

1/14/15

United States Department of Transportation
Docket Operations
1200 New Jersey Ave. SE
West Building Ground Floor Room W12-140
Washington DC 20590

Re: Exemption Request Pursuant To Section 333 of the FAA Reform Act of 2012

Dear Sir or Madam:

I am writing pursuant to the FAA Modernization and Reform Act of 2012 (the "Reform Act")

And the procedures contained in 14 C.F.R. 11, to request that David Ho, owners and operators of a DJI Phantom 2 Vision Plus V3.0 model no. PV331 (Serial # PH645472832) UNMANNED AIRCRAFT SYSTEMS (UAS), and a transportable ground station. The PHANTOM is referred to as a quad-copter with the maximum gross weight of about 3 pounds. It is equipped with four rotors that are driven by electric motors powered by batteries. The Phantom has a maximum airspeed of 30 knots and to be exempted from the Federal Aviation Regulations (FAR's) listed below.

The exemption is needed in order to operate a small lightweight unmanned aircraft system (UNMANNED AIRCRAFT SYSTEMS (UAS) commercially in airspace regulated by the Federal Aviation Administration (FAA). These operations will be conducted within and under the conditions outlined herein or as may be established By the FAA as required by Section 333. §11.81.

The following aspects of Section 333 of the FAA Modernization and Reform Act of 2012 should be considered.

The following information is submitted to meet the requirement of the above act.

1. Name and address:

- a. David Ho
- b. 8312 Callista, Frankfort IL 60423
- c. Office: 779-324-0788
- d. Email: David@aerialphoto.pics

2. The Specific Sections of Title 14 of the Code of Federal Regulations from Which David Ho Requests Exemption are:

- 14 CFR 21;
- 14 C.F.R. 45.23(b);
- 14 CFR 61.113 (a) & (b);
- 14 C.F.R. 91, et seq.;
- 14 CFR 407 (a) (1);
- 14 CFR 409 (a) (2); and,
- 14 FR 417 (a) & (b).

3. The extent of relief you seek, and the reason you seek relief:

David Ho, respectfully submits this request in harmony with the Reform Act, 112 P.L. 95 §§ 331-334, pursuing reprieve from any currently applicable FARs operating to preclude me, David Ho intended use is saleable aerial cinematography in video or still format within the Greater Chicago region to provide information for intended parties that enhances real estate listings or any legal business that provide supplementary tool adding a greater degree of flexibility which supplements the present abilities obtainable by manned aircraft inside the national airspace system.

The Reform Act in Section 332 provides for such incorporation of civil unmanned aircraft systems into our national airspace system as it is in the public's interest to do so. David Ho's, DJI Phantom 2 Vision Plus V3.0 model no. PV331 (Serial # PH645472832) quad-copter small UNMANNED AIRCRAFT SYSTEMS (UAS), meets the definition of "small unmanned aircraft" as defined in Section 331 and therefore the integration of my ultra-light weight UNMANNED AIRCRAFT SYSTEMS (UAS) is expressly considered by the Reform Act. David Ho would like to operate my DJI Phantom 2 Vision Plus V3.0 model no. PV331 (Serial # PH645472832) ultra-light weight UNMANNED AIRCRAFT SYSTEMS (UAS), prior to the time period, by which the Reform Act requires the FAA to broadcast rules governing such craft. The Reform Act guides the Secretary in defining the types of UNMANNED AIRCRAFT SYSTEMS (UAS)'s that may operate safely in

our national airspace system. Considerations include: The weight, size, speed and overall capabilities of the UNMANNED AIRCRAFT SYSTEMS (UAS)'s; whether the UNMANNED AIRCRAFT SYSTEMS (UAS) will be operated near airports or heavily populated areas; and, Whether the UNMANNED AIRCRAFT SYSTEMS (UAS) will be **operated by line of sight**. My DJI Phantom 2 Vision Plus V3.0 model no. PV331 (Serial # PH645472832) UNMANNED AIRCRAFT SYSTEMS (UAS) operates four (4) counter-rotating propellers for stability, control and steadiness. My UNMANNED AIRCRAFT SYSTEMS (UAS) is equipped with GPS and auto return safety technology. Weighing less than five (5) pounds far below the maximum 55 pound limit); including camera with gimbal.

