Exemption No. 11194

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

In the matter of the petition of

QUIET CREEK CORPORATION

for an exemption from parts 21 and 91 Subpart E (91.407 – 91.417); §§ 45.23; 45.29; 61.3; 61.23; 61.113(a) and (b); 61.133(a); 91.7(a); 91.9; 91.109(a); 91.119; 91.121; 91.151(a); and 91.203; of Title 14, Code of Federal Regulations

Regulatory Docket No. FAA-2014-0910

GRANT OF EXEMPTION

By letter dated October 29, 2014, Mr. Robert Davis, CEO, Quiet Creek Corporation (hereinafter Petitioner or Operator), 5130 North Prairie Clover Trail, Tucson, Arizona 85704 petitioned the Federal Aviation Administration (FAA) for an exemption parts 21 and 91 Subpart E (91.401 – 91.417); §§ 45.23, 45.29, 61.3, 61.23, 61.113(a) and (b), 91.7(a), 91.9, 91.109(a), 91.119, 91.121, 91.151(a), and, 91.203 of Title 14, Code of Federal Regulations (14 CFR). The exemption would allow the petitioner to operate the SenseFly eBee unmanned aircraft system (UAS) to conduct mapping and precision agriculture operations.

The petitioner supports its request with the following information:

The petitioner proposes to operate the SenseFly eBee UAS to conduct mapping and precision agriculture operations. See Appendix A for the petition submitted to the FAA describing the proposed operations, including the regulations from which the petitioner seeks an exemption.

The petition and the following supporting documentation, which includes proprietary supporting documents, are hereinafter referred to as the operating documents:

1. eBee Maintenance Procedures
2. eBee Training Documentation
3. eBee Extended User's Manual (Revision 12)
4. SenseFly Justification of Airworthiness and Safety Assessment

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) 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, 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 part 21, Subpart H, and any associated noise certification and testing requirements of part 36, is not necessary.

Manned aircraft conducting aerial imagery operations thousands of pounds or more, are operated by an onboard pilot and may carry other onboard crewmembers, as well as carry 100 gallons or more of fuel. The petitioner's UA weighs approximately 1.7 pounds. The pilot and crew will be remotely located from the aircraft. The limited weight and construction reduces the potential for harm to persons or damage to 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 UAS for the proposed operation.

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

The petitioner's UAS has the capability to land safely after experiencing certain in-flight contingencies or failures and is also able to respond to a loss of global positioning system (GPS) or a lost-link event with pre-coordinated automated landing maneuvers. These safety features provide an equivalent level of safety compared to a manned aircraft holding a restricted airworthiness certificate performing a similar operation.

Regarding the petitioner's requested relief from 14 CFR § 45.23(b), *Display of marks* and §45.29 *Size of marks*, the petitioner presumably requests this relief under the assumption that marking with the word "experimental" will be required as a condition of a grant of exemption. However, this marking is reserved for aircraft that are issued experimental certificates under

14 CFR § 21.191. The petitioner's UAS will not be certificated under § 21.191, and therefore the "experimental" marking is not required, and a grant of exemption for § 45.23(b) is not necessary. However, 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). Therefore, the requested relief from § 45.29(f) is not granted.

The petitioner requests relief from14 CFR 91 Subpart E *Maintenance, Preventative maintenance, and alterations* (primarily §§ 91.405(a) *Maintenance required*, 91.407(a)(1) O*peration after maintenance, preventive maintenance, rebuilding, or alteration*, 91.409(a)(1)(2) *Inspections*, and 91.417(a) and (b) *Maintenance records*). The petitioner's operating documents contain pre-flight and post flight checks for the UAS, as well as procedures for corrective maintenance. The FAA has evaluated the petitioner's request and determined that cause for exemption to the requirements of §§ 91.401 and 91.403 is not necessary. The FAA further notes that relief from §§ 91.405(a), 91.407(a)(1), 91.409(a)(1)(2), and 91.417(a) and (b) is warranted. The FAA finds that adherence to the operating documents, with respect to the maintenance requirements of the preceding sections and as specified by the conditions and limitations below, is sufficient to ensure that safety is not adversely affected.

UAS Pilot in Command

The petitioner requested regulatory relief from 14 CFR § 61.113(a) and (b) *Private pilot privileges and limitations*. The petitioner proposes that its UAS operators should not be required to hold a commercial or private pilot certificate. Instead, the UAS operators should be required to complete an Academy of Model Aeronautics-affiliated UAS training program and education program, successfully complete a small UAS education and training program provided by any FAA-qualified entity, or hold a private pilot certificate. Although Section 333 provides limited statutory flexibility relative to 49 USC § 44704 for the purposes of airworthiness certification, it does not provide flexibility relative to other sections of title 49. The FAA does not possess the authority to exempt petitioners from the statutory requirement to hold an airman certificate, as prescribed in 49 USC § 44711. For further information see Exemption No. 11110 (Trimble Navigation, Ltd).

