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

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

September 3, 2015

Exemption No. 12753
Regulatory Docket No. FAA−2015−2541

Mr. Robert W. Biggs
Phoenix Drone Pros
601 East Pinto Court
Gilbert, AZ 85296

Dear Mr. Biggs:

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 June 11, 2015, you petitioned the Federal Aviation Administration (FAA) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial photography, videography, surveying, inspections, search and rescue operations, and UAS training[1].

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 Inspire 1.

[1] The petitioner requested authority to conduct UAS training. At this time, the FAA is unable to authorize UAS operations for training until a further assessment is completed. When the FAA completes its review, we will proceed accordingly and no further action will be required by the petitioner. However, the petitioner is permitted to train its own pilot in commands and visual observers in accordance with condition no. 14 and the other conditions and limitations in this exemption.

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[2]. The FAA has issued grants of exemption in circumstances similar in all material respects to those presented in your petition. In Grants of Exemption Nos. 11062 to Astraeus Aerial (*see* Docket No. FAA−2014−0352), 11109 to Clayco, Inc. (*see* Docket No. FAA−2014−0507), 11112 to VDOS Global, LLC (*see* Docket No. FAA−2014−0382), and 11213 to Aeryon Labs, Inc. (*see* Docket No. FAA−2014−0642), the FAA found that the enhanced safety achieved using an unmanned aircraft (UA) with the specifications described by the petitioner and carrying no passengers or crew, rather than a manned aircraft of significantly greater proportions, carrying crew in addition to flammable fuel, gives the FAA good cause to find that the UAS operation enabled by this exemption is in the public interest.

Having reviewed your reasons for requesting an exemption, I find that—

- They are similar in all material respects to relief previously requested in Grant of Exemption Nos. 11062, 11109, 11112, and 11213;
- The reasons stated by the FAA for granting Exemption Nos. 11062, 11109, 11112, and 11213 also apply to the situation you present; and
- A grant of exemption is in the public interest.

Our Decision

In consideration of the foregoing, I find that a grant of exemption is in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. 106(f), 40113, and 44701, delegated to me by the Administrator, Mr. Robert W. Biggs 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

[2] 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.

the extent necessary to allow the petitioner to operate a UAS to perform aerial data collection. This exemption is subject to the conditions and limitations listed below.

Conditions and Limitations

In this grant of exemption, Mr. Robert W. Biggs 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 Inspire 1 when weighing less than 55 pounds including payload. Proposed operations of any other aircraft will require a new petition or a petition to amend this exemption.

2. Operations for the purpose of closed-set motion picture and television filming are not permitted.

3. The UA may not be operated at a speed exceeding 87 knots (100 miles per hour). The exemption holder may use either groundspeed or calibrated airspeed to determine compliance with the 87 knot speed restriction. In no case will the UA be operated at airspeeds greater than the maximum UA operating airspeed recommended by the aircraft manufacturer.

4. The UA must be operated at an altitude of no more than 400 feet above ground level (AGL). Altitude must be reported in feet AGL.

5. The UA must be operated within visual line of sight (VLOS) of the PIC at all times. This requires the PIC to be able to use human vision unaided by any device other than corrective lenses, as specified on the PIC's FAA-issued airman medical certificate or U.S. driver's license.

6. All operations must utilize a visual observer (VO). The UA must be operated within the visual line of sight (VLOS) of the PIC and VO at all times. The VO may be used to satisfy the VLOS requirement as long as the PIC always maintains VLOS capability. The VO and PIC must be able to communicate verbally at all times; electronic messaging or texting is not permitted during flight operations. The PIC must be designated before the flight and cannot transfer his or her designation for the duration of the flight. The PIC must ensure that the VO can perform the duties required of the VO.

7. This exemption and all documents needed to operate the UAS and conduct its operations in accordance with the conditions and limitations stated in this grant of exemption, are hereinafter referred to as the operating documents. The operating documents must be accessible during UAS operations and made available to the

Administrator upon request. If a discrepancy exists between the conditions and limitations in this exemption and the procedures outlined in the operating documents, the conditions and limitations herein take precedence and must be followed. Otherwise, the operator must follow the procedures as outlined in its operating documents. The operator may update or revise its operating documents. It is the operator's responsibility to track such revisions and present updated and revised documents to the Administrator or any law enforcement official upon request. The operator must also present updated and revised documents if it petitions for extension or amendment to this grant of exemption. If the operator determines that any update or revision would affect the basis upon which the FAA granted this exemption, then the operator must petition for an amendment to its grant of exemption. The FAA's UAS Integration Office (AFS−80) may be contacted if questions arise regarding updates or revisions to the operating documents.

