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

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

June 8, 2015

Exemption No. 11777
Regulatory Docket No. FAA–2015–0919

Mr. John C. Ullom
Owner
Skygizmo Unmanned Aerial Systems
2 Pelican Circle
Half Moon Bay, CA 94019

Dear Mr. Ullom:

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 April 1, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Skygizmo Unmanned Aerial Systems (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial imaging, cinematography, recording of outdoor sporting events, and introductory instruction for UAS hobbyists.

See Appendix A for the petition submitted to the FAA describing the proposed operations and the regulations that the petitioner seeks an exemption.

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

Airworthiness Certification

The UAS proposed by the petitioner are the DJI S1000+ and Yuneec Q500.

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[1]. The FAA has issued grants of exemption in circumstances similar in all material respects to those presented in your petition. In Grants of Exemption Nos. 11062 to Astraeus Aerial (*see* Docket No. FAA−2014−0352), 11109 to Clayco, Inc. (*see* Docket No. FAA−2014−0507), 11112 to VDOS Global, LLC (*see* Docket No. FAA−2014−0382), and 11213 to Aeryon Labs, Inc. (*see* Docket No. FAA−2014−0642), the FAA found that the enhanced safety achieved using an unmanned aircraft (UA) with the specifications described by the petitioner and carrying no passengers or crew, rather than a manned aircraft of significantly greater proportions, carrying crew in addition to flammable fuel, gives the FAA good cause to find that the UAS operation enabled by this exemption is in the public interest.

Having reviewed your reasons for requesting an exemption, I find that—

- They are similar in all material respects to relief previously requested in Grant of Exemption Nos. 11062, 11109, 11112, and 11213;
- The reasons stated by the FAA for granting Exemption Nos. 11062, 11109, 11112, and 11213 also apply to the situation you present; and
- A grant of exemption is in the public interest.

Our Decision

In consideration of the foregoing, I find that a grant of exemption is in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. 106(f), 40113, and 44701, delegated to me by the Administrator, Skygizmo Unmanned Aerial Systems is granted an exemption from 14 CFR §§ 61.23(a) and (c), 61.101(e)(4) and (5), 61.113(a), 61.315(a), 91.7(a), 91.119(c), 91.121, 91.151(a)(1), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b), to the extent necessary to allow the petitioner to operate a UAS to perform aerial data collection. This exemption is subject to the conditions and limitations listed below.

[1] Aerial data collection includes any remote sensing and measuring by an instrument(s) aboard the UA. Examples include imagery (photography, video, infrared, etc.), electronic measurement (precision surveying, RF analysis, etc.), chemical measurement (particulate measurement, etc.), or any other gathering of data by instruments aboard the UA.

Conditions and Limitations

In this grant of exemption, Skygizmo Unmanned Aerial Systems is hereafter referred to as the operator.

Failure to comply with any of the conditions and limitations of this grant of exemption will be grounds for the immediate suspension or rescission of this exemption.

1. Operations authorized by this grant of exemption are limited to the DJI S1000+ and Yuneec Q500 when weighing less than 55 pounds including payload. Proposed operations of any other aircraft will require a new petition or a petition to amend this exemption.

2. Operations for the purpose of closed-set motion picture and television filming are not permitted.

3. The UA may not be operated at a speed exceeding 87 knots (100 miles per hour). The exemption holder may use either groundspeed or calibrated airspeed to determine compliance with the 87 knot speed restriction. In no case will the UA be operated at airspeeds greater than the maximum UA operating airspeed recommended by the aircraft manufacturer.

4. The UA must be operated at an altitude of no more than 400 feet above ground level (AGL). Altitude must be reported in feet AGL.

5. The UA must be operated within visual line of sight (VLOS) of the PIC at all times. This requires the PIC to be able to use human vision unaided by any device other than corrective lenses, as specified on the PIC's FAA-issued airman medical certificate or U.S. driver's license.

6. All operations must utilize a visual observer (VO). The UA must be operated within the visual line of sight (VLOS) of the PIC and VO at all times. The VO may be used to satisfy the VLOS requirement as long as the PIC always maintains VLOS capability. The VO and PIC must be able to communicate verbally at all times; electronic messaging or texting is not permitted during flight operations. The PIC must be designated before the flight and cannot transfer his or her designation for the duration of the flight. The PIC must ensure that the VO can perform the duties required of the VO.

