University of Oklahoma Norman Campus Policy on Operating Unmanned Aerial Systems (UAS) for Research Purposes

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1. Background

The Federal Aviation Administration (FAA) has jurisdiction over all navigable airspace in the United States. The FAA’s primary mission is to ensure the safe and efficient oversight and management of the national airspace system (NAS). Any operation of aircraft that endangers public safety – either on the ground or in the air – is prohibited by the FAA. Violations carry very stiff federal penalties.

All aircraft – whether manned or unmanned – are subject to FAA rules and regulations. The FAA classifies all aircraft as belonging to one of two categories: public or civil. As stated by the FAA, a public aircraft is one that is only for the United States government or owned and operated by the government of a state, the District of Columbia, or a territory or possession of the U. S. or a political subdivision. Any aircraft that doesn’t meet the definition of a public aircraft is considered a “civil aircraft”.

The FAA provides further distinction between civil aircraft. For several decades, the FAA has allowed small unmanned aircraft operated for hobby and recreational purposes to be flown under certain restrictions and rules. Section 336 of the FAA Modernization and Reform act of 2012 (Public Law 112-95) codified some of the rules regarding hobby and recreational use. However, the FAA does not currently allow these aircraft to be flown for commercial applications, except in very limited cases where explicit permission is provided by the FAA. The FAA is currently working to develop rules and regulations to eventually allow operation of unmanned aircraft in the NAS, but for the time being, virtually all operation of unmanned aircraft is prohibited.

In terms of hobby and recreational operation of unmanned aircraft, Section 336 of the modernization act also includes a requirement that when the hobby or recreational aircraft is flown within 5 miles of an airport, the operator must provide the airport operator with prior notice. It is important to remember that the entire University of Oklahoma Norman campus lies within a 5 mile radius of Max Westheimer Airport (KOUN), and therefore is subject to this clause.

The FAA does not extend any sort of hobby or recreational use exemption or allowance to a public university to operate unmanned aircraft for any purpose, including university research activities. In order for public universities to operate UAS for research purposes, they must apply for and be granted a Certificate of Authorization (or COA) from the FAA to enable limited operation of
unmanned aircraft in the NAS\textsuperscript{1}. \textbf{Note that COAs are granted to the University, not to individuals. Furthermore, COAs are only available to government agencies or public entities for operations that are considered public aircraft operations.} COAs can only be granted for purposes that meet the strict definition of public aircraft operations. COAs cannot be granted to public universities for education, training, or other uses since these applications are considered commercial in nature.

\textit{Since current FAA rules do not allow COAs for educational purposes, any University faculty, staff or students interested in using UAS for any educational purposes should contact the VPR office to discuss options.}

Because UAS are becoming an important tool for many different types of research it is necessary for the University of Oklahoma Norman Campus to formalize processes to manage UAS operations and ensure full compliance with all State and Federal laws and regulations. The policy described herein ensures that the University has clear lines of authority and well-defined internal processes to identify, manage, and mitigate risk, and thus ensure safe and legal operation of UAS in furtherance of its institutional goals and objectives.

\textbf{This policy applies to University faculty, staff, and students using or proposing to use UAS for purposes that are part of their official University research activities.} Any faculty, staff, or students operating UAS for hobby or recreational purposes should consult the local chapter of the Academy of Model Aeronautics (AMA) to locate an AMA-sanctioned location where such UAS use is approved.

Additionally, \textbf{this policy applies only to UAS operations on/over property owned or managed by the University.} For operations on other property, please contact the Office of the Vice President for Research (405-325-3806).

\textbf{2. Overview of COA Process}

Because of the potential legal and risk management issues involved in managing a COA, faculty, staff and students on the University of Oklahoma Norman Campus who wish to pursue a COA application for research purposes must complete a three-step process. Prior to beginning this process, it is strongly recommended that the applicant consult with James Grimsley (jgrimsley@ou.edu), Associate Vice President for Research, to ensure a smooth and timely application process. It is also recommended that the applicant review the FAA’s most recent UAS FAQ and information online at \url{http://www.faa.gov/about/initiatives/uas/}

- \textbf{The first step} involves completing a narrative, not to exceed two single-spaced pages and submitted to the Vice President for Research, that BRIEFLY

\textsuperscript{1}\url{http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/systemops/aim/organizations/s/uas/coa/}
describes the following: (a) Nature (research, instruction, other) and goals of the work to be undertaken, (b) Need for unmanned aerial system(s) (UAS), (c) Type of vehicle(s) to be utilized and the manner in which it/they will be operated, (d) Schedule of activities to be undertaken, and (e) Sources and nature of financial support, if appropriate. Much of this information is required for the COA application and can be extracted from it. It is also recommended that the faculty member meet with the OU Aviation Department prior to initiating the checklist to discuss issues such as airworthiness, training, and access to requisite personnel such as qualified visual observers and pilot/operators.

