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

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

April 8, 2015

Exemption No. 11307
Regulatory Docket No. FAA–2014–1018

Mr. Christopher Lawler
Price Aviation Group
422 Blossom Lane
Frederick, MD 21701

Dear Mr. Lawler:

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 December 6, 2014, you petitioned the Federal Aviation Administration (FAA) on behalf of Price Aviation Group (hereinafter petitioner or operator) for an exemption. The exemption would allow the petitioner to operate an unmanned aircraft system (UAS) to conduct aerial photography and inspection.

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 the 3DR X8+.

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, C*ertification 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, Price Aviation Group 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, Price Aviation Group 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 3DR X8+ 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 April 30, 2017, unless sooner superseded or rescinded.

Sincerely,

/s/
John Barbagallo
Acting Deputy Director, Flight Standards Service

IN THE MATTER OF THE PETITION FOR EXEMPTION OF:
PRICE AVIATION GROUP FOR AN EXEMPTION SEEKING RELIEF FROM THE REQUIREMENTS OF
TITLE 14 OF THE CODE OF FEDERAL REGULATIONS
CONCERNING OPERATION OF SMALL
UNMANNED AIRCRAFT SYSTEMS PURSUANT TO SECTION 333 OF
THE FAA MODERNIZATION AND REFORM ACT OF 2012 (PUBLIC LAW 112-95)

Submitted on December 6, 2014

Christopher Lawler
Price Aviation Group
422 Blossom Ln.
Frederick, MD 21701

## GLOSSARY

| | |
|---|---|
| AGL | Above Ground Level |
| ATC | Air Traffic Control |
| COA | Certificate of Authorization |
| FAA | Federal Aviation Administration |
| FAR | Federal Aviation Regulation |
| GCS | Ground Control Station |
| NAS | National Airspace System |
| PIC | Pilot In Command |
| sUAS | Small Unmanned Aircraft System |
| VFR | Visual Flight Rules |
| VMC | Visual Meteorological Conditions |
| VO | Visual Observer |
| VLOS | Visual Line of Sight |

## TABLE OF CONTENTS

## SUMMARY

Price Aviation Group (PAG) seeks exemption to operate a sUAS under Section 333 of the FAA Modernization and Reform Act of 2012. This exemption will allow PAG to operate a UAS for the purposes of aerial photography and inspection in a controlled, sterile environment. PAG will be operating a proven airframe to accomplish flights with an equivalent or better level of safety to manned operations.

## BACKGROUND

PAG is a company focused on cost-effective, safe solutions to aerial inspections and photography. The company principal is an Airline Transport Pilot and former Line Check airmen with an accreditation from the American Association of Airport Executives as a Certified Member. Having firsthand knowledge of the National Airspace system from the ground and in the air gives PAG an advantage in operating small UAS. In addition to flying professionally and understanding airport management, the principal also has experience in Radio Control (R/C) operations. R/C operations similar to professional flying require a standard of care to operate safely from checklists to post-flight review. The standards in PAG operations will mirror Part 121 operations.

Each flight will be carefully coordinated to ensure safe operations as described in exemptions that have been granted and included in this petition. In any aviation operation, the discipline to ensure a safe operation needs to the first priority. PAG will only conduct flights where the environment can be controlled and no hazard to the public can occur. This will be accomplished through use of the procedures detailed in this document.

PAG will be using tried and true technology from 3DR to perform appropriate missions. The 3DR product includes redundancy required by previous exemptions. Information on the sUAS will be included as an appendix to this document. The technology that is available from this company includes the necessary restrictions on performance to comply with FAA requirements:

### X8+ Operating Limits

| | |
|---|---|
| Maximum Altitude* | 100 m (328 ft) |
| Range* | 300 m (984 ft) from launch point |
| GPS Lock | GPS lock required at all times |
| Maximum estimated flight time | 15 min |

| | |
|---|---|
| Payload capacity | 800 g (1.7 lbs) |

(Appendix)

## BASIS FOR THE PETITION

In accordance with 14 C.F.R. § 11.81, PAG provides the following information in support of its petition for exemption:

### A. Name And Address Of The Petitioner.

The name and address of the Petitioner is:

Price Aviation Group
422 Blossom Ln.
Frederick, MD 21701

Specific contact information:

Christopher Lawler
422 Blossom Ln.
Frederick, MD 21701
Tel: 570-850-8924
Email: clawler@priceav.com

### B. The Specific Sections Of 14 C.F.R. From Which PAG Seeks Exemption

1. 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.