7. This exemption and all documents needed to operate the UAS and conduct its operations in accordance with the conditions and limitations stated in this grant of exemption, are hereinafter referred to as the operating documents. The operating documents must be accessible during UAS operations and made available to the

Administrator upon request. If a discrepancy exists between the conditions and limitations in this exemption and the procedures outlined in the operating documents, the conditions and limitations herein take precedence and must be followed. Otherwise, the operator must follow the procedures as outlined in its operating documents. The operator may update or revise its operating documents. It is the operator's responsibility to track such revisions and present updated and revised documents to the Administrator or any law enforcement official upon request. The operator must also present updated and revised documents if it petitions for extension or amendment to this grant of exemption. If the operator determines that any update or revision would affect the basis upon which the FAA granted this exemption, then the operator must petition for an amendment to its grant of exemption. The FAA's UAS Integration Office (AFS−80) may be contacted if questions arise regarding updates or revisions to the operating documents.

8. Any UAS that has undergone maintenance or alterations that affect the UAS operation or flight characteristics, e.g., replacement of a flight critical component, must undergo a functional test flight prior to conducting further operations under this exemption. Functional test flights may only be conducted by a PIC with a VO and must remain at least 500 feet from other people. The functional test flight must be conducted in such a manner so as to not pose an undue hazard to persons and property.

9. The operator is responsible for maintaining and inspecting the UAS to ensure that it is in a condition for safe operation.

10. Prior to each flight, the PIC must conduct a pre-flight inspection and determine the UAS is in a condition for safe flight. The pre-flight inspection must account for all potential discrepancies, e.g., inoperable components, items, or equipment. If the inspection reveals a condition that affects the safe operation of the UAS, the aircraft is prohibited from operating until the necessary maintenance has been performed and the UAS is found to be in a condition for safe flight.

11. The operator must follow the UAS manufacturer's maintenance, overhaul, replacement, inspection, and life limit requirements for the aircraft and aircraft components.

12. Each UAS operated under this exemption must comply with all manufacturer safety bulletins.

13. Under this grant of exemption, a PIC must hold either an airline transport, commercial, private, recreational, or sport pilot certificate. The PIC must also hold a current FAA airman medical certificate or a valid U.S. driver's license issued by a state, the District of Columbia, Puerto Rico, a territory, a possession, or the Federal government. The PIC must also meet the flight review requirements specified in 14 CFR § 61.56 in an aircraft in which the PIC is rated on his or her pilot certificate.

14. The operator may not permit any PIC to operate unless the PIC demonstrates the ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption, including evasive and emergency maneuvers and maintaining appropriate distances from persons, vessels, vehicles and structures. PIC qualification flight hours and currency must be logged in a manner consistent with 14 CFR § 61.51(b). Flights for the purposes of training the operator's PICs and VOs (training, proficiency, and experience-building) and determining the PIC's ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption are permitted under the terms of this exemption. However, training operations may only be conducted during dedicated training sessions. During training, proficiency, and experience-building flights, all persons not essential for flight operations are considered nonparticipants, and the PIC must operate the UA with appropriate distance from nonparticipants in accordance with 14 CFR § 91.119.

15. UAS operations may not be conducted during night, as defined in 14 CFR § 1.1. All operations must be conducted under visual meteorological conditions (VMC). Flights under special visual flight rules (SVFR) are not authorized.

16. The UA may not operate within 5 nautical miles of an airport reference point (ARP) as denoted in the current FAA Airport/Facility Directory (AFD) or for airports not denoted with an ARP, the center of the airport symbol as denoted on the current FAA-published aeronautical chart, unless a letter of agreement with that airport's management is obtained or otherwise permitted by a COA issued to the exemption holder. The letter of agreement with the airport management must be made available to the Administrator or any law enforcement official upon request.

17. The UA may not be operated less than 500 feet below or less than 2,000 feet horizontally from a cloud or when visibility is less than 3 statute miles from the PIC.

18. If the UAS loses communications or loses its GPS signal, the UA must return to a pre-determined location within the private or controlled-access property.

19. The PIC must abort the flight in the event of unpredicted obstacles or emergencies.

20. The PIC is prohibited from beginning a flight unless (considering wind and forecast weather conditions) there is enough available power for the UA to conduct the intended operation and to operate after that for at least five minutes or with the reserve power recommended by the manufacturer if greater.

21. Air Traffic Organization (ATO) Certificate of Waiver or Authorization (COA). All operations shall be conducted in accordance with an ATO-issued COA. The exemption holder may apply for a new or amended COA if it intends to conduct operations that cannot be conducted under the terms of the attached COA.

22. All aircraft operated in accordance with this exemption must be identified by serial number, registered in accordance with 14 CFR part 47, and have identification (N−Number) markings in accordance with 14 CFR part 45, Subpart C. Markings must be as large as practicable.

