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

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

April 6, 2015

Exemption No. 11283
Regulatory Docket No. FAA−2014−0857

Mr. Ryan Lee Baker
CEO
Arch Aerial, LLC
30707 McKinney Drive
Tomball, TX 77375

Dear Mr. Baker:

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.

The Basis for Our Decision

By letter dated November 17, 2014, you petitioned the Federal Aviation Administration (FAA) on behalf of Arch Aerial, LLC (hereinafter petitioner or operator) for an exemption. The exemption would allow the petitioner to operate an unmanned aircraft system (UAS) to conduct agricultural survey, film production, property survey, aerial photography, pipeline survey, and for monitoring damage in the event of a natural disaster.

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. The FAA received 23 comments in support of the petition.

Airworthiness Certification

The UAS proposed by the petitioner is an Arch Aerial OCTO.

The petitioner requested relief from 14 CFR part 21, C*ertification 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, 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. 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, Arch Aerial, 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.

Conditions and Limitations

In this grant of exemption, Arch Aerial, 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 Arch Aerial OCTO 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 Colombia, 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 April 30, 2017, unless sooner superseded or rescinded.

Sincerely,

/s/
John Barbagallo
Acting Deputy Director, Flight Standards Service

ArchAerial

Capture the most of your world.

Arch Aerial, LLC
30707 McKinney Dr.
Tomball, TX 77375
(281) 974 - 5752

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

October 16th, 2014

RE: Exemption Request Under Section 333 of the FAA Reform Act and Part 11 of the Federal Aviation Regulations

To Whom It May Concern:

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 ("FAA Reform Act") and 14 C.F.R. Part 11, Arch Aerial LLC (AALLC) requests an exemption from Federal Aviation Regulations ("FARs") detailed below for the Arch Aerial OCTO multi-rotor aircraft. Arch Aerial would like to specifically request exemptions from 14 CFR 21, 14 CFR 91.203, 14 CFR 45.23, 14 CFR 45.29, 14 CFR 91.9, 14 CFR 61.113, 14 CFR 61.133, 14 CFR 91.109, 14 CFR 91.119, 14 CFR 91.121, 14 CFR 91.151, 14 CFR Subpart E (91.401 – 91.417), FAA Policy 8900.227 Paragraph 16(c)(4) and Paragraph 16(e)(1). These regulations will be listed in an itemized form below.

14 CFR 21
14 CFR 91.203
14 CFR 45.23
14 CFR 45.29
14 CFR 91.9
14 CFR 61.113
14 CFR 61.133
14 CFR 91.109
14 CFR 91.119
14 CFR 91.121
14 CFR 91.151
14 CFR Subpart E (91.401 – 91.417)
FAA Policy 8900.227 Paragraph 16(c)(4) and Paragraph 16(e)(1).

The Arch Aerial OCTO is an eight-rotor UAS that weighs 7.0 pounds, and is operated using a radio control 2.4 GHz transmitter, and monitored using an Android or Windows-based ground control station, connected via radio telemetry in the 915 MGHz band. The

Arch Aerial OCTO can carry a payload of up to 13 pounds, and has been operated with a payload of high-resolution DSLR cameras, infrared cameras, and video cameras for photography, videography, geospatial analysis and photogrammetry. This request for an exemption would support a COA application to use the Arch Aerial OCTO multi-rotor UAS for agricultural survey, film production, property survey, aerial photography, pipeline survey, and for monitoring damage in the event of a natural disaster.

AALLC has extensive operational experience in the United States and abroad, and designed the AALLC OCTO for topographic survey and aerial mapping. AALLC staff members have assisted American research institutions abroad in survey and supplemental aerial photography.[1] AALLC is requesting this exemption in order to operate the AALLC OCTO for low-altitude aerial photography in unpopulated areas for primarily precision agricultural survey and property survey.

