UNIVERSITY OF CALIFORNIA Unmanned Aircraft System Safety

Use of Unmanned Aircraft Systems at Institutions of Higher Education

In Oct 2018, the FAA Reauthorization Act of 2018 was signed into law with two provisions significantly relevant for the University of California: Sec 349 - Exception for Limited Recreational Operations of Unmanned Aircraft and Sec 350 - Use of Unmanned Aircraft Systems at Institutions of Higher Education

In Sec 350, Congress decreed that for the purposes of Sec 349, a recreational purpose shall include an unmanned aircraft system operated by and institution of higher education for educational or research purposes. The phrase 'educational or research purposes' includes

- Instruction of students at the institution
- Academic or research related uses of UAS that have been approved by the institution
- Activities undertaken by the institution as part of research projects
- Other academic activities approved by the institution

Given this wide definition, this provision is relevant to approximately 75% of the University of California's UAS activity.

In Sec 349, Congress rewrote the regulations that was previously associated with 'model aircraft' use, now referred to as simply 'Recreational Operations.' To abide by the new 'Recreational Operations' regulations,

- The aircraft must be operated in accordance with or within the programming of a Community-Based Organization (CBO)
- The aircraft must be flown within visual line of sight
- The aircraft must be operated in a manner that does not interfere with and gives way to any manned aircraft
- The operator must obtain prior approval from the FAA to operate within controlled airspace
- The aircraft may not fly more than 400 ft above ground level in uncontrolled airspace outside of designated 'fixed-sites', and
- The operator must pass an aeronautical knowledge and safety test, and maintains proof of passage to be available to the FAA and law enforcement.

The new regulations can be interpreted as stricter than the previous 'Model Aircraft' regulations, however, due to the inclusion of Sec 350, they offer a new and easier path forward for many University of California use. Previously, all research activity with UAS required a 14 CFR 107 Small Unmanned Aircraft System Remote Pilot Certificate (Drone License), which can be a challenging imposition in a 10 week quarter. The new regulations provide an alternative more suitable for introductory student UAS activity.

As of July 2019, the FAA has not finalized the implementation all aspects of Section 349. Currently, the aeronautical knowledge and safety exam has not been implemented. In the interim, the FAA is directing all 'Recreational Operations' to abide by their interim rules as described here: https://www.faa.gov/uas/recreational_fliers/

In the current interim rules, a UC student conducting academic activities may abide by the Recreational Operation regulations without a Drone License. Once the aeronautical knowledge and safety test has been established, all students wishing to abide by the Recreational Operation regulations must complete the test before flying.

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Frequently Asked Questions

Which set of regulations do I fall under?
For any academic related activity, it depends on whether your operations fit within the Recreational Operations exemption, otherwise you default to abiding by 14 CFR 107 regulations. Keep in mind that the Recreational Operations exemptions mandates compliance with a CBO's safety guidelines which may have stricter restrictions than 14 CFR 107. But if the purpose is for the University, but not academic (example: Media & Communications, Facility Inspection), then you must abide by 14 CFR 107 regulations.

When doing an academic activity, which set of regulations should I abide by?
There are advantages and disadvantages to both scenarios. In many cases, the new 'Recreational Operations' may be the fastest path forward for simple, rural flight operations. At the current time, academic UAS activities that plan on flying in certain controlled airspace areas, over occupied structures, within 25 ft of another person, or outside of a reasonably controlled flying site, should proceed with 14 CFR 107 regulations.

What will the new Aeronautical Knowledge and Safety Test be like? How much will it cost?
The FAA has not released details of the new test. However, it is anticipated that the test will be a shorter and simpler version of the 14 CFR 107 license exam, focusing on the bare minimum 'rules of the road' and safety guidance. It is anticipated to take less than 1 hour for a novice, and would include embedded training, no prior studying necessary. No information regarding the cost has been announced, but is expected to be minimal, if any.

What does the new regulations mean when it says 'the programming of a Community-Based Organization'?
The regulations do not require you to be a member of a 'Community-based organization,' but that you abide by the rules and safety guidelines of a community-based organization. The Academy of Model Aeronautics is one of the largest CBOs and have an extensive safety history for those that abide by their rules and safety guidelines (located here: **https://www.modelaircraft.org/sites/default/files/100.pdf**). These rules and safety guidelines often include prohibition on flying over people and buildings, limitations on suitable flying locations and specific standoff distances.

What does the new regulations mean when it says "The operator must obtain prior approval from the FAA to operate within controlled airspace"?
The FAA is mandating that all controlled airspace access requests for recreational operations be routed through the Low Altitude Authorization Notification Capability system (LAANC) and not by calling the local airport tower. The LAANC system can provide instantaneous authorization via a 3rd party application such as Airmap, KittyHawk, or UASideKick for flight requests below a certain altitude depending on your location.

I am planning to fly over a research site that is access controlled and the airspace is uncontrolled, do I need a Drone License?
Typically not. This common scenario will typically meet the necessary site requirements for Recreational Operations.

I am planning to fly along the beach to monitor coastal erosion, do I need a Drone License?
Unless the beach is to be closed to the public, this scenario will likely require a Drone License.

I am planning on flying in the campus quad to test a flight controller, do I need a Drone License?
If the airspace is uncontrolled (Class G), and the area within the campus quad is sufficiently cleared and closed to non-participants, then you do not need a Drone License. If you want to fly at UCI, UCSB or UCLA, then you will need to obtain an Airspce Authorization via LAANC.

I do not have a Drone License, can I do a coursework assignment on the use of drones in building inspections?
You may be able to do some flying without a drone license, however, you will not be allowed to fly over a building and must stay at least 25 ft from all non-participants, which may limit your ability to conduct effective analysis.

I am a graduate student Teaching Asssistant and I would like to teach my students how to fly a drone? Do I need a license? Do the students need a license?
If the site is sufficiently cleared and closed to non-participants, than everyone may have a chance to learn how to fly a drone without a drone license. However, additional safety precautions may be necessary.