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

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

August 14, 2015

Exemption No. 11171A
Regulatory Docket No. FAA−2014−0816

Mr. Brian J. Borkowski
Asymmetric Technologies, LLC
1395 Grandview Avenue, Suite 3
Columbus, OH 43212

Dear Mr. Borkowski:

This letter is to inform you that we have granted your petition for an amendment. It explains the basis for our decision, describes its effect, and lists the revised conditions and limitations.

By letter dated April 16, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Asymmetric Technologies, LLC (hereinafter petitioner or operator) for an amendment to your current exemption. That exemption from Part 21, Subpart H, Part 27; §§ 45.23(b), 45.27(a), 61.113(a) and (b), 91.7(a), 91.9 (b)(2); 91.9(c); 91.103; 91.109(a); 91.119; 91.121; 91.151(a); 91.203(a)and(b); 91.405(a)(1); 91.407(a)(1); 91.409(a)(1); and 91.417(a) and (b) of Title 14, Code of Federal Regulations (14 CFR) allows the petitioner to operate a UAS to conduct infrastructure (bridge) inspections. You requested an amendment to add aerial imaging and inspections with a focus on tall structures (between 200 and 400 feet AGL), transportation and towered infrastructure, including bridges, cell phone and radio towers, light poles, utility-power generation and transmission structures, and dams, and (ii) for the purpose of conducting demonstrations of the Microdrone platforms in conjunction with training and inspection efforts; To allow flight operations within the National Airspace System ("NAS") 100 feet above existing structures that already exceed an altitude of 400 feet above ground level (AGL) when inspection conditions warrant such necessity; and that the PIC must possess at least a recreational or sport pilot certificate and have a valid U.S. driver's license.

In your petition, you indicate that there has been no change in the conditions and reasons relative to public interest and safety that were the basis for granting the original exemption.

The FAA has determined that good cause exists for not publishing a summary of the petition in the Federal Register because the requested amendment to the exemption would not set a precedent, and any delay in acting on this petition would be detrimental to the petitioner. The

unmanned aircraft(s) authorized in the original grant is comparable in type, size, weight, speed and operating capabilities to those in this petition.

Airworthiness Certification

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, C*ertification 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

The FAA has updated the conditions and limitations since the petitioner's initial grant of exemption to those found in Exemption No. 11213 to Aeryon Labs, Inc. (Docket No. FAA-2014-0642). Also 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), 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 amendment to 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 an amendment is in the public interest.

Our Decision

The FAA has determined that the justification for the issuance of Exemption No. 11171 remains valid and is in the public interest. Therefore, under the authority contained in 49 U.S.C. 106(f), 40113, and 44701, delegated to me by the Administrator, the operator is granted an amendment to its 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[1]. 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.

Conditions and Limitations

The conditions and limitations within Grant of Exemption No. 11171 have been superseded, and are amended as follows.

In this grant of exemption, Asymmetric Technologies, 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 Microdrones MD4−1000 and MD4−200 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

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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.

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 February 28, 2017, unless sooner superseded or rescinded.

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

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, DC

Regulatory Docket No. FAA-2014-0816

ASYMMETRIC TECHNOLOGIES, LLC, PETITION FOR AMENDMENT CONCERNING

CONDITION AND LIMITATION NUMBERS 1, 2, 4, & 16 TO GRANT OF EXEMPTION NO. 11171

Submitted on April 16th, 2015
BRIAN J. BORKOWSKI
ASYMMETRIC TECHNOLOGIES, LLC
1395 Grandview Avenue, Suite3
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Phone: 614-725-5310
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President and CEO

I. INTRODUCTION

Petitioner, Asymmetric Technologies, LLC. ("Asymmetric"), by and through undersigned counsel, pursuant to the provisions of the Federal Aviation Regulations and the Federal Aviation Administration ("FAA") Modernization and Reform Act of 2012 ("FMRA"), Section 333, Special Rules for Certain Unmanned Aircraft Systems, hereby petitions the Administrator for amendments to Condition and Limitations numbered one (1) two (2) four (4) and sixteen (16) to Grant of Exemption No. 11171 (Regulatory Docket No. FAA-2014-0816), which granted Asymmetric applicable exemptions from 14 C.F.R to the extent necessary to allow operation of the Microdrone MD4-1000 Unmanned Aircraft System ("UAS") for the special purpose of conducting bridge infrastructure inspections.