The FAA recently granted 6 companies an exemption to use small UAS to film for movie and TV production companies.[2] AALLC is also requesting this exemption to use the AALLC OCTO to film and photograph for movie and TV production companies, and asserts that the AALLC OCTO is as safe, if not safer than the platforms in use by these companies.

The presence of UAS and their integration into the NAS has been in the public eye for quite some time now, and both the private and public sectors have shown a significant amount of interest in paving the way for safe and responsible UAS operation. AALLC is fully committed to this mission, and desires to operate small AALLC UAS for both research and commercial purposes using the Flight Restrictions (FRs) listed below.

The Arch Aerial OCTO will be operated in accordance with the following FRs:

- Flight operations will occur only in Class E or Class G airspace
- Flight operations will occur at no more than 400 feet above ground level
- Flight operations will occur using an electric power source
- Flight operations will not risk the safety of the PIC or VO, or fly over any members of the general public
- Flight operations will avoid congested or populated areas, which the FAA designates as yellow on VFR charts
- Flight operations will be operated within VLOS, with one PIC and one ground-based VO within an audible distance of the PIC
- Flight operations will occur only during daylight hours
- Flight operations will not be conducted within a 5 NM radius from the center of any FAA designated airport
- Flight operations will only be conducted with permission from the land owner
- Flight operations will comply with all NOTAMs and TFRs

---

[1] http://www.dayofarchaeology.com/tag/arch-aerial-llc/

[2] https://www.faa.gov/news/press_releases/news_story.cfm?newsId=17194

AALLC is submitting this petition on its own behalf. If the FAA requires any modifications to our Arch Aerial OCTO exemption request, Arch Aerial requests the opportunity to amend this petition to include any modifications the FAA may require before granting or rejecting the petition for exemption. Arch Aerial will amend its petition to meet any additional standards for the integration of small UAS operation into the NAS.

AALLC also requests that the FAA keep materials labeled "Confidential" from the public record for the purpose of maintaining our intellectual property.

Best Regards,

Ryan Lee Baker
CEO / Arch Aerial LLC
rbaker@archaerial.com
(281) 974 - 5752
30707 McKinney Dr.
Tomball, TX 77375

ATTACHED:
Exemption Requests
Arch Aerial OCTO Manual
Monthly Maintenance Inspection Checklist
Arch Aerial OCTO Go-For-Flight Pre-Flight Checklist

EXEMPTION REQUESTS
AALLC requests exemption for the following statutes:

14 CFR 21
14 CFR 91.203
14 CFR 45.23
14 CFR 45.29
14 CFR 91.9
14 CFR 61.113
14 CFR 61.133
14 CFR 91.109
14 CFR 91.119
14 CFR 91.121
14 CFR 91.151
14 CFR Subpart E (91.401 – 91.417)
FAA Policy 8900.227 Paragraph 16(c)(4) and Paragraph 16(e)(1).

14 CFR 21 | Airworthiness Certificates

AALLC requests an exemption from Section 14 CRF Part 21 which requires the issuance of an Airworthiness Certificate for flight operation, while the FAA is still carrying out research and development for UAS standards and regulation.

AALLC's OCTO multi-rotor aircraft weights only approximately 7.0 pounds, and can carry a maximum payload of up to 13 pounds. It will not carry fuel or passengers, and will obey the operational requirements (FRs) outlined in the introduction to this exemption petition. The AALLC OCTO can travel at most 0.5 NM from launch due to power supply constraints and forward speed limitations. We assert that the AALLC OCTO, as compared to manned aircraft, significantly reduces the risk to crew, passengers, property, and the general public due its small size, limited range, and FR outlined above.

In the event that the FAA requires AALLC to obtain an Experimental Airworthiness Certificate or traditional Airworthiness Certificate in order to receive an exemption from Section 333, AALLC requests an opportunity to pursue such a certification.

