



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

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

July 15, 2015

Exemption No. 12059
Regulatory Docket No. FAA-2015-1569

Mr. Joseph Daniel Rodricks
174 West Street
P.O. Box 389
East Bridgewater, MA 02333

Dear Mr. Rodricks:

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 to the public docket on May 11, 2015, you petitioned the Federal Aviation Administration (FAA) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial videography, photography, and inspections.

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 3.

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

You have requested to use a UAS for aerial data collection¹. 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, Mr. Joseph Daniel Rodricks 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. Joseph Daniel Rodricks is hereafter referred to as the operator.

¹ Aerial data collection includes any remote sensing and measuring by an instrument(s) aboard the UA. Examples include imagery (photography, video, infrared, etc.), electronic measurement (precision surveying, RF analysis, etc.), chemical measurement (particulate measurement, etc.), or any other gathering of data by instruments aboard the UA.

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 3 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 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 July 31, 2017, unless sooner superseded or rescinded.

Sincerely,

/s/

John S. Duncan

Director, Flight Standards Service

Enclosures

U.S. Department of Transportation
Docket Operations West Building Ground Floor, Room w12-140
1200 New Jersey Ave.
SE Washington, DC 20590

Joseph Daniel Rodricks– Section 333 Exemption Petition

Re: Exemption Request Section 333 of the FAA Reform Act of the Federal Aviation Regulations from 14 C.F.R. 61.113(a)&(b); 91.7(a); 91.9(b) (2); 91.109; 91.121; 91.151(a); 91.405(a); 91.407(a) (1); 91.409(a) (2); 91.417(a)&(b)

Dear Sir or Madam:

I, Joseph Daniel Rodricks, am writing pursuant to the FAA Modernization and Reform Act of 2012 and the procedures contained within 14 C.F.R. 11, to request that I, an owner and operator of small unmanned aircraft, be exempted from the Federal Aviation Regulations (“FARs”) listed below so that I, may operate a small ultra light weight unmanned aircraft system (“UAS”) commercially in airspace regulated by the Federal Aviation Administration (“FAA”) located in New England (specifically in southeastern Massachusetts) in accordance with FAA UAS Regulations & Policies.

This exemption request is made based on information outlined in this petition, as well as the accompanying DJI Phantom 3 Operators Manual. The DJI Phantom 3 UAS was selected because it has a proven capability for controlled flight as well as a gyro stabilized flight mode, GPS aided navigation, a compass, blinking lights on the bottom, a failsafe mode for returning home. These devices are offered for general sale around the world and have often been used as Model Aircraft in the USA. In addition, I, have flown UAS’s in a recreational capacity since 2012 and have adopted safety procedures avoid public hazard, as well as manned aircraft hazards.

I. Contact Information

Joseph Daniel Rodricks
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phone: 508.801.4524 Email: jrodricks@gmail.com

II. Information regarding the Phantom 3 UAS

Specifically, the UAS is:

An ultra lightweight battery operated 4-motor rotorcraft in the form of a quadcopter that takes off and lands vertically, manufactured by DJI, Model Phantom 3, with the following equipment:

- An on-board flight computer (with GPS/GLONASS, sonar altitude and station keeping function) that receives signals for flight controls from a ground-based transmitter/controller

- An integrated on-board camera capable of capturing imagery in the form of full color, high resolution still photos and video

- An on-board telemetry system that delivers flight data from the on-board flight computer to the on-board radio transmitter including altitude AGL, horizontal and vertical speed, compass direction of flight and direction back to its launch site

- A 2.4GHz on-board radio transmitter that transmits live video from the on-board camera plus all the flight data from the telemetry system described above to the Ground Station described below

The Ground Station:

- A Pilot in Command (PIC) in operational control of a flight operation from beginning to end and who controls the UAS while in the air

- A 2.4GHz radio transmitter/controller (transmit power of 20 dBm) operated by the PIC to control the UAS while in flight

- A radio receiver receiving and recording live video and flight data from the on-board camera and computer visible PIC to view during flight

III. Proposed Operations

First, I seek an exemption to perform video filming and photographing by air for public and private use. Second, I will employ UAS's to inspect land, residential commercial and industrial structures and property.

Specifically, I will use UASs which are equipped with cameras and sensors, in order to engage in the following commercial activities in southeastern Massachusetts and the greater New England area:

(a) Video and/or still photo recording by air for public and private purposes, including: television, cinematography and advertising and support of professional operations in engineering, land surveying and development, agriculture, real estate, etc. Filming and photography will only be conducted with permission and under contract with registered owners or with any local government authority and only when safe to do so.

(b) Support provided to search and rescue operations and reconnaissance in cases of need, emergency or natural disasters only when government authorities have requested it by contract or donation and only when safe to do so.

IV. Relevant Statutory Authority

This Petition for Exemption is submitted pursuant to Section 333(a) through (c) of the FAA Modernization and Reform Act of 2012 ("Reform Act"). Congress has directed the FAA "to safely accelerate the integration of civil unmanned aircraft systems into the national airspace system." Pursuant to Section 333 of the Reform Act, the FAA Administrator is to permit unmanned aircraft systems to operate in the National Air Space ("NAS") where it is safe to do so based on the following considerations:

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

Additionally, the FAA Administrator has general authority to grant exemptions from the agency's safety regulations and minimum standards when the Administrator decides a requested exemption is in the public interest. See 49 U.S.C. § 106(f) (defining the

authority of the Administrator); 49 U.S.C. § 44701(f) (permitting exemptions from §§ 44701(a), (b) and §§ 44702-44716, et seq.). A party requesting an exemption must explain the reasons why the exemption: (1) would benefit the public as a whole, and (2) would not adversely affect safety (or how it would provide a level of safety at least equal to the existing rules). See 14 C.F.R. § 11.81 (petitions for exemption).