Specifically, Asymmetric seeks an amendment to specific Conditions and Limitations contained in Grant of Exemption No. 11171 as follows:

(1) Whereas use and operation of Microdrone MD4-1000 is previously granted, Asymmetric seeks permission to also use and operate Microdrone MD4-200;

(2) Whereas use of UAS to inspect bridge infrastructure is previously granted, Asymmetric seeks permission to (i) use UAS to conduct aerial imaging and inspections with a focus on tall structures (between 200 and 400 feet AGL), transportation and towered infrastructure, including bridges, cell phone and radio towers, light poles, utility-power generation and transmission structures, and dams, and (ii) for the purpose of conducting demonstrations of the Microdrone platforms in conjunction with training and inspection efforts;

(4) To allow flight operations within the National Airspace System ("NAS") 100 feet above existing structures that already exceed an altitude of 400 feet above ground level (AGL) when inspection conditions warrant such necessity.

(16) The PIC must possess at least a recreational or sport pilot certificate and have a valid U.S. driver's license.

Asymmetric submits that in adhering to existing FAA standards and guidelines concerning UAS operations, and the conditions and limitations set forth in Grant of Exemption No. 11171, as well as the proposed amendments thereto as set forth below, will ensure the safety of the NAS, and of persons and property on the ground.

In support thereof, Asymmetric states the following:

A. Name and Address of the Petitioner.

The name and address of the Petitioner is:

ASYMMETRIC TECHNOLOGIES, LLC

1395 Grandview Avenue, Suite3

Columbus, OH 43212

B. The point of contact for this Petition and specific contact information is as follows:

Brian J. Borkowski

1395 Grandview Avenue, Suite 3

Columbus, OH 43212

Phone: 614-725-5310 Fax: 614-928-3202

Email: brian@asymmetric.com

II. PROPOSED OPERATIONS

A. Asymmetric Seeks To Amend Condition and Limitation Number One (1) to Exemption No. 11171.

Condition and Limitation number one to Grant of Exemption No. 11171 states the following at page 16:

"Operations authorized by this grant of exemption are limited to the following aircraft described in the operating documents which has four rotors and four motors in a quadcopter configuration and weighing less than 8.5 pounds: Microdrones MD4-1000, manufactured by Microdrones. Proposed operations of any other aircraft will require a new petition or a petition to amend this grant."

1. Extent of the Amendment Sought.

Asymmetric submits that Condition and Limitation number 1 to Grant of Exemption No. 11171 be amended as follows:

Operations authorized by this grant of exemption are limited to the following aircraft described in the operating documents which has four rotors and four motors in a quadcopter configuration and weighing less than 8.5 pounds: Microdrones MD4-200 and MD4-1000, manufactured by Microdrones.

2. Necessity of Amendment Sought.

This relief is requested because Asymmetric's original Petition For Exemption (Regulatory Docket No. FAA-2014-0816) sought operation of only the Microdrones MD4-1000 to accomplish its bridge infrastructure inspection efforts. However, since the approval of Exemption No. 11171, Asymmetric has purchased the more light-weight MD4-200 Microdrones model in aspirations of building its UAS fleet and the company's capability as an inspection provider. Asymmetric proposes that it may safely operate the Microdrones MD4-200 in accordance with the already established guidance and provisions set forth in Exemption No. 11171 that apply to the use of the Microdrones model MD4-1000.

By operating the Microdrones MD4-200 UAS, Asymmetric will be able to enhance its aerial services capability by utilizing several UAS platforms. Furthermore, the MD4-200 Microdrones and its capabilities and limitations meet the safety considerations for UA as stated in Section 333(b) of P.L. 112-95.

B. Asymmetric Seeks To Amend Condition and Limitation Number Two To Grant Of Exemption No. 11171.

Condition and Limitation number two to Grant of Exemption No. 11171 states the following at page 16:

"UAS operations under this exemption are limited to the inspection of bridge infrastructure."

1. Extent of the Amendment Sought.

Asymmetric submits that Condition and Limitation number two (2) to Grant of Exemption No. 11171 be amended as follows:

UAS operations under this exemption are limited to aerial imaging and inspection, with a focus on tall structures, transportation and towered infrastructure. This exemption also provides for UAS demonstrations on predetermined and pre-coordinated structures for training and planning purposes in conjunction with inspection efforts.

2. Necessity of Amendment Sought.

This relief is requested because Asymmetric's original Petition For Exemption (Regulatory Docket No. FAA-2014-0816) sought specific exemptions from FRMA, Section 333 in anticipation of its then singular effort to conduct bridge infrastructure inspections. However, since the approval of Exemption No. 11171, Asymmetric has been working diligently to enhance its UAS program and services and has consequently been approached by several transportation engineering and utility service providers in aspirations of partnering with Asymmetric and utilizing its trained UAS personnel and Microdrones fleet to conduct inspections and obtain aerial imagery and data. These inspections would include the collection of imagery and data on structures such as bridges, cell towers, transmission towers, power lines, separate wind-turbines, and hydroelectric dams.