23. Documents used by the operator to ensure the safe operation and flight of the UAS and any documents required under 14 CFR §§ 91.9 and 91.203 must be available to the PIC at the Ground Control Station of the UAS any time the aircraft is operating. These documents must be made available to the Administrator or any law enforcement official upon request.

24. The UA must remain clear and give way to all manned aviation operations and activities at all times.

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

26. All Flight operations must be conducted at least 500 feet from all nonparticipating persons, vessels, vehicles, and structures unless:
    a. Barriers or structures are present that sufficiently protect nonparticipating persons from the UA and/or debris in the event of an accident. The operator must ensure that nonparticipating persons remain under such protection. If a situation arises where nonparticipating persons leave such protection and are within 500 feet of the UA, flight operations must cease immediately in a manner ensuring the safety of nonparticipating persons; and
    b. The owner/controller of any vessels, vehicles or structures has granted permission for operating closer to those objects and the PIC has made a safety assessment of the risk of operating closer to those objects and determined that it does not present an undue hazard.

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

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

28. Any incident, accident, or flight operation that transgresses the lateral or vertical boundaries of the operational area as defined by the applicable COA must be reported to the FAA's UAS Integration Office (AFS−80) within 24 hours. Accidents must be reported to the National Transportation Safety Board (NTSB) per instructions contained on the NTSB Web site: www.ntsb.gov.

If this exemption permits operations for the purpose of closed-set motion picture and television filming and production, the following additional conditions and limitations apply.

29. The operator must have a motion picture and television operations manual (MPTOM) as documented in this grant of exemption.

30. At least 3 days before aerial filming, the operator of the UAS affected by this exemption must submit a written Plan of Activities to the local Flight Standards District Office (FSDO) with jurisdiction over the area of proposed filming. The 3-day notification may be waived with the concurrence of the FSDO. The plan of activities must include at least the following:
    a. Dates and times for all flights;
    b. Name and phone number of the operator for the UAS aerial filming conducted under this grant of exemption;
    c. Name and phone number of the person responsible for the on-scene operation of the UAS;
    d. Make, model, and serial or N−Number of UAS to be used;
    e. Name and certificate number of UAS PICs involved in the aerial filming;
    f. A statement that the operator has obtained permission from property owners and/or local officials to conduct the filming production event; the list of those who gave permission must be made available to the inspector upon request;
    g. Signature of exemption holder or representative; and
    h. A description of the flight activity, including maps or diagrams of any area, city, town, county, and/or state over which filming will be conducted and the altitudes essential to accomplish the operation.

31. Flight operations may be conducted closer than 500 feet from participating persons consenting to be involved and necessary for the filming production, as specified in the exemption holder's MPTOM.

Unless otherwise specified in this grant of exemption, the UAS, the UAS PIC, and the UAS operations must comply with all applicable parts of 14 CFR including, but not limited to, parts 45, 47, 61, and 91.

This exemption terminates on June 30, 2017, unless sooner superseded or rescinded.

Sincerely,

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

Enclosures

SKYGIZMO
Unmanned Aerial Systems

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April 1st, 2015

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

Re: 333 Exemption For Commercial Operations Of Unmanned Aerial Systems

Dear Team FAA,

I hope my application for a Section 333 Exemption finds all of you well. Thank you for considering its merits and for the service you provide to our nation.

Best Regards

John C. Ullom

John Ullom
Owner Skygizmo UAS

Table of Contents

Additional Documentation:

- Yuneec Q500 UAS Operations Manual
- DGI S1000 Plus UAS Operations Manual

I. Company Background

John Ullom founded Skygizmo UAS in 2015. He has a Private Pilots License with Single Engine Land and Glider Aero Tow ratings. He has been a pilot since he learned to fly Hang Gliders in the mid 1980's.

II. Training & Operations

Section 333 of "The Reform Act" states:

> *"...the Secretary of Transportation shall determine if certain unmanned aircraft systems may operate safely in the national airspace system...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..."*

Skygizmo will adhere to the specifications and requirements set within the DJI S1000+ and Yuneec Q500 Operations manual(s) and FAA guidelines.

Skygizmo UAS seeks authorization to utilize the DJI S1000+ and Yuneec Q500 to conduct operations for aerial imaging, cinematography, recording of outdoor sporting events, and introductory instruction for UAS hobbyists. Though we request the authorization to work within multiple industries, the operational area, environment and flight operations will not generally change. We fully anticipate conducting operations for two or more industries concurrently over the same area and therefore believe, flight operations and the safety of, require the same level of attention regardless of whether the UAV is recording an outdoor sporting event, acquiring data for a farmer, or providing cinematography services.