8. Any UAS that has undergone maintenance or alterations that affect the UAS operation or flight characteristics, e.g., replacement of a flight critical component, must undergo a functional test flight prior to conducting further operations under this exemption. Functional test flights may only be conducted by a PIC with a VO and must remain at least 500 feet from other people. The functional test flight must be conducted in such a manner so as to not pose an undue hazard to persons and property.

9. The operator is responsible for maintaining and inspecting the UAS to ensure that it is in a condition for safe operation.

10. Prior to each flight, the PIC must conduct a pre-flight inspection and determine the UAS is in a condition for safe flight. The pre-flight inspection must account for all potential discrepancies, e.g., inoperable components, items, or equipment. If the inspection reveals a condition that affects the safe operation of the UAS, the aircraft is prohibited from operating until the necessary maintenance has been performed and the UAS is found to be in a condition for safe flight.

11. The operator must follow the UAS manufacturer's maintenance, overhaul, replacement, inspection, and life limit requirements for the aircraft and aircraft components.

12. Each UAS operated under this exemption must comply with all manufacturer safety bulletins.

13. Under this grant of exemption, a PIC must hold either an airline transport, commercial, private, recreational, or sport pilot certificate. The PIC must also hold a current FAA airman medical certificate or a valid U.S. driver's license issued by a state, the District of Columbia, Puerto Rico, a territory, a possession, or the Federal government. The PIC must also meet the flight review requirements specified in 14 CFR § 61.56 in an aircraft in which the PIC is rated on his or her pilot certificate.

14. The operator may not permit any PIC to operate unless the PIC demonstrates the ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption, including evasive and emergency maneuvers and maintaining appropriate distances from persons, vessels, vehicles and structures. PIC qualification flight hours and currency must be logged in a manner consistent with 14 CFR § 61.51(b). Flights for the purposes of training the operator's PICs and VOs (training, proficiency, and experience-building) and determining the PIC's ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption are permitted under the terms of this exemption. However, training operations may only be conducted during dedicated training sessions. During training, proficiency, and experience-building flights, all persons not essential for flight operations are considered nonparticipants, and the PIC must operate the UA with appropriate distance from nonparticipants in accordance with 14 CFR § 91.119.

15. UAS operations may not be conducted during night, as defined in 14 CFR § 1.1. All operations must be conducted under visual meteorological conditions (VMC). Flights under special visual flight rules (SVFR) are not authorized.

16. The UA may not operate within 5 nautical miles of an airport reference point (ARP) as denoted in the current FAA Airport/Facility Directory (AFD) or for airports not denoted with an ARP, the center of the airport symbol as denoted on the current FAA-published aeronautical chart, unless a letter of agreement with that airport's management is obtained or otherwise permitted by a COA issued to the exemption holder. The letter of agreement with the airport management must be made available to the Administrator or any law enforcement official upon request.

17. The UA may not be operated less than 500 feet below or less than 2,000 feet horizontally from a cloud or when visibility is less than 3 statute miles from the PIC.

18. If the UAS loses communications or loses its GPS signal, the UA must return to a pre-determined location within the private or controlled-access property.

19. The PIC must abort the flight in the event of unpredicted obstacles or emergencies.

20. The PIC is prohibited from beginning a flight unless (considering wind and forecast weather conditions) there is enough available power for the UA to conduct the intended operation and to operate after that for at least five minutes or with the reserve power recommended by the manufacturer if greater.

21. Air Traffic Organization (ATO) Certificate of Waiver or Authorization (COA). All operations shall be conducted in accordance with an ATO-issued COA. The exemption holder may apply for a new or amended COA if it intends to conduct operations that cannot be conducted under the terms of the attached COA.

22. All aircraft operated in accordance with this exemption must be identified by serial number, registered in accordance with 14 CFR part 47, and have identification (N−Number) markings in accordance with 14 CFR part 45, Subpart C. Markings must be as large as practicable.

23. Documents used by the operator to ensure the safe operation and flight of the UAS and any documents required under 14 CFR §§ 91.9 and 91.203 must be available to the PIC at the Ground Control Station of the UAS any time the aircraft is operating. These documents must be made available to the Administrator or any law enforcement official upon request.

