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

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

June 23, 2015

Exemption No. 11866
Regulatory Docket No. FAA–2015–1023

Mr. Andrew Shelter
Payson Associates
201 Garrett Avenue
Swarthmore, PA 19081

Dear Mr. Shelter:

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 April 7, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Payson Associates (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial photography and videography for commercial and residential real estate, legal, construction, and insurance industries.

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[1]. 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, Payson Associates 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.

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

Conditions and Limitations

In this grant of exemption, Payson Associates 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.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 June 30, 2017, unless sooner superseded or rescinded.

Sincerely,

/s/
John S. Duncan
Director, Flight Standards Service

Enclosures

BEFORE THE FEDERAL AVIATION ADMINISTRATION

Payson Associates,

Docket No. FAA-2015-_____

Petitioner.

PETITION OF PAYSON ASSOCIATES FOR AN EXEMPTION FROM CERTAIN FEDERAL AVIATION REGULATIONS TO PERMIT UNMANNED AIRCRAFT SYSTEMS (UAS) OPERATIONS

DATE: April 7, 2015

U. S. Department of Transportation

Docket Management System

1200 New Jersey Ave., SE

Washington, DC 20590

Dear Sir or Madam:

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (the Reform Act) and 14 C.F.R. Part 11, Payson Associates, operator of Small Unmanned Aircraft Systems ("sUAS") equipped to conduct aerial photography and videography for the commercial and residential real estate, legal, construction, and insurance industries, hereby applies for an exemption from the listed Federal Aviation Regulations ("FARs") to allow commercial operation of its sUAS, so long as such operations are conducted within and under the conditions outlined herein or as may be established by the FAA as required by Section 333.1

As described more fully below, the requested exemption would permit the operation of small, unmanned and relatively inexpensive sUAS under controlled conditions in airspace that is 1) limited 2) predetermined 3) controlled as to access and 4) would provide safety enhancements to the already safe operations in the film and television industry presently using conventional aircraft. Approval of this exemption would thereby enhance safety and fulfill the Secretary of Transportation's (the FAA Administrator's) responsibilities to "…establish requirements for the safe operation of such aircraft systems in the national airspace system." Section 333(c) of the Reform Act.

1. BACKGROUND INFORMATION: THE PETITIONER

Payson Associates (“PAYSON ASSOCIATES”), is a sole proprietorship located in Swarthmore, Delaware County, Pennsylvania. PAYSON ASSOCIATES provides photography and videography for the real estate, construction, legal and insurance industries.

2. PROPOSED UAS OPERATIONS: THE EXEMPTION REQUEST

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (“FMRA”), PAYSON ASSOCIATES requests that the FAA grant PAYSON ASSOCIATES an exemption from certain sections of the FAR (detailed below) so that PAYSON ASSOCIATES may commercially operate one or more small DJI Phantom 2 drones for aerial photography and videography for its' customers, PAYSON ASSOCIATES’ proposed UAS operations, as conditioned and limited herein, will not adversely affect safety, but rather will provide an equivalent or greater level of safety than that provided by the current rules and large manned aircraft operations.

They will operate only in line of sight and will operate in accordance with the manufacturer's User Manual (version 1.8) and Pilot Training Guide, attached (hereinafter referred collectively as “the Manuals”).

All flights will occur over private or controlled access property with the property owner’s, or their duly appointed representative, prior consent and knowledge.

Your name and mailing address. You may include other contact information such as a fax number, telephone number, or email address;

Name: Payson Associates

Address: 201 Garrett Avenue, Swarthmore, PA 19081

Telephone number: 484-326-9344

Email: ashelter@paysonassociates.com

Principal officer: Andrew Shelter

Legal status: Sole proprietorship.

Entity established: January 1st, 1998

TIN: 23-3003209

DUNS: 083064506

Federal Government Central Contractor Registration Code: 1MD03

The specific section or sections of 14 CFR from which you seek an exemption;

14 C.F.R. Part 21, Subpart H, Airworthiness Certificates & 14 C.F.R. §91.203(a)(1).

14 C.F.R. Part 27: Airworthiness Standards: Normal Category Rotorcraft.

Aircraft Marking and Identification Requirements: 14 C.F.R. §§ 91.9(c), 45.23(b) and 45.27(a).

