIC will immediately notify the ATC facility with jurisdiction over the operations area. The PIC will provide the following information:
 - a. Altitude.
 - b. Last known location.
 - c. Direction of flight/heading.
 - d. Fuel on board/Battery Time.
 - e. PIC intentions.
 - f. Termination of flight or emergency condition.

E. Operations Area (See Attachments)

1. Class B, D and G Airspace within the Massachusetts Counties of Essex and Middlesex.
2. Maximum Altitudes:
 - a. 400 feet AGL in Class G airspace
 - b. In accordance with UASFM altitudes in Class B and D airspace.

AUTHORIZATION

This Certificate of Waiver or Authorization does not, in itself, waive any Title 14 Code of Federal Regulations not specifically stated, nor any state law or local ordinance. Should the proposed operation conflict with any state law or local ordinance, or require permission of local authorities or property owners, it is the responsibility of the proponent to resolve the matter. This COA does not authorize flight within Temporary Flight Restrictions, Special Flight Rule Areas, regulatory Special Use Airspace or the Washington DC Federal Restricted Zone (FRZ) without pre-approval. The proponent is hereby authorized to operate the small Unmanned Aircraft System in the NAS within the areas defined in the Operations Authorized section of the cover page.

Attachment 1

Operations Area

Class B, D and G Airspace within the Massachusetts Counties of Essex and Middlesex
At or below 400 feet AGL in Class G airspace and
In accordance with UASFM altitudes in Class B and D airspace.