2. Section 91.103 prescribes, in pertinent part, that each pilot in command shall, before beginning a flight, become familiar with all available information concerning that flight, to include—

    (a) For a flight under IFR or a flight not in the vicinity of an airport, weather reports and forecasts, fuel requirements, alternatives available if the planned flight cannot be completed, and any known traffic delays of which the pilot in command has been advised by ATC;

    (b) For any flight, runway lengths at airports of intended use, and the following takeoff and landing distance information:

        (1) For civil aircraft for which an approved Airplane or Rotorcraft Flight Manual containing takeoff and landing distance data is required, the takeoff and landing distance data contained therein; and

        (2) For civil aircraft other than those specified in paragraph (b)(1) of this section, other reliable information appropriate to the aircraft, relating to aircraft performance under expected values of airport elevation and runway slope, aircraft gross weight, and wind and temperature.

3. 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.

    (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.

    (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.

    (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.

4. 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."

5. 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; or (2) At night, to fly after that for at least 45 minutes. [emphasis added]

6. 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.

7. 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.

8. 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.

9. 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.

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

**C. The Extent Of Relief PAG Seeks And The Reason PAG Seeks The Relief.**

A. Section 61.113(a) and (b):

a. Due to the fact that there are no standards for private or commercial sUAS operations,

b. Knowledge of flight characteristics and the Federal Aviation Regulations (FARs), along with the ability to physically manipulate the controls of the sUAS are the critical aspects of the requested operation.

c. The risks associated with the operation of the sUAS are so diminished from the standards that Part 61 was written for an equivalent level of safety can be maintained with a private pilot certificate.

d. 4. FAA has authority to waive pilot requirements for commercial operations under 49 U.S.C §44701(f).

B. 14 CFR § 91.103 – Preflight Action

1. The PIC shall perform a preflight inspection in accordance with the manufacturers recommendations of the UAS, controller, and

ground control station prior to each flight to ensure it is free of all discrepancies.

2. Equivalent safety levels will be met through preparation and compliance with the operator's manual and site preparation.

C. 14 CFR 91.119(c) – Requirements for Minimum Safe Altitudes for Civil Aircraft Operation

1. The sUAS will be operated only within a predetermined area below 400 feet AGL.

2. 2. An equivalent level of safety will be maintained.

D. 14 CFR 91.121 – Altimeter Settings

1. SUAS may not have a barometric altimeter, and may use a GPS altitude read out indication instead, so an exemption may be needed.

2. The operator will achieve an equivalent level of safety as the sUAS uses AGL height from its initialization (launch) point, cross-referenced with Mean Sea Level (MSL) altitude of the launch point.

E. CFR 91.151 (a)(1) – Fuel Requirements for Flights in VFR Conditions

1. An equivalent level of safety can be obtained by terminating the flight prior to 30 minutes or 25% battery power, whichever occurs first.

2. The UAS will not be operated at night.

F. 14 CFR 91.405 (a) Maintenance Required

1. This section and Part 43 apply only to aircraft with an airworthiness certificate, therefore these sections will not apply.

2. Maintenance will be accomplished by PAG pursuant to the manufacturer's recommendations.

3. Maintenance, preventive maintenance, rebuilding, and alteration will be successfully accomplished by trained personnel.

4. The sUAS shall be discrepancy free prior to initiating flight.

5. If a mechanical issue arises the sUAS can land safely within the "Safe Zone."

G. 14 CFR 91.407 (a) (1) – Operation After Maintenance, Preventive Maintenance, Rebuilding, or Alteration

1. This section and Part 43 apply only to aircraft with an airworthiness certificate, therefore these sections will not apply.