Operation of the UNMANNED AIRCRAFT SYSTEMS (UAS) preceding flight and post flight must be operated in a check list format and that safety is paramount with each flight. My DJI Phantom 2 Vision Plus V3.0 model no. PV331 (Serial # PH645472832) is designed to hover in place via GPS and operate in less than a 22 knots (25 mph) wind. David Ho operates this UNMANNED AIRCRAFT SYSTEMS (UAS) with in mind that safety, stability and fear of detrimental financial loss, I will not fly in winds exceeding 13 knots (15 mph). Built in safety systems include a GPS mode that allows my UNMANNED AIRCRAFT SYSTEMS (UAS) to hover in place when radio controls are released. This is the safest, most dependable and unwavering mode to prevent accident and hazard. When pilot communication is lost UNMANNED AIRCRAFT SYSTEMS (UAS) is designed to slowly descend to point of origination, the UNMANNED AIRCRAFT SYSTEMS (UAS) has a function that instantaneously video records once communication is lost. I do not and will not operate my UNMANNED AIRCRAFT SYSTEMS (UAS) near airports, Hospitals or helipads, and do not operate near areas where general public is one hundred (100) yards depending on location, conditions and weather. David Ho is constantly vigilant on alert for any manned aircraft and prepared either avoid and shall yield the right-of-way to all aircraft and operate in a manner to avoid any type of collision hazard with respect to persons on the ground or property and to land/terminate instantly to the nearby and safest ground point should a manned aircraft approach my location or suspect manned aircraft may approach near my location, My DJI Phantom 2 Vision Plus V3.0 model no. PV331 (Serial # PH645472832) UNMANNED AIRCRAFT SYSTEMS (UAS) is capable of vertical and horizontal operations, and are flown only within **my line of sight of me. As the Remote controlled pilot**. The UNMANNED AIRCRAFT SYSTEMS (UAS) is operation under the power of a battery power rather than combustible fuels, flights generally last between ten (10) to 15 minutes, with an altitude under three hundred fifty (300) feet.

4. How Request Will Benefit the Public As A Whole:

In-flight videography for topographical awareness and real estate marketing or any legal business utilizing aerial photographs or video has been around for an extensive period of time done with manned fixed wing aircraft and helicopters. For the small budget businessperson the expense of such aerial Videography is enormously fee and cost prohibitive. Depriving, many others of the smaller businessperson from exploiting a valuable advertising tool. Manned aircraft exposes a superior hazard to the public through conceivable cataclysmic crash causing loss to property and or life. UNMANNED AIRCRAFT SYSTEMS (UAS) pose no such hazards due its size, speed and nonexistence of flammable fuel significantly reduces any potential threat to the public.

5. Reasons Why Exemption Will Not Adversely Affect Safety or How the Exemption Will Provide a Level of Safety At Least Equal To Existing Rule:

David Ho's safety protocols will enhance safety; exemption will not adversely affect safety. In addition I, submit the following representations of enhancements to current aerial videography and photography for real estate or any legal business requiring photographic images:

DJI Phantom 2 Vision +

Serial Number: PH645472832 weighs less than 5 pounds complete with DJI Factory installed camera:

- The Phantom 2 Vision +, firmware programmed for maximum 300 feet Above ground level and 1000 feet radius distance are limited distance for maintaining Visual sight line of operation. Most intended operation will only requires range of 25-125 above ground level and less than 200 feet lateral distance from Pilot in command.

Current firmware upgrades for:

- Main Controller
- GPS
- Receiver
- Battery
- Zen IMU

Current Physical upgrades:

- DJI factory Prop Guards

1. I for one always obtain all essential permissions prior to operation and postings a warning sign reading "Attention Use of Quad Rotor Drone for Aerial Photography in progress- Remain Back 125 feet";
2. I for one will conduct operations under strict personal and flight safety protocols and constantly strive to update and enhance safety protocols;
3. I for one conduct extensive pre-flight inspections and protocol, during which safety carries principal importance;
4. No payloads other than gimbaled camera;
5. I for one only operate in reasonably safe environment that are strictly controlled, are away from power lines, elevated lights, airports and actively populated areas;
6. I for one, pilot my UNMANNED AIRCRAFT SYSTEMS (UAS) through remote control only by line of sight;
7. I for one, only operate my UNMANNED AIRCRAFT SYSTEMS (UAS) with a height limitation set for a maximum of 300 feet ABOVE GROUND LEVEL. (Operating -25% inside the 400 foot permissible ceiling set by the FAA Modernization and Reform Act of 2012);
8. I for one, UNMANNED AIRCRAFT SYSTEMS (UAS) only operate for 3-7 minutes per flight, well with in tolerances issued by the manufacture;
9. I for one will land my UNMANNED AIRCRAFT SYSTEMS (UAS) prior to manufacturer recommended minimum level of battery power;
10. I for one will employ the GPS a flight safety feature whereby it hovers and then slowly lands if communication with the remote control pilot is lost and continues to record flight as per manufacture settings;
11. I for one will maintain records specific to retain until the work is repeated or superseded by other work for one year after the work is performed;
12. I for one will maintain records shall retain and transferred with the aircraft at the time the aircraft is sold ;
13. I for one will list or denote in records a list of defects furnished to a registered owner or operator shall be retained until defects are repaired and the aircraft is approved for return service;

