

AGL - Height of Structure

400 ft Radius

Telecommunications Tower

Part 107 — Operating Rules



Goals of This Lecture

According to the FAA's UAS Airman Certification Standards, a Remote PIC should be able to demonstrate knowledge of:

- Registration requirements for sUAS.
- The requirement for the sUAS to be in a condition for safe operation.
- Medical condition(s) that would interfere with safe operation of an sUAS.
- Responsibility and authority of the remote pilot in command.
- Allowing a person other than the remote PIC to manipulate the flight controls.
- Regulatory deviation and reporting requirements of in-flight emergencies.
- Hazardous operations, such as careless or reckless behavior or allowing an object to be dropped.
- Operating from a moving aircraft or moving land- or water-borne vehicle.
- Alcohol or drugs and the provisions on prohibition of use.
- Offenses involving alcohol or drugs.

Goals of This Lecture

According to the FAA's UAS Airman Certification Standards, a Remote PIC should be able to demonstrate knowledge of:

- The consequences of refusing to submit to a drug or alcohol test or to furnish test results.
- Daylight operation.
- Visual line of sight (VLOS) aircraft operations.
- The requirements when a visual observer is used.
- The prohibition of operating multiple sUAS.
- The prohibition of carrying hazardous material.
- Staying safely away from other aircraft and right-of-way rules.
 - See and avoid other aircraft and other potential hazard considerations of the remote pilot in command.
- Operations over human beings.

Goals of This Lecture

According to the FAA's UAS Airman Certification Standards, a Remote PIC should be able to demonstrate knowledge of:

- Prior authorization required for operation in certain airspace.
- Operation in the vicinity of airports.
- Operation in prohibited or restricted areas.
- Flight restrictions in the proximity of certain areas designated by notice to airmen (NOTAM).
- Preflight familiarization, inspection, and actions for aircraft operations.
- Operating limitations for small unmanned aircraft.
 - Maximum ground speed.
 - Altitude limitations.
 - Minimum visibility.
 - Cloud clearance requirements.
- Flights defined as public aircraft operations.

Registration Requirements





Federal Aviation
Administration

New Account

Login



Welcome to the Small Unmanned Aircraft System (sUAS) Registration Service

This site will allow you to register your small UAS
with the FAA and update your registration.

REGISTER

LEARN MORE



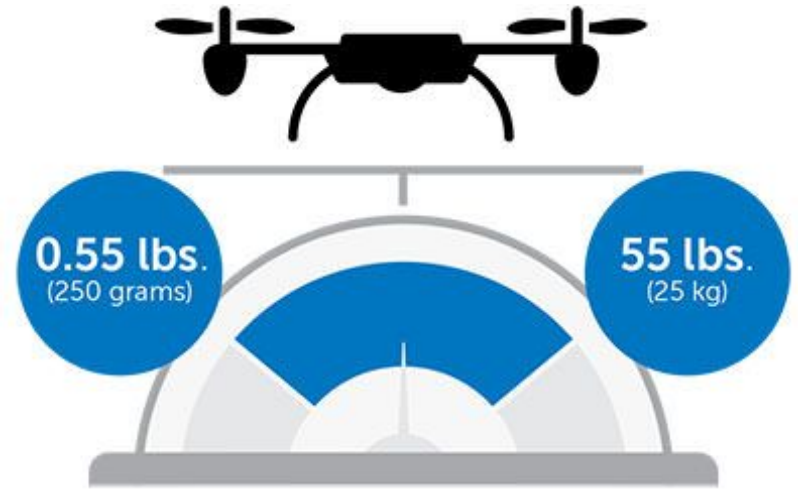
<http://registermyuas.faa.gov>

Foreign Aircraft Permit

Required if civil aircraft is:

- Registered in another country
- Owned, controlled, or operated by someone who is not a U.S. citizen or permanent resident

sUAS must be registered if the total aircraft weight is greater than 0.55 lbs and less than 55 lbs.



If the owner is less than 13 years of age, then the UA must be registered by a person who is at least 13 years of age.