H. 14 CFR 91.409 (a) (1) and (2) - Inspections.

1. This section and Part 43 apply only to aircraft with an airworthiness certificate, therefore these sections will not apply.

I. 14 CFR 91.417(a) and (b) – Maintenance Records.

1. This section and Part 43 apply only to aircraft with an airworthiness certificate, therefore these sections will not apply.

**D. Reasons why granting this request would be in the public interest.**

- PAG is a small business that is using the latest sUAS technology.
- PAG will operate with an equivalent or better level of safety.
- PAG will use a sUAS that has proven operational history.
- PAG will use available technology and knowledge to ensure public safety continuously updating procedures.
- PAG will only conduct flights where a controlled, sterile environment can be assured.

**E. The Reasons Why Granting The Exemption Would Not Adversely Affect Safety, Or How The Exemption Would Provide A Level Of Safety At Least Equal To That Provided By The Rule From Which PAG Seeks Exemption.**

**1. PIC and Visual Observer**

a. The PIC shall possess at least a private pilot certificate and at least a current driver's license.

i. The PIC shall also meet the flight review requirements

specified in 14 CFR § 61.56 in an aircraft in which the PIC is rated on their pilot certificate.

ii. The PIC shall be trained in the operation of the specific Make and Model of the UAS being piloted.

iii. The PIC must have:

1. A minimum of 200 flight cycles and 25 hours of total time as a sUAS rotorcraft pilot
2. Five hours logged with the make and model utilized

b. The PIC and Visual Observer (VO) will be designated before each flight

i. Minimum crew for each operation will consist of the PIC and the VO.

c. The PIC and VO will always be within visual line of sight (VLOS) of each other and in direct verbal communication at all times.

d. Safety Briefings prior to each flight:

i. Designated roles of PIC and VO
ii. Risk Management and Mitigation
iii. PIC and VO will inspect site for safety issues.
iv. PIC will operate the UAS with appropriate distance from non-participants in accordance with 14 CFR § 91.119.

**2. SUAS Specifications and Design:**

a. All sUAS flown under this exemption shall be less than 55 pounds including aircraft and payload.

b. The radio frequency spectrum used for operation and control of the sUAS shall comply with the Federal Communications Commission (FCC) or other appropriate government oversight agency requirements.

c. Maximum speed shall be no more than 50 knots.

d. The sUAS shall be equipped with Inertial Navigation Sensor(s) (IRS/IRU/Accelerometer).

e. The sUAS shall be equipped with a Compass (Magnetometer/Heading Source).

f. The sUAS shall be equipped with a Global Positioning System (GPS) guidance system.

g. The sUAS shall have a return to home feature

**3. Maintenance**

a. The UAS shall be maintained in accordance with the manufacturer's recommendations with appropriate recordkeeping.

b. The PIC shall perform a preflight inspection of the sUAS, controller, and ground control station prior to each flight to ensure it is operational with no discrepancies. If the preflight inspection has any discrepancies that may affect a safe operation, repairs or maintenance shall be performed prior to flight. The sUAS will only be operated if it is free of all discrepancies.

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 in accordance with the operator's manual. The PIC who conducts the functional test flight must make an entry in the UAS aircraft records of the flight. The requirements and procedures for a functional test flight and aircraft record entry must be added to the operator's manual.

c. PAG shall follow the manufacturer's sUAS maintenance, overhaul, replacement, inspection, and life limit requirements. When not specified at a minimum, the following shall be included:

i. Actuators / Servos
ii. Powerplant(s) (motors)
iii. Propellers
iv. Electronic speed controller(s)
v. Batteries
vi. Remote controllers and Ground control station

d. All sUAS shall 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, except with respect to the size of the markings. Markings shall be as large as practicable.

