Re: Exemption Request Section 333 of the FAA Reform Act of the Federal Aviation Regulations from 14 C.F.R. Part 21; 14 C.F.R. 61.113(a)&(b); 91.7(a); 91.9(b) (2); 91.109; 119.121; 91.151(a); 91.203(a)&(b); 91.405(a); 91.407(a) (1); 91.409(a) (2); 91.417(a)&(b)

Dear Sir or Madam,

I, Shanon Kern, am writing pursuant to the FAA Modernization and Reform Act of 2012 and the procedures contained within 14 C.F.R. 11, to request that I, Shanon Kern, an owner and operator of small unmanned aircraft, be exempted from the Federal Aviation Regulations ("FARs") listed below so that I, Shanon Kern, may operate my small ultra light weight unmanned aircraft system ("UAS") commercially in airspace regulated by the Federal Aviation Administration ("FAA").

As described herein I, Shanon Kern, am a licensed Private Pilot ASEL, and an experienced RC multi-copter enthusiast, in the state of California. I intend to use my DJI Phantom and DJI F550 equipped with a GoPro camera for aerial photography/videography/cinematography. My small lightweight UAS is a cost effective and potentially safer option than utilizing the industry standard single engine plane or rotorcraft for aerial photography. As a private pilot ASEL, I am very aware of the dangers that lay inside our national air space. If given the exemptions required to commercially fly a UAS, I will continue to operate my UAS in a safe and effective manner. I am currently in the process of building the required cross-country hours in order to become a commercial and instrument rated pilot. I have developed a series of pre-flight, in-flight and post-flight checklists that will ensure safe operation. I have developed safety protocols and controls to avoid and prevent public hazard, as well as manned aircraft hazards/catastrophe.

Granting my, Shanon Kern's, request comports with the Secretary of Transportation's (FAA Administrator's) responsibilities and authority to not only integrate UAS's into the national airspace system, but to "...establish requirements for the safe operation of such aircraft systems [UAS's] in the national airspace system" under Section 333(c) of the Reform Act specific to the use of UAS's for commercial photography. Further I, Shanon Kern, will conduct my operations in compliance with the protocols described herein or as otherwise established by the FAA.

For the reasons stated below I, Shanon Kern, respectfully request the grant of an exemption allowing me to operate ultra light weight, remote controlled UAS's for commercial aerial photography/videography/cinematography.

I. Contact Information:

Shanon Kern
3589 Hume st, West Sacramento, CA 95691
shanon.kern@icloud.com

II. The Specific Sections of Title 14 of the Code of Federal Regulations From Which Shanon Kern Requests Exemption are:

14 CFR 21; 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 CFR 417 (a) & (b).

III. The Extent of relief Shanon Kern seeks and the Reason He Seeks Such Relief:

I, Shanon Kern, submit this application in accordance with the Reform Act, 112 P.L. 95 §§ 331-334, seeking relief from any currently applicable FARs operating to prevent me, Shanon Kern, contemplated commercial cinematic, academic and other flight operations within the national airspace system. The Reform Act in Section 332 provides for such integration of civil unmanned aircraft systems into our national airspace system as it is in the public's interest to do so. My, Shanon Kern's, ultra light weight UAS meets the definition of "small unmanned aircraft" as defined in Section 331 and therefore the integration of my ultra light weight UAS is expressly contemplated by the Reform Act. I would like to operate my ultra light weight UAS prior to the time period by which the Reform Act requires the FAA to promulgate rules governing such craft. The Reform Act guides the Secretary in determining the types of UAS's that may operate safely in our national airspace system. Considerations include: The weight, size, speed and overall capabilities of the UAS's; Whether the UAS will be operated near airports or heavily populated areas; and, Whether the UAS will be operated by line of sight. 112 P.L. 95 § 333 (a). Each of these items reflect in favor of an exemption for me, Shanon Kern. My UAS utilizes four (4) counter-rotating propellers for balance, control and stability. My 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.

