

# **LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT UNCREWED AERIAL VEHICLE (UAV) MANUAL**

## **1. PURPOSE**

The purpose of this document is to define and outline the procurement process, personnel, training and FAA licensing requirements, operation and reporting for operation and usage of Uncrewed Aerial Vehicle (UAV) within the Louisiana Department of Transportation and Development (DOTD). Procedures outlined in this document regarding the operation of UAV shall be developed, maintained, and administered by the Office of Engineering.

## **2. DEFINITIONS**

14 CFR Part 107 (Part 107): Federal law governing the registration, pilot certification and operation of civil small Uncrewed Aircraft systems within the United States.

AE: Associate Elements, systems and equipment not affixed to the airframe. AE may be provided in the form of a service and may or may not use External Services (ES). Examples include, but are not limited to, Remote Pilot Station (facilities, equipment, computer devices, other hardware, and software including algorithms, interfaces and displays); Launch and Recovery Equipment (hardware and software). Command and control links (hardware and software for over the air transmission and data backhaul). Ground-based Detect and Avoid (ground-based sensors, data links, hardware, and supporting software algorithms interfaces and displays).

BVLOS: Beyond Visual Line of Sight, is a broad spread of existing and potential UAS operations whose only common factor in the Uncrewed Aircraft (UA) being out of the direct visual line of sight of the remote pilot.

FAA: Federal Aviation Administration

Flight Plan: Documentation of Mission Details including, but not limited to, advance scouting via maps, UAV site, class of airspace, preliminary survey, geographic interference, man-made obstacles, and documentation of active Notice to Air Missions.

LAANC: (Pronounced “Lance”) Low Altitude Authorization and Notification Capability, uses desktop and mobile apps designed to support the volume of drone operations with almost real-time airspace authorizations.

Log Book: Each section is responsible for maintaining log books and records for drone usage. Each drone shall have its own independent log book – each of which is susceptible to standard record retention schedules and are subject to audit. Log books contain all pertinent information for flight including, but not limited to, time/date of flight, description of flight conditions, objectives, inspection findings, Pilot in Command and Visual Observer names, weather

conditions, known hazards or obstacles, landing areas, mission limitations, and return to home flight profile.

Microweather: Specialized weather data provided for low altitude operation of UAV

NOTAM: Notice to Air Missions; a notice containing information essential to personnel concerned with flight operations but not known far enough in advance to be publicized by other means.

PIC: Pilot in Command

UAV: Uncrewed Aircraft Vehicle; for the purpose of this manual, UAV includes small uncrewed aircraft systems (sUAS), uncrewed aircraft (UA), uncrewed aircraft system (UAS).

VFR: Visual Flight Rules

VO: Visual Observer

VLOS: Visual line-of-sight

### **3. PERSONNEL**

Aircraft Fleet Command Pilot: Maintains list of authorized DOTD pilots with valid annual FAA certifications as well as DOTD owned UAVs and associated FAA identification numbers.

Pilot in Command (PIC): Remote Pilot whose duties include operational control of the UAV and administrative responsibilities: operation in accordance with appropriate section developed flight manuals, FAA regulations and department policies. Responsible for maintaining current section required trainings in addition to DOTD required annual FAA certifications and providing proof of certification to Aircraft Fleet Command Pilot. Only pilots who have completed the required FAA training, Section specific trainings, and are on the Aircraft Fleet Command Pilot UAV pilot list are authorized to fly.

Visual Observers: The primary duty of the Visual Observer is to maintain VLOS with the aircraft and stay in communication with the PIC during operation of the UAV to provide information regarding terrain, obstructions, conflicting air traffic and to assist with navigating the UAV to complete the assigned operation. Visual Observers are required to maintain the same training and certification as the PIC.

### **4. PROCUREMENT**

Procurement of UAV is the responsibility of DOTD Section 14 Procurement under the Office of Management and Finance. Procurement of UAV must be in accordance with Procurement guidelines and approved by the Secretary.

