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I formally petition the Federal Aviation Administration (FAA) for an exemption from part 21, subpart H; and Sections 45.23(b), 61.113(a) and (b), 91.7(a), 91.119 (c) 91.121, 91.151(a), 91.203(a) and (b), 91.405(a), 91.407(a)(1), 91.409(a)(2), and 91.417(a) and (b) of Title 14, Code of Federal Regulations (14 CFR).

Outlined below are the descriptions of the parts, subparts and sections in which I request exemptions and my reason for requesting the exemptions.

Part 21 prescribes the procedural requirements for issuing and changing design approvals, productions approvals, airworthiness certificates, and airworthiness approvals.

Section 45.23(b) prescribes 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.

Section 61.113(a) and (b) prescribes that—

(a) no person who holds a private pilot certificate may act as a pilot in command of an aircraft that is carrying passengers or property for compensation or hire; nor may that person, for compensation or hire, act as pilot in command of an aircraft.

(b) a private pilot may, for compensation or hire, act as pilot in command of an aircraft in connection with any business or employment if:

- (1) The flight is only incidental to that business or employment; and
- (2) The aircraft does not carry passengers or property for compensation or hire.

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

Section 91.119 prescribes that, except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes:

(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.

(1) A helicopter may be operated at less than the minimums prescribed in paragraph (b) or (c) of this section, provided each person operating the helicopter complies with any routes or altitudes specifically prescribed for helicopters by the FAA; and

(2) A powered parachute or weight-shift-control aircraft may be operated at less than the minimums prescribed in paragraph (c) of this section.

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."

Section 91.151(a) prescribes that no person may begin a flight in an airplane under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed, (1) during the day, to fly after that for at least 30 minutes [emphasis added].

Section 91.203(a) prohibits, in pertinent part, any person from operating a civil aircraft unless it has within it (1) an appropriate and current airworthiness certificate; and (2) an effective U.S. registration certificate issued to its owner or, for operation within the United States, the second copy of the Aircraft registration Application as provided for in § 47.31(c).

Section 91.203(b) prescribes, in pertinent part, that no person may operate a civil aircraft unless the airworthiness certificate or a special flight authorization issued under § 91.715 is displayed at the cabin or cockpit entrance so that it is legible to passengers or crew.

Section 91.405(a) requires, in pertinent part, that an aircraft operator or owner shall have that aircraft inspected as prescribed in subpart E of the same part and shall, between required inspections, except as provided in paragraph (c) of the same section, have discrepancies repaired as prescribed in part 43 of the chapter.

Section 91.407(a)(1) prohibits, in pertinent part, any person from operating an aircraft that has undergone maintenance, preventive maintenance, rebuilding, or alteration unless it has been approved for return to service by a person authorized under § 43.7 of the same chapter.

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.

Section 91.417(a) and (b) prescribes, in pertinent part, that—

(a) Each registered owner or operator shall keep the following records for the periods specified in paragraph (b) of this section:

(1) Records of the maintenance, preventive maintenance, and alteration and records of the 100-hour, annual, progressive, and other required or approved inspections, as appropriate, for each aircraft (including the airframe) and each engine, propeller, rotor, and appliance of an aircraft. The records must include—

(i) A description (or reference to data acceptable to the Administrator) of the work performed; and

(ii) The date of completion of the work performed; and

(iii) The signature, and certificate number of the person approving the aircraft for return to service.

(2) Records containing the following information:

(i) The total time in service of the airframe, each engine, each propeller, and each rotor.

(ii) The current status of life-limited parts of each airframe, engine, propeller, rotor, and appliance.

(iii) The time since last overhaul of all items installed on the aircraft which are required to be overhauled on a specified time basis.

(iv) The current inspection status of the aircraft, including the time since the last inspection required by the inspection program under which the aircraft and its appliances are maintained.

(v) The current status of applicable airworthiness directives (AD) and safety directives including, for each, the method of compliance, the AD or safety directive number and revision date. If the AD or safety directive involves recurring action, the time and date when the next action is required.

(vi) Copies of the forms prescribed by § 43.9(d) of this chapter for each major alteration to the airframe and currently installed engines, rotors, propellers, and appliances.

(b) The owner or operator shall retain the following records for the periods prescribed:

(1) The records specified in paragraph (a)(1) of this section shall be retained until the work is repeated or superseded by other work or for 1 year after the work is performed.

