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

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

July 30, 2015

Exemption No. 12236
Regulatory Docket No. FAA–2015-1928

Mr. Albert S. O'Connor
President
OConnor Aerial Videos & Editing LLC dba iDRONE
1010 Black Willow Drive
Oviedo, FL 32765

Dear Mr. O'Connor:

This letter is to inform you that we have granted your request for exemption. It transmits our decision, explains its basis, and gives you the conditions and limitations of the exemption, including the date it ends.

By letter dated May 12, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of OConnor Aerial Videos & Editing LLC dba iDRONE (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial videos, photography, mapping, and survey.

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 are the DJI Phantom 2 and 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, OConnor Aerial Videos & Editing LLC dba iDRONE 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.

[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.

Conditions and Limitations

In this grant of exemption, OConnor Aerial Videos & Editing LLC dba iDRONE is hereafter referred to as the operator.

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

1. Operations authorized by this grant of exemption are limited to the DJI Phantom 2 and 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 July 31, 2017, unless sooner superseded or rescinded.

Sincerely,

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

Enclosures

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May 12, 2015

United States Department of Transportation
Docket Management System
1200 New Jersey Avenue, SE
West Building Ground Floor Room W12-140
Washington, DC 20590

Re: Request for exemption pursuant to Section 333 of the FAA Reform Act of 2012

Dear Sir or Madam,
My name is Albert S. O'Connor, president of OConnor Aerial Videos & Editing LLC ("OCAVE") d/b/a iDRONE, and I am writing pursuant to the FAA Modernization and Reform Act of 2012[1] (the "Reform Act") and the procedures contained in 14 C.F.R. 11, and I respectfully request, in accordance with 14 C.F.R. § 11.61, that OCAVE, an owner and Operator of small Unmanned Aircraft ("UA"), be provided relief by exemption from the Federal Aviation Regulations ("FARs") listed below, so that OCAVE may operate its small lightweight Unmanned Aircraft Systems ("UAS") commercially, and for hire, in airspace regulated by the Federal Aviation Administration ("FAA").

OCAVE proposes to capture High Definition and Ultra-High Definition quality video for commercial purposes as well as perform aerial mapping surveys for data collection utilizing small, lightweight, UA to accomplish these unmanned aerial tasks.

[1] 112 P.L. 95 (2012).

If granted, this exemption will allow OCAVE to start operating UA for commercial purposes and for hire to capture aerial videos and photography for TV and Film productions, real estate marketing, and for high resolution aerial mapping survey data collection.

The Specific sections of Title 14 of the Code of Federal Regulations, from which OCAVE requests exemption, are:
14 C.F.R. § 11.61
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) & (c)
14 C.F.R. § 91.103(b)
14 C.F.R. § 91.109 (a)
14 C.F.R. § 91.119
14 C.F.R. § 91.121
14 C.F.R. § 91.151(a) & (b)
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)(1) & (2), 14 C.F.R. § 91.417 (a) & (b)

DETAILED INFORMATION ABOUT THE PETITIONER

OConnor Aerial Videos & Editing LLC ("OCAVE") was founded in 2014 by Albert S. O'Connor, a video professional with over 34 years of video production, video post-production, and photographic experience. OCAVE has been operating its lightweight UA strictly within the United States in a multitude of test missions involving proof-of-principal demonstrations of precision high resolution aerial mapping surveys for certification purposes, as well as student films requiring aerial footage be shot from no higher than 50 feet Above Ground Level ("AGL") and OCAVE has performed these operations without incident, voluntarily, and without financial compensation. Based in Central Florida, OCAVE would now like permission to fly its UA commercially, and for hire, in the NAS to capture aerial video and photo imagery as well as perform high resolution aerial mapping surveys for data collection purposes for a multitude of industries. OCAVE also has future plans to expand into Precision Agriculture by providing aerial mapping surveys for farms utilizing multi-spectral cameras to help farmers increase their crop yield while helping reduce farming's impact on the environment. OCAVE has been in compliance with all applicable FARs and has not performed aerial services for pay by any entity at any location within the United States.

