



May 14, 2015

**Administration** 

Exemption No. 11587 Regulatory Docket No. FAA–2015–0448

Mr. Jeffrey D. Greer P.O. Box 1221 Senoia, GA 30276

Dear Mr. Jeffrey D. Greer:

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 docket on February 23, 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 videography and cinematography.

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+ and DJI Inspire 1.

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 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, Mr. Jeffrey D. Greer 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. Jeffrey D. Greer 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+ and DJI Inspire 1 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: <a href="https://www.ntsb.gov">www.ntsb.gov</a>.

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

Enclosures

# **Exemption Request**

Regulatory Docket No. TBD

The following petition is submitted by JEFFREY D. GREER, REALTOR® and made to

UNITED STATES OF AMERICA DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WASHINGTON, DC 20591

for an exemption from Title 14, Code of Federal Regulations (14 CFR) Sections 45.23(a)(b); 45.27(a); 45.29; 47.15; 91.7(a); 91.119(b)(c); 91.121, 91.151(a); 91.405(a); 91.407(a)(1); 91.409(a)(2); and 91.417(a) & (b).

# PREVIOUS GRANT OF EXEMPTION

I submit the following approved exemption as reference (a):

Exemption No. 11138 / Regulatory Docket No. FAA-2014-0481

By letter dated July 12, 2014, Mr. Douglas Trudeau, Realtor®, of Tierra Antigua Realty Trudeau), 1650 E River Road, Suite 202, Tucson, AZ 85718 petitioned the Federal Aviation Administration (FAA) for an exemption from part 21, subpart H; and Sections 45.23(b), 1.113(a) and (b), 91.7(a), 91.9(b)(2), 91.103(b), 91.109, 91.119, 91.121, 91.151(a), 91.203(a) and (b), 91.405(a), 91.407(a)(1), 91.409(a)(2), and 91.417(a) and (b) of Title 14, Code of Federal Regulations (14CFR). The proposed exemption would allow Trudeau to operate the PHANTOM 2 Vision+ quad-copter unmanned aircraft system (UAS) to conduct aerial videography and cinematography to enhance academic community awareness for those individuals and companies unfamiliar with the geographical layout of the metro Tucson area and augment real estate listing videos.

# The FAA's decision pertaining to Exemption No. 11138

In consideration of the foregoing, I find that a grant of exemption is in the public interest. Therefore, pursuant to the authority contained in 49U.S.C. 106(f), 40113, and 44701, delegated to me by the Administrator, Mr. Douglas Trudeau, Realtor®, of Tierra Antigua Realty, is granted an exemption from 14CFR61.113(a) and (b), 91.7(a), 91.119(c), 91.121, 91.151(a)(1), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b) to the extent necessary to allow petitioner to operate an unmanned aircraft systems (UAS) for the purpose of aerial videography/cinematography and augment real estate listing videos.

# **CURRENT EXEMPTION PETITION**

I, JEFFREY D. GREER, REALTOR®, submit the following:

# **Summary of request**

I am submitting this petition pursuant to the FAA Modernization and Reform Act of 2012 and the procedures contained within 14 C.F.R. 11, so that I may operate the DJI PHANTOM 2 Vision+ and/or DJI INSPIRE 1 (or similar, should newer, safer and/or more advanced models become available) quad-copter unmanned aircraft system (UAS) to conduct aerial photography, videography and cinematography to enhance academic community awareness for those individuals and companies unfamiliar with the geographical layout of Georgia (where I am a licensed real estate agent) and surrounding areas and states, and augment real estate listing photos/videos as well as photos/videos of other businesses for which UAS aerial photography, videography and cinematography would be beneficial.

In reference (a), Exemption No. 11138 (which is essentially identical to my request), an exemption was approved for an individual with no pilot certificate. I have held at least a private pilot certificate since 2/25/80 and currently hold an ATP MEL, SEL, Instrument rating, CFI and CFII. I also hold a current Class I medical certificate.

