



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

800 Independence Ave., S.W.  
Washington, D.C. 20591

## **CORRECTED COPY**

The FAA is reissuing the April 8, 2015, grant of exemption of Exemption No. 11305. A correction was made to add the Hexacrafter HO-1250 aircraft to the Airworthiness Certification section and to Conditions and Limitations #1. Below is the amended Exemption No. 11305 that includes the aforementioned change. We made the correction in our records as of May 7, 2015.

April 8, 2015

Exemption No. 11305  
Regulatory Docket No. FAA-2014-1017

Mr. Scott Hess  
Owner  
Flying Cross Aerial Productions  
P.O. Box 26203  
Austin, TX 78755

Dear Mr. Hess:

This letter is to inform you that we have granted your request for exemption. It transmits our decision, explains its basis, and gives you the conditions and limitations of the exemption, including the date it ends.

### **The Basis for Our Decision**

By letter dated December 3, 2014, you petitioned the Federal Aviation Administration (FAA) on behalf of Flying Cross Aerial Productions (hereinafter petitioner or operator) for an exemption. The exemption would allow the petitioner to operate an unmanned aircraft system (UAS) to conduct aerial photography and filming.

See Appendix A for the petition submitted to the FAA describing the proposed operations and the regulations that the petitioner seeks an exemption.

The FAA has determined that good cause exists for not publishing a summary of the petition in the Federal Register because the requested exemption would not set a precedent, and any delay in acting on this petition would be detrimental to the petitioner.

### **Airworthiness Certification**

The UAS proposed by the petitioner are the DJI S900, DJI S1000, and Hexacrafter HO-1250.

The petitioner requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*. In accordance with the statutory criteria provided in Section 333 of Public Law 112–95 in reference to 49 U.S.C. § 44704, and in consideration of the size, weight, speed, and limited operating area associated with the aircraft and its operation, the Secretary of Transportation has determined that this aircraft meets the conditions of Section 333. Therefore, the FAA finds that the requested relief from 14 CFR part 21, and any associated noise certification and testing requirements of part 36, is not necessary.

### **The Basis for Our Decision**

You have requested to use a UAS for aerial data collection and closed set motion picture and filming. The FAA has issued grants of exemption in circumstances similar in all material respects to those presented in your petition. In Grants of Exemption Nos. 11062 to Astraeus Aerial (*see* Docket No. FAA–2014–0352), 11109 to Clayco, Inc. (*see* Docket No. FAA–2014–0507), 11112 to VDOS Global, LLC (*see* Docket No. FAA–2014–0382), and 11213 to Aeryon Labs, Inc. (*see* Docket No. FAA–2014–0642), the FAA found that the enhanced safety achieved using an unmanned aircraft (UA) with the specifications described by the petitioner and carrying no passengers or crew, rather than a manned aircraft of significantly greater proportions, carrying crew in addition to flammable fuel, gives the FAA good cause to find that the UAS operation enabled by this exemption is in the public interest.

Having reviewed your reasons for requesting an exemption, I find that—

- They are similar in all material respects to relief previously requested in Grant of Exemption Nos. 11062, 11109, 11112, and 11213;
- The reasons stated by the FAA for granting Exemption Nos. 11062, 11109, 11112, and 11213 also apply to the situation you present; and
- A grant of exemption is in the public interest.

### **Our Decision**

In consideration of the foregoing, I find that a grant of exemption is in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. 106(f), 40113, and 44701, delegated to me by the Administrator, Flying Cross Aerial Productions is granted an exemption from 14 CFR §§ 61.23(a) and (c), 61.101(e)(4) and (5), 61.113(a), 61.315(a),

91.7(a), 91.119(c), 91.121, 91.151(a)(1), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b), to the extent necessary to allow the petitioner to operate a UAS to perform aerial data collection and closed set motion picture and filming. This exemption is subject to the conditions and limitations listed below.

### **Conditions and Limitations**

In this grant of exemption, Flying Cross Aerial Productions is hereafter referred to as the operator.

Failure to comply with any of the conditions and limitations of this grant of exemption will be grounds for the immediate suspension or rescission of this exemption.

