

Procedures related to the Unmanned Aerial Systems (UAS) policy

USC Unmanned Aerial Systems (Drone) Policy: <https://policy.usc.edu/unmanned-aerial-systems-drones/>

To submit a drone operating plan approved by a sponsoring USC school or division to the UAS Review Board for registration, the applicant must submit the plan to the Board no less than 10 days prior to each proposed use (as per steps outlined below).

Regardless of whether the applicant has obtained an FAA Remote Pilot Certificate or has engaged the services of a third party to act as Remote Pilot in Command, the applicant still must obtain operational approval from the USC UAS Review Board.

At all times, an approved Remote Pilot In Command of a properly authorized UAS must comply with FAA regulations, federal law, state law, and any local or other applicable laws or regulations regarding unmanned aircraft systems, in addition to compliance with the university UAS policy and any additional conditions required by the UAS Review Board. Evidence of compliance with such laws and regulations is a prerequisite to the operation of a UAS on or above USC property or in connection with a USC sanctioned or affiliated event or activity.

UAS Review Board approval does not override any other approval required by the university or other governing body.

Note that applications for commercial UAS use will not be accepted. The UAS Review Board will rely on the current FAA definition of commercial UAS use to help make this determination. Commercial users should obtain approval from a sponsoring USC school dean or division vice president, and resubmit the approved operating plan for registration.

Registration procedure for operating plans approved by a sponsoring USC school or division

Step 1: Submit the approved drone operating plan to the UAS Review Board at uscdrone@usc.edu at least 10 days prior to the operation date disclosed in the approved operating plan. The operating plan must include contact information of the executive that approved the operating plan.

Step 2: The UAS Review Board will confirm the details of the approved operating plan with the executive who granted approval.

Step 3: The UAS Review Board will issue an acknowledgement that the approved operating plan has been reviewed and registered by the UAS Review Board. Registration details will be emailed to the applicant and the Remote Pilot in Command (if a third-party company is used). A Remote Pilot in Command Drone operators will be expected to provide valid registration information to campus safety personnel while piloting a UAS on or above USC property or in connection with a USC sanctioned or affiliated event or activity.

Prerequisites for any UAS operating plan:

- a. Proof that the applicant is either an active student, faculty member, or employee of the university or its affiliates.
- b. Drone operators are required to register their drone with the FAA. Beginning September 16, 2023, all drone pilots required to register their drone must operate their aircraft in accordance with the remote ID rule for pilots.
https://www.faa.gov/uas/getting_started/register_drone/
- c. The envisioned UAS operation must demonstrate compliance with all FAA regulations, applicable laws, government regulations, and university policy.
- d. The envisioned operation must be judged by the UAS Review Board to not pose an unacceptable threat to health, safety, privacy, or the environment, either in an absolute sense or compared to other methods of obtaining the desired information.
- e. The envisioned operation must be judged by the UAS Review Board to be in the best interest of the public and the university.

The UAS Operating Plan must include:

- 1) Statement of purpose(s) of the operation: including proposed use and handling of any data (visual, auditory, multi-spectral, etc.) collected during the flights. Examples of data or imagery to be collected, or a video documenting the UAS maneuver(s) to be performed.
- 2) The identity and contact information of the Remote Pilot in Command who is responsible for operating the UAS, along with proof that the person has a remote pilot certificate with the FAA that has a small UAS rating.
- 3) Proof of drone registration with the FAA.
- 4) Dates and times of the UAS operation.
- 5) Boundary map of operating area and proposed method for staying within those boundaries. The FAA has included the following airspace restrictions for UAS operation:
 - a. The altitude of the UAS cannot be higher than 400 feet above ground level
 - b. The minimum flight visibility, as observed from the location of the control station must be no less than 3 statute miles.
 - c. The minimum distance of the small UAS from clouds must be no less than:
 - i. 500 feet below the cloud; and
 - ii. 2,000 feet horizontally from the cloud.

- 6) Hardware and software to be used, including technical specifications from the manufacturer(s) of the UAS airframe and sensors, along with proof that the UAS is registered with the FAA. (<https://registermyuas.faa.gov/>).
- 7) To confirm that the UAS is in compliance with FAA operating limitations, submit total weight and maximum speed of the UAS and any ancillary equipment affixed to the aircraft, per technical specifications from the manufacturer(s). The FAA has implemented the following operating limitations:
 - b. The groundspeed of the UAS may not exceed 87 knots (100 miles per hour)
 - c. Maximum weight of 55 pounds.
- 8) Confirmation that the UAS flight will not be over human beings, unless that human being is directly participating in the operation of the UAS, or is located under a covered structure or inside a stationary vehicle that can provide reasonable protection from a falling small UAS.
- 9) The identity and contact information of the primary USC sponsor(s).
- 10) Proposed UAS emergency landing procedures and an emergency response plan with specific lost link procedures.
- 11) Provisions for the safety and security of persons and property within the operating area.
- 12) Proof of insurance from the pilot(s) or other remote operator(s).

For light drones (below five pounds)

 - Limits of \$1M Combined Single Limit bodily injury/ property damage should be the minimum evidenced coverage.
 - USC to be Additional Insured with waiver of subrogation.

For heavier drones (up to 25 pounds)

 - Limits of \$3M Combined Single Limit bodily injury/ property damage should be the minimum evidenced coverage.
 - USC to be Additional Insured with waiver of subrogation.

If the contract use involves heavier drones (over 25 pounds) with complex/ experimental scope of operations

 - Limits of \$5M Combined Single Limit bodily injury/ property damage should be the minimum evidenced coverage.
 - USC to be Additional Insured with waiver of subrogation.
- 13) Certification that the flight will adhere to all of the Safety Requirements Applicable to all UAS Flights contained in these Procedures.

