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

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

August 31, 2015

Exemption No. 12680
Regulatory Docket No. FAA−2015−2492

Mr. Arlington Duncan
GOLD LEAF AVIATION LLC
4906 Wellington Way
Houston, TX 77069

Dear Mr. Duncan:

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

By letter dated June 1, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of GOLD LEAF AVIATION LLC (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial videography, photography, inspections, data collection, and training[1].

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.

[1] The petitioner requested authority to conduct UAS training. At this time, the FAA is unable to authorize UAS operations for training until a further assessment is completed. When the FAA completes its review, we will proceed accordingly and no further action will be required by the petitioner. However, the petitioner is permitted to train its own pilot in commands and visual observers in accordance with condition no. 14 and the other conditions and limitations in this exemption.

Airworthiness Certification

The UAS proposed by the petitioner is a Yuneec Q500 Typhoon.

The petitioner requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*. In accordance with the statutory criteria provided in Section 333 of Public Law 112−95 in reference to 49 U.S.C. § 44704, and in consideration of the size, weight, speed, and limited operating area associated with the aircraft and its operation, the Secretary of Transportation has determined that this aircraft meets the conditions of Section 333. Therefore, the FAA finds that the requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*, and any associated noise certification and testing requirements of part 36, is not necessary.

The Basis for Our Decision

You have requested to use a UAS for aerial data collection[2]. 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,

[2] 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.

delegated to me by the Administrator, GOLD LEAF AVIATION 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, GOLD LEAF AVIATION 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 Yuneec Q500 Typhoon 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

UNITED STATES OF AMERICA

DEPARTMENT OF TRANSPORTATION

FEDERAL AVIATION ADMINISTRATION

WASHINGTON, DC

Regulatory Docket No. _____

IN THE MATTER OF THE PETITION FOR EXEMPTION OF:

GOLD LEAF AVIATION LLC FOR AN EXEMPTION SEEKING RELIEF FROM THE REQUIREMENTS OF TITLE 14 OF THE CODE OF FEDERAL REGULATIONS SECTIONS

14 CFR Part 21 subpart H

14 CFR 45.23 (b)

14 CFR 61.113 (a) & (b)

14 CFR 91.7 (a)

14 CFR 91.9 (b) (2)

14 CFR 91.103

14 CFR 91.109

14 CFR 91.119 (c)

14 CFR 91.121

14 CFR 91.151 (a)

14 CFR 91.203 (a) & (b)

14 CFR 91.405 (a)

14 CFR 91.407 (a) (1)

14 CFR 91.409 (a) (2)

14 CFR 91.417 (a) & (b)

CONCERNING COMMERCIAL OPERATION OF YUNEEC Q500 TYPHOON UNMANNED AIRCRAFT SYSTEMS PURSUANT TO SECTION 333 OF THE FAA MODERNIZATION AND REFORM ACT OF 2012 (PUBLIC LAW 112-95)

TABLE OF CONTENTS **Page**

GLOSSARY OF ABBREVIATIONS

AGL Above Ground Level

AOI Area of Interest

ATC Air Traffic Control

ATO Air Traffic Organization

AV Aerial Vehicle

CFR Code of Federal Regulations

COA Certificate of Authorization

FAA Federal Aviation Administration

FAR Federal Aviation Regulation

GCS Ground Control Station

GPS Global Positioning System

LOL Loss of Link

NAS National Airspace System

NOTAM Notice to Airman

PIC Pilot In Command

Section 333 FAA Modernization and Reform Act of 2012 (FMRA) Section 333

SO Safety Observer

SOP Standard Operating Procedures

UA Unmanned Aircraft

UAS Unmanned Aircraft System

VFR Visual Flight Rules

VLOS Visual Line of Site

VMC Visual Meteorological Conditions

VTOL Vertical Takeoff and Landing

SUMMARY

GOLD LEAF AVIATION LLC seeks exemption from the requirements of 14 CFR 21 subpart H; 14 CFR 45.23(b); 14 CFR 61.113(a) and (b); 14 CFR 91.7(a); 14 CFR 91.9(b)(2); 14 CFR 91.103; 14 CFR 91.109; 14 CFR 91.119(c); 14 CFR 91.121; 14 CFR 91.151(a); 14 CFR 91.203 (a) and (b); 14 CFR 91.405 (a); 14 CFR 91.407 (a) (1) 14 CFR 91.409 (a)(1) and (2); 14 CFR 91.417(a) and (b), to operate an Unmanned Aircraft System pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (FMRA). This exemption will permit GOLD LEAF AVIATION LLC to operate an Unmanned Aircraft System (UAS) for the commercial purpose of conducting aerial video & photography and data collection of construction sites, real estate, infrastructure, public & private events, and landscape over certain areas of the United States.

INTRODUCTION AND INTERESTS OF THE PETITIONER

UAS Integration Office – Special Rules Coordinator
Federal Aviation Administration
U. S. Department of Transportation
Docket Management System
1200 New Jersey Ave., SE
Washington, DC 20590

June 1, 2015

Re: Petition for Exemption for Use of UAS for Real Estate, Public Interest, Small Business Applications Under Section 333, Title 14

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (the "Reform Act") and 14 CFR Part 11, Arlington Duncan and my company, GOLD LEAF AVIATION LLC, operator of an Unmanned Aircraft System (UAS), hereby applies for an exemption from the listed Federal Aviation Regulations ("FARs") to allow commercial operation of its UAS, so long as such operations are conducted within and under the conditions outlined herein or as may be established by the FAA as required by Section 333.
Commercial operation of an UAS, as described herein, which are equipped with camera(s) and sensors, would operate in the following manner:

1. Aerial photography and/or video for public and/or private use including real estate, architecture, land surveying, engineering and other related professional activities.

2. Aerial video and/or photography for public and/or private use including television, public events, cinematography and news gathering.

3. Aerial inspection/photography of residential/commercial structures under contract with the owners or local government authority.

4. Aerial inspection/photography of residential/commercial utility infrastructure including but not limited to electrical power lines, wind turbines and cell towers.

5. Aerial video/photography or providing live video feed to assist with search and rescue operations in cases of an emergency or natural disaster only when the local authorities or government has requested it by contract or donation.

6. The ability to offer training to persons individually or belonging to both private and/or public organizations that have interests in the use and application of a UAS for the purpose of the safe operation of a UAS to enhance the safety of the National Airspace System (NAS) as well as for the

protection of the persons and property.

As described fully below, the requested exemption would permit the operation of a UAS under controlled conditions in the NAS that would be a) limited b) controlled c) predetermined and d) will provide safety enhancements to the already safe operations in the industry presently using conventional aircraft. Approval of this exemption would thereby enhance safety and fulfill the Secretary of Transportation's (the FAA Administrator's) responsibilities to "....establish requirements for the safe operation of such aircraft systems in the national airspace system."

BACKGROUND

Unmanned Aircraft System: YUNEEC Q500 TYPHOON

GOLD LEAF AVIATION LLC will operate the Yuneec Electric Aviation Model Q500 Typhoon UAS, with a total weight of 1700g or 4.75 lbs. The dimensions are 420mm x 420mm x 240mm or 16.54 inches x q6.54 inches x 9.45 inches. Under still air the maximum speed is no more than 6.7 m/s or 15 mph with a cruising speed of 6.7 m/s or 15 mph. The YUNEEC Q500 TYPHOON has the ability to hover and move along a vertical and horizontal plane simultaneously. The YUNEEC Q500 TYPHOON has four motors, motor model YUNM4234 KV700, powered by a 5400 mAh 3s 11.1v Lithium Polymer battery. There are four counter rotating propellers, propeller models YUNQ500115A and YUNQ50011B, in use. The YUNEEC Q500 TYPHOON will be controlled with a Yuneec model ST10, 10 channel remote controller with an operating frequency of 2.400GHz – 2.483GHz. The live video feed will have an operating frequency of 5.728GHz – 5.850GHz. The applicant will operate the UAS in line of sight within a closed off and predetermined area owned and/operated by the property representative.

The YUNEEC Q500 TYPHOON UAS that will be operated by GOLD LEAF AVIATION LLC will be registered in accordance with 49 U.S.C. 44103, Registration of Aircraft, as well as 14 C.F.R Part 47, Aircraft Registration, and marked in accordance with 14 C.F.R. Part 45, Identification and Registration Marking.

