



U.S. Department
of Transportation

**Federal Aviation
Administration**

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

August 11, 2015

Exemption No. 12422
Regulatory Docket No. FAA-2015-2266

Mr. Jeffrey J. Antonelli
Antonelli Law
Counsel for Richter Brothers Studios, Inc
dba Richter Studios
35 E Wacker Drive, Suite 1875
Chicago, IL 60601

Dear Mr. Antonelli:

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

By letter dated May 26, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Richter Brothers Studios, Inc. dba Richter Studios (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial cinematography.

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

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

Airworthiness Certification

The UAS proposed by the petitioner is a DJI Inspire 1.

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

The Basis for Our Decision

You have requested to use a UAS for aerial data collection¹. The FAA has issued grants of exemption in circumstances similar in all material respects to those presented in your petition. In Grants of Exemption Nos. 11062 to Astraeus Aerial (*see* Docket No. FAA–2014–0352), 11109 to Clayco, Inc. (*see* Docket No. FAA–2014–0507), 11112 to VDOS Global, LLC (*see* Docket No. FAA–2014–0382), and 11213 to Aeryon Labs, Inc. (*see* Docket No. FAA–2014–0642), the FAA found that the enhanced safety achieved using an unmanned aircraft (UA) with the specifications described by the petitioner and carrying no passengers or crew, rather than a manned aircraft of significantly greater proportions, carrying crew in addition to flammable fuel, gives the FAA good cause to find that the UAS operation enabled by this exemption is in the public interest.

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

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

Our Decision

In consideration of the foregoing, I find that a grant of exemption is in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. 106(f), 40113, and 44701, delegated to me by the Administrator, Richter Brothers Studios, Inc. dba Richter Studios is granted an exemption from 14 CFR §§ 61.23(a) and (c), 61.101(e)(4) and (5), 61.113(a), 61.315(a), 91.7(a), 91.119(c), 91.121, 91.151(a)(1), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b), to the extent necessary to allow the petitioner to operate a UAS to

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

perform aerial data collection. This exemption is subject to the conditions and limitations listed below.

Conditions and Limitations

In this grant of exemption, Richter Brothers Studios, Inc. dba Richter Studios is hereafter referred to as the operator.

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

1. Operations authorized by this grant of exemption are limited to the DJI Inspire 1 when weighing less than 55 pounds including payload. Proposed operations of any other aircraft will require a new petition or a petition to amend this exemption.
2. Operations for the purpose of closed-set motion picture and television filming are not permitted.
3. The UA may not be operated at a speed exceeding 87 knots (100 miles per hour). The exemption holder may use either groundspeed or calibrated airspeed to determine compliance with the 87 knot speed restriction. In no case will the UA be operated at airspeeds greater than the maximum UA operating airspeed recommended by the aircraft manufacturer.
4. The UA must be operated at an altitude of no more than 400 feet above ground level (AGL). Altitude must be reported in feet AGL.
5. The UA must be operated within visual line of sight (VLOS) of the PIC at all times. This requires the PIC to be able to use human vision unaided by any device other than corrective lenses, as specified on the PIC's FAA-issued airman medical certificate or U.S. driver's license.
6. All operations must utilize a visual observer (VO). The UA must be operated within the visual line of sight (VLOS) of the PIC and VO at all times. The VO may be used to satisfy the VLOS requirement as long as the PIC always maintains VLOS capability. The VO and PIC must be able to communicate verbally at all times; electronic messaging or texting is not permitted during flight operations. The PIC must be designated before the flight and cannot transfer his or her designation for the duration of the flight. The PIC must ensure that the VO can perform the duties required of the VO.
7. This exemption and all documents needed to operate the UAS and conduct its operations in accordance with the conditions and limitations stated in this grant of exemption, are hereinafter referred to as the operating documents. The operating

documents must be accessible during UAS operations and made available to the Administrator upon request. If a discrepancy exists between the conditions and limitations in this exemption and the procedures outlined in the operating documents, the conditions and limitations herein take precedence and must be followed.

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

8. Any UAS that has undergone maintenance or alterations that affect the UAS operation or flight characteristics, e.g., replacement of a flight critical component, must undergo a functional test flight prior to conducting further operations under this exemption. Functional test flights may only be conducted by a PIC with a VO and must remain at least 500 feet from other people. The functional test flight must be conducted in such a manner so as to not pose an undue hazard to persons and property.
9. The operator is responsible for maintaining and inspecting the UAS to ensure that it is in a condition for safe operation.
10. Prior to each flight, the PIC must conduct a pre-flight inspection and determine the UAS is in a condition for safe flight. The pre-flight inspection must account for all potential discrepancies, e.g., inoperable components, items, or equipment. If the inspection reveals a condition that affects the safe operation of the UAS, the aircraft is prohibited from operating until the necessary maintenance has been performed and the UAS is found to be in a condition for safe flight.
11. The operator must follow the UAS manufacturer's maintenance, overhaul, replacement, inspection, and life limit requirements for the aircraft and aircraft components.
12. Each UAS operated under this exemption must comply with all manufacturer safety bulletins.
13. Under this grant of exemption, a PIC must hold either an airline transport, commercial, private, recreational, or sport pilot certificate. The PIC must also hold a current FAA airman medical certificate or a valid U.S. driver's license issued by a state, the District of Columbia, Puerto Rico, a territory, a possession, or the Federal

government. The PIC must also meet the flight review requirements specified in 14 CFR § 61.56 in an aircraft in which the PIC is rated on his or her pilot certificate.