1. Operations authorized by this grant of exemption are limited to the DJI S900, DJI S1000, and Hexacrafter HO-1250 when weighing less than 55 pounds including payload. Proposed operations of any other aircraft will require a new petition or a petition to amend this exemption.
2. Operations for the purpose of closed-set motion picture and television filming are permitted.
3. The UA may not be operated at a speed exceeding 87 knots (100 miles per hour). The exemption holder may use either groundspeed or calibrated airspeed to determine compliance with the 87 knot speed restriction. In no case will the UA be operated at airspeeds greater than the maximum UA operating airspeed recommended by the aircraft manufacturer.
4. The UA must be operated at an altitude of no more than 400 feet above ground level (AGL). Altitude must be reported in feet AGL.
5. The UA must be operated within visual line of sight (VLOS) of the PIC at all times. This requires the PIC to be able to use human vision unaided by any device other than corrective lenses, as specified on the PIC's FAA-issued airman medical certificate or U.S. driver's license.
6. All operations must utilize a visual observer (VO). The UA must be operated within the visual line of sight (VLOS) of the PIC and VO at all times. The VO may be used to satisfy the VLOS requirement as long as the PIC always maintains VLOS capability. The VO and PIC must be able to communicate verbally at all times; electronic messaging or texting is not permitted during flight operations. The PIC must be designated before the flight and cannot transfer his or her designation for the duration of the flight. The PIC must ensure that the VO can perform the duties required of the VO.

7. This exemption and all documents needed to operate the UAS and conduct its operations in accordance with the conditions and limitations stated in this grant of exemption, are hereinafter referred to as the operating documents. The operating documents must be accessible during UAS operations and made available to the Administrator upon request. If a discrepancy exists between the conditions and limitations in this exemption and the procedures outlined in the operating documents, the conditions and limitations herein take precedence and must be followed. Otherwise, the operator must follow the procedures as outlined in its operating documents. The operator may update or revise its operating documents. It is the operator's responsibility to track such revisions and present updated and revised documents to the Administrator or any law enforcement official upon request. The operator must also present updated and revised documents if it petitions for extension or amendment to this grant of exemption. If the operator determines that any update or revision would affect the basis upon which the FAA granted this exemption, then the operator must petition for an amendment to its grant of exemption. The FAA's UAS Integration Office (AFS-80) may be contacted if questions arise regarding updates or revisions to the operating documents.
8. Any UAS that has undergone maintenance or alterations that affect the UAS operation or flight characteristics, e.g. replacement of a flight critical component, must undergo a functional test flight prior to conducting further operations under this exemption. Functional test flights may only be conducted by a PIC with a VO and must remain at least 500 feet from other people. The functional test flight must be conducted in such a manner so as to not pose an undue hazard to persons and property.
9. The operator is responsible for maintaining and inspecting the UAS to ensure that it is in a condition for safe operation.
10. Prior to each flight, the PIC must conduct a pre-flight inspection and determine the UAS is in a condition for safe flight. The pre-flight inspection must account for all potential discrepancies, e.g. inoperable components, items, or equipment. If the inspection reveals a condition that affects the safe operation of the UAS, the aircraft is prohibited from operating until the necessary maintenance has been performed and the UAS is found to be in a condition for safe flight.
11. The operator must follow the UAS manufacturer's maintenance, overhaul, replacement, inspection, and life limit requirements for the aircraft and aircraft components.
12. Each UAS operated under this exemption must comply with all manufacturer safety bulletins.
13. Under this grant of exemption, a 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, the District of Columbia, Puerto Rico, a territory, a possession, or the Federal government. The PIC must also meet the flight review requirements specified in 14 CFR § 61.56 in an aircraft in which the PIC is rated on his or her pilot certificate.