BASIS FOR PETITION

Petitioner, GOLD LEAF AVIATION LLC, pursuant to the provisions of the Federal Aviation Regulations (14 C.F.R. § 11.61) and the FAA Modernization and Reform Act of 2012 (FMRA), Section 333, Special Rules for Certain Unmanned Aircraft Systems, hereby petitions the Administrator to commercially operate the YUNEEC Q500 TYPHOON UAS in the National Airspace System (NAS), and for an exemption from the requirements of 14 CFR 21 subpart H; 14 CFR 45.23(b); 14 CFR 61.113(a) and (b); 14 CFR 91.7(a); 14 CFR 91.9(b)(2); 14 CFR 91.103; 14 CFR 91.109; 14 CFR 91.119(c); 14 CFR 91.121; 14 CFR 91.151(a); 14 CFR 91.203 (a) and (b); 14 CFR 91.405 (a); 14 CFR 91.407 (a) (1) 14 CFR 91.409 (a)(1) and (2); 14 CFR 91.417(a) and (b). In consideration of the speed, weight, size, and limited operating area associated with the unmanned aircraft and its operation, GOLD LEAF AVIATION LLC's operation of YUNEEC Q500 TYPHOON UAS meets the conditions of FMRA Section 333 and therefore, will not require an airworthiness certificate in accordance with 14 C.F.R. Part 21, Subpart H.

Accordingly, GOLD LEAF AVIATION LLC requests relief from Sections 91.405(a), 91.407(a)(1), 91.409(a)(1) & (a)(2), and 91.417(a) & (b), as these sections set forth requirements for maintenance that only apply to aircraft with an airworthiness certificate. GOLD LEAF AVIATION LLC submits that the requested relief is proper since an equivalent level of safety will be ensured. GOLD LEAF AVIATION LLC will use experienced personnel or technicians to perform maintenance, alterations, or preventive maintenance on the UAS using the methods, techniques, and practices prescribed in the operating documents (i.e., the GOLD LEAF AVIATION LLC Operations Manual, Monthly Maintenance Log, and YUNEEC Q500 TYPHOON Instruction Manual. Furthermore, GOLD LEAF AVIATION LLC will document and maintain all maintenance records for the YUNEEC Q500 TYPHOON UAS.

Relief from certain requirements of Section 61.113(a) and (b), entitled Private pilot privileges and limitations: Pilot in command, is requested by GOLD LEAF AVIATION LLC to the extent necessary to allow a Pilot in Command (PIC) holding a private pilot or higher level certificate, as well as an airman medical certificate, and who has demonstrated, by meeting minimum flight- hour and currency requirements, that the PIC is able to safely operate the YUNEEC Q500 TYPHOON UAS in a manner consistent with this exemption, including evasive and emergency maneuvers and maintaining appropriate distances from people, vessels, vehicles and structures.

GOLD LEAF AVIATION LLC seeks relief from Section 91.7(a), entitled Civil aircraft airworthiness, because the YUNEEC Q500 TYPHOON UAS do not require an airworthiness certificate in accordance with 14 C.F.R. Part 21, Subpart H. As such, GOLD LEAF AVIATION LLC submits that it will ensure that the YUNEEC Q500 TYPHOON UAS are in an airworthy condition, prior to every flight, by determining that the UAS are in compliance with the operating documents (i.e., the GOLD LEAF AVIATION LLC Aerial Operations Manual, Monthly Maintenance Log, and YUNEEC Q500 TYPHOON Instruction Manual), and that the aircraft is in a condition for safe flight.

In accordance with 14 C.F.R. § 11.81, GOLD LEAF AVIATION LLC provides the following information in support of its petition for exemption:

I. Name and Address Of The Petitioner.

The name and address of the Petitioner and point of contact is:

Arlington Duncan
GOLD LEAF AVIATION LLC
4906 Wellington Way
Houston, TX 77069
Tel: (281) 397-0898
Email: bagoman@gmail.com

II. The Specific Sections Of 14 C.F.R. From Which GOLD LEAF AVIATION LLC Seeks Exemptions

14 CFR 21 subpart H; 14 CFR 45.23(b); 14 CFR 61.113(a) and (b); 14 CFR 91.7(a); 14 CFR 91.9(b)(2); 14 CFR 91.103; 14 CFR 91.109; 14 CFR 91.119(c); 14 CFR 91.121; 14 CFR 91.151(a); 14 CFR 91.203 (a) and (b); 14 CFR 91.405 (a); 14 CFR 91.407 (a) (1) 14 CFR 91.409 (a)(1) and (2); 14 CFR 91.417(a) and (b)

III. The Extent Of Relief GOLD LEAF AVIATION LLC Seeks And The Reason GOLD LEAF AVIATION LLC Seeks The Relief.

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (the "Reform Act") and 14 CFR Part 11, Arlington Duncan and my company, GOLD LEAF AVIATION LLC, operator of an Unmanned Aircraft System (UAS), hereby applies for an exemption from the listed Federal Aviation Regulations ("FARs") to allow commercial operation of its UAS, so long as such operations are conducted within and under the conditions outlined herein or as may be established by the FAA as required by Section 333.
Commercial operation of an UAS, as described herein, which are equipped with camera(s) and sensors, would operate in the following manner:

Aerial photography and/or video for public and/or private use including real estate, architecture, land surveying, engineering and other related professional activities.

Aerial video and/or photography for public and/or private use including television, public events, cinematography and news gathering.

Aerial inspection/photography of residential/commercial structures under contract with the owners or local government authority.

Aerial inspection/photography of residential/commercial utility infrastructure including but not limited to electrical power lines, wind turbines and cell towers.

Aerial video/photography or providing live video feed to assist with search and rescue operations in cases of an emergency or natural disaster only when the local authorities or government has requested it by contract or donation.

The ability to offer training to persons individually or belonging to both private and/or public organizations that have interests in the use and application of a UAS for the purpose of the safe operation of a UAS to enhance the safety of the National Airspace System (NAS) as well as for the protection of the persons and property.

As described fully below, the requested exemption would permit the operation of a UAS under controlled conditions in the NAS that would be a) limited b) controlled c) predetermined and d) will provide safety enhancements to the already safe operations in the industry presently using conventional aircraft. Approval of this exemption would thereby enhance safety and fulfill the Secretary of Transportation's (the FAA Administrator's) responsibilities to "….establish requirements for the safe operation of such aircraft systems in the national airspace system."

14 C.F.R. Part 21, Subpart H: Airworthiness Certificates 14 C.F.R. §91.203 (a) (1)
Subpart H, entitled Airworthiness Certificates, establishes the procedural requirements for the issuance of airworthiness certificates as required by FAR §91.203 (a) (1). Given the size and limited operating area associated with the aircraft to be utilized by the Applicant, an exemption from Part 21 Subpart H meets the requirements of an equivalent level of safety under Part 11 and Section 333 of the Reform Act. 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, in the restricted environment and under the conditions proposed will be 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.
The UAS to be operated hereunder is less than 55 lbs. fully loaded, carries neither a pilot nor passenger, carries no explosive materials or flammable liquid fuels, and operates exclusively within a secured and designated area. Unlike other civil aircraft, operations under this exemption will be tightly controlled and monitored by both the operator and under the requirements and in compliance with local public safety requirements. These safety enhancements provide a greater degree of safety to the public and property owners than conventional operations conducted with airworthiness certificates issued under 14 C.F.R. Part 21, Subpart H.
Lastly, application of these same criteria demonstrates that there is no credible threat to national security posed by the UAS, due to its size, speed of operation, location of operation, lack of explosive materials or flammable liquid fuels, and inability to carry a substantial external load.

14 C.F.R. § 45.23 (b). Marking of the Aircraft
The regulation requires when marks include only the Roman capital letter "N" and the registration number is displayed on limited, restricted or light-sport category aircraft or experimental or provisionally certificated aircraft, the operator must also display on that aircraft near each entrance to the cabin, cockpit, or pilot station, in letters not less than 2 inches nor more than 6 inches high, the words "limited," "restricted," "light-sport," "experimental," or "provisional," as applicable.
Even though the UAS will have no airworthiness certificate, an exemption may be needed as the UAS will have no entrance to the cabin, cockpit or pilot station on which the word "Experimental" can be placed. Given the size of the UAS, two-inch lettering will be impossible. The word "Experimental" will be placed on

the fuselage in compliance with §45.29 (f).
The equivalent level of safety will be provided by having the UAS marked on its fuselage as required by §45.29 (f) where the pilot, observer and others working with the UAS will see the identification of the UAS as "Experimental."

14 C.F.R. § 61.113 (a) and (b): Private Pilot Privileges and Limitations: Pilot in Command.
Relief from Section 61.113(a) and (b) entitled Private pilot privileges and limitations: Pilot in command, is requested to the extent necessary to allow a PIC holding a private pilot or higher level certificate, as well as a current and valid airman medical certificate, and who has met certain flight-hour and currency requirements, to conduct the proposed UAS flight operations for compensation or hire.