OCAVE UAS EQUIPMENT INVENTORY

I am asking for an exemption as per 14 C.F.R. § 11.61 to operate DJI Phantom UA for compensation or hire within the United States NAS. OCAVE, for now, operates two UA:

- DJI Phantom 2 v3, professionally built by CineDrones (a DJI certified builder, dealer, repair facility) to perform precision aerial mapping surveys utilizing its onboard DJI Ground Station hardware that is linked to and controlled by an Apple iPad running DJI's Ground Station software application that is used to upload aerial mapping pattern data to the Phantom 2 via Bluetooth transmitter; the iPad is also used to constantly track the UA's GPS location throughout the entire aerial mapping session and provides audible and visual alerts in the event any safety issues are encountered and provides the capability to have the UA return immediately for a safe landing. This UA has a First Person View ("FPV") capability allowing the Operator to see what the UA sees via its on-board video camera, allowing for greater flight safety during flight operations.

• DJI Phantom 3 Professional which carries a 4K capable Ultra High Definition FPV video camera and will be used for real estate marketing, TV/Film production, as well as high resolution aerial still photography. This UA can also perform precision aerial mapping surveys if needed. This UA also provides both audible and visual alerts if in the event any safety issues are encountered, this UA has the capability to have it return immediately for safe landing.

Both UA have four counter rotating plastic propellers, both UA are gyro and GPS stabilized, with both carrying a shielded electronic compass, these are three basic backup systems that ensure safe and stable UA operations. A fourth safety feature that is built-in to each UA is DJI's Return To Home ("RTH") safety feature, that in the event of lost remote control communication between the UA Operator and the UA itself, these two UA automatically RTH and auto-land beside the UA Operator, even if the Operator changes his location, the UA will go the Operator's position then land next to the Operator. A fifth safety feature involves battery power, that if the battery power drops below 30%, a safety feature is automatically invoked by each DJI Phantom that forces it to immediately auto-land itself safely and slowly so as to avoid sudden power loss and a resulting crash. So safety being in the public's interest, each UA has five safety features guaranteeing safe flights. Finally, each DJI Phantom OCAVE owns has the latest DJI software update that visually and audibly warns its Operator from flying into restricted airspace and in particular, prevents it from take-off and flight in Washington DC's airspace.

The DJI Phantom 2 v.3 UA is powered by a 11.1 volt Lithium Polymer battery ("LiPo") that power each of its four electric motors, the DJI Phantom 2 has at most a 12 minute flight envelope and the Phantom 3 has a 15.2 volt LiPo battery with flight envelope of almost 20 minutes. Each DJI Phantom is only capable of Vertical Take Off or Landing ("VTOL") and do not require runways to take off or land. Each DJI Phantom weighs approximately 5 pounds, well below the FAA's mandated 55 pound limit for commercially used UAs, and each UA is approximately 16 inches in width and length and stand 8 inches high with both being made of polymer plastic. No combustible fuel is ever used on DJI UAs, and when airborne, each DJI Phantom can be clearly seen because of their Red and Green flashing anti-collision lights, which operate automatically and continuously, during all flights and cannot be turned off by the UA Operator. Each DJI UA has a maximum flight speed of 35 knots.

14 C.F.R. § 45.23 (b) states "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." Because UA are inherently different from manned aircraft, DJI UA have no cabin, cockpit, or pilot station, and have extremely limited surface area on which to affix 2 - 6 inch high aircraft identification numbers and letters, OCAVE requests exemption from 14 C.F.R. § 45.23 (b).

Until such time it is mandated by the FAA as to how each UA is to be appropriately marked with an FAA registration number, OCAVE's interim policy is that each of its UA it owns will be clearly marked with OCAVE's owners name, cell phone number, and email address so that the Operator and Visual Observer ("VO") as well as others who might be working with the UA, can see the markings.