14. The operator may not permit any PIC to operate unless the PIC demonstrates the ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption, including evasive and emergency maneuvers and maintaining appropriate distances from persons, vessels, vehicles and structures. PIC qualification flight hours and currency must be logged in a manner consistent with 14 CFR § 61.51(b). Flights for the purposes of training the operator's PICs and VOs (training, proficiency, and experience-building) and determining the PIC's ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption are permitted under the terms of this exemption. However, training operations may only be conducted during dedicated training sessions. During training, proficiency, and experience-building flights, all persons not essential for flight operations are considered nonparticipants, and the PIC must operate the UA with appropriate distance from nonparticipants in accordance with 14 CFR § 91.119.
15. UAS operations may not be conducted during night, as defined in 14 CFR § 1.1. All operations must be conducted under visual meteorological conditions (VMC). Flights under special visual flight rules (SVFR) are not authorized.
16. The UA may not operate within 5 nautical miles of an airport reference point (ARP) as denoted in the current FAA Airport/Facility Directory (AFD) or for airports not denoted with an ARP, the center of the airport symbol as denoted on the current FAA-published aeronautical chart, unless a letter of agreement with that airport's management is obtained or otherwise permitted by a COA issued to the exemption holder. The letter of agreement with the airport management must be made available to the Administrator or any law enforcement official upon request.
17. The UA may not be operated less than 500 feet below or less than 2,000 feet horizontally from a cloud or when visibility is less than 3 statute miles from the PIC.
18. If the UAS loses communications or loses its GPS signal, the UA must return to a pre-determined location within the private or controlled-access property.
19. The PIC must abort the flight in the event of unpredicted obstacles or emergencies.
20. The PIC is prohibited from beginning a flight unless (considering wind and forecast weather conditions) there is enough available power for the UA to conduct the intended operation and to operate after that for at least five minutes or with the reserve power recommended by the manufacturer if greater.

21. Air Traffic Organization (ATO) Certificate of Waiver or Authorization (COA). All operations shall be conducted in accordance with an ATO-issued COA. The exemption holder may apply for a new or amended COA if it intends to conduct operations that cannot be conducted under the terms of the attached COA.
22. All aircraft operated in accordance with this exemption must be identified by serial number, registered in accordance with 14 CFR part 47, and have identification (N-Number) markings in accordance with 14 CFR part 45, Subpart C. Markings must be as large as practicable.
23. Documents used by the operator to ensure the safe operation and flight of the UAS and any documents required under 14 CFR §§ 91.9 and 91.203 must be available to the PIC at the Ground Control Station of the UAS any time the aircraft is operating. These documents must be made available to the Administrator or any law enforcement official upon request.
24. The UA must remain clear and give way to all manned aviation operations and activities at all times.
25. The UAS may not be operated by the PIC from any moving device or vehicle.
26. All Flight operations must be conducted at least 500 feet from all nonparticipating persons, vessels, vehicles, and structures unless:
  - a. Barriers or structures are present that sufficiently protect nonparticipating persons from the UA and/or debris in the event of an accident. The operator must ensure that nonparticipating persons remain under such protection. If a situation arises where nonparticipating persons leave such protection and are within 500 feet of the UA, flight operations must cease immediately in a manner ensuring the safety of nonparticipating persons; and
  - b. The owner/controller of any vessels, vehicles or structures has granted permission for operating closer to those objects and the PIC has made a safety assessment of the risk of operating closer to those objects and determined that it does not present an undue hazard.

The PIC, VO, operator trainees or essential persons are not considered nonparticipating persons under this exemption.

27. All operations shall be conducted over private or controlled-access property with permission from the property owner/controller or authorized representative. Permission from property owner/controller or authorized representative will be obtained for each flight to be conducted.
28. Any incident, accident, or flight operation that transgresses the lateral or vertical boundaries of the operational area as defined by the applicable COA must be reported

to the FAA's UAS Integration Office (AFS-80) within 24 hours. Accidents must be reported to the National Transportation Safety Board (NTSB) per instructions contained on the NTSB Web site: [www.nts.gov](http://www.nts.gov).

If this exemption permits operations for the purpose of closed-set motion picture and television filming and production, the following additional conditions and limitations apply.