This relief is requested since the limitations set forth in Section 61.113(a) and (b) state that a private pilot may, for compensation or hire, act as PIC of an aircraft in connection with any business or employment 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 set forth more fully below, GOLD LEAF AVIATION LLC submits that an equivalent level of safety will be maintained because no PIC will be allowed to operate the YUNEEC Q500 TYPHOON UAS unless that PIC has met certain flight-hour and currency requirements, demonstrating that the PIC is able to safely operate either the YUNEEC Q500 TYPHOON UAS in a manner consistent with the operations specifications as described in this exemption, including evasive and emergency maneuvers, as well as maintaining appropriate distances from people, vessels, vehicles and structures.

Further, GOLD LEAF AVIATION LLC submits that all flights of the YUNEEC Q500 TYPHOON UAS, conducted by the PIC pursuant to the grant of this Petition: (1) will be incidental to GOLD LEAF AVIATION LLC's business; and (2) will not carry passengers or property for compensation or hire

14 C.F.R. §91.7(a): Civil Aircraft Airworthiness.
Relief From Section 91.7(a). Relief from Section 91.7(a) entitled Civil aircraft airworthiness, is requested to the extent required to allow GOLD LEAF AVIATION LLC to determine that the YUNEEC Q500 TYPHOON UAS are in airworthy condition prior to every flight by ensuring that the UAS is in compliance with the operating documents (i.e., the Gold Leaf Aviation Aerial Operations Manual, Monthly Maintenance Log, and YUNEEC Q500 TYPHOON Instruction Manual).

GOLD LEAF AVIATION LLC seeks the requested relief because the YUNEEC Q500 TYPHOON UAS does not require an airworthiness certificate in accordance with 14 C.F.R. Part 21, Subpart H. Therefore, GOLD LEAF AVIATION LLC will ensure that the YUNEEC Q500 TYPHOON UAS are in airworthy condition based upon its compliance with the operating documents (i.e., the GOLD LEAF AVIATION LLC Aerial Operations Manual, Monthly Maintenance Log, and YUNEEC Q500 TYPHOON Instruction Manual) prior to every flight, and further, determine that the aircraft is in condition for safe flight, as stated in the conditions and limitations below.

14 C.F.R. § 91.9 (b) (2): Civil Aircraft Flight Manual in the Aircraft.
Section 91.9 (b) (2) provides: No person may operate a U.S.-registered civil aircraft … (2) For which an Airplane or Rotorcraft Flight Manual is not required by §21.5 of this chapter, unless there is available in the aircraft a current approved airplane or Rotorcraft Flight Manual, approved manual material, markings, and placards, or any combination thereof. The UAS, given its size and configuration has no ability or place to carry such a flight manual on the aircraft, not only because there is no pilot on board, but because there is no room or capacity to carry such an item on the aircraft. The equivalent level of safety will be maintained by keeping the flight manual at the ground control point where the pilot flying the UAS will have immediate access to it.

14 C.F.R. § 91.103: Preflight Action.
This regulation requires each pilot in command to take certain actions before flight to insure the safety of flight. As FAA approved rotorcraft flight manuals will not be provided for the aircraft an exemption will be needed. The PIC will take all actions as stated in the Operating Manual including but not limited to reviewing weather, flight battery requirements, landing and takeoff distances and aircraft performance data before initiation of flight.

14 C.F.R. §91.109: Flight Instruction.
Section 91.103 provides that 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. UAS and remotely piloted aircraft, by their design do not have fully functional dual controls. Flight control is accomplished through the use of a ground control station that communicates with the aircraft via radio communications. The FAA has approved exemptions for flight training without fully functional dual controls for a number of aircraft and for flight instruction in experimental aircraft. The equivalent level of safety provided by the fact that neither a pilot nor passengers will be carried in the aircraft and by the size and speed of the aircraft.

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. As this exemption is for a UAS that is a helicopter and the exemption requests authority to operate at altitudes up to 400 AGL, or not more than 200 above an elevated platform from which filming is planned, an exemption may be needed to allow such operations. As set forth herein, the UAS will never operate at higher than 400 AGL with the exception that in circumstances where the UAS is used to survey or photograph a structure whose height exceeds 400 feet AGL, the UAS will not be operated more than 200 feet above the highest point on the structure. It will however be operated in a restricted area with security perimeter, where buildings and people will not be exposed to operations without their pre-obtained consent.
The equivalent level of safety will be achieved given the size, weight, speed of the UAS as well as the location where it is operated. No flight will be taken without the permission of the property owner or local officials. Because of the advance notice to the property owner and participants in the filming activity, all affected individuals will be aware of the planned flight operations. Compared to flight operations with aircraft or rotorcraft weighting far more than the maximum 55lbs. proposed herein and 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 UAS operations and the operations of conventional aircraft that must comply with Section 91.119.

14 C.F.R. §91.121 Altimeter Settings.
Relief from Section 91.121, entitled Altimeter settings, is required to allow flight operations of the YUNEEC Q500 TYPHOON UAS, which utilize a barometric pressure sensor, GPS equipment, and a radio communications telemetry data link to downlink altitude information from the UAS to the PIC at the ground control Station (GCS). Since the FAA requires that any altitude information concerning UAS operations be reported to air traffic control (ATC) in feet above ground level (AGL), GOLD LEAF AVIATION LLC seeks the requested relief because the YUNEEC Q500 TYPHOON UAS's altimeter may be set on the ground to zero feet AGL, rather than the local barometric pressure or field altitude, before each flight. Considering the limited altitude of the proposed operations, relief from 14 CFR 91.121 is sought to the extent necessary to comply with the applicable conditions and limitations stated below. As more fully set forth herein, an equivalent level of safety will be maintained since the YUNEEC Q500 TYPHOON UAS are equipped with a barometric pressure sensor and GPS equipment, which automatically ensures that a ground level pressure setting will be established prior to each flight, and provides the PIC with altitude information of the UA on the heads-up display of the GCS.

14 C.F.R. § 91.151(a): Fuel Requirements for Flight in VFR Conditions
Relief from Section 91.151(b) entitled Fuel requirements for flight in VFR conditions, is requested to the extent required to allow flights of the battery powered YUNEEC Q500 TYPHOON UAS during daylight hours in visual meteorological conditions (VMC), under visual flight rules (VFR), for a total duration of 20 minutes to the first

point of intended landing and, assuming normal cruising speed, to fly after that for at least 5 minutes. GOLD LEAF AVIATION LLC seeks the requested relief because without an exemption from Section 91.151(b), the flight time duration of the battery powered YUNEEC Q500 TYPHOON UAS will severely constrain the practicality of any aerial video or still photo flight operations that GOLD LEAF AVIATION LLC proposes to conduct pursuant to this Petition.

Significantly, as set forth below, the technical specifications of the YUNEEC Q500 TYPHOON UAS, the YUNEEC Q500 TYPHOON operating documents, and GOLD LEAF AVIATION LLC's proposed operating limitations, ensure that GOLD LEAF AVIATION LLC will safely operate the battery powered YUNEEC Q500 TYPHOON UAS during daylight hours in visual meteorological conditions (VMC), under visual flight rules (VFR), with enough battery power to fly for a total duration of 20 minutes to the first point of intended landing and, assuming normal cruising speed, to fly after that for at least 5 minutes. Applicant believes that an equivalent level of safety can be achieved by limiting flights to 25 minutes or 25% of battery power— whichever happens first. This restriction would be more than adequate to return the UAS to its planned landing zone from anywhere in its limited operating area.

14 C.F.R. §91.203 (a) and (b): Carrying Civil Aircraft Certification and Registration

The regulation provides in pertinent part:

(a) Except as provided in § 91.715, no person may operate a civil aircraft unless it has within it the following:

(1) An appropriate and current airworthiness certificate. . . .

(b) No person may operate a civil aircraft unless the airworthiness certificate required by paragraph (a) of this section or a special flight authorization issued under §91.715 is displayed at the cabin or cockpit entrance so that it is legible to passengers or crew.

The UAS fully loaded weighs no more than 55 lbs. and is operated without an onboard pilot. As such, there is no ability or place to carry certification and registration documents or to display them on the UAS.

An equivalent level of safety will be achieved by keeping these documents at the ground control point where the pilot flying the UAS will have immediate access to them, to the extent they are applicable to the UAS.

