Exemption No. 11195

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, DC 20591

In the matter of the petition of **FALCONSKYCAM** for an exemption from part 21 subpart H, §§ 45.23(b), 61.113(a) and (b), 91.7(a), 91.9(b)(2), 91.109, 91.119, 91.121, 91.151(a), 91.203(a) and (b), 91.205(b), 91.215, part 91 subpart E of Title 14, Code of Federal Regulations	**Regulatory Docket No. FAA−2014−0884**

GRANT OF EXEMPTION

By letter dated October 22, 2014[1], Ms. Diana Cook, FalconSkyCam (hereinafter petitioner or operator), 1525 Graves Avenue, Apartment 123, El Cajon, California 92021, petitioned the Federal Aviation Administration (FAA) for an exemption part 21 subpart H, §§ 45.23(b), 61.113(a) and (b), 91.7(a), 91.9(b)(2), 91.109, 91.119, 91.121, 91.151(a), 91.203(a) and (b), 91.205(b), 91.215, part 91 subpart E of Title 14, Code of Federal Regulations (14 CFR). The exemption would allow the petitioner to operate the DJI Phantom 2 unmanned aircraft system (UAS) to conduct aerial photography for real estate, surveying, marine photo and video, agriculture, and special events.

The petitioner supports its request with the following information:

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

[1] On February 6, 2015, and posted to the public docket, the petitioner responded to the FAA's Request for Information.

The petitioner has provided the following information to support its request for an exemption:

1) Phantom 2 User Manual v1.4
2) Zenmuse H3-2D Gimbal User Manual v1.16
3) Unmanned Aerial Vehicle and First Person View Pre-Flight Checklist

The petition and the document above are hereinafter referred to as the operating documents.

The FAA evaluated the petition and determined it was not precedent-setting. Therefore, a summary of the petition was not published in the Federal Register for public comment.

The FAA's analysis is as follows:

The FAA has organized its analysis into four sections: (1) Unmanned Aircraft Systems (UAS), (2) the UAS pilot in command (PIC), (3) the UAS operating parameters, and (4) the public interest.

Unmanned Aircraft System (UAS)

The petitioner requested relief from 14 CFR part 21, C*ertification procedures for products and parts, Subpart H—Airworthiness Certificates*. In accordance with the statutory criteria provided in Section 333 of P.L. 112-95 in reference to 49 USC § 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 parts 21, and any associated noise certification and testing requirements of part 36, is not necessary.

Manned helicopters conducting aerial photography and filming can weigh thousands of pounds or more and are operated by an onboard pilot, in addition to other onboard crewmembers, as necessary. The petitioner's unmanned aircraft (UA) will weigh less than 6 lbs. with no onboard pilot or crew. The pilot and crew will be remotely located from the aircraft. The limited weight significantly reduces the potential for harm to participating and nonparticipating individuals or property in the event of an incident or accident. The risk to an onboard pilot and crew during an incident or accident is eliminated with the use of a UA for the aerial filming operation.

Manned aircraft are at risk of fuel spillage and fire in the event of an incident or accident. The petitioner's UA carries no fuel, and therefore the risk of fire following an incident or accident due to fuel spillage is eliminated.

This exemption does not require an electronic means to monitor and communicate with other aircraft, such as transponders or sense and avoid technology. Rather the FAA is mitigating the risk of these operations by placing limits on altitude, requiring stand-off distance from clouds, permitting daytime operations only, requiring that the UA be operated within visual line of sight (VLOS), utilizing a visual observer for all flights, and yielding right of way to all other

operations. Additionally, the exemption provides that the operator will request a notice to airmen (NOTAM) prior to operations to alert other users of the National Airspace System (NAS). These mitigations address awareness of UAS operations occurring in the airspace.

The petitioner's UAS has the capability to operate safely after experiencing certain in-flight contingencies or failures and uses an auto-pilot system to maintain UAS stability and control. The UAS is also able to respond to a loss of global positioning system (GPS) or a lost-link event with a pre-coordinated, predictable, automated flight maneuver. These safety features provide an equivalent level of safety compared to a manned aircraft performing a similar operation and mitigate the risk of command and control link failures.

