

DRONE OPERATIONS AND EMPLOYMENT

This document provides a step by step, generic yet comprehensive guide to planning and employment for all aspects of drone operations: Specifically, drone use in photography, aerial survey, search and rescue, firefighting and agricultural spraying.

1. SAFETY

The remote pilot needs to take into account the small unmanned aircraft's course, speed, and trajectory, including the possibility of a catastrophic failure, to determine if the small unmanned aircraft would go over or strike a person not directly involved in the flight operation (non-participant). In addition, the remote pilot must take steps using a safety risk-based approach to ensure that:

- a. the small unmanned aircraft does not operate over non-participants who are not under a covered structure or in a stationary covered vehicle;
- b. the small unmanned aircraft will pose no undue hazard to other aircraft, people, or property in the event of a loss of control of the aircraft for any reason (§ 107.19); and
- c. the small UAS is not operated in a careless or reckless manner so as to endanger the life or property of another (§ 107.23).

If the remote pilot cannot comply with these requirements, then the flight must not take place or the flight must be immediately and safely terminated.

2. Ground Survey

- a. Obstacles—Trees, towers, power lines
- b. National Landmarks, Monuments, Construction Cranes, Highways, Public Spaces
- c. Sporting Events, Outdoor Events, Concerts

3. Airspace Survey

- a. Class – B, C, D, E, G
- b. Geo-Fenced Areas
- c. Airports in Controlled Airspace
 - i. For flight near airports in controlled airspace, drone operators must receive an airspace authorization prior to operation. Airspace authorizations come with altitude limitations and may include other operational provisions. Controlled airspace and other flying restrictions can be found on the [B4UFLY](#) app.
- d. Required ATC Coordination
- e. NOTAMS
- f. Frequency Deconfliction
- g. Prohibited Areas
- h. Restricted Areas

- i. TFRs – Temporary Flight Restrictions, for VIP movement, hurricanes, chemical spill special events.
 - i. Note, a wildfire is considered a TFR, even though it might not be NOTAM'd
- j. Airports in Uncontrolled Airspace
 - i. For flights near airports in uncontrolled airspace that remain under 400' above the ground, prior authorization is not required. When flying in these areas, remote pilots and recreational flyers must be aware of and avoid traffic patterns and takeoff and landing areas. A drone must not interfere with operations at the airport must yield right-of-way to all other aircraft. Uncontrolled airspace and other flying restrictions can be found on the [B4UFLY](#) app.

Drones are prohibited from flying over designated national security sensitive facilities. Operations are prohibited from the ground up to 400 feet above ground level, and apply to all types and purposes of UAS flight operations. Examples of these locations are:

- ii. Military bases designated as Department of Defense facilities
- iii. National landmarks – Statue of Liberty, Hoover Dam, Mt. Rushmore
- iv. Certain critical infrastructure, such as nuclear power plants

4. Airspace Authorization

Part 107 allows operations of drones or unmanned aircraft system (UAS) under 55 pounds at or below 400 feet above ground level (AGL) for visual line-of-sight operations only.

- a. The [Operations Over People](#) rule allows for routine operations of small UAS at night without a waiver. To comply with the rule you must:
 - i. Be an [FAA-Certificated Remote Pilot](#), issued under Part 107
 - ii. [Register](#) and mark your drone.
 - iii. Equip your drone with anti-collision lighting visible for at least three (3) statute miles that has a flash rate sufficient to avoid a collision.
 - iv. Hold a valid airspace authorization for operations in controlled airspace under 400 feet issued through the [FAA Drone Zone](#) or the [Low Altitude Authorization and Notification Capability](#) (LAANC).

5. Day vs Night Ops

- a. Required Equipment - The small unmanned aircraft must have lighted anti-collision lighting visible for at least three (3) statute miles that has a flash rate sufficient to avoid a collision.

6. Remote ID and Registration

- a. Required on all part 107 drones starting September 16th, 2023
- b. All drones flown under Part 107 (essentially all drones weighing more than .55lbs or drones used for other than recreational purposes) must be registered.

There are three ways drone pilots can meet the identification requirements of the remote ID rule:

- [Operate a Standard Remote ID Drone](#) (PDF) that broadcasts identification and location information of the drone and control station. A standard remote ID drone is one that is produced with built-in remote ID broadcast capabilities.
- [Operate a drone with a remote ID broadcast module](#) (PDF) giving the drone's identification, location, and take-off information. A broadcast module is a device that can be attached to a drone, or a feature (such as a software upgrade) integrated with the drone. Persons operating a drone with a remote ID broadcast module must be able to see their drone at all times during flight.
- [Operate \(without remote ID equipment\)](#) (PDF) at FAA-recognized identification areas (FRIAs) sponsored by community-based organizations or schools. FRIAs are the only locations unmanned aircraft (drones and radio-controlled airplanes) may operate without broadcasting remote ID message elements.