The S1000+ and the Q500 both meet the requirements for determination for exemption as each has a maximum weight of less than 25 lbs, maximum speeds of less than 50 knots and flight durations of less than two hours (battery limited). Operating within visual line of sight (VLOS) and remaining below 400 ft AGL will be the standard operating procedures for Skygizmo UAS and will remain so until further advances in safety of flight are introduced to the market and regulated by the FAA.

The Aircraft:

DJI S1000+

Design: The S1000+ UAS is an Octocopter built from a variety of durable, lightweight and modular components that aid in its capability to be on mission in a variety of conditions. As well, the modularity of construction allows for easy exchange of structural, propulsion or sensor components – in the field. ~ *As defined by DJI*

Aircraft Performance/Specifications:

- Aircraft Type: Octocopter
- Flight Controls:
  - Primary: GPS Guided Autopilot
  - Backup: Standard RC Transmitter Flight Controls
- Propulsion: Eight Electric Motors
- Power Source: Rechargeable Li-Po Battery
- Max Flight Duration: 15 minutes
- Max Rotor Tip to Rotor Tip Diameter: 114.5 cm
- Empty Weight: 4.4 kg
- Max Payload: 5.6 kg
- RC Frequency: 2.4 GHz
- Video Transmission Frequency: 5.8GHZ

Yuneec Q500

Design: The Q500 UAS is a Quadcopter built from a variety of durable, and lightweight components. The Q500 UAS has an integrated Camera and Flight Controller.

Aircraft Performance/Specifications:

- Aircraft Type: Quadcopter
- Flight Controls:
  - Primary: GPS Guided Autopilot (Ground Control Station)
  - Backup: Standard Flight Controls (RC Transmitter)
- Propulsion: Four Electric Motors
- Power Source: Rechargeable Li-Po Battery
- Max Flight Duration: 25 minutes
- Max Rotor Tip to Rotor Tip Diameter: 89.5 cm
- Weight: 1.7 kg (Integrated Camera)
- RC Frequency: 2.4 GHz
- Video Transmission Frequency: 5.8GHz

Operator Training:

The PIC for all Skygizmo UAS operations will be the owner of Skygizmo UAS, John Ullom. In addition to his Private Pilots License, John Ullom will maintain a third class medical certificate. It is not anticipated that Skygizmo UAS will need to hire additional PICs. Should that change prior to the issuances of new regulations for Unmanned Vehicle Services, Skygizmo UAS will apply for an appropriate privileges and exemptions. Before flying any UAS commercially, the PIC will become familiar with the following:

Pre-Flight Training:

- Unpacking and assembly
- Power requirements, set-up and connectivity
- System end-to-end set-up and test / inspections
- Preflight, run-up and system checks

Flight Operations Training:

- Proper Handling
- Motor Operations
- GCS Flight Programming and Test
- Launch
- Basic Flight (climb, cruise, descent, landing)
- Maneuvering
- Airspace and Landing Zone Operations
- Flight Reprogramming
- Flight Monitoring
- In-Flight Emergency Procedures

Post Flight:

- Shut Down Procedures
- Data Retrieval and Storage
- End-to-End Test and Maintenance Logs
- Disassembly
- Packing, Storage and Transportation

Operations Execution:

Given the fact commercial UAS operations are restricted due to the lack of regulations other than provided within the above stated documents, a logical and safe solution is to utilize the safety guidance provided for hobbyist use of an UAS and other model aircraft as identified by Advisory Circular 91-57 and Section 336 of the "Reform Act". Skygizmo UAS operations will be conducted in a methodical, efficient and most importantly, safe manner adhering to strict guidelines, which address safety, concerns with proximity to

airports and populated areas in the interim of official guidance from the FAA as the rules and regulations are being further developed.

The following list provides specific rules and guidelines that all Skygizmo UAS operations will adhere to too ensure at least an equivalent or higher level of safety when compared to manned aircraft performing the same functions as outlined within 14 C.F.R.:

- All flight crews will:
  - Be comprised of a minimum of two Skygizmo UAS personal; one serving as the Pilot In Command and the other as a Visual Observer
  - Attend pre and post flight mission briefs which will consist of weather information, flight information to include operational area and mission objectives, hazard mitigation actions and most importantly emergency and abort procedures; also included will be any NOTAMs or improvements to standard operating procedures through further refinements in operations
  - Communicate over two way radio, cell phone and/or other communication devices identified to increase operational efficiencies

