

Cornell University
UAV Guidelines
Office of Risk Management and Insurance

Purpose: The Office of Risk Management and Insurance has published guidelines as a resource for members of the University community to help them safely, responsibly and legally operate UAV in furtherance of their objectives and the University's mission.

COMMERCIAL OPERATIONS

The Office of Risk Management and Insurance must approve all UAV operations at the University. Commercial operators must provide evidence of the following at least one week prior to the UAV operation:

- Valid UAV Pilot certification / license
- FAA Registration number
- Evidence of Commercial General Liability Insurance
- Waivers and/or Airspace Authorization documents (if operating in controlled airspace)
- UAV Operation Request Form
- Event Registration Form (for operations at the University's Ithaca campus only)

Please note: These requirements do not apply to recreational / hobbyist use; however, the Office of Risk Management and Insurance still needs to approve recreational and hobbyist operations. Recreational and hobbyist use guidance is in this document below.

Obtaining UAV Pilot Certification / license:

1. Part 61 pilot certificate holders with a current flight review must complete the FAA's training course. There are two options for completing the training:
 1. ALC-451: Part 107 Small Unmanned Aircraft Systems (sUAV). <https://www.faasafety.gov/>, or
 2. The initial FAA Unmanned Aircraft General (UAG) Knowledge Test at a Knowledge Testing Center (KTC)
2. All other applicants must complete the ALC-451: Part 107 Small Unmanned Aircraft Systems (sUAV) training course (<https://www.faasafety.gov/>) and pass the initial FAA Unmanned Aircraft General (UAG) Knowledge Test at a Knowledge Testing Center (KTC). Knowledge Testing Centers: [knowledge-testing-centers](https://www.faasafety.gov/knowledge-testing-centers)
 1. **Important!** The UAG Knowledge Test's content contains information from Part 107 **and** general aviation information, including items like weather conditions, aeronautical navigation, and aviation terminology. The Part 107 information is only about 40-50% of the exam; therefore, passing the exam requires knowledge

of general aviation information. Risk Management and Insurance can provide further guidance.

3. After satisfying the applicable initial training or testing requirements, apply for a part 107 remote pilot certificate with a sUAV rating through an online or paper process. Apply online through the Integrated Airman Certificate and/or Rating Application (IACRA) website or submit a paper FAA Form 8710-13, Remote Pilot Certificate and/or Rating Application. You may be required to meet with an FAA-authorized individual.
4. Please submit a copy of your Remote Pilot Certificate to the Office of Risk Management and Insurance.

UAV Registration

1. All UAV must be registered with the FAA prior to operating at the University if the UAV weighs more than 0.55 lbs.
2. The registration number must be a unique identifier number, legible, durable and visible or accessible without tools.

Insurance

1. UAV operators must have commercial general liability insurance with minimum coverage limits of \$2,000,000 per occurrence. Cornell University will need to be named as the certificate holder and an additional insured on a Certificate of Insurance (COI). A certificate of insurance demonstrating proof of the coverage must be submitted the Office of Risk Management and Insurance.

Airspace Authorizations and waivers for operating in controlled airspace

1. Operations that occur within five miles of an airport require FAA approval. The University's Ithaca campus is within five miles of the Tompkins County Regional Airport; therefore, all commercial operators flying UAVs at campus must obtain an FAA airspace authorization or waiver form
2. If the operation cannot be conducted within the regulatory structure of part 107, the Remote PIC is responsible for submitting an application for a Certificate of Waiver and proposing a safe alternative. Only certain provisions of part 107 are waivable. The FAA will determine if the proposed operation can be safely conducted under the terms of that Certificate of Waiver. The Office of Risk Management and Insurance must approve all operations occurring within the terms of a waiver.

Evaluation of Impacts with Safety

1. The review of the UAV activity is limited to the scope of campus or public safety. It does not review all safety implications.
2. The Office of Risk Management and Insurance reviews proposed UAV operations for loss reduction and prevention strategies for personnel safety, property damage, privacy concerns and regulatory compliance. An effective means for these loss prevention and

reduction strategies is to relocate UAV activity to large, open areas away from non-participating persons.

3. Ultimately, the Remote Pilot in Command (RPIC) is responsible for maintaining a safe operating environment. Not all UAV safety risks are capable to be reviewed. The review of UAV safety does not absolve an RPIC's responsibility to ensure a safe operating environment.