V. These Proposed UAS Operations Meet the Requirements of Section 333 of the Reform Act

The proposed operations in this Petition for Exemption qualify for expedited approval pursuant to Section 333 of the Reform Act as each of the statutory criteria and relevant factors are satisfied.

VI. Approval is Warranted Based on the UAS Size, Weight, Speed, and Operational Capability

I, Joseph Daniel Rodricks, will employ the DJI Phantom 3 quadcopter for the operations specified in this Petition for exemption.

- The Phantom 3 UASs have a maximum take-off weight of less than 5 pounds
- Flight speed will not exceed 32 knots, and it will not be flown in controlled airspace or at an altitude that exceeds 400 feet AGL.
- All flights will be flown in such a manner that they can be safely terminated with a reserve battery power of no less than 20% of the battery's maximum charge.
- The DJI Phantom 3 UAS does not carry any flammable propellant or liquid fuel.
- The Phantom 3 UAS has an integrated GPS system that calculates the UAS's position and height and relays that information via a to the operator in near real-time.
- The Phantom 3 UAS contain a failsafe mode if its connection to the remote control is lost. This system permits the UAS to return to a predetermined location and land without injury or damage. This failsafe mode can also be triggered remotely by the Ground Station.

VII. Approval is Warranted Based on the Operational Restrictions Set Forth in the Operations Manual.

DJI's operators manual contain all of the procedures and limitations necessary to successfully perform the operations specified in this Petition for Exemption

VIII. Public Interest

The public interest will be served by granting Joseph Daniel Rodricks a Petition for Exemption in New England and southeastern Massachusetts. Congress has established a national policy that favors early integration of UASs into the NAS in controlled, safe working environments such as those proposed in this Petition. In addition the public also has an interest in reducing the hazards associated with alternate methods of conducting similar operations. Currently operations are conducted manually at risk to human life, using low flying helicopters or conventionally crewed aircraft, are extremely cost prohibitive or are incapable by traditional means. By using UAS, exposure to physical hazards will be reduced by conducting the operation while human life remains safely on the ground.

Additionally, the intended uses of the UAS as outlined in this document have identifiable safety benefits that include reducing the danger and emissions associated with full size helicopters and conventionally crewed aircraft. UAS have no fuel to ignite or explode, no crew, add a greater degree of flexibility, supplement the current capabilities offered by manned aircraft, and public interest for a ground impact of a small lightweight UAS is further minimized from an ecological and safety standpoint. Further small UAS provide less of a nuisance to the general public by virtue of their inherent nature to produce less noise than conventional helicopters and crewed aircraft.

IX. A Summary The FAA May Publish in the Federal Register:

A. 14 C.F.R. 91: Airworthiness Certificates, Manuals and The Like.

14 C.F.R. 91.7(a) I, Joseph Daniel Rodricks will ensure the UAS is in airworthy condition based on compliance with the Phantom 3 operating documents prior to each flight.

14 C.F.R. § 91.121 Relief is requested considering the limited altitude of proposed operations.

B. 14 C.F.R. § 61.113: Private Pilot Privileges and Limitations: PIC.

Pursuant to 14 C.F.R. § 61.113 (a), The FAA has previously declared that additional manned airship experience of a commercially certified pilot would not correlate to the airmanship skills necessary for similarly proposed operations in previously issued exemptions to this regulation through Exemption Nos. 11062 and 11138.

Pursuant to 14 C.F.R. § 61.113 (b), The stick and rudder controls of the typical aircraft one would be trained on to achieve a private pilots license are completely different than that of a small UAS. Additionally, the FAA does not require manned ultralight vehicle PICs to meet any aeronautical knowledge, age, or experience requirements or to have airman or medical certificates (as outlined in 14 C.F.R. § 103).

D. 14 C.F.R. 91.119 (c): Minimum Safe Altitudes.

14 C.F.R. § 91.119 (c) I will ensure that all persons and objects not essential to flight operations must remain 500 feet away from operations.

E. 14 C.F.R. 91.151 (c): Fuel Requirements for Flight in VFR Conditions.

14 C.F.R. 91.151 (c): I, will ensure that each individual flight will not begin unless there is enough power to fly to the first point of intended landing and land the UA with 30% battery power remaining. In addition, each individual flight will last no longer than 20 minutes, 5 minutes less than the manufacturer stated 25 minutes of flight time.

F. 14 C.F.R. 91.405 (a); 407 (a) (1); 409 (a) (2); 417(a) & (b): Maintenance Inspections.

The above-cited Regulations require, amongst other things, aircraft owners and operators to “have [the] aircraft inspected as prescribed in subpart E of this part and shall between required inspections, except as provided in paragraph (c) of this section, have discrepancies repaired as prescribed in part 43 of this chapter. . . .”

These Regulations only apply to aircraft with an airworthiness certificate. They will not, therefore, apply to my, Joseph Daniel Rodricks, UAS. However, as a safety precaution I inspect my UAS per operating documents before and after each flight.

X. Conclusion

This Petition for Exemption satisfies the criteria articulated in Section 333 of the Reform Act of 2012 including weight, speed, operating capabilities, proximity to airports and populated areas, operation within visual line of sight and national security. Additionally, the Petition provides more than adequate justification for the grant of the requested exemptions to permit Joseph Daniel Rodricks to operate a Phantom 3 UAS in New England for the operations specified herein.

Granting the exemption will benefit the public interest as a whole in several ways, including (1) significantly improving safety and reducing risk by alleviating human exposure to danger, and (2) improving the quality of services and decreasing operating costs compared with conventional flight operations.