



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

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

May 8, 2015

Exemption No. 11500
Regulatory Docket No. FAA-2015-0294

Ms. Dallice Tylee
Silver Fern Homes, LLC
285 Martin Drive
Boulder, CO 80305

Dear Ms. Tylee:

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

The Basis for Our Decision

By undated letter, you petitioned the Federal Aviation Administration (FAA) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial videography and photography for hobby and recreational purposes, as well as, marketing and promotional purposes in the real estate industry.

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 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, Ms. Dallice Tylee 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, Ms. Dallice Tylee 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 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 May 31, 2017, unless sooner superseded or rescinded.

Sincerely,

/s/

John S. Duncan
Director, Flight Standards Service

§ 11.81 What information must I include in my petition for an exemption?

You must include the following information in your petition for an exemption and submit it to the FAA as soon as you know you need an exemption.

(a) Your name and mailing address and, if you wish, other contact information such as a fax number, telephone number, or e-mail address;

DALLICE TYLEE
Silver Fern Homes, LLC
285 Martin Drive, Boulder CO 80305
Phone: 303-746-6765
Email: dallice@silverfernhomes.com

(b) The specific section or the section of 14 CFR from which you seek an exemption;

Following the Grant of Exemption No. 11138 in the matter of the Petition of Douglas Trudeau, Realtor, and Regulatory Docket ID. FAA-2014-0481, Petitioner Dallice Tylee requests an exemption from the same specific sections of 14 CFR:

1.61.113(a) and (b): PRIVATE PILOT PRIVILEGES and LIMITATIONS
2.63.13: APPLICABILITY
3.91.7(a): CIVIL AIRCRAFT WORTHINESS
4.91.119(c): MINIMUM SAFE ALTITUDES
5.91.121: ALTIMETER SETTINGS
6.91.151(a)(1): FUEL REQUIREMENTS
7.91.405(a): MAINTENANCE REQUIRED
8.91.407(a)(1): OPERATION AFTER MAINTENANCE REBUILDING ALTERATION
9.91.409(a)(1) and (2): INSPECTIONS
10.91.417(a) and (b): MAINTENANCE RECORDS

14 C.F.R. 21 and 14 C.F.R. 91: Airworthiness Certificates, Manuals:

14 C.F.R. 21, Subpart H, entitled Airworthiness Certificates, sets forth requirements for procurement of necessary airworthiness certificates in relation to FAR § 91.203(a)(1). The size, weight and enclosed operational area of the Petitioner's UAS permits exemption from Part 21 because the UAS meets (and exceeds) an equivalent level of safety pursuant to Section 333 of the Reform Act. The FAA is authorized to exempt aircraft from the airworthiness certificate requirement under both the Act (49 U.S.C. § 44701 (f)) and Section 333 of the Reform Act. Both pieces of legislation permit the FAA to exempt UAS's from the airworthiness certificate requirement in consideration of the weight, size, speed, maneuverability and proximity to areas such as airports and dense populations. The petitioners UAS meets or exceeds each of the elements.

14 C.F.R. 91.7(a) prohibits the operation of an aircraft without an airworthiness certificate. As no such certificate will be applicable in the form contemplated by the FARs, this Regulation is inapplicable.

14 C.F.R. § 91.9 (b) (2) requires an aircraft flight manual in the aircraft. As there are no on board pilots or passengers, and given the size of the UAS, this Regulation is inapplicable. The FAA has previously issued exemptions to this regulation in Exemption Nos. 8607, 8737, 8738, 9299, 9299A, 9565, 9565B, 10167, 10167A, 10602, 10700 and 32827.

14 C.F.R. § 91.121 regarding altimeter settings is inapplicable insofar as the UAS utilizes electronic global positioning systems with a barometric sensor.

14 C.F.R. § 91.203 (a) and (b) provides for the carrying of civil aircraft certifications and registrations. They are inapplicable for the same reasons described above. The equivalent level of safety will be achieved by maintaining any such required certifications and registrations by Petitioner, Dallice Tylee.

14 C.F.R. § 45.23: Marking of The Aircraft.

Applicable Codes of Federal Regulation require aircraft to be marked according to certain specifications. UAS's are unmanned. They therefore do not have a cabin, cockpit or pilot station on which to mark certain words or phrases. Further, two-inch lettering is difficult to place on such small aircraft with dimensions smaller than minimal lettering requirement. Regardless, the Petitioner will mark her UAS in the largest possible lettering by placing the word "EXPERIMENTAL" on its fuselage as required by 14 C.F.R. §45.29 (f) so that I the pilot, or anyone assisting as an assistant/observer with the UAV will see the markings. The FAA has previously issued exemptions to this regulation. Exemptions Nos. 8738, 10167, 10167A and 10700.

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

Pursuant to 14 C.F.R. §§ 61.113 (a) & (b), private pilots are limited to non-commercial operations. Petitioner, Dallice Tylee, holds a private pilot license and a 3rd class medical certificate and has been flying without incident since 2010. The petitioner believes she can achieve an equivalent level of safety as achieved by current Regulations because her UAS does not carry any pilots or passengers. Further, while helpful in understanding airspace regulations, laws and guidelines, a pilot license will not ensure remote control piloting skills. The risks attended to the operation of my UAS is far less than the risk levels inherent in the commercial activities outlined in 14 C.F.R. § 61, et seq. Thus, allowing the Petitioner to operate the UAS and meet and exceed current safety levels in relation to 14 C.F.R. §61.113 (a) & (b).

