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

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

June 9, 2015

Exemption No. 11784
Regulatory Docket No. FAA–2015–0288

Mr. Ryan Swakon
Managing Member
Precision Unmanned Aerial, LLC
1056 Snidow Drive
West Linn, OR 97068

Dear Mr. Swakon:

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

The Basis for Our Decision

By letter dated January 29, 2015,[1] you petitioned the Federal Aviation Administration (FAA) on behalf of Precision Unmanned Aerial, LLC (hereinafter petitioner or operator) for an exemption. The exemption would allow the petitioner to operate an unmanned aircraft system (UAS) to conduct aerial photography for yachts, land surveying, real estate, and, search operations.

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.

[1] By letter posted to the public docket on June 2, 2015, the petitioner requested to remove closed-set filming from its proposed operation.

Airworthiness Certification

The UAS proposed by the petitioner are the DJI Phantom 2, DJI Inspire 1, and DJI S1000.

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, Precision Unmanned Aerial, LLC 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, Precision Unmanned Aerial, LLC 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, DJI Inspire 1, and DJI S1000 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

Precision Unmanned Aerial, LLC
1056 Snidow Dr
West Linn, Oregon 97068
305-218-5954

January 29, 2015

U. S. Department of Transportation
Docket Management System
1200 New Jersey Ave., SE
Washington DC 20590

Re: Exemption Request Pursuant to Section 333 of the FAA Reform Act and Part 11 of the Federal Aviation Regulations from: *14 CFR 61.113(a) & (b); 91.7 (a); 91.103; 91.119(c); 91.121; 91.151(a); 91.405(a); 91.407(a)(1); 91.409 (a)(1) and (2); 91.417(a) & (b).*

Dear Sir or Madam:

I am the **Precision Unmanned Aerial (PUA), LLC**, managing member, and currently the Director of Operations on a Part 135 certificate. I hold three airline transport pilot ratings (ASEL, MSEL, Rotorcraft) and have been conducting the types of operations of interest to PUA, LLC in conventional aircraft for several years. We operate **Precision Unmanned Aerial, LLC** at the highest level of safety possible while lowering the operational risks to the public. One of our main goals is to bring awareness to the general public and noncommercial operators about safe UAS operation. We are currently working on computer based software to help operators who are not pilots understand the National Airspace System (NAS) so they will not violate airspace when flying recreationally. We believe all UAS noncommercial operators should be required to complete some kind of educational course upon purchase of a UAS. We look forward to helping the FAA with any research needed for establishing UAS rules and regulations.

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (the "Reform Act") and 14 C.F.R. Part 11, **Precision Unmanned Aerial, LLC**, an operator of Unmanned Aircraft Systems ("UAS") specializing in aerial photography for: yacht photography, land surveying, real estate photography, motion picture and television industry and search operations is applying for an exemption from the Federal Aviation Regulations ("FARs") to allow commercial operation of its UASs, 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. As described below, the

requested exemption would permit the operation of small UAS under controlled conditions. 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.

The name and address of the applicant is:

Name:	**Precision Unmanned Aerial, LLC**
Attn:	Ryan Swakon
Email:	rswakon@precisionunmannedaerial.com
Address:	1056 Snidow Dr
	West Linn, OR. 97068
Phone:	305-218-5954

Regulations from which the exemption is requested:

- 61.113(a) & (b)
- 91.7 (a)
- 91.103
- 91.119(c)
- 91.121
- 91.151(a)
- 91.203(a) & (b)
- 91.405(a)
- 91.407(a)(1)
- 91.409 (a)(1) & (2)
- 91.417(a)&(b)

This exemption application is expressly submitted to fulfill Congress' goal in passing Section 333(a) through (c) of the Reform Act. This law directs the Secretary of Transportation to consider whether certain unmanned aircraft systems may operate safely in the national airspace system (NAS) before completion of the rulemaking required under Section 332 of the Reform Act. In making this determination, the Secretary is required to determine which types of UAS do not create a hazard to users of the NAS or the public or pose a threat to national security in light of the following:

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

Reform Act § 333 (a). Lastly, if the Secretary determines that such vehicles "may operate safely in the national airspace system, the Secretary shall establish requirements for the safe operation of such aircraft in the national airspace system." Id. §333(c).

The Federal Aviation Act expressly grants the FAA the authority to issue exemptions. This statutory authority by its terms includes exempting civil aircraft, as the term is defined under §40101 of the Act, and UASs from the requirement that all civil aircraft must have a current airworthiness certificate. The Administrator may grant an exemption from a requirement of a regulation prescribed under subsection (a) or (b) of this section or any sections 44702-44716 of this title if the Administrator finds the exemption in the public interest. 49 U.S.C. §44701(f) See also 49 USC §44711(a); 49 USC §44704; 14 CFR §91.203 (a) (1).