14 C.F.R. § 61.113 (a) & (b): Private Pilot Privileges and Limitations: Pilot in Command.

14 C.F.R. § 91.9(b)(2): Civil Aircraft Flight Manual in the Aircraft.

14 C.F.R. § 91.7(a): Civil Aircraft Airworthiness.

14 C.F.R. § 91.103: Preflight Action.

14 C.F.R. § 91.109(a): Flight Instruction.

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

14 C.F.R. § 91.121 Altimeter Settings.

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

14 C.F.R. § 91.203 (a) & (b): Carrying Civil Aircraft Certification and Registration.

14 C.F.R. §§ 91.405(a); 91.407(a)(1); 91.409(a)(2); 91.417 (a) & (b): Maintenance Inspections.

The extent of relief you seek and the reason you seek the relief;

14 C.F.R. Part 21, Subpart H, Airworthiness Certificates & 14 C.F.R. § 91.203(a)(1).

This petition seeks an exemption from 14 C.F.R. Part 21, Subpart H, which establishes the procedural requirements for the issuance of airworthiness certificates as required by 14 C.F.R. §91.203(a)(1). Given the size and limited operating area associated with the sUAS to be utilized by the Petitioner, an exemption from Part 21 Subpart H meets the requirements of an equivalent level of safety under Part 11 and Section 333 of the Reform Act.

The Federal Aviation Act (49 U.S.C.§ 44701(f)) and Section 333 of the Reform Act both authorize the FAA to exempt aircraft from the requirement for an airworthiness certificate, upon consideration of the size, weight, speed, operational capability, and proximity to airports and populated areas of the particular UAS.

In all cases, an analysis of these criteria demonstrates that the sUAS operated without an airworthiness certificate, in the restricted environment and under the conditions proposed will be at least as safe, or safer, than a conventional rotorcraft operating with an airworthiness certificate without the restrictions and conditions of the proposed sUAS operations.

Equivalent Level of Safety

The sUAS to be operated hereunder is less than 55 lbs. fully loaded, carries neither a pilot nor passenger, and carries no explosive materials or flammable liquid fuels. Unlike other civil aircraft, the proposed operations in this petition for exemption will be controlled and monitored by the operator, in accordance with the Manuals' requirements.

These safety enhancements, which already apply to civil aircraft operated in connection with existing inspection operations, provide a greater degree of safety to the public and property owners than conventional operations conducted with airworthiness certificates issued under 14 C.F.R. Part 21, Subpart H. Lastly,

application of these same criteria demonstrates that there is no credible threat to national security posed by the sUAS, due to its size, speed of operation, location of operation, lack of explosive materials or flammable liquid fuels, and inability to carry a substantial external load.

14 C.F.R. Part 27: Airworthiness Standards: Normal Category Rotorcraft.

14 C.F.R. Part 27 sets forth the procedural requirements for airworthiness certification of normal category rotorcraft. To the extent the Petitioner's sUAS would otherwise require certification under Part 27, as a rotorcraft, Petitioner requests an exemption from Part 27's airworthiness standards for the same reasons identified in the exemption request from 14 C.F.R. Part 21, Subpart H.

Aircraft Marking and Identification Requirements: 14 C.F.R. §§ 91.9(c), 45.23(b) and 45.27(a).

This petition seeks an exemption from the aircraft marking and identification requirements of 14 C.F.R. §§ 91.9(c), 45.23(b) and 45.27(a).

14 C.F.R. § 91.9(c), Civil aircraft flight manual, marking, and placard requirements, provides that:

No person may operate a U.S.-registered civil aircraft unless that aircraft is identified in accordance with part 45 of this chapter.

14 C.F.R. § 45.23(b), Markings of the Aircraft, states:

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.

14 C.F.R. § 45.27(a), Rotorcraft, states:

Each operator of a rotorcraft must display on that rotorcraft horizontally on both surfaces of the cabin, fuselage, boom, or tail the marks required by §45.23.

Exemption from § 45.23(b) is warranted because the sUAS has no entrance to the cabin, cockpit, or pilot station on which the word "Experimental" can be placed. Moreover, given the size of the sUAS, two-inch lettering would be impossible. The word "Experimental" will be placed on the fuselage in compliance with § 45.29(f).

Given the nature of the specific relief sought by this exemption request, Petitioner

requires relief from the associated marking and identification requirements of § 45.27(a) and § 91.9(c), which would require compliance with § 45.23(b).

Equivalent Level of Safety

An equivalent level of safety for exemptions to the aircraft marking and identification requirements of §§ 91.9(c), 45.23(b) and 45.27(a), will be provided by having the sUAS marked on its fuselage as required by §45.29(f) where the pilot, observer, and others working with the sUAS will see the identification of the UAS as "Experimental." Additionally, Petitioner will ensure compliance with any requests of sUAS marking by the FAA.