# I am supporting my request with the following information:

1) This Exemption Request, 2) PHANTOM Flying Flow Chart V1.0 (Simplified Version); 3) PHANTOM 2 Vision+ Quick Start Guide, 4) PHANTOM 2 Vision+ Pilot Training Guide v1.1; 5) PHANTOM 2 Vision+ User Manual v1.6, 6) Inspire 1 Quick Start Guide v1.0, 7) Inspire 1 User Guide v1.0 (all hereinafter referred to as operating documents) 8) Personal protocols and controls.

# I request relief from the following regulations:

In the interest of brevity, I have omitted exemption requests which the FAA determined "relief not necessary" in reference (a), Exemption No. 11138 / Regulatory Docket No. FAA-2014-0481.

Sections 45.23(a)(b), 45.27(a) and 45.29 which pertain to aircraft markings and section 47.15 pertaining to registration. The UA does not have a cabin, cockpit or pilot station on which to mark certain words or phrases. Further, two-inch lettering would be difficult and unreadable if placed on such a small aircraft with dimensions smaller than the minimal lettering requirement. This makes applying for and displaying an N number impractical, especially considering the design of the UA. Further, in the current NPRM for Small UAS, the "FAA proposes to exempt small unmanned aircraft which have not previously been registered anywhere from the regulatory requirements of §47.15, which were designed to apply to large-asset manned aircraft."

Section 91.7(a) which prescribes that no person may operate a civil aircraft unless it is in an airworthy condition. Hobby grade UAs do not currently require airworthiness certificates. I will, however, perform a preflight inspection of my UAS before each flight as outlined in the operating documents and in accordance with manufacturer specifications to comply with 91.7(b).

Section 91.119(b)(c) which prescribes that, except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes:

- (b) Over any congested area of a city, town, or settlement, or over any open air assembly of persons, an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft.
- (c) Over other than congested areas at an altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.

Such restrictions put owners in congested and other than congested areas at a disadvantage by limiting enhanced marketing of their homes or businesses, thereby discriminating against them. Vertical takeoff and landing while photographing or making a video recording of a home or business can allow an enhanced perspective of the structure as well as its proximity of mountains, golf courses, lakes, or other attractions not possible through ground level photography or videography. Reasonable and responsible aerial photography/videography in congested and other than congested areas of subdivisions, neighborhoods and/or businesses can be safely conducted.

Section 91.121 which requires, in pertinent part, each person operating an aircraft to maintain cruising altitude by reference to an altimeter that is set "to the elevation of the departure airport or an appropriate altimeter setting available before departure." Hobby grade UAs do not have an altimeter that can be set.

Section 91.151(a)(1) which prescribes that no person may begin a flight in an airplane under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed, during the day, to fly after that for at least 30 minutes. The UAS flights will be conducted line of sight so no cross country will flown negating the need for fuel reserves.

Section 91.405(a) which requires, in pertinent part, that an aircraft operator or owner shall have that aircraft inspected as prescribed in subpart E of the same part and shall, between required inspections, except as provided in paragraph (c) of the same section, have discrepancies repaired as prescribed in part 43 of the chapter.

Section 91.407(a)(1) which prohibits, in pertinent part, any person from operating an aircraft that has undergone maintenance, preventive maintenance, rebuilding, or alteration unless it has been approved for return to service by a person authorized under §43.7 of the same chapter.

Section 91.409(a)(1) and (2) which prescribe, in pertinent part, that-

(1) no person may operate an aircraft unless it has had an annual inspection in accordance with part 43 of this chapter and has been approved for return to service by a person authorized by §43.7 of this chapter, and

(2) within the preceding 12 calendar months, it has had an inspection for the issuance of an airworthiness certificate in accordance with part 21 of this chapter.