Regarding the petitioner's requested relief from 14 CFR § 45.23(b), *Display of marks,* because the petitioner's UAS will not be certificated under 14 CFR § 21.191, a grant of exemption for 14 CFR § 45.23(b) is not necessary. The petitioner's UA 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 per § 45.29(f).

Regarding the petitioner's requested relief from 14 CFR Subpart E (§§ 91.401-417), the FAA has determined that relief from the following sections is required: 14 CFR §§ 91.405(a) *Maintenance required,* 91.407(a)(1) *Operation after maintenance, preventive maintenance, rebuilding, or alteration,* 91.409(a)(1) and (2) *Inspections,* and 91.417(a) and (b) *Maintenance records.* The FAA has evaluated the petitioner's request and determined that cause for granting the exemption is warranted. The FAA notes that the petitioner's operating documents contain preflight and post-flight checks for the UAS. The FAA finds that adherence to the operating documents, as required by the conditions and limitations below, is sufficient to ensure that safety is not adversely affected. In accordance with the petitioner's UAS maintenance, inspection, and recordkeeping requirements, the FAA finds that exemption from 14 CFR §§ 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b) is warranted subject to the conditions and limitations below.

<u>UAS Pilot in Command (PIC)</u>

Regarding the petitioner's requested relief from 14 CFR § 61.113(a) and (b) *Private pilot privileges and limitations*, the petitioner proposes to operate its UAS with a pilot holding, at a minimum, a private pilot certificate and at least a current third-class medical certificate. Under current regulations, civil operations for compensation or hire require a PIC holding a commercial pilot certificate per 14 CFR part 61. Based on the private pilot limitations in accordance with pertinent parts of 14 CFR §61.113(a), with limited exceptions, a pilot holding a private pilot certificate cannot act as a PIC of an aircraft for compensation or hire. However, in Grant of Exemption No. 11062 to Astraeus Aerial (Astraeus), the FAA determined that a PIC with a private pilot certificate operating the Astraeus UAS would not adversely affect operations in the NAS or present a hazard to persons or property on the ground.

The FAA has analyzed the petitioner's proposed operation and has determined that it does not differ significantly from the situation described in Grant of Exemption No. 11062 (Astraeus Aerial). The petitioner plans to operate over private property with controlled access in the NAS. Given: 1) the similar nature of the petitioner's proposed operating environment to that of Astraeus, 2) the parallel nature of private pilot aeronautical knowledge requirements to those of commercial requirements [ref: Exemption No. 11062], and 3) the airmanship skills necessary to operate the UAS, the FAA finds that the additional airmanship experience of a commercially certificated pilot would not correlate to the airmanship skills necessary for the petitioner's specific proposed operations. Therefore, the FAA finds that a PIC holding a private pilot certificate and a third-class airman medical certificate is appropriate for the proposed operations and that granting relief from 14 CFR § 61.113(a) is warranted.

With regard to a training program, the petitioner has proposed that prior to the first operation, the PIC be required to complete an UAS education and training program including all applicable regulations and guidance documents including aeronautical background information such as charts, NOTAMS and Advisory Circulars; Radio Communications Procedures; Human Factors and Crew Resource Management; Basic Small UAS Aerodynamics; Weather factors; Airmanship and Decision-making and Safe Operating Procedurees. The conditions and limitations below stipulate that the petitioner may not permit any PIC to operate unless that PIC has demonstrated through the petitioner's qualification, training, and currency requirements that the PIC is able 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 people, vessels, vehicles and structures.

In conclusion, the FAA finds that a PIC holding at least a private pilot certificate and a third-class airman medical certificate and who has completed the petitioner's UAS training and currency requirements can conduct the proposed UAS operations without adversely affecting the safety of the NAS or persons or property on the ground. Upon consideration of the overall safety case presented by the petitioner, the FAA finds that granting the requested relief from 14 CFR § 61.113(a), is warranted. The FAA also finds that relief from 14 CFR § 61.113(b) is not necessary.

