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

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

May 5, 2015

Exemption No. 11455
Regulatory Docket No. FAA–2015–0228

Mr. Mike Porter
President/Chief Pilot
High Flight Photo
85 Conifer Court
Port Ludlow, WA 98365

Dear Mr. Porter:

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 dated January 30, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of High Flight Photo (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial videography and cinematography to enhance academic community awareness and to augment real estate listing videos.

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. However, two comments were filed in the docket in support of the petition.

Airworthiness Certification

The UAS proposed by the petitioner are the DJI Phantom 2 Vision+ and DJI Inspire 1.

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 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, High Flight Photo 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, High Flight Photo 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: www.ntsb.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

15-0228

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

January 30, 2015

The attached paperwork is submitted from High Flight Photo in request for a Petition of Exemption. An electronic version has already been submitted with a comment tracking number of; 1jz-8gx5-ux8w.

Thanks

Mike Porter
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UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Washington, DC 20591

January 30, 2015

The Copter Shop, Inc. petitions for a Grant of Exemption so that the company can conduct aerial videography and cinematography to enhance academic community awareness for those individuals and companies unfamiliar with the geographical layout of the Puget Sound area and to augment real estate listing videos. Specifically we request an exemption from part 21, subpart H; and Sections 45.23(b),61.113(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 (14 CFR). These flights would be conducted using either a DJI Phantom with a GoPro camera or a DJI Inspire 1 with a build in camera.

With Safety being our primary goal we look at this operation as a safer alternate to operating a larger petroleum powered aircraft requiring airborne crew members. To ensure that we can meet those requirements we will make sure that all our PICs have at least a private pilots certificate with a current FAA class 3 physical. In addition we will insist that all PICs go through our ground training program that will cover the operation of the specific UAV they will be operating , weather requirements, UAV system operations both normal and emergency . The training will also cover the importance of documenting both the flight hours of the PIC and the UAV . Special emphasize will be put on documenting any and all maintenance discrepancies and the importance of properly documenting the resulting corrective action prior to any flight. In addition, we believe that every PIC needs to have accumulated at least 25 hours of UAS time of which at least 10 hours would be in multi rotor UAVs and have at least 5 hours in make/model prior to commercial operations. To maintain proficiency we will make sure the PIC makes at least 3 take offs and landings within any 90 day time frame and all these requirements will be documented in the Pilots log book. To ensure we do not interfere with any other manned aircraft we will not fly above 400' or within 5 miles of any airport unless we are in radio contact with the control tower. To ensure all know of our presence we will post all flights on Notams and will advise all local residence of impending flights. On the day of the flight we will post signage indicating that a UAV flight is in the immediate area. As for the actual UAV operation we will insist on that all PICs complete a preflight safety check of the UAS that will ensure all components of the system work as required.

Part 21 prescribes the procedural requirements for issuing and changing design approvals, productions approvals, airworthiness certificates, and airworthiness approvals.2

Section 45.23(b) prescribes that when marks include only the Roman capital letter "N" and the registration number is displayed on limited, restricted or light-sport category aircraft or experimental or provisionally certificated aircraft, the operator must also display on that aircraft near each entrance to the cabin, cockpit, or pilot station, in letters not less than 2 inches nor more than 6 inches high, the words "limited," "restricted," "light-sport," "experimental," or "provisional," as applicable.

Because of the size of the aircraft, we propose to install the "N" on the fuselage but do not think there is adequate space to also place any of the categories mentioned

Section 61.113(a) and (b) prescribes that—
(a) no person who holds a private pilot certificate may act as a pilot in command of an aircraft that is carrying passengers or property for compensation or hire; nor may that person, for compensation or hire, act as pilot in command of an aircraft.
(b) a private pilot may, for compensation or hire, act as pilot in command of an aircraft in connection with any business or employment if:
(1) The flight is only incidental to that business or employment; and
(2) The aircraft does not carry passengers or property for compensation or hire.

Since we will not be carrying any passengers or property for compensation we feel a private pilot can carry out the responsibilities of the PIC.

Section 91.7(a) prescribes that no person may operate a civil aircraft unless it is in an airworthy condition.

An exemption is requested to 91.7(a) because the UAV does not have to receive an airworthy condition by the FAA

Section 91.7(b) prescribes that the pilot in command of a civil aircraft is responsible for determining whether that aircraft is in condition for safe flight and that the PIC shall discontinue the flight when un airworthy mechanical, electrical, or structural conditions occur.

We will terminate any flight when the aircraft becomes un airworthy with mechanical, electrical or structural conditions. There is no exception.

Section 91.9(b)(2) prohibits operation of U.S.-registered civil aircraft unless there is available in the aircraft a current approved Airplane or Rotorcraft Flight Manual, approved manual material, markings, and placards, or any combination thereof.

There is no FAA approved manual for the Phantom 2 but we are submitting the following that we feel will suffice. Flow Chart, quick start check list, user manual and advanced check list. In addition we have prepared our own company operating manual and finally we have created a check list to ensure a safe operation.

