



Davis Division Academic Senate

Request for Consultation Responses

Draft: Presidential Unmanned Aircraft System Policy

April 5, 2017

The Office of the President invites comments on a proposed new policy for Unmanned Aircraft Systems (UAS). The Policy is to establish minimum standards for the safe use and operation of UAS and Small Unmanned Aircraft Systems (SUAS), including drones and model aircraft, on any University Location or at any Authorized University Activity. This policy requires that all UAS operations are performed in a manner that mitigates risks to safety, security, and privacy, and ensures compliance with the Federal Aviation Administration (FAA) Modernization and Reform Act of 2012 (Public Law 112–95) and all applicable laws.

Academic Freedom & Responsibility

April 10, 2017 9:06 AM

Response continued on next page.

UC DAVIS: ACADEMIC SENATE
COMMITTEE ON ACADEMIC FREEDOM AND RESPONSIBILITY

April 10, 2017

RFC: Draft Presidential Unmanned Aircraft System Policy

The committee on Academic Freedom and Responsibility feels as though the policy reasonable and does not have concerns regarding the draft.

FEC: College of Agricultural and Environmental Sciences

April 5, 2017 10:43 PM

Response continued on next 2 pages.

UC Presidential Unmanned Aircraft System Policy

Comments by College of Agricultural & Environmental Sciences - FEC
University of California, Davis

Background. Operation of unmanned aircraft systems is regulated by the Federal Aviation Administration (FAA), and the Federal Aviation Regulations (FAR) establish that the pilot in command is responsible for safe, legal and appropriate flight operations. The FAA certification process for pilots is based on clearly defined technical and regulatory knowledge and emphasizes responsible aeronautical decision making. The FAA maintains advance noticing and reporting requirements for flights. In this context, any new UC policy should not be duplicative of existing FAA safeguards and protocols, and should provide a clear justification for the imposition of any added administrative burden. The policy as presented, does not adequately articulate the problems that will be addressed by these new administrative procedures nor does it articulate the benefits that will be realized. The UC system needs to be clear about which risks are not already being mitigated by existing FAA regulations, and then must construct a policy to continually identify and reduce those risks through additional oversight.

The proposed UC Policy on unmanned aircraft systems is redundant with existing Federal regulations. UAS operations in general, are highly regulated at the Federal level by FAA, primarily in Part 107 (Small Unmanned Aircraft Operations) of the FAR. Furthermore, the nature of most research UAS operations, FAR Part 137 (Agricultural Aircraft Operations), FAR Part 91 (General Operations and Flight Rules) and FAR Part 61 (Certification: Pilots, Flight Instructors and Ground Instructors) prescribe conditions of operation and pilot certification. Further, UAS operations are conducted under Certificates of Authorization (COA's) from the FAA which further restrict and regulate the flight operations. Given the existing preeminence of the Federal requirements, it is not apparent that a UC policy on UAS operations is necessary.

In particular, the FAR's are explicit that flight safety, including the decision to conduct the flight, is the primary responsibility of the {remote} pilot in command. For small UAS operations, FAR 107 is explicit:

§107.19 Remote pilot in command.

- (a) A *remote pilot in command* must be designated before or during the flight of the small unmanned aircraft.
- (b) The *remote pilot in command* is directly responsible for and is the final authority as to the operation of the small unmanned aircraft system.
- (c) The *remote pilot in command* must ensure that the small unmanned aircraft will pose no undue hazard to other people, other aircraft, or other property in the event of a loss of control of the aircraft for any reason.
- (d) The *remote pilot in command* must ensure that the small UAS operation complies with all applicable regulations of this chapter.
- (e) The *remote pilot in command* must have the ability to direct the small unmanned aircraft to ensure compliance with the applicable provisions of this chapter.

For UAS operations that, due to aircraft size or nature of flight, e.g., delivery of payload or release of biologically-active agents, require pilot certification at the commercial, manned aircraft rating, FAR Part 91 is explicit in the authority and responsibility of the pilot in command:

§91.3 Responsibility and authority of the pilot in command.

(a) The *pilot in command* of an aircraft is directly responsible for, and is the final authority as to, the operation of that aircraft.

§91.103 Preflight action.

Each *pilot in command* shall, before beginning a flight, become familiar with all available information concerning that flight.

§91.7 Civil aircraft airworthiness.

(a) No person may operate a civil aircraft unless it is in an airworthy condition.

(b) The *pilot in command* of a civil aircraft is responsible for determining whether that aircraft is in condition for safe flight. The pilot in command shall discontinue the flight when an airworthy mechanical, electrical, or structural conditions occur.