The petitioner indicated it will supplement its proposed operation(s) with a visual observer (VO). In Grant of Exemption No. 11062, the FAA agreed with the petitioner's proposed use of a VO and required a VO to be used in all UAS operations. Although a medical certificate is not required for a VO, the UA must never be operated beyond the actual visual capabilities of the VO, and the VO and PIC must have the ability to maintain VLOS with the UA at all times. It is the responsibility of the PIC to be aware of the VO's visual limitations and limit operations of the UA to distances within the visual capabilities of both the PIC and VO. Moreover, the VO will not be operating the aircraft. Therefore, as in Grant of Exemption No. 11062, the FAA does not consider a medical certificate necessary for the VO and the requirement for a VO is included in the conditions and limitations below.

The petitioner stated that its visual observers who are not pilots will attend ground training to understand the proper roles of an observer, communication procedures, proper visual scan

techniques, operations at non-towered airports, and appropriate sections of the Aeronautical Information Manual.

The FAA considers the PIC to be designated for the duration of the flight. Therefore, per the conditions and limitations below, the PIC must be designated before the flight and cannot transfer his or her designation for the duration of the flight.

UAS Operating Parameters

Regarding the petitioner's requested relief from 14 CFR § 91.7(a) *Civil aircraft airworthiness,* the FAA finds that relief from § 91.7(a) is necessary. While the petitioner's UAS will not require an airworthiness certificate in accordance with 14 CFR part 21, Subpart H, the FAA considers the petitioner's compliance with its operating documents to be a sufficient means for determining an airworthy condition. Therefore, relief from § 91.7(a) is granted. The petitioner is still required to ensure that its aircraft is in an airworthy condition – based on compliance with the operating documents prior to every flight, and as stated in the conditions and limitations below.

In accordance with 14 CFR § 91.7(b) *Civil aircraft airworthiness*, the PIC of the UAS is responsible for determining whether the aircraft is in a condition for safe flight. The FAA, as in grant of Exemption No. 11062 to Astraeus, has determined that the operating documents include procedures to be used prior to each flight that can ensure compliance with § 91.7(b). The petitioner is required to ensure that its aircraft is in a condition for safe flight – based on compliance with the operating documents– prior to every flight.

Regarding the petitioner's requested relief from §§ 91.9(b)(2) *Civil aircraft flight manual, marking, and placard requirements* and 91.203(a) and (b) *Civil aircraft: Certifications required*, the FAA has previously determined in Grant of Exemption 11062, Astraeus Aerial, that relief from these sections is not necessary. Relevant materials may be kept in a location accessible to the PIC in compliance with the regulations.

Regarding the petitioner's requested relief from 14 CFR § 91.109 *Flight instruction; Simulated instrument flight and certain flight tests,* the petitioner did not describe training scenarios in which a dual set of controls would be utilized or required, i.e. dual flight instruction, provided by a flight instructor or other company-designated individual, that would require that individual to have fully functioning dual controls. Furthermore, the FAA is requiring that the petitioner's PICs possess at least a private pilot's certificate. Also, this exemption will require that training operations only be conducted during dedicated training sessions. The FAA finds that safety will not be adversely impacted if the petitioner follows the training outlined in the operating documents. As such, the FAA finds that the petitioner can conduct its operations without the requested relief from § 91.109.

