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

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

June 17, 2015

Exemption No. 11847
Regulatory Docket No. FAA–2015–1068

Mr. Nicholas McMahon
President
McMahon Helicopter Services, Inc.
Executive Heliport Building
8351 Ronda Drive
Canton, MI 48187

Dear Mr. McMahon:

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

By letters dated March 20 and June 9, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of McMahon Helicopter Services, Inc. (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial work for in the energy, motion picture/television, and real-estate industries.

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 Inspire 1.

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 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, McMahon Helicopter Services, Inc. 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, McMahon Helicopter Services, Inc. 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 Inspire 1 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 June 30, 2017, unless sooner superseded or rescinded.

Sincerely,

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

Enclosures

Project Officer: _____

MR NICHOLAS MCMAHON
MCMAHON HELICOPTER SERVICES INC
EXECUTIVE HELIPORT BUILDING
8351 RONDA DRIVE
CANTON MI 48187

McMAHON
HELICOPTER SERVICES

Mach 20, 2015

U.S. Department of Transportation
Docket Management System
1200 New Jersey Ave., SE
Washington, DC 20590

Dear Sir or Madam:

Our company, McMahon Helicopter Services, Inc. (MHS), an FAA licensed Air Carrier[1] and Repair Station[2], hereby applies for an exemption from certain Federal Aviation Regulations (FARs) listed in this letter –with explanations– pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 to further develop and operate our small Unmanned Aircraft Systems (UAS) commercially.

If granted, the exemption would allow us to conduct aerial work for our clients in the energy industry, motion picture/television industries, and real-estate industries, who frequently require low-level aerial images utilizing various sensors and equipment – all of which we currently carry out utilizing our certified aircraft. As described more thoroughly below and in our UAS Operations Manual[3], any commercial or experimental operation involving UAS would be conducted by MHS with safety standards that meet or exceed the current safety standards for our certified aircraft.

This request is of a very similar nature to previous requests your department has received and granted exemptions to on September 25, 2014 through March 19, 2015. We ask that all confidential information enclosed such as operations manuals, aircraft flight manuals, procedures, etc., are not published or shared as they contain proprietary information.

For the record, the applicant name, address, and contact information is as follows:

Company Name:	McMahon Helicopter Services, Inc.
Contact Name:	Nicholas McMahon
Address:	Executive Heliport Building 8351 Ronda Drive Canton, MI 48187
Phone:	1-734-459-5980
Fax:	1-734-459-5980
Email:	nick@mcmahonhelicopters.com

[1] A copy of the MHS Air Carrier Certificate is enclosed.
[2] A copy of the MHS Repair Station Certificate is enclosed.
[3] A copy of the MHS UAS Operations Manual is enclosed and is confidential.

The regulations we wish to request to be exempted from for UAS operations are:

91.199 (b) and (c)
91.121
91.215(b)(2)
91.407(a)(1)
91.409(a)(1) and (a)(2)

Regulations and Explanations

While conducting our research, we have concluded that the above regulations are applicable to *any* aircraft operations and not specific to aircraft category or class. As you have previously concluded, these regulations will require an alternative ruling or exemption in order to conduct UAS operations. We have also concluded that there are several regulations, which will surely apply to our UAS operations, but currently only apply to specific categories of aircraft – such as altitude restrictions and placards. We have included guidelines for these regulations based on your previously approved exemptions for other UAS operators in our confidential, proprietary UAS Operations Manual, which outlines our company's UAS operating procedures.

91.199(b) and (c) – Minimum Safe Altitudes over Congested Areas & other than Congested Areas

Explanation: Since the UAS will not be operated above 400 feet AGL, it cannot comply with parts (b) and (c) of this section.

91.121 Altimeter Settings

Explanation: The aircraft does not have a pitot static system and relies on GPS for altitude readings.

91.215(b)(2) ATC Transponder and altitude reporting equipment and use

Explanation: Under this subpart, no aircraft can operate within the Mode C veil without a proper transponder and Mode C capabilities. The UAS does not have a payload capacity or power system sufficient to support this requirement.

91.407(a)(1) Operation after maintenance, preventative maintenance, rebuilding, or alteration

Explanation: The FAA has not defined the qualifications of a UAS technician under part 43.7.