29. The operator must have a motion picture and television operations manual (MPTOM) as documented in this grant of exemption.
30. At least 3 days before aerial filming, the operator of the UAS affected by this exemption must submit a written Plan of Activities to the local Flight Standards District Office (FSDO) with jurisdiction over the area of proposed filming. The 3-day notification may be waived with the concurrence of the FSDO. The plan of activities must include at least the following:
  - a. Dates and times for all flights;
  - b. Name and phone number of the operator for the UAS aerial filming conducted under this grant of exemption;
  - c. Name and phone number of the person responsible for the on-scene operation of the UAS;
  - d. Make, model, and serial or N-Number of UAS to be used;
  - e. Name and certificate number of UAS PICs involved in the aerial filming;
  - f. A statement that the operator has obtained permission from property owners and/or local officials to conduct the filming production event; the list of those who gave permission must be made available to the inspector upon request;
  - g. Signature of exemption holder or representative; and
  - h. A description of the flight activity, including maps or diagrams of any area, city, town, county, and/or state over which filming will be conducted and the altitudes essential to accomplish the operation.
31. Flight operations may be conducted closer than 500 feet from participating persons consenting to be involved and necessary for the filming production, as specified in the exemption holder's MPTOM.

Unless otherwise specified in this grant of exemption, the UAS, the UAS PIC, and the UAS operations must comply with all applicable parts of 14 CFR including, but not limited to, parts 45, 47, 61, and 91.

This exemption terminates on April 30, 2017, unless sooner superseded or rescinded.

Sincerely,

/s/

John S. Duncan

Director, Flight Standards Service





December 3, 2014

U.S. Department of Transportation  
Docket Management System  
1200 New Jersey Ave., SE  
Washington, DC 20590

DEPARTMENT OF  
TRANSPORTATION  
SECRET OPERATIONS

2014 DEC -3 P 12:03

Re: Petition of Scott R. Hess (d/b/a Flying Cross Aerial Productions) for an Exemption Request Pursuant to Section 333 of the FAA Reform Act and Part 11 of the Federal Aviation Regulations from 14 C.F.R. Part 21, Subpart H; 61.113(a) & (b); 91.119(c); 91.121; 91.151(a); 91.405(a); 91.407(a)(1); 91.409(a)(2); 91.417(a) & (b).

Dear Sir or Madam:

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (the "Reform Act") and 14 C.F.R. Part 11, Scott R. Hess (d/b/a Flying Cross Aerial Productions), ("FCAP") does hereby apply for an exemption from the Federal Aviation Regulations ("FAR's") identified below, to allow commercial use of small unmanned aerial systems ("sUAS") for the purpose of aerial photography and filmmaking under certain conditions set forth in the FCAP confidential Flight Operations Manual and **identical conditions** set forth in the FAA-issued "Exemption No. 11062", and related exemptions issued to operators for closed set filming.

Also, pursuant to 14 CFR § 11.87, we request that the FAA not publish this petition request in the Federal Register and not delay action based on the following:

1. This petition for exemption does not set precedent. Previous identical exemption requests have been approved.
2. The requested relief is identical to exemptions granted previously, specifically, Exemption(s) Nos. 11062 (Astraeus Aerial), 11066 (Aerial MOB), 11065 (Helivideo), and others.
3. A delay in action on this petition would adversely affect pending requests for aerial filming operations and result in lost opportunity and wages for participating crew, and a delay in the public benefit of granting this petition. In addition, a competitive advantage for unapproved commercial sUAS operators exists and continues to grow every day.
4. We are filing this exemption petition immediately following the finalized operations manual with respect to newly acquired sUAS.

Notwithstanding the request not to publish this petition request in the Federal Register, FCAP has submitted supporting materials including the confidential "Flight Operations Manual" which are confidential documents pursuant to 14 CFR § 11.35(b) and are not available to the public.

**Pursuant to 14 CFR § 11.87:**

- a) The name and address of the applicant:

Scott R. Hess  
d/b/a Flying Cross Aerial Productions  
P.O. Box 26203  
Austin, TX 78755  
512-655-9974

- b) 14 C.F.R. - Regulations for which exemption is requested:

1. Part 21, Subpart H
2. 61.113(a) and (b)
3. 91.119(c)
4. 91.121
5. 91.151(a)
6. 91.405(a)
7. 91.407(a)(1)
8. 91.409(a)(2)
9. 91.417(a) and (b)

These regulation exemption requests are identical to the exemptions determined as necessary by the FAA in previously approved exemption petitions as described above.