THE EXTENT OF RELIEF OCAVE SEEKS AND THE REASON IT SEEKS SUCH RELIEF: [2]
OCAVE submits this application in accordance with the Reform Act, 112 P.L. 95 § 331-334, seeking relief from any currently applicable FARs that prevent OCAVE's contemplated commercial and other flight operations within the NAS. The Reform Act in Section 332 provides for such integration of civil unmanned aircraft systems into our NAS as it is in the public's interest to do so. OCAVE's lightweight UA meets the definition of "small Unmanned Aircraft" as defined in Section 331 and therefore the integration of OCAVE's lightweight UA is in accordance with the Reform Act's provisions. OCAVE would like to operate its lightweight UA prior to the point in time where the Reform Act requires the FAA to publish rules governing such craft.

The Reform Act guides the Secretary of Transportation, who is the FAA Administrator, in determining the types of UA that may operate safely in our national airspace system.
Each item listed below is in favor of OCAVE as per Section 333 (a) of P.L. 112-95 *Special Rules for Certain Unmanned Aircraft Systems*:
- The weight, size, speed and overall capabilities of the UAS;
- Whether the UAS will be operated near airports or populated areas;
- Whether the UAS will be operated by VLOS or Visual Line Of Sight during the daytime using VFR or Visual Flight Rules keeping below 400 feet AGL and utilizing a trained Visual Observer.

OCAVE's operation of its UA will not "create a hazard to users of the national airspace system or the public." pursuant to 112 P.L. 95 § 333 (b). Given the small size and weight of OCAVE's UA, combined with its operation in locations that have been previously reviewed by OCAVE's UA Operator for safety purposes, OCAVE's UA falls within Congress's contemplated safety zone when it published the Reform Act and its corresponding directive to integrate UA into the national airspace system. OCAVE's UA and Operator have a positive safety record, do not pose any threat to the general public or national security, and ensures an equivalent level of safety to manned aircraft operations.

[2] The FAA has the authority to issue the exemption sought by OCAVE pursuant to the Federal Aviation Act, 85 P.L. 726 (1958), as amended (the "Act").

OCAVE UA Operator CERTIFICATION AND COMPANY SAFE-FLYING CULTURE
Until the time comes where FAA certified civil UA trainers are available, a San Francisco-based UA aerial mapping company, Skycatch Workmode, has trained dozens of UA Operators to fly UAS-based aerial mapping missions for other countries that already permit commercial UA operations, OCAVE's UA Operator, Albert O'Connor, has already obtained flight certification by Skycatch Workmode to fly UA for precision aerial mapping survey data collection and OCAVE's UA Operator has also studied extensively the FAA's regulations regarding UA operations: keeping well below 400 feet AGL, operate UA no closer than 5 miles from any airport, does not fly UA over populated areas, the Operator maintains Visual Line Of Sight ("VLOS"), adheres to Daytime Visual Flight Rules ("VFR"), and when necessary, utilizes a trained Visual Observer for UA

aerial operations when necessary. The majority of OCAVE's UA operations will be performed no higher than 200 feet AGL. OCAVE's UA Operator has read and thoroughly understands the UA manufacturer's "safe flying" operations manual and has over 150 hours of UA flight experience. No one other than a certified UA Operator will ever remotely control OCAVE's UA. OCAVE's owner is also a member in good standing of the Academy of Model Aeronautics ("AMA") which worked closely with the FAA in formulating its recent Notice of Public Rule Making ("NPRM") regarding the commercial use of UAS in the NAS.