UAV Safety

1. The UAV operation review process includes is meant to ensure that the RPIC is aware of potential risks and has procedures to mitigate risks.
2. Not all potential safety considerations may be applicable. Many risks associated with UAV activity can be mitigated by selecting operating locations where a UAV incident or accident would be unlikely to cause an injury. Planning for safety is an important aspect to UAV activity. Many RPICs have documented standard operating procedures that may be used to full safety planning requirements.

Safety planning should include the following parameters:

- a. All operations at Cornell University must comply with FAA regulations, state and local laws / ordinances and University regulations
- b. UAV shall not exceed an altitude of 400 feet above ground level.
- c. UAV speeds shall not exceed 20 miles per hours (MPH)
- d. The UAV must always be within the operator's line-of-sight.
- e. UAV shall not interfere with manned aircraft.
- f. UAV shall not fly over large crowds or people.
- g. Operators shall take reasonable precautions to respect other people's privacy.
- h. Operators shall reasonably attempt to notify people in the area about the operation.
- i. Operators shall not control the UAV from moving vehicles.
- j. Operators shall not recklessly operate the UAV.
- k. Operators shall not operate the UAV while under the influence of drugs or alcohol.
- l. Operations shall only occur during daylight hours, unless the operator has received FAA authorization to operate at night and obtained approval from Risk Management.
- m. Operations shall not occur if the FAA issues any Temporary Flight Restrictions for the airspace over the University.

Aerial Threats to UAV Activity

1. One of the biggest UAV safety concerns for the FAA is aircraft to aircraft strikes.. Detecting and avoiding aircraft is a four-stage process: detect, assess, decide, act. Each stage takes a significant amount of time.
2. Minimize the threat of aerial collisions by making sure you have enough time to get out of the way.

Maintaining Privacy

1. The use of UAV is still relatively new and there is still much concern regarding privacy, civil rights, liberties and UAV. UAV use for purposes of recording or transmitting visual images must take all reasonable measures to avoid violations of areas normally considered private.
2. The perceived invasion of privacy is additionally to be avoided. It is unlikely that a proponent would blatantly propose activity that would invade a person's privacy. However, there may be proposed activity that may be perceived as potentially invading privacy. An example of this would be in UAV activity in close proximity to residential buildings. Regardless of the intent or business nature of the UAV activity, unless mitigating strategies are employed, such activities should be prohibited. Best practices regarding

Emergency First Responder Use of UAV

1. The Policy states that the operation of UAV by emergency first responders may be exempt from the policy based on determination of emergency needs. First responders should refer to their internal department protocols. However, the Office of Risk Management and Insurance is available to assist in the development of first responder protocols for UAV usage.

Crew Resource Management

1. UAV operations may involve one individual or a team of crew-members. The Remote Pilot in Command (“Remote PIC”) has the final authority and responsibility for the operation and safety of the UAV. A person who is not a Remote PIC may operate an UAV only under the direct supervision of the Remote PIC. A visual observer may be used as a flight crew-member to help see and avoid other objects in the sky or on the ground.

Accident Reporting

1. Accidents resulting in serious injury to any person or any loss of consciousness, or damage to property, other than the UAV, if the cost to repair or replace is greater than \$500 must be reported to the FAA within 10 days of the operation.
2. Complete a University Injury Report in the event of injuries to any person or any loss of consciousness. [Injury Report Form](#)

3. Some of common UAV accidents, incidents and malfunctions that have been reported include: Operator error resulting in collision with stationary object, loss of battery/fuel, fly-away/loss of control, Hardware malfunctions such as GPS interference, improper Part 107: Full version

RECREATIONAL AND HOBBYIST OPERATIONS

Recreational and Hobbyist users are allowed to operate UAV at the University once Risk Management has approved the operation. The FAA considers students as recreational or hobbyist operators when operating a UAV for recreational purposes at educational institutions or when operating in furtherance of their education. The FAA recently posted updated regulations regarding recreational use on its' website.

Educational Users

https://www.faa.gov/uas/educational_users/

Recreational Fliers and Modeler Community-Based Organizations

https://www.faa.gov/uas/recreational_fliers/

