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

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

September 1, 2015

Exemption No. 12694
Regulatory Docket No. FAA−2015−1675

Mr. Justin Mashuta
69 Bel Aire Drive
Mystic, CT 06355

Dear Mr. Mashuta:

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 letters posted to the public docket on May 14 and August 13, 2015, you petitioned the Federal Aviation Administration (FAA) for an exemption. You 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 3 Professional.

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. Justin Mashuta 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, Mr. Justin Mashuta is hereafter referred to as the operator.

[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.

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 3 Professional 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

Request for Section 333 Exemption Photography

05/06/15

by/for

Justin Mashuta

This document constitutes an exemption Request under Section 333 of the FAA Modernization and Reform Act of 2012 for Aviation Unmanned to perform Aerial Photography & Videography by/for Justin Mashuta.

The main use of this UAS would be taking real-estate photos. The UAS systems that I plan to use is a DJI PHANTOM PROFESSIONAL 3 and will be referenced in this document and also in the attached user manual.

1. The safe operation to the NAS and/or persons and/or property will be kept to a minimum by always flying the UAS within visual eye contact, less than 400 ft above ground and never directly above persons or public places. The orientation of flights will be such that the pilot in command (PIC) always has a visual on the rear mounted LED flight Indicator. Additional safety features on the DJI PHANTOM PROFESSIONAL 3 include, return to home, low voltage, enhanced fail-safe. All operations will include a visual observer (VO) aiding the PIC.

2. Preflight inspection would consist of checking battery condition/level in both the transmitter and UAS. The binding/link feature will not let the UAS start if communication is not established. A check for power-lines, antennas and other overhead objects would be performed. Wind conditions would be monitored and be a factor for flying.

3. The radio frequency of the DJI PHANTOM PROFESSIONAL 3 is in 2.400GHz-2.483GHz range. Maximum take-off weight less than 1280g. Max Ascent speed 5 m/s, max descent speed 3 m/s. Maximum flight speed 16 m/s (ATTI mode, no wind).

4. The PIC will be only myself and I have a minimum of 60 plus hours flying time with a similar DJI PHANTOM 2 model and various other lower class UAS models. I am currently in the process of obtaining a Sport Pilot Certificate (SPC) and will only fly the drone commercially when the SPC is obtained. Until the SPC is obtained commercial flight of the DJI PHANTOM PROFESSIONAL 3 will

be flown by a licensed pilot. I am a IT technician, photographer, and video editor and have over 16 years of experience working with equipment relative to phantom. Testing, updating, and programming the DJI PHANTOM PROFESSIONAL 3 firmware would be done on a monthly schedule.

5. I am in good medical health and sound mental health. No arrests or felonies.

6. The intended use of this DJI PHANTOM PROFESSIONAL 3 is to supplement my existing 10 plus year photography and videography business with occasional aerial photographs. Other photographer are currently offering aerial photography and currently have a competitive edge

7. All photo flights for hire would have the date, time, GPS coordinates along with the camera metadata recorded on a hard drive and also backed up to a server. This data would be kept readily available for a period of 1 year after each aerial flight for hire.

8. In use flight time for UAS operation during real estate projects would be no more than 40 minutes. Each battery lasts approximately 23 minutes of uninterrupted flight and I own two batteries.

9. Proximity of local airports: there are two airports in my area of operation. Groton-New London Airport [KGON] and Westerly State Airport [KWST]. Westerly State Airport does not have a control tower. In terms of photography in proximity to these airports it is difficult to inform until I receive a client and know where the project location will reside. In the projects (pre-UAS) I have worked on up until this date have not been within 3 nautical miles of these listed airports. [KGON: http://www.airnav.com/airport/kgon | 155 Tower Ave, Groton, CT 06340 | Proximity of possible assigments would be no less than 1 mile] [KWST: https://www.airnav.com/airport/KWST | 56 Airport Rd, Westerly, RI 02891 | Proximity of possible assiments would be no less than 1 mile] Note: The latest firmware for the DJI PHANTOM 3 PRO. Will not allow the drone to operate within a no fly zone (airports, etc) in compliance to FAA rules and regulations. See page 40 of the attached user manual.