Mark Your Aircraft

- When you register, you will receive a unique registration number valid for three years. After three years, you must renew your aircraft registration.
- You must mark each aircraft with the assigned unique registration number before it is operated.

A medical certificate is not required, but the remote PIC, the person manipulating the controls, the visual observer, and anyone else taking part in the sUAS operation need to be physically and mentally fit.

Remote PIC



While he or she must be designated before each flight, the Remote PIC can change during flight from one Remote PIC to another, as long as both are maintaining visual line-of-sight and control of the UA.

Role of the Remote PIC

The Remote PIC is directly responsible for and is the final authority on the operation of the sUAS under Part 107.

- Assessing the operating environment
- Briefing crew members
- Ensuring all control links are working
- Monitoring battery power
- Monitoring payloads
- Ensuring all documents are easily accessible

**Checklists are a
Remote PIC's
best friend.**



Person Manipulating the Controls



Operating Requirements

- You are being directly supervised by a remote PIC who has met the recurrent testing/training requirement.
- The remote PIC has the ability to immediately take direct control of the sUAS.

- 1) Stand close enough to physically take over the control station.
- 2) Use a “buddy box” system with two control stations.
- 3) Use a pre-programmed safe-mode system with "home" or "hover" functions.



Visual Observer



The role of a visual observer (VO) is to alert the rest of the crew about potential hazards during sUAS operations. The use of VOs is optional. The Remote PIC must make certain that all VOs:

- Are positioned in a location where they are able to see the sUAS continuously and sufficiently to maintain visual line-of-sight.
- Possess a means to effectively communicate the sUAS position and the position of other aircraft to the remote PIC and person manipulating the controls.

sUAS Operations



**In case of an in-flight emergency,
the Remote PIC is permitted to
deviate from Part 107 to the extent
necessary to respond to that
emergency.**

Types of Hazardous Operation

- Operations that interfere with manned aircraft operations
- Operating an sUAS over persons not directly participating in the operation
- Loading the sUAS beyond its capabilities to the point of losing control
- Failure to consider weather conditions near structures, trees, or rolling terrain when operating in a densely populated area
- Flying near emergency responders, firefighters or police during a crisis

Part 107 permits operation of an sUAS from a moving land or water-borne vehicle but only if the area is sparsely populated.

...but operation from a moving aircraft is prohibited.

No crewmember operation if:

- Drank alcohol within the preceding 8 hours
- Has a blood alcohol concentration of .04 percent or greater
- Using a drug that affects mental or physical capabilities

