Exemption No. 11433A

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

In the matter of the petition of **CAPE PRODUCTIONS, INC.** for an exemption from §§ 61.113(a) and (b), 61.133(a), 91.7(a), 91.119(c), 91.151(a), 91.405(a), 91.407(a)(1), 91.409(a)(2), and 91.417(a) and (b) of Title 14, Code of Federal Regulations	**Regulatory Docket No. FAA−2015−0223**

GRANT OF AMENDMENT

The FAA is amending the April 24, 2015 grant of exemption to Cape Productions, Inc. to include additional aircraft and address requests included in petitions for amendment dated May 20, 2015 and August 7, 2015. Specifically, in this exemption, the FAA has:

- Clarified operations near people and determined safe operations in response to petition for amendment dated May 20, 2015.
- Added two aircraft as requested in petition of amendment dated August 7, 2015.

By letters dated May 20, 2015 and August 7, 2015, M. Anne Swanson and J.G. Harrington, on behalf of Cape Productions, Inc. (hereinafter petitioner or operator), 1299 Pennsylvania Avenue NW, Suite 700, Washington DC 20004, petitioned the Federal Aviation Administration (FAA) for amendments to Exemption No. 11433 granted relief from §§ 61.113(a) and (b), 61.133(a), 91.7(a), 91.119(c), 91.151(a), 91.405(a), 91.407(a)(1), 91.409(a)(2), and 91.417(a) and (b) of Title 14 Code of Federal Regulations (14 CFR). The petitioner also requested to add two unmanned aircraft systems (UAS) to the list of approved aircraft in Exemption No. 11433 to conduct aerial data collection.

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

The petitioner supports its request with the following information:

The petition for exemption describing the proposed operation and the regulations from which the petitioner seeks exemption is posted to the docket. To view the petition, visit http://www.regulations.gov, enter the regulatory docket number found on the first page of this document into the search box and click "Search," then click on the "Open Docket Folder" link next to a result associated with the docket number.

Cape Productions currently conducts operations to record athletic performances under Exemption No. 11433. No accidents or incidents have been reported to date. Cape Productions seeks to leverage its experience conducting these operations to provide higher quality imagery and videography for its consenting customers.

The petitioner has provided the following information along with its petition via confidential submission to the FAA to support its request for an exemption:

1. Cape Productions - sUAS Flight Operations Manual
2. Cape Productions – 3D Robotics X8+ sUAS Aircraft Flight Manual
3. Movie Production and Television Operations Manual

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

Discussion of Public Comments:

A summary of the petition was published in the Federal Register on November 25, 2015 (80 FR 73870). Five comments were submitted; one was a general comment and four were in support of the petition. The Minnesota Department of Transportation, Office of Aeronautics submitted a comment on operation of UAS near people. The National Ski Areas Association, Small UAV Coalition and Cape Productions commented in support of the petition.

The Minnesota Department of Transportation (MN DOT), Office of Aeronautics expressed concern regarding the method of which the FAA will use to determine safe distances for operation of a UAS at distances of less than 500 feet from people. While MN DOT expressed that a number less than 500 feet would seem appropriate for professionally operated UAS, they encouraged the FAA to determine a conservative minimum distance until more data can be collected to support further reductions in distance. However, as discussed in the FAA's

analysis section below, the FAA has adopted the approach of: (1) ensuring participants are briefed on the risks and consent to being within 500 feet of the aircraft; and (2) conditioning the exemption on the operator taking action to mitigate those risks, including developing an operations manual and providing the FAA with a plan of activities prior to operating. With those mitigations in place the FAA has found that the operations can be conducted without an adverse impact on safety.

The National Ski Areas Association (NSAA) supported Cape Productions receiving an amendment to its current exemption. The NSAA attested to the high level of safety that current operations Cape Productions' is conducting at eight resorts. NSAA highlighted that Cape's operations have experienced no incidents and caused no injuries. The NSAA endorses Cape Productions' well developed risk management practices and overall commitment to safety. They also further detail that ski areas are well adept in managing guest traffic and controlling access to terrain, which is a key part of Cape Productions' amendment. The FAA has included the petitioner's safety case, petition, and supporting documents in the analysis described within this exemption. That analysis includes the risk management practices, safety programs, and controlled access terrain.