Section 91.103(b) prescribes that a pilot shall for any flight, become familiar with runway lengths at airports of intended use, and takeoff and landing distance information.

The Phantom 2 does not use any runway for take off and the company policy is that the Phantom 2 will remain clear of all ramps, taxiways and runways associated with any airport.

Section 91.109(a) prescribes, in pertinent part, that no person may operate a civil aircraft (except a manned free balloon) that is being used for flight instruction unless that aircraft has fully functioning dual controls.

The Phantom 2 does not have dual flight controls and all instruction is via the one controller. We therefore request an exemption from this requirement

Section 91.119 prescribes that, except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes

(a) Anywhere. An altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface.

We will not operate the Phantom 2 near any power lines, light posts or any other powered obstacle

(b) Over congested areas. 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.

We will not operate the Phantom 2 over any congested areas.

(c) Over other than congested areas. 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.

Because of small size of the Phantom 2 (3 lbs) and the fact there is no fuel on board we feel as how we offer no risk to flying less than 500 in other than congested areas. We would like to operate like powered parachutes in that we will ensure that we do not present any hazard to persons or property on the surface. In addition we will ensure we have permission from the owner of any vehicle or property prior to getting within the 500 ft area.

(d) Helicopters, powered parachutes, and weight-shift-control aircraft. If the operation is conducted without hazard to persons or property on the surface—
(1) A helicopter may be operated at less than the minimums prescribed in paragraph (b) or (c) of this section, provided each person operating the helicopter complies with any routes or altitudes specifically prescribed for helicopters by the FAA; and
(2) A powered parachute or weight-shift-control aircraft may be operated at less than the minimums prescribed in paragraph (c) of this section.

Section 91.121 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."

The Phantom 2 does not have a barometric altimeter but uses GPS signals to compute altitude. We will set the altitude to zero prior to take off so as to be able to know altitude above the ground at all times.

Section 91.151(a) 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, (1) during the day, to fly after that for at least 30 minutes [emphasis added].

Since the Phantom 2 does not carry fuel but uses battery power we request the following. The battery on the Phantom 2 has 2 lights that come on when the battery is at 30% power and we would like to use that as the planning to return for a safe landing. Most of our flights will not exceed 10 mins in flight and since the battery has a normal 25 minute range this 30% factor should provide a safe return point. We will ensure that all flights consider winds in determining there return point as they could have a head wind on return.

Section 91.203(a) prohibits, in pertinent part, any person from operating a civil aircraft unless it has within it (1) an appropriate and current airworthiness certificate; and (2) an effective U.S. registration certificate issued to its owner or, for operation within the United States, the second copy of the Aircraft registration Application as provided for in § 47.31(c).

An exemption is requested for the airworthiness requirement since the Phantom 2 does not have an airworthiness.

Section 91.203(b) prescribes, in pertinent part, that no person may operate a civil aircraft unless the airworthiness certificate or a special flight authorization issued under § 91.715 is displayed at the cabin or cockpit entrance so that it is legible to passengers or crew.

Since there is no requirement for an airworthiness certificate for the Phantom 2 this requirement would not be appropriate. In addition because of the size of the aircraft there is just not a place to display the certificate.

Section 91.405(a) 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.4

There is no approved maintenance program for the Phantom 2 but we will ensure that it goes through a complete overhaul by an approved DJI maintenance personnel annually.

Section 91.407(a)(1) 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.

After any maintenance that requires change of engine or propeller that aircraft will undergo an test flight by the PIC in a remote unpopulated area to ensure the aircraft is operating safely

Section 91.409(a)(2) prescribes, in pertinent part, that no person may operate an aircraft unless, 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.

After any maintenance that requires change of engine or propeller that aircraft will undergo a test flight by the PIC in a remote unpopulated area to ensure the aircraft is operating safely

Section 91.417(a) and (b) prescribes, 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.5

(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 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

We will maintain an aircraft logbook that will reflect all flight time on the UAV, any maintenance performed on the UAV. There are no life-limited parts on the Phantom 2, no system of AD . If we are notified by the manufacture (DJI) that there is a discrepancy we will rectify it and annotate prior to the next flight if it relates to flight safety.

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

High Flight Photo provides the following supporting documentation including: 1) Supplemental Response for Petition, 2) PHANTOM
Flying Flow Chart V1.0 (Simplified Version), PHANTOM Quick Start Manual v1.7, PHANTOM Advanced Manual v.1.4, 3) PHANTOM 2 Vision+ User Manual 4) restricted areas map, 5) personal protocols and controls, and 6)High Flight Photo Safety/Flight Manual (all hereinafter 7) Radio Frequency Spectrum chart referred to as operating documents).