- All flight operations will:
  - At no time fly within one statute mile of any operational airfield
  - Provide prior notification to airfield operator and airfield air traffic control tower (when applicable) when operating within five statute miles of any active airfield; no later than 24 hours prior to air operations
  - Be conducted using a UAS as defined by the FAA that has a UAV weighing less than 55 lbs; all operations authorized through this exemption request will be done with the either the S1000+ UAS or the Q500 UAS
  - Be conducted in Class G and occasionally E airspace and shall not exceed 400 ft AGL
  - Be conducted VLOS of the qualified PIC and VO
  - Give right-of-way to and avoid flying near manned aircraft at all times
  - Be conducted in rural environments and uncongested urban environments
  - Be conducted with written consent from land owner / managing agency
  - Ensure air vehicles do not encroach within 500 ft of any paved road, person, vehicle, or structure that is not associated with operations
  - Abort/Cancel in the event of detrimental weather to include wind speeds exceeding the allowable limits as defined within operations manual of the applicable UAS

- All Hobbyist Instruction:
  - Will be conducted in areas where it will be easy to maintain safety
  - Be designed to promote a safe attitude in the student and stress courteous conduct
  - Will include the fundamentals of Flight, GPS, Data and Control Links, Autonomous Systems, and Emergency Procedures

- Cover the FAR's and Conditions that apply to all Skygizmo UAS operations

Emergency Procedures:

- In the event the air vehicle losses GPS signal, automated return to home will immediately commence based on the pre-programmed parameters identified and uploaded prior to initiation of flight. The flight plan is built in such a way that hazards are identified prior to launch will allow the PIC to successfully recover control of the air vehicle.
- In the event the PIC losses signal with the air vehicle, automated return-to-home and loiter will commence until signal is regained. The flight plan is built in such a way that all hazards are identified prior to launch and an automated landing in the event signal is not regained will be conducted in a safe and responsible manner.
- In the event hazardous weather unexpectedly approaches and may affect operations, the PIC will immediately abort the operation and conduct landing activities
- In the event an in-flight emergency occurs, (i.e. air vehicle maintenance issues), the PIC will immediately abort flight and conduct landing activities; air vehicle inspection will immediately be achieved and the air vehicle will not return to service without proper authorization from a trained maintenance technicial
- In a "significant" event (i.e. air vehicle crashes and outside assistance is needed), PIC will conduct notification procedures to include county sheriff and fire departments, airfield operator/tower if applicable and any other authority required to mitigate situation a "significant" event report will be generated by the PIC, verified by the VO.
- By following these strict, mostly self imposed guidelines; Skygizmo, UAS will achieve a safety level greater than that directed by the rules in which they seek exemption, especially true when you compare the same operating procedures against a manned aircraft. UAS's are inherently safer in all facets due to the fact that they are much smaller, fly at much lower speeds, there are no human operators on board and there is zero fuel to be concerned with in the event of a crash. As processes are further refined, the operations will only add to an already higher level of safety compared to manned flight operations in which serves the public's best interest in the FAA's endeavor to integrate UAS into the NAS.

III. Regulations – Exemption Requested

Pursuant to 14 C.F.R. § 11.81(e), Skygizmo UAS seeks exemption from the below mentioned regulations and provides reason as to why the exemption should be approved based on the level of safety at least equal to that of which the rules require.

- **14 C.F.R. Part 21 Subpart H – Airworthiness Certificates**
  - **Establishes:** *The procedural requirements for the issuance of airworthiness certificates as required by 14 C.F.R. § 91.203(a)(1)*

Given the small size of the UAS, the limited operating areas and meticulous procedures defined within the training and operations section (re-iterated below), 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" with consideration "of the size, weight, speed, operational capability, and proximity to airports and populated areas of the particular UAS."

- UAS Size: Less than 5 ft
- UAS Weight: Less than 25 lbs
- UAS Speed : Less than 50 knots
- UAS Capacities: 2 hour battery limited flight time (No fuel on board)
- No operations within one statute mile; Prior notice given to ATC tower/Airport Operator w/in five statute miles
- Operations conducted in Rural areas and uncongested urban areas only, with a minimum distance of 500 ft from all persons, structures, roads, and vehicles other than those that are part of the mission

NOTE: The FAA has recently set precedence to this regulation within like given parameters and an exemption should be approved on this basis. See exemption approvals for Build Imagery, Blue Chip UAS, Astraeus Aerial, Aerial MOB, HeliVideo Productions, RC Pro Productions, Snaproll Media and Pictorvision.

- **14 C.F.R. § 45.23(b) – Aircraft Marking and Identification Requirements**
  - **14 C.F.R. § 45.23(b)**, Markings of the Aircraft, states:
    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.

Skygizmo UAS will ensure compliance with § 45.29(f) to meet the intent of the regulation by placing the word "experimental" on the fuselage of the air vehicle(s).