14 CFR 91.203 | Civil Aircraft; Certifications Required

Section 14 CFR 91.203 requires that aircraft carry on board the aircraft's Airworthiness Certificate. The subsection (b) further states that the Airworthiness Certificate should be "displayed at the cabin or cockpit entrance so that it is legible to passengers or crew".

The AALLC OCTO has requested an exemption in the previous section (14 CFR 21 | Airworthiness Certificates). In the event that the FAA required AALLC to obtain an experimental Airworthiness Certificate, AALLC would pursue such a certification and

keep the relevant information on the ground with the PIC and VO at their designated ground station.

Subsection (b) does not apply to the AALLC OCTO, as it does not carry passengers or crew, or have a "cockpit" entrance. AALLC proposes mounting the AALLC identification information (mailing address, phone number, COA ID Number, or any other information deemed relevant to the FAA) and the UAS identification information (UAS unique number issued by AALLC, and Airworthiness Certificate information if required) on a visible exterior surface of the AALLC OCTO.

14 CFR 45.23 | Display of marks; general.

Subsections (a) and (b) for 14 CFR 45.23 require that the operator of the aircraft display the registration number on the side of the aircraft, and at various positions "near each entrance to the cabin, cockpit, or pilot station, in letters not less than 2 inches nor more than 6 inches high".

AALLC's OCTO does not have a cabin, cockpit, passengers or crew, and as such has no means of mounting it to these structures. AALLC proposes that it keeps identification information and an AALLC OCTO manual with the PIC and VO at the ground station. AALLC also proposes that in place of the markings required by 14 CFR 45.23, it keeps registration information and the AALLC mailing address, email address, and phone number permanently affixed to a visible exterior surface of the AALLC OCTO.

14 CFR 45.29 | Size of marks.

Subsections (a) and (b) of 14 CFR 45.29 provide for the size and dimensions of the markings noted in 14 CFR 45.23. Subsection (b) section (iii) states that "Marks at least 3 inches high may be displayed on an aircraft for which the FAA has issued an experimental certificate under § 21.191 (d), § 21.191 (g), or § 21.191 (i) of this chapter to operate as an exhibition aircraft, an amateur-built aircraft, or a light-sport aircraft when the maximum cruising speed of the aircraft does not exceed 180 knots CAS".

AALLC proposes that the mounted identification information listed in the previous two sections will be sufficient for identification for the AALLC OCTO. As the OCTO is only 7.0 pounds and does not have the space on board to post 3 inch letters, we propose that AALLC keeps registration information and the AALLC identification information (mailing address, email address, phone number, or any other information the FAA deems relevant for identification purposes) permanently affixed to a visible exterior surface of the AALLC OCTO and with the PIC and VO on the ground.

14 CFR 91.9 | Civil aircraft flight manual, marking, and placard requirements.

Section 14 CFR 91.9 requires those operating an aircraft to keep a Flight Manual on board the aircraft during operation.

AALLC requests an exemption from this section as the AALLC OCTO does not carry passengers or crew and would not benefit from keeping a Flight Manual on board the aircraft during operation. AALLC will keep a Flight Manual with the PIC and VO at the ground station.

14 CFR 61.113 | Private pilot privileges and limitations: Pilot in command and 14 CFR 61.133 | Commercial pilot privileges and limitations.

14 CFR 61.113 stipulates, "No person who holds a private pilot certificate may act PIC that is carrying passengers or property for compensation or hire". Subsection (b) of this part stipulates that the PIC may conduct flight if (1) the "flight is only incidental to that business or employment; and (2) "the aircraft does not carry passengers or property for compensation or hire."

As AALLC requests that the AALLC OCTO be operated with only ground school and a passing score on the FAA Written Examination, AALLC requests that the AALLC OCTO be allowed to operate for compensation or hire to complete market research for use for agricultural survey, pipeline survey, oil rig survey, monitoring damage or movement of environmentally sensitive materials in the event of an environmental disaster, property survey, film production, and aerial photography. Considering that the AALLC OCTO does not carry passengers or property, and there is no equivalent flight certification for UAS PICs and VOs, AALLC requests that the PIC and VO be required to complete only an FAA approved ground school program and pass the FAA Written Examination.