14. The operator may not permit any PIC to operate unless the PIC demonstrates the ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption, including evasive and emergency maneuvers and maintaining appropriate distances from persons, vessels, vehicles and structures. PIC qualification flight hours and currency must be logged in a manner consistent with 14 CFR § 61.51(b). Flights for the purposes of training the operator's PICs and VOs (training, proficiency, and experience-building) and determining the PIC's ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption are permitted under the terms of this exemption. However, training operations may only be conducted during dedicated training sessions. During training, proficiency, and experience-building flights, all persons not essential for flight operations are considered nonparticipants, and the PIC must operate the UA with appropriate distance from nonparticipants in accordance with 14 CFR § 91.119.
15. UAS operations may not be conducted during night, as defined in 14 CFR § 1.1. All operations must be conducted under visual meteorological conditions (VMC). Flights under special visual flight rules (SVFR) are not authorized.
16. The UA may not operate within 5 nautical miles of an airport reference point (ARP) as denoted in the current FAA Airport/Facility Directory (AFD) or for airports not denoted with an ARP, the center of the airport symbol as denoted on the current FAA-published aeronautical chart, unless a letter of agreement with that airport's management is obtained or otherwise permitted by a COA issued to the exemption holder. The letter of agreement with the airport management must be made available to the Administrator or any law enforcement official upon request.
17. The UA may not be operated less than 500 feet below or less than 2,000 feet horizontally from a cloud or when visibility is less than 3 statute miles from the PIC.
18. If the UAS loses communications or loses its GPS signal, the UA must return to a pre-determined location within the private or controlled-access property.
19. The PIC must abort the flight in the event of unpredicted obstacles or emergencies.
20. The PIC is prohibited from beginning a flight unless (considering wind and forecast weather conditions) there is enough available power for the UA to conduct the intended operation and to operate after that for at least five minutes or with the reserve power recommended by the manufacturer if greater.
21. Air Traffic Organization (ATO) Certificate of Waiver or Authorization (COA). All operations shall be conducted in accordance with an ATO-issued COA. The

exemption holder may apply for a new or amended COA if it intends to conduct operations that cannot be conducted under the terms of the attached COA.

22. All aircraft operated in accordance with this exemption must be identified by serial number, registered in accordance with 14 CFR part 47, and have identification (N-Number) markings in accordance with 14 CFR part 45, Subpart C. Markings must be as large as practicable.
23. Documents used by the operator to ensure the safe operation and flight of the UAS and any documents required under 14 CFR §§ 91.9 and 91.203 must be available to the PIC at the Ground Control Station of the UAS any time the aircraft is operating. These documents must be made available to the Administrator or any law enforcement official upon request.
24. The UA must remain clear and give way to all manned aviation operations and activities at all times.
25. The UAS may not be operated by the PIC from any moving device or vehicle.
26. All Flight operations must be conducted at least 500 feet from all nonparticipating persons, vessels, vehicles, and structures unless:
 - a. Barriers or structures are present that sufficiently protect nonparticipating persons from the UA and/or debris in the event of an accident. The operator must ensure that nonparticipating persons remain under such protection. If a situation arises where nonparticipating persons leave such protection and are within 500 feet of the UA, flight operations must cease immediately in a manner ensuring the safety of nonparticipating persons; and
 - b. The owner/controller of any vessels, vehicles or structures has granted permission for operating closer to those objects and the PIC has made a safety assessment of the risk of operating closer to those objects and determined that it does not present an undue hazard.

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

27. All operations shall be conducted over private or controlled-access property with permission from the property owner/controller or authorized representative. Permission from property owner/controller or authorized representative will be obtained for each flight to be conducted.
28. Any incident, accident, or flight operation that transgresses the lateral or vertical boundaries of the operational area as defined by the applicable COA must be reported to the FAA's UAS Integration Office (AFS-80) within 24 hours. Accidents must be

reported to the National Transportation Safety Board (NTSB) per instructions contained on the NTSB Web site: www.nts.gov.