(2) The records specified in paragraph (a)(2) of this section shall be retained and transferred with the aircraft at the time the aircraft is sold.

(3) A list of defects furnished to a registered owner or operator under § 43.11 of this chapter shall be retained until the defects are repaired and the aircraft is approved for return to service.

## **Droneview LLC's exemption requests from the above are detailed below:**

Unmanned Aircraft System:

Droneview LLC plans to operate a UAS, the PHANTOM 2 Vision+ v3, which is comprised of an unmanned aircraft (UA or PHANTOM). The PHANTOM 2 Vision + v3 is a quad-copter with a gross weight of about 3 pounds. It is equipped with four rotors that are driven by electric motors which is powered by batteries. The UA has a maximum airspeed of 30 mph.

Droneview LLC plans to use this UAS in aerial cinematography and photography on rural ranch sites, rural RV resorts, enhancing real-estate listings and other such tasks for businesses in the greater San Antonio Texas area which could benefit from an aerial view for their planning of future expansions and/or advertising of their products or business. For most businesses and realtors in the area, standard aerial photography has been very cost prohibitive. The economic impact of being able to assist your business using aerial photography would be substantial.

The use of this UAS in the above named applications greatly reduces risk to the public and property as there is no fuel carried by the Phantom 2 Vision + v3, aircraft noise is greatly reduced as opposed to a standard aircraft or rotorcraft both of which require numerous passes or extended lengths of hover time to accomplish the same task as the Phantom can in only a few minutes. The Phantom only weighs about 3 pounds and is by far a much smaller hazard to persons or property than a standard aircraft or helicopter in the event of a catastrophic in-flight failure.

There is no higher priority for Droneview LLC other than the safety of the public and property.

Droneview LLC makes the following representations of its operation in which to abide by to ensure these exemptions if granted, will provide a level of safety at least equal to existing rules:

The Phantom 2 Vision + v3 will only be operated by, at a minimum, a private pilot with at least a 3<sup>rd</sup> class airman medical certificate. The PIC will have completed at a minimum, 25 hours of documented flight time using the Phantom 2 Vision + v3 with focus being:

- a) Collision avoidance
  - b) Loss of C2 link procedures as outlined in the Operators manual for the Phantom 2 Vision + v3.
  - c) Identification of inflight hazards i.e. aerial wires, birds in the area, changing weather etc.
  - d) Estimating distance from objects, persons, vehicles and vessels.
  - e) Communication with the spotter(s)
  - f) Completed the DJI Phantom 2 vision +v3 pilot training guide maneuvers and skills. (PDF) attached.
  - g) The ability to recognize persons or objects that are **not** part of the intended and permitted part of the project that enter the 500 foot operational area unless such persons or objects are deemed permitted by the owner or controller of the property or area and the PIC makes a safety assessment of the risk of operating closer and it does not pose undue or significant risk.
  - h) The ability to quickly and safely land the Phantom 2 vision + v3 in the event of intrusion into the safe zone.
- 1.) A complete pre-flight systematic check by the PIC of the Phantom's physical condition, i.e. props, prop guards, landing gear, position indicator lights, battery capacity and overall airframe condition. If any of the above are not within the manufacturers minimum standards no flight will take place until such time as the issue(s) is repaired to manufacturers standards. \*Although prop guards are not required on the Phantom 2 vision + v3, Droneview LLC will not operate without them.
  - 2.) Written documentation of each physical inspection and repairs if any, by the PIC (pilot in command) will be kept with the Phantom and will be on-site and available for review.

- 3.) Software in relation to the Phantom's operation will be checked for proper function. The most current DJI vision APP and the current firmware will be installed to assure the most up to date safety features.
- 4.) Prior to every flight, the compass on the Phantom 2 vision + will be calibrated as to ensure precision location.
- 5.) Droneview will ensure the altimeter setting on the Phantom 2 vision + is that of AGL (above ground level) rather than GPS or barometric pressure derived settings.
- 6.) Every safety feature offered through the DJI vision APP will be enabled for every flight, every time.