Such operations will insure that the UAS will not create a hazard to users of the national airspace system or the public. Given the small size of **Precision Unmanned Aerial, LLC** UASs and the environment within which they will operate, **Precision Unmanned Aerial, LLC** UAS operations adhere to the Reform Act's safety requirements. Additionally, approval of this application presents no national security issues. Based on the substantial level of safety surrounding the proposed operations, and the significant public benefit (enhanced safety), reduction in environmental impacts (reduced emissions and noise), the grant of the requested exemption is in the public interest. Accordingly, **Precision Unmanned Aerial, LLC** respectfully requests that the FAA grant the requested exemption without delay.

AIRCRAFT AND EQUIVALENT LEVEL OF SAFETY

Precision Unmanned Aerial, LLC currently operates two different types of UASs and has plans to add an additional model to our fleet the second quarter 2015.

- DJI Phantom 2 (Currently)
- DJI Inspire 1 (Currently)
- DJI S1000 (SQ - 2015)

Both the Phantom 2 and the Inspire 1 are highly successful consumer grade UAS Quadcopters designed to carry a high definition (HD) camera powered by four electric motors. It utilizes an internal inertial measuring unit (IMU) with integrated barometric sensor

augmented with global positioning system (GPS) to maintain its geospatial orientation and position. It is controlled primarily through an FCC certified radio control (RC) unit. Real time video and telemetry information is transmitted back to a ground control station allowing the operator and/or PIC to monitor battery level, GPS signal strength, altitude (AGL), distance from PIC, camera imagery, and control camera angle. It has failsafe modes of operation for either loss of RC or GPS signal. Altitude can be limited by the onboard flight controller system and maximum altitude can be preprogrammed by the PIC. The flight controller/ipad will warn the pilot via telemetry and external lighting cues before reaching a low battery state. An automatic termination of flight and landing will be initiated when the battery reaches a predetermined low state.

All UAS operations conducted by Precision Unmanned Aerial, LLC will:

- Weigh less than 55 pounds, including the payload (i.e. camera, lens, and gimbal).
- Operate at speeds of no more than 50 knots, can hover, and can simultaneously move vertically and horizontally.
- Only operate its UAS in line of sight of the operator (PIC).
- Limit each operational flight to 30 minutes or less. Flights will be terminated at 25% battery power reserve should that occur prior to the 30 minute limit.
- Operated at an altitude of no more than 400 feet AGL.
- Be operated by a FAA licensed airman with at least a private pilot's certificate and third class medical.
- Be operated at a lateral distance of at least 100 feet from any inhabited structures, buildings, vehicles, vessels, or people not associated with the operation or who have not signed a waiver in advance of the operation.
- Require operators (PIC) to check for any Temporary Flight Restrictions (TFR) by calling 1800 WX Brief and a current sectional chart for the area of operation to make sure they will not violate National Airspace System (NAS).

- Have the capability to return to a pre-determined location if the UAS loses communications or loses its GPS signal

- Have the ability to communicate if needed by Radio or Phone. Operators (PIC) during all UAS operation have the local Flight Standards District Offices (FSDO) and the closest airport control towers phone number and frequency.

- Be entered and tracked in our aircraft management software. The software tracks all of the components of the UAS as well as flight time for the UAS and pilot. It will not allow maintenance to be overflown, thereby enhancing the safety of the program.

DISCUSSION OF EXCEPTIONS REQUESTED

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

Sections 61.113 (a) and (b) limit private pilots to non-commercial operations. Because the UAS will not carry a pilot or passengers, the proposed operations can achieve the equivalent level of safety of current operations by requiring the PIC operating the aircraft to have a private pilot's license rather than a commercial pilot's license to operate a small UAS.

Unlike a conventional manned aircraft, a UAS is remotely controlled by a ground-based Operator. The operational area is controlled and restricted, and all flights are planned and coordinated in advance. The level of safety exceeds that provided by a single individual holding a commercial pilot's certificate operating a conventional aircraft. The risks associated with the use of a UAS are so diminished from the level of risk associated with commercial operations contemplated by Part 61 allowing UAS use by a private pilot as the PIC exceeds the present level of safety sought by 14 C.F.R. §61.113 (a) and (b).

14 C.F.R. § 91.7 (a) Civil aircraft airworthiness

(a) No person may operate a civil aircraft unless it is in an airworthy condition.

Since no FAA regulatory standard exists for determining airworthiness of the UAS, the regulation will need an exemption. **Precision Unmanned Aerial, LLC** compliance with our operating documents will be sufficient means for determining an airworthy condition.