Deliberations of the USC UAS Review Board may be informed by, but do not supplant or supersede, other related university policies and review procedures.

Safety Requirements Applicable to all UAS Flights:

The following safety-related requirements must be adhered to on all UAS flights:

- 1) **Condition for Safe Operation:** No Remote Pilot in Command may operate a small UAS system unless it is in condition for safe operation. Prior to each flight, the Remote Pilot in Command must check the small UAS to determine whether it is in condition for safe operation. For guidance on how to determine whether a small UAS is in a condition for safe operation, please visit https://www.faa.gov/uas/media/AC_107-2_AFS-1_Signed.pdf, Appendix “C”.
- 2) **Preflight familiarization, inspection, and actions for aircraft operation:** Prior to flight, the remote pilot in command must:
 - a. Assess the operating environment, considering risks to persons and property in the immediate vicinity both on the surface and in the air. This assessment must include:
 - i. Local weather conditions;
 - ii. Local airspace and any flight restrictions;
 - iii. The location of persons and property on the surface; and
 - iv. Other ground hazards.
 - b. Ensure that all persons directly participating in the small UAS operation are informed about the operating conditions, emergency procedures, contingency procedures, roles and responsibilities, and potential hazards;
 - c. Ensure that all control links between ground contract station and the small UAS are working properly;
 - d. If the small UAS is powered, ensure that there is enough available power for the small UAS to operate for the intended operational time; and
 - e. Ensure that any object attached or carried by the UAS is secure and does not adversely affect the flight characteristics or controllability of the UAS.
- 3) **Medical Condition:** No person may operate a small UAS, whether acting as the Remote Pilot in Command or under the direct supervision of the Remote Pilot in Command, if the person knows or has reason to know that he or she has a physical or mental condition that would interfere with the safe operation of the small UAS.
- 4) **In-flight emergency:** In an in-flight emergency requiring immediate action, the Remote Pilot in Command may deviate from the Operating Plan to the extent necessary to meet that emergency. Emergency action should be taken in a way that minimizes injury to persons and/or damage to property. A written report must be prepared and retained in each instance where an in-flight emergency causes a deviation. The report must

summarize the nature of the emergency and explain the nature and extent of the deviation.

- 5) **Hazardous Operation:** A Remote Pilot in Command is prohibited from:
 - a. Operating a small UAS in a careless or reckless manner so as to endanger the life or property of another; or
 - b. Allowing an object to be dropped from a Small Unmanned Aircraft in a manner that creates an undue hazard to persons or property.

- 6) **Operation From a Moving Vehicle or Aircraft:** The Remote Pilot in Command is prohibited from operating a small UAS from a moving aircraft, or from a moving land or water-borne vehicle unless the small UAS is flown over a sparsely populated area and is not transporting another person's property for compensation or hire.

- 7) **Alcohol or Drugs:** The Remote Pilot in Command is prohibited from operating a small UAS while under the influence of alcohol and/or drugs, or within 8 hours after the consumption of any alcohol and/or drugs.

- 8) **Daylight Operation:** All operation of small UAS' must occur during daylight hours.

- 9) **Visual Line of Sight:** With vision that is unaided by any device other than corrective lenses, the Remote Pilot in Command, the visual observer (if one is used), and the person manipulating the flight control of the small UAS must be able to see the small UAS throughout its entire flight.

- 10) **Visual Observer:** If a visual observer is used during the aircraft operation, all of the following requirements must be met:
 - a. The Remote Pilot in Command, the person manipulating the flight controls of the small UAS, and the visual observer must maintain effective communication with each other at all times.
 - b. The remote pilot in command must ensure that the visual observer is able to maintain visual line of sight at all times
 - c. The Remote Pilot in Command, the person manipulating the flight controls, and the visual observer must scan the airspace where the small UAS is operating for any potential collision hazard and must maintain awareness of the position of the small UAS through direct visual observation.

- 11) **Operation of Multiple small UAS':** A person may not operate or act as a remote pilot in command or visual observer of more than one unmanned aircraft at a time.

- 12) **Carriage of Hazardous Material:** A small unmanned aircraft may not carry hazardous material. For purposes of this section, the term hazardous material is defined in 49 CFR 171.8.
- 13) **Right of Way:** All small UAS must yield the right of way to all aircraft, airborne vehicles, and launch and reentry vehicles. Yielding the right of way means that the small UAS must give way to the aircraft or vehicle and may not pass over, under, or ahead of it unless well clear. No person may operate a small UAS so close to another aircraft as to create a collision hazard.
- 14) **Operation in Certain Airspace:** No person may operate a small UAS in Class B, C, or D airspace or within the lateral boundaries of the surface area of Class E airspace designated for an airport unless that person has prior authorization from Air Traffic Control (ATC). Also, no person may operate a small UAS in a manner that interferes with the operations and traffic patterns at any airport, heliport, or seaplane base. Finally, no person may operate a small UAS in prohibited or restricted areas unless that person has permission from the using or controlling agency, as appropriate.

Definitions

USC Property – Buildings, facilities, grounds, and land that are owned or controlled by University of Southern California.

Remote Pilot in Command: The Remote Pilot in Command is the person operating the small UAS personally, or directly supervising the operation of a small UAS with the ability to immediately take direct control of the flight of the UAS.

UAS - Unmanned Aerial System - UASs are also known as or may be characterized as unmanned aircraft systems, model aircraft, or drones. According to the FAA, a UAS is the unmanned aircraft and all of the associated support equipment, control station, data links, telemetry, communications and navigation equipment, etc., necessary to operate the unmanned aircraft. Unmanned aerial systems may have a variety of names including drones, quadcopter, quadrotor, etc.