7. LAANC - Low Altitude Authorization and Notification Capability

- LAANC automates the application and approval process for airspace authorizations. Through automated applications developed by an FAA Approved UAS Service Suppliers (USS) pilots apply for an airspace authorization.
- Requests are checked against multiple airspace data sources in the FAA UAS Data Exchange such as UAS Facility Maps, Special Use Airspace data, Airports and Airspace Classes, as well as Temporary Flight Restrictions (TFRs) and Notices to Airmen (NOTAMs). If approved, pilots can receive their authorization in near-real time.
- Unless specifically requested in an authorization, drone pilots do not need to notify the tower before they fly.
- LAANC provides airspace authorizations only. Pilots must still check NOTAMs, weather conditions, and abide by all airspace restrictions.

There are two ways to use LAANC:

- Submit a near real-time authorization request for **operations under 400 feet in controlled airspace around airports (available to Part 107 Pilots and Recreational Flyers)**.
- Submit a "further coordination request" if you need to **fly above the designated altitude ceiling in a UAS Facility Map, up to 400 feet**.
 - You can apply up to 90 days in advance of a flight and the approval is coordinated manually through the FAA (**available to Part 107 pilots only**).

8. Part 107 Waivers

- Log into the [FAA Drone Zone](#).
 - Select "Create Part 107 Waiver/Authorization".
 - In pop up titled "Part 107 Waiver/Authorization" application choose second option: Airspace Authorization and start application.
 - Fill in the required fields:
 - Operation Title:
 - Be clear and specific about what you want to do. For example: Photography shoot in MSP Class B airspace.
 - Responsible party:
 - This does not have to be the drone pilot. The responsible party is not required to hold a remote pilot certificate, but will be held responsible for the safety of the overall operation and documentation of pilots and make/model of all drone operating under the terms of the authorization.

iv. Operation Parameters:

1. Start/End Date. Note: Dates cannot exceed 90 days from the date of application
2. Timeframe – select the time you wish to operate.
3. Frequency – select how often you will need to fly.
4. Local Time Zone.
5. Proposed Location Of Operation:
 - a. Provide as much detail as possible about your proposed operation.
6. Proposed Maximum Flight Altitude About Ground Level (AGL):
 - a. Requests to fly at or below a UAS Facility Map altitude are approved by FAA Service Centers.
 - b. Requests to fly above the UASFM and below 400 feet are coordinated by the FAA Service Center with the relevant air traffic facility that manages the airspace you wish to fly in.
7. Review and submit your information to the FAA.
8. Upon submission you will receive a reference number for your application.
9. You may check you application status anytime by logging back into your Part 107 dashboard and selecting the "Manage Part 107 Waivers/Authorizations" button.

9. Emergency Situations

First responders and other organizations responding to natural disasters or other emergency situations may be eligible for expedited approval through our Special Governmental Interest (SGI) process.

Operations that may be considered include:

- Firefighting
 - Includes Wildfire Suppression and Red Flag Warning Area Monitoring
- Search and Rescue
- Law Enforcement
- Utility or Other Critical Infrastructure Restoration
- Damage Assessments Supporting Disaster Recovery Related Insurance Claims
- Media Coverage Providing Crucial Information to the Public

To apply for a waiver through the SGI process you must be an existing Part 107 Remote Pilot with a current certificate OR you must have an existing Certificate of Waiver or Authorization (COA). To submit a waiver through this process, fill out the [Emergency Operation Request Form](#) (MS Word) and send to the FAA's System Operations Support Center (SOSC) at 9-ator-hq-sosc@faa.gov. If approved, the FAA will add an amendment to your existing COA or Remote Pilot Certificate that authorizes you to fly under certain conditions for the specified operation. If denied, operators should NOT fly outside the provisions of their existing COA or part 107. Operators have the option to amend their requests.

* The Special Government Interest (SGI) amendment process and is outlined in [JO 7210.3](#).

10. DC Area Prohibited & Restricted Airspace

The National Capital Region is governed by a Special Flight Rules Area (SFRA) within a 30-mile radius of Ronald Reagan Washington National Airport, which restricts all flights in the greater DC area.

The SFRA is divided into a 15-mile radius **inner** ring and a 30-mile radius **outer** ring.

- Flying an unmanned aircraft within the 15-mile radius **inner** ring is prohibited without specific FAA authorization.
- Experienced Part 107 and public aircraft operators with justification can file your request through the [on-line Access Program \(AAP\)](#)
- A TSA/FAA waiver and an SGI/COA is required
- Flying a drone for recreational or non-recreational use between 15 and 30 miles from Washington, D.C. is allowed under these operating conditions:
 - Aircraft must weigh less than 55 lbs. (including any attachments such as a camera)
 - Aircraft must be registered and marked
 - Fly below 400 ft.
 - Fly within visual line-of-sight
 - Fly in clear weather conditions
 - Never fly near other aircraft

The airspace around Washington, D.C. is more restricted than in any other part of the country. Rules put in place after the 9/11 attacks establish "national defense airspace" over the area and limit aircraft operations to those with an FAA and Transportation Security Administration authorization. Violators face stiff fines and criminal penalties.