The FAR's are clear and explicit that the on-site remote pilot in command (Part 107) or pilot in command (Part 91) is responsible, at the time preceding and during flight, for the safe conduct of the flight, given local, immediate flight conditions and the airworthiness of the aircraft.

Public agency (including the University of California) UAS operations, are primarily conducted under COA's issued for specific purposes. These COA's specify public notice prior to, and subsequent reporting of, flights. For example, one current COA issued to Biological and Agricultural Engineering at U C Davis requires that a NOTAM be filed with the FAA at least 48 hours prior to flight. These NOTAM's are distributed by the FAA on public and commercial web sites and become part of the Federally-mandated preflight briefing for all manned flight operations. This information is provided graphically on maps easily accessible by the public or by telephone to FAA flight briefing stations. The NOTAM's specify the locations, altitudes and times of UAS flights. Functionally, a "block" of airspace is defined and UAS operations may proceed at the pilot in command's discretion within that airspace block and during the specified times of operation. This process is concurrent with the requirements of FAR 107 and FAR 91 that assign responsibility for flight decisions with the pilot in command, given the immediate local conditions and airworthiness of the aircraft.

The proposed requirement for a 14 day *a priori* "approval" of each flight is unnecessarily burdensome on research activities involving UAS, and it is particularly troublesome, unnecessary and potentially dangerous. The nature of agricultural, public health and environmental research means that exact times and locations of flight can seldom be anticipated in advance. Weather, crop conditions, pest and disease outbreaks, environmental events, changes with aircraft, sensing and payload delivery systems are dynamic in nature and require maximum flexibility in flight scheduling. Often the details of one flight are dependent

on the findings of previous flights, reflecting the uncertainty of research in general and, in particular, research involving UAS operations. For these reasons, UAS research operations will often file Notice to Airman (NOTAM) that covers wide areas and time blocks in order to facilitate the necessary flexibility in research while maintaining compliance with FAA regulations. Yet, the UC approval, of which the criteria for approval are not specified in the proposed policy, cannot anticipate the immediate, local conditions for the UAS flight; only the pilot in command, after the requisite preflight briefing, can make the determination of safe flight. The proposed policy of pre-approval for flights could create an artificial sense of safety for inexperienced pilots and be counterproductive to safe operation.

This policy draft appears to have been targeted to inexperienced pilots and as such does not recognize that several faculty members have rather comprehensive drone research programs and are already certified at the highest levels. A comprehensive UC policy needs to recognize the vast range of experience and certification among faculty members at campuses like UC Davis.

A UC policy should simply require that all UAS operations be conducted by properly certified pilots and in accordance with all Federal, state and local regulations. To allow for UC internal record keeping, a simple and expedient process to simultaneously submit FAA flight plans and log FAA approvals would be beneficial provided this process does not add any substantial administrative burden nor compromise the primacy of FAA regulations. The establishment of a UC Policy that is designed to assist faculty members in the acquisition of necessary training and full compliance with FAA guidelines and regulations, would be of significant benefit.

Since the FAA is the ultimate arbiter of the safety of all UAS operation, there would be no occasion when UC Policy could approve a flight that the FAA has not allowed, furthermore the policy document provides no guidance as to the conditions under which UC would disallow a UAS flight that the FAA has deemed acceptable. The intent and benefit of the proposed UC policy is therefore unclear.

Ultimately, the responsibility for safe and appropriate UAS operations rests with the pilot in command. UC system should facilitate multiple paths to high drone safety standards, which could include:

1. Establishment of "SWAT teams" of existing faculty experts on campuses with extensive drone experience, to provide: 1) comments, guidance and recommendations to users and administration, and 2) to coordinate with FAA, ASSURE, and UC core drone facilities with regard to current drone safety regulations and drone safety protocols.
2. Investment in core drone facilities and accompanying skilled personnel would provide faculty and students with training and technical assistance in the implementation of drone research programs through a recharge agreement.
3. The core facilities program would also have as a major responsibility to conduct training and certification programs as well as educational programs.

FEC: College of Letters and Science

March 7, 2017 10:03 AM

No response at this time.

Research

March 28, 2017 9:08 AM

The Committee on Research has reviewed the Unmanned Aircraft System Policy. We are generally in support of the policy, but have concerns about the “UAS Request Form”, its review, and transparency in the process. We would like to know: What information must be provided on the request form? Who will evaluate the requests and what are their credentials? What criteria are used to evaluate the requests? What are grounds for rejecting the requests? Is there an appeal process? How far in advance must the forms be submitted and how long will it take to receive a response?