- The **second step** involves completing an internal application checklist (see below) to ensure that appropriate steps have been taken to safely operate a UAS within the COA framework and to manage and mitigate all associated risks. **Note that the internal application checklist must be completed for each new COA application.**

- The **third step** involves completing and submitting the online FAA COA application. **Please be aware that a new COA application must be submitted for each aircraft to be operated in a specific air space.** Also, because the COA is held by the University, not by individuals, the Office of the Vice President for Research (Norman campus) is the University office responsible for coordinating the submission of and serving as the formal custodian for all OU COAs, regardless of their application area (research, education, outreach). The Norman Campus Vice President for Research therefore has final approval and oversight over all matters involving Norman campus COAs.

3. **COA Advisory Committee**

The Vice President for Research will chair an Advisory Committee to assist in the development of University policies and procedures regarding COAs. Membership will include, at a minimum, individuals from the following Norman Campus offices/organizations: Senior Vice President and Provost, Vice President for Research, Export Controls, Technology Development, Aviation, Risk Management, Faculty Senate, and Legal Counsel. The Committee will meet at least once per year, and at other times as needed, and will serve in other capacities as noted below.

4. **Internal COA Application Checklist**

No COA application involving University of Oklahoma personnel, land, airspace or technologies may be submitted until **ALL** of the items shown in the checklist below have received appropriate sign-off from the entities listed, AND until final overall approval is received from the Vice President for Research. It is the responsibility of the individual faculty, staff or student seeking the COA to coordinate completion of the checklist for that COA. In situations where a COA application is being sought for airspace over land not owned by the University, an MOU between the University and the landowner must be negotiated, or other arrangements made, prior to the submission of the completed
checklist to the Vice President for Research. The Office of Legal Counsel must approve such arrangements.

5. Process for Submitting the COA (After Internal Checklist is Completed and Approved)

The Office of the Vice President for Research will maintain a repository of successful COA applications for new applicants to consult. The same office will also attempt to answer questions related to the COA process and direct COA applicants to other personnel who may be able to provide additional guidance. However, as noted above, faculty, staff and students proposing to fly a UAS are responsible for completing the internal COA checklist and drafting the FAA COA application. The VPR's office will serve as the formal contact for all COA technical matters.

Once a complete FAA COA application has been drafted by the faculty and/or staff member requesting the COA, it must be reviewed and approved by the Office of the Vice President for Research. The COA Advisory Committee may be consulted as part of that review. The Vice President for Research and/or Advisory Committee will provide advice, as appropriate, to strengthen the application, mitigate institutional risk and liabilities, and expedite FAA approval.

The Office of the Vice President for Research, on behalf of the University, will officially submit all COA applications. Additionally, the Office of the Vice President for Research will maintain oversight for the execution of COAs held by the University. The Advisory Committee will periodically review University-held COAs and assist in revising, as necessary, the University's COA policy. Any problems arising from the operation of a University-held COA must be promptly reported, as noted in the checklist.
University of Oklahoma Norman Campus COA Checklist

Each item listed below must be formally approved in writing (email is acceptable) by an appropriate official representing each department or office prior to submission to the Vice President for Research. It is the responsibility of the faculty, staff or student organizing a COA application to complete each step by contacting each department or office. However, the Office of the Vice President for Research will assist and guide faculty in completing the checklist (contact James Grimsley; jgrimsley@ou.edu). The items in this checklist can be addressed in parallel and there is no requirement for accomplishing the items in sequence.

**Item 1:** Review/assessment of airworthiness certificate (Aviation Department signoff, Ken Carson contact, Matt Esker or Bryce Bailey alternate).

**Item 2:** The name and licensure information of a duly licensed pilot, holding an FAA-authorized medical certificate, who will serve as the Pilot in Command for COA activities covered by the application (OU Aviation Department signoff, Ken Carson contact, Matt Esker or Bryce Bailey alternate).

**Item 3:** Prior to beginning operations, assuming the COA is approved, appropriate insurance coverage will be obtained and be in place prior to operation (Risk Management signoff, Kevin Leach).