The FAA is also requiring a pilot certificate for UAS operations because pilots holding an FAA issued private or commercial pilot certificate are subject to the security screening by the Department of Homeland Security that certificated airmen undergo. As previously determined by the Secretary, the requirement to have an airman certificate ameliorates security concerns over civil UAS operations conducted in accordance with Section 333.

Given these grounds, the FAA must determine the appropriate level of pilot certification for the petitioner's proposed operation.

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 and in

accordance with pertinent parts of 14 CFR § 61.113(a), 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.

This is similar to other petitions for exemption previously filed with and considered by the FAA. As in Exemption Nos. 11109 (Clayco, Inc.) and 11170 (Viafield), the FAA has analyzed the petitioner's proposed operation and determined it does not differ significantly from these grants of exemption. The petitioner plans to operate in the NAS over controlled access property, with the permission of the property owner/controller, while also limiting property access to consenting participants while operations are underway. Given: 1) the similar nature of the petitioner's proposed operating environment to that of Clayco and Viafield, 2) the parallel nature of private pilot aeronautical knowledge requirements to those of commercial requirements [ref: Exemption No. 11062, Astraeus Aerial], and 3) the airmanship skills necessary to operate in the UAS, the FAA finds that the additional manned airmanship experience of a commercially certificated pilot would not necessarily correlate to the airmanship skills required for the petitioner's 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.

The petitioner also requested relief from § 61.3, *Requirement for certificates, ratings, and authorizations*. The FAA finds that relief from this section is not necessary because the regulation permits pilots to keep pilot and medical certificates in their physical possession when exercising the privileges of that certificate.

The petitioner additionally requested relief from 14 CFR § 61.23, *Medical certificates: Requirements and duration*. Insofar as the FAA requires that a third-class medical certificate is required for the PIC, relief from § 61.23 is not granted.

In conclusion, the FAA finds that a PIC holding a current private pilot certificate and a third-class airman medical certificate, and who has completed the petitioner's flight training requirements, can conduct the proposed UAS operations without adversely affecting the safety of the NAS and persons or property on the ground. Upon consideration of the safety case presented by the petitioner, the FAA finds that granting the relief from 14 CFR § 61.113(a) is warranted subject to the conditions and limitations below. The FAA also finds that relief from 14 CFR § 61.113(b) is not necessary. Relief from 14 CFR § 61.133(a), *Commercial pilot privileges and limitations,* is not necessary.

The petitioner does not indicate whether it plans to supplement its proposed operation(s) with a visual observer (VO). The FAA notes that one of the determinations for operations under section 333 is operation within visual line of sight (VLOS). As the PIC is determined to be in command of the UA, he or she must maintain VLOS while operating the UA. The FAA notes that a visual observer complements the PIC's capability to see and avoid other aircraft (per § 91.113), including when the PIC may be momentarily attending to other flying tasks

(e.g., maneuvering the aircraft close to structures, vehicles, or other objects). The VO provides an additional level of operational safety and thus 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. The conditions and limitations below stipulate that the PIC must ensure that a VO is present for all operations, and that the VO can perform the functions of maintaining visual contact with the UAS. It is the responsibility of the PIC to be limit operations of the UA to distances within the visual capabilities of both the PIC and VO. As in Grant of Exemption No. 11062 to Astraeus Aerial, the FAA does not consider a medical certificate necessary for the VO.

UAS Operating Parameters

Regarding the petitioner's requested relief from 14 CFR § 91.7(a) *Civil aircraft airworthiness*, the petitioner's request is based on the fact that no airworthiness certificate will be issued for the UAS and that no FAA regulatory standard exists for determining airworthiness. 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). Therefore, relief from § 91.7(b) is not necessary. The petitioner is still 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 14 CFR § 91.9, *Civil aircraft flight manual, marking, and placard requirements;* and 14 CFR § 91.203, *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(a), *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. Rather, the petitioner intends to accomplish training as described in the UA training program and through the use of "qualified instructors familiar with the eBee." 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. The FAA notes that the UA ground control station is computer-based and therefore will be accessible to both an instructor and a student at all times and the controls can be passed back and forth between the instructor and student, thus achieving an equivalent level of safety as having two sets of controls. As such, the FAA finds that the petitioner can conduct its operations without the requested relief from § 91.109(a).