14 C.F.R. §91.405 (a); 407 (a) (1); 409 (a) (2); 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...," and others shall inspect or maintain the aircraft in compliance with Part 43. Given that these section and Part 43 apply only to aircraft with an airworthiness certificate, these sections will not apply to the applicant. Maintenance will be accomplished by the operator pursuant to the flight manual and operating handbook. An equivalent level of safety will be achieved because the UAS is very limited in size and will carry a small payload and operate only in restricted areas for a limited period of time. If mechanical issues arise the UAS can land immediately and will be operating from no higher than 400 feet AGL. The operator will ensure that the UAS is in working order prior to initiating flight, perform required maintenance, and keep a log of any maintenance performed. 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. An equivalent level of safety will be achieved because maintenance and inspections will be performed in accordance with the UAS Manufacturer's User Manual. As provided in the Operating Manual, the operator will ensure that the UAS is in working order prior to initiating flight and perform required maintenance needed.

IV. The Reasons Why Granting GOLD LEAF AVIATION LLC's Request Would Be In The Public Interest; That Is, How It Would Benefit The Public As A Whole.

Granting the present Petition will further the public interest by allowing Gold Leaf Aviation to safely, efficiently, and economically perform aerial video and photography of construction sites, real estate, and landscape over certain areas of the United States. Additionally, use of the YUNEEC Q500 TYPHOON UAS will decrease congestion of the NAS, reduce pollution, and provide significant benefits to the economy. Notably, the benefits of GOLD LEAF AVIATION LLC's proposed operation of the YUNEEC Q500 TYPHOON UAS will be realized without implicating any privacy issues.

1. The Public Will Benefit From Decreased Congestion Of The NAS.

The YUNEEC Q500 TYPHOON UAS is battery powered and serves as a safe, efficient, and economical alternative to the manned aircraft traditionally utilized to obtain aerial imagery. By reducing the amount of manned aircraft needed to perform aerial acquisitions, an exemption allowing the use of a YUNEEC Q500 TYPHOON UAS would reduce the amount of manned aircraft in the NAS, reduce noise and air pollution, as well as increase the safety of life and property in the air and on the ground. Furthermore, by reducing the number of manned aircraft operating in the NAS, congestion around airports caused by arriving and departing aircraft will be reduced. The YUNEEC Q500 TYPHOON UAS do not require an airport to takeoff or land. Likewise, a reduction of manned aircraft conducting aerial video and photography missions would result in fewer aircraft that must be handled by air traffic control during the ground, takeoff, departure, arrival, and landing phases of flight operations.

2. The Public Will Benefit From The Safety And Efficiency Of The YUNEEC Q500 TYPHOON UAS.

Conducting aerial acquisitions with the YUNEEC Q500 TYPHOON UAS, instead of manned aircraft, will greatly benefit the public by drastically reducing the levels of air and noise pollution generated during traditional aerial video and still photography flight operations. By using battery power and electric motors, the YUNEEC Q500 TYPHOON UAS produce no air pollution, and is the most viable environmentally conscious alternative to the cabin class, four-six cylinder internal combustion engine aircraft that are typically utilized for aerial video and photography, while burning approximately 10-16 gallons per hour of leaded aviation fuel. The YUNEEC Q500 TYPHOON UAS, while reducing the carbon footprint of aerial acquisitions, also eliminates noise pollution, as the UAs are propelled by battery powered electric motors, rather than an internal combustion engine. By using the YUNEEC Q500 TYPHOON UAS to perform aerial acquisitions, the substantial risk to life and property in the air and on the ground, which is usually associated with traditional manned aircraft flight operations, will be substantially reduced or completely eliminated. Aside from the lack of flight crew members located onboard the aircraft, the YUNEEC Q500 TYPHOON, has less physical potential for collateral damage to life and property on the ground, and in the air, compared to the manned aircraft that typically conduct similar operations.

GOLD LEAF AVIATION LLC will operate the Yuneec Electric Aviation Model Q500 Typhoon UAS, with a total weight of 1700g or 4.75 lbs. The dimensions are 420mm x 420mm x 240mm or 16.54 inches x q6.54 inches x 9.45 inches. Under still air the maximum speed is no more than 6.7 m/s or 15 mph with a cruising speed of 6.7 m/s or 15 mph. The YUNEEC Q500 TYPHOON has the ability to hover and move along a vertical and horizontal plane simultaneously. The YUNEEC Q500 TYPHOON has four motors, motor model YUNM4234 KV700, powered by a 5400 mAh 3s 11.1v Lithium Polymer battery. There are four counter rotating propellers, propeller models YUNQ500115A and YUNQ50011B, in use. The YUNEEC Q500 TYPHOON will be controlled with a Yuneec model ST10, 10 channel remote controller with an operating frequency of 2.400GHz – 2.483GHz. The live video feed will have an operating frequency of 5.728GHz – 5.850GHz. The applicant will operate the UAS in line of sight within a closed off and predetermined area owned and/operated by the property representative.

3. Performing Aerial Video and Photography Operations With The YUNEEC Q500 TYPHOON UAS Will Benefit The Economy.

In addition to being safe and efficient, the YUNEEC Q500 TYPHOON UAS are also an economical alternative to using manned aircraft to conduct similar aerial operations. As such, operation of the YUNEEC Q500 TYPHOON UAS will allow United States based companies, like GOLD LEAF AVIATION LLC, to remain competitive and contribute to growth of the U.S. economy. Specifically, with the rising cost of aviation fuel and the Environmental Protection Agency ("EPA") regulatory actions phasing out leaded aviation fuels, U.S. owned and operated companies must adopt new and alternative technology in order to remain competitive. Operating the battery powered YUNEEC Q500 TYPHOON UAS is one such technology that not only allows companies greater operational flexibility compared to manned aircraft, but provides such flexibility without the high operational cost of a traditional manned aircraft. By operating the YUNEEC Q500 TYPHOON UAS, companies such as GOLD LEAF AVIATION LLC, can remain competitive and profitable, and therefore, provide greater job stability to employees and contractors, which will ultimately contribute to growth of the U.S. economy. Improved financial performance of U.S. companies, through commercial use of the YUNEEC Q500 TYPHOON UAS, provides a stable workforce that increases consumer spending; improves local, state, and federal tax revenues; and allows companies to invest in research and development in order to remain competitive both in the United States and abroad.

4. There Are No Privacy Issues.

Similar to the manned aerial acquisition flight operations that have been conducted for decades, GOLD LEAF AVIATION LLC's proposed operation of the YUNEEC Q500 TYPHOON UAS will not implicate any privacy issues. Specifically, the YUNEEC Q500 TYPHOON UAS will be operated only in compliance with operating documents (i.e., the GOLD LEAF AVIATION LLC Aerial Operations Manual, Monthly Maintenance Log, and YUNEEC Q500 TYPHOON Instruction Manual) which requires property owner involvement as well as local law enforcement notification, and in accordance with the Federal Aviation Regulations, including the minimum altitude requirements of 14 C.F.R. § 91.119.

V. The Reasons Why Granting The Exemption Would Not Adversely Affect Safety, Or How The Exemption Would Provide A Level Of Safety At Least Equal To That Provided By The Rule From Which GOLD LEAF AVIATION LLC Seeks Exemption.

1. Reasons Why The YUNEEC Q500 TYPHOON UAS Meet The Conditions Of The FAA Modernization and Reform Act of 2012 (FMRA) Section 333.

In consideration of the size, weight, speed, and limited operating area associated with the unmanned aircraft and its operation, GOLD LEAF AVIATION LLC's operation of the YUNEEC Q500 TYPHOON UAS meet the conditions of FMRA Section 333, and will not require an airworthiness certificate in accordance with 14 C.F.R. Part 21, Subpart H. Section 333 provides authority for a UAS to operate without airworthiness certification and sets forth requirements for considering whether a UAS will create a hazard to users of the NAS or the public, or otherwise pose a threat to national security. Specifically, FMRA Section 333 states the following, in part:

> *(a) In General.--Notwithstanding any other requirement of this subtitle, and not later than 180 days after the date of enactment of this Act, the Secretary of Transportation shall determine if certain unmanned aircraft systems may operate safely in the national airspace system before completion of the plan and rulemaking required by section 332 of this Act or the guidance required by section 334 of this Act.*

(b) Assessment of Unmanned Aircraft Systems.--In making the determination under subsection (a), the Secretary shall determine, at a minimum--

(1) which types of unmanned aircraft systems, if any, as a result of their size, weight, speed, operational capability, proximity to airports and populated areas, and operation within visual line of sight do not create a hazard to users of the national airspace system or the public or pose a threat to national security; and

(2) whether a certificate of waiver, certificate of authorization, or airworthiness certification under section 44704 of title 49, United States Code, is required for the operation of unmanned aircraft systems identified under paragraph (1).