Please refer to the attached DJI Phantom 2 Vision + V.1.6 PDF file starting at page 39 for a description of the following safety features:

- (6) Enable ground station
- (7) Compass calibration
- (8) Low battery auto go home
- (9) Dynamic home point
- (10) Current RTH (return to home) altitude (AGL)
- (14) Low battery alarm

- 7.) Use of the DJI Ground Station GUI (graphical user interface)

Refer to attached DJI Phantom 2 Vision + V.1.6 PDF for detailed descriptions starting at page 34.

Of particular interest are the following:

- [3] Flight attitude and radar function
- [4] Flight parameters-RTH (return to home) altitude, horizontal distance from home point, altitude-vertical distance from home point, speed-horizontal flying speed.
- [6] Flight Battery Level indication
- [7] There is a built in preflight checklist within the DJI vision APP which is completed prior to each flight.
- [8] Aircraft GPS Status-**Droneview LLC's Phantom 2 vision + v3 will not fly with less than (7) GPS Satellites available.**
- [14] Hide or show flight parameters- **Droneview LLC's Phantom 2 vision + v3 will ALWAYS fly with parameters displayed in order to assist in maintaining safe distances from persons and objects and to adhere to the flight plan.**

- 8.) Droneview LLC will operate with a minimum of (1) one, trained spotter for every flight. "Trained" meaning familiarization with the Phantom 2 Vision Plus v3, its abilities according to the operators' manual as well as the abilities of PIC. Spotters will participate in documented training developed in-house prior to being allowed on the flight line. Training will consist of, at a minimum the following:

- a) The ability to roughly identify minimum distance from objects
  - b) The ability to quickly recognize unusual flight maneuvers/attitudes of the Phantom 2 vision + v3
  - c) The ability to communicate with the PIC the visual limitations and to never let the Phantom 2 vision + v3 out of the visual capabilities of the PIC and the spotter(s).
  - d) The ability to recognize persons or objects that are **not** part of the intended and permitted part of the project that enter the 500 foot operational area unless such persons and objects are deemed permitted by the owner or controller of the property or area and the PIC makes a safety assessment of the risk of operating at a closer range and it does not pose undue or significant risk to those persons or objects. “
  - e) The ability to accurately describe to the PIC, the orientation of the Phantom in relation to the pre-set home point as well as the direction of travel.
  - f) The training will take place under strict, safe conditions away from persons or large obstacles. I.e. large open fields.
- 9.) Prior to each flight, the PIC and the Spotter(s) will perform a pre-flight briefing detailing the estimated flight distance, estimated flight level AGL and the goal of the particular flight. Each preflight briefing will be documented by the PIC to include flight details, pilot name, spotter(s) name, weather details, time and date.

Written and/or verbal consent will be obtained from the person/business requesting the flight.

A post-flight briefing will also be conducted and documented with the PIC and the

The Documented Pre-flight, the raw pictures and/or the raw video footage as well as the post-flight brief and written consent will be kept by Droneview LLC for a period of at least (2) years.

Droneview LLC believes that given the size, weight, speed, and limited operating area associated with the Phantom 2 Vision + V3, requests an exemption from 14 CFR part 21, Subpart H (Airworthiness Certificates) and § 91.203 (a) and (b) (Certifications required), subject to certain conditions and limitations, is warranted and meets the requirements for an equivalent level of safety under 14 CFR part 11 and Section 333 of P.L. 112-95 (Section 333).

Droneview LLC requests exemption from § 45.23 *Marking of the aircraft*. The Phantom 2 vision plus v3 does not have a cabin, does not have a cockpit or a pilot station. Minimum sized lettering and wording are difficult to place on the Phantom 2 vision + v3. Droneview will however affix a sticker on the unit which will contain contact information for the company in case of aircraft loss.

Droneview LLC requests an exemption from §§ 91.405(a), 91.407(a) (1), 91.409(a) (2) and 91.417(a) and (b) *Maintenance inspections* and feel it should be granted since they only

apply to aircraft with an airworthiness certificate. Droneview LLC has developed maintenance inspections and documentation methods for the Phantom 2 vision + v3 from personal experience as well as the manufacturer's user manual. (See attached pdf Phantom 2 vision plus user manual v1.6.)

#### UAS Pilot in Command (PIC)

Under § 61.113 (a) and (b) private pilots are limited to non-commercial operations. Droneview LLC will only use, at a minimum a pilot with a private pilot license, current 3<sup>rd</sup> class airmen medical certificate.