Request for an exemption/relief from Title 14, Code of Federal Regulations Part 21

Along with Sections:

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 . 91.119 (a) (b) & (c)

14 C.F.R. 91.121

14 C.F.R. 91.405 (a)

14 C.F.R. 91.407 (a) (1)

14 C.F.R. 91.409 (a) (2)

14 C.F.R. 91.417 (a) & (b)

The petitioner requests relief from the following regulations:

Part 21 prescribes, in pertinent part, the procedural requirements for issuing and changing design approvals, production approvals, airworthiness certificates, and airworthiness approvals.

Section 45.23 (b) prescribes, in pertinent part, that when marks include only the Roman capital letter "N" and the registration number is displayed on limited, restricted or light-sport category aircraft or experimental or provisionally certificated aircraft, the operator must also display on that aircraft near each entrance to the cabin, cockpit, or pilot station, in letters not less than 2 inches nor more than 6 inches high, the words "limited," "restricted," "light-sport," "experimental," or "provisional," as applicable.

Reason for relief: The body of the DJI Phantom is too small to support this size of markings.

Action: The UAS will be marked with the business name, contact information and word "Provisional" made as large as possible. In addition the serial number is listed with the manufacture and searchable on the internet.

Section 61.113 (a) & (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:

Reason for relief: (A) & (B) The flights are only incidental to the business of photography. This UAS is too small to carry a pilot or passenger and will not carry or deliver any personal property for hire. In addition obtaining a private pilot certificate would be an unnecessary requirement and/or hardship for the purpose of unmanned aerial photography.

Action: The only payload for this exemption is a fixed camera. No other payload/payloads will be allowed.

Section 91.7(a) prescribes, in pertinent part, that no person may operate a civil aircraft unless it is in an airworthy condition.

Reason for Relief: Airworthy condition is not defined in the Phantom Professional 3 manual.

Action: An airworthy preflight inspection would be checking battery condition/level in both the transmitter and UAS. The binding/link feature will not let the Phantom Professional 3 start up if communication is not established. Check for power-lines, antennas, and other overhead objects would be performed. Wind conditions would be monitored and be a factor for flying.

Section 91.9(b)(2) prohibits operation of U.S.-registered civil aircraft unless there is available in the aircraft a current approved Airplane or Rotorcraft Flight Manual, approved manual material, markings, and placards, or any combination thereof.

Reason for relief: The manufacture does not have an approved Airplane or Rotorcraft Flight Manual.

Action: There is a “Checklist before every flight” instruction tag attached to the body of the Phantom Professional 3 that will be followed and on page 44 on the attached user manual.

Section 91.119 (a) (b) & (c) 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.

Reason for relief: This UAS Phantom quad copter at most times would be operated at less than the minimums prescribed in paragraph (b) or (c) of this section. The regulation states that over sparsely populated areas the aircraft cannot be operated closer than 500 feet to any person, vessel, vehicle, or structure. Since the typical photo assignment would be photography of real estate structures and or vacant land it would be necessary to operate closer than 500 feet.

Action: Operations will only be flown over property where permission has been obtained and careful pre-planned has been performed. If/when the low battery LED flashes the UAS will be landed in a safe manner.

Due to the small size and weight of the Phantom Professional 3, the hazard to persons, vehicles and structures is minimal compared to manned aircraft.

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.

Reason for relief: The Phantom Professional 3 is not equipped with an altimeter and can hover within a 10 foot radius in all directions. There is no minimum cruising speed and it will not be launched from an airport.

Action: The above ground level height will be less than 400 feet programmed into the firmware and never flown out of visual eye contact or at night.

Section 91.405 (a) requires, in pertinent part, that an aircraft operator or owner shall have that aircraft inspected.
Reason for relief: There is no certified inspection facility and the Phantom Professional 3 will not power on if it fails the POST (power on self test).
Action: In the event that the Phantom Professional 3 needed inspection for any major or intermittent problems it would be safer to replace the entire UAS.

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 section 43.7 of the same chapter.
Reason for relief: Replacement of props, motors, and batteries should be allowed by the operator. In addition updating firmware when required should be allowed.
Action: Parts will be genuine factory replacement. Only manufacture approved firmware will be uploaded.

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.
Reason for relief: There is no certified inspection facility or process for the Phantom Professional 3. Estimated flight times for photo shoots would be less than 40 minutes possibly 2 times a week which would be approximately 80 minutes of flight time per week.
Action: When any flight or intermittent problem become apparent and is not remedied by a simple repair the entire UAS would be replaced by the same model or as close to the DJI Phantom Professional 3.

