University of California

Motion Picture & Television Operations Manual

For operation of Unmanned Aircraft Systems
Under a Grant of Exemption granted to the University of California under Section 333 of the FAA Modernization Act

11/1/2015

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Purpose

This manual has been developed for The Regents of the University of California (hereafter referred to as "the University of California" or "UC") for its use in connection with the operation of Unmanned Aircraft Systems ("UAS") conducted under a Grant of Exemption granted to the University of California under Section 333 of the FAA Modernization and Reform Act of 2012 (Reform Act) and 14 C.F.R. Part 11. The purpose of this manual is to provide guidance additional to the UC UAS Operations Manual on the requirements for conducting closed set filming operations. Closed set filming permits the UAS to be flown at closer than 500 feet from participating persons who are part of the filming operation beyond the Pilot in Command and Visual Observers. In order to be considered a participating person, the individual must give his or her consent to be involved and must also be necessary for the filming production. University of California pilots, sensor operators, visual observers, and other University of California personnel when applicable, will comply with the procedures and conditions of this manual (as well as with any conditions and limitations stipulated in its Grant of Exemption, and with the University UAS Operations Manual), whenever UAS flight operations are performed that require the exemption as mentioned above.

Owner/Operator & Organization

The Regents of the University of California

Distribution and Revision Procedures

The University of California shall document and record all revisions made to this manual to ensure that records are kept current. The University of California shall forward all revisions that would affect the basis on which the FAA granted the exemption to the Flight Standards District Office (FSDO) at least 15 days before the proposed effective date. All revisions shall be documented using the Revision Letter (Appendix C) and recorded using the Revision Control Page (Appendix D).

Area of Operations

The University of California's approved area of operations for operation of UAS under its Section 333 Grant of Exemption will be the United States, including its territories and possessions.
Plan of Activities

At least three (3) days prior to any scheduled closed set filming operation, the University of California will submit a written plan of activities to the local Flight Standards District Office (FSDO) having jurisdiction over that area. The plan of activities will include the following:

1. Dates and times for all flights.
2. Name and phone number of person responsible for the event.
3. Name and phone number of person responsible for flight operations.
4. Make, model, and serial number (if available) of the UAS to be used.
5. Name and certificate number of pilot(s) involved in the event.
6. A statement that the University has obtained permission from such property owners and/or local officials as may be required by law. The list of those who gave permission must be made available to the inspector upon request from the waiver holder.
7. Signature of University representative.
8. A description of the flight activity including maps or diagrams of any area, city, town, county, and/or State over which the operation will be conducted.

The three (3) day notification specified above may be waived by the FSDO; however, the University of California and/or the operator should contact the FSDO as soon as possible with this request and be prepared to explain in detail why the three (3) day notification is not practical.

Permission to Operate

Before any flight operations are conducted under the provisions of this manual, the University will obtain permission to conduct these operations from such property owners and local officials as as may be required by law. Persons from whom permission may be required are listed below:

1. Property owners
2. Law enforcement officials
3. Fire department officials
4. Local, State and Federal government

5. Air traffic control

University of California personnel obtaining such permission will do so in writing whenever practical; however, verbal permission is otherwise acceptable. A standard Permission Form is provided in Appendix E and may be used when obtaining written permission. University of California personnel will assure a sufficient number of Permission Forms are available at the job site. Written permission forms will be maintained at the job site until flight operations are completed, and then turned into the Operations Manager consistent with the University UAS Operations Manual and University records retention policy. These forms will be made available for inspection by the Federal Aviation Administration (FAA) or other official personnel upon request.

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**Security**

Prior to any flight operation the operator will coordinate with appropriate production personnel to devise a plan of securing the area(s) of operation from all unauthorized persons and vehicles to a minimum of a 500-foot perimeter. Provisions will be made to immediately discontinue operations should the area(s) become unsecured or for any other reason in the interest of safety.

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**Briefing of Pilot**

Prior to the start of any operation under the provisions of this manual, the pilot in command (PIC) will conduct a briefing of all procedures to participating personnel of the risks involved, emergency procedures, and safeguards to be followed during the event. Personnel will also be briefed on additional provisions that may be issued by the FSDO that has geographic responsibility for the operational area, including the location of boundaries or time limits. The briefing shall cover:

1. Pertinent sections of this manual
2. UAS Operations Manual
3. Plan of activities
4. UAS takeoff and landing procedures
5. Role of PIC, Visual Observer, and camera/gimbal operator
6. Overview of flight activities to be conducted
7. Recall procedures
8. Emergency procedures

9. Risks to participating personnel

10. How to control nonparticipating persons

Certification/Airworthiness

University of California UAS used in operations conducted under its Section 333 Grant of Exemption do not require an airworthiness certificate. The University of California will use trained technicians to perform maintenance, alterations, or preventive maintenance on the UAS using the methods, techniques, and practices prescribed in the UAS operating documents. The University of California will document maintenance performed on its UAS.

Pilot & Visual Observer Minimum Requirements

The University of California shall establish and specify the minimum pilot requirements. Minimum requirements shall meet or exceed the following (using Exemption No. 11062 to Astraeus Aerial as a basis):

Prior to conducting operations, the PIC must have logged time as a UAS pilot, consistent with 14 CFR 61.51(b), and meet the qualifications specified Section 9 of the University UAS Operations Manual. Prior to operations the PIC must also have training as a UAS pilot specific to operating the same make and model of UAS to be used for operations under the exemption. Prior documented flight experience that was obtained in compliance with applicable regulations could satisfy this requirement.

Training, proficiency, and experience-building flights can be conducted to accomplish the required competency. During training, proficiency, and experience-building flights the PIC is required to operate the UAS with appropriate distances in accordance with 14 CFR 91.119.