Each UAV purchased must be on the UAV federally approved “Blue UAS Cleared List” or in compliance with the National Defense Authorization Act drone procurement guidelines. Procurement of UAS not included on the Blue UAS Cleared List or in compliance with the National Defense Authorization Act drone procurement guidelines may be permitted in limited circumstances with written justification approved by the Secretary.

## **5. RECORD KEEPING**

All videos, images, or data obtained during UAV operations will be stored and maintained in accordance with the department’s policy on records retention. Each section is responsible for establishing a record retention schedule with DOTD Records Management.

Information collected using the department’s UAV is subject to disclosure pursuant to state and federal public records laws, subject to certain exceptions and exemptions provided by law. All public records requests for UAV data shall be reviewed and responded to by legal counsel.

All data will be stored on DOTD or OTS media in accordance with statewide data security protocol.

## **6. EMPLOYEE RESPONSIBILITY**

The safe operation of the UAV will be the responsibility of the PIC and VO. Any knowledge of hazards will immediately be reported to the PIC. All visual observers shall notify the PIC of conditions that warrant immediate termination of the flight.

Anything that could impair the alertness or judgment of a PIC or VO, to include but not limited to illness, ingestion of impairing substances, exhaustion, or emotional problems, will prohibit the members from taking part in UAV operations.

DOTD requires 1 PIC and a minimum of 1 VO on all UAV operations.

Pilot and visual observer must maintain VLOS in accordance with FAA regulations.

Mobile device usage by PICs and VOs is restricted to operation of UAV and otherwise prohibited.

All DOTD owned UAVs are commercial aircraft and shall be registered with the FAA accordingly. FAA registration is the responsibility of the individual section and owner information shall be formatted as follows:

State of Louisiana  
Department of Transportation and Development  
(Responsible section address)  
City, State Zip

## **7. TRAINING**

All pilots shall be familiar with the operation manual of the UAV they are utilizing. PIC shall be certified and current with all DOTD and FAA requirements (FAA's Part 107 rule). Department PICs and VOs are required to complete FAA recurrent training annually.

It is the responsibility of the individual section to develop and maintain operational and training policy specific to the UAV and business need. All operational and training policies shall include the following:

### **Pre-Flight Actions:**

- Each section is responsible for completing and preserving preflight checklist and flight plan for each flight
- Inspection of UAV according to instructions contained in manufacturer's manual.
- Any issues identified during preflight inspection shall be documented in the UAV log book and corrected prior to flight.
- Any issues with the UAV that cannot be immediately resolved will result with the UAV being taken out of service until the UAV is deemed operational.
- Review of emergency and contingency procedures for aircraft system failure, flight termination, divert to alternate or emergency landing site, lost link procedures and loss of visual line of sight.

### **Post-Flight Actions:**

- PIC will ensure shut down and stowing procedures are done in accordance with manufacturer's instruction manual.
- UAV flights will be documented in the log book after each flight.  
Any issues identified during post flight inspection shall be documented in the UAV log book and corrected prior to further use.
- In the event of an accident or incident, the PIC shall submit the "DOTD UAV Accident Form" to the Aircraft Fleet Command Pilot in addition to any forms or reports required by an outside agency.

## **8. COMPLIANCE AND AUDIT**

The Department's Legal and Audit sections or Aircraft Fleet Command Pilot may conduct a review of the records of UAV use to ensure compliance and consistency with existing law, regulations and DOTD policy. Where appropriate, recommendations will be made to ensure DOTD's UAV use is consistent with its authorities and applicable law, regulations and policy.

Only FAA Certified pilots on the Aircraft Fleet Command Pilot's list are authorized to operate UAVs. A section's authority to operate a particular UAV may be revoked by Aircraft Fleet Command Pilot. An individual's ability to operate a UAV as a PIC may be revoked by Aircraft Fleet Command Pilot.