- c.) The extent of relief sought, and reason for seeking relief:

1. Part 21, Subpart H: Airworthiness Certificates

The FAA has determined that no exemption is required of this section if a finding is made under the Reform Act that the sUAS selected provides an equivalent level of safety when compared to aircraft normally used for the same application. As the aircraft specified in this exemption request meet the size, weight, speed and other characteristics of sUAS aircraft specified in previously approved exemption requests as noted, no exemption is believed to be needed. If, however, an exemption is determined to be needed by the FAA after review of this petition, one is requested.

An equivalent or greater level of safety is obtained when sUAS physical and operating characteristics, safety systems, maintenance requirements and other operating procedures as set forth in the attached Confidential Flight Operations Manual are adhered to.

2. 61.113(a) and (b): Private Pilot Privileges and Limitations: Pilot in Command.

FCAP is seeking relief from this regulation as the requirement for a Commercial Pilot License with a second class medical would be an unnecessary burden on the operator with regard to obtaining and certifying UA pilots.

The UAS will not carry a pilot or passengers, and the proposed operations can achieve the equivalent level of safety by requiring the pilot to possess a private pilot's license only, with a valid third class medical. This level of knowledge and skill combined with the proposed operating procedures described in the Flight Operations Manual (VLOS only, closed-set requirements, etc.) will more than adequately allow safe operation within the national airspace system, and with regard to persons or property on the ground. The additional knowledge and skill requirements for a Commercial Pilot's license do not add any level of safety with respect to closed-set small UAS operations in the same manner they do with full scale, passenger-carrying aircraft.

An equivalent or greater level of safety is achieved by requiring UA pilots to have a minimum number of hours logged, flight sequences, knowledge and experience testing, etc. as described in the Flight Operations Manual.

3. 91.119(c): Minimum Safe Altitudes.

FCAP is seeking relief from this regulation as the primary purpose of the UAS operation is to provide 'low altitude' aerial cinematography and photography services.

This section prescribes that an aircraft may not be operated closer than 500 feet to any person, vessel, vehicle or structure in uncongested areas. As sUAS aircraft are much smaller, lighter, and operate at much slower speeds than full size aircraft, and do not carry explosive fuel, the potential for injury and damage to persons and property on the ground is significantly lower in the event of an uncontrolled descent. In addition, with respect to participating persons on the ground, a full safety briefing would be conducted describing flight operations, including any risk. This is similarly done with restrictions and guidelines for full size aircraft in accordance with an approved Motion Picture and Television Operations Manual, the applicable sections of which are included in the FCAP Flight Operations Manual.

An equivalent or greater level of safety is obtained than when using full size aircraft in similarly approved filming operations as the potential for injury and damage is significantly reduced when applying size, weight and speed restrictions on the UA. Also, the UA has built in safety features such as autoland, ability to control with loss of an engine, etc. that full size aircraft may not have.

4. 91.121: Altimeter Settings

FCAP is seeking relief from this regulation as the UA will not have a barometric altimeter.

An equivalent or greater level of safety exists as although the UA does not have a typical barometric altimeter onboard, it does report GPS AGL altitude to the PIC via radio telemetric feed. This is combined with the UA being operated within visual line of sight and below 400' AGL, and the pilot requirements to verify AGL reading prior to liftoff (as contained in the Flight Operations Manual).

5. 91.151(a): Fuel Requirements for Flight in VFR Conditions

FCAP is seeking relief from the fuel requirements of this FAR as current battery technology allows the UA to fly for approximately 15-30 minutes in normal conditions. As 91.151(a) requires a 30-minute reserve AFTER reaching the point of intended landing, there is no practical flight possible under this regulation.

An equivalent or greater level of safety exists as the exact battery level remaining is transmitted to the pilot via radio telemetry, and given that the operating area for the UA is in close proximity to the pilot (VLOS), an unsafe condition where the UA is unable to return for landing due to low battery condition is easily avoidable. Additionally, should a defective battery prematurely deplete, the UA is configured to autoland above the point at which the flight controller detects low voltage. And, as part of the FCAP Operations Manual, it is a requirement that any flight be terminated if telemetry is lost. Otherwise, a flight limit of 30 minutes or 25% battery remaining is prescribed.