**3. Permissions and Permitting**

a. All required permissions and permits shall be obtained from territorial, state, county or city jurisdictions, including local law enforcement, or other appropriate governmental agencies.

b. At least three days before a scheduled operational flight, PAG shall submit a written Plan of Activities to the local flight standards district office (FSDO) with jurisdiction over the area of the proposed flight. The 3-day notification may be waived with the concurrence of the FSDO.

   i. The plan of activities shall include at least the following:

      1. Dates and times for all requested flights
      2. Name and phone number of the PIC responsible for operation of the sUAS
      3. Make, model, and serial or N-number of sUAS to be used
      4. Name and certificate number of sUAS PICs involved in the flight
      5. Signature of exemption-holder or representative
      6. A description of the flight activity, including maps or diagrams of any area over which flights will be conducted, the relationship of that area to any nearby city, town, etc., and the altitudes essential to accomplish the operation

c. Documents required under 14 CFR § 91.9 and § 91.203 shall be readily available to the PIC any time the aircraft is in operation. These documents shall be made available to the Administrator or any law enforcement official upon request.

d. PAG shall obtain an Air Traffic Organization (ATO) issued Certificate of Waiver or Authorization (COA) prior to conducting any operations under this grant of exemption. Dow shall also request a Notice to Airman (NOTAM) not more than 72 hours in advance, but not less than 48 hours prior to the operation.

**4. Operations**

a. The sUAS shall not operate in Class B, C, or D airspace without written

approval from the FAA. The sUAS shall not operate within 5 nautical miles of the geographic center of a non-towered airport as denoted on a current FAA-published aeronautical chart unless a letter of agreement with that airport's management is obtained, and the operation is conducted in accordance with a NOTAM as required by the operator's COA. This letter of agreement with the airport management shall be made available to the Administrator upon request.

b. Flights shall be conducted under day visual meteorological conditions (VMC).

    i. In addition, the sUAS shall 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.

    ii. sUAS operations shall not be conducted during night, as defined in 14 CFR § 1.1.

    iii. Flights shall not be conducted under special visual flight rules (SVFR).

c. Flights shall be operated at an altitude of no more than 400 feet above ground level (AGL).

d. The PIC shall be prohibited from operating the sUAS from any moving device or vehicle.

e. The sUAS shall be operated within visual line of sight (VLOS) of the PIC.

    i. The PIC shall maintain VLOS without the aid of telescopes, cameras or other devices.

    ii. The PIC will maintain VLOS with their own vision, which includes the use of eyeglasses or corrective lenses.

f. The sUAS shall remain clear and yield the right of way to manned operations and activities at all times

g. Prior to any flight operations authorized by this grant of exemption, the PIC and VO must have successfully completed a qualification process, as outlined in the operator's manual. As this is a requirement stipulated by the operator, the test must be developed and implemented by a

qualified person designated at the sole discretion of the operator. A record of completion of this qualification process must be documented and made available to the Administrator upon request.

h. The UAS must abort the flight in the event of unpredicted obstacles or emergencies in accordance with the operator's manual.

i. 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. Further flight operations may not be conducted until the incident, accident, or transgression is reviewed by AFS-80 and authorization to resume operations is provided.

**5. Flight Time**

a. Each sUAS operation shall be completed within 30 minutes flight time or with 25% battery power remaining, whichever occurs first.

**F. Summary for Federal Register publication.**

**The Rules From Which PAG Seeks Exemption:** 14 CFR 61.113(a) and (b), 14 CFR 91.103, 14 CFR 91.119, 14 CFR 91.121, 14 CFR 91.151(a), 14 CFR 91.405(a), 14 CFR 91.407(a)(1), 14 CFR 91.409(a)(2), 14 CFR 91.417(a) and (b)

**A. Brief Description Of The Nature Of The Exemption PAG Seeks:**

Price Aviation Group (PAG) seeks exemption to operate a UAS under Section 333 of the FAA Modernization and Reform Act of 2012. This exemption will allow PAG to operate a UAS for the purposes of aerial photography and inspection in a controlled, sterile environment. PAG will be operating a proven airframe to accomplish flights with an equivalent or better level of safety to manned operations.

## CONCLUSION

PAG seeks to operate sUAS in a manner that will ensure an equivalent level of safety to the general public. The flights will be conducted to a high standard using proven technology complying with FAA regulations and the conditions of the requested exemption.

Specific information on the sUAS is included as an appendix, and any other information needed to fulfill necessary requirements will be gladly given upon request.

Submitted By:

Christopher Lawler
Price Aviation Group
December 6, 2014