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

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

September 21, 2015

Exemption No. 12943
Regulatory Docket No. FAA−2015-2616

Mr. Donald D. Bell
Beverly-Hanks and Associates
9 Cleftridge Court
Asheville, NC 28803

Dear Mr. Bell:

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 posted to the public docket on July 6, 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 and videography for real estate.

See Appendix A for the petition submitted to the FAA describing the proposed operations and the regulations that the petitioner seeks an exemption.

The FAA has determined that good cause exists for not publishing a summary of the petition in the Federal Register because the requested exemption would not set a precedent, and any delay in acting on this petition would be detrimental to the petitioner.

Airworthiness Certification

The UAS proposed by the petitioner is a DJI Phantom 2 Vision+.

The petitioner requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*. In accordance with the statutory criteria provided in Section 333 of Public Law 112−95 in reference to 49 U.S.C. § 44704, and in consideration of the size, weight, speed, and limited operating area associated with the aircraft and its operation, the Secretary of Transportation has determined that this aircraft meets the conditions of Section 333. Therefore, the FAA finds that the requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*, and any associated noise certification and testing requirements of part 36, is not necessary.

The Basis for Our Decision

You have requested to use a UAS for aerial data collection[1]. The FAA has issued grants of exemption in circumstances similar in all material respects to those presented in your petition. In Grants of Exemption Nos. 11062 to Astraeus Aerial (*see* Docket No. FAA−2014−0352), 11109 to Clayco, Inc. (*see* Docket No. FAA−2014−0507), 11112 to VDOS Global, LLC (*see* Docket No. FAA−2014−0382), and 11213 to Aeryon Labs, Inc. (*see* Docket No. FAA−2014−0642), the FAA found that the enhanced safety achieved using an unmanned aircraft (UA) with the specifications described by the petitioner and carrying no passengers or crew, rather than a manned aircraft of significantly greater proportions, carrying crew in addition to flammable fuel, gives the FAA good cause to find that the UAS operation enabled by this exemption is in the public interest.

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

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

Our Decision

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

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

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. Donald D. Bell is hereafter referred to as the operator.

Failure to comply with any of the conditions and limitations of this grant of exemption will be grounds for the immediate suspension or rescission of this exemption.

1. Operations authorized by this grant of exemption are limited to the DJI Phantom 2 Vision+ when weighing less than 55 pounds including payload. Proposed operations of any other aircraft will require a new petition or a petition to amend this exemption.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Sincerely,

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

Enclosures

U S Department of Transportation
Docket Management System
1200 New Jersey Avenue SE
Washington DC
20590

Dear Sir or Madam:

This petition is being submitted on my behalf without counsel or consulting services.

Pursuant to section 333 of the FAA Modernization and reform Act of 2012 (the Reform Act) and 14 C.F.R Part 11, Donald D Bell , Realtor/Broker Beverly-Hanks and Associates, a full service real estate brokerage firm, hereby applies for an exemption from the Federal Aviation Regulations (FARS) listed below to allow operation of my Small Unmanned Aircraft System (sUAS) commercially in airspace regulated by the Federal Aviation Administration (FAA) so long as such operations are conducted with and under the conditions outlined herein or as may be established by the FAA as required by section 333.

THE requested exemption would permit Donald D Bell to pursue its commercial interests in providing services to clients and for marketing purposes using a small advanced sUAS in the following areas:

1. Real Estate
2. Marketing of Real Estate
3. Photography of land for the sellers and buyers visual knowledge
4.

Donald D Bell states that all sUAS flights will occur over private or controlled access property and will do so with the property owners consent and knowledge and that only people who have consented or otherwise have agreed to be in the area where aerial videographer and photography will take place.