(c) Requirements for Safe Operation.--If the Secretary determines under this section that certain unmanned aircraft systems may operate safely in the national airspace system, the Secretary shall establish requirements for the safe operation of such aircraft systems in the national airspace system.

In seeking this exemption, GOLD LEAF AVIATION LLC submits that the YUNEEC Q500 TYPHOON UAS can operate safely in the NAS pursuant to FMRA Section 333, as demonstrated by: (a) the characteristics of the YUNEEC Q500 TYPHOON UAS; (b) the pilot certification requirement; and (c) the specific operating limitations.

a. The Specifications Of The YUNEEC Q500 TYPHOON UAS Demonstrate Its Safe Characteristics.

The YUNEEC Q500 TYPHOON UAS do not create a hazard to users of the NAS or the public, or otherwise pose a threat to national security considering its size, weight, speed, and operational capability.

i. Technical Specifications Of The YUNEEC Q500 TYPHOON UAS.

The technical specifications of the YUNEEC Q500 TYPHOON UAS are set forth by the YUNEEC Q500 TYPHOON Technical Specification & Data Sheet, attached hereto as EXHIBIT A.

ii. The YUNEEC Q500 TYPHOON UAS Autonomous Flight And Navigation Modes Enable The UASs To Remain Within A Defined Operational Area.

The YUNEEC Q500 TYPHOON UAS may be operated in both manual and fully autonomous flight modes. A complete description of the flight and navigational modes of the YUNEEC Q500 TYPHOON UAS is provided at pages 13-17 of the YUNEEC Q500 TYPHOON User Manuals, attached hereto as EXHIBIT B.

iii. The YUNEEC Q500 TYPHOON UAS Is Designed For Automatic Return To Home Point Or Hover In The Event Of Loss Of The Control Link Or Navigation.

When the Control Link is lost, the YUNEEC Q500 TYPHOON UAS will remain stationary, in flight, for 3 seconds or more. If, after 3 seconds, the YUNEEC Q500 TYPHOON UAS does not reacquire control link data from the GCS, the UAS will assume that the Control Link is lost and the UAS will return to the home position (i.e., failsafe mode) via GPS, and will descend to the takeoff position and shutdown. A complete description of the Failsafe Function of the YUNEEC Q500 TYPHOON UAS is set forth at page 17 of the YUNEEC Q500 TYPHOON User Manual, attached hereto as EXHIBIT B.

iv. The YUNEEC Q500 TYPHOON GCS And Its Operation.

A complete description of the operation and specifications of the YUNEEC Q500 TYPHOON GCS and flight control software is provided at pages 27 through 28 of the YUNEEC Q500 TYPHOON User Manual.

b. Flight Operations Of YUNEEC Q500 TYPHOON UAS IS Limited To The Line Of Sight Of A Certificated Pilot in Command With A Safety Observer.

GOLD LEAF AVIATION LLC will only utilize certificated pilots who possess a current and valid airman medical certificate to act as a pilot in command (PIC) of the YUNEEC Q500 TYPHOON UAS. Additionally, a safety observer will assist all pilots during flight time.

c. Flights Of YUNEEC Q500 TYPHOON UAS Will Be Conducted Pursuant To Specific Operating Limitations.

In seeking this exemption, GOLD LEAF AVIATION LLC proposes to commercially operate YUNEEC Q500 TYPHOON UAS for the special purpose of conducting aerial video and photography over certain areas of United States, pursuant to the following specific operating limitations:

1. Operations authorized by this grant of exemption will be limited to the following aircraft described in the operating documents, rotorcraft UAS weighing less than 55 pounds maximum gross weight: YUNEEC Q500 TYPHOON Unmanned Aircraft Systems. Proposed operations of any other aircraft will require a new petition or a petition to amend this grant.

2. UAS operations under this exemption will be limited to conducting operations for the purpose of aerial video and photography.

3. The UAs may not be flown at an indicated airspeed exceeding 20 knots.

4. The UA must be operated at an altitude of no more than 500 feet above ground level (AGL), as indicated by the procedures specified in the operating documents unless a special request is made and approved by ATC. All altitudes reported to ATC must be in feet AGL.

5. The UAs 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.

6. The use of first person view (FPV) by the PIC or safety observer (SO) is not permitted.

7. All operations must utilize a safety observer (SO). The SO may be used to satisfy the VLOS requirement as long as the PIC always maintains VLOS capability. The SO 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 SO can perform the functions prescribed in the operating documents.

8. The SO must not perform any other duties beyond assisting the PIC with seeing and avoiding other air traffic and other ground based obstacles/obstructions and is not permitted to operate the camera or other instruments.

9. The operating documents and the grant of exemption must be accessible during UAS operations and made available to the Administrator upon request. If a discrepancy exists between the conditions and limitations contained in the grant of exemption and the procedures outlined in the operating documents, the conditions and limitations contained in the grant of exemption 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 upon request. The operator must also present updated and revised documents if it petitions for extension or amendment to the grant of exemption. If the operator determines that any update or revision would affect the basis upon which the FAA granted the exemption, then the operator must petition for 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.

10. Prior to each flight the PIC must inspect the UAS to ensure that it is in a condition for safe flight. 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. The Ground Control Station must be included in the preflight inspection. All maintenance and alterations must be properly documented in the aircraft records.

11. 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. The PIC who conducts the functional test flight must make an entry in the aircraft records.

12. The pre-flight inspection must account for all potential discrepancies, e.g. inoperable components, items, or equipment, not already covered in the relevant sections of the operating documents.

13. The operator must follow the UAS manufacturer's aircraft/component, maintenance, overhaul, replacement, inspection, and life limit requirements.

14. The operator must carry out its maintenance, inspections, and record keeping requirements, in accordance with the operating documents. Maintenance, inspection, alterations, and status of replacement/overhaul component parts must be noted in the aircraft records, including total time in service, description of work accomplished, and the signature of the authorized person returning the UAS to service.

15. Each UAS operated under this exemption must comply with all manufacturer Safety Bulletins.

16. The authorized person must make an entry in the aircraft record of the corrective action taken against discrepancies discovered between inspections.

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

18. The operator may not permit any PIC to operate unless the PIC meets the operator's qualification criteria and demonstrates the ability to safely operate the UAS in a manner consistent with how the UAS will be operated under the exemption, including evasive and emergency maneuvers and maintaining appropriate distances from persons, vessels, vehicles and structures. PIC qualification flight hours must be logged in a manner consistent with 14 C.F.R. § 61.51(b). Flights for the purposes of training the operator's PICs are permitted under the terms of the 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 UAS with appropriate distance from nonparticipants in accordance with 14 C.F.R. § 91.119.

19. UAS operations may not be conducted during night, as defined in 14 C.F.R. § 1.1. All operations must be conducted under visual meteorological conditions (VMC). If flight at night is required, a special

request will be made at the FAA office closest to proposed area of operations. Flights under special visual flight rules (SVFR) are not authorized.

20. The UAS may not operate within 5 nautical miles of an airport reference point as denoted on a current FAA-published aeronautical chart unless a letter of agreement with that airport's management is obtained, and the operation is conducted in accordance with a NOTAM as required by the operator's COA. The letter of agreement with the airport management must be made available to the Administrator upon request.

21. The UAS 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.

22. If the UAS loses communications or loses its GPS signal, it must return to a predetermined location within the planned operating area and land or be recovered in accordance with the operating documents.

23. The PIC must abort the flight in the event of unpredicted obstacles or emergencies in accordance with the operating documents.

24. The PIC is prohibited from beginning a flight unless (considering wind and forecast weather conditions) there is enough power to fly at normal cruising speed to the intended landing point and land the UAS with 25% battery power remaining.

25. The operator must obtain an Air Traffic Organization (ATO) issued Certificate of Waiver or Authorization (COA) prior to conducting any operations under the grant of exemption. This COA will also require the operator to request a Notice to Airman (NOTAM) not more than 72 hours in advance, but not less than 48 hours prior to the operation. All operations shall be conducted in accordance with airspace requirements in the ATO issued COA including class of airspace, altitude level and potential transponder requirements.

26. All aircraft operated in accordance with the exemption must be identified by serial number, registered in accordance with 14 C.F.R. part 47, and have identification (N- Number) markings in accordance with 14 C.F.R. part 45, Subpart C. Markings must be as large as practicable.

27. Before conducting operations, the radio frequency spectrum used for operation and control of the UAS must comply with the Federal Communications Commission (FCC) or other appropriate government oversight agency requirements.

