

SOUTH DAKOTA BOARD OF REGENTS

Full Board

AGENDA ITEM: 28

DATE: April 1-2, 2015

SUBJECT: Operation of Unmanned Aerial Systems

Institutional Use and Regulation of Unmanned Aerial Systems.

Popularly known as drones, Unmanned Aerial Systems (UAS) number among recent technological innovations that have significant potential to revolutionize the operations of government and business. This technology may support ranges of functions that might otherwise be accomplished with greater difficulty, cost and intrusiveness. Roof inspection, crop development, grazing patterns, traffic conditions, search and rescue, road repair needs, archeological research, monitoring cross-country practice, to some extent, imagination is the limit on the scope of possible uses to support university operations and programs or similar functions for other state agencies or private entities.

Private use of UAS, either in the form of personally owned and operated hobby devices, or in the form of entity owned and operated devices, also presents concerns for universities. As the technology has become more commonly used, incidents of misuse have also grown. During the 2014 fall football season, for example, a number of incidents arose where drones overflowed crowded football stadia.

UASs operated by public or private entities and individuals are subject to regulation by the Federal Aviation Authority. Although the FAA generally exempts individually owned and operated hobby or recreational craft, the FAA is developing more robust regulations for entity uses of these aircraft. Draft regulations were issued on February 23, 2015, but the rulemaking process may not yield final rules until 2017.

In the meantime, public or private entities that seek to operate UAS must apply for exemption from standard general aviation rules under existing rules that permit governmental use of the technology to carry out core governmental functions (e.g., functions that do not involve fee for service) and that permit a broader variety of commercial (i.e., not core governmental

(Continued)

RECOMMENDED ACTION

Approve attached Board Policy No. 1:30.

functions) uses of the technology where it can be shown that the uses can be conducted safely and will not interfere with general or commercial aviation.¹

The South Dakota School of Mines and Technology has supported active research programs involving UAS for many years. South Dakota State University and the University of South Dakota are actively exploring research and administrative uses of the technology. Early contacts with FAA and other state agencies suggested the necessity to coordinate approaches to assuring that institutions would have access to support to identify and to comply with FAA exemption requirements.

In cooperation with the South Dakota Bureau of Administration Office of Risk Management, arrangements have been made with May, Adams, Gerdes and Thompson, LLP, to obtain legal assistance in completing FAA applications for exemptions and addressing compliance priorities and arrangements have been made to obtain insurance coverage for UAS operations.

The attached policy proposal represents a third element in preparing for the introduction of UAS into the institutional research and operating environment. The policy addresses two ranges of concern, administrative requirements for the institutional use of UAS and regulations for the private use of UAS over institutional grounds.

The administrative policies have five essential requirements that must be met before an institution may begin to use a UAS. Each institution that intends to use UAS will:

1. Establish an office to oversee its UAS program;
2. Obtain an FAA exemption,
3. Obtain insurance coverage,
4. Train UAS operators (some of whom may have to be licensed pilots)
5. Prepare manuals, operating procedures, maintenance schedules, logs and other records and records management systems required to comply with FAA regulations.

Regulations for private use establish time, place and manner restrictions to protect the ordinary and beneficial uses of institutional grounds and facilities. These rules rely upon *United*

¹ "There are presently two methods of gaining FAA authorization to fly civil (non-governmental) UAS:

1. [Section 333 Exemption](#) – a grant of exemption in accordance with Section 333 AND a civil Certificate of Waiver or Authorization (COA); this process may be used to perform commercial operations in low-risk, controlled environments. ...
2. [Special Airworthiness Certificate \(SAC\)](#) – applicants must be able to describe how their system is designed, constructed, and manufactured, including engineering processes, software development and control, configuration management, and quality assurance procedures used, along with how and where they intend to fly."

Operation of Unmanned Aerial Systems

April 1-2, 2015

Page 3 of 3

States v. Causby, 328 U. S. 256 (1946) (the glide path brought heaving bombers less than seventy feet above a farm house and barn), which concluded that, notwithstanding plenary federal jurisdiction over navigable airspace, very low flights could interfere with possessory interests.

The rules require prior authorization to overfly institutional premises, limit flight to daylight hours and require that the UAS remain within sight of the operator. They prohibit the use of UAS during outdoor events or within a quarter mile of athletic facilities. UAS may not be flown within one hundred yards of buildings or fifty yards of people or animals, and they may not be flown in a manner that interferes with ground vehicles or traffic.

SOUTH DAKOTA BOARD OF REGENTS

Policy Manual

SUBJECT: Proposed Unmanned Aircraft Systems (UAS Policy)

NUMBER: 1:30

1. Purpose

The Board permits the use of unmanned aircraft systems (UAS) to support administrative, research, instructional, and service functions of the institutions. This policy serves to provide guidance concerning the appropriate operation of and uses for UAS relating to academic endeavors and to protect them from abuse and from unlawful or other misuse.

2. Background

The Federal Aviation Administration (FAA) has jurisdiction over all navigable airspace in the United States. The mission of the FAA is to ensure the safe and efficient management of the national airspace system (NAS). All aircraft, whether manned or unmanned, are subject to FAA rules and regulations.

The FAA classifies all aircraft operated by entities as belonging to one of two categories of operation: public or civil. Public UAS operations include those aircraft owned and operated by government or public entities for governmental purposes. All other UAS operations are considered civil. UAS operated by individuals for hobby or recreational purposes are considered model aircraft. Model aircraft operations do not generally require special FAA approval, so long as they adhere to certain statutory parameters. Ownership and use of UAS by entities do not generally fall within these parameters.