Additionally, it has been determined that the ability to conduct UAS demonstrations for customers on structures authorized within Exemption No. 11171 not only enhances safety in regards to planning and preparation for UAS operations by Asymmetric and its partners, but would supplement the approved training program prescribed in the Asymmetric Flight Manual. These demonstrations also support Asymmetric' s UAS platform resale efforts with customers that want to build their own UAS programs as a result of successful inspections.

Asymmetric proposes that it may safely operate its UAS Microdrones platforms and enhance its aerial services capability in accordance with the already established standards and safety procedures set forth in Exemption No. 11171 (Regulatory Docket No. FAA-2014-0816).

C. Asymmetric Seeks To Amend Condition and Limitation Number Four To Grant Of Exemption No. 11171.

Condition and Limitation number four (4) to Grant of Exemption No. 11171 states the following at page 17:

"The UAS must be operated at an altitude of no more than 400 feet above ground level (AGL), as indicated by the procedures specified in the operator's manual. All altitudes reported to the ATC must be in feet AGL."

1. Extent Of The Amendment Sought.

Asymmetric submits that Condition and Limitation number 4 to Grant of Exemption No. 11171 be amended as follows:

The UAS must be operated as indicated by the procedures specified in the operator's manual at an altitude of no more than 400 feet above ground level (AGL), or, no more than 100 feet above structures that already impede the national airspace with a height of 301 feet or greater. All altitudes reported to the ATC must be in feet AGL.

2. Necessity of Amendment Sought.

This relief is requested because Asymmetric's original Petition For Exemption (Regulatory Docket No. FAA-2014-0816) included only the necessary operating parameters specific to the conduct of a narrow category of bridge inspections. With the expansion of Asymmetric's role as a UAS inspection provider and its research of target-market structures, it is determined that some commercial structures that are in need of inspection and repair already exceed a height of 400 feet, or are close enough to that height, that they provide the necessity to exceed the 400-foot vertical ceiling in order to conduct thorough and safe inspections.

By obtaining the authorization to operate the UAS Microdrone platforms at altitudes up to 100 feet above structures that hamper inspection efforts with height in close proximity to a 400 foot ceiling, Asymmetric will be able to provide thorough inspection data and imagery of structures in their entirety for use by its partnered engineering and power generating companies. Moreover, a structure's vertical height plus 100-feet has been determined to be a safe operating distance so as to reduce the risk of damage to property or injury to persons.

D. Asymmetric Seeks To Amend Condition and Limitation Number Sixteen (16) to Exemption No. 11171.

Condition and Limitation number one to Grant of Exemption No. 11171 states the following at page 18:

"The PIC must possess at least a private pilot certificate and at least a current third- class medical certificate."

1. Extent of the Amendment Sought.

Asymmetric submits that Condition and Limitation number 16 to Grant of Exemption No. 11171 be amended as follows:

"The PIC must possess at least a recreational or sports pilot certificate and have a valid driver's license."

2. Necessity of Amendment Sought.

This relief is requested because of the recent change in guidance by the FAA to commercial operators flying under Section 333 Exemptions.

By using a recreational or sports certified pilot, Asymmetric will be able to operate its aerial services to the high level of safety and responsibility required by the Section 333 Exemption. Due to the Microdrone md4-200 and md4-1000 small size, endurance, range and payload capabilities, no passengers and no cargo would ever be carried. The Microdrone systems have an all-digital software platform with advanced features previously restricted to full size unmanned UAS. Automated features and advanced controls enable safe, reliable operation.

Microdrones systems automatically detect potential issues with configurable automated response behavior such as ret1urn home and land. The systems self-calibrate all of its flight sensors and performs self-tests prior to takeoff to check for errors. The operator is able to set altitude limits. The PIC has the ability to set up maximum altitude limits to prevent climbing to altitudes where normal manned aviation takes place. Mircodrone systems display battery voltage and flight times to both the PIC and observer. Low battery on the Microdrone system triggers a warning to PIC to return home. Critical battery on the Microdrone system initiates an automatic controlled descent and landing. If the Microdrone detects a lost link to the control system the vehicle will perform its predefined Return to Home and Land behavior or automatically land at the location it is currently flying. Given these safety features, Asymmetric request that operators should be required to have a recreational or sports pilot certification and hold a valid U.S. driver's license.