**Item 4:** Burn ban plan in place (Kessler Atmospheric and Ecological Field Station Director signoff (Dr. Jeffrey Basara) or official responsible for other OU COA location being proposed).

**Item 5:** Plan in place for notifying all local landowners in the over-flight radius of planned operations each time the UAS is flown (KAEFS Director signoff (Dr. Jeffrey Basara) or official responsible for any other OU COA location being proposed).

**Item 6:** Flight plan to ensure that no trespass of private property will occur and that flights do not create a nuisance or hazard for any properties in place (KAEFS Director signoff (Dr. Jeffrey Basara) or official responsible for any other OU COA location being proposed).

**Item 7:** Plan in place to notify and provide Public Affairs with contact information upon approval of COA and agreement that any public communications will be coordinated with Public Affairs (Public Affairs signoff, Catherine Bishop).

**Item 8:** Plan in place for integrating COA activity so that it does not disrupt non-UAS research performed at COA site (KAEFS Director signoff (Dr. Jeffrey Basara) or official responsible for any other OU COA location being proposed).
**Item 9:** Plan in place for coordinating COA activities with local fire and police agencies (KAEFS Director signoff (Dr. Jeffrey Basara) or official responsible for any other OU COA location being proposed

**Item 10:** Written affirmation in place that the COA will be used only for non-commercial, research purposes (VPR signoff, James Grimsley)

**Item 11:** Export Control review and approval of application completed (Export Control signoff, Gretta Rowold)

**Item 12:** Affirmation in place that any complaint against the COA activity will immediately be reported to Advisory Committee and Vice President for Research (VPR signoff, James Grimsley)

**Item 13:** Affirmation in place that any accidents or damage related to COA activity will be reported immediately following the Incident Reporting Procedure (http://www.ou.edu/content/risk/insurance/liability-insurance.html). (VPR signoff, James Grimsley)

**Item 14:** Applicant represents, warrants, and certifies that at all times, all applicable laws shall be complied with (Legal Counsel signoff)

**Item 15:** To the extent that surveillance is to be deployed pursuant to a COA, a special notification will be sent and reviewed by the VPR Office (James Grimsley) and the Office of Legal Counsel before a COA application can proceed.

**Item 16:** Item 15: Prior to beginning operations, assuming the COA is approved, the pilot in command and project director must complete Environmental Health and Safety Office Hazard Communication/General Safety training (http://www.ou.edu/ehso/) (Trent Brown, University Environmental Health & Safety Officer)

**Item 17:** Approval by the Norman Campus Vice President for Research that all required items on this checklist have been satisfied with appropriate signoff (Dr. Kelvin Droegemeier)
Addendum 1 – Utilizing OU’s “Blanket COA”

The FAA granted a “blanket COA” to OU in April 2016 that allows operation of small UAS (less than 55lbs) at altitudes under 400 ft and in “Class G” airspace. Although the blanket COA expedites access to flight operations and reduces the number of applications that OU must submit to the FAA, it does not change OU's internal responsibilities for safety and risk oversight.

Depending on the particular research operation application/scenario, the COA oversight process is amended as follows:

**Scenario 1.** For research projects that require altitudes above 400 ft or for any flight operations other than Class G airspace, OU will be required to submit a new COA application and our existing process (Items 1 – 16) will be followed “as is”. The “blanket COA” is not applicable to this scenario.

**Scenario 2.** For new research projects (or new researchers), the COA process (Items 1 – 16) should be followed “as is” with no changes. The only difference is that at the end of the process, OU is not required to submit a new COA application to the FAA.

**Scenario 3.** If a researcher changes or adds a vehicle to an existing research project and the vehicle is in roughly the same size and weight class, then the following items will need to be reviewed from the checklist:

a. Export control approval and check (Item 11)

b. Airworthiness checks (Item 1)

**Scenario 4.** If a researcher adds a new vehicle to an existing research project, but the new vehicle differs significantly from an existing vehicle (i.e. – going from a 5lb vehicle to a 50lb vehicle), the following checklist items will require a review:

a. Export control approval and check (Item 11)

b. Airworthiness check (Item 1)

c. Risk management approval (Item 3)

**Scenario 5.** If a researcher adds a new location to a project, but the research focus and vehicle remain the same, then the following items will need to be reviewed:

a. Land use agreements (Item 5, Item 6, Item 8, Item 13)

b. Risk Management (Item 3, Item 4)

c. Approval by OU Public Affairs (Item 7)