24. The UA must remain clear and give way to all manned aviation operations and activities at all times.

25. The UAS may not be operated by the PIC from any moving device or vehicle.

26. All Flight operations must be conducted at least 500 feet from all nonparticipating persons, vessels, vehicles, and structures unless:
    a. Barriers or structures are present that sufficiently protect nonparticipating persons from the UA and/or debris in the event of an accident. The operator must ensure that nonparticipating persons remain under such protection. If a situation arises where nonparticipating persons leave such protection and are within 500 feet of the UA, flight operations must cease immediately in a manner ensuring the safety of nonparticipating persons; and
    b. The owner/controller of any vessels, vehicles or structures has granted permission for operating closer to those objects and the PIC has made a safety assessment of the risk of operating closer to those objects and determined that it does not present an undue hazard.

    The PIC, VO, operator trainees or essential persons are not considered nonparticipating persons under this exemption.

27. All operations shall be conducted over private or controlled-access property with permission from the property owner/controller or authorized representative. Permission from property owner/controller or authorized representative will be obtained for each flight to be conducted.

28. Any incident, accident, or flight operation that transgresses the lateral or vertical boundaries of the operational area as defined by the applicable COA must be reported to the FAA's UAS Integration Office (AFS−80) within 24 hours. Accidents must be reported to the National Transportation Safety Board (NTSB) per instructions contained on the NTSB Web site: www.ntsb.gov.

If this exemption permits operations for the purpose of closed-set motion picture and television filming and production, the following additional conditions and limitations apply.

29. The operator must have a motion picture and television operations manual (MPTOM) as documented in this grant of exemption.

30. At least 3 days before aerial filming, the operator of the UAS affected by this exemption must submit a written Plan of Activities to the local Flight Standards District Office (FSDO) with jurisdiction over the area of proposed filming. The 3-day notification may be waived with the concurrence of the FSDO. The plan of activities must include at least the following:
    a. Dates and times for all flights;
    b. Name and phone number of the operator for the UAS aerial filming conducted under this grant of exemption;
    c. Name and phone number of the person responsible for the on-scene operation of the UAS;
    d. Make, model, and serial or N−Number of UAS to be used;
    e. Name and certificate number of UAS PICs involved in the aerial filming;
    f. A statement that the operator has obtained permission from property owners and/or local officials to conduct the filming production event; the list of those who gave permission must be made available to the inspector upon request;
    g. Signature of exemption holder or representative; and
    h. A description of the flight activity, including maps or diagrams of any area, city, town, county, and/or state over which filming will be conducted and the altitudes essential to accomplish the operation.

31. Flight operations may be conducted closer than 500 feet from participating persons consenting to be involved and necessary for the filming production, as specified in the exemption holder's MPTOM.

Unless otherwise specified in this grant of exemption, the UAS, the UAS PIC, and the UAS operations must comply with all applicable parts of 14 CFR including, but not limited to, parts 45, 47, 61, and 91.

This exemption terminates on September 30, 2017, unless sooner superseded or rescinded.

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

Enclosures

US Department of Transportation Exemption Request Pursuant to Section 333 of the FAA Reform Act and Part 11 of the Federal Aviation

June 11, 2015

Robert W. Biggs
DBA Phoenix Drone Pros
601 E. Pinto Ct.
Gilbert, AZ 85296

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 21 subpart H; 14 CFR 45.23(b); 14 CFR 61.113(a) and (b); 14 CFR 91.7(a); 14 CFR

91.9(b)(2); 14 CFR 91.103; 14 CFR 91.109; 14 CFR 91.119(c); 14 CFR 91.121; 14 CFR 91.151(a); 14 CFR 91.203

(a) and (b); 14 CFR 91.405 (a); 14 CFR 91.407 (a) (1) 14 CFR 91.409 (a)(1) and (2); 14 CFR 91.417(a) and (b)

Dear Sir or Madam:
Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (the "Reform Act") and 14 CFR Part 11, Robert W. Biggs, DBA "Phoenix Drone Pros," operator of Unmanned Aircraft Systems (UAS), hereby applies for an exemption from the listed Federal Aviation Regulations ("FARs") to allow commercial operation of designated UAS, provided such operations are conducted within and under the conditions outlined herein or as may be established by the FAA as required by Section 333.