Section 91.417(a) and (b) which prescribe, in pertinent part, that-

- (a) each registered owner or operator shall keep the following records for the periods specified in paragraph (b) of this section:
  - (1) Records of the maintenance, preventive maintenance, and alteration and records of the 100 hour, annual, progressive, and other required or approved inspections, as appropriate, for each aircraft (including the airframe) and each engine, propeller, rotor, and appliance of an aircraft. The records must include:
- (i) A description (or reference to data acceptable to the Administrator) of the work performed; and
  - (ii) The date of completion of the work performed; and
- (iii) The signature, and certificate number of the person approving the aircraft for return to service.
  - (2) Records containing the following information:
- (i) The total time in service of the airframe, each engine, each propeller, and each rotor.
- (ii) The current status of life-limited parts of each airframe, engine, propeller, rotor, and appliance.
- (iii) The time since last overhaul of all items installed on the aircraft which are required to be overhauled on a specified time basis.
- (iv) The current inspection status of the aircraft, including the time since the last inspection required by the inspection program under which the aircraft and its appliances are maintained.
- (v) The current status of applicable airworthiness directives (AD) and safety directives including, for each, the method of compliance, the AD or safety directive number and revision date. If the AD or safety directive involves recurring action, the time and date when the next action is required.
- (vi) Copies of the forms prescribed by §43.9(d) of this chapter for each major alteration to the airframe and currently installed engines, rotors, propellers, and appliances.
  - (b) The owner or operator shall retain the following records for the periods prescribed:

    (1) The records specified in paragraph (a)(1) of this section shall be retained until
- (1) The records specified in paragraph (a)(1) of this section shall be retained until the work is repeated or superseded by other work or for 1 year after the work is performed.
- (2) The records specified in paragraph (a)(2) of this section shall be retained and transferred with the aircraft at the time the aircraft is sold.
  - (3) A list of defects furnished to a registered owner or operator under §43.11 of

this chapter shall be retained until the defects are repaired and the aircraft is approved for return to service.

I am requesting an exemption from §§91.405(a), 91.407(a)(1), 91.409(a)(2) and 91.417(a) and (b) Maintenance Inspections be granted since they only apply to aircraft with an airworthiness certificate and not hobby grade UAs. Also, a UAS does not require a certificated A&P or other maintenance person to perform inspections. I will perform a preflight inspection of my UAS before each flight as outlined in the operating documents and in accordance with manufacturer specifications.

# **Unmanned Aircraft System**

I will operate a UAS, the PHANTOM 2 Vision+ and/or INSPIRE 1, which is comprised of an unmanned aircraft (hereafter referred to as UA or PHANTOM) and a transportable ground station. The PHANTOM is referred to as a quad-copter which is a hobby grade radio controlled (RC) UA that has the capacity for software upgrades and a maximum gross weight of about 3 pounds. It is equipped with four rotors that are driven by electric motors powered by batteries. The UA has a maximum airspeed of approximately 30 knots. Incorporated into the programming of the Phantom is an automatic return home feature that automatically directs the UA back to point of takeoff should communication with the transmitter be lost. Both UAS comply with Part 15 of the FCC Rules.

A small, ultra-lightweight camera may be factory installed or a similar camera such as a GoPro may be attached to the UA that I will operate over various areas in and around Georgia as well as other states to enhance academic community awareness and augment real estate listings and other business and industry photos and videos.

I also propose to abide by and ensure this exemption will provide a level of safety at least equal to existing rules:

- I will only operate in reasonably safe environments that are controlled, are away from power lines, elevated lights and airports (without prior communication with the controlling authority) and
- I will conduct preflight inspections and protocols as outlined in the operating documents and in accordance with manufacturer specifications with safety as the primary concern.

## **UAS Pilot in Command (PIC)**

I have held at least a private pilot certificate since 2/25/80 and currently hold an ATP MEL, SEL, Instrument rating, CFI and CFII. I also hold a current Class I medical certificate.