The Small UAV Coalition commented in support of Cape Productions' petition. The Small UAV Coalition highlights that Cape Productions' petition adheres to the three conditions that the FAA listed in Exemption No. 13465. They believe that the safeguards Cape proposes to follow meet these three conditions and are more than adequate to ensure the safety of Cape's operations within 500 feet of the participants and spectators at these sporting events. The FAA recognizes the similarity between the operation approved in Exemption No. 13465 and the petitioner's proposed operation in this case. Provisions in Exemption No. 13465 were examined and considered in the development of this grant of exemption.

The FAA's analysis is as follows:

The FAA has organized its analysis into three sections: (1) Unmanned Aircraft Systems (UAS), (2) the UAS operating parameters, and (3) the public interest.

Unmanned Aircraft Systems (UAS)

This amendment allows Cape Productions to continue to operate the 3DRobotics X8+ when weighing less than 55 pounds including payload as authorized under Exemption No. 11433 (Apr. 24, 2015). Additionally, the petitioner has requested to operate the 3D Robotics Solo and DJI Inspire 1.

In accordance with the statutory criteria provided in Section 333 of PL 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 their operation, the Secretary of Transportation has determined that these aircraft meet the conditions of Section 333 and that an airworthiness certificate is not required. 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.

Additionally, we have added a condition to this exemption stating that, consistent with existing law, the operator will need to obtain a Foreign Aircraft Permit pursuant to 14 CFR § 375.41 if it will be using foreign civil aircraft[1] in its operations.

UAS Operating Parameters

Operations Near People

For the reasons discussed below, the FAA finds that Cape Productions may allow an unmanned aircraft (UA) to fly closer than 500 feet to athletes who are directly participating in the intended purpose of the operation (e.g. filming skiing athletes), but may not fly over them. Cape Productions may allow the UA to fly over people who are directly participating in the operation of the UA such as the PIC and the visual observer.

In its petition for exemption, Cape Productions described the following safety mitigations it will exercise during UAS operations to film athletic performances on outdoor terrain including ski slopes and mountain trails: the small unmanned aircraft will not exceed a speed of 50 knots; all operations will take place in a controlled access environment by requiring consent via waiver for all individuals entering the resort or when consent is not obtained by using physical barriers (such as fencing or natural topographic barriers) to prevent unauthorized people from entering the filming area; additional consent forms will be provided for individuals whose performances will be filmed; prior to operations a map will be prepared which denotes takeoff and landing points, the area of operations, and the fail safe point to be used in the event that operations must be immediately terminated. Cape Productions' operational safety measures include the use of pre-programmed flight plans, signage concerning the use of UAS in locations where filming is taking place, and a comprehensive security plan. Their safety plan includes; an identified control point from which the PIC will conduct operations, processes to cease operations if unauthorized persons, vehicles, or aircraft

[1] *Foreign civil aircraft* means (a) an aircraft of foreign registry that is not part of the armed forces of a foreign nation, or (b) a U.S.-registered aircraft owned, controlled or operated by persons who are not citizens or permanent residents of the United States. 14 CFR §375.1.

enter the area of operation, and visual arm signals and auditory signals to be used during operations to communicate that unauthorized persons have accessed the area.

In Exemption No. 13465A, Kansas State University (KSU) requested to conduct small unmanned aircraft training for compensation. Consistent with prior exemptions the FAA authorized KSU to conduct operations over people directly participating in the flight of the aircraft such as the PIC, students manipulating the aircraft's controls, and visual observers. Additionally, the FAA authorized KSU to operate closer than 500 feet, but not over, consenting students who would not be flying the UAS and, due to increased risk of those operations, included specific requirements for those operations designed to mitigate such risks. Lastly, the FAA required that a UAS may only be operated within 500 feet of a non-participating person if barriers or structures are present that sufficiently protect that person from the UA and/or debris or hazardous materials such as fuels or chemicals in the event of an accident.