14 C.F.R. § 61.113 (a) & (b): Private Pilot Privileges and Limitations: Pilot in Command.

This petition seeks an exemption from the private pilot privileges and limitations of § 61.113 (a) & (b), which states:

Private Pilot Privileges and Limitations: Pilot in Command.

(a) Except as provided in paragraphs (b) through (h) of this section, no person who holds a private pilot certificate may act as 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.

Section 61.113(a) limits private pilots to being in command of non-commercial flights. Section 61.113(b)(1) provides an exception that allows a private pilot to command an aircraft without passengers or property, in connection with business or employment if "[t]the flight is only incidental to that business or employment." That exception likely does not apply to the proposed operations under this petition for exemption, as the flights are not incidental to the proposed aerial surveys and inspections but rather essential to it. Accordingly, this petition seeks an exemption to § 61.113(a)'s commercial limitation and/or § 61.113(b)(1)'s requirement that the flight be incidental to the business to benefit from the exception.

Equivalent Level of Safety

Because the sUAS will not carry a pilot or passengers and is inherently stable, with sophisticated computer and GPS controls, the proposed operations can achieve the equivalent level of safety to § 61.113 (a) and (b), by requiring the PIC operating the sUAS to have significant

Unlike a conventional aircraft that carries the pilot and passengers, the sUAS is remotely controlled with no living thing on board. Moreover, the area of operation is controlled and restricted, and all flights are planned and coordinated in advance in accordance with the Manual, and flights are limited in duration and altitude.

The sole operator of the sUAS has extensive experience operating the sUAS in a non-commercial environment, and is Certified Safety Professional and a retired Naval Officer with extensive experience in safe control of rotary and fixed wing aircraft.

14 C.F.R. § 91.9(b)(2): Civil Aircraft Flight Manual in the Aircraft.

This petition seeks an exemption from the flight manual requirements of 14 C.F.R. § 91.9(b)(2), which states:

(b) No person may operate a U.S.-registered civil aircraft

(2) For which an Airplane or Rotorcraft Flight Manual is not required by §21.5 of this chapter, 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.

Given its size, configuration, and load capacity, the sUAS has no ability to carry such a manual on the aircraft, not only because there is no pilot on board, but because there is simply no room or capacity to carry such an item on the aircraft.

Equivalent Level of Safety

The safety related purpose of this manual requirement can be equally satisfied by maintaining the sUAS flight manual at the ground control point where the pilot flying the sUAS will have immediate access to it. Accordingly, Petitioner requests an exemption from § 91.9(b)(2)'s flight manual requirements, on the condition that the sUAS flight manual be available at the control point during each operation.

14 C.F.R. § 91.7(a): Civil Aircraft Airworthiness.

This petition seeks an exemption from 14 C.F.R. § 91.7(a), which requires that a civil aircraft be in an airworthy condition to be operated. Inasmuch there will be no airworthiness certificate issued for the sUAS, should this exemption be granted, no FAA regulatory standard will exist for determining airworthiness.

Equivalent Level of Safety

PAYSON ASSOCIATES Pilot in Command who will be flying the sUAS has over 50 flight hours and a stellar safety record. Given the size of the sUAS and the

requirements contained in the Manual for maintenance and use of safety checklists prior to each flight, an equivalent level of safety will be provided.

14 C.F.R. § 91.103: Preflight Action.

This petition seeks an exemption from § 91.103, which requires a PIC to become familiar with specific information before each flight, including information contained in the FAA approved Flight Manual on board the aircraft. Inasmuch as an FAA approved flight manual will not be provided for the sUAS, an exemption will be needed.

Equivalent Level of Safety

An equivalent level of safety will be provided by following the Aircraft Operations Manual comprehensive preflight checklist. The PIC will take all actions, including reviewing weather, flight battery requirements, landing and takeoff distances, and aircraft performance data, before initiation of flight.

14 C.F.R. § 91.109(a): Flight Instruction.

This petition seeks an exemption from 14 C.F.R. § 91.109(a), which provides 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." sUAS and remotely piloted aircraft, by their design do not have fully functional dual controls. Instead, flight control is accomplished through the use of a control box that communicates with the sUAS via radio communications.

Equivalent Level of Safety

Given the size and speed of the sUAS, an equivalent level of safe training can still be performed without dual controls because no pilot or passengers are aboard the sUAS, and all persons will be a safe distance away should the sUAS experience any difficulties during flight instruction.

