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

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

September 1, 2015

Exemption No. 12695
Regulatory Docket No. FAA−2015−1887

Mr. James E. Mackler
Counsel for Unmanned Aircraft Professional Services, LLC
Bone, McAllester Norton, PLLC
511 Union Street, Suite 1600
Nashville, TN 37219

Dear Mr. Mackler:

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 May 20 and August 7, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Unmanned Aircraft Professional Services, LLC (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial data collection.

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 Vision+, DJI Phantom 3, DJI Inspire 1, and DJI S1000+.

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, Unmanned Aircraft Professional Services, LLC 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, Unmanned Aircraft Professional Services, LLC 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 Vision+, DJI Phantom 3, DJI Inspire 1, and DJI S1000+ 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 September 30, 2017, unless sooner superseded or rescinded.

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

Enclosures

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May 20, 2015

U. S. Department of Transportation
Docket Management System
1200 New Jersey Ave., SE,
West Building Ground Floor, Room W12-140,
Washington, DC 20590

Re: Request for Exemption under Section 333 of the FAA Modernization and Reform Act and Part 11 of the Federal Aviation Regulations from 14 C.F.R. 61.23(a) and (c); 61.101(e)(4) and (5); 61.113(a); 61.315(a); 91.119(c); 91.121; 91.151(a)(1); 91.405(a); 91.407(a)(1); 91.409(a)(1) and (2); 91.417(a) & (b).

PETITION FOR SUMMARY EXEMPTION

Dear Sir or Madam:

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (the Reform Act) and 14 C.F.R. Part 11, Unmanned Aircraft Professional Services, LLC, ("UAPS") an operator of Small Unmanned Aircraft (UA) hereby applies for an exemption from the listed Federal Aviation Regulations ("FARs") to allow commercial operation of its UA. UAPS is eligible for a **summary exemption for aerial data collection**[1]**.**

QUICK REFERENCE SUMMARY:

- Types of aircraft to be flown:

[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. See exemption # 11482.

- DJI Phantom 2 Vision +
- DJI Phantom 3
- DJI Inspire 1
- DJI S1000 +

- In addition to the confidential and proprietary technical documents provided under separate cover, user manuals, quick start guides, and safety guidelines are all currently available online at the following URLs:

  Phantom Series

  - Phantom 2Vision+ : http://www.dji.com/product/phantom-2-vision-plus/download
  - Phantom 3 : http://www.dji.com/product/phantom-3/download

  Inspire Series

  - Inspire 1: http://www.dji.com/product/inspire-1/download

  Spreading Wings Series

  - S 1000+: http://www.dji.com/product/spreading-wings-s1000-plus/download

- The operations will be for **Aerial data collection**.[2]
- Operating restrictions:
  - UAPS agrees to all of the restrictions listed in Exemption # 11358 granted to New Heights Aerial Media, LLC for Aerial Data Collection on April 17, 2015. Those restrictions are listed below. Based upon the FAA's recent guidance, this petition is eligible for summary exemption and should be granted immediately.
  - A flight operations and procedures manual will be submitted confidentially via email.

[2] Exemption # 11358 to New Heights Aerial Media, LLC was for "aerial data collection."

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UAPS requests that the publication and comment procedures be waived in accordance with 14 C.F.R. § 11.87:

Pursuant to § 11.87 the FAA may not publish a summary of a petition for exemption and request comments if the applicant presents or the Agency finds good cause why the Agency should not delay action on the petition. The factors to be considered in deciding whether to request comment include:

(a) Whether granting your petition would set a precedent.

(b) Whether the relief requested is identical to exemptions granted previously.

(c) Whether our delaying action on your petition would affect you adversely.

(d) Whether you filed your petition in a timely manner.

Corresponding to the above sub-sections, UAPS has good cause to request the FAA to waive the comment period and not delay action on the petition because:

(a) UAPS would not set any precedent. Section 333 petitions generally fall into two categories: film/television production and aerial data collection. Most exemptions in these categories are handled through the summary grant process. UAPS agrees to the *same exact* limitations as required by previous aerial data collection approvals, such as exemption # 11358, except that we are proposing to operate the DJI aircraft listed above. These aircraft, and the variants thereof, are commonly used and have been previously approved. For example:

i. Exemptions # 11184 and # 11161 permits the use of the DJI S1000.
ii. Exemption # 11341 was for the use of DJI Phantom 2 Vision+.
iii. Exemptions # 11347 and 11306 were for the DJI Phantom 2. DJI has announced they will discontinue the Phantom 2 model and replace it with the Phantom 3. Although no exemptions have been granted for the

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Phantom 3, it is substantially similar in performance to the DJI Phantom 2 Vision+ ("P2") in all relevant respects.

iv. Exemptions # 11455 and # 11532 were for the use of the Inspire 1.