Here, Cape Productions intends to film athletes on outdoor terrain and on mountain trails. These activities would pose similar risk to the athletes as the risk posed to the observing KSU students who were also within 500 feet of the operation. In KSU the FAA required briefing of those students on potential risks and that the students acknowledge and consent to those risks. Additionally, the exemption is conditioned upon KSU developing an operations manual to document and address operational safety practices and submitting a written plan of activities to an FAA Flight Standards District Office to facilitate oversight prior to operating. The FAA finds that the risk mitigations included as conditions in the KSU exemption can be implemented here to address the similar risks posed to the athletes Cape Productions intends to film. Therefore, with those conditions, the FAA has determined that the small UAS may be flown within 500 feet of but not over the athletes without an adverse impact on safety.

This exemption does not permit operations within 500 feet of people not participating in the operation unless barriers or structures are present that sufficiently protect that person from the UA and/or debris or hazardous materials such as fuel or chemicals in the event of an accident. Under these conditions, the operator must ensure that these nonparticipating persons remain under such protection for the duration of the operation. 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 that does not cause undue hazard to persons.

Cape Productions indicated that it would either obtain consent from all individuals entering the resort, or, when consent is not obtained prevent people from being within 500 feet of sUAS operations with physical barriers (such as fencing or natural topographic barriers). The FAA notes that such general consent would not satisfy the conditions in this exemption

relating to operating within 500 feet of people which require a specific briefing about the risk of the operations and acknowledgement of those risks and consent. Operations may not be conducted under this exemption within 500 feet of people who do not meet those requirements unless they are protected by barriers or structures as described above.

Additionally, operations for training, proficiency, or experience building for PICs to qualify to operate under this exemption must be conducted during dedicated training sessions. Operations for training, proficiency, and experience building may not be conducted within 500 feet of people with the exception of people participating in the safe operation of the UA, to ensure the safety of others.

All people associated with the operations must be briefed by the PIC on the potential risk of the proposed flight operation(s) and acknowledge and consent to those risks. The FAA uses briefings as a means to notify passengers and others of safety information and to risks of certain operations. *See, e.g.*, 14 CFR §§ 91.319(d)(1) (advising passengers of experimental nature of an aircraft); 136.7 (air tour briefings). The requirement to obtain consent provides an additional margin of safety by building upon the briefing requirement to ensure that people participating in the intended operation have acknowledged that a UA will be operated within 500 feet.

The FAA recognizes that there are additional risks when operating a UA close to people. As such the FAA has determined that when conducting these types of operations, the operator must have an operations manual addressing the items as specified in the conditions and limitations below. Unmanned aircraft operations conducted in close proximity to people (less than 500 feet) invoke added safety risks. The requirement to operate in accordance with the manual required in the conditions and limitations below, helps ensure that safety will not be adversely affected because the operator must document and address operational safety practices relevant to its operation. An operations manual must include items such as; the operator's contact information, distribution and revision information, persons authorized, plan of activities, permission to operate, security methodology, briefing instructions, flight personnel minimum requirements, communications information, and accident notification plan. Documented operational safety practices and procedures help ensure a safe and repeatable process for conducting flight operations. Formal procedures ensure adequate safety guidelines are available and adhered to in normal operational environments, but also during emergency circumstances. The operations manual is considered part of the operating documents and must be accessible to the PIC during operations. This operations manual is based on the requirement in Exemption No.13465A.

Operators conducting these operations must also submit a written Plan of Activities to the local Flight Standards District Office at least 24 hours prior to initiating operations as described in the conditions and limitations below. The written plan of activities includes pertinent items provided to Flight Standards District Offices. The written plan of activities is necessary for Aviation Safety Inspectors to conduct surveillance of activities and ensure compliance with the provisions of the authorization and waiver, associated special provisions, operations manual, and the plan of activities in accordance with FAA Order 8900.1 to ensure the safety of the NAS.