David Ho's operating procedures exceeding existing rules. First, the possible loss of life is lessened because UNMANNED AIRCRAFT SYSTEMS (UAS)'s carry no pilots or passengers on board and I only operate my UNMANNED AIRCRAFT SYSTEMS (UAS) safely in the direct detailed areas of operation versus fixed wing or helicopter requires travel to the region of need. Second, there is no fuel on board an UNMANNED AIRCRAFT SYSTEMS (UAS) and thus the probability for fire or explosions is significantly diminished. Lastley, the small size and extremely maneuverability of my UNMANNED AIRCRAFT SYSTEMS (UAS) allow me to remotely pilot away from hazards quickly and safely.

6. A Summary The FAA May Publish in the Federal Register:

14 C.F.R. 21 and 14 C.F.R. 91: Airworthiness Certificates, Manuals and the Like.

14 C.F.R. 21, Subpart H, entitled Airworthiness Certificates, sets forth requirements for procurement of necessary airworthiness certificates in relation to FAR § 91.203(a)(1). The size, weight and enclosed operational area of my, David Ho's, UNMANNED AIRCRAFT SYSTEMS (UAS) permits exemption from Part 21 because my UNMANNED AIRCRAFT SYSTEMS (UAS) meets (and exceeds) an equivalent level of safety pursuant to Section 333 of the Reform Act. The FAA is authorized to exempt aircraft from the airworthiness certificate requirement under both the Act (49 U.S.C. § 44701 (f)) and Section 333 of the Reform Act. Both pieces of legislation permit the FAA to exempt UNMANNED AIRCRAFT SYSTEMS (UAS)'s from the airworthiness certificate requirement in consideration of the weight, size, speed, maneuverability and proximity to areas such as airports and dense populations. My, David Ho's, current and projected UNMANNED AIRCRAFT SYSTEMS (UAS)'s meet or exceed each of the details.

14 C.F.R. 91.7(a) prohibits the operation of an aircraft without an airworthiness certificate. As no such certificate will be applicable in the form contemplated by the FARs, this Regulation is inapplicable.

14 C.F.R. § 91.9 (b) (2) requires an aircraft flight manual in the aircraft. As there are no on board pilots or passengers, and given the size of the UNMANNED AIRCRAFT SYSTEMS (UAS)'s, this Regulation is inapplicable. An equivalent level of safety will be achieved by maintaining safety/flight manual delineating areas of where safety can be defined. (See Enclosed) The FAA has previously issued exemptions to this regulation in Exemption Nos. 8607, 8737, 8738, 9299, 9299A, 9565, 9565B, 10167, 10167A, 10602, 10700 and 32827.

14 C.F.R. § 91.121 regarding altimeter settings is inapplicable insofar as my UNMANNED AIRCRAFT SYSTEMS (UAS) utilizes electronic global positioning systems with a barometric sensor.

14 C.F.R. § 91.203 (a) and (b) provides for the carrying of civil aircraft certifications and registrations. They are inapplicable for the same reasons described above. The equivalent level of safety will be achieved by maintaining any such required certifications and registrations by me, David Ho.

14 C.F.R. § 45.23: Marking of the Aircraft.

Applicable Codes of Federal Regulation require aircraft to be marked according to certain specifications. My UNMANNED AIRCRAFT SYSTEMS (UAS) are, by definition, unmanned. They therefore do not have a cabin, cockpit or pilot station on which to mark certain words or phrases. Further, two-inch lettering is difficult to place on such small aircraft with dimensions smaller than minimal lettering requirement. Regardless, I will mark its UNMANNED AIRCRAFT SYSTEMS (UAS)'s in the largest possible lettering by placing the word "EXPERIMENTAL" on its fuselage as required by 14 C.F.R.