Under current regulations, civil operations for compensation or hire require a PIC holding a commercial pilot certificate per 14 CFR part 61. Based on the private pilot limitations in accordance with pertinent parts of 14 CFR 61.113(a) and (b), a pilot holding a private pilot certificate cannot act as a PIC of an aircraft for compensation or hire unless the flight is only incidental to a business or employment. "However, in Grant of Exemption No. 11062 to Astraesus Aerial (Astraesus), the FAA determined that a PIC with a private pilot certificate operating the Astraesus UAS would not adversely affect operations in the NAS or present a hazard to persons or property on the ground." Droneview requests that an exemption allowing a private pilot employed by Droneview be allowed to be the PIC of the Phantom 2 vision plus v.3 for compensation similar to the grant of exemption No.11602 to Astraesus Aerial.

Droneview LLC requests relief from § 91.119(c) because the aircraft will be operated at altitudes below 300 feet AGL. Section 91.119(c) states that no person may operate an aircraft below the following altitudes: *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. Droneview LLC will operate pursuant to the following restrictions related to § 91.119:

- Operate in reasonably safe environments that are closely monitored by ground assistants and signage placed in locations that would be considered reasonable locations for pedestrians, vehicles or vessels to enter the area.
- Within 5 miles of airports and congested areas. Congested areas will be defined by VFR charts as well as by contacting the local FSDO (flight standards district office)
- Conduct all operations under Droneview LLC's guidelines contained in the operating documents and will analyze flight data and other sources of information such as the manufacturer's website to constantly update and enhance safety.
- Contact respective airports if operations will be within 5 miles to advise them of estimated flight time, flight duration, elevation of flight and other pertinent information deemed important by the airport.
- Always obtain all necessary permissions prior to operation. Permissions include but are not limited to a (COA) and a request for a (NOTAM) as well as permission from the property owner or person in control of the property and when practical will be in writing and kept on file for 2 years for review. If it's not possible to obtain written permission, the PIC will document in writing how permission was obtained i.e. phone call with date, time and party information.

Droneview LLC requests relief from 14 CFR 91.121 *Altimeter Settings*. Droneview's Phantom 2 vision + has a barometric altimeter and GPS derived altitude capabilities. The FAA requires any altitude

reported to ATC to be in feet AGL. Droneview will set the altimeter on the Phantom 2 vision + to zero feet AGL rather than local barometric pressure or field altitude before flight.

Droneview LLC requests relief from § 91.151 (a) *Fuel requirements for flight in VFR conditions* based on the following:

No fuel is used in the Phantom 2 vision + but it is battery operated. Batteries have, in our experience have about 15 minutes of quality flying time. In the interest of safety, Droneview LLC generally lands with 35% of battery remaining which gives about 9 minutes of flying time per battery. The Phantom 2 vision + v3 has an audible battery state warning system. Droneview LLC will always follow the manufactures minimum battery warning which is 30% remaining. There is also an on-screen warning of not enough battery to return to home message if flight distance has exceeded battery capacity. In this event, an emergency landing would be made as soon as safe and practical. The Phantom 2 vision + also has an automated function which results in immediate landing when a low battery is detected. Researching previous relief requests, relief has been granted for manned aircraft to operate at less than prescribed minimums, including Exemption Nos. 2689, 5745, and 10650. In addition, similar UAS-specific relief has been granted in exemption Nos. 8811, 10808, and 10673 for daytime, VFR conditions. Droneview LLC will adhere to all VFR minimums as well as VMC conditions when planning and/or executing any flights. There is little purpose for aerial video or pictures if the weather is less than desirable. Following VFR minimum standards will at least ensure a safe flight. Wind and forecast weather will be a key in deciding suitable conditions. Local weather can be attained from the nearest airport by using AWOS. No flight will take place in any condition that would potentially be outside of the Phantom 2 vision + capabilities in wind. Droneview will always fly within its 30% minimum remaining battery life at its first intended landing point.

Droneview LLC will obtain an Air Traffic Organization (ATO) issued Certificate of Waiver or Authorization (COA) prior to conducting any operations. Droneview will also request a Notice to Airman (NOTAM) not more than 72 hours in advance, but not less than 48 hours prior to the operation.

If there are any areas that have not been addressed, please contact me for supplemental information.

Sincerely,

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