Operations Near Vessels, Vehicles, and Structures

Operations near vessels, vehicles, and structures are those operations in which a UA is operated within 500 feet of such objects. To conduct such operations, the PIC must: (1) have permission from a person with legal authority over any vessels, vehicles, or structures located within 500 feet of the UA's operating area; and (2) make a safety assessment of the risk of operating closer to those objects and determine that no undue hazard would result from the operation.

In the underlying exemption issued to Cape Productions, the FAA required that the UA be returned to a pre-determined location within the private or controlled area of operation if the UAS loses communication or GPS signal. The FAA has re-examined the situation where the GPS signal is lost or the PIC loses communications with the UA and determined that these two situations employ unique functions and incur different failure modes. *See* Exemption No. 13465 (Oct. 31, 2015). As in that exemption, the FAA has included two separate conditions and limitations addressing each situation. In the situation where the UAS uses GPS navigation and the GPS signal is necessary to safely operate the UA, the PIC is required to immediately recover or land the UA. However, if the UA can be operated safely without a GPS signal, the operation may continue. If the PIC loses command or control link with the UA, the UA must follow a pre-determined route to either reestablish link or immediately land. The modified conditions and limitations preserve the same intent and level of safety, while also adding clarity and reducing restrictiveness for the operator.

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 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 FAA has issued a COA to this operator, which is attached to this exemption. The COA sets the requirements 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 follow the terms of a COA. If the petitioner intends to conduct operations outside of the parameters of what is permitted under the attached COA it may apply to the ATO for a new or amended COA.

Public Interest

The FAA finds that a grant of exemption is in the public interest. The exemption ensures safe progression of UAS integration into the National Airspace System and therefore 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 for its operations and granted by the FAA:

Relief considered (14 CFR)	**FAA determination (14 CFR)**
21	Relief not necessary
45.23(b)	Relief not necessary
61.23(a) and (c)	Relief granted with conditions and limitations
61.101(e)(4) and (5)	Relief granted with conditions and limitations
61.113(a)	Relief granted with conditions and limitations
61.133	Relief not necessary
61.3(d)(2)(iii)	Relief not necessary
61.315(a)	Relief granted with conditions and limitations
91.7(a)	Relief granted with conditions and limitations
91.7(b)	Relief not necessary
91.9(b)(2)	Relief not necessary
91.9(c)	Relief not granted
91.103	Relief not granted

Relief considered (14 CFR)	FAA determination (14 CFR)
91.109(a)	Relief granted with conditions and limitations
91.119(a)	Relief not granted
91.119(b)	Relief not granted
91.119(c)	Relief granted with conditions and limitations
91.119(d)	Relief not necessary
91.121	Relief granted with conditions and limitations
91.151(a)(1)	Relief granted with conditions and limitations
91.203(a) and (b)	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, Cape Productions, Inc. 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), 91.109(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 conduct UAS operations according to the conditions and limitations listed below.

Conditions and Limitations

The conditions and limitations within Grant of Exemption No. 11433 have been superseded, and are amended as follows.

In this grant of exemption**,** Cape Productions, Inc. is hereafter referred to as the operator.

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

1. Operations authorized by this exemption are limited to the 3D Robotics X8+, 3D Robotics Solo, and DJI Inspire 1 when weighing less than 55 pounds including payload and the equipment used to secure the payload. Proposed operations of any other aircraft will require a new petition or a petition to amend this grant.

2. If operations under this exemption involve the use of foreign civil aircraft[2] the operator would need to obtain a Foreign Aircraft Permit pursuant to 14 CFR § 375.41 before conducting any commercial air operations under this authority. Application instructions are specified in 14 CFR §375.43. Applications should be submitted by electronic mail to the DOT Office of International Aviation, Foreign Air Carrier Licensing Division. Additional information can be obtained via https://cms.dot.gov/policy/aviation-policy/licensing/foreign-carriers.

3. The UA may not be operated at a speed exceeding 87 knots (100 miles per hour). The operator 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. This limitation is in addition to any altitude restrictions that may be included in the applicable COA.

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

6. The PIC must have the capability to maintain visual line of sight (VLOS) 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 that individual's FAA-issued airman medical certificate or valid U.S. driver's license issued by a state, the District of Columbia, Puerto Rico, a territory, a possession, or the Federal Government, to see the UA.