Section 91.417 (a) & (b) prescribes, in pertinent part, that a registered owner or operator shall keep the following records for the periods specified in paragraph (b) of this section:
Reason for relief: Due to the popularity, simplicity, size and limitation of the Phantom Professional 3 this could become an overburden for the owner/operator and any regulating agency.
Action: All photo flights for hire would have the date, time, GPS coordinates along with the camera metadata recorded on a hard drive and also backed up to a DVD. This data would be kept readily available for a period of 1 year after each aerial flight for hire.

Public Interest: Granting my request would be in the public interest by giving an opportunity for real estate photographers to offer safer and more competitively priced aerial photography and videography to the general public.

Adversely affect safety: This exemption would not adversely affect the safety of the general public due to the size, weight and keeping the UAS in visual sight. In comparisons to aerial photography from a manned aircraft, low altitude photography from a UAS would be safer and have less of an environmental impact.

Additional view/comments. As a competent photographer the need to offer photography from a UAS is something that will help my business and clients. I am in hopes that this exemption is granted so that I can assist in the ground floor education and lead by good example for the good of the people.

The DJI PHANTOM PROFESSIONAL 3 will not be flown at night and never in the flight path of manned aircraft. The first condition listed to always keep visual eye contact on the 22mm LED flight indicator is probably the most important. My main objective is to offer aerial real estate photography/videography at a competitive rate for the general public in the safest way possible.

Respectfully,

Justin Mashuta
69 Bel Aire Dr.
Mystic, CT 06355
CELL: 860.884.4811

Request for Section 333 Exemption Photography

05/06/15

by/for

Justin Mashuta

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The main use of this UAS would be taking real-estate photos. The UAS systems that I plan to use is a DJI PHANTOM PROFESSIONAL 3 and will be referenced in this document and also in the attached user manual.

1. The safe operation to the NAS and/or persons and/or property will be kept to a minimum by always flying the UAS within visual eye contact, less than 400 ft above ground and never directly above persons or public places. The orientation of flights will be such that the pilot in command (PIC) always has a visual on the rear mounted LED flight Indicator. Additional safety features on the DJI PHANTOM PROFESSIONAL 3 include, return to home, low voltage, enhanced fail-safe. All operations will include a visual observer (VO) aiding the PIC.

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3. The radio frequency of the DJI PHANTOM PROFESSIONAL 3 is in 2.400GHz-2.483GHz range. Maximum take-off weight less than 1280g. Max Ascent speed 5 m/s, max descent speed 3 m/s. Maximum flight speed 16 m/s (ATTI mode, no wind).

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be flown by a licensed pilot. I am a IT technician, photographer, and video editor and have over 16 years of experience working with equipment relative to phantom. Testing, updating, and programming the DJI PHANTOM PROFESSIONAL 3 firmware would be done on a monthly schedule.

5. I am in good medical health and sound mental health. No arrests or felonies.

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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)

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Part 21 prescribes, in pertinent part, the procedural requirements for issuing and changing design approvals, production approvals, airworthiness certificates, and airworthiness approvals.

Section 45.23 (b) prescribes, in pertinent part, that when marks include only the Roman capital letter "N" and the registration number is displayed on limited, restricted or light-sport category aircraft or experimental or provisionally certificated aircraft, the operator must also display on that aircraft near each entrance to the cabin, cockpit, or pilot station, in letters not less than 2 inches nor more than 6 inches high, the words "limited," "restricted," "light-sport," "experimental," or "provisional," as applicable.

Reason for relief: The body of the DJI Phantom is too small to support this size of markings.

Action: The UAS will be marked with the business name, contact information and word "Provisional" made as large as possible. In addition the serial number is listed with the manufacture and searchable on the internet.

Section 61.113 (a) & (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:

Reason for relief: (A) & (B) The flights are only incidental to the business of photography. This UAS is too small to carry a pilot or passenger and will not carry or deliver any personal property for hire. In addition obtaining a private pilot certificate would be an unnecessary requirement and/or hardship for the purpose of unmanned aerial photography.

Action: The only payload for this exemption is a fixed camera. No other payload/payloads will be allowed.