The University of California may determine that specific training and or experience is necessary to address all potential flight hazards and requisite airmanship skills. The University of California will not permit any PIC to operate unless that PIC is able to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption and/or waiver, including evasive and emergency maneuvers and maintaining appropriate distances from persons, vessels, vehicles and structures.

Prior to operations the PIC must hold either an airline transport, commercial, private, recreational, or sport pilot certificate. The PIC must also hold a current FAA airman medical certificate or a valid U.S. driver’s license issued by a state, (14 CFR § 61.23).
the District of Columbia, Puerto Rico, a territory, a possession, or the Federal government, and have satisfied the minimum training and experience requirements as stated in the conditions and limitations above.

Visual Observers should have training with the UAS which they are observing affording them direct experience with the performance of the UAS they will be observing.

**Communications**

Prior to the start of any operation covered by this manual, the PIC will formulate a plan to provide communications capability to all participants during the actual operation. Oral, visual or radio communications may be used as long as it is effective and is capable of keeping the participants continuously appraised of the current status of the operation.

**Accident Notification**

Should an accident or incident requiring notification of the National Transportation Safety Board (NTSB) occur, the notification requirements of 49 CFR part 830 shall be complied with.

**Recall/Stop Procedures**

Specific procedures will vary based on the UAS being used, the physical location, and other unique configurations in the field. Details will be part of the required pre-flight briefing.

**Special Provisions**

The controls, procedures, and conditions set forth in this manual is the primary assurance that persons on the surface will not be jeopardized.

The UAS and pilots used under this exemption and/or waiver will only be those specified in manual, Appendices A and B, or associated plan of activities. Each pilot’s name and certificate number shall appear on each daily plan of activity. All UAS and pilot(s) participating in the activity shall be available for FAA inspection before the scheduled event.

Each PIC conducting operations authorized under this exemption and/or waiver understands the conditions of issuance, and that it constitutes a waiver of 14 CFR Section 91.119 (b) and (c). (Appendix G) UAS takeoff and landing areas will be
protected
in a manner that will prevent unauthorized persons from entering the takeoff and landing area. The University of California will ensure that the participating persons involved in the operations are thoroughly briefed on special procedures, communication, emergency procedures, and on the provisions of the authorization and/or waiver before commencing the activities. No person may participate in any event unless that person has received a briefing on the provisions of the exemption and/or waiver.

University of California Organization

OPERATIONS MANAGER
Duties and Responsibilities:

1. Has final word in the formulation of policy and procedures concerning this manual.

2. Acts as liaison between University of California and the FAA on matters concerning this manual.

3. Maintains a current copy of this manual and assures that each approved pilot is provided access to a copy of this manual and obtains a signed statement from each that they have read and understand its contents.

4. Responsible for assuring that all revisions to this manual are distributed and processed properly.

5. Must approve or disapprove the proposed operations performed by University of California under the provisions of this manual.

6. Assume the responsibilities of PIC when acting as such.

7. The Operations Manager may delegate functions to other personnel but retains responsibility.

PILOT IN COMMAND (PIC)
Duties and Responsibilities:

1. Assure the UAS to be flown is in airworthy condition and required maintenance has been performed as appropriate.

2. Acquire permission from the Operations Manager before any operation under the provisions of this manual.

3. Be knowledgeable of the contents of this manual and abide by the procedures, policies and conditions contained herein.
4. Coordinate with location personnel to formulate plans, routes, locations, etc. with safety of all persons involved is the primary concern.

5. Maintain and keep current their copy of this manual and have it on site at any job or operation requiring the / Section 333 Grant of Exemption.

6. The PIC may delegate functions to other personnel, but retains responsibility.

VISUAL OBSERVER
Duties and Responsibilities:

1. Maintain visual line of sight with the UAS at all times.

2. Maintain direct communication with the PIC.

3. Maintain a broader “situational” awareness of the secure area and stay alert for unauthorized persons or vehicles that could compromise the area.

4. Assist the PIC in with collision avoidance. Including, but not limited to, avoidance of other traffic, clouds, obstructions, and terrain.
## Appendix A - List of Approved Pilots

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<th>Pilot Name</th>
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Appendix B - List of Approved UAS

1. [Ex: DJI Phantom Vision 2+]
2. XXXXXX
3. XXXXXX
4. XXXXXX
# Appendix C - Revision Letter

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*R = Remove and Replace  
*D = Delete and Destroy  
*N = Insert New Page*

Manual Serial # _______________________   Issued To ________________________

Revised By __________________________________  Date _____________________

This form must be returned to the Operations Manager no later than: _______________
### Appendix D - Revision Control Page

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Appendix E - Location Permission Form

In signing this form, I hereby grant permission to the Operators and Pilots of the University of California to operate their aircraft at less than 500 feet from property, or in some jurisdiction in which I am responsible for or affiliated with, for the purpose of film or television production.

Please indicate the basis of authority to grant permission: __________________________

____________________________________________________________________________

Name: __________________________
Title (if applicable): __________________________
Location: __________________________
Date of Operation: __________________________
Signature: __________________________
Date: __________________________

University of California Representative Receiving Permission:

Name: __________________________
Date: __________________________
Appendix F - Motion Picture & Television Operations Manual Pilot Acknowledgment and Receipt

By signing below, I hereby acknowledge that I have received a copy of the University of California Motion Picture & Television Operations Manual. I hereby acknowledge that I have read and understand the policies and procedures as outlined herein and accept to be subject to compliance.

_________________________________  
Signature

_________________________________  
Date

_________________________________  
Print Name

_________________________________  
Pilot Certificate Number