HOW OCAVE's UA OPERATIONS WILL BENEFIT THE PUBLIC

Within the FAA's recent April 2015 NPRM regarding the commercial use of UA, the FAA indicated that it felt that the use of UA was far safer and in the public's interest rather than using full size manned aircraft for similar aerial operations. Each of OCAVE's UA weigh no more than 5 pounds, carry no onboard fuel, are powered by a single 11.1 volt or 15.2 volt LiPo battery, fly no faster than 30 knots, and have no carbon exhaust to impact the environment, and can perform aerial videography and photography as well as precision aerial mapping surveys less expensively and with greater safety than manned aircraft performing same duties. The average manned helicopter carries people, hundreds of gallons of combustible aviation fuel, and are made of metal weighing up to 2 tons. Despite manned helicopters' exemplary safety record, if one were to fall from the sky, the pilot and passengers could be injured or worse, and any property below it could be destroyed and occupants severely injured as well. Electrically powered UA weigh 5 pounds and are made of plastic and carry no passengers, pilot, or combustible fuel, and present no danger to the public below their flight operations. The use of small Unmanned Aircraft Systems will drastically reduce liability insurance claims since small lightweight UA will be performing many of the same aerial film, video, and photographic duties, once performed by full size manned aircraft in a safer, more controlled environment.

Whereas manned aircraft, both fixed wing and rotary wing, cannot not fly lower than 500 feet AGL over populated areas, except for rotary wing aircraft who may fly below 500 feet AGL in special situations when approved by the FAA and local Air Traffic Control ("ATC"), OCAVE's UA, on the other hand, will fly no higher than 200 feet AGL and as such, will clearly be in the public's interest that small lightweight Unmanned Aircraft Systems be permitted to fly commercially in the NAS to perform duties that were once only possible with manned aircraft.

America has always been a front runner in the sciences, computer technology, and innovation. Other countries have already instituted commercial UA operations into their NAS such as the EU and Canada, and now they are reaping the educational, technological, and financial benefits, that UA are bringing to their businesses, industries, governments, agriculture and society as a whole. The United States needs to allow small companies like OCAVE to operate commercially so that it, like many other small companies utilizing UA, can provide jobs and competition that challenge larger corporate entities who have taken the lead in the proposed use of UA commercially and small companies like OCAVE can be part of and contribute to the phenomenal growth this technological revolution in small lightweight UA that are being used commercially all over the world, this change needs to happen in our NAS sooner rather than later.

DETAILED LIST OF OCAVE's REQUEST FOR EXEMPTION FROM FARs REGARDING THE COMMERCIAL USE OF UAS FOR COMMERCIAL PURPOSES

14 C.F.R. § 11.61 OCAVE respectfully requests the FAA to adopt, amend, or repeal regulations, or grant relief from the requirements of current regulations, regarding the commercial use of small, lightweight, UA in the NAS.

14 C.F.R. 21, subpart H In regards to Standard airworthiness certificates which are airworthiness certificates issued for manned aircraft type certificated in the normal, utility, acrobatic, commuter, or transport category, and for manned free balloons, and for aircraft designated by the FAA as special classes of aircraft., 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 OCAVE's UA permits exemption from Part 21 because OCAVE's UA meet an equivalent level of safety pursuant to Section 333 of the Reform Act. The FAA is authorized to exempt aircraft from the airworthiness certification 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 UA from the airworthiness certificate requirement in consideration of the weight, size, speed, maneuverability and proximity to areas such as airports and dense populations. OCAVE's UA meet or exceed each of the elements.

14 C.F.R. 45.23(b) in regards to Marking The Aircraft, applicable Codes of Federal Regulation require aircraft to be marked according to certain specifications. OCAVE's UA are, by definition, unmanned. They therefore do not have a cabin, cockpit or pilot station on which to mark certain words or phrases. Such small aircraft have almost no surface area on which to place such markings. Regardless, OCAVE will mark its UA in the largest possible lettering showing OCAVE's owner's name, phone number, and email address, so that the the Operator and Visual Observer as well as others working with the UA can 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 (a)(b) Since small lightweight UA are incapable of carrying passengers or Pilot In Charge ("PIC"), OCAVE requests exemption from the requirement of a private pilot certificate for Pilot In Command.