Section 91.7(a) prescribes, in pertinent part, that no person may operate a civil aircraft unless it is in an airworthy condition.

Reason for Relief: Airworthy condition is not defined in the Phantom Professional 3 manual.

Action: An airworthy preflight inspection would be checking battery condition/level in both the transmitter and UAS. The binding/link feature will not let the Phantom Professional 3 start up if communication is not established. Check for power-lines, antennas, and other overhead objects would be performed. Wind conditions would be monitored and be a factor for flying.

Section 91.9(b)(2) prohibits operation of U.S.-registered civil aircraft unless there is available in the aircraft a current approved Airplane or Rotorcraft Flight Manual, approved manual material, markings, and placards, or any combination thereof.

Reason for relief: The manufacture does not have an approved Airplane or Rotorcraft Flight Manual.

Action: There is a “Checklist before every flight” instruction tag attached to the body of the Phantom Professional 3 that will be followed and on page 44 on the attached user manual.

Section 91.119 (a) (b) & (c) 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.

Reason for relief: This UAS Phantom quad copter at most times would be operated at less than the minimums prescribed in paragraph (b) or (c) of this section. The regulation states that over sparsely populated areas the aircraft cannot be operated closer than 500 feet to any person, vessel, vehicle, or structure. Since the typical photo assignment would be photography of real estate structures and or vacant land it would be necessary to operate closer than 500 feet.

Action: Operations will only be flown over property where permission has been obtained and careful pre-planned has been performed. If/when the low battery LED flashes the UAS will be landed in a safe manner.

Due to the small size and weight of the Phantom Professional 3, the hazard to persons, vehicles and structures is minimal compared to manned aircraft.

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.

Reason for relief: The Phantom Professional 3 is not equipped with an altimeter and can hover within a 10 foot radius in all directions. There is no minimum cruising speed and it will not be launched from an airport.

Action: The above ground level height will be less than 400 feet programmed into the firmware and never flown out of visual eye contact or at night.

Section 91.405 (a) requires, in pertinent part, that an aircraft operator or owner shall have that aircraft inspected.
Reason for relief: There is no certified inspection facility and the Phantom Professional 3 will not power on if it fails the POST (power on self test).
Action: In the event that the Phantom Professional 3 needed inspection for any major or intermittent problems it would be safer to replace the entire UAS.

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 section 43.7 of the same chapter.
Reason for relief: Replacement of props, motors, and batteries should be allowed by the operator. In addition updating firmware when required should be allowed.
Action: Parts will be genuine factory replacement. Only manufacture approved firmware will be uploaded.

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.
Reason for relief: There is no certified inspection facility or process for the Phantom Professional 3. Estimated flight times for photo shoots would be less than 40 minutes possibly 2 times a week which would be approximately 80 minutes of flight time per week.
Action: When any flight or intermittent problem become apparent and is not remedied by a simple repair the entire UAS would be replaced by the same model or as close to the DJI Phantom Professional 3.

Section 91.417 (a) & (b) prescribes, in pertinent part, that a registered owner or operator shall keep the following records for the periods specified in paragraph (b) of this section:
Reason for relief: Due to the popularity, simplicity, size and limitation of the Phantom Professional 3 this could become an overburden for the owner/operator and any regulating agency.
Action: All photo flights for hire would have the date, time, GPS coordinates along with the camera metadata recorded on a hard drive and also backed up to a DVD. This data would be kept readily available for a period of 1 year after each aerial flight for hire.

Public Interest: Granting my request would be in the public interest by giving an opportunity for real estate photographers to offer safer and more competitively priced aerial photography and videography to the general public.

Adversely affect safety: This exemption would not adversely affect the safety of the general public due to the size, weight and keeping the UAS in visual sight. In comparisons to aerial photography from a manned aircraft, low altitude photography from a UAS would be safer and have less of an environmental impact.

Additional view/comments. As a competent photographer the need to offer photography from a UAS is something that will help my business and clients. I am in hopes that this exemption is granted so that I can assist in the ground floor education and lead by good example for the good of the people.

The DJI PHANTOM PROFESSIONAL 3 will not be flown at night and never in the flight path of manned aircraft. The first condition listed to always keep visual eye contact on the 22mm LED flight indicator is probably the most important. My main objective is to offer aerial real estate photography/videography at a competitive rate for the general public in the safest way possible.

Respectfully,

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