REGULATIONS FROM WHICH EXEMPTION IS REQUESTED:

14 C.F.R Part 21
14 C.F.R. 45.23(b)
14 C.F.R. 61.113(a) & (b)
14 C.F.R. 91.7 (a)
14 C.F.R. 91.9 (b) (2)
14 C.F.R. 91.109
14 C.F.R. 91.119
14 C.F.R. 91.121
14 C.F.R. 91.151 (a)
14 C.F.R. 91.203 (a) & (b)
14 C.F.R. 91.205 (b)
14 C.F.R. 91.215
14 C.F.R. 91.401-91.417

Unmanned Aircraft System

sUAS are often seen as superior to helicopters as an aerial video gathering platform due to the small devices cheaper equipment and personal cost. Couple that with the greater degree of mobility for photography in areas where it is virtually impossible to take any quality of photos to share with the client or prospective buyer.

Donald D Bell is petitioning for an exemption to operate a DJI Phantom 2 Vision Plus. This sUAS features are as follows:

3-AXIS CAMERA STABILIZATION
A built-in high precision 3-axis camera stabilization system brings a whole new level of smoothness to your aerials and gives you total creative freedom in the sky.
PRECISION FLIGHT AND STABLE HOVERING
The integrated GPS auto-pilot system offers position holding, altitude lock and stable hovering, giving you constant smooth flight so you can focus on getting the shots you want.
GROUND STATION SUPPORT
Program a flight path using your smart-phone with our 16 waypoint Ground Station system. Tilt the camera up and down, take photos and shoot video all while the Phantom 2 Vision+ flies autonomously.

ONSCREEN REAL-TIME FLIGHT PARAMETERS

Keep track of current flight telemetry and see what your Phantom sees on your mobile device.

HIGH PERFORMANCE CAMERA

The Phantom 2 Vision+ carries an extremely high quality camera and a removable 4GB micro SD card. It shoots full HD video at 1080p/30fps and 720p/60fps, giving you crystal clear video and the option for slow motion shots. Photos are shot at 14 megapixels.

CAMERA TILT CONTROL

Tilt the camera as you fly, creating unique angles and amazing shots.

SUPPORTS ADOBE DNG RAW

DNG RAW photo capture means all original image information is retained for powerful post processing.

ADOBE LENS PROFILE SUPPORT

An Adobe lens profile for barrel distortion removal is available for the DJI Phantom 2 Vision+ camera.

CAMERA PARAMETER SETTINGS

Camera settings including Picture Quality, ISO, Exposure Compensation, White Balance, and capture Format can be adjusted through the VISION app.

ALBUM SYNCHRONIZATION

Beam photos and videos from the Vision+ straight to your phone using Wi-Fi. No computer required.

The flight radar displays the current position of the Phantom 2 Vision+ in relation to the pilot.

Exceeding the control range of the remote control will trigger 'Return-to-Home', meaning the Phantom 2 Vision+ will automatically fly back to its takeoff point and land safely.

The DJI product also offers a failsafe in that if the unit looses contact with the ground station the DJI Phantom Vision 2 Plus will automatically return to home base launce site. This is also a feature in the event that the batter reaches end of charge. (25 minute normal flight time on one charge)

Additional specifications:

Aircraft

Supported Battery
DJI 5200mAh LiPo Battery
Weight (Battery & Propellers Included)
1242g
Hover Accuracy (Ready To Fly)
Vertical: 0.8m; Horizontal: 2.5m
Max Yaw Angular Velocity
200°/s
Max Tiltable Angle
35°
Max Ascent / Descent Speed
Ascent: 6m/s; Descent: 2m/s
Max Flight Speed
15m/s (Not Recommended)
Diagonal Motor-Motor Distance
350mm

Gimbal

Working Current
Static : 750mA; Dynamic : 900mA
Control Accuracy
±0.03°
Controllable Range
Pitch : -90°?0°
Maximum Angular Speed
Pitch : 90°/s

Camera

Operating Environment Temperature
0°C-40°C
Sensor Size
1/2.3"
Effective Pixels
14 Megapixels
Resolution
4384×3288
Hd Recording
1080p30 & 720p
Recording Fov
110° / 85°

