DEPARTMENT POLICY AND PROCEDURE

02-006, Use of Small Unmanned Aircraft Systems

Original Effective Date: 08/20/18
Distribution: DEQ Employees

ISSUE

This Department of Environmental Quality (DEQ) policy and procedure is to establish requirements for the legal and safe use of Small Unmanned Aircraft Systems (sUAS), commonly referred to as drones.

DEFINITIONS

Aerial Reconnaissance Technology (ART) Drone Technical and Program Support (TAPS) Team: The ART Drone TAPS Team is a group of representatives from each DEQ division that advise and coordinate the use of sUAS drone technology within the DEQ.

Air Traffic Control (ATC): The ground-based personnel and equipment concerned with monitoring and controlling air traffic within a particular area.

DEQ-Pilot in Command (DEQ-PIC): A DEQ employee designation required to fly sUAS drones for the DEQ. Designation is achieved when the following are completed:

a) Current certification by the Federal Aviation Administration (FAA) in Title 14 of the Code of Regulations (CFR), Part 107, Small Unmanned Aircraft Systems
b) Has demonstrated flying proficiency with DEQ trainer and field sUAS drone models.
c) Has been mentored in DEQ mission planning and appropriate mission conduct by a DEQ-PIC.
d) Has demonstrated the ability to develop and conduct missions and submit pilot log reports.

Division: A DEQ Division or Office.

FAA: Federal Aviation Administration

FAA Part 107: Title 14 of the Code of Federal Regulations (CFR), Part 107, Small Unmanned Aircraft Systems. These are regulations promulgated by the FAA for the commercial use of sUAS drones.

Low Altitude Authorization and Notification Capability (LAANC): LAANC is an industry developed application that provides sUAS drone operators with near, real-time processing of airspace notifications. It also provides automatic approval of requests that are below approved altitude in controlled airspace. LAANC meets the regulatory requirements of the Small UAS Rule and the Special Rule for Model Aircraft. To view a map of controlled airspace, go to FAA's Web site.

Mission: A sUAS drone flight conducted for a specific environmental purpose, objective, or regulated safety concern. A mission can be time-critical or planned. A mission can, but generally does not, include flights for equipment firmware updating or software application testing.

Mission Planning Template: A detailed plan outlining mission objectives, contacts, supervisor approval, landowner consent, airspace determinations, flight lines and battery usage, National Weather Service weather outlook, DEQ-PIC signoff, pre-mission checklist, onsite safety briefing, pre-flight checklist, post processing checklist, and archive-pilots log deliverable. For time-critical missions, a subset of the full mission planning template is used, as appropriate. An example template is located with this policy and procedure in the DEQ SharePoint Intranet.

Notice to Airmen (NoTAM): A notice filed with an aviation authority to alert aircraft pilots of potential hazards along a flight route, or at a location, that could affect the safety of the flight.

Remote Pilot in Command (Remote PIC or Remote Pilot): A person who holds a remote pilot certificate with an sUAS rating and has the final authority and responsibility for the operation and safety of an sUAS drone operation conducted under FAA Part 107.

Small Unmanned Aircraft: An unmanned aircraft weighing less than 55 pounds on takeoff, including everything that is on board or otherwise attached to the aircraft.

Small Unmanned Aircraft System (sUAS) Drone: A small unmanned aircraft and its associated elements (including communication links and the components that control the small unmanned aircraft) that are required for the safe and efficient operation of the small unmanned aircraft in the national airspace system, also known as a drone.

Temporary Flight Restriction (TFR): A type of NoTAM. A TFR defines an area restricted to air travel due to a hazardous condition, a special event, or a general warning for the entire FAA airspace.

Unmanned Aircraft: An aircraft operated without the possibility of direct human intervention from within or on the aircraft.

Unmanned Aircraft System/Vehicle (UAS/UAV): An aircraft without a human pilot, flown by a pilot via ground control system, or autonomously through use of an onboard computer, communication links, and any additional equipment that is necessary for the UAS to operate safely.

Visual Flight Rules (VFR): All flights of the UAS shall be conducted under VFR conditions, at an altitude below 400 feet above ground level, and at a proper distance from any nearby airport as defined by FAA regulations for public operations.

Visual Observer: A person who is designated by the Remote PIC to assist him/her in the mission (e.g., to see and avoid other air traffic or objects aloft or on the ground).

POLICY

I. DEQ Pilot Requirements

A DEQ-PIC must do the following to fly for the DEQ:

a) Obtain and be current in their FAA Part 107 certification.

b) Follow FAA regulations at all times, including contacting ATC or LAANC as required.

c) Adhere to DEQ sUAS drone procedures, as amended (including mission planning, supervisor mission approval, etc.).

d) Demonstrate flight proficiency with trainer and field sUAS drones prior to conducting missions for the DEQ

e) Use Visual Observers as part of mission personnel, when appropriate.

