



UNMANNED AERIAL VEHICLES:
A GUIDE FOR PEST MANAGEMENT PROFESSIONALS

2023



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OVERVIEW

Unmanned Aerial Systems (UAS), often referred to as drones, have become increasingly popular in recent years for recreational as well as professional applications. Many drones are often equipped with a camera that allows the user to view and record aerial pictures and videos from the device. This offers the user with a “birds-eye” view of their surroundings that can be useful for inspecting properties and structures while keeping the user safely on the ground. While the popularity of drones continues to grow, so have the regulations imposed on drones when used for commercial purposes. The goal of this document is to offer guidance on the steps required by individuals and companies that wish to utilize drones in their pest and wildlife inspection services.



DEFINITIONS

14 CFR 107 (part 107) — The federal regulation that defines how small, unmanned aircraft can be flown in compliance for commercial purposes, including the individual requirements for licensing at the federal level.

Commercial UAS or Drone Use — The Federal Aviation Administration considers any UAS flight that promotes a business in any way to be commercial drone use.

Drone — As defined by part 107, a small unmanned aircraft weighing less than 55 pounds on takeoff, including everything that is on board or otherwise attached to the aircraft.

Federal Aviation Administration (FAA) — An arm of the U.S. Department of Transportation that issues and enforces regulations and minimum standards covering manufacturing, operating, and maintaining aircraft.

Small Unmanned Aircraft System (sUAS) — A small unmanned aircraft or drone 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.

Recreational UAS or Drone Use — The Federal Aviation Administration defines recreational or hobby drone use as flying for enjoyment and not for work, business purposes, or for compensation or hire.

Remote Pilot Certificate with Small UAS Rating — The required certification to fly a drone commercially under FAA standards.



CONSIDERATIONS FOR DRONE USE

Drones can be a useful tool when conducting exterior inspections of a customer's property or structure(s). Those advantages can include assessing a structure for structural damage or evidence of pests (nesting, gnawing, rub marks, droppings, etc.) as well as taking video images to use for documentation of pest activity, conducive conditions, and/or treatment areas.

While drones can provide a list of notable service enhancements, these devices do carry an inherent level of liability and safety risk if not operated in a safe and professional manner. Therefore, it may be necessary to outline potentially prohibited uses. Those can include, but are not limited to:

- Using a personal drone for “company” purposes
- Using a “company” drone for personal purposes
- Flying a drone indoors that is not specifically designed for indoor flight
- Hovering a drone above people and pets (illegal without waivers)
- Using a drone to distribute a pesticide (illegal without waivers)

PROCEDURES

For many states, licensing or training may not be required when operating a drone for **recreational** use. However, when a drone is used for **commercial** purposes, additional licensing is required at the federal level. The steps outlined below are required by law to be completed before any commercial use of a drone or UAS takes place. Be advised that additional state or local restrictions may require additional steps before a drone can be used for recreational or commercial purposes.

1. **User Is a Licensed Drone Pilot With FAA** — The individual piloting the drone must be a current Remote Pilot Certificate holder in FAA Part 107 — Commercial Drone Pilot for Small Unmanned Aerial Systems (sUAS)
2. **Drone Is Registered With FAA** — Every drone unit must be registered with the FAA. Once registered the registration number must be clearly labeled on the exterior of the drone.
3. **Drone Is Registered With Any State or Local Municipality as Required by Law** — States and local governments may have additional laws and regulations requiring additional permits and registrations. As the operator of a drone, it is your responsibility to know and abide by all laws in addition to those required by FAA.
4. **Acquire Drone Insurance Coverage** — Drone insurance is typically additional general liability coverage specific to the drone and types of operations you will complete. Hull Insurance, or insurance on the drone itself is also recommended.

In addition to obtaining proper licensing and insurance coverage, supplemental drone flight training with a vendor that specializes in how to safely operate a drone is highly recommended to improve the competency of the remote pilot as part of your drone program.



HOW TO BECOME LICENSED

To fly a drone for commercial purposes you must be at least 16 years old and have obtained a **Remote Pilot Certificate** with a small UAS rating. To acquire this certificate, follow the steps outlined on the [FAA's Certified Remote Pilots Including Commercial Operator's](#) page.

REGISTERING YOUR DRONE

Each sUAS must individually be registered with the FAA via the [FAA DroneZone website](#). Each registration is \$5.00 and expires after 3 years from the date of the registration. It is advised that a copy of the sUAS registration be kept with the device at all times.

Remote ID will be required for all drones operating after September of 2023. If your drone does not have Remote ID built into the aircraft, a Remote ID transponder will need to be equipped on your drone. Each drone flown for commercial purposes needs its own Remote ID transponder, they cannot be shared across multiple drones.

ADDITIONAL STATE REGISTRATIONS, LICENSES, AND PERMITTING

Additional state and local laws or regulations may further restrict the use or licensing requirements for registering and flying sUAS commercially. The information below outlines additional requirements for several states that exceed federal regulations. It is strongly advised to consult your state agency, or the FAA if your state agency is not listed below, for the most updated information.

North Carolina

To fly a drone in North Carolina you must have your Part 107 Certificate and:

- Must be at least 16 years old.
- Must take and pass the N.C. Department of Transportation's Unmanned Aircraft Operator's Knowledge Test.
- Provide proof of their remote pilot certificate or other authorization to conduct commercial UAS operations from the FAA.
- Agree to Terms and Conditions outlined by the state.
- <https://www.ncdot.gov/divisions/aviation/uas/Pages/commercial-operators.aspx>



Minnesota

To fly a drone in Minnesota commercially you must have your Part 107 Certificate and:

- Register your drone with Minnesota Department of Transportation (MnDOT)
 - Registration as of June 2022 costs \$25 per year
- Acquire a Commercial Operations License from the MnDOT
 - \$30 per year as of June 2022
- <https://www.dot.state.mn.us/aero/drones/commercial.html>

Washington State

Commercially operated drones in Washington State are required by law to register with the Washington State Department of Transportation, Aviation Division.

