



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

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

June 16, 2015

Exemption No. 11809  
Regulatory Docket No. FAA-2015-0484

Mr. Larry Bossone  
MCS Communications  
27 Bodine Road  
Berwyn, PA 19312

Dear Mr. Bossone:

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.

By letter posted February 27, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of MCS Communications (hereinafter petitioner or operator) for an exemption. The exemption would allow the petitioner to operate an unmanned aircraft system (UAS) to conduct operations for viewing private properties for sales, evaluations, mortgage applications, maintenance, and related business intentions.

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 is a DJI Phantom 2.

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, *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**

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, MCS Communications 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, MCS Communications 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 Phantom 2 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 5 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 June 30, 2017, unless sooner superseded or rescinded.

Sincerely,

/s/

John S. Duncan

Director, Flight Standards Service

Enclosures



## Exemption Request for FAR 333

Larry Bossone

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MCS Communications request to seeking exemptions from the following FAR Parts in title 14 Code of Regulations.

Purpose: Using Remote Control Helicopter – under 4.4 lbs(2 kg.). for viewing private properties for sales, evaluations, mortgage applications, maintenance and related business intentions

Following are Parts seeking an exemption with abbreviation of rules and alternate proposals for exemption

Part 21 Procedural requirements for fixed wing and changing design approval production approvals, airworthiness certificates and airworthy approval

REASON REQUEST EXEMPTION: Size, weight, speed, limited operating area

See enclosed Specifications \*\* meets the equivalent level of safety under 14 CFR part 21 Subpart H.

45.23 (b) Registration numbers

REASON REQUEST EXEMPTION: Size of UAV makes it impossible to have 2" lettering.

ALTERNATE PROPOSAL: Lettering designed in accordance with 14 CFR part 47 and having identification (N number) markings in accordance with 14 CFR part 45 (c) as large as practicable.

61.133 Commercial Pilot. FAA has already granted exemptions for UAV operations. Private pilot license is deemed sufficient for operation of UAV.

ALTERNATE PROPOSAL: Operator will be Private Pilot with currency as required by 14 CFR 61: 56; 61:57, as well as requirements under 14 CFR 61:51(b)

91.7 No person may operate aircraft unless in airworthy condition

ALTERNATE PROPOSAL (see Assembly and Flight Cautions taken from Phantom manual (Proprietary – Not for Publication))

91.9 (b) Flight Manual (see Flight manual - Proprietary)

91.103 Preflight Actions:

Alternate Proposal (See Checklist: Pilot will perform all functions before beginning flight)

91.109 Dual Controls for flight instruction -

Flight training will be accomplished at remote field approved by owner of location. No persons allowed within 300 feet of operation except those required for safe operation of training. (see training syllabus)

91.119 Minimum Safe Altitudes: All flights will be conducted below 400 feet AGL. Will operate only in safe areas away from public and traffic, thus providing a level of safety at least equivalent to or better than full size of aircraft currently used for these operations with weights of over 5000 lbs. AUV gross weight will weigh under 4.4 lbs., carry no liquid fuel and operate under speeds of 30 mph.

91.121 Altimeter Settings: Regulation is inapplicable for this type aircraft. UAV utilizes a GPS with barometric sensor.

91.151 (a) Fuel Requirements – Land with minimum 25% battery power (indicated on transmitter screen and video monitor)

91.203 (a) Appropriate airworthy certificate (See certificate DJI Specifications Phantom 2 [Confidential])

91.405 Maintenance Required

Alternate Proposal: Pilot will inspect aircraft using DJI see Phantom Pilot Preflight Checklist (Confidential). Pilot will perform minor maintenance such as replacements of propellers, minor adjustments, weights and balance. Major modifications or repairs will be performed by manufacturers representatives or persons skilled in electronics of Phantom 2.

91:409 (a) (1) (2) Inspections (See above)

91.417 Maintenance Records – Owner will keep log of all maintenance performed.

MCS Communications request exemptions for the above items for the purpose of operating a UAV for close set filming for the motion picture and television industry. The flights will be below 400 feet AGL and not exceed a ground speed of 40 knots. The aircraft will be the DJI Phantom 2. Aircraft will not exceed 4.4 pounds (see specifications).

The aircraft will be operated within visual line of sight of the PIC at all times. All operations will consist of a Phantom operator and separate camera-person to operate the camera gimbal. All persons shall be able to communicate at all times while aircraft is operating.

The aircraft will only operate in a “sterile area” not be operating within 300 ft. of non - participating persons except those consenting to be involved and necessary for the production. An aviation safety inspector may approve a smaller radius consistent with safety requirements.

MCS Communications will submit a written “Plan of Activities” to FSDO 3 days before the proposed shoot.

MCS Communications will obtain the consent of all persons involved in the filming and insure that only consenting persons are allowed within 100 ft. of the flight operation and this radius may be reduced based upon an equivalent level of safety. However, the advanced permission of the relevant FSDO, operation at closer range can be approved.

Written and/or oral permission from the relevant property holders will be obtained.

MCS Communications - FAR 333 Exemption Request

A briefing will be held before each flight. All persons involved in the filming must be present and understand the purpose and parameters of flight.

The aircraft will be available with an emergency return to home condition in case of failure of all components.

Using a UAV for companies involved in sales, maintenance, inspection and evaluation of property, provides a safer and more economical method of obtaining information. Pictures from a UAV would allow inspections of the construction from areas not available at ground level. Aerials for sales would provide an overview of the house and grounds. In all cases UAV coverage would be more cost effective. Aerials would provide potential clients a better picture of the building and grounds. Because of it's smaller size and operating in a restricted area, our UAV will give business a safer tool for aerials of buildings and land. A standard fixed wing or helicopter flying over the same area would be more costly, nosier and dangerous. Based on all above MCS Communications request an exemption under Section 333 p NOTE:

The accompanying manuals marked 'Confidential' contain proprietary information that has not and will not share with the public and are protected from release under Freedom of Information Act 5 USC 552 et.sc

Check List and Training Syllabus may be modified slightly as safety conditions warrant better methods of providing safety and training.

MCS Communications - FAR 333 Exemption Request