NOTE: The FAA has set precedence to this regulation within like given parameters and an exemption should be approved on this basis along with previous exemptions: Nos. 10700, 10167 and 10167A. Also, see most recent exemption approvals for Build Imagery, Blue Chip UAS, Astraeus Aerial, Aerial MOB, HeliVideo Productions, RC Pro Productions, Snaproll Media and Pictorvision for further justification of approval.

- **14 C.F.R. 91.7(a) – Civil Aircraft Airworthiness**
  - **States:** *No person may operate a civil aircraft unless it is in an airworthy condition.*

Currently there is no airworthiness certificate for either the DJI S100+ or the Yuneec Q500 UAS; however, daily pre and post flight inspections will be accomplished in accordance with manufactures maintenance manual(s) and guidance. During flight, the PIC will adhere to § 91.7(b) and abort air operations immediately upon identification of an in flight emergency. Trained maintenance technicians and/or the manufacturer will conduct any maintenance performed. By applying the prescribed operations, inspection and maintenance procedures within the operations section and operations manual, an equivalent level of safety will be achieved.

NOTE: The FAA has set precedent by previously issuing exemptions for § 91.7(a): Exemption Nos. 8607, 8737, 8738, 9299, 9299A, 9565, 9565B, 10167, 10167A, 10602, 32827, and 10700. Also, see most recent exemption approvals for Build Imagery, Blue Chip UAS, Astraeus Aerial, Aerial MOB, HeliVideo Productions, RC Pro Productions, Snaproll Media and Pictorvision for further justification of approval.

- **14 C.F.R. 91.103 – Preflight Action**
  - **States:** *Each pilot in command shall, before beginning a flight, become familiar with all available information concerning that flight. This information must include- (paragraphs a, b, 1 and 2)*

A pre-flight mission brief must be attended by all crew members. This "PMB" will contain weather and all flight information including emergency and abort procedures. In addition, the PIC will verify air vehicle is ready for flight by coordinating with the maintenance technician during pre-flight inspection.

The exemption requested for this section is specifically addressed toward the requirements, which do not apply to UAS operations such as runways and air traffic control integration.

NOTE: As previously stated, air traffic control and airport operator will be notified prior to any operations being executed within five statute miles

NOTE: The FAA has recently set precedence to this regulation within like given parameters and an exemption should be approved on this basis. See exemption

approvals for Build Imagery, Blue Chip UAS, Astraeus Aerial, Aerial MOB, HeliVideo Productions, RC Pro Productions, Snaproll Media and Pictorvision.

14 C.F.R. 91.119 (c) – Minimum Safe Altitudes

- **States:** *Except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes: (c) Over other than congested areas. An altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.*

All Skygizmo UAS operations will be conducted at 400 ft AGL or below in uncontrolled Class G and occasionally E airspace. As a UAS are inherently safer than traditional aircraft due to their small size, lightweight, battery operated vs fuel and no human on-board; Skygizmo UAS will not operate within 500 ft to any improved roads, vehicles persons or structures (other than those being inspected as part of the flight operation or consenting participants). In addition, objects/hazards will be identified and geo-located prior to flight to be utilized within the flight planning stages to ensure this objective is met.

- **14 C.F.R. 91.151(a) – Fuel Requirements for Flight in VFR Conditions**
  - **States:** *No person may begin a flight in an airplane under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed— (1) During the day, to fly after that for at least 30 minutes;*

This regulation is written based on the capabilities of a traditional aircraft which have flight times of several hours or greater; therefore, with the majority of UAS's which have flight times of only an hour or less, this regulation would effectively deny the ability of the air vehicle to operate.

To meet the intent, Skygizmo.com, will operate its air vehicles to no less than 25% remaining battery power to ensure safe landing and retrieval of the air vehicle. This 25% buffer and the ability to quickly and safely land a UAS in non-traditional environments, ensures at least an equal level of safety.

NOTE: The FAA has set precedent by previously issuing exemptions for § 91.151(a): Exemption Nos. 10673, 2689F, 5745, 10673 and 10808. Also, see most recent exemption approvals for Build Imagery, Blue Chip UAS, Astraeus Aerial, Aerial MOB, HeliVideo Productions, RC Pro Productions, Snaproll Media and Pictorvision for further justification of approval.