6-9. 91.405(a), 91.407(a)(1), 91.409(a)(2); 91.417(a) and (b): Maintenance Inspections

FCAP is seeking relief from the above stated FAR's as the UA will not have an airworthiness certificate. Therefore there is no requirement to perform an inspection in order to maintain airworthiness as stated in Appendix D to Part 43 for 100hr. and annual inspections.

An equivalent or greater level of safety exists as the FCAP Flight Operations Manual does prescribe regular maintenance and inspections, compliance with manufacturer's service bulletins, test flights after maintenance, technician training, and so forth, in the spirit of the scope and detail of Appendix D to Part 43. In addition, while mechanical failures are not out of the question, a crash resulting from a catastrophic failure has a very small amount of risk of injury when compared to a failure in a passenger carrying full size aircraft, for which this regulation was intended.

d) Public Interest:

FCAP believes that allowing commercial use of small-unmanned aircraft will enhance the safety of filming operations by reducing the risk associated with low altitude full size aircraft operations. A manned, turbine powered helicopter operating in close proximity to production personnel and actors on the ground has a far greater risk of injury than a small, lightweight UA carrying no combustible fuel, especially when the UA is operating within the parameters of the FCAP Flight Operations Manual.

Additionally, the safe integration of sUAS within the national airspace is a growing concern amongst pilots, the FAA, and general public. This exemption would provide a safe stepping-stone to a more robust set of future sUAS rules.

e) Level of Safety:

As outlined in each of the FAR's above for which relief is sought (underlined).

f) Summary:

Flying Cross Aerial Production seeks exemption from the following rules for the commercial operation of a small unmanned aerial system in order to conduct filming and photography operations below an altitude of 400' AGL and within a limited operating area: 14 C.F.R. Part 21, Subpart H; 61.113(a) & (b); 91.119(c); 91.121; 91.151(a); 91.405(a); 91.407(a)(1); 91.409(a)(2); 91.417(a) & (b).

This exemption will enhance the level of safety currently able to be obtained using full sized manned helicopters for the same type of work.

g) Additional Information:

The applicant, Scott Hess, is a safety conscious member of the aviation community as both a commercially rated airman (3227668) with flight instructor ratings in single and multi-engine land, and as an aircraft and powerplant mechanic with Inspection Authorization, and over 36 blemish free years of flying. Also a radio control aircraft hobbyist and member of the Academy of Model Aeronautics (11689), Mr. Hess brings a unique perspective on the safe integration of sUAS in the national airspace system.


Mr. Hess has been providing video production services since 1982, including air-to-air and air-to-ground cinematography from turbine helicopters with many hundreds of flight hours. He has been a professional videographer for over 32 years including 16 years as a staff cameraman at CBS. As owner of Flying Cross Aerial Productions, he continues to provide aerial cinematography services from full size helicopters.

Additionally, the sUAS aircraft specified in the attached Flight Operations Manual are unmodified, commercially produced aircraft by the largest consumer sUAS manufacturer worldwide, and have the largest user base of any sUAS, with a proven safety record. Size, weight, speed limitations and other operating restrictions are described in the attached Flight Operations Manual and are consistent with other previously approved Section 333 exemptions for filmmaking. For reference, the UA specified have a gross weight of less than 55lbs and fly at a speed of no more than 50kts, carry neither a pilot nor a passenger, carry no explosive materials or flammable liquid fuels, and operate exclusively within a secured area as set out in the Flight Operations Manual. In addition, integrated safety features ensure the safety of persons and property within and surrounding the limited operating area by employing automatic 'return to home and land' in the event of command and control failure, and other safety features as described in the Flight Operations Manual.

The following document is included in this petition, marked as Proprietary and Confidential:

Flying Cross Aerial Productions  
Small Unmanned Aerial Systems Flight Operations Manual  
Rev. 1.0 dated 12-01-2014

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Hess".

Scott Hess, Owner  
Flying Cross Aerial Productions  
P.O. Box 26203  
Austin, TX 78755