28. The documents required fewer than 14 C.F.R. 91.9 and 91.203 must be available to the PIC at the Ground Control Station of the UAS any time the UAS is operating. These documents must be made available to the Administrator or any law enforcement official upon request.

29. The UAS must remain clear and yield the right of way to all manned aviation operations and activities at all times.

30. The UAS may not be operated by the PIC from any moving device or vehicle.

31. Flight operations must be conducted at least 500 feet from all nonparticipating persons (persons other than the PIC, SO, operator trainees or essential persons), vessels, vehicles, and structures unless:

a. Barriers or structures are present that sufficiently protect nonparticipating persons from the UAS 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 UAS, flight operations must cease immediately and/or;

b. The aircraft is operated near vessels, vehicles or structures where the owner/controller of such vessels, vehicles or structures has granted permission 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, and;

c. Operations nearer to the PIC, SO, operator trainees or essential persons do not present an undue hazard to those persons per § 91.119(a).

32. All operations shall be conducted over private or controlled-access property with permission from the land owner/controller or authorized representative. Permission from land owner/controller or authorized representative will be obtained for each flight to be conducted.

33. 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.

2. Reasons Why An Exemption From The Requirements Of Section 61.113(a) And (b) Would Not Adversely Affect Safety.

GOLD LEAF AVIATION LLC submits that the equivalent level of safety established by Section 61.113(a) and (b) will be maintained because no PIC will be allowed to operate the YUNEEC Q500 TYPHOON UAS unless that PIC has demonstrated, by meeting minimum flight-hour and currency requirements, that the PIC is able to safely operate the YUNEEC Q500 TYPHOON UAS in a manner consistent with the exemption, including evasive and emergency maneuvers and maintaining appropriate distances from people, vessels, vehicles and structures. Considering GOLD LEAF AVIATION LLC's proposed area of operations, and the operating limitations set forth-above; the parallel nature of private pilot aeronautical knowledge requirements to those of commercial pilot requirements (See Exemption No. 11062); and the airmanship skills necessary to safely operate the YUNEEC Q500 TYPHOON UAS, GOLD LEAF AVIATION LLC submits that the additional manned airmanship experience of a commercially certificated pilot would not correlate to the airmanship skills necessary for GOLD LEAF AVIATION LLC's specific proposed flight operations. The FAA has previously granted relief from Section 61.113(a) and (b) specific to UAS, in circumstances similar, in all material respects, to those presented herein (e.g. Exemption Nos. 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11110, 11112, 11136, 11138, 11150, 11153, 11156, 11158, 11159, 11160, 11161). GOLD LEAF AVIATION LLC will not allow any PIC to operate the YUNEEC Q500 TYPHOON UAS unless that PIC has demonstrated, by meeting minimum flight-hour requirements of the YUNEEC Q500 TYPHOON UAS training and currency requirements, that the PIC is able to safely operate the YUNEEC Q500 TYPHOON UAS in a manner consistent with this exemption, including evasive and emergency maneuvers and maintaining appropriate distances from people, vessels, vehicles and structures. Specifically, the PIC must have accumulated and logged, in a manner consistent with 14 C.F.R. § 61.51(b), 25 hours of total time as a UAS rotorcraft pilot (with a minimum of 5 hours of those hours as a UAS pilot operating the same make and model of UAS to be used for operations under the exemption). In addition to the hour requirements, the PIC must accomplish 3 takeoffs and landings in the preceding 90 days (for currency purposes).

As in Exemption Nos. 11062, 11138, and 11153, prior documented flight experience that was obtained in compliance with applicable regulations will ensure an equivalent level of safety during GOLD LEAF AVIATION LLC's proposed operations. The Administrator has held that prior documented flight experience that was obtained in compliance with applicable regulations would ensure safe operations, stating as follows:

In Exemption No. 11062, the FAA required that prior to conducting operations for the purpose of motion picture filming (or similar operations), the PIC must have accumulated and logged, in a manner consistent with 14 CFR 61.51(b), 25 hours of total time as a UAS rotorcraft pilot including at least 10 hours logged as a UAS pilot with a multi-rotor UAS. Prior to operations under Exemption No. 11062, the PIC must also have accumulated and logged a minimum of 5 hours as a UAS pilot operating the same make and model of UAS to be used for operations under the exemption. For clarification, the FAA considers these minimum hour requirements to be inclusive rather than additive; i.e. 5 hours make and model time may be included in the 10 hours of multi-rotor time and the 10 hours may be included in the total 25 hours of UAS rotorcraft time. In addition to the hour requirements, the PIC must accomplish 3 takeoffs and landings in the preceding 90 days (for currency purposes). The FAA finds that at a minimum, the flight-hour requirements in Exemption No. 11062 are appropriate to practice and build proficiency in the skills necessary to safely conduct the petitioner's proposed operations. The FAA also finds that prior documented flight experience that was obtained in compliance with applicable regulations would satisfy this requirement. Training, proficiency, and experience-building flights can also be conducted under the grant of exemption to accomplish the required flight time. During training, proficiency, and experience-building flights the PIC is required to operate the UAS with appropriate distances in accordance with 14 C.F.R 91.119.

Exemption No. 11138 at page 15.

Accordingly, GOLD LEAF AVIATION LLC will ensure safe operations by not allowing any PIC to operate the YUNEEC Q500 TYPHOON unless that PIC has demonstrated, by meeting minimum flight-hour and currency requirements, that the PIC is able to safely operate the YUNEEC Q500 TYPHOON UAS in a manner consistent with the exemption, including evasive and emergency maneuvers and maintaining appropriate distances from people, vessels, vehicles and structures.

3. Reasons Why An Exemption From The Requirements Of Section 91.7(a) Would Not Adversely Affect Safety.

The equivalent level of safety established by Section 91.7(a) will be maintained because prior to every flight, GOLD LEAF AVIATION LLC will ensure that the YUNEEC Q500 TYPHOON UAS is in an airworthy condition based upon the UAS's compliance with its operating documents and as stated in the conditions and limitations herein. Additionally, the FAA has previously granted relief from Section 91.7(a) specific to UAS, in circumstances similar, in all material respects, to those presented herein (e.g. Exemption Nos. 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11110, 11112, 11136, 11138, 11150, 11153, 11156, 11157, 11158, 11159, 11160, 11161).

4. Reasons Why An Exemption From The Requirements Of Section 91.121 Would Not Adversely Affect Safety.

The equivalent level of safety established by Section 91.121 will be maintained because the altitude information of the YUNEEC Q500 TYPHOON UAS will be provided to the PIC via GPS equipment and a radio communications telemetry data link, which downlinks from the UA to the GCS for active monitoring of the flight path and altitude. This altitude information, combined with GOLD LEAF AVIATION LLC's operation of the YUNEEC Q500 TYPHOON UAS within visual line of sight, at or below 500 feet AGL, will ensure a level of safety equivalent to Section 91.121. The altitude information will be generated by GPS equipment installed onboard the aircraft.

Prior to each flight, a zero altitude initiation point is automatically established by the UAS at ground level. The FAA has previously granted relief from Section 91.121 specific to UAS, in circumstances similar, in all material respects, to those presented herein (e.g. Exemption Nos. 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11112, 11136, 11138, 11150, 11153, 11156, 11157, 11158, 11159, 11160, 11161).

5. Reasons Why An Exemption From The Requirements Of Section 91.151(b) Would Not Adversely Affect Safety.

A grant of this exemption would ensure an equivalent level of safety established by 14 C.F.R. Section 91.151(b) as a result of (1) the technical specifications of the YUNEEC Q500 TYPHOON UAS; (2) the limitations on the proposed flight operations; and (3) the location of the proposed flight operations. Accordingly, GOLD LEAF AVIATION LLC will ensure that it will safely operate the battery powered YUNEEC Q500 TYPHOON UAS during daylight hours in VFR conditions, with enough battery power to fly for a total duration of 20 minutes to the first point of intended landing and, assuming normal cruising speed, to fly after that for at least 5 minutes. Here, as in Exemption No. 11109, the technical specifications of the YUNEEC Q500 TYPHOON UAS; the limitations on the proposed flight operations; and the location of the proposed operations, will ensure an equivalent level of safety established by 14 C.F.R. Section 91.151(b). Furthermore, safety will be ensured as the YUNEEC Q500 TYPHOON UAS provide audible and visual warnings to the PIC at the GCS when the UAs experiences low battery voltage, the first warning occurring at approximately 33% remaining battery power, and again at approximately 10% remaining battery power. At the critically low battery level, the YUNEEC Q500 TYPHOON UAS will descend and land automatically. Significantly, previous exemptions granted by the FAA concerning Section 91.151 establish that safety is not adversely affected when the technical characteristics and operating limitations of the UAS are considered. Relief has been granted for manned aircraft to operate at less than the minimums prescribed in Section 91.151, including Exemption Nos. 2689, 5745, and 10650. Moreover, the FAA has previously granted relief from Section 91.151 specific to UAS, in circumstances similar, in all material respects, to those presented herein (e.g. Exemption Nos. 8811, 10808, 10673, 11042, 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11110, 11136, 11138, 11150, 11153, 11156, 11157, 11158, 11159, 11160, 11161).