(b) The relief requested is identical to that granted, without publication for comment, in Exemption # 11358 for aerial data collection.

(c) Delaying the granting of this petition **would adversely affect the public, the FAA, and UAPS.** The public, as well as the FAA, would be better served by the FAA quickly granting this petition and thereby freeing up limited FAA resources and allowing FAA inspectors to dedicate their time and attention to much higher priorities. Moreover, UAPS is adversely affected by the above listed regulations.

(d) The petition has been filed in a timely manner.

Petitioners contact information:

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Attn: Allen S Orr
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Regulations from which the exemption is requested:

- 14 C.F.R. § 61.23(a) and (c)
- 14 C.F.R. § 61.101(e)(4) and (5)
- 14 C.F.R. § 61.113(a)
- 14 C.F.R. § 61.315(a)
- 14 C.F.R. § 91.7(a)

- 14 C.F.R. § 91.119(c)
- 14 C.F.R. § 91.121
- 14 C.F.R. § 91.151(a)(1)
- 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)

This exemption application is expressly submitted to fulfill Congress' goal in passing Section 333(a) through (c) of the FAA Modernization and Reform Act of 2012. This law directs the Secretary of Transportation to consider whether certain unmanned aircraft systems may operate safely in the national airspace system (NAS) before completion of the rulemaking required under Section 332 of the FAA Modernization and Reform Act. In making this determination, the Secretary is required to determine which types of UA do not create a hazard to users of the NAS or the public or pose a threat to national security in light of the following:

- The UA's size, weight, speed, and operational capability;
- Operation of the UA in close proximity to airports and populated areas; and,
- Operation of the UA within visual line of sight of the operator (VLOS).[3]

If the Secretary determines that such vehicles "may operate safely in the national airspace system, the Secretary shall establish requirements for the safe operation of such aircraft in the national airspace system." *Id.* § 333(c) (emphasis added).[4]

The Federal Aviation Act expressly grants the FAA the authority to issue exemptions. This statutory authority by its terms includes exempting civil aircraft, as the term is defined

[3] FAA Modernization and Reform Act of 2012 at § 333(a).

[4] Applicant interprets this provision to place the duty on the Administrator to not only process applications for exemptions under section 333, but for the Administrator to craft conditions for the safe operation of the UAS, if it should be determined that the conditions set forth herein do not fulfill the statutory requirements for approval.

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under § 40101 of the Act that includes UAS's, from the requirement that all civil aircraft must have a current airworthiness certificate.

"The Administrator may grant an exemption from a requirement of a regulation prescribed under subsection (a) or (b) of this section or any sections 44702-44716 of this title if the Administrator finds the exemption in the public interest." 49 U.S.C. § 44701(f). *See also* 49 U.S.C. § 44711(b).

OPERATING DOCUMENTS

The following confidential and proprietary documents are submitted under separate cover:

- Flight Operations and Procedures Manual.
- Aircraft Flight Manual for the DJI Phantom 2 Vision+.
- Aircraft Flight Manual for the DJI Phantom 3.
- Aircraft Flight Manual for the DJI Inspire 1.
- Aircraft Flight Manual for the DJI S1000+.
- Training manuals for the Pilot in Command and Visual Observer.

UAPS will operate only within the limitations below and the limitations listed in the confidentially submitted technical documents. The limitations below, from the previously granted exemption, will be followed if there is a conflict with the technical manuals.

AIRCRAFT AND EQUIVALENT LEVEL OF SAFETY

The applicant proposes that the exemption requested herein applies to civil aircraft that have the characteristics and that operate with the limitations listed herein. These limitations provide for at least an equivalent or even higher level of safety to operations under the current regulatory structure.

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These limitations and conditions are identical to Exemption # 11358 for aerial data collection except for the difference in aircraft. UAPS agrees to be bound by the following when conducting commercial UA operations:

1. Operations authorized by this grant of exemption are limited to the DJI line of aircraft listed above 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. 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.
3. 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.
4. 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.
5. 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.
6. 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

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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.

