



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

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

August 4, 2015

Exemption No. 12297
Regulatory Docket No. FAA–2015–0533

Mr. Jason Hoffman
P.O. Box 330526
Nashville, TN 37203

Dear Mr. Hoffman:

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 letters dated March 2, March 24, and July 15, 2015, you petitioned the Federal Aviation Administration (FAA) for an exemption. The exemption would allow the petitioner to operate an unmanned aircraft system (UAS) to conduct aerial filming of motion pictures, music videos, web videos, corporate videos, television programs and commercials, and still photography.

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 Vision+.

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. 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 Astraesus 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, Mr. Jason Hoffman 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. This exemption is subject to the conditions and limitations listed below.

Conditions and Limitations

In this grant of exemption, Mr. Jason Hoffman 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 Vision+ 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 not 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.

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 August 31, 2017, unless sooner superseded or rescinded.

Sincerely,

/s/

John S. Duncan
Director, Flight Standards Service

March 2, 2015

U.S. Department of Transportation, Docket Operations
West Building Ground Floor, Room W12-140
1200 New Jersey Avenue, SE
Washington, DC 20590

Re: Exemption Request under Section 333 of the FAA Reform Act and Part 11 of the Federal Aviation Regulations from certain parts of the FARs.

Dear Sir or Madame,

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (the Reform Act) and 14 C.F.R. Part 11, Jason Hoffman, photographer, hereby applies for an exemption from the listed Federal Aviation Regulations ("FARs") to allow him to operate a small Unmanned Aircraft System ("UAS") under the conditions and limitations set forth in this Petition.

The proposed exemptions, if granted, would allow Petitioner to operate small, camera-mounted unmanned aircraft systems ("UAS") weighing 55 pounds or less for the purpose of aerial filming of motion pictures, music videos, web videos, corporate videos, television programs and commercials, and still photography. The requested exemption would permit the operation of small, unmanned and relatively inexpensive sUAS under controlled conditions in airspace that is (1) limited, (2) predetermined, and (3) would provide safety enhancements to the already safe photography operations presently using manned helicopters and airplanes in Nashville.

Approval of this exemption would thereby enhance safety and fulfill the FAA Administrator's responsibilities to "...establish requirements for the safe operation of such aircraft systems in the national airspace system." Section 333(c) of the Reform Act."

The name and address of the applicant is: Jason Hoffman P.O. Box 330526 Nashville, TN 37203

Regulations from which the exemption is requested:

14 CFR Part 21

14 C.F.R. § 45.23(b)

14 CFR § 61.3

14 C.F.R. § 91.7 (a)

14 CFR § 91.9 (b) (2)

14 C.F.R. § 91.103

14 C.F.R. § 91.109

14 C.F. R. § 91.119

14 C.F.R. § 91.121

14 CFR § 91.151 (a)

14 CFR § 91.203 (a) & (b)

14 CFR § 91.205(b)

14 CFR § 91.215

14 CFR § 91.405 (a)

14 CFR § 407 (a) (1)

14 CFR § 409 (a) (2)

14 CFR § 417 (a) & (b)

The Appendix describes the FARs from which an exemption is requested and summarizes the justification for each requested exemption.

The Petition is submitted to fulfill Congress' goal under Section 333(a) through (c) of the Reform Act, which directs the Secretary of Transportation to consider whether certain unmanned aircraft systems may operate safely in the national airspace system (NAS) before completion of the rulemaking required under Section 332 of the Reform Act. In making this determination, the Administrator must determine which types of UASs do not create a hazard to users of the NAS or the public or pose a threat to national security in light of the following:

- The UAS's size, weight, speed, and operational capability;
- Operation of the UAS in close proximity to airports and populated areas; and
- Operation of the UAS within visual line of sight of the operator

Reform Act § 333 (a).

If the Administrator determines that such vehicles "may operate safely in the national airspace system, the Secretary shall establish requirements for the safe operation of such aircraft in the national airspace system." *Id.* § 333(c) (emphasis added).

The Secretary has delegated his aviation authority to the Administrator of the FAA.

The Federal Aviation Act expressly grants the FAA the authority to grant exemptions from its regulatory requirements for civil aircraft, a term defined under §40101 of the Act, which includes sUASs. The Administrator may grant an exemption from a requirement of a regulation prescribed under subsection (a) or (b) of this section or any sections 44702-44716 of the Federal Aviation Act if Administrator finds the exemption in the public interest. 49 U.S.C. § 44701(f) See also 49 USC § 44711(a); 49 USC § 44704; 14 CFR §91.203 (a) (1).

The petitioner has over fifteen years of experience as a digital photographer, both as a profession and hobby, and has been a helicopter and airplane RC enthusiast without incident for over twelve years. The wide availability of small Unmanned Aircraft Systems, also known as "microdrones," capable of carrying

high-quality video cameras and priced at affordable levels attracted the petitioner. His entire involvement with photography has involved exploring new technologies and adapting them to capture better quality imagery. Petitioner currently has practiced flying various UAS models under 50 pounds, under 35 miles per hour, under 400 feet, for total of sixty hours over remote areas of the Nashville metropolitan area, over remote locations in East Tennessee, and in the Smokey Mountains, in Tennessee for recreational purposes, exploring the potential and the limitations of its video subsystem.

He is pleased with the quality of the still and video imagery captured and overall safe maneuverability and controlled operation of the various UASs he's flown.