- **14 C.F.R. 91.405(a), 91.407(a)(1), 91.409(a)(2) and 91.417(a) & (b) – Maintenance Inspections**
  - **91.405(a) States:** *Each owner or operator of an aircraft—(a) 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*

  - **91.407(a)(1) States:** *(a) No person may operate any aircraft that has undergone maintenance, preventive maintenance, rebuilding, or alteration unless—(1) It has been approved for return to service by a person authorized under § 43.7 of this chapter*

- **91.409(a)(2) States:** *(a) Except as provided in paragraph (c) of this section, no person may operate an aircraft unless, within the preceding 12 calendar months, it has had—(2) An inspection for the issuance of an airworthiness certificate in accordance with part 21 of this chapter. No inspection performed under paragraph (b) of this section may be substituted for any inspection required by this paragraph unless it is performed by a person authorized to perform annual inspections and is entered as an "annual" inspection in the required maintenance records.*

- **91.417(a) & (b) States:** *(a) Except for work performed in accordance with §§ 91.411 and 91.413, each registered owner or operator shall keep the following records for the periods specified in paragraph (b) of this section: (paragraphs 1 (i–iii), 2 (i–vi)); (b) The owner or operator shall retain the following records for the periods prescribed: (paragraphs 1–3)*

Due to the fact neither the S1000+ UAS nor the Q500 UAS at present has an airworthiness certificate, these regulations cannot be complied with as written and therefore an exemption is necessary. Pre/Post and routine inspections (not to exceed 50 flight hours) and maintenance will be conducted in accordance with the manufacturer's guidance as stated in the operations and maintenance manuals. In addition, to meet the intent of these regulations, Skygizmo UAS, will maintain daily logs of pre and post flight inspections and have maintenance performed by trained technicians and/or the manufacturer themselves. In the event maintenance is required, trained technicians will verify the air vehicle is in flight readiness status prior to releasing to PIC for use in operations.

Unscheduled maintenance will be accomplished in the event of a mechanical or structural failure during flight. Upon completion of unscheduled maintenance, documentation will be provided to the Pilot In Command to sign off and verify that the air vehicle is once again ready for flight and accept the level of risk associated with returning the air vehicle to flight status. At no time will there be changes made to the air vehicle which would impact the structural integrity of the air frame without the manufacturer making such changes and verifying the flight its air worthiness.

All inspection and maintenance will be documented and maintained in-house. These actions will meet the intent of the regulation exemption is being requested and lead to the equivalent level of safety.

NOTE: The FAA has recently set precedence to this regulation within like given parameters and an exemption should be approved on this basis. See exemption approvals for Build Imagery, Blue Chip UAS, Astraeus Aerial, Aerial MOB, HeliVideo Productions, RC Pro Productions, Snaproll Media and Pictorvision.

- **14 C.F.R. 61.183 – Instructor Eligibility Requirements**

  - **States:** *To be eligible for a flight instructor certificate or rating a person must:*
    (a) Be at least 18 years of age;
    (b) Be able to read, speak, write, and understand the English language. If the applicant is unable to meet one of these requirements due to medical reasons, then the Administrator may place such operating limitations on that applicant's flight instructor certificate as are necessary;
    (c) Hold either a commercial pilot certificate or airline transport pilot certificate with:

(1) An aircraft category and class rating that is appropriate to the flight instructor rating sought; and
(2) An instrument rating or privileges on that person's pilot certificate that is appropriate to the flight instructor rating sought, if applying for--
(i) A flight instructor certificate with an airplane category and single-engine class rating;
(ii) A flight instructor certificate with an airplane category and multiengine class rating;
(iii) A flight instructor certificate with a powered-lift rating; or (iv) A flight instructor certificate with an instrument rating.
(d) Receive a logbook endorsement from an authorized instructor on the fundamentals of instructing listed in Sec. 61.185 of this part appropriate to the required knowledge test;
(e) Pass a knowledge test on the areas listed in Sec. 61.185(a)(1) of this part, unless the applicant:
(1) Holds a flight instructor certificate or ground instructor certificate issued under this part;
(2) Holds a current teacher's certificate issued by a State, county, city, or municipality that authorizes the person to teach at an educational level of the 7th grade or higher; or
(3) Is employed as a teacher at an accredited college or university.
(f) Pass a knowledge test on the aeronautical knowledge areas listed in Sec. 61.185(a)(2) and (a)(3) of this part that are appropriate to the flight instructor rating sought;
(g) Receive a logbook endorsement from an authorized instructor on the areas of operation listed in Sec. 61.187(b) of this part, appropriate to the flight instructor rating sought;
(h) Pass the required practical test that is appropriate to the flight instructor rating sought in an:
(1) Aircraft that is representative of the category and class of aircraft for the aircraft rating sought; or
(2) Flight simulator or flight training device that is representative of the category and class of aircraft for the rating sought, and used in accordance with an approved course at a training center certificated under part 142 of this chapter.
(i) Accomplish the following for a flight instructor certificate with an airplane or a glider rating:
(1) Receive a logbook endorsement from an authorized instructor indicating that the applicant is competent and possesses instructional proficiency in stall awareness, spin entry, spins, and spin recovery procedures after providing the applicant with flight training in those training areas in an airplane or glider, as appropriate, that is certificated for spins; and
(2) Demonstrate instructional proficiency in stall awareness, spin entry, spins, and spin recovery procedures. However, upon presentation of the endorsement specified in paragraph (i)(1) of this section an examiner may accept that endorsement as satisfactory evidence of instructional proficiency in stall awareness, spin entry, spins, and spin recovery procedures for the practical test, provided that the practical test is not a retest as a result of the applicant failing the previous test for deficiencies in the knowledge or skill of stall awareness, spin entry, spins, or spin recovery instructional procedures. If the retest is a result of deficiencies in the ability of an applicant to demonstrate knowledge or skill of stall awareness, spin entry, spins, or spin recovery instructional procedures, the examiner must test the person on stall awareness, spin entry, spins, and spin recovery instructional procedures in an airplane or glider, as appropriate, that is certificated for spins;
(j) Log at least 15 hours as pilot in command in the category and class of aircraft that is appropriate to the flight instructor rating sought; and
(k) Comply with the appropriate sections of this part that apply to the flight instructor rating sought.