14 C.F.R. 91.119: Minimum Safe Altitudes.

14 C.F.R. § 91.119 prescribes safe altitudes for the operation of civil aircraft. It allows helicopters to be operated at lower altitudes in certain conditions. The Petitioner's UAS will never operate at an altitude greater than 200 AGL; safely below the standard of 400 AGL. The Petitioner will however operate the UAS in safe areas away from public and traffic, providing a level of safety at least equivalent to or below those in relation to minimum safe altitudes. Given the size, weight, maneuverability and speed of the UAS, an equivalent or higher level of safety will be achieved.

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

See: Safety/Flight Manual ("Operating Documents") - Section 333 Exemption Petition

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 Petitioner, Dallice Tylee's UAS. However, as a safety precaution the Petitioner will inspect the UAS before and after each flight.

(c) The extent of relief you seek, and the reason you seek the relief;

To allow petitioner Dallice Tylee to operate the commercially available DJI PHANTOM 2 VISION+ quad-copter unmanned aircraft system (UAS) to conduct aerial videography and photography for hobby and recreational purposes. To also use it for marketing and promotional purposes in the real estate industry.

(d) The reasons why granting your request would be in the public interest; that is, how it would benefit the public as a whole;

Residents of northern Colorado enjoy spectacular views which include the Rocky Mountains, city lights and sunrises over the plains. A UAS is a quick, low cost and safe way to capture photographs and short videos that promote both the area and showcase a property. The market is demanding of such services from real estate agents and the petitioner is attempting to offer clients and the general public such services while respecting and following FAA laws and guidelines.

The petitioner believes that her use of an UAS will pose no threat to the public given its small size and lack of combustible fuel. The petitioner proposes that use of her UAS will minimize ecological impact and promote education and economic growth in northern Colorado.

(e) The reasons why granting the exemption would not adversely affect safety, or how the exemption would provide a level of safety at least equal to that provided by the rule from which you seek the exemption;

Petitioner Dallice Tylee notes the FAA's findings in the Grant of Exemption No 11138 in the matter of the petition of Douglas Trudeau, Realtor, and Regulatory Docket No. FAA-2014-0481: The FAA finds that a grant of exemption is in the public interest. The enhanced safety and reduced environmental impact achieved using a 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.

Petitioner Dallice Tylee submits the following representations of enhancements to current aerial videography and photography for real estate:

- My UAS weighs less than 5 pounds complete;
- I only operate my UAS below 200 feet (well within the 400 foot permissible ceiling set by the FAA Modernization and Reform Act of 2012);
- My UAS only operate for 10-15 minutes per flight;
- I land my UAS prior to manufacturer recommended minimum level of battery power;
- I pilot my UAS through remote control only by line of sight;
- I have a UAS assistant/observer at each flight, who also has the UAS in line of sight;
- The UAS has GPS a flight safety feature whereby it hovers and then slowly lands if communication with the remote control pilot is lost;
- I actively analyze flight data and other sources of information to constantly update and enhance safety protocols;
- I only operate in reasonably safe environment that are strictly controlled, are away from power lines, elevated lights, airports and actively populated areas and during daylight hours;

- I conduct extensive pre-flight inspections during which safety carries primary importance;
- I always obtains all necessary permissions prior to operation;
- I have procedures in place to abort flights in the event of safety breaches or potential danger.

Petitioner Dallice Tylee is supplying:

- PHANTOM flying flowchart
- PHANTOM 2 Vision+ User Manual
- Flight Protocol and Safety Documents

Petitioner Dallice Tylee notes the Conditions and Limitations relative to the Grant of Exemption No. 11138 in the matter of the petition of Douglas Trudeau, Realtor, and Regulatory Docket No. FAA-2014-0481 and will comply with the 33 items as listed in the Exemption. Petitioner Dallice Tylee has an almost identical model Phantom 2 Vision +, with the only difference being the model this Petitioner owns has a built-in video camera, rather than the removable Go-Pro option.

- (f) A summary we can publish in the FEDERAL REGISTER, stating:**
(I) The rule from which you seek the exemption; and

Following the Grant of Exemption No. 11138 in the matter of the Petition of Douglas Trudeau, Realtor, and Regulatory Docket ID. FAA-2014-0481, Petitioner Dallice Tylee requests an exemption from the same specific sections of 14 CFR:

1.61.113(a) and (b): PRIVATE PILOT PRIVILEGES and LIMITATIONS
 2.63.13: APPLICABILITY
 3.91.7(a): CIVIL AIRCRAFT WORTHINESS
 4.91.119(c): MINIMUM SAFE ALTITUDES
 5.91.121: ALTIMETER SETTINGS
 6.91.151(a)(1): FUEL REQUIREMENTS
 7.91.405(a): MAINTENANCE REQUIRED
 8.91.407(a)(1): OPERATION AFTER MAINTENANCE REBUILDING ALTERATION
 9.91.409(a)(1) and (2): INSPECTIONS
 10.91.417(a) and (b): MAINTENANCE RECORDS

- (II) A brief description of the nature of the exemption you seek:**

Petitioner Dallice Tylee seeks an exemption for the purpose of using the PHANTOM 2 Vision + for hobby, recreational and commercial photography and videography to provide real estate clients and the general public with educational footage and to use such footage for marketing/promotional purposes.

The Petitioner notes the FAA's findings in the Grant of Exemption No 11138 in the matter of the petition of Douglas Trudeau, Realtor, and Regulatory Docket No. FAA-2014-0481: The FAA finds that a grant of exemption is in the public interest. The enhanced safety and reduced environmental impact achieved using a 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.