14 C.F.R. § 91.103: Preflight Action

> *Section 91.103 requires each pilot to preflight an aircraft before flight to insure the safety of flight.*

As FAA approved rotorcraft flight manuals will not be used, an exemption is requested. However, an equivalent level of safety will be provided. The PIC will take all actions, including reviewing weather, flight battery requirements, Notices to Airmen (NOTAM), landing and takeoff distances, and aircraft performance data before commencement of flight.

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

Section 91.119 establishes safe altitudes for operation of civil aircraft. *Section 91.119 provides, in pertinent part, that:*

> *"...except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes: .....*
>
> *(b) 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 **Precision Unmanned Aerial, LLC** requests authority to operate at altitudes only up to 400 AGL, an exemption is needed to allow such operations.

14 C.F.R. §91.121 Altimeter Settings

This regulation requires 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."*

As the UAS may not have a barometric altimeter, but instead a GPS altitude read out, an exemption may be needed. An equivalent level of safety will be achieved by the operator, pursuant to the safety check list and live flight data monitoring, confirming the altitude of the launch site shown on the GPS altitude indicator before flight.

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

Section 91.151 (a) prohibits an individual from beginning:

> *"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 UAS provides approximately 30 minutes of powered flight. To meet the 30 minute reserve requirement in 14 CFR §91.151, sUAS flights would be limiting factor. Given the limitations on the UAS an exemption may be needed.

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

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.*

The UAS fully loaded weigh is no more than 55 lbs and is operated without an onboard pilot. As such, there is no ability or place to carry certification and registration documents or to display them on the UASs. An equivalent level of safety will be achieved by keeping these documents at the ground control point where the controller (PIC) of the UAS will have immediate access to them, to the extent they are applicable to the UAS.

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

These regulations require that an aircraft operator or owner:

> *"shall have that aircraft inspected as prescribed in subpart E of this part and shall between required inspections, except as provided in paragraph (c) of this section, have discrepancies repaired as prescribed in part 43 of this chapter...," and others shall inspect or maintain the aircraft in compliance with Part 43.*

Given that these section and Part 43 apply only to aircraft with an airworthiness certificate, these sections will not apply to the applicant. Maintenance will be accomplished by the operator pursuant to the flight manual and operating handbook. An equivalent level of safety will be achieved because these UAS are very limited in size and will carry a small payload. If mechanical issues arise the UAS can land immediately and will be operating from no higher than 400 feet AGL. The operator will ensure that the UAS is in working order prior to initiating

flight, perform required maintenance, and keep a log book of any maintenance performed as well as track all flight hours. 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. An equivalent level of safety will be achieved because maintenance and inspections will be performed in accordance with the UAS Manufacturer's Manual, as referenced in the Aircraft Operations Manual. As provided in the Operations Manual, the operator will ensure that the UAS is in working order prior to initiating flight and perform required maintenance needed.

SUMMARY FOR PUBLICATION

Precision Unmanned Aerial, LLC seeks an exemption from the following rules:

> 14 CFR 61.113(a) & (b); 91.7 (a); 91.103;91.119(c); 91.121; 91.151(a); 91.405(a); 91.407(a)(1); 91.409 (a)(1) and (2); 91.417(a) &(b).

To operate commercially small unmanned vehicle (55lbs or less) in yacht photography, land surveying, real estate photography, motion picture and television industry and search operations. Approval of exemptions allowing UASs commercial operations in the areas list above will enhance safety by reducing risk. A UAS weighing fewer than 55 lbs. and powered by batteries eliminates virtually all of that risk given the reduced mass and lack of combustible fuel carried on board traditional aircraft performing the same function. The UAS will carry no passengers or crew and, therefore, will not expose them to the risks associated with manned aircraft flights. The operation of small UAS conducted in the strict conditions outlined above, will provide an equivalent level of safety supporting the grant of the exemptions requested herein, including exempting the applicant from the requirements of Part 21 and allowing commercial operations. These UASs operate at very slow speeds, close to the ground, as a result, are far safer than conventional operations conducted with turbine helicopters operating in close proximity to the ground and people.

Privacy

All flights will occur over private or controlled areas with the property owner's prior consent and knowledge. Filming will be only of people who have given their consent or otherwise have agreed to be in the area where filming will take place. Satisfaction of the criteria provided in Section 333 of the Reform Act of 2012 (size, weight, speed, operating capabilities, proximity to airports and populated areas and operation within visual line of sight and national security) provide more than adequate justification to grant **Precision Unmanned Aerial, LLC** requested exemption.

If you have any questions or need any additional information, please contact me at 305-218-5954 or rswakon@precisionunmannedaerial.com

Sincerely,

Precision Unmanned Aerial, LLC

Ryan Swakon
Managing Member