14 C.F.R. § 91.7 (a) Prohibits the operation of an aircraft without an airworthiness certificate as to its airworthiness condition, and as such, UA are not civil aircraft, carry no passengers or pilot and such a certificate will be applicable in the form contemplated by the FARs in regards to manned aircraft, but this regulation is inapplicable in as far as small unmanned aircraft like the ones OCAVE will be using, in that respect, OCAVE requests exemption from this regulation.

14 C.F.R. § 91.9 (b)(2) & (c) Requires an aircraft flight manual in and onboard the aircraft. Given the small size of OCAVE's UA, there is no room for a pilot, no cockpit is available, or space within the UA in which to store a flight manual, so this requirement is inapplicable and OCAVE requests exemption from this regulation. An equivalent level of safety will be achieved by maintaining a manual at OCAVE's business location. 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. OCAVE requests relief from 14 C.F.R. § 91.9 (b)(2) & (c) because of previously requested relief from C.F.R. 45.23(b) in regards to proper markings of Aircraft Identification Numbers as in regards to the size limitations that is inherent with small unmanned aircraft.

14 C.F.R. § 91.103(b) As UA are strictly Vertical Takeoff Or Landing ("VTOL") and require no runways or airport elevation to be concerned with, and taking into consideration that UA with a gross weight of 5 pounds or less require very little physical space in which to launch a VTOL UA, this requirement is inapplicable and OCAVE requests exemption from this regulation.

14 C.F.R. § 91.109 (a) Small, lightweight, UA are not manned, therefore the FAA requirement that dual flight controls for instructional purposes be available is inapplicable, OCAVE requests exemption from this regulation.

14 C.F.R. § 61.113 (a) & (b), In regards to Private Pilot Privileges and Limitations, private pilots are limited to non-commercial operations. A private pilot's license or even a sport pilot's license could be helpful but will not ensure UA remote control piloting skills, though OCAVE's Operator's current UA training and certification will and do ensure UA remote control piloting skills. The potential risks associated with OCAVE's UA aerial operations is far less than what is inherent with manned commercial aviation activities outlined in 14 C.F.R. § 61.

14 C.F.R. § 91.119 Refers to Minimum Safe Altitudes which stipulates what safe altitudes for civilian rotary wing and fixed wing aircraft are, and be no lower than 500 feet AGL, but allows manned helicopters to be flown at lower altitudes over specific locations with clearance from local Air Traffic Control ("ATC"). OCAVE's UA will never fly higher than 400 feet AGL, but will, however, operate its UA in specifically designated areas that were previously reviewed for any potential safety issues and then cleared for flights which will be well within minimum safe altitudes of 200 feet AGL or less. OCAVE's UA, flown at such minimum safe altitudes, will be able to land quickly and safely in such a way as to be at a higher level of safety than that which could be achieved by manned aircraft in similar situations and in that regard, OCAVE's UA will pose no danger to the public or national security.

14 C.F.R. § 91.121 Regards altimeter settings for manned aircraft, which in the case of small UAS, this is inapplicable as there is no pilot onboard to monitor a physical altimeter gauge. OCAVE's UA automatically take into account their immediate altitude in regards to Mean Sea Level Pressure ("MSLP") via onboard barometric pressure device which automatically "tells" the UA how high it is flying above MSL and exactly the altitude of Ground Level below it and this data is relayed to the UA Operator via On Screen Display ("OSD") through the UAS's First Person View ("FPV") video relay the UA Operator can see on his video monitor constantly.