Thank you in advance for your consideration.

Robert W. Biggs, DBA
Phoenix Drone Pros

The Unmanned Aircraft (UA) described herein is smaller, lighter and more maneuverable than conventional aircraft running on combustible fuel, operates at lower altitudes with no people on board and will thereby reduce current risk levels, enhance safety and diminish the likelihood of death or serious bodily injury. With a small payload and maximum flight time of only 20 minutes, this offers little or no risk to national security.

Commercial operation of an UAS, as described herein, which are equipped with camera(s) and sensors, would provide professional services in the following areas:

1. Aerial photography and/or video for public and/or private use including real estate, architecture, land surveying, engineering and other related professional activities.

2. Aerial video and/or photography for public and/or private use including television, public events, cinematography and newsgathering.

3. Aerial inspection/photography of residential/commercial structures under contract with the owners or local government authority.

4. Aerial inspection/photography of residential/commercial utility infrastructure including but not limited to electrical power lines, wind turbines and cell towers.

5. Aerial video/photography or providing live video feed to assist with search and rescue operations in cases of an emergency or natural disaster only when the local authorities or government has requested it by contract or donation.

6. Training to persons individually or belonging to both private and/or public organizations to increase awareness and improve safety for current and future UAS operations within the NAS.

As described fully below, the requested exemption would permit the operation of designated UAS as set forth in this document under controlled conditions in the NAS that would be a) limited b) controlled c) predetermined and d) safe. Approval of this exemption would increase public awareness of UAS operations and enhance safety to aid in fulfilling 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."

The name and address of the applicant is:

Robert W. Biggs, DBA Phoenix Drone Pros
Phone: (480) 330-1778
Email: PhoenixDronePros@gmail.com
Address: 601 e. Pinto Ct., Gilbert, Arizona 85296

Regulations from which the exemption is requested:

14 CFR Part 21 subpart H

14 CFR 45.23 (b)

14 CFR 61.113 (a) & (b)

14 CFR 91.7 (a)

14 CFR 91.9 (b) (2)

14 CFR 91.103

14 CFR 91.109

14 CFR 91.119 (c)

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)

Robert W. Biggs, DBA Phoenix Drone Pros, will operate one or more of the following model UAS:

1. DJI T600 INSPIRE 1

The DJI T600 Inspire One manufactured by DJI innovations, is lightweight 4 electric motor/rotor, battery operated quadcopter with a 6.5lb gross weight that takes off and lands vertically. The Inspire one has a length of 17.3 inches, width of 17.7 inches, height of 11.8 inches, and a maximum speed of approximately 42 knots. Its avionics suite contains an on-board flight computer with GPS navigation and an Inertial Measurement Unit (IMU) based attitude stability system. Also included is a barometric altimeter sensor, compass unit ultrasonic altimeter and vision positioning camera. An on-board processor receives signals for flight and payload control from a ground-based transmitter/controller/ground station device. An on-board telemetry system delivers flight data from the flight computer to the downlink radio transmitter to provide the Pilot in Command (PIC) with information such as altitude AGL, horizontal and vertical speed, compass direction of flight, bearing and distance to the controlling station, current waypoint, battery status, current flight mode, GPS health status, datalink status, and GPS position. This data is displayed to the PIC via the Ground Control Station (GCS) application running on one or more computer devices such as a smart phone, tablet or PC.

THE GROUND CONTROL STATION/CONTROLLER:
The DJI UAS products CCAS intends to operate under this exemption use a series of components to comprise the Ground Control Station (GCS). The first and primary component of the ground segment is a handheld pilot controller and an optional handheld payload controller. The pilot controller provides a user interface for flight attitude and altitude commands augmented by the UA's onboard IMU and GPS aided stabilization system. The controller also has options for manipulating the flight mode, payload gimbal, camera functions, and landing gear if equipped. The Datalink segment is comprised of an uplink transmitter command/control link using a frequency range of 2.4GHz to 2.48GHz frequency range with a power output of approximately 125mW. The uplink sends flight and payload commands to the UA's autopilot which then processes the commands along with sensor inputs to manipulate the motor speed controllers and provide the desired response. The downlink transmitter on the UA operates on a 5.728GHz to 5.85GHz and an output power of approximately 25mW. The downlink transmitter provides live video from the on-board camera plus all the UA flight data described above. Downlink data and video is received by the pilot controller and optional payload controller which is then displayed to the PIC and optional PO via an application on a handheld device such as a smart phone, tablet or PC. The GCS application also provides a heads up display of pertinent flight data and UA status reports along with a moving map display. Both the uplink and downlink transmitters have been tested and comply with part 15 of the FCC rules for a class B digital device.