91.409(a)(1) and (a)(2) Inspections

Explanation: (a)(1) The FAA has not defined the qualifications of a UAS technician under part 43.7.
(a)(2) The FAA does not issue airworthiness certificates for our UAS systems.

Public Benefit

This requested exemption would enable MHS to develop new technologies, UAS operational methods, and work with the FAA to help integrate UAS operations into the National Airspace System – ultimately reducing the costs of certain aerial services we currently provide to businesses and consumers with our certified aircraft. This exemption would also enable MHS to operate in locations and at altitudes that otherwise may be potentially hazardous for certified aircraft due to the size of the helicopters, proximity to obstructions, and other factors. Additionally, the UAS will significantly reduce carbon emissions and the noise footprint created by turbine and piston powered aircraft performing similar tasks. Reducing noise levels in any environment improves ease of communication on the ground and also reduces or eliminates complaints by non-participants.

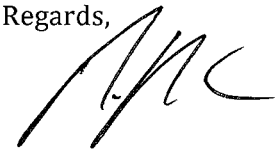
Safety Standards

If granted this exemption, MHS will meet or exceed the same high-level, FAA Approved, safety standards in which we already operate our *certified* aircraft. As detailed in our UAS Operations Manual, MHS will notify the FAA in advance of UAS operations, utilize air-to-ground radios for communication with other air traffic as an additional safety method when necessary, utilize spotters, and operate within a controlled access environment. Further, given the small size and weight of the UAS (weight is under 55 lbs.), the lack of combustible fuel, lack of onboard pilot or passengers, the UAS poses *less* of a potential risk to persons or property than a certified aircraft when operated in a controlled environment performing certain tasks.

It should be noted that as an Air Carrier, MHS understands the importance of the United States National Airspace System (NAS), MHS abides by the rules that the DOT and FAA mandate, and MHS understands the magnitude of the responsibility required while operating Unmanned Aerial Systems in a commercial aviation environment.

We are looking forward to integrating UAS into our company operations and also helping the FAA integrate these systems into the NAS. Please feel free to call or email me with any questions.

Regards,



Nicholas McMahon
President
McMahon Helicopter Services, Inc.

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

Air Agency Certificate

Number **BUBR632C**

This certificate is issued to
McMAHON HELICOPTER SERVICES, INC.

whose business address is
EXECUTIVE HELIPORT
8351 RONDA DRIVE
CANTON, MI 48187

upon finding that its organization complies in all respects with the requirements of the Federal Aviation Regulations relating to the establishment of an Air Agency, and is empowered to operate an approved **REPAIR STATION**

with the following ratings:

LIMITED AIRFRAME
LIMITED POWERPLANT
LIMITED ACCESSORIES

This certificate, unless canceled, suspended, or revoked, shall continue in effect **INDEFINITELY**

Date issued:
JUNE 13, 1986
R- APRIL 10, 2008

By direction of the Administrator
Carl R. Welke
CARL R. WELKE, ACTING MANAGER, DTW FSDO

This Certificate is not Transferable, AND ANY MAJOR CHANGE IN THE BASIC FACILITIES, OR IN THE LOCATION THEREOF, SHALL BE IMMEDIATELY REPORTED TO THE APPROPRIATE REGIONAL OFFICE OF THE FEDERAL AVIATION ADMINISTRATION

Any alteration of this certificate is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both

FAA Form 8000-4 (1-67) SUPERSEDES FAA FORM 390.

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

Air Carrier Certificate

This certifies that

MCMAHON HELICOPTER SERVICES, INC.
8351 RONDA DRIVE
CANTON, MICHIGAN 48187

has met the requirements of the Federal Aviation Act of 1958, as amended, and the rules, regulations, and standards prescribed thereunder for the issuance of this certificate and is hereby authorized to operate as an air carrier and conduct common carriage operations in accordance with said Act and the rules, regulations, and standards prescribed thereunder and the terms, conditions, and limitations contained in the approved operations specifications.

This certificate is not transferable and, unless sooner surrendered, suspended, or revoked, shall continue in effect indefinitely.

By Direction of the Administrator.

Certificate number: BUBA632C

Effective date: JANUARY 16, 1981
REISSUED: MAY 12, 1989

Issued at: GL23

C. David Wood
(Signature)

MANAGER
(Title)

GREAT LAKES REGION/DTW FSDO
(Region/Office)

FAA Form 8430-18 (6-87)