Currently, a number of people, some professional colleagues and potential future clients, have been made aware of Petitioner's accomplishments and have seen the results and are requesting Petitioner to undertake additional microdrone photography for compensation.

He has been advised that this is not now permitted unless he obtains special permission from the FAA. Many competitors of Petitioner are actively flying sUAS to conduct aerial photography for commercial purposes, notwithstanding the FAA's stated prohibition. He also notes and has read the congressional mandate in sections 332 and 333 of the FAA Revitalization and Reform Act of 2012 that the FAA move quickly to accommodate the economic and societal benefits that can result from widespread deployment of sUAS technology. Accordingly, Petitioner applies for authorization under the Federal Aviation Act, and the FARs rules to undertake the following activities for commercial purposes. Unless the Petition is granted, Petitioner will be at a significant competitive dis-advantage if he, as he prefers, complies with FAA policy.

Vehicle

The Petitioner will fly various small, camera-mounted unmanned aircraft systems ("UAS") weighing 55 pounds or less, at a speed no greater than 50 knots. This vehicle has built in capability to limit the height it flies above the ground, to limit the radius of the distance it flies from the operator, and to exclude it from class B, C, and D airspace. The vehicle also has the built-in capability to return to the launching point if the wireless control link is interrupted or if the operator attempts to exceed any of the height, radius, or airspace limitations programmed into it.

The vehicle weighs about five pounds empty and has a maximum gross weight of approximately twenty pounds. It has a top speed of about 30 knots, carry neither a pilot nor passenger, carry no explosive materials or flammable liquids, and operate exclusively within a predetermined area. It has four fixed pitch rotors, thrust from which is varied by changing RPM. It is powered by a lithium polymer battery.

Flight Profile

The petitioner will not fly UAS above 400 feet above ground level, or more than 1500 feet away from him. He will carefully preflight check the vehicle before each mission to assure that its navigation system are properly calibrated and that any included return-to-home features, altitude, and radius limitations work.

He will operate the vehicle for aerial photography missions only in the early morning hours and other times when few people are out in the public. He will operate it only over largely unpopulated areas where the potential of uncontrolled descent to cause injury or damage is lowest.

He will not operate it in controlled airspace whatsoever, without express written consent from the FAA. In the unlikely event that a manned aircraft flies below 400 feet AGL where the petitioners operating his Phantom, he will keep both the vehicle and manned aircraft in sight and avoid the manned aircraft.

More particularly, the Petitioner will fly UASs **only** over the following types of areas in Metropolitan Nashville:

- Over Lakes and various waterways of Nashville and the state of Tennessee, outward of the shoreline
- Over open water in marinas, anchorages, and rivers amongst and surrounding the city of Nashville
- Over lines of railroad and rail classification yards
- Over metropolitan Nashville parks
- Over nonresidential and noncommercial large-scale industrial areas
- Over private property when he has been commissioned by the person in legal possession of the property to do so
- Over public or private events petitioner is hired as photographer.

The Petitioner's proposed operations satisfy the criteria provided in Section 333 of the Reform Act relating to size, weight, speed, operating capabilities, proximity to airports and populated areas and operation within visual line of sight and national security. The Petition justifies grant of the requested exemptions allow the Petitioner to obtain aerial photography with his microdrone.

Respectfully submitted,

Jason Hoffman

A handwritten signature in black ink, appearing to read 'Jason Hoffman', with a long horizontal flourish extending to the right.

APPENDIX

FAR Section	Subject	Justification
14 CFR § 45.23(b)	Requirement to display registration number on vehicle	Insufficient space on vehicle
14 CFR Part 21	Aircraft certification requirements and procedures	Designed for manned aircraft; not suitable for off-the-shelf sUAS
14 CFR § 61.3	Requirement for pilot certificate	Part 61 requirements designed for manned aircraft, not sUAS; petition describes training for sUAS operator
14 CFR § 91.7 (a)	Airworthiness requirement	Designed for manned aircraft; not suitable for off-the-shelf sUAS

14 CFR § 91.9 (b) (2)	Requirement for manual to be available in the cockpit	No one aboard to read manual
14 CFR § 91.103(b)	Requirement for crew members to be onboard	Unmanned vehicle
14 CFR § 91.109	Requirement for dual controls during flight instruction	No one aboard to operate controls
14 CFR § 91.119	Minimum altitudes for safe flight	Safety requires operation below these altitudes
14 CFR § 91.121	Altimeter settings	No one aboard to read altimeter
14 CFR § 91.203 (a) & (b)	Requirement for registration and airworthiness certificates to be onboard	No one aboard to read certificates
14 CFR § 91.205(b)	Cockpit instruments	No one aboard to read
	Requirement	instruments
14 CFR § 91.215	Transponder requirement	Vehicle has insufficient useful load; will be operated below ATC radar coverage
14 CFR § 91.405 (a)	Inspection requirements	Designed for manned aircraft; not suitable for off-the-shelf sUAS
14 CFR § 91.407(a) (1)	Inspection approval requirements	Designed for manned aircraft; not suitable for off-the-shelf sUAS
14 CFR § 91.409 (a) (2)	Airworthiness inspection	Designed for manned aircraft; not suitable for off-the-shelf sUAS
14 CFR § 91.417 (a) & (b)	Maintenance records requirements	Designed for manned aircraft; not suitable for off-the-shelf sUAS