DOCUMENTATION

The following documents are attached and provided to support this petition.

- DJI T600 Inspire 1 - Manual Version 1.0
- Preflight Checklist

Given the small size of the UAS in scope and the controlled environment provided, the proposed operations will adhere to the Reform Act's safety requirements. The approval of this application presents no national security issues. Regarding the level of safety surrounding the proposed operations and the public benefit, reduction in environmental impacts, including but not limited to reduced emissions and noise, the grant of the requested exemption is in the public interest. Accordingly, the applicant graciously requests that the FAA grant the requested exemption.

OPERATIONAL PARAMETERS

AIRCRAFT AND EQUIVALENT LEVEL OF SAFETY

The operation limitations proposed for an equivalent or higher level of safety because operations will further enhance the safety of the persons and/or property using conventional aircraft. These limitations and conditions to which the applicant agrees to adhere to when conducting commercial operations under the FAA issued exemption as set forth in the Flight Operations Manual (FOM) include:

1. The UAS will weigh significantly less than 55 lbs. It weighs less than 4 pounds with battery and camera.

2. The UAS, depending on the model in operation, will have a maximum operating speed of no more than 50mph.

3. Flights will be operated within line of sight of the Pilot in Command (PIC) and/or Visual Observer (VO).

4. Maximum flight time for each operational flight will be depending on the UAS model in operation, but will not exceed 30 minutes. Flights will be terminated at 25% battery power reserve or 30 minutes of flight time whichever occurs first.

5. Flights will be operated at an altitude of no more than 400 feet Above Ground Level (AGL) and not more than 200 feet above an elevated platform from which filming is planned.

6. Minimum crew for each operation will consist of the UAS Pilot and at least one Visual Observer (VO), and may include a third, but separate, Camera Operator (CO).

7. The UAS pilot will be a designated Pilot in Command (PIC). The PIC will have logged a minimum of 20 hours on the designated UAS.

8. A safety briefing will be performed prior to each day's flights consisting of all the days' production activities.

9. All flight activities will be logged.

10. All flights will occur under Visual Flight Rules Meteorological Conditions (VMC) only.

11. The flights will occur in Class G airspace no closer than a 5-mile radius of the geographic center/Airport Reference Point (ARP) of a tower controlled or uncontrolled airport.

12. Flights will not be closer than a 5 mile radius of the geographic center/Airport.

13. The operator will file FAA Form 7711-1, or its equivalent, as modified in light of the requested exemption, with the appropriate local Flight Standards District Office (FSDO) no more than 72 hours but no less than 48 hours from planned operation.

14. The operator will obtain verbal/written consent of all persons involved with the planned operation and ensure that only consenting persons will be allowed within 100 feet of the flight operation, and the radius may be reduced to 30 feet based upon an equivalent level of safety determination, as U.S. Department of Transportation required under the FOM. With the advanced permission of the FSDO, operations at closer range may be approved.

15. The PIC and VO will have been trained in operation of UAS and receive up-to-date information for the particular UAS to be operated.

16. The PIC and VO will be able to communicate by voice and/or radio at all times.

17. Written and/or verbal permission and permits will be obtained from territorial, state, county or city jurisdictions, including law enforcement, fire or other appropriate governmental agencies as appropriate to flight operations.

18. If the UAS loses communications with the remote controller or loses GPS signal, the UAS will have the capability to return to a pre-determined location within a designated location and land autonomously.

19. The UAS will have the capability to abort a flight in case of emergencies with an automated “Return Home and Land” function.

20. The UAS will have the capability to abort a flight in case of unpredicted obstacles, weather, or emergencies such as low battery.