7. 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.
8. The operator is responsible for maintaining and inspecting the UAS to ensure that it is in a condition for safe operation.
9. 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.
10. The operator must follow the UAS manufacturer's maintenance, overhaul, replacement, inspection, and life limit requirements for the aircraft and aircraft components.

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11. Each UAS operated under this exemption must comply with all manufacturer safety bulletins.
12. 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.
13. 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.
14. 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.
15. 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

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holder. The letter of agreement with the airport management must be made available to the Administrator or any law enforcement official upon request.

16. 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.
17. 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.
18. The PIC must abort the flight in the event of unpredicted obstacles or emergencies.
19. 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.
20. 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.
21. 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.
22. 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.
23. The UA must remain clear and give way to all manned aviation operations and activities at all times.
24. The UAS may not be operated by the PIC from any moving device or vehicle.
25. All Flight operations must be conducted at least 500 feet from all nonparticipating persons, vessels, vehicles, and structures unless:

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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.
c. The PIC, VO, operator trainees or essential persons are not considered nonparticipating persons under this exemption.

26. 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.
27. 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.

STATUTORY CRITERIA PROVIDED IN SECTION 333

The Federal Aviation Act (49 U.S.C.§ 44701 (f)) and Section 333 of the Reform Act both authorize the FAA to exempt aircraft from the requirement for an airworthiness certificate, upon consideration of the size, weight, speed, operational capability, and proximity to airports and populated areas of the particular UAS. In all cases, an analysis of these criteria demonstrates that the UAS operated without an airworthiness certificate and under the restrictions proposed will be

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at least as safe, or safer, than a conventional aircraft (fixed wing or rotorcraft) operating with an airworthiness certificate without the restrictions and conditions proposed.

Since the UA fully loaded weighs no more than 55 lbs. and is operated without an onboard pilot, there is no ability or place to carry certification and registration documents or to display them on the unmanned aircraft. An equivalent level of safety will be achieved by keeping these documents at the ground control point where the pilot flying the UA will have immediate access to them. Given the size of the unmanned aircraft, the FAA registration number will be displayed on the airframe in as large a font as possible.

14 C.F.R. § 61.23(a) & (c): MEDICAL CERTIFICATES

Exemption # 11221, # 11284, and many others have provided that a U.S. driver's license could be used in lieu of the medical certificate.

14 C.F.R. § 61.101(e)(4) & (5): RECREATIONAL PILOT PRIVILEGES AND LIMITATIONS & 14 C.F.R. § 61.315(a): SPORT PILOT LIMITATIONS.

Exemption # 11221, # 11284, and many others have provided that the "PIC must hold either an airline transport, commercial, private, recreational, or sport pilot certificate." Likewise, UAPS is also performing commercial UAS work and is asking for the same restrictions which have been previously deemed to provide an equivalent level of safety as the burdensome regulations.

14 C.F.R. § 61.113 (a): PRIVATE PILOT PRIVILEGES AND LIMITATIONS: PILOT IN COMMAND.

Sub-sections 61.113(a) limit private pilots to non-commercial operations. Because the UAS will not carry a pilot or passengers, the proposed operations can achieve the equivalent level of safety of current operations by requiring the PIC operating the aircraft to have a private pilot's license rather than a commercial pilot's license to operate this small UAS.

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Unlike a conventional aircraft that carries the pilot and passengers, the UAS is remotely controlled with no living thing on board.

14 C.F.R. § 91.7(a): CIVIL AIRCRAFT AIRWORTHINESS.

As described above, the DJI aircraft and their associated flight controllers are widely used and have been previously approved. As an example, the DJI laptop Ground Control Station (http://www.dji.com/product/pc-ground-station/download), DJI iPad Ground Control Station (http://www.dji.com/product/ipad-ground-station/download, and DJI Lightbridge video downlink (http://www.dji.com/product/dji-lightbridge/download) were approved in several petitions, including Exemption # 11554.

14 C.F.R. § 91.119: MINIMUM SAFE ALTITUDES

Section 91.119 establishes safe altitudes for operation of civil aircraft. Section 91.119 (d) allows helicopters to be operated at less than the minimums prescribed, provided the person operating the helicopter complies with any route or altitudes prescribed for helicopters by the FAA.