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

This petition seeks an exemption from the minimum safe altitude requirements of 14 C.F.R. § 91.119. Section 91.119 prescribes the minimum safe altitudes under which aircraft may not operate, including 500 feet above the surface and away from any person, vessel, vehicle, or structure in non-congested areas. C.F.R. § 91.119(c). Section § 91.119(d)(1) allows for a helicopter to operate at less than those altitudes when it can be operated "without hazard to persons or property on the surface," provided that "each person operating the helicopter complies with any routes or altitudes specifically prescribed for helicopters by the FAA.

To provide the intended inspections, the sUAS will normally need to be operated within a range of between 50 and 200 feet from the property being filmed or photographed. Accordingly, due to the nature of the proposed operations, the PIC may at times be less than 500 feet away from structures during the operation, and an exemption is therefore required.

Equivalent Level of Safety

Compared to flight operations with rotorcraft weighting far more than the maximum 55 lbs. proposed herein, and the lack of flammable fuel, any risk associated with these operations is far less than those presently presented with conventional aircraft. An equivalent level of safety will be achieved given the size, weight, and speed of the UAS as well as the location where it is operated. No flight will be taken without the permission of the property owner and/or local officials. Because of the advance notice to the property owner and participants, all affected individuals will be aware of the planned flight operations. Furthermore, by operating at such lower altitudes, the sUAS will not interfere with other aircraft that are subject to the minimum safe altitude regulations.

14 C.F.R. § 91.121 Altimeter Settings.

This petition seeks an exemption from 14 C.F.R. § 91.121, which requires a person operating an aircraft to maintain cruising altitude or flight level by reference to an altimeter that is set to the elevation of the departure airport or barometric pressure. An exemption is required because the sUAS does not have a barometric altimeter, but rather a GPS altitude read out.

Equivalent Level of Safety

An equivalent level of safety will be achieved by following the procedures set forth in the Manual. As prescribed in the Manual, the operator will confirm the altitude of the launch site shown on the GPS altitude indicator before flight. Moreover, the PIC will use the GPS altitude indicator to constantly monitor the sUAS height, thus ensuring operation at safe altitudes.

14 C.F.R. § 91.151(a): Fuel Requirements for Flight in V FR Conditions.

This petition seeks an exemption from 14 C.F.R. § 91.151(a)'s fuel requirements for flight in VFR conditions. Section 91.151 states:

(a) 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; or

(2) At night, to fly after that for at least 45 minutes.

The battery powering the sUAS provides approximately 20 minutes of powered flight. An exemption from the 30 minute reserve requirement in 14 CFR §91.151 is therefore required.

Equivalent Level of Safety

An equivalent level of safety can be achieved by limiting flights to 25 minutes or 25% of battery power, whichever happens first. This restriction would be more than adequate to return the sUAS to its planned landing zone from anywhere within its limited operating area. Operation of the sUAS with less than 30 minutes of reserve fuel does not engender the type of risks that Section 91.151(a) was intended to alleviate given the size and speed of the small UAS. Moreover, operation will be limited to controlled areas where only people and property owners, or official representatives who have signed waivers will be allowed.

14 C.F.R. § 91.203 (a) & (b): Carrying Civil Aircraft Certification and Registration.

This petition seeks an exemption from civil aircraft certification and registration requirements of 14 C.F.R. § 91.203 (a) and (b). The regulation provides in pertinent part:

(a) Except as provided in §91.715, no person may operate a civil aircraft unless it has within it the following:

(1) An appropriate and current airworthiness certificate

(b) No person may operate a civil aircraft unless the airworthiness certificate required by paragraph (a) of this section 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.

In addition to the fact that Petitioner is seeking an exemption from the airworthiness certificate requirements, an exemption to this regulation is necessary because: (1) the sUAS's load capacity and size does not allow it to carry certification and registration documents; (2) the sUAS does not have a cabin or cockpit entrance at which the documents could be displayed; and (3) there are no passengers or crew for whom the certificates need be displayed.

Equivalent Level of Safety

To the extent these regulations are applicable to the proposed sUAS operations, an equivalent level of safety will be achieved by keeping these documents at the ground control point where the pilot flying the sUAS will have immediate access to them.

14 C.F.R. §§ 91.405(a); 91.407(a)(1); 91.409(a)(2); 91.417 (a) & (b):

Maintenance Inspections.