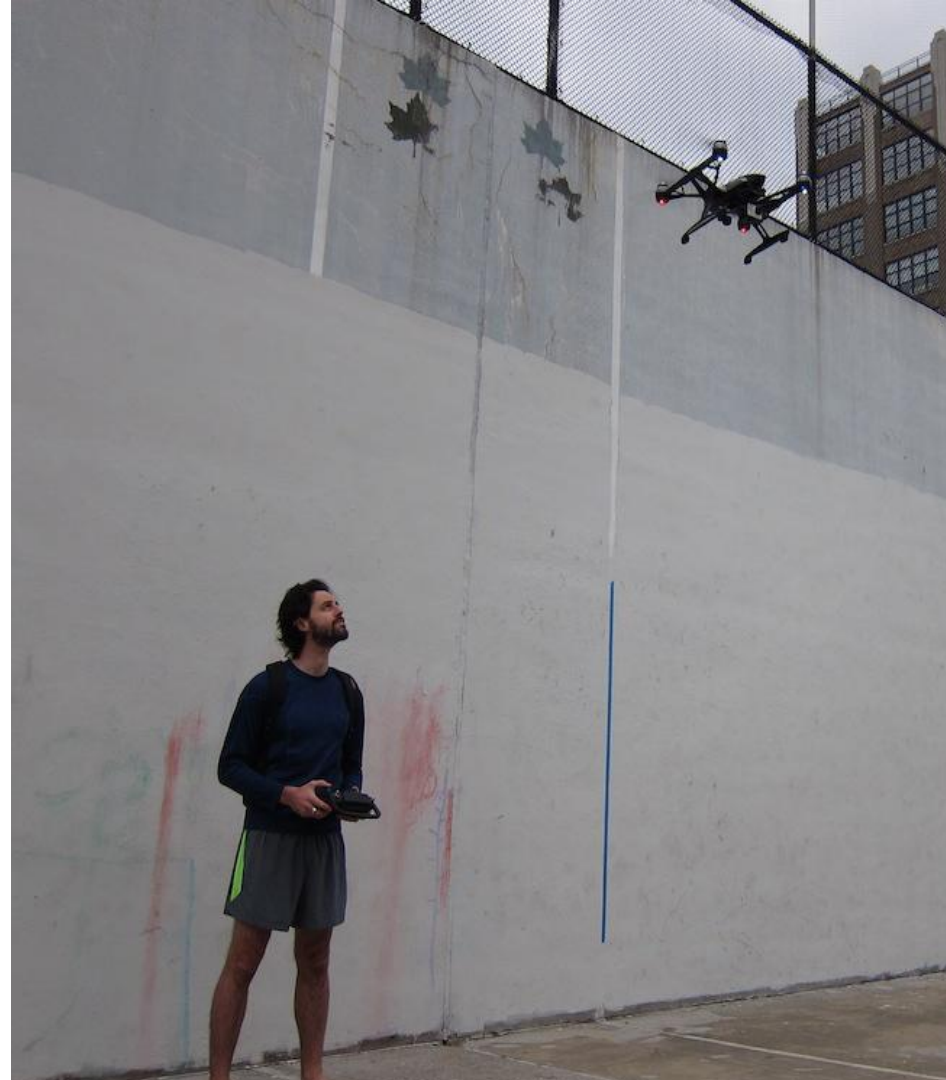
Daylight Operation

Part 107 prohibits operation of an sUAS at night, but you CAN fly from the 30 minutes before official sunrise (morning civil twilight) to the 30 minutes after official sunset (evening civil twilight).

During daylight, sUAS operations are permitted, but if you're flying in that 30-minute civil twilight period, your UA must be equipped with anti-collision lights that are capable of being visible for at least 3 miles in all directions.



**It's required to
maintain VLOS
under Part 107.**



To scan for traffic, the crew should systematically focus on different segments of the sky for short intervals.

Miscellaneous Operating Rules

- No simultaneous operation of multiple UAs
- No carriage of hazardous material
- “See and Avoid” — No interfering with operations and traffic patterns at any airport, heliport, or seaplane base. The Remote PIC also has a responsibility to remain clear of and yield right-of-way to all other aircraft and to avoid other potential hazards that may affect the remote PIC’s operation of the aircraft.

Flying Over People

Part 107 prohibits a person from flying a small UA directly over a person who is not under a safe cover, such as a protective structure or a stationary vehicle.

However, a small UA may be flown over a person who is directly participating in the operation of the sUAS. This includes the remote PIC, another person manipulating the controls, a VO, and crewmembers who are necessary for the safety of the sUAS operation, as assigned and briefed by the remote PIC ahead of time.

Operations are allowed in Class B, Class C, and Class D airspace, and within the lateral boundaries of the surface area of Class E airspace designated for an airport, but only if the PIC has prior authorization from air traffic control (ATC).

TFRs and NOTAMs

Common TFRs that relate to sUAS operations include, but are not limited to:

- Presidential TFRs and NOTAMs
- Emergency response TFRs and NOTAMs
- Standing TFRs that go into and out of effect (e.g., stadiums for sporting events)

