



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

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

April 29, 2015

Exemption No. 11150A
Regulatory Docket No. FAA-2014-0400

Mr. Gregory S. Walden
Akin Gump Strauss Hauer & Feld LLP
1333 New Hampshire Ave NW
Washington, DC 20037

Dear Mr. Walden:

This letter is to inform you that we have granted your petition to amend Exemption No. 11150. It explains the basis for our decision, describes its effect, and lists the revised conditions and limitations.

By letters dated February 24 and March 9, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of AeroCine, LLC (hereinafter petitioner or operator) for an amendment to Exemption No. 11150. That exemption from §§ 61.113(a) and (b); 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) of Title 14, Code of Federal Regulations (14 CFR) allows the petitioner to conduct aerial cinematography for the motion picture and television industry. You requested an amendment to expand operations to real estate photography and videography, agriculture, inspections of oil and gas facilities, flare stacks, and bridge infrastructure, wildlife preservation industries, and search and rescue operations, as well as add two new aircraft, the DJI S1000 and Aerobo.

In your petition, you indicate that there has been no change in the conditions and reasons relative to public interest and safety that were the basis for granting the original exemption.

The FAA has determined that good cause exists for not publishing a summary of the petition in the Federal Register because the requested amendment to the exemption would not set a precedent, and any delay in acting on this petition would be detrimental to the petitioner. The unmanned aircraft(s) authorized in the original grant are comparable in type, size, weight, speed and operating capabilities to those in this petition.

Airworthiness Certification

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 relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*, and any associated noise certification and testing requirements of part 36, is not necessary.

The Basis for Our Decision

The FAA has updated the conditions and limitations since the petitioner’s initial grant of exemption to those found in Exemption No. 11213 to Aeryon Labs, Inc. (Docket No. FAA-2014-0642). Also 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), 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 amendment to 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 an amendment is in the public interest.

Our Decision

The FAA has determined that the justification for the issuance of Exemption No. 11150 remains valid with respect to this exemption and is in the public interest. Therefore, under the authority contained in 49 U.S.C. 106(f), 40113, and 44701, delegated to me by the Administrator, AeroCine, LLC is granted an amendment to its 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

The conditions and limitations within Grant of Exemption No. 11150 have been superseded, and are amended as follows.

In this grant of exemption, AeroCine, LLC 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 AeroCine Kopterworx Hammer X12¹, DJI S1000, and Aerobo 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.

¹ Per Exemption No. 11150 issued on January 23, 2015, the FAA authorized the use of the AeroCine Kopterworx Hammer X12 UAS aircraft variant, serial #KW-0127 onward.

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.

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 January 31, 2017, unless sooner superseded or rescinded.

Sincerely,

/s/

John S. Duncan
Director, Flight Standards Service

Akin Gump

STRAUSS HAUER & FELD LLP

GREGORY S. WALDEN

+1 202.887.4213/fax: +1 202.887.4288
gswalden@akingump.com

March 9, 2015

Jim Williams
UAS Integration Office
Federal Aviation Administration
800 Independence Avenue SW
Washington, DC 20591

Re: Re: Docket FAA 2014-0400, Petition for Second Amendment to Exemption No. 11150

Dear Mr. Williams:

This firm represents AeroCine, LLC, which received FAA Exemption No. 11150 on January 23, 2015 authorizing AeroCine under section 333 of the FAA Modernization and Reform Act of 2012 to operate its unmanned aircraft system (“UAS”) for purposes of capturing high definition feature film quality aerial cinematography. On February 24, 2015, AeroCine submitted a petition for an amendment to that Exemption to operate the same UAS (the Kopterworx Hammer X12) for additional purposes, namely real estate photography and videography, agriculture, inspections of oil and gas facilities, flare stacks, and bridge infrastructure, wildlife preservation industries, and search and rescue operations. That petition remains pending.

In this present petition for an amendment to Exemption No. 11150, AeroCine seeks to operate two additional types of UASs for the purposes listed above: (1) the DJI S1000 and (2) the Aerobo UAV, designed and manufactured by AeroCine. Both UASs would be equipped with one of two flight controllers: either the DJI Wookong-M or the 3D Robotics Pixhawk.

The airworthiness of the DJI S1000 was previously determined by the FAA in Exemption No. 11156 (Total Safety U.S. Inc.), Exemption No. 11158 (Team 5, LLC), and Exemption No. 11184 (Low Country RC). The airworthiness of the DJI Wookong-M flight controller was approved by FAA for use by AeroCine with the Kopterworx Hammer X12 in Exemption No. 11150 granted to AeroCine. The 3D Robotics Pixhawk flight controller has been approved by FAA for use by Viking Unmanned Aerial Systems in Exemption No. 11192.