6. Reasons Why An Exemption From The Requirements Of Sections 91.405(a), 91.407(a)(1), 91.409(a)(1) & (a)(2), And 91.417(a) & (b) Would Not Adversely Affect Safety.

In seeking this exemption, GOLD LEAF AVIATION LLC submits that the equivalent level of safety with regard to the regulatory maintenance and alteration requirements established by Sections 91.405(a), 91.407(a)(1), 91.409(a)(1) & (a)(2), and 91.417(a) & (b) will be met because GOLD LEAF AVIATION LLC will use trained technicians to perform maintenance, alterations, or preventive maintenance on the UASs using the methods, techniques, and practices prescribed in the operating documents (i.e., the GOLD LEAF AVIATION LLC Operations Manual, Monthly Maintenance Log, and YUNEEC Q500 TYPHOON Instruction Manual). Furthermore, GOLD LEAF AVIATION LLC will document and maintain all maintenance records for the YUNEEC Q500 TYPHOON UAS. Since the YUNEEC Q500 TYPHOON UAS will be inspected as prescribed by the operating documents, GOLD LEAF AVIATION LLC will maintain the equivalent level of safety established by Sections 91.405(a), 91.409(a)(1), and 91.409(a)(2). A copy of the YUNEEC Q500 TYPHOON User Manual are attached hereto as Exhibit B; a copy of the YUNEEC Q500 TYPHOON UAS Maintenance LOG is attached hereto as Exhibit C. Likewise, the exemption sought will not adversely affect safety because GOLD LEAF AVIATION LLC will use trained technicians to perform maintenance, alterations or preventive maintenance on the UAS using the methods, techniques, and practices prescribed by the operating documents. Furthermore, the exemption sought would maintain an equivalent level of safety established by Sections 91.407, 91.417(a) and 91.417(b), because all maintenance of the YUNEEC Q500 TYPHOON UAS will be performed by trained technicians. Maintenance will be documented and

maintained utilizing the monthly maintenance log. Significantly, previous exemptions granted by the FAA concerning Sections 91.405(a), 91.407(a)(1), 91.409(a)(1) & (a)(2), and 91.417(a) & (b) establish that safety is not adversely affected when the technical characteristics and operating limitations of the UAS are considered. In consideration of GOLD LEAF AVIATION LLC's proposed operating limitations, the operating documents, and the technical aspects of the YUNEEC Q500 TYPHOON UAS, GOLD LEAF AVIATION LLC submits that safety will not be adversely affected by granting exemption from 14 C.F.R. Sections 91.405(a), 91.407(a)(1) and (a)(2), 91.409(a)(2), and 91.417(a) and (b). The FAA has previously granted relief specific to UAS in circumstances similar, in all material respects, to those presented herein (e.g. Exemption Nos. 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11110, 11112, 11136, 11138, 11150, 11153, 11156, 11157, 11158, 11159, 11160, 11161).

7. The FAA May Prescribe Any Other Conditions For Safe Operation.

In accordance with Section 333 of the FAA Modernization and Reform Act of 2012 (FMRA) and 14 C.F.R. § 21.16 entitled Special Conditions, GOLD LEAF AVIATION LLC requests that the FAA prescribe special conditions for the intended operation of the YUNEEC Q500 TYPHOON UAS, which contain such safety standards that the Administrator finds necessary to establish a level of safety equivalent to that established by 14 C.F.R. Part 21, Subpart H, and 14 C.F.R §§ 61.113(a) & (b), 91.7 (a), 91.121, 91.151(b), 91.405(a), 91.407(a)(1), 91.409(a)(1) & (a)(2), and 91.417(a) & (b). Such special conditions will permit safe operation of the UAs for the limited purpose of conducting aerial video and photography over certain areas of the United States for compensation or hire. FMRA Section 333 sets forth the requirements for considering whether a UAS will create a hazard to users of the NAS or the public, or otherwise pose a threat to national security; and further, provides the authority for such UAS to operate without airworthiness certification in accordance with any requirements that must be established for the safe operation of the UAS in the NAS. Likewise, the Administrator may prescribe special conditions pursuant to 14 C.F.R. § 21.16, for operation of the YUNEEC Q500 TYPHOON UAS, since the airworthiness regulations of 14 C.F.R. Part 21 do not contain adequate or appropriate safety standards, due to the novel or unusual design features of the aircraft. Section 21.16, entitled Special Conditions, states the following:
If the FAA finds that the airworthiness regulations of this subchapter do not contain adequate or appropriate safety standards for an aircraft, aircraft engine, or propeller because of a novel or unusual design feature of the aircraft, aircraft engine or propeller, he prescribes special conditions and amendments thereto for the product. The special conditions are issued in accordance with Part 11 of this chapter and contain such safety standards for the aircraft, aircraft engine or propeller as the FAA finds necessary to establish a level of safety equivalent to that established in the regulations.

See 14 C.F.R. § 21.16.

Therefore, in accordance with FMRA Section 333 and 14 C.F.R. § 21.16, the FAA may prescribe special conditions for Gold Leaf Aviation's intended operation of the YUNEEC Q500 TYPHOON UAS, which contain such safety standards that the Administrator finds necessary to establish a level of safety equivalent to that established by 14 C.F.R. Part 21, Subpart H, and 14 C.F.R Sections 61.113(a) & (b), 91.7(a), 91.121, 91.151(b), 91.405(a), 91.407(a)(1), 91.409(a)(1) & (a)(2), and 91.417(a) & (b).

VI A Summary That Can Be Published In The Federal Register, stating: The Rules From Which GOLD LEAF AVIATION LLC Seeks Exemption:

GOLD LEAF AVIATION LLC seeks exemption from the requirements of 14 C.F.R. 21, subpart H; 14 C.F.R. 45.23(b); 14 C.F.R. §§ 61.113 (a) & (b); 14 C.F.R. § 91.7 (a); 14 C.F.R. § 91.9 (b)(2); 14 C.F.R. § 91.103(b); 14 C.F.R. § 91.109; 14 C.F.R. § 91.119; 14 C.F.R. § 91.121; 14 C.F.R. § 91.151(a); 14 C.F.R. §§ 91.203(a) and (b); 14 C.F.R. § 91.405 (a); 14 C.F.R. § 91.407 (a)(1); 14 C.F.R. § 91.409 (a)(2); 14 C.F.R. § 91.409 (a) (2); and, 14 C.F.R. §§ 91.417 (a) & (b) to commercially operate an Unmanned Aircraft System (UAS) for the purpose of conducting aerial video and photography over certain areas of the United States.

A Brief Description Of The Nature Of The Exemption GOLD LEAF AVIATION LLC Seeks:

14 C.F.R. 21 and 14 C.F.R. 91: Airworthiness Certificates, Manuals and Similar.

14 C.F.R. 21, Subpart H, entitled Airworthiness Certificates, sets forth requirements for procurement of necessary airworthiness certificates in relation to FAR § 91.203(a)(1). The size, weight and enclosed operational area of my UAS aircraft permits exemption from Part 21 because my UAS aircraft meet (and exceeds) an equivalent level of safety pursuant to Section 333 of the Reform Act. The FAA is authorized to exempt aircraft from the airworthiness certificate requirement under both the Act (49 U.S.C. § 44701 (f)) and Section 333 of the Reform Act. Both pieces of legislation permit the FAA to exempt UAS's from the airworthiness certificate requirement in consideration of the weight, size, speed, maneuverability and proximity to areas such as airports and dense populations. My current and projected UAS meet or exceed each of the elements.

14 C.F.R. 91.7(a) prohibits the operation of an aircraft without an airworthiness certificate. As no such certificate will be applicable in the form contemplated by the FARs, this Regulation is inapplicable.