Due to the fundamentally different nature of Manned Aerial Systems and Unmanned Aerial Systems, these regulations cannot be complied with as written and therefore an exemption is requested. Skygizmo UAS will develop a syllabus and instructional protocols similar to those that are used in the Manned Aircraft Instructional industry.

IV. Public Interest

The public's best interest is achieved by the safe integration of UAS's into the NAS. With the ongoing exemption process, the FAA has to identify those exemption requests with the public's best interest in mind and select the companies who will be able to achieve this in a safe and responsible manner. Two of the main problems the public has with UAS are the fear of what they will be used for and whether or not they are safe to fly within the same airspace as commercial airliners.

Skygizmo UAS will operate in such a manner as to provide a positive example of how Unmanned Aerial Systems can add to the quality of life and benefit all Americans. By flying with respectful and courtesy and teaching those values to prospective hobbyists, among who will be the future Pilots In Command for the Unmanned Aerial Services industry, Skygizmo UAS hopes to be part of making the services it will provide, a ubiquitous part of life in America.

Skygizmo UAS will provide any additional information requested and will diligently work with the FAA to make this approval a reality as it is in the best interest and safety of the public as directed by Congress.

V. Privacy Concerns

As previously stated, one of the main concerns the public has with the integration of Unmanned Aerial Systems into the NAS is privacy and spying. Skygizmo UAS understands and shares those privacy and oversight concerns. Skygizmo UAS will meet or exceed the specifications found in Executive Order 12333, DoD Directive 5240.1-R and AFI 14-104. Although the regulations do not apply to private commercial entities, knowledge and application of these regulations will assist and ensure any and all privacy concerns will be minimal and immediately mitigated. Before any recording is provided to a customer or the public, any imagery that violates the privacy of any person or entity will be scrubbed.

VI. Summary ~ Federal Register

Pursuant to Section 333 of PL 112-95 commonly known as the "FAA Modernization and Reform Act of 2012" or "The Reform Act", John Ullom, d/b/a Skygizmo UAS, hereby applies for authorization to conduct commercial unmanned aerial systems (UAS) operations that include aerial imaging, cinematography, recording of outdoor sporting events, and introductory instruction for UAS hobbyists, within the United States National Airspace System (NAS); within Class G and occasionally E airspace.

Rules in which Skygizmo UAS seeks exemption:

- 14 C.F.R. Part 21 Subpart H
- 14 C.F.R. § 45.23(b)
- 14 C.F.R. § 91.7(a)
- 14 C.F.R. § 91.103
- 14 C.F.R. § 91.119
- 14 C.F.R. § 91.151(a)
- 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. § 91.417(a) & (b)
- 14 C.F.R. § 61.183(c)(1)(c)(2)(i)(ii)(iii)(iv) & (d) & (e)(1)(2)(3) & (f) & (g) & (h)(1)(2)(i) & (1)(2) & (j) & (k)

Throughout this exemption request, Skygizmo UAS has shown how it will ensure the public's best interest is at hand and assist the FAA with their charge to: "...safely accelerate the integration of civil unmanned aircraft systems into the national airspace system..." as directed by Congress. Skygizmo UAS has also shown how the approval of this request will meet and exceed "...at least an equivalent level of safety..." for the regulations they seek exemption.