AeroCine will comply with all of the conditions and limitations imposed in Exemption 11150 (with the amendment to condition/limitation number 2 to reflect additional purposes), except that condition/limitation number 1 will need to be revised to include the DJI S1000 and Aerobo UASs. The list of “operating documents” will also need to be revised to include AeroCine’s

Jim Williams
Federal Aviation Administration
March 9, 2015
Page 2

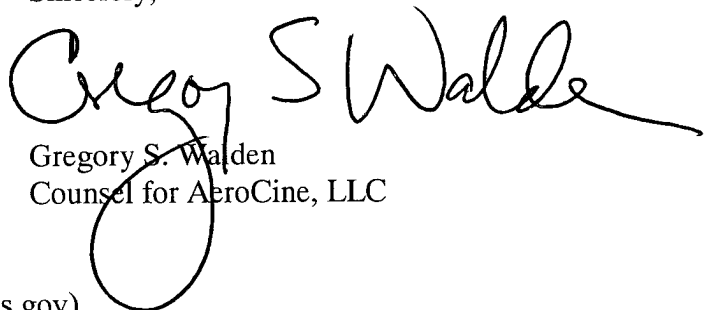
Technical Manuals for these two UASs equipped with flight controllers. Other than these revisions, there will be no change in the conditions and reasons relative to public safety that were the basis for the initial grant of exemption.¹

The AeroBo is AeroCine's custom designed carbon fiber frame to house the electronics and flight controller for its UAVs, as shown in manuals submitted to the FAA. The weight of the AeroBo with landing gear and electronics, but excluding gimbal, is about 15 pounds. The AeroBo was designed by several mechanical engineers with a master's degree who put the frame through strength analysis tests with cutting-edge, industry-leading software, confirming it is significantly stronger, lighter, and more dynamically balanced than off-the-shelf frames. It provides an optimum level of safety.

Because the requested amendment would not set any precedent or otherwise raise any novel issue, and because AeroCine seeks to begin these operations without delay, AeroCine respectfully requests the FAA to determine that good cause exists to dispense with publication of the summary of this petition in the Federal Register and grant the requested amendment expeditiously by summary means.

Thank you for your consideration of this petition.

Sincerely,



Gregory S. Walden
Counsel for AeroCine, LLC

Enclosures (not filed with www.regulations.gov)

¹ Submitted separately to this amendment petition are several manuals prepared by AeroCine, which contain proprietary and commercially sensitive material, and which are not publicly available. Accordingly, these documents are exempt from required disclosure under the Freedom of Information Act, 5 U.S.C. 552(b)(4) and are not to be included in the Federal Docket Management System per 14 C.F.R. 11.35(b).

Akin Gump

STRAUSS HAUER & FELD LLP

GREGORY S. WALDEN

+1 202.887.4213/fax: +1 202.887.4288
gswalden@akingump.com

February 24, 2015

Jim Williams
UAS Integration Office
Federal Aviation Administration
800 Independence Avenue SW
Washington, DC 20591

Re: Re: Docket FAA 2014-0400, Petition for Amendment to Exemption No. 11150

Dear Mr. Williams:

This firm represents AeroCine, LLC, which received FAA Exemption No. 11150 (the “Exemption”) last month authorizing AeroCine under section 333 of the FAA Modernization and Reform Act of 2012 to operate its unmanned aircraft system (“UAS”) for purposes of capturing high definition feature film quality aerial cinematography. AeroCine now seeks an amendment to that Exemption so that it may operate the same UAS (the Kopterworx Hammer X12) for additional purposes, namely real estate photography and videography, agriculture, inspections of oil and gas facilities, flare stacks, and bridge infrastructure, wildlife preservation industries, and search and rescue operations.

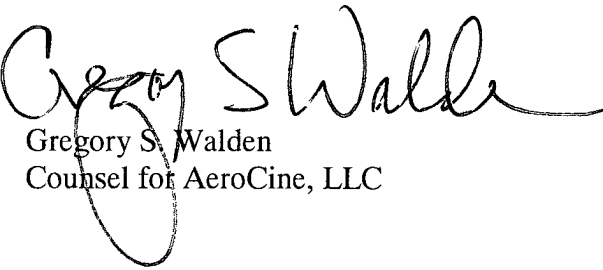
AeroCine will comply with all of the conditions and limitations imposed in the Exemption, except that condition/limitation number 2 would be revised to reflect these additional purposes. Other than an expansion of the purposes for which AeroCine will operate its UAV/UAS, there will be no change in the conditions and reasons relative to public safety that were the basis for the initial grant of exemption.

Because the requested amendment would not set any precedent or otherwise raise any novel issue, and because AeroCine seeks to begin these operations without delay, AeroCine respectfully requests the FAA to determine that good cause exists to dispense with publication of the summary of this petition in the Federal Register and grant the requested amendment expeditiously by summary means.

Jim Williams
Federal Aviation Administration
February 24, 2015
Page 2

Thank you for your consideration of this petition.

Sincerely,



Gregory S. Walden
Counsel for AeroCine, LLC