Regarding the petitioner's requested relief from 14 CFR § 91.119 *Minimum safe altitudes*, the petitioner did not specify the paragraph(s) in 14 CFR § 91.119 from which it requires relief. Relief from § 91.119(a), which requires operating at an altitude that allows a safe emergency landing if a power unit fails, is not granted. The FAA expects the petitioner to be able to

perform an emergency landing without undue hazard to persons or property on the surface if a power unit fails. Relief from § 91.119(b), operation over congested areas, is not applicable, because the petitioner states that operations will be conducted over sparsely populated areas. Relief from § 91.119(c) is necessary because the aircraft will be operated at altitudes below 400 feet above ground level (AGL). Section 91.119(c) states that no person may operate an aircraft below the following altitudes: *over other than congested areas*, an altitude of 500 feet above the surface, except over open water or sparsely populated areas. Section 91.119(c) provides that in operations over water or sparsely populated areas, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure. The petitioner states that it will operate pursuant to the following, self-imposed restrictions related to § 91.119:

- Petitioner will conduct operations over private or controlled access property with the permission of the landowner;
- Petitioner will avoid operations over populated areas and stay within the "sterile area";
- Petitioner will limit operations to Visual Flight Rules Meteorological Conditions (VMC) and daylight hours;
- Petitioner will ensure aircraft operations remain within VLOS of the PIC and VO and will be visually monitored at all times;
- Petitioner will operate no closer than 3 miles from an airport or heliport

The petitioner proposes to avoid populated areas and operations over persons who have not provided consent; however the petitioner did not describe specific minimum stand-off distances from persons, vessels, vehicles and structures. As discussed in Exemption No. 11109 to Clayco, Inc., operations conducted closer than 500 feet to the ground may require that the UA be operated closer than 500 feet to essential persons, or objects that would not be possible without additional relief. Therefore, the FAA is requiring that prior to conducting UAS operations, all persons not essential to flight operations (nonparticipating persons) must remain at appropriate distances. In open areas this requires the UA to remain 500 feet from all persons other than essential flight personnel (i.e. PIC, VO, operator trainees or essential persons).

The FAA has also considered that the UA will weigh less than 6 pounds. If barriers or structures are present that can sufficiently protect nonparticipating persons from the UA or debris in the event of an accident, then the UA may operate closer than 500 feet to persons afforded such protection. The operator must also 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. When considering how to immediately cease operations, the primary concern is the safety of those nonparticipating persons. In addition, the FAA finds that operations may be conducted closer than 500 feet to vessels, vehicles and structures when the property owner/controller grants such permission and the PIC makes a safety assessment of the risk of operating closer to those objects and determines that it does not present an undue hazard.

Thus, the FAA finds that relief from § 91.119(c) is warranted, provided adherence to the procedures in the operating documents and the FAA's additional conditions and limitations outlined below. Relief from § 91.119(a) is unwarranted as the FAA expects the petitioner to

be able to perform an emergency landing without undue hazard to persons or property on the surface. Relief from §§ 91.119(b) and 91.119(d) are not applicable.

Regarding the petitioner's requested relief from 14 CFR § 91.121 *Altimeter Settings*, the FAA believes that an altitude reading is a critical safety component of the petitioner's proposed operation. Although the petitioner will not have a typical barometric altimeter onboard the aircraft, the FAA finds the petitioner's intention to operate the UA within VLOS and at or below 400 feet AGL, combined with the petitioner's intention to limit the altitude of the UAS through flight limit function on the UAS, to be a sufficient method for ensuring the UAS operations do not adversely affect safety. The altitude information will be generated by GPS equipment installed onboard the aircraft, and/or a static pressure sensor (barometer) which aids in estimating the altitude. Prior to each flight, calibrating the compass must be established and confirmed for accuracy by the UAS PIC. In addition, as stated in the conditions and limitations below, the FAA requires any altitude reported to Air Traffic Control (ATC) to be in feet AGL. The petitioner may choose to set the altimeter to zero feet AGL rather than local barometric pressure or field altitude before flight. Considering the limited altitude of the proposed operations, relief from 14 CFR § 91.121 is granted to the extent necessary to comply with the applicable conditions and limitations stated below.