Holding at least a private pilot certificate for 35 years, I have a detailed familiarity with the FAR/AIM, including all classes of airspace and special use airspace, IFR and VFR sectionals, and am legally eligible to fly for compensation or hire (§61.167(a); (§61.133(a)(1)(ii)). This will serve the public in all industries in addition to real estate that may benefit from UAS aerial

photography, videography and cinematography by having access to a legally licensed and exempted UAS operator.

Regarding UAS operational training, I will have flown numerous practice flights in remote areas simulating flights for future photography/videography to gain the necessary familiarization with the characteristics of the UAS performance under different wind, temperature and other weather conditions.

## **UAS Operating Parameters**

I will abide by the following additional operating conditions under this exemption:

- All operations will be conducted with me as Pilot in Command (PIC).
- UAS will be operated at an air speed less than or equal to 30 knots in accordance with procedures specified in the operating documents.
- Land the UAS prior to the manufacturer's recommended minimum level of battery power.
  - Operate the UAS only within visual line of sight (VLOS) of myself as PIC.
- Use the global positioning system (GPS) flight safety feature of the UAS whereby it hovers and then slowly lands if communication with the Ground Control System is lost.
- Have in my possession during flights the operating documents and the grant of exemption and will adhere to the conditions set forth therein.
- Inspect the UA and Ground Control System prior to each flight to ensure they are in a condition for safe flight. Should an unsafe condition be noted, the flight will not be conducted until proper maintenance can be performed and logged.
- Conduct a functional test flight following any maintenance or alterations that may affect UAS operations to ensure proper function and make an entry of such in the UAS records.
- Follow all UAS manufacturer component, maintenance, overhaul, replacement, inspection and life limit requirements.
- Carry out UAS maintenance, inspections, and record keeping requirements in accordance with the operating documents. Maintenance, inspection, alterations and any other description of work accomplished will be noted in the UAS records prior to returning the UAS to service.
  - Comply with all safety bulletins.
- Conduct ongoing training, proficiency and experience-building flights and comply with the requirement of 3 takeoffs and landings within a 90 day period.
- Operate the UAS at an altitude less than or equal to 500 feet AGL and not within 50 feet of people on the ground unless those people are inside a building or structure. A sign will be posted stating "Attention Aerial Photography in Progress. Remain Back 50 Feet" (This will be more restrictive than the current NPRM for the Micro UAS Subclassification of UAs up to 4.4 lbs. which proposes that flying over any person is permitted.)
- UAS operations will be conducted during the day under Visual Meteorological Conditions (VMC). No operations will be conducted at night.
  - Flights will be aborted should unpredicted obstacles or emergencies arise.
- Flights within 5 nautical miles of an airport (where a great deal of real estate and businesses exist) will only be conducted with prior communication to the appropriate airport

personnel as to location, altitude and duration of the flight.

- Wind and weather conditions will be considered at the takeoff/landing point prior to flight.
  - Right of way will be given to all manned air operations at all times.
  - UAS operations will not be conducted from any moving device or vehicle.
- UAS operations will be conducted by permission of the owner of the land, structure, vehicle or vessel or their authorized representative. Permission need only be granted once should repeat flights over the aforementioned land, structure, vehicle or vessel be deemed warranted.

## In conclusion

I believe my request for exemption is warranted in this case and respectfully request that it be granted without termination date for the reasons I have stated above. Aerial photography and videography operations for private or commercial properties and businesses benefit the public with enhanced perspectives of characteristics, amenities, and benefits a property has that cannot be displayed through ground level photography and videography. And while this is essentially the same request as the one granted under Exemption No. 11138 / Regulatory Docket No. FAA-2014-0481, my request goes further in that I currently hold ATP and Class I medical certificates.

Thank you for your time and attention to my request.

Jeffrey D. Greer, Realtor®

Berkshire Hathaway HomeServices, Georgia Properties