I, Shanon Kern, consider safety as foremost with each flight. My UAS is designed to hover in place via GPS and operate in less than a 20 knot wind. For safety, stability and fear of financial loss I will not fly in winds exceeding 10 KPH. Built in safety systems include a GPS mode that allows my UAS to hover in place when radio controls are released. . When pilot communication is lost UAS is designed slowly descend to point of take off. I do not operate my UAS near airports, Hospitals nor Police heliports, and do not operate near areas where general public is within fifty to one hundred (50-100) yards depending on location, conditions and weather. . When pilot communication is lost my UAS is designed

slowly descend to the point of take off. I do not operate my UAS near airports, hospitals nor police heliports, and do not operate near areas where general public is within fifty to one hundred (50-100) yards depending on location, conditions and weather. Utilizing battery power rather than combustible fuels, flights generally last between three (3) to seven (7) minutes, with an altitude under one hundred fifty (150) feet AGL. I, Shanon Kern, will operate my UAS with a fully charged battery and will ensure there is enough power to return to the original starting destination with 2 minutes reserve on a battery as tested lasting 15 minutes.

My skills as a private pilot have made me hyper vigilant when it comes to the safe and effective use of my UAS. I use the same pre-flight techniques on my UAS as I use in a airplane. By using FAA approved weather I am able to better understand the operating environment, while checking NOTAMS, METARS and other pertinent information. I have 10+ years experience operating RC helicopters and UAS's. I believe that my knowledge as a private pilot will assist in properly understanding the potential hazards to persons and property as I operate in the national air space. The UAS I am currently using can be purchased and built off the shelf. By granting me an exemption, I am operating my UAS with significantly more restrictions then the hobby UAS operator.

IV. How Shanon Kern's Request Will Benefit the Public As A Whole:

Aerial videography is traditionally achieved using small single engine aircraft equipped with large cameras. In order to achieve a clear picture, the pilot is tasked with performing ground reference maneuvers at around 1000ft AGL. By utilizing a UAS for this function, pilots reduce the risk of damages to persons or property in the event of an in flight emergency. Congress has already proclaimed that it is in the public's interest to integrate commercially flown UAS's into the national airspace system, hence the passing of the Reform Act.

V. Reasons Why Shanon Kern's Exemption Will Not Adversely Affect Safety Or How The Exemption Will Provide a Level of Safety At Least Equal To Existing Rule:

I, Shanon Kern, believe that by allowing this exemption, it will create the beginning framework for other UAS enthusiasts to operate their aircraft in a much more regulated and safer environment. By creating laws and regulations for commercial UAS use, it will legitimize the industry and create a clear path for safer aviation.

I have the knowledge and skills to understand the intricacies of locating and flying in different air spaces. I have set standards and practices that allow for a much safer use than the average UAS hobbyist. My UAS is equipped with fail safe programming that allows it to fly and return safely if the pilot were to become incapacitated, or the connection was lost.

VI. A 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, Shanon Kern's, UAS permits exemption from Part 21 because my 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 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, Shanon Kern's current and projected UAS's meet or exceed 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 on board pilots or passengers, and given the size of the UAS's, this Regulation is inapplicable. An equivalent level of safety will be achieved by maintaining a

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safety/flight manual delineating areas of where safety can be defined.[10] 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 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, Shanon Kern.

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 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 that minimal lettering requirement. Regardless, I will mark its UASs 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, Shanon Kern, can achieve an equivalent level of safety as achieved by current regulations because my UAS does not carry any pilots or passengers. The risks attended to the operation of my 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, Shanon Kern, to operate my 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 UAS will never operate at an altitude greater than 200 AGL; safely below the standard of 400 AGL. I, Shanon Kern, will however operate my 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 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.

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Douglas Trudeau, Realtor®, Tucson AZ - Section 333 Exemption Petition

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, Shanon Kern’s, UAS.

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 UAS permits exemption from Part 21 because my, Shanon Kern’s, 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 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 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 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.

In summary, Shanon Kern seeks an exemption from the following Regulations:

14 C.F.R. 21, subpart H; 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. § 91.103(b); 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) and (b); 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. § 91.409 (a) (2); and, 14 C.F.R. §§ 91.417 (a) & (b) to commercially operate my, Shanon Kern's, small unmanned vehicle/lightweight unmanned aircraft vehicle in thereby enhance safety. My UAS craft do not contain potentially

Thank you for your time and consideration in this matter.

Respectfully,

Shanon Kern