Regarding the petitioner's requested relief from § 91.151(a) *Fuel requirements for flight in VFR conditions,* prior relief has been granted for manned aircraft to operate at less than the prescribed minimums, including Exemption Nos. 2689, 5745, and 10650. In addition, similar UAS-specific relief has been granted an Exemption Nos. 8811, 10808, and 10673 for daytime, Visual Flight Rules (VFR) conditions. The petitioner's UAS provides low battery warnings at 30% capacity that indicate the PIC must command the UA's return to the launch point when low battery capacity voltage is reached. The UAS also provides critical low battery warnings at 15% battery capacity indicating that the UA will begin to descend and land automatically. These factors provide the FAA with sufficient reason to grant the relief from 14 CFR § 91.151(a) as requested in accordance with the conditions and limitations below. The PIC will be 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 UA with 30% battery power remaining.

The FAA Air Traffic Organization (ATO) reviews all proposed UAS operations and evaluates the safety of these operations relative to the requested airspace through the existing Certificate of Waiver or Authorization (COA) process. The majority of current UAS operations occurring in the NAS are being coordinated through Air Traffic Control (ATC) by the issuance of a COA. This process not only makes local ATC facilities aware of UAS operations, but also provides ATC the ability to consider airspace issues that are unique to UAS operations. The COA will require the operator to request a NOTAM, which is the mechanism for alerting other users of the NAS to the UAS activities being conducted. The conditions and limitations below prescribe the requirement for the petitioner to obtain an ATO-issued COA.

The petitioner requested relief from 14 CFR § 91.205(b) *Powered civil aircraft with standard category U.S. airworthiness certificates: Instrument and equipment requirements.* Since the

petitioner's UAS does not have a standard category U.S. airworthiness certificate, relief from § 91.205 is not necessary.

While the petitioner requested relief from 14 CFR § 91.215 *ATC transponder and altitude reporting equipment and use,* the FAA is not granting relief. Section 91.215(b)(3) includes provisions for aircraft not originally certificated with an engine-driven electrical system or which has not subsequently been certified with such a system installed. For UAS not equipped with a transponder, sub-paragraph (d)(3) authorizes requests for ATC authorized deviations made to the ATC facility having jurisdiction over the concerned airspace within the time periods specified. For operation of an aircraft that is not equipped with a transponder, the request must be made at least one hour before the proposed operation. The FAA finds adherence to the conditions and limitations below as well as compliance with the ATC issued COA will ensure safety and is therefore not granting relief.

Public Interest

The FAA finds that a grant of exemption is in the public interest. The enhanced safety and reduced environmental impact achieved using a 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.

The following table summarizes the FAA's determinations regarding the relief sought by the petitioner:

Relief considered (14 CFR)	FAA determination (14 CFR)
21 Subpart H	Relief not necessary
45.23(b)	Relief not necessary
61.113(a) and (b)	Relief granted for paragraph (a) with conditions and limitations; paragraph (b) relief not necessary
91.7(a)	Relief granted with conditions and limitations
91.9(b)(2)	Relief not necessary
91.109	Relief not necessary
91.119	Relief not granted for paragraph (a); paragraph (b) relief not applicable; paragraph (c) relief granted with conditions and limitations; paragraph (d) relief not applicable
91.121	Relief granted with conditions and limitations
91.151(a)	Relief granted for paragraph (a)(1), day, with conditions and limitations
91.203(a) and (b)	Relief not necessary
91.205(b)	Relief not necessary
91.215(b)(3)	Relief not granted
91.405(a)	Relief granted with conditions and limitations
91.407(a)(1)	Relief granted with conditions and limitations
91.409(a)(1) and (2)	Relief granted with conditions and limitations
91.417(a) and (b)	Relief granted with conditions and limitations

The FAA's 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, FalconSkyCam is granted an exemption from 14 CFR §§ 61.113(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 FalconSkyCam to

operate the DJI Phantom 2 to conduct aerial photography for real estate, surveying, marine photo and video, agriculture, and special events. This exemption is subject to the conditions and limitations listed below.

Conditions and Limitations

Relative to this grant of exemption**,** FalconSkyCam is here after referred to as the operator.