Remote Control

Operating Frequency
5.728 GHz□5.85 GHz
Communication Distance (Open Area)
CE Compliance: 400m; FCC Compliance: 800m
Receiver Sensitivity (1%Per)
-93dBm
Transmitter Power
CE Compliance: 25mW; FCC Compliance: 100mW
Working Voltage
120 mA@3.7V
Built-In Lipo Battery Working Current/Capacity
3.7V, 2000mAh

Range Extender

Operating Frequency
2412-2462MHz
Communication Distance (Open Area)
500-700m
Transmitter Power
20dBm
Power Consumption
2W

DJI VISION App

System Requirement Of Mobile Device
iOS version 6.1 or above/ Android system version 4.0 or above
Mobile Device Support

- iOS recommended: iPhone 4s, iPhone 5, iPhone 5s, iPhone 6, iPhone 6 Plus,
- iPod touch 5 (available but not recommended: iPad 3, iPad 4, iPad mini)
- Android recommended: Samsung Galaxy S3, S4, Note 2, Note 3 or phones of similar configuration

These specifications meet with the Model Aircraft Operation Standards as set below:

1. The petitioner will only operate its sUAS in the line-of-sight of a pilot and /or observer and will operate at sites that are" sufficient distance" for populated areas within sterile area described in the FOPM. Such operations will ensure the sUAS will not "create a hazard to users of the national aerospace systems or the public."
2. When flying the sUAS within (3) miles of an airport, airport operators will be notified and the operator will give the right-of-way to avoid flying in the proximity of full-scale aircraft. Maximum flight time for each operation will be 30 minutes.
3. Flights will be terminated when the batter reaches 25%, allowing sufficient reserve flight time to saftly land the sUAS.
4. The sUAS will be programmed so it will not operate at an altitude that exceeds 400 feet AGL and not more than 200 feet above an elevated platform from which videographer is planned.
5. Minimum crew for each operation shall consist of : sUAS pilot, (Pilot in charge or PIC) a visual sUAS observer (Visual Observer or VO) and the camera operator.
6. The sUAS operated by the petitioner weighs less than 25 Lbs including all payload (camera, lens, and stabilized gimbal)
7. The sUAs will operate at speeds of no greater that 15m/s, can hover and can simultaneously move vertically and horizontally.
8. Because of the size of the sUAS and the restricted sterile environment within which it operates, Donald D Bell operations adhere to the Reform Act's safety requirement.
9. The PIC will have logged at least 20hrs before authorization to fly
10. All flights will be placed in an active log.
11. All flights will occur under Visual Flight rules Meteorological Conditions (VMG) only.
12. The PIC and VO will have been trained in operation of sUAS and received up-to-date information for the particular sUAS operated.

In addition to those items stated it is my sincere opinion that by granting this exemption would allow both buyer and sellers to get a clear and concise view of property they own or will own without the sometimes hazardous walking about unknown terrain. In the mountains of western North Carolina we regularly encounter treacherous terrain as well as wildlife that may harm or be harmed by traditional walking of land. For example: black bear sow and cubs in the spring, rattle snake and copper head snake, to mention a few.

When videoing or photographing a tract, as stated in the bullet point, we will have enough coverage from the PIC or the VO to protect the general public and generally speaking we will be flying tracts that are larger than 10 acres. That limits the general public interaction.

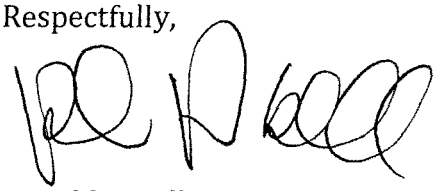
I also believe that by granting my request it will allow a great deal of flexibility in my practice in the land brokerage business to have a smaller footprint on the land as well as a small environmental impact.

The applicant, Donald D Bell, 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 sUAS.

The applicant, Donald D Bell, request your respective approval under this Section 333 exemption petition request.

Thank you for your interest and consideration in this matter. Please notify Donald D Bell of your actions, and or approvals.

Respectfully,



Donald D Bell
dbell@beverly-hanks.com
9 Cleftridge Court
Asheville NC 28803
828-275-8286

Beverly-Hanks and Associates
820 Merriman Ave
Asheville NC
28804