14 CFR 91.109 | Flight instruction; Simulated instrument flight and certain flight tests.

14 CFR 91.109 stipulates, "No person may operate a civil aircraft (except a manned free balloon) that is being used for flight instruction unless that aircraft has fully functioning dual controls."

AALLC requests an exemption from this part, as the AALLC OCTO uses on board software and a small RC transmitter for flight operation, which can accommodate "Instructor" override with the correct RC transmitter. We feel that this override, along with training within VLOS for the PIC, VO, student, and instructor, is sufficient for the operation of AALLC OCTO UAS.

14 CFR 91.119 | Minimum safe altitudes: General.

14 CFR 91.119 requires that the PIC operate at "...an altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure."

Following current FAA guidelines, the AALLC OCTO operates below 400 feet and within VLOS. Considering that we intend to operate within VLOS and below 400 feet,

the AALLC OCTO cannot comply with this request. AALLC will operate within all guidelines and proposed operation procedures outlined above. In addition, AALLC will fly only over private property with written permission from the property owner for flight, image capture, image storage, and image transfer (in accordance with Texas House Bill 912, published September 2013).

14 CFR 91.121 | Altimeter settings.

14 CFR 91.121 stipulates that the PIC "operating an aircraft shall maintain the cruising altitude or flight level of that aircraft, as the case may be, by reference to an altimeter that is set, when operating – (i) The current reported altimeter setting of a station along the route and within 100 nautical miles of the aircraft."

The AALLC OCTO maintains an altitude using the barometric altitude reading and the GPS reading for altitude on board, transmitted through the 915 MHz telemetry dongle to tablet, Android device, or PC. Considering that the AALLC uses primarily a barometric altitude reading, and the AALLC OCTO will only be in flight for around 20-30 minutes, even drastic changes in barometric pressure will not affect the altitude reading.

14 CFR 91.151 | Fuel requirements for flight in VFR conditions.

14 CFR 91.151 requires that the PIC may not begin a flight under VFR "unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing…"

The AALLC OCTO does not use liquid fuel, but instead uses a lithium polymer battery that utilizes electric energy instead of fuel. Considering this clarification, and the fact that the AALLC OCTO cannot fly more than 0.5 NM from its launch point, AALLC requests an exemption from 14 CFR 91.151.

14 CFR Subpart E (91.401 – 91.417) | General Operating and Flight Rules

Subsections 91.405 and 91.407 of 14 CFR Subpart E require that routine and regularly scheduled maintenance be performed upon the aircraft before flight. Furthermore, Section 91.407 Part (1) stipulates that no person may operate an aircraft unless "It has been approved for return to service by a person authorized under §43.7 of this chapter".

AALLC requests exemption from these points, and proposes that the PIC and VO be allowed to perform maintenance reviews and inspections once a month, and pre-flight checks before *every* flight. The 'Monthly Maintenance Inspection Checklist' and 'Pre-Flight Checklist' are both attached to this petition. The PIC and VO will be able to repair broken arms, replace broken or worn propellers, and calibrate using the flight software. Further diagnosis or maintenance that requires tools not available to the PIC or VO in the field will be performed by AALLC.

FAA Policy 8900.227 Paragraph 16(c)(4) and Paragraph 16(e)(1).

Policy 8900.227 Paragraphs 16(c)(4) and 16(e)(1) stipulate that the PIC and VO must have valid medical evaluations, classified as FAA second-class medical certificates, in order to perform as the Pilot In Command or the Visual Observer.

Considering that the PIC and VO will both be on the ground, and that the AALLC OCTO cannot travel further that 0.5 NM, AALLC proposes that the PIC and VO only be required to have 20/20 vision or corrective lenses or contacts.