14 C.F.R. § 91.151(a) & (b) In part states, "No person can fly under VFR conditions unless there's enough fuel to fly to the first point of intended landing and to [be able] to continue flying 20 minutes after that." This regulation is in regards to manned aircraft being used to transport the pilot and/or passengers to the first intended landing point, with a 20 minute fuel reserve. OCAVE requests exemption from this regulation as its UA will not have a pilot onboard, no passengers, and will <u>not</u> be flying to another location and then land for any reason. OCAVE's small unmanned aircraft will only fly to shoot videos or photos of a specific location or perform aerial mapping surveys of a specific area, and then will land back with the UA Operator; there never will be a need for either UA to fly to an "intended landing point" for transportation reasons. Each of OCAVE's UA are capable of only 12 minutes and 20 minutes of flight respectively, therefore the regulation's latter requirement that once an aircraft flies to its first point of intended landing and have enough fuel to fly 20 more minutes, is inapplicable.

14 C.F.R. § 91.203(a) and (b) as per OCAVE's previous request for exemption from 14 C.F.R. 21 and 14 C.F.R. 45.23(b), the requirement that a registration number be on the UA's fuselage and an airworthiness certificate be affixed near the UA's cockpit, small unmanned aircraft do not have a fuselage nor a cockpit, therefore this regulation that is not applicable.

14 C.F.R. § 91.405 (a), 14 C.F.R. § 91.407 (a)(1), 14 C.F.R. § 91.417 (a) & (b) Maintenance regulations require 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 and do not apply to OCAVE should its requested exemption be granted. OCAVE has proven maintenance program that involves constant software updates from the UA manufacturer's website and fixes any damage that may occur to the UA itself by utilizing the repair services of an authorized UA repair facility and if any, such repairs will be fixed immediately and documented, thus attaining an equivalent level of safety as that of manned aircraft. OCAVE requests exemption from this regulation.

14 C.F.R. § 91.409 (a)(1) & (2) regulation states: "No person may operate an aircraft unless, within the preceding 12 calendar months, it has had and annual inspection…by a person authorized by 43.7 of this chapter… An inspection for the issuance of an airworthiness certificate in accordance with part 21 of this chapter." In an previous request noted above, OCAVE requests relief of and exemption from 14 C.F.R. 21, subpart H, an action that would negate the need for 14 C.F.R. § 91.409 (a)(1) & (2).

<u>CONCLUSION</u>

Giving OConnor Aerial Videos & Editing LLC these exemptions will allow it to commence commercial operations under the control of an experienced and certified UAS Operator with decades of video and film production experience, whose first priority is keeping safety at the forefront of all aerial operations and has profit taking a back seat to all other considerations. Being that battery powered UA are inherently safe as compared to the use of full-size manned rotary wing and fixed wing aircraft performing similar functions of obtaining aerial video and photographic imagery as well as aerial mapping, the use of small, lightweight, Unmanned Aircraft Systems for these tasks makes the most sense and greatly increases public safety, which is at its heart, in the public's interest. OConnor Aerial Videos & Editing LLC operates mostly at minimum flight altitudes and rarely needs to ascend to a maximum of 400 feet AGL. OConnor Aerial Videos & Editing LLC will maintain a flight log of all flights, maintain a record of any maintenance repairs and upgrades, and will always adhere to all FAA rules and regulations pertaining to the use of UA in the NAS.

Finally, I would like to note that on the FAA's website published a "News Update" titled: "FAA Streamlines UAS COAs for Section 333", which can be viewed at this link [http://www.faa.gov/news/updates/?newsId=82245] and this FAA article states specifically:
"Section 333 exemption holders will automatically receive a "blanket" 200 foot COA. For new exemption holders, the FAA will issue a COA at the time the exemption is approved. Anyone who wants to fly outside the blanket parameters must obtain a separate COA specific to the airspace required for that operation."

OConnor Aerial Videos & Editing LLC respectfully requests that the FAA grant its exemption request without delay as well as provide it the required COA once its exemption is granted.

Thank you for taking OConnor Aerial Videos & Editing LLC into consideration in exempting it from FARs regarding commercial use of UAS in the United States NAS.

Sincerely,

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