III. PUBLIC INTEREST

Granting Asymmetric's Request For Amendment to Conditions and Limitations numbers One (1), Two (2), and Four (4), is In The Public Interest, that is, the public as a whole benefits, as described below.

Granting the present petition for amendment(s) will continue to further the public interest as set forth in Grant of Exemption No. 11171, beginning on page 8, in which the Administrator found good cause for Asymmetric' s proposed UAS operation because enhanced safety is achieved by using an unmanned aircraft with the specifications described by Asymmetric, and by carrying no passengers or crew, as compared to a manned aircraft of significantly greater proportions, which carries crew in addition to flammable fuel. Granting the requested amendments is in the public interest by alleviating human exposure to danger by working at extreme elevations, and/or in proximity to high-voltage. The types of inspections proposed herein improve the quality of inspection services while decreasing operating costs associated therewith, comparative to conventional flight operations. Additionally, Asymmetric's proposed operations significantly reduce hazards, as well as emissions, associated with the common practice of manned helicopter utilization to conduct similar inspection operations.

Asymmetric's proposed UAS operations will provide benefits to energy, science, and civil engineering. Furthermore, the benefits of Asymmetric's proposed operation of the Microdrone UAS will be realized without implicating any privacy issues.

Granting of Asymmetric' s proposed amendment will fulfill the Congressional mandate of the FAA Modernization and Reform Act of 2012, by allowing Asymmetric to safely, efficiently, and economically operate the Microdrone UAS commercially within the NAS.

IV. SAFETY

Granting the hereto proposed amendments to conditions and limitations numbers one (1), two (2), four (4), and sixteen (16) will not adversely affect safety.

Asymmetric proposes that it may safely operate the Microdrone UAS in accordance with its safety procedures and guidelines as outlined in its Flight Operations Manual. Granting these amendments would ensure Asymmetric' s inspection operations are confined to flights at an altitude of no more than 400 feet AGL, or only exceed that height to a vertical ceiling of 100 feet above an existing structure when inspection conditions warrant the necessity to do so.

All FAA mandated procedures and notifications including provisions for obtaining a Certificate of Authorization or waiver (COA), and publishing of a Notice To Airmen (NOTAM) as outlined in 14 CFR § 91.119 as well as Grant of Exemption 11171 shall be strictly adhered to. Asymmetric respectfully submits that an equivalent level of safety will be maintained, as presented in Grant of Exemption No. 11171, as all other previously granted conditions and limitations shall remain in effect.

V. FEDERAL REGISTRY SUMMARY

The following summary may be published In the Federal Register, in the event it should be determined such summary is needed:

1. The Rules From Which Asymmetric Seeks Exemption:

Asymmetric, LLC seeks to amend Condition and Limitation number One, Two, Four, and Sixteen to Grant of Exemption No. 11171.

2. A Brief Description Of The Nature Of The Exemption Asymmetric Seeks:

This amendment to Grant of Exemption No. 11171 will permit Asymmetric Technologies, LLC to (1) allow operations of the Microdrone MD4-200; (2) to allow use of UAS to conduct aerial imaging and inspections of towered infrastructure and tall structures, and for the purpose of conducting demonstrations of the Microdrone platforms in conjunction with training and inspection efforts; (4) allow flight operations within the National Airspace System ("NAS") 100 feet above existing structures

that already exceed an altitude of 400 feet above ground level (AGL) when inspection conditions warrant the necessity.

VI. ANY ADDITIONAL INFORMATION, VIEWS, OR ARGUMENTS AVAILABLE TO SUPPORT ASYMMETRIC'S REQUEST:

This Petition is made pursuant to the FAA Modernization and Reform Act of 2012 Section 333, which directs the Secretary of Transportation to determine if certain UAS may operate safely in the NAS. As such, Asymmetric's request for amendment may be granted pursuant to the authority of FMRA Section 333 and 14 C.F.R. Part 11, as set forth above.

CONCLUSION

WHEREFORE, in accordance with the Federal Aviation Regulations (14 C.F.R) and the FAA Modernization and Reform Act of 2012, Section 333, Asymmetric respectfully requests that the Administrator grant this Petition for amendment to Grant of Exemption No. 11171, to the extent necessary to allow Asymmetric to operate the Microdrone UAS within the NAS for the purpose of aerial imaging and inspections of utility-power generation structures and dams, and for the purpose of conducting demonstrations of the Microdrone platforms in conjunction with training and inspection efforts.

Dated: April 16th, 2015

Respectfully submitted,
ASYMMETRIC TECHNOLOGIES, LLC

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