14 C.F.R. § 91.9 (b) (2) requires an aircraft flight manual in the aircraft. As there are no on board pilots or passengers, and given the size of the UAS, this Regulation is inapplicable. An equivalent level of safety will be achieved by maintaining a safety/flight manual delineating areas of where safety can be defined. The FAA has previously issued exemptions to this regulation in Exemption Nos. 8607, 8737, 8738, 9299, 9299A, 9565, 9565B, 10167, 10167A, 10602, 10700 and 32827.
14 C.F.R. § 91.121 regarding altimeter settings is inapplicable insofar as my UAS utilizes electronic global positioning systems with a barometric sensor.

14 C.F.R. § 91.203 (a) and (b) provides for the carrying of civil aircraft certifications and registrations. They are inapplicable for the same reasons described above. The equivalent level of safety will be achieved by maintaining any such required certifications and registrations by me and any proposed PIC's of the UAS proposed.

14 C.F.R. § 45.23: Marking of the Aircraft.
Applicable Codes of Federal Regulation require aircraft to be marked according to certain specifications. My UAS are, by definition, unmanned. They therefore do not have a cabin, cockpit or pilot station on which to mark certain words or phrases. Further, two-inch lettering is difficult to place on such small aircraft with dimensions smaller that minimal lettering requirement.
Regardless, I propose that each UA will carry its appropriate "N" number if one is issued by the FAA, in such size as can reasonably fit upon the sides of the aircraft in at least two locations on the booms or fuselage. If an N number is not obtained from the FAA, I will mark the related UAS in the largest possible lettering by placing the word "EXPERIMENTAL" on its fuselage as required by 14 C.F.R. §45.29 (f) so that I the pilot, or anyone assisting me as a spotter with the UA will see the markings. The FAA has previously issued exemptions to this regulation through Exemptions Nos. 8738, 10167, 10167A and 10700.

14 C.F.R. § 61.113: Private Pilot Privileges and Limitations: PIC.

Pursuant to 14 C.F.R. §§ 61.113 (a) & (b), private pilots are limited to non-commercial operations. The FAA has previously ruled in its exemption that a Private Pilot's Certificate is required for flight of the UAS for commercial purposes. I, Arlington Duncan, am a licensed commercial pilot and will assure that all PIC's proposed to operate any of the UAS aircraft also have at minimum a Private Pilot's certificate and current Class Three medical. My UAS do not carry any pilots or passengers. The risks attended to the operation of my UAS is far less than the risk levels inherent in the commercial activities outlined in 14 C.F.R. § 61, et seq. Thus, allowing me and any other Private Pilot Certified PIC to operate the proposed UAS to meet and exceed current safety levels in relation to 14 C.F.R. §61.113 (a) & (b).

14 C.F.R. 91.119: Minimum Safe Altitudes.
14 C.F.R. § 91.119 prescribes safe altitudes for the operation of civil aircraft. It allows helicopters to be operated at lower altitudes in certain conditions. My UAS will never operate at an altitude greater than 400 AGL. I will however operate my UAS in safe areas away from public and traffic, providing a level of safety at least equivalent to or below those in relation to minimum safe altitudes. Given the size, weight, maneuverability and speed of my UAS, an equivalent or higher level of safety will be achieved.

14 C.F.R. 91.405 (a); 407 (a) (1); 409 (a) (2); 417(a) & (b): Maintenance Inspections.
The above-cited Regulations require, amongst other things, aircraft owners and operators to "have [the] aircraft inspected as prescribed in subpart E of this part and shall between required inspections, except as provided in paragraph (c) of this section, have discrepancies repaired as prescribed in part 43 of this chapter. . . ."
These Regulations only apply to aircraft with an airworthiness certificate. They will not, therefore, apply to my proposed UAS. However, as a safety precaution I require the PIC to perform a comprehensive pre-flight and post-flight inspection of the UAS, adhering to the manufacturers' recommendations and checking all flight systems, power system, rotors and electronics including battery levels. The UAS has significant self-diagnostic software and systems checks built into its operations. Any system not reporting correctly and fully functional shall result in an aborted flight until the problem is identified and solved and the systems once again report 100% green and good to go.

VII. Any Additional Information, Views, Or Arguments Available To Support GOLD LEAF AVIATION LLC's Request.

This Petition is made pursuant to the FAA Modernization and Reform Act of 2012 (FMRA) Section 333, which directs the Secretary of Transportation to determine if certain UAS may operate safely in the NAS. As such, GOLD LEAF AVIATION LLC's request for exemption may be granted pursuant to the authority of FMRA Section 333 and 14 C.F.R. Part 11, as set forth above. FMRA Section 333 sets forth the requirements for considering whether a UAS will create a hazard to users of the NAS or the public, or otherwise pose a threat to national security; and further, provides the authority for such UAS to operate without airworthiness certification.

As discussed in detail above, GOLD LEAF AVIATION LLC will operate the YUNEEC Q500 TYPHOON UAS safely in the NAS, without creating a hazard to users of the NAS, or the public, or otherwise pose a threat to national security.

CONCLUSION

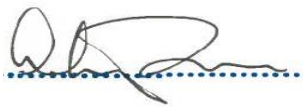
As set forth herein, GOLD LEAF AVIATION LLC seeks an exemption pursuant to 14 C.F.R. § 11.61 and Section 333 of the FAA Modernization and Reform Act of 2012 (FMRA), which will permit safe operation of the YUNEEC Q500 TYPHOON UAS commercially, without an airworthiness certificate, for the limited purpose of conducting aerial video and photography over certain areas of the United States. By granting this Petition, the FAA Administrator will be fulfilling the Congressional mandate of the FAA Modernization and Reform Act of 2012, while also advancing the interests of the public, by allowing GOLD LEAF AVIATION LLC to safely, efficiently, and economically operate the YUNEEC Q500 TYPHOON UAS commercially within the NAS. WHEREFORE, in accordance with the Federal Aviation Regulations and the FAA Modernization and Reform Act of 2012, Section 333, GOLD LEAF AVIATION LLC respectfully requests that the Administrator grant this Petition for an exemption from the requirements of 14 C.F.R. 21, subpart H; 14 C.F.R. 45.23(b); 14 C.F.R. §§ 61.113 (a) & (b); 14 C.F.R. § 91.7 (a); 14 C.F.R. § 91.9 (b)(2); 14 C.F.R. § 91.103(b); 14 C.F.R. § 91.109; 14 C.F.R. § 91.119; 14 C.F.R. § 91.121; 14 C.F.R. § 91.151(a); 14 C.F.R. §§ 91.203(a) and (b); 14 C.F.R. § 91.405 (a); 14 C.F.R. § 91.407 (a)(1); 14 C.F.R. § 91.409 (a)(2); 14 C.F.R. § 91.409 (a) (2); and, 14 C.F.R. §§ 91.417 (a) & (b), and permit GOLD LEAF AVIATION LLC to operate the YUNEEC Q500 TYPHOON UAS commercially for the purpose of conducting aerial video and photography over certain areas of the United States.

Dated: June 1, 2015

Respectfully submitted,

GOLD LEAF AVIATION LLC

c/o Arlington Duncan



Arlington Duncan

4906 Wellington Way

Houston, TX 77069

Tel: (281) 397 0898

Appendices:

Exhibit A – YUNEEC Q500 TYPHOON Specifications Data Sheet

Exhibit B – YUNEEC Q500 TYPHOON Manufacturer's User Manual

Exhibit C – Monthly Maintenance Log

Exhibit A – Technical Specification & Data Sheet

ST10

PERSONAL GROUND STATION

The ST10 is a 10-channel 2.4GHz RC transmitter that also includes built-in hardware and functionality for a 5.8GHz video downlink and First-Person View (FPV). With the convenient and easy-to-use ST10 you'll no longer need separate components to view real-time video and telemetry data during flight.

UAS #2 Yuneec Typhoon Q500
Manufacturer: Yuneec Electric Aircraft
Model: Typhoon Q500
Weight: 1700 g / 3.75 Pounds
Passenger Capacity: 0 (unmanned)
Size (dimensions): 420x420x240 mm (16.53x16.53x9.45 inches)
Max Speed: 22 mps (72.18 fps / 49.21 mph)
Max Flight Time: 25 minutes
Max Ceiling (software limited): 400 ft AGL
Operations: Line of Sight
Controller: Dedicated 10ch, 2.4GHz Commercial Controller with 2 km maximum rated operating distance

Exhibit B – YUNEEC Q500 TYPHOON User Manual (See Attachment)

Exhibit C – Monthly Maintenance Log

month:_____(year:_____

UAS#:_____	Date Issue Discovered	Date Issue Addressed	Issue Description & Maintenance Conducted	Maintenance(Performed By: Print & Sign)
Software Updates				
Airframe				
Engines				
Propellers				
Camera Gimbal				
Landing Gear				
Vibration Dampening				
Other:				