[2] *Foreign civil aircraft* means (a) an aircraft of foreign registry that is not part of the armed forces of a foreign nation, or (b) a U.S.-registered aircraft owned, controlled or operated by persons who are not citizens or permanent residents of the United States. 14 CFR §375.1.

7. All operations must utilize a visual observer (VO). The UA must be operated within the visual line of sight (VLOS) of the VO at all times. The VO must use human vision unaided by any device other than corrective lenses to see the UA. The VO and the 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.

8. This exemption and all documents needed to operate the UAS and conduct its operations in accordance with the conditions and limitations stated in this 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, the applicable ATO-issued COA, and the procedures outlined in the operating documents, the most restrictive conditions, limitations, or procedures apply and must be followed. The operator may update or revise its operating documents as necessary. The operator is responsible for tracking revisions and presenting 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 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 exemption. The FAA's UAS Integration Office may be contacted if questions arise regarding updates or revisions to the operating documents.

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 prior to conducting further operations under this exemption. Functional test flights must be conducted by a PIC with a VO and other personnel required to conduct the functional flight test (such as a mechanic or technician) and must remain at least 500 feet from all 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.

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

11. 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.

12. The operator must follow the UAS manufacturer's maintenance, overhaul, replacement, inspection, and life limit requirements for the aircraft and aircraft components. Each UAS operated under this exemption must comply with all manufacturer safety bulletins.

13. *PIC certification:* Under this 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. *PIC qualifications:* The PIC must demonstrate the ability to safely operate the UAS in a manner consistent with how it will be operated under this exemption, including evasive and emergency maneuvers and maintaining appropriate distances from persons, vessels, vehicles and structures before operating non-training, proficiency, or experience-building flights under this exemption. PIC qualification flight hours and currency may be logged in a manner consistent with 14 CFR § 61.51(b), however UAS pilots must not log this time in the same columns or categories as time accrued during manned flight. UAS flight time must not be recorded as part of total time.

    Under all situations, the PIC is responsible for the safety of the operation. The PIC is also responsible for meeting all applicable conditions and limitations as prescribed in this exemption and ATO-issued COA, and operating in accordance with the operating documents. All training operations must be conducted during dedicated training sessions and may or may not be for compensation or hire. The operation must be conducted with a dedicated VO who is no collateral duties and is not the PIC during the flight. The VO must maintain visual sight of the aircraft at all times during flight operations without distraction in accordance with the conditions and limitations below. Furthermore, the PIC must operate the UA not closer than 500 feet to any nonparticipating person without exception.

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 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.

17. For UAS operations where GPS signal is necessary to safely operate the UA, the PIC must immediately recover/land the UA upon loss of GPS signal.

18. If the PIC loses command or control link with the UA, the UA must follow a pre-determined route to either reestablish link or immediately recover or land.

19. The PIC must abort the flight operation if unpredicted circumstances or emergencies that could potentially degrade the safety of persons or property arise. The PIC must terminate flight operations without causing undue hazard to persons or property in the air or on the ground.

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. 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.

22. 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.

23. The UA must remain clear of and give way to any manned aircraft at all times.

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

25. All flight operations must be conducted at least 500 feet from all persons, vessels, vehicles, and structures unless when operating:
    a. *Over or near people directly participating in the operation of the UAS.* People directly participating in the operation of the UAS include the PIC, VO,

and other consenting personnel that are directly participating in the safe operation of the UA.

b. *Near but not over people directly participating in the intended purpose of the UAS operation.* People directly participating in the intended purpose of the UAS includes athletes who must be briefed on the potential risks and acknowledge and consent to those risks. Operators must notify the local Flight Standards District Office (FSDO) with a plan of activities at least 24 hours prior to flight operations.

c. *Near nonparticipating persons.* Except as provided in subsections (a) and (b) of this section, a UA may only be operated closer than 500 feet to a person when barriers or structures are present that sufficiently protect that person from the UA and/or debris or hazardous materials such as fuel or chemicals in the event of an accident. Under these conditions, the operator must ensure that the person remains under such protection for the duration of the operation. If a situation arises where the person leaves such protection and is within 500 feet of the UA, flight operations must cease immediately in a manner that does not cause undue hazard to persons.

d. *Near vessels, vehicles and structures.* Prior to conducting operations the operator must obtain permission from a person with the legal authority over any vessels, vehicles or structures that will be within 500 feet of the UA during operations. The PIC must make a safety assessment of the risk of operating closer to those objects and determined that it does not present an undue hazard.