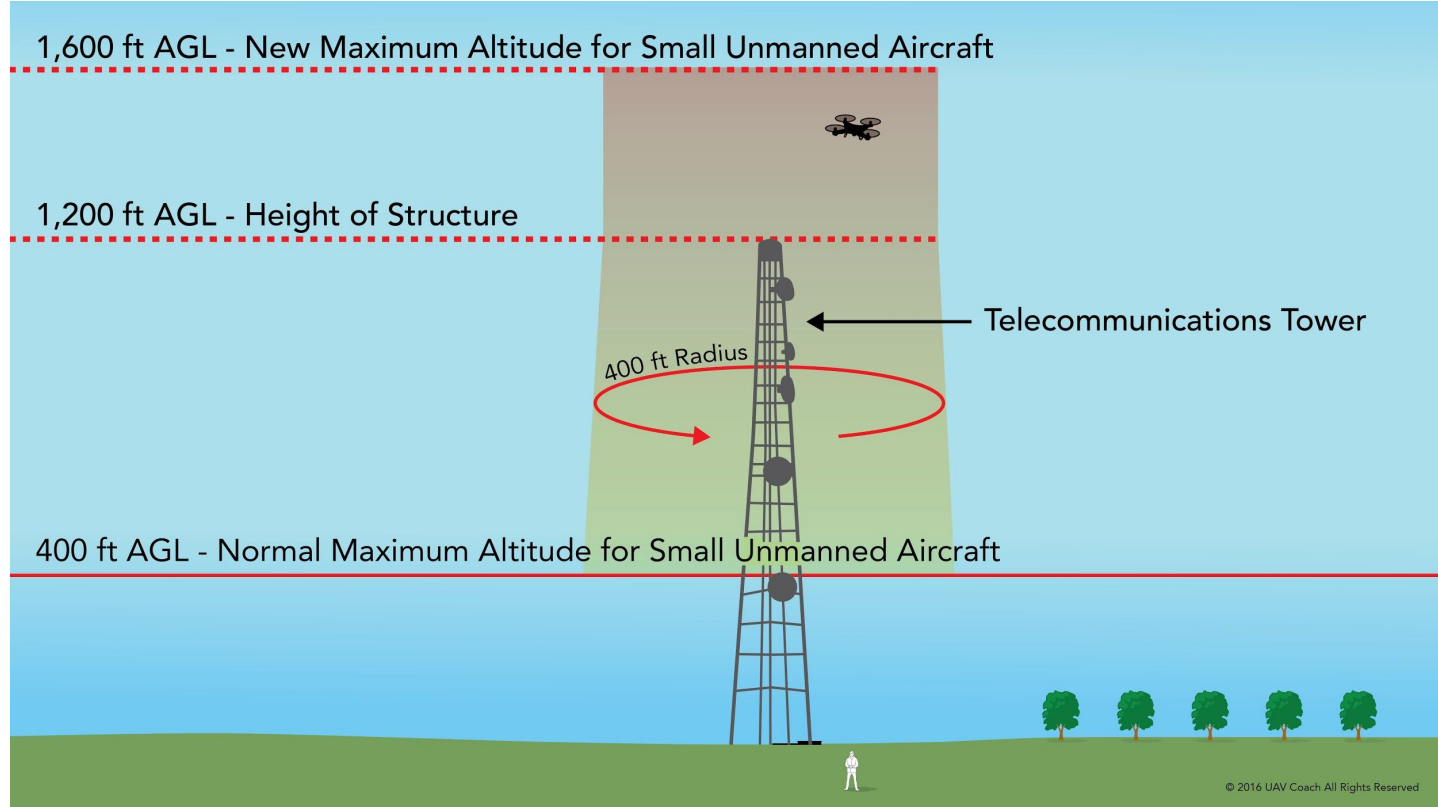
No person may operate a small unmanned aircraft in Prohibited or Restricted areas unless that person has permission from the using or controlling agency, as appropriate.



sUAS Operating Limitations

- May not be flown faster than a groundspeed of 87 knots (100 mph)
- May not be flown higher than 400 feet above ground level (AGL). However, if it's flown within a 400-foot radius of a structure, it can go to a maximum of 400 feet above the structure's immediate uppermost limit.

Maximum Altitude Limit



If UA is flown within a 400-foot radius of a structure, it can go to a maximum of 400 feet above the structure's immediate uppermost limit.

sUAS Operating Limitations

- Minimum visibility, as observed from the location of the Control Station (CS), may not be less than 3 statute miles (sm); and
- If there are clouds, the UA must be at least 500 feet below the clouds and at least 2,000 feet horizontally from the clouds.

The content in this course is not legal advice, and if you have any questions about complying under Part 107, or other legal considerations like business formation, release forms, and client contracts, you should seek out a lawyer for professional advice.