This petition seeks an exemption from the maintenance inspection requirements of 14 C.F.R. §§ 91.405(a); 91.407(a)(1); 91.409(a)(2); 91.417 (a) & (b). These regulations specify maintenance and inspection standards in reference to 14 C.F.R. Part 43. See, e.g., 14 C.F.R. § 91.405(a) (stating that each owner or operator of an aircraft "shall have that aircraft inspected as prescribed in subpart E of this part and shall between required inspections . . . have discrepancies repaired as prescribed in part 43 of this chapter"). An exemption to these regulations is needed because Part 43 and these sections apply only to aircraft with an airworthiness certificate, which the sUAS will not have.

Equivalent Level of Safety

An equivalent level of safety will be achieved because maintenance and inspections will be performed in accordance with the Manuals. As provided in the Manuals, the operator will ensure that the UAS is in working order prior to initiating flight, perform required maintenance, and keep a log of any maintenance performed. The operator is the person most familiar with the aircraft and best suited to maintain the aircraft in an airworthy condition to provide the equivalent level of safety.

If mechanical issues arise, the UAS can land immediately and will be operating from no higher than 200 feet AGL. Moreover, the sUAS's small size, carrying capacity, and the fact that flight operations will only take place in restricted areas for limited periods of time, create less risk than the same factors associated with conventional fixed-wing aircraft and rotorcraft performing the same operation.

How your request would benefit the public as a whole;

The operation significantly improves safety and reduces risk by alleviating human exposure to danger associated with current aerial survey and inspection methods, namely, full size helicopters. Manned helicopters performing aerial photography have experienced an exceedingly high number of accidents and fatalities. The public's interest is furthered by reducing human exposure to death or serious injury associated with manned aircraft performing photography, inspections and patrols.

Petitioner's sUAS are battery powered and create no emissions. If Petitioner's sUAS crashes, there is no fuel to ignite and explode. Any impact of Petitioner's lightweight sUAS is, obviously, far less than a full size helicopter. The public's interest is furthered by minimizing ecological impact of an accident and by reducing human exposure to potentially harmful emissions associated with manned aircraft.

Aerial surveys are valuable tools for roof, utility-power generation, cell phone towers, bridge and tunnel inspections and other elements that comprise the national transportation and communication infrastructure. However, problems with safety, cost, statistical integrity, and logistics continue to impede aerial surveys and inspections from conventional manned aircraft. The use of sUAS addresses these problems and is a powerful tool for performing a wide-range of utility-power generation inspection and patrol applications. The public as a whole will benefit from the safer and more cost-effective utility aerial services that sUAS operations provide.

Reasons why the exemption would not adversely affect safety, or how the exemption would provide a level of safety at least equal to the existing rule;

These reasons are listed individually above for each specific exemption request.

A summary we can publish in the Federal Register stating—

The rules from which you seek the exemption;

Payson Associates seeks an exemption from the following rules:

14 CFR Part 21, Subpart H; 14 CFR Part 27; 14 CFR 45.23(b); 14 C.F.R. § 61.113 (a) & (b); 14 CFR 91.7(a); 14 CFR 91.9(b)(2); 14 CFR 91.103; 14 CFR 91.109(a); 14 CFR 91.119; 14, CFR 91.121; 14 CFR 91.151(a); 14 CFR 91.203 (a) & (b); 14 CFR 91.405(a); 14 CFR, 91.407(a)(1); 14 CFR 91.409(a)(2); 14 CFR 91.417 (a) & (b).

and

A brief description of the exemption you seek;

Payson Associates seeks an exemption from the following rules:

14 CFR Part 21, Subpart H; 14 CFR Part 27; 14 CFR 45.23(b); 14 C.F.R. § 61.113 (a) & (b); 14 CFR 91.7(a); 14 CFR 91.9(b)(2); 14 CFR 91.103; 14 CFR 91.109(a); 14 CFR 91.119; 14, CFR 91.121; 14 CFR 91.151(a); 14 CFR 91.203 (a) & (b); 14 CFR 91.405(a); 14 CFR, 91.407(a)(1); 14 CFR 91.409(a)(2); 14 CFR 91.417 (a) & (b).

for the purposes of conducting aerial photography, videography and inspections for the commercial and residential real estate, legal, construction, and insurance industries,

Any additional information, views, or arguments available to support your request;

Additional documents attached and submitted in this electronic application, including user manuals, sUAS pilot training guide, and sUAS technical specifications.

If you want to exercise the privileges of your exemption outside the United States, you must state the reason.

Payson Associates does not intend to operate the sUAS outside of the United States.