3. Establishment of Institutional Administration

Each institution that intends to operate a UAS will designate an institutional office to assume responsibility for overseeing institutional UAS compliance. The institutional office will be responsible for handling requests to pursue a COA or § 333 exemption on behalf of an institutional unit. Where the cognizant institutional administrators determine that the investment in the technology, its operation and maintenance is justified, the institutional office will be responsible for making arrangements to submit applications, obtain insurance coverage, train operators and assemble the necessary operations manuals and record-keeping systems. Upon receipt of authorization from the FAA, the institutional office will be responsible for monitoring institutional compliance with FAA training, operations, maintenance, record-keeping and other regulatory requirements.

4. Institutional Usage Pursuant to a Certificate of Authorization

The FAA may grant permission to institutions to operate UAS, so long as their use qualifies as a government function under 49 USC §40125. In order for an administrative unit within the institution to operate UAS for a government function, the institution must apply for and be granted a Certificate of Authorization (COA) from the FAA to enable operation of a UAS. *Government uses for purposes of the COA include research in furtherance of core governmental functions, institutional security, facilities maintenance, institutional relations and activities provided to the public at no cost incidental to an institution's public service mission.*

COAs are only available to government agencies or public entities for operations that are considered public aircraft operations. *COAs cannot be granted to public institutions for education or training since these applications are considered commercial in nature.* A COA is granted to the institution, not to individuals. Data acquired through the use of the UAS belongs to the institution and not to the individual.

A. Requirements Institutions must meet in order to use UAS for government uses:

- i. Institutions must obtain a COA from the FAA for governmental uses or other FAA exceptions or authorizations prior to use;
- ii. Insurance Coverage is obtained;
- iii. Each person controlling the UAS must receive Operator Training; and
- iv. Each institution must establish and document such additional training, maintenance, logging and control procedures as may be required under FAA policy and guidance.

B. Overview of COA Process

Due to the potential legal and risk management issues involved in managing a COA, a two-step process must be followed for institutional administrative units that wish to apply for COA for government purposes.

STEP ONE:

A brief narrative must be completed detailing the following:

- i. Nature of institutional function supported by the use of a UAS and goals of the work to be undertaken;
- ii. Need for a UAS;
- iii. Type of UAS to be utilized and the manner in which it/they will be operated;
- iv. Type of data to be collected and plan for collected data;
- v. Person(s) who will be operating the UAS and proof of training;
- vi. Schedule of the activities to be undertaken; and

vii. Sources and nature of financial support when appropriate

Much of this information is required for the COA, this information may be duplicated from the information put in the COA.

STEP TWO:

An internal application checklist must be completed to ensure the UAS will be operated within the COA framework. The checklist includes:

- i. Completion of the brief narrative of Step One;
- ii. Review of justifications for data collection (including instrumentation and project goals);
- iii. Creation and maintenance of logs of all flights and all data files collected;
- iv. Creation and maintenance of operator file(s) with proof of training;
- v. Copy of completed and approved COA; and
- vi. Proof of insurance

5. Institutional Usage of UAS pursuant to an § 333 exemption from general rules governing civil aviation.

FAA regulations do not currently allow UAS operation for nongovernmental civil (commercial) purposes. Any aircraft operation in the national airspace requires a certificated and registered aircraft, a licensed pilot, and operational approval through an exemption petition process. Section 333 of the FAA Modernization and Reform Act of 2012 grants the Secretary of Transportation the authority to determine whether an airworthiness certificate is required for a UAS to operate safely. When a petitioner has demonstrated that adequate safety measures are in place, the FAA may grant an exemption that would allow UAS operation for commercial purposes. Commercial purposes involve uses including, but not limited to: education, training, marketing, news, promotional research, and public service.

A. Requirements Institutions must meet in order to use UAS for commercial purposes:

- i. Institutions must obtain a § 333 exemption for civil operations by demonstrating that the UAS can be operated safely within an assigned area and cause no harm to the public;
- ii. Insurance Coverage is required;
- iii. Each person controlling the UAS must receive Operator Training and be a licensed pilot; and
- iv. Each institution must establish and document such additional training, maintenance, logging and control procedures as may be required under FAA policy and guidance

6. Private use of Model Aircraft and UAS Usage within Institutional Airspace

Model aircraft operated for hobby or recreational purposes by individuals or other UAS devices may not be operated over institutional grounds without prior permission, and may never be operated in ways that interfere with the use of institutional grounds.

Permission to use drones may be requested through institutional offices that administer requests for private use of institutional facilities.

The following restrictions apply to the time, place, and manner private model aircraft or UAS devices are operated:

- A. Only with prior permission;
- B. Only during daylight hours
- C. Within full view and control of operator.;
- D. Not during out of door institutional events;
- E. Not over outdoor athletic facilities or any portion of the campus grounds within a 1,320 foot radius of the facility;
- F. Not within 300 feet of buildings;
- G. Not within 150 feet of persons or animals; and
- H. Not in a manner which interferes with ground vehicles or traffic.

For purposes of this section, institutional airspace includes that portion of the air space between the surface of the ground and 300 feet above the ground or above a building or structure erected on the property.

For purposes of this section, all use other than use by the institution is private use. Students, student organizations, employees or employee organizations may use model aircraft or UAS only with permission first obtained.

7. UAS Compliance with Other Policies

This policy is to be read in conjunction with institutional policies regarding conduct while on institutional grounds and utilizing institutional resources.