Regarding the petitioner's requested relief from 14 CFR § 91.119, *Minimum safe altitudes,* the petitioner did not specify the paragraph(s) in § 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 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, controlled access, or public property with the permission of the landowner;
- Petitioner will avoid operations over congested areas;
- Petitioner will limit operations to Visual Flight Rules Meteorological Conditions (VMC) and daylight hours;
- Petitioner will ensure aircraft operations remain within VLOS and will be visually monitored at all times;
- Petitioner will pre-program a GPS geo-fence around the operator of 0.5 miles, and a flight ceiling at 400 feet;
- Petitioner will verbally coordinate all operations conducted within 5 miles from an airport with the airport authority, or air traffic control when a control tower is present at the airport;
- Petitioner will ensure all operations shall comply with required permissions and permits established by territorial, state, county or city jurisdictions; including local law enforcement, fire, or other appropriate governmental agencies.
- Petitioner will conduct eBee operations in compliance with existing safety procedures inherent to the activities of the related company

The petitioner proposes to avoid congested areas; however, the petitioner did not describe specific minimum stand-off distances from persons, vessels, vehicles and structures. As discussed in Exemption No. 11109 (Clayco), 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 have a maximum take-off weight of 1.7 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 the petitioner adheres to the procedures in the operating documents and the FAA's additional conditions and limitations, outlined below. Relief from § 91.119(a) is not granted 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) is not applicable, as is relief from § 91.119(d), which pertains to helicopters only.

Regarding the petitioner's requested relief from 14 CFR § 91.121 *Altimeter Settings*, the FAA notes that the petitioner's UAS has a barometric pressure sensor and GPS derived altitude capabilities. However, as stated in the conditions and limitations below, the FAA requires any altitude reported to Air Traffic Control (ATC) to be in feet above ground level (AGL). 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 in Exemption Nos. 8811, 10808, and 10673 for daytime VFR conditions. The operating documents state that the UA batteries provide approximately 45 minutes of powered flight. Information provided in the operating documents discusses procedures regarding remaining battery power. Those documents provide explanation of the automatic landing procedures that are executed when the eBee exhausts battery power. The FAA believes that, given the limitations on its proposed operations and the location of those proposed operations, a reduced minimum power reserve for flight in daytime VFR conditions is reasonable. These factors provide the FAA with sufficient reason to grant the relief from 14

CFR § 91.151(a)(1), as requested in accordance with the conditions and limitations, below. These conditions and limitations prohibit the PIC from beginning a flight unless 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 petitioner proposed operating in other than congested areas. 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 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 Notice to Airmen (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.

Public Interest

The FAA finds that a grant of exemption is in the public interest. The UA is able to collect high-resolution data that, according to the petitioner, would provide farmers with a more cost-effective method to assess and manage crops, and also a safer way for businesses to access dangerous working areas such as mines, quarries, and polluted sites. The enhanced safety 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 and 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 regulatory relief:

Relief considered (14 CFR)	FAA determination (14 CFR)
Part 21, Subpart H	Relief not necessary
45.23	Relief not necessary
45.29	Relief not granted
61.3	Relief not necessary
61.23	Relief not granted
61.113(a) and (b)	Relief granted for paragraph (a) with conditions and limitations; paragraph (b) relief not necessary
61.133(a)	Relief not necessary
91.7(a)	Relief granted with conditions and limitations
91.9	Relief not necessary
91.109(a)	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 91.151(a)(1), day, with conditions and limitations
91.203	Relief not necessary
91.401	Relief not necessary
91.403	Relief not necessary
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, Quiet Creek Corporation is granted an exemption from §§ 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 petitioner to operate a UAS for the purposes of mapping and precision agriculture operations. This exemption is subject to the conditions and limitations listed below.

Conditions and Limitations

Relative to this grant of exemption, Quiet Creek Corporation, is hereafter referred to as the operator.

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

1. eBee Maintenance Procedures
2. eBee Training Documentation
3. eBee Extended User's Manual (Revision 12)
4. SenseFly Justification of Airworthiness and Safety Assessment

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 a fixed-wing aircraft weighing approximately 1.7 pounds: senseFly eBee (eBee). 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 conducting operations for the purposes mapping and precision agriculture.

3) The UA may not be flown at an indicated airspeed exceeding 55 knots.

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 pilot in command (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 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 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) 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 UAS 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.

9) 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.

10) 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).

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

12) 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. This includes total time in service, description of work accomplished, and the signature of the authorized person returning the UAS to service.

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

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

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

16) The operator may not permit any PIC to operate the UAS 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.

17) 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.

18) 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 NOTAM, as required by the operator's COA. The letter of agreement between the petitioner and the airport management must be made available to the Administrator upon request.

19) 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.

20) If the UA loses communications or loses its GPS signal, it must return to a pre-determined location within the planned operating area and land or be recovered in accordance with the operating documents.

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

22) 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 UA with 30% battery power remaining.

23) The operator must obtain an Air Traffic Organization (ATO) issued Certificate of Waiver or Authorization (COA) prior to conducting any operations under this grant of exemption. This COA will 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.

24) 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.

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

26) The operator is required to keep a copy of the UAS manufacturer's operating/flight manual and all other operating documents in a location accessible to the PIC, during flight operations. These documents must be made available to the Administrator or any law enforcement official upon request.

27) The UA must remain clear of and yield the right of way to all manned aviation operations and activities at all times.

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

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

30) 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 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, VO, operator trainees or essential persons do not present an undue hazard to those persons, per § 91.119(a).

31) 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.

32) 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 3, 2015.

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