- \$15 fee per year as of June 2022
- <https://wsdot.wa.gov/travel/aviation/pilots-aircraft/uncrewed-aircraft-systems-and-commercial-drone-registration>
- If the drone and pilot are visiting from out of state for less than 90 days in a calendar year you can apply for an exemption.

ADDITIONAL SAFETY CONSIDERATIONS

Because of their capacity to fly at high altitudes and speeds, drones can pose a risk to people and property if not operated safely and responsibly. It is important that pilots properly assess the designated flight area for potential hazards before each flight. Below are some safety hazards to consider before drones are transported, used, or stored. However, due to differences in environment and equipment there may be other important safety factors to consider that are not listed here. Always consult your company's safety policy or your supervisor for how to respond to these and other safety-related matters.

Histoplasmosis Dust

When inspecting roof areas for bird nesting, drones should not be flown less than 10 feet from nesting areas and areas where droppings have accumulated so as not to disturb dust that may contain Histoplasma spores.

Powerlines

Drones should be kept away from powerlines. Even drones equipped with obstacle avoidance can have difficulty identifying powerlines as obstacles.



Drone Batteries

Many drones rely on lithium-ion batteries that, when damaged or malfunction, pose a risk of overheating, combusting, and possible explosion. Always inspect batteries before charging, before and after flight, and before storage to check for any signs of damage. If damage is noted, replace them immediately.

Battery Fire

If drone batteries catch fire, keep all people away from the area and contact local fire emergency services by calling 911.

Weather and Environmental Conditions

Drones are typically designed to be flown in fair weather with little to no precipitation. Changes in environmental conditions such as low visibility, differences in sea level, and variations in temperature and humidity can impact flight and drone responsiveness. Follow the drone manufacturer's specification information to stay within maximum capabilities of the drone.

REMOTE PILOT IN CHARGE (RPIC) RESPONSIBILITIES

The rPIC is the Part 107 Certificate holder who is responsible for the safety and compliance of all flight activities. To encourage safe operational practices, a drone program can include verification steps, such as those listed below, the rPIC should follow. There may be other important considerations not listed here that your drone program may need to consider.

Preflight

- Verify airspace restrictions and confirm that appropriate LAANC Authorizations have been acquired.
- Verify that the drone has been registered and the registration label is clearly visible on the exterior of the aircraft.
- Verify that the drone is in safe operating condition and has been maintained and has adequate battery power for the planned flight.
- Verify that the rPIC and any other crew is physically and mentally fit to be a part of the flight crew. This includes feeling healthy and well rested, not under pressure or hurried, and no medication taken that interferes with abilities nor any alcohol consumed in the previous 8 hours.
- Verified that the area is secured from people and pets, if necessary, for the safe operation of the drone.



During Flight

- Minimize all distractions and focus on the flight mission when piloting or assisting as a visual observer.
- Maintain situational awareness.
- Capture only the images and video of the customer's property.
- In an emergency, land the drone immediately.

Post Flight

- Inspect the drone and batteries for damage.
- Verify the drone is powered down and stored properly.

RESTRICTED & PROHIBITED AIRSPACES

Areas around airports are restricted airspaces and require FAA Approval prior to operating a drone in that airspace. The FAA's [No Drone Zone](#) page provides up-to-date information and mapping applications to identify restricted airspaces. If there are restrictions in the area, you must request authorization through a Low Altitude Authorization and Notification Capability (LAANC) request.

ACCIDENTS AND CLAIMS INVOLVING DRONES

If a drone causes damage or injury to property or person greater than \$500 (not including the damage to the drone), the incident should be reported to the [FAA DroneZone](#) and possibly National Transportation Safety Board (NTSB).

An FAA DroneZone Accident Report must be filled out by the rPIC and submitted no later than 10 days after a Part 107 operation that meets the following criteria:

- Serious injury to any person or any loss of consciousness; or
- Damage to any property, other than the small unmanned aircraft, unless one of the following conditions is satisfied:
 - The cost of repair (including materials and labor) does not exceed \$500; or
 - The fair market value of the property does not exceed \$500 in the event of total loss.

A [NTSB Report](#) must also be filled out immediately if any of the situations below occur:

- Aircraft accident resulting in death or serious injury (14 CFR §830.2) such as:
 - Hospitalization for more than 48 hours (within 7 days of the incident)
 - Fracture of any bone (except fingers, toes, or nose)
 - Hemorrhages, nerve, muscle, or tendon damage



- Involves any internal organs
- Involves 2nd or 3rd degree burns
- Flight control malfunction that is not due to pilot error, loss of link to the drone, or loss of control due to operating the drone outside of the aircraft envelope.
- In-flight fire
- Collision with another aircraft in flight
- Damage to property, other than the aircraft, that exceeds an estimated \$25,000.

An **Optional NASA/ASRS Report** can be filed if an accidental violation has occurred. This is akin to a “near miss” report in OSHA language. NASA collects data to observe trends and then works to find solutions to common problems. The only advantage of filing this report is that if the FAA were to come back and identify that there was a violation committed, if it was already self-reported, then fines may be waived or minimized. <https://asrs.arc.nasa.gov/uassafety.html>.



The National Pest Management Association, a non-profit organization with more than 4,000 members, was established in 1933 to support the pest management industry's commitment to the protection of public health, food, and property from the diseases and dangers of pests.

For more information, visit [NPMAPestWorld.org](https://www.npmapestworld.org).