26. All operations shall be conducted over private or controlled-access property with permission from a person with legal authority to grant access. Permission will be obtained for each flight to be conducted.

27. 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 within 24 hours. Accidents must be reported to the National Transportation Safety Board (NTSB) in accordance with its UAS accident reporting requirements.

For operations conducted closer than 500 feet to people directly participating in the intended purpose of the operation, not protected by barriers, the following additional conditions and limitations apply:

28. The operator must have an operations manual that contains at least the following items, although it is not restricted to these items.
    a. Operator name, address, and telephone number.

b. Distribution and Revision. Procedures for revising and distributing the operations manual to ensure that it is kept current. Revisions must comply with the applicable conditions and limitations in this exemption.
c. Persons Authorized. Specify criteria for designating individuals as directly participating in the safe operation of the UAS. The operations manual must include procedures to ensure that all operations are conducted at distances from persons in accordance with the conditions and limitations of the exemption.
d. Plan of Activities. The operations manual must include procedures for the submission of a written plan of activities.
e. Permission to Operate. The operations manual shall specify requirements and procedures that the operator will use to obtain permission to operate over property or near vessels, vehicles, and structures in accordance with this exemption.
f. Security. The manual must specify the method of security that will be used to ensure the safety of nonparticipating persons. This should also include procedures that will be used to stop activities when unauthorized persons, vehicles, or aircraft enter the operations area, or for any other reason, in the interest of safety.
g. Briefing of persons directly participating in the intended operation. Procedures must be included to brief personnel and participating persons on the risks involved, emergency procedures, and safeguards to be followed during the operation.
h. Personnel directly participating in the safe operation of the UAS Minimum Requirements. In accordance with this exemption, the operator must specify the minimum requirements for all flight personnel in the operating manual. The PIC at a minimum will be required to meet the certification standards specified in this exemption.
i. Communications. The operations manual must contain procedures to provide communications capability with participants during the operation. The operator can use oral, visual, or radio communications as along as the participants are apprised of the current status of the operation.
j. Accident Notification. The operations manual must contain procedures for notification and reporting of accidents in accordance with this exemption.

In accordance with this exemption, the operating manual and all other operating documents must be accessible to the PIC during UAS operations.

29. At least 24 hours prior to operations, the operator must submit a written Plan of Activities to the local Flight Standards District Office having jurisdiction over the proposed operating area.

The Plan of Activities must include at least the following:

a. Dates and times for all flights. For seasonal or long-term operations, this can include the beginning and end dates of the timeframe, the approximate frequency (e.g. daily, every weekend, etc.), and what times of the day operations will occur. A new plan of activities must be submitted prior to each season or period of operations.
b. Name and phone number of the on-site person responsible for the operation.
c. Make, model, and serial or N-Number of each UAS to be used.
d. Name and certificate number of each UAS PIC involved in the operations.
e. A statement that the operator has obtained permission from property owners. Upon request, the operator will make available a list of those who gave permission.
f. Signature of exemption holder or representative stating the plan is accurate.
g. A description of the flight activity, including maps or diagrams of the area over which operations will be conducted and the altitudes essential to accomplish the operation.

In accordance with this exemption, the Plan of Activities and all other operating documents must be accessible to the PIC during UAS operations. A new Plan of Activities must be submitted should there be any changes to items (a) through (g).

Unless otherwise specified in this 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 April 30, 2017, unless sooner superseded or rescinded.

Issued in Washington, DC, on December 29, 2015.

/s/
John S. Duncan