The petition and the following supporting documentation are hereinafter referred to as the operating documents:

1) Phantom 2 User Manual v1.4
2) Zenmuse H3-2D Gimbal User Manual v1.16
3) Unmanned Aerial Vehicle and First Person View Pre-Flight Checklist

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 following aircraft described in the operating documents which is the DJI Phantom 2 Unmanned Aircraft System, a quad rotor aircraft. Proposed operations of any other aircraft will require a new petition or a petition to amend this grant.

2. UAS operations under this exemption are limited to aerial photography for conducting real estate photography, surveying, agriculture, marine photo and video and special events.

3. The UA may not be flown at an indicated airspeed exceeding 29 knots (15 m/s).

4. The UA must be operated at an altitude of no more than 400 feet above ground level (AGL), as indicated by the procedures specified in the operating documents. All altitudes reported to ATC must be 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.

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 functions prescribed in the operating documents.

7. The VO 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.

8. The operating documents and this 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 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 upon request. The operator must also present updated and revised documents if it petitions for extension or amendment. 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 amendment to their exemption. The FAA's UAS Integration Office (AFS-80) may be contacted if questions arise regarding updates or revisions to the operating documents.

9. Prior to each flight the PIC must inspect the UAS to ensure 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.

10. 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 in accordance with the operating documents. The PIC who conducts the functional test flight must make an entry in the UAS aircraft records of the flight. The requirements and procedures for a functional test flight and aircraft record entry must be added to the operating documents.

11. The preflight inspection section in the operating documents must be amended to include the following requirement: The preflight inspection must account for all discrepancies, i.e. inoperable components, items, or equipment, not covered in the relevant preflight inspection sections of the operating documents.

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

13. The operator must carry out their maintenance, inspections, and record keeping requirements, in accordance with the operating documents. Maintenance, inspection, and alterations must be noted in the aircraft logbook, including total flight hours, description of work accomplished, and the signature of the authorized UAS technician returning the UAS to service. The petitioner will return the UAS to the manufacturer for maintenance purposes as stipulated by the manufacturer's maintenance program.

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

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

16. The PIC must possess at least a private pilot certificate and a third-class airman medical certificate for all of petitioner's flight operations. If the PIC holds a commercial pilot certificate he or she must hold at least a second-class medical certificate as required by 14 CFR §61.23. 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.

17. 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 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). The PIC must ensure that the VO is trained appropriately in order to fulfill her or her duties. A record of training must be documented and made available upon request by the Administrator. Flights for the purposes of training the operator's PICs and VOs (training, proficiency, and experience-building) are permitted under the terms of this exemption. However, training 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.

18. 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.

19. The UA 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 Notice to Airmen (NOTAM), as required by the operator's Certificate of Waiver or Authorization (COA). The letter of agreement with the airport management must be made available to the Administrator upon request.

20. 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.

21. 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 and land or be recovered in accordance with the operating documents.

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

23. The PIC will be 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 UA with 30% battery power remaining in accordance with the operating documents.

24. The operator must obtain an Air Traffic Organization (ATO) issued COA prior to conducting any operations under this grant of exemption. This COA will require the operator to request a 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.

25. 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.

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

27. The 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.

28. The UA must remain clear and yield the right of way to all other aviation operations and activities at all times.

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

30. The UA may not be operated from an elevated platform.

31. The UA may not be operated over congested or densely populated areas.

32. Flight operations must be conducted at least 500 feet from all nonparticipating persons (persons other than the PIC or VO), vessels, vehicles, and structures unless:
    a. Barriers or structures are present that sufficiently protect nonparticipating persons from 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 and/or;

b. The aircraft is operated near vessels, vehicles or structures where the property owner/controller has granted permission and the PIC has made a safety assessment of the risk of operating closer to those objects and;
c. Operations near the PIC or VO do not present an undue hazard to the PIC or VO per § 91.119(a).

33. 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 prior to the beginning of every flight.

34. 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.

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 March 31, 2017, unless sooner superseded or rescinded.

Issued in Washington, DC, on March 6, 2015.

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