Because of the lack of flammable fuel, any risk associated with these operations is far less than those presently presented with conventional aircraft operating at or below 500 AGL. In addition, the low-altitude operations of the UAS will ensure separation between these small UAS operations and the operations of conventional aircraft that must comply with Section 91.119.

14 C.F.R. § 91.121: ALTIMETER SETTINGS

This regulation requires each person operating an aircraft to maintain cruising altitude by reference to an altimeter that is set "... to the elevation of the departure airport or an appropriate altimeter setting available before departure." As the UAS may not have a barometric altimeter, but instead a GPS altitude read out, an exemption may be needed. An equivalent level of safety will be achieved by the operator, pursuant to the operating manuals.

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14 C.F.R. § 91.151(a): FUEL REQUIREMENTS FOR FLIGHT IN VFR CONDITIONS

Section 91.151 (a) prohibits an individual from beginning "a flight in an airplane under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing, and, assuming normal cruising speed - (1) During the day, to fly after that for at least 30 minutes; or (2) At night, to fly after that for at least 45 minutes."

The applicant believes that an equivalent level of safety can be achieved by prohibiting the PIC from beginning a UAS flight unless (considering wind and forecast weather conditions and assuming normal cruising speed) "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." Exemption # 11284, at page 5.

14 C.F.R. § 91.405 (a); § 91.407 (a) (1); § 91.409 (a) (2); § 91.417(a) & (b): MAINTENANCE INSPECTIONS

These regulations require that an aircraft operator or owner "shall have that 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"[5] and others shall inspect or maintain the aircraft in compliance with Part 43. Given that these sections and Part 43 apply only to aircraft with an airworthiness certificate, these sections will not apply to the applicant. An equivalent level of safety will be achieved because these small UAS's are very limited in size and will carry a small payload and operate only in restricted areas for limited periods of time. Moreover, the operator is the person most familiar with the aircraft and best suited to maintain the aircraft in an airworthy condition to provide the equivalent level of safety. Lastly, the petitioner will operate in accordance with the manuals submitted confidentially which will provide an equivalent level of safety as the burdensome regulations.

[5] 14 C.F.R. § 91.405(a).

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CONCLUSION:

The operation of UAPS using a small UAS, weighing less than 55 lbs., conducted under the proposed restrictions outlined above, will provide an equivalent level of safety supporting the grant of the exemptions requested herein.

If I can be of any assistance to further expedite this petition, please do not hesitate to contact me at (615) 238-6312 or at my email jmackler@bonelaw.com.

Sincerely yours,

_____

James E Mackler, Esq.

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Amendment to FAA-2015-1887

James Mackler [jmackler@bonelaw.com]
Sent: Friday, August 07, 2015 10:26 AM
To: 9-AWA-AVS-333Exemptions (FAA)
Cc: James Mackler [jmackler@bonelaw.com]

To Whom It May Concern:

My client's petition was posted to the docket on 5-20-2015, docket number FAA-2015-1887.

I would like to provide the following additional information explaining why granting the request would be in the public interest. I have also submitted a comment to the docket.

- The enhanced safety achieved using an unmanned aircraft with the specifications described in this petition 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 that would be enabled by this exemption is in the public interest.
- If the petitioner does not have the option of using the Petitioner's UA, the only other way to obtain the data is by using manned aircraft which pose a danger to the pilot as well as individuals on the ground. There is no pilot on board the UA and due to the small size of the UA, there is less risk danger posed to the public on the ground in case of an emergency. Additionally, the UA has multiple motors while most manned aircraft have only one engine.
- Manned airplanes and helicopters produce great amounts of noise pollution disrupting the quiet enjoyment of private property of the public on the ground. UA are much quieter and will not disrupt the public as much as manned aircraft; thus, the public will benefit from a reduction in noise pollution.
- In addition to the noise pollution reduction, engine or turbine powered aircraft produce exhaust which affects the environment while the UA of the petitioner are electric and do not produce any emission. The environment and the public are benefited by the use of UA.
- UA use batteries for power which are not as flammable and explosive as 100LL or Jet A. If there was an emergency where the UA crashed, there is less chance of individuals being injured from an explosion or fire. UA also use smaller propellers than manned helicopters which will cause far less damage in the case of a crash than the "grenading" that typically happens during a manned helicopter crash.
- Lastly, the UA will be operated at lower altitudes than manned aircraft. Thus, the

public benefits because the danger of a mid-air collision is lessened

Thank you very much,
James Mackler

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