PREFLIGHT CHECKLIST

PRE-FLIGHT CHECKLIST
DJI INSPIRE 1
UAV Number: N-229DP

DEPARTURE
- ☐ Batteries fully charged
- ☐ Tablet
- ☐ Cables
- ☐ Safety Vest
- ☐ Micro SD Card - Clear
- ☐ Laptop
- ☐ GoPro

PRE-FLIGHT
- ☐ Notify owner and residents
- ☐ Check weather, wind < 15mph
- ☐ Put on safety vest, signage
- ☐ Power ON Hot Spot
- ☐ Power ON tablet, connect to Tx
- ☐ Power ON Transmitter
- ☐ Set antennae
- ☐ Power ON Drone
- ☐ Exit Travel Mode
- ☐ Power OFF Drone
- ☐ Insert micro SD card in camera
- ☐ Install correct camera lens filter
- ☐ Install Camera
- ☐ Install propellers, prop locks
- ☐ Power ON Drone
- ☐ Check flight status on tablet
- ☐ Check battery status on tablet
- ☐ Clear map
- ☐ Set camera mode - 4k or 1080, MP4
- ☐ Perform calibration
- ☐ Place drone in clear take off area
- ☐ TAKE-OFF: Hover, test controls

POST-FLIGHT
- ☐ LAND
- ☐ Remove propellers, prop locks
- ☐ Remove Camera
- ☐ Remove micro SD card
- ☐ Enter Travel Mode
- ☐ Power OFF Drone
- ☐ Power OFF Transmitter
- ☐ Reset antennae
- ☐ Power OFF tablet
- ☐ Power OFF HotSpot
- ☐ Remove safety vest, signage

SPECIFIC SECTIONS OF 14 C.F.R. FROM WHICH PETITIONERS SEEK AN EXEMPTION

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

These regulations limit private pilots to non-commercial operations. Because the UAS will not carry a pilot or passengers and be operated within limited areas and altitudes, 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 this small UAS.

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

While the UAS will not have an airworthiness certificate in accordance with 14 C.F.R. part 21, Subpart H, the airworthy condition of the UAS will be the responsibility of the PIC in accordance with 14 C.F.R. § 91.7(b).

C. 14 C.F.R. § 91.119(c) Minimum safe altitudes over congested and other areas

This regulation establishes safe altitudes for operation of civil aircraft over areas other than congested areas. PDP requests relief from this section with respect to persons involved in the operation as well as vehicles and structures. The UAS will not be operated above 400 feet altitude. It will be operated in a defined area where people and buildings will not be exposed to operations without their pre-obtained consent.

D. 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 does not have a barometric altimeter, an exemption is requested. The UAS Flight Controller utilizes GPS equipment aided by a static pressure sensor to determine and maintain altitude. The aircraft altitude above the takeoff point is provided in the video downlink telemetry information and provides sufficient information for the PIC to maintain altitudes at or below the 400 foot (122 meter) limitations. April 6, 2015 Page 6

E. 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 cursing 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."
Given that the UAS aircraft only fly for a maximum of 30 minutes and typically carry about 15 minutes of batter power, an exemption is requested. The UAS operations are always conducted within a few minutes of the takeoff and landing point and within a restricted area. BEAP believes that terminating the flight with 25% remaining battery power provides an equivalent amount of safety that is intended by section 191.151(a).

F. 14 C.F.R. § 91.405(a) Maintenance Required; 14 C.F.R. § 91.407(a)(1) Operation after maintenance, preventative maintenance, rebuilding or alteration; 14 C.F.R. §§ 91.409(a)(1) and (2) Inspections; 14 C.F.R. §§ 91.417(a) and (b) Maintenance Records

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 the sections and Part 43 apply only to aircraft with an airworthiness certificate, these sections will not apply to the Petitioner. Maintenance will be accomplished by the operator pursuant to the Owner's Manuals. An equivalent level of safety will be achieved because these small UAS are very limited in size and will carry a small payload and operate only in restricted areas for limited periods of time. 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 initial flight, perform required maintenance and keep a log of any maintenance performed. Moreover, 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. The FAA issued exemption to these regulations in Exemption No. 11062.

Additional Information.

The applicant, Robert W. Biggs, believes this exemption request and associated safety considerations adequately satisfy criteria provided in Section 333 of the Reform Act of 2012, providing sufficient justification for the granting of commercial operations of the applicant's UAS.

The applicant, Robert W. Biggs, requests your respective approval of this Section 333 exemption petition request.

Thank you for your interest and attention in this matter. Please notify Robert W. Biggs of your actions, and or approvals. Thank You for your interest in this request. Sincerely,

Robert W. Biggs
DBA Phoenix Drone Pros
PhoenixDronePros@gmail.com
601 E. Pinto Ct.
Gilbert, Arizona 85296