

Drone Safety

Background

Improper operation of Unmanned Aerial Vehicles (UAV), Unmanned Aircraft Systems (UAS), or drones represent a hazard to other aircraft and people. Incidents involving drones with manned aircraft and people are on the rise as UAS use increases for both recreational and commercial use. Drones are becoming more common place in agriculture for crop scouting and mapping.

FFA report of Hazardous or Unauthorized UAS Activity:¹

Period	Number of Reports
July – September 2017	635
April – June 2017	660
January – March 2017	404
October – December 2016	398
July – September 2016	473
April – June 2016	531
February – March 2016	264
August 2015 – January 2016	582

In December 2016, one year after implementing the registration rule, the FAA announced that over 600,000 drone operators and drones had been registered. Today, the total number of registrations has swelled to 943,535. This includes 106,739 registered non-hobbyist drones and 836,796 registered hobbyists as of 10/31/2017.² This is a small fraction of the drones sold during the study period; over 3 million drones are estimated to be shipped in 2017³

Regulations

Drones may be operated under two different sets of rules. These rules are similar and operations have the same safety concerns.

Fly under the Special Rule for Model Aircraft (Section 336)	Fly under the FAA's Small UAS Rule (Part 107)
<ul style="list-style-type: none">• Fly for hobby or recreation ONLY• Register your model aircraft• Follow community-based safety guidelines and fly within the programming of a nationwide community-based organization	<ul style="list-style-type: none">• Fly for recreational OR commercial use• Register your drone• Get a Remote Pilot Certificate from the FAA• Fly a drone under 55 lbs.• Fly within visual-line-of-sight*

¹ https://www.faa.gov/uas/resources/uas_sightings_report/

² <http://dronecenter.bard.edu/drone-registrations/>

³ <https://www.gartner.com/newsroom/id/3602317>

Fly under the Special Rule for Model Aircraft (Section 336)	Fly under the FAA's Small UAS Rule (Part 107)
<ul style="list-style-type: none"> • Fly a model aircraft under 55 lbs. unless certified by a community-based organization • Fly within visual line-of-sight • Never fly near other aircraft • Notify the airport and air traffic control tower prior to flying within 5 miles of an airport • Never fly near emergency response efforts 	<ul style="list-style-type: none"> • Don't fly near other aircraft or over people* • Don't fly in controlled airspace near airports without FAA permission* • Fly only during daylight or civil twilight, at or below 400 feet* <p>* These rules are subject to waiver.</p>

Source: https://www.faa.gov/uas/getting_started/

Talking Points:

- Different drone makes and models have different features and flight characteristics. Do not assume that all drones will fly the same. When operating an unfamiliar model practice in a safe area.
- Plan your mission. Review airspace and the flight area for hazards before flight.
- Be aware of airspace requirements and restrictions. Use FFA maps to determine maximum altitude. Fly at or below 400 feet above ground level (AGL)
- Never fly in a manner that creates a hazard to people or property. Specifically: Never fly near other aircraft, especially near airports. Never fly over groups of people, stadiums, or sports events. Never fly near emergency response efforts such as fires
- Do not approach an operating drone. The propellers are sharp and rotate at high speed. Always bring a first aid kit.
- Never fly over people
- Never fly near power lines or buildings
- Stay away from surrounding obstacles
- Monitor your altitude.
- Do not fly in rain, fog, or snow.
- Do not fly in high wind conditions (see you manual for specific limitations).
- Keep your UAS within sight.
- Monitor battery life and always allow for enough power to return the drone safely and make a safe landing.
- Always fly the drone in a controlled manner.

Questions:

1. How high can a drone legally fly? A: 400' above the ground.
2. True/False; You should not fly over people. A: True
3. True/False: It is safe to approach an operating drone if it on the ground. A: False
4. Which part of the FAA regulation governs commercial operations? A: Part 107
5. How far from the operator or observer can a drone be flown? A: visual line of sight