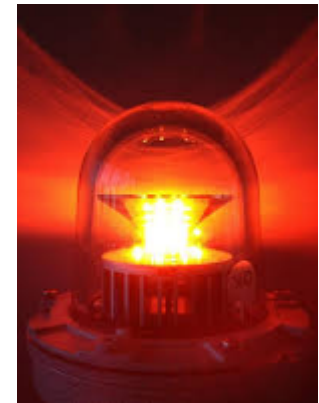


Operational Rules

- Details of UAS rules
- Except for airspace and Air Traffic Control (ATC; in a later lesson)
- Many rules can be waived by request

Daylight Operation

- Operation from sunrise to sunset if unlighted
- Lighted 30m before sunrise to 30m after sunset
 - Anti-collision lighting required
 - Red/white flashing beacon vis. at 3 miles
 - Can reduce intensity in interest of safety
- Can operate at night without waiver
- FAA's definition of “civil twilight”



http://aa.usno.navy.mil/data/docs/RS_OneYear.php

Pre-flight

- Broken or cracked control surfaces
- Check for loose wires or fraying
- Inspect lithium batteries carefully
- Ensure sufficient power/fuel for operation
- Check total weight of craft including load
- Inspect remote control system
- Check controls “free and correct”
- Beware of Radio Frequency (RF) interference on 2.4 and 5 gigahertz (GHz) ranges
- Caution after maintenance
 - Anyone may perform maintenance, unless otherwise specified by manufacturer



Altitude and Speed

- Given in Part 107.51(a) and (b)
- 400 feet Above Ground Level (AGL)
- 87 knots (100 MPH) ground speed
- Altitude exception:
 - 400 feet above a structure
 - 400 foot radius around structure

Visibility and Weather

- Part 107.51(c) and (d)
- 3 statute mile visibility
- 500 feet below clouds
- 2000 feet horizontally from clouds

Example: overcast at 800', limit is 300' to stay below clouds, rather than the standard 400'.

Line of Sight

- UAS directly visible at all times by unaided eye
- “Unaided” means without binoculars or video
 - Prescription eyeglasses are considered “unaided”
 - Can use binoculars and cameras to help with safety
- May be momentarily out of sight while maneuvering
- Can use observers to help with coverage
- “Directly visible” at night is difficult, and you cannot rely on the anti-collision lights or telemetry

See and Avoid

- PIC and observers in position to see aircraft
 - Scan sky in small sectors, looking for movement
- Must avoid all other aircraft
- If talking to ATC, you are still responsible for watching for aircraft
- Must yield right-of-way to all other aircraft:
 - Cannot pass above, below, or ahead unless well clear

Using Moving Vehicles

- May operate from a moving vehicle
- Only over “sparsely populated” area
- Cannot carry another's property (no waiver)
- Cannot operate UAS from a moving aircraft

Overflight of People

- Cannot generally operate over unprotected people
- Operation over PIC, operator, observers is allowed
- Buildings and parked cars count as protection for non-participants

Category Declaration of Compliance

- User can declare “Category 1.” Manufacturer generally involved for “Category 2” through “Category 4.”
- Declaration of Compliance allows overflight of people and moving vehicles
- “Sustained flight” not permitted over open-air assemblies of people unless Remote ID rules are followed
- Sustained flight not permitted over moving vehicles except for a closed site

Hazardous Materials

- Cannot carry hazardous materials
 - See 14 CFR 11 for exemption procedure
- Explosives and radioactive materials prohibited
- Lithium batteries are also hazardous
 - Lithium OK for power source
 - Cannot carry spare batteries as payload



Miscellaneous

- Single aircraft
 - No part of crew can serve with more than one UAS at a time.
- Dropping objects OK
 - Do not endanger persons or property on the ground
- In September 2023, Part 89 will be in effect
 - Remote Identification requirements for broadcasting ID and GPS data
 - Or operate inside a FRIA

Waivers

- Operational vs. Airspace
- Waiver vs. Authorization
- Issued to organizations or individuals
- Apply on-line

<https://faadronezone.faa.gov/>

- Special Governmental Interest (SGI) waivers