§45.29 (f) so that I the pilot, or anyone assisting me as a spotter with the UAV will see the markings. The FAA has previously issued exemptions to this regulation through Exemptions Nos. 8738, 10167, 10167A and 10700.

14 C.F.R. § 61.113: Private Pilot Privileges and Limitations: PIC.

Pursuant to 14 C.F.R. §§ 61.113 (a) & (b), private pilots are limited to non-commercial operations. I, David Ho, can achieve an equivalent level of safety as achieved by current Regulations because my UNMANNED AIRCRAFT SYSTEMS (UAS) does not carry any pilots or passengers. Further, while helpful, a pilot license will not ensure remote control piloting skills. The risks attended to the operation of my UNMANNED AIRCRAFT SYSTEMS (UAS) is far less than the risk levels inherent in the commercial activities outlined

in 14 C.F.R. § 61, et seq. Thus, allowing me, David Ho, to operate my UNMANNED AIRCRAFT SYSTEMS (UAS) meet and exceed current safety levels in relation to 14 C.F.R. §61.113 (a) & (b).

14 C.F.R. 91.119: Minimum Safe Altitudes.

14 C.F.R. § 91.119 prescribes safe altitudes for the operation of civil aircraft. It allows helicopters to be operated at lower altitudes in certain conditions. My UNMANNED AIRCRAFT SYSTEMS (UAS) will never operate at an altitude greater than 300 ABOVE GROUND LEVEL; safely below the standard of 400 ABOVE GROUND LEVEL. I, David Ho, will however operate my UNMANNED AIRCRAFT SYSTEMS (UAS) in safe areas away from public and traffic, providing a level of safety at least equivalent to or below those in relation to minimum safe altitudes. Given the size, weight, maneuverability and speed of my UNMANNED AIRCRAFT SYSTEMS (UAS), an equivalent or higher level of safety will be achieved.

14 C.F.R. 91.405 (a); 407 (a) (1); 409 (a) (2); 417(a) & (b): Maintenance Inspections.

The above-cited Regulations require, amongst other things, aircraft owners and operators to “have [the] 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. . . .”

These Regulations only apply to aircraft with an airworthiness certificate. They will not, therefore, apply to my, David Ho's, UNMANNED AIRCRAFT SYSTEMS (UAS). However, as a safeguard I inspect my UNMANNED AIRCRAFT SYSTEMS (UAS) beforehand and afterward each flight.

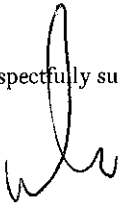
Summary the FAA May Publish in the Federal Register: A. 14 C.F.R. 21 and 14

C.F.R. 91: Airworthiness Certificates, Manuals and the Like. 14 C.F.R. 21, Subpart H, entitled Airworthiness Certificates, sets forth requirements for procurement of necessary airworthiness certificates in relation to FAR § 91.203(a)(1). The size, weight and enclosed operational area of my UNMANNED AIRCRAFT SYSTEMS (UAS) permit exemption from Part 21 because my, David Ho's, UNMANNED AIRCRAFT SYSTEMS (UAS) meets an equivalent level of safety pursuant to Section 333 of the Reform Act. The FAA is authorized to exempt aircraft from the airworthiness certificate requirement under both the Act (49 U.S.C. § 44701 (f)) and Section 333 of the Reform Act. Both pieces of legislation permit the FAA to exempt UNMANNED AIRCRAFT SYSTEMS (UAS)'s from the airworthiness certificate requirement in consideration of the weight, size, speed, maneuverability and proximity to areas such as airports and dense populations. My UNMANNED AIRCRAFT SYSTEMS (UAS) meets or exceeds each of the elements. 14 C.F.R. 91.7(a) prohibits the operation of an aircraft without an airworthiness certificate. As no such certificate will be applicable in the form contemplated by the FARs, this Regulation is inapplicable. 14

C.F.R. § 91.9 (b) (2) requires an aircraft flight manual in the aircraft. As there are no pilots or passengers, and given the size of the UNMANNED AIRCRAFT SYSTEMS (UAS)'s, this Regulation is inapplicable. An equivalent level of safety will be achieved by maintaining a manual. The FAA has previously issued exemptions to this regulation in Exemption Nos. 8607, 8737, 8738, 9299, 9299A, 9565, 9565B, 10167, maintenance program that involves regular software updates and curative measures for any damaged hardware. Therefore, an equivalent level of safety will be achieved.

7. There is no request to exercise the privileges of your exemption outside the United States.

Respectfully submitted,



David Ho