II. DEQ sUAS Drone Equipment Requirements

a) DEQ sUAS drones must be properly registered under FAA Part 107.

b) Only a DEQ-PIC may operate a DEQ sUAS drone.

c) DEQ sUAS drones must pass pre-flight and post-flight checklist procedures that are signed off by the DEQ-PIC.

d) DEQ sUAS drone hardware, software, equipment, and necessary accessory purchase requests will be coordinated with the ART Drone Taps Team.

III. DEQ sUAS Drone Missions and FAA Coordination

a) A detailed mission planning template will be developed prior to flight for non-emergency missions.

b) Aerial consent will be sought from the landowner or facility authorized representative prior to operating a DEQ sUAS drone over private property or a facility. Consent is not required in emergency situations (e.g., Pollution Emergency Alerting System (PEAS) response), where authorized by law, license, permit, or other legal mechanisms, or over public property. Private property consent can be sought verbally, as applicable in time-critical situations.

c) All FAA program contact, such as FAA Part 107 and Airspace Waiver Requests, is to be coordinated through the ART TAPS Team prior to submittal to the FAA.

IV. DEQ Use of Collected Incidental Data

Incidental aerial imagery collected during the course of DEQ sUAS drone operations, meaning outside of the mission objectives (such as adjacent property), will only be evaluated when reasonably believed to constitute a threat to public health and safety or the environment.

PROCEDURE

Mission Planning Procedure

Step	Who	Does What
1.	DEQ-PIC	Receives mission inquiry from DEQ division program.
2.	DEQ-PIC	Shares mission inquiry with supervisor.
3.	Supervisor	Approves or disapproves developing mission planning template.
4.	DEQ-PIC	If approved, develops mission planning template (non-emergency).
5.	Supervisor	Approves the conducting of a mission based on the final mission planning template.
6.	DEQ-PIC	Coordinates with division program and conducts mission.
7.	DEQ-PIC	Conducts post-processing to meet division program objectives.
8.	DEQ-PIC	Sends mission pilot log to ART Drone TAPS Team.
9.	DEQ-PIC	Delivers final mission products to division program.
10.	DEQ-PIC	Archives mission products appropriately off of network hard drive.
11.	DEQ-PIC	Prepares sUAS drone to be mission-ready for next mission.

DEQ-PIC Designation and Proficiency Procedure

Prior to achieving DEQ-PIC status and being allowed to conduct/fly sUAS Drone missions for the DEQ, staff are required to meet all of the following:

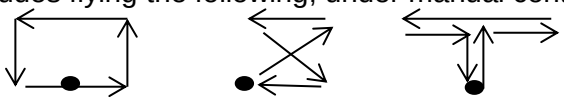
a) Have supervisor's approval to train for and become a DEQ-PIC.
b) Hold an FAA Part 107 certification.
c) Pass a practical flying proficiency with trainer and field models.
d) Develop a mission planning template.
e) Conduct a mission under the supervision of an ART Drone TAPS Team member.

DEQ sUAS Drone Proficiency Demonstration

DEQ staff must demonstrate proficiency flying with DEQ training designated sUAS drones (or personal equivalent), prior to demonstrating proficiency with field designated sUAS drone models. The DEQ sUAS indoor training and outdoor field models are summarized in the table below:

Type	Characteristics	Models[1]			
Indoor Training	Lightweight, Plastic	Eachine E-8	JJRC-H31	Aviax H20	
Outdoor Field	Composite, GPS enabled, Sensors	DJI Phantom 4 Pro/Advanced	DJI Mavic Air	DJI Spark	Yuneec Typhoon Pro

The practical demonstration includes flying the following, under manual control:



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[1] Current list available from the ART Drone TAPS Team

Proficiency must FIRST be demonstrated with an indoor training model, then with an outdoor field model, in the presence of an ART Drone TAPS Team member.

Failure to adhere to DEQ Policy and Procedure No. 02-006

The operation of an sUAS drone to conduct DEQ field activities without following the FAA Part 107 and DEQ-PIC requirements will be reported to the DEQ employee's immediate supervisor and the TAPS TEAM Coordinator.

LINK TO ADDITIONAL INFORMATION

Federal Register Notice, Operation and Certification of Small Unmanned Aircraft Systems

APPROVING AUTHORITY

C. Heidi Grether, Director

CONTACT/UPDATE RESPONSIBILITY

Any questions or concerns regarding this policy and procedure should be directed to Art Ostaszewski, DEQ Drone Coordinator, at 517-936-7991 or ostaszewskia@michigan.gov.

A DEQ policy and procedure cannot establish regulatory requirements for parties outside of the DEQ. This document provides direction to DEQ staff regarding the implementation of rules and laws administered by the DEQ. It is merely explanatory, does not affect the rights of or procedures and practices available to the public, and does not have the force and effect of law. DEQ staff shall follow the directions contained in this document.