Unmanned Aircraft System

High Flight Photo plans to operate a UAS, the PHANTOM 2 Vision+, which is comprised of an unmanned aircraft (UA or PHANTOM) and a transportable ground station. The PHANTOM is referred to as a quad-copter with 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 30 knots. High Flight Photo plans to attach a small ultra-lightweight GoPro 3+ camera to his UA and operate the UA over various areas un Western Washington to include Clallam, Jefferson, Kitsap counties to enhance academic community awareness and augment real estate listing videos. High Flight Photo makes the following representations of operational enhancements which he proposes to abide by to ensure this exemption will provide a level of safety at least equal to existing rules:
• High Flight Photo will only operate in reasonably safe environments that are strictly controlled, are away from power lines, elevated lights, airports and actively populated areas; and
• High Flight Photo will conduct extensive preflight inspections and protocols, during which safety carries primary importance.
High Flight Photo states that given the size, weight, speed, and limited operating area associated with the aircraft to be utilized by him, an exemption from 14 CFR part 21, Subpart H (Airworthiness Certificates) and § 91.203 (a) and (b) (Certifications required), subject to certain conditions and limitations, is warranted and meets the requirements for an equivalent level of safety under 14 CFR part 11 and Section 333 of P.L. 112-95 (Section 333).
Petitioner requests an exemption from § 45.23 Marking of the aircraft because his UA will not have a cabin, cockpit or pilot station on which to mark certain words or phrases. Further, he states that two-inch lettering is difficult to place on such a small aircraft with dimensions smaller than the minimal lettering requirement. Regardless of this, High Flight Photo states that he will mark his UAS in the largest possible lettering by placing the word "Experimental" on its fuselage as required by § 45.29(f) so that he or anyone assisting him as a spotter will see the markings.
The petitioner states that an exemption from §§ 91.405(a), 91.407(a)(1), 91.409(a)(2) and 91.417(a) and (b) Maintenance inspections may be required and should be granted since they only apply to aircraft with an airworthiness certificate. However, High Flight Photo states as a safety precaution he will perform a preflight inspection of his UAS before each flight as outlined in his operating documents.

UAS Pilot in Command (PIC)

High Flight Photo asserts that under § 61.113 (a) and (b) private pilots are limited to non-commercial operations, however he can achieve an equivalent level of safety as achieved by current regulations because his UAS does not carry any pilots or passengers. Further while helpful, a pilot license will not ensure remote control piloting skills. We believe that the risks of operating a UAS are far less than the risk levels inherent in the commercial activities outlined in 14 CFR part 61, et seq., thus he requests an exemption from § 61.113 Private Pilot Privileges and Limitations: Pilot in command.

Regarding UAS operational training, the High Flight Photo has flown numerous practice flights in remote areas as a hobbyist simulating flights for future commercial use to gain familiarization with the characteristics of his UAS' performance under different temperature and weather conditions. He further states that he practices computerized simulated flights to maintain adequate skills and response reflex time. The PIC for High Flight Photo currently holds an FAA ATP certificate with a current 3rd class physical (see attach)

UAS Operating Parameters

High Flight Photo will abide by the following additional operating conditions under this exemption:
• operate the UAS below 300 feet and within a radius distance of 1000 feet from the controller to both aid in direct line of sight visual observation;1
• operate the UAS for 3-7 minutes per flight;
• land the UAS prior to the manufacturer's recommended minimum level of battery power;
• operate the UAS only within visual line of sight (VLOS);
• use the UAS' global positioning system (GPS) flight safety feature whereby it hovers and then slowly lands if communication with the remote control pilot is lost;
• conduct all operations under his own personal and flight safety protocols (including posting a warning sign reading: "Attention Aerial Photography in Progress – Remain Back 150 feet") contained in the operating documents and will actively analyze flight data and other sources of information to constantly update and enhance his safety protocols;
• contact respective airports if operations will be within 5 miles to advise them of his estimated flight time, flight duration, elevation of flight and other pertinent information;
• always obtain all necessary permissions prior to operation; and
• have procedures in place to abort flights in the event of safety breaches or potential danger.

High Flight Photo states that § 91.7(a) prohibits the operation of an aircraft without an airworthiness certificate. High Flight Photo asserts that since there is currently no certificate applicable to his operation, this regulation is inapplicable. 91.9(b)(2) requires an aircraft flight manual in the aircraft, however since there are no pilots or passengers on board his aircraft and given its size, this regulation is inapplicable. High Flight Photo can maintain an equivalent level of safety by maintaining a safety/flight manual with the UAS ground station.

Public Interest

Aerial videography for geographical awareness and for real estate marketing has been around for a long time through manned fixed wing aircraft and helicopters, but for small business owners, its expense has been cost-prohibitive. Granting this exemption to High Flight Photo would allow us to provide this service at a much lower cost. Further small UAS will pose no threat to the public given its small size and lack of combustible fuel when compared to larger manned aircraft. Operation of this UAS will minimize ecological damage and promote economic growth by providing information to companies looking to relocate or build in the Puget Sound area.

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