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

29. The operator must have a motion picture and television operations manual (MPTOM) as documented in this grant of exemption.
30. At least 3 days before aerial filming, the operator of the UAS affected by this exemption must submit a written Plan of Activities to the local Flight Standards District Office (FSDO) with jurisdiction over the area of proposed filming. The 3-day notification may be waived with the concurrence of the FSDO. The plan of activities must include at least the following:
 - a. Dates and times for all flights;
 - b. Name and phone number of the operator for the UAS aerial filming conducted under this grant of exemption;
 - c. Name and phone number of the person responsible for the on-scene operation of the UAS;
 - d. Make, model, and serial or N-Number of UAS to be used;
 - e. Name and certificate number of UAS PICs involved in the aerial filming;
 - f. A statement that the operator has obtained permission from property owners and/or local officials to conduct the filming production event; the list of those who gave permission must be made available to the inspector upon request;
 - g. Signature of exemption holder or representative; and
 - h. A description of the flight activity, including maps or diagrams of any area, city, town, county, and/or state over which filming will be conducted and the altitudes essential to accomplish the operation.
31. Flight operations may be conducted closer than 500 feet from participating persons consenting to be involved and necessary for the filming production, as specified in the exemption holder's MPTOM.

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

This exemption terminates on August 31, 2017, unless sooner superseded or rescinded.

Sincerely,

/s/

John S. Duncan

Director, Flight Standards Service

Enclosures

ANTONELLI LAW

Drone/UAS Practice Group

35 E Wacker Drive
Suite 1875
Chicago, IL 60601
Tel. 312.201.8310

Jeffrey@Antonelli-Law.com

U.S. Department of Transportation
Docket Management System
1200 New Jersey Ave S.E.
Washington, D.C. 20590

May 26, 2015

Re: Request for Exemption under Section 333 of the FAA Modernization and Reform Act of 2012 and Part 11 of the Federal Aviation Regulations from Certain Provisions of 14 C.F.R. Richter Studios

Dear Sir or Madam:

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (the Reform Act) and 14 C.F.R. Part 11, Antonelli Law files this petition for exemption on behalf of Richter Studios (“Richter”), an operator of Small Unmanned Aircraft Systems (“UAs”) for aerial cinematography. Specifically, petitioner seeks an exemption from the Federal Aviation Regulations (“FARs”) listed in Appendices A and B to allow commercial operation of its UAs, so long as such operations are conducted within and under the conditions outlined herein or as may be established by the FAA in a grant of this petition. This request is substantially similar to other data collection petitions previously approved, and should be considered under the expedited summary grant procedure.


Approval of the exemption for petitioner will allow commercial operation of the DJI Inspire 1 in Class G airspace nationwide unless otherwise prescribed by an Air Traffic Organization (ATO) issued COA. This UA has been previously approved for commercial operations in Exemption Nos. 11204, 11224, 11254, 11279, 11280, 11288, 11295, 11301, 11303, 11313, 11314, 11318, 11323, 11327, 11336, 11342, 11359, 11377, 11384, 11385, and 11394. The UA covered by this petition is a small battery-powered craft, weighing approximately 6.5 lbs., inclusive of battery and payload. Operation of the UA under the strict conditions proposed below will provide an equivalent level of safety, as Congress intended, while still allowing commercial operations. Operations using these UAs are far safer than conventional operations conducted with helicopters and fixed-wing aircraft that weigh thousands of pounds, carry highly flammable fuel, and operate in close proximity to the ground, trees, infrastructure, and people.

Congress directed the FAA to consider seven factors in deciding whether to approve Section 333 exemption petitions - size, weight, speed, operational capability, proximity to airports, proximity to populated areas, and operation within visual line of sight. In this case, each factor supports the exemption request. In particular, the UA is small, and will operate at slow speeds and close to the ground. It will be able to more safely and efficiently conduct operations that would

otherwise involve risk of injury or death. The substantial increase of safety and decrease of risk to human life and to property weighs heavily in favor of granting the exemption.

For your ease in reviewing this petition, please refer to the table of contents which begins on page 3. If we can provide any additional information to assist your understanding or review of this document, please do not hesitate to contact us at 312-201-8310 or via email at jeffrey@antonelli-law.com.

Thank you,



Jeffrey J. Antonelli
Attorney for Richter Studios

Of Counsel
Kate D. Fletcher
Airline Transport Pilot License
Type rated in:
CE-500 (Citation Jet)
SF-340 (Saab turbo prop)
DC-9 (turbo-jet)
B-737 (Boeing 737)
B-757 (Boeing 757)
B-767 (Boeing 767)
First Class Medical Certificate
Tel: 312.285.4359
kate@kdfletcherlaw.com

Table of Contents

I. Publishable Summary 5

II. Petitioner’s Contact Information..... 5

III. Proposed Operations 6

 A. The UAs 6

 B. The Crew 6

 C. Flight Conditions 7

 D. Flight Operations 7

IV. Aircraft and Equivalent Level of Safety 8

VI. Proposed Conditions of the Exemption..... 8

VI. Privacy 12

VII. Public Interest and Safety..... 12

VIII. Regulations from Which Exemption is Requested 13

 Appendix A: FARs as to which Richter wishes the same determination to be made as has been made previously. 13

 Appendix B: Richter’s argument for exemption from 14 CFR §§ 61.23(a) and (c), 61.101(e)(4) and (5), 61.113(a), 61.315(a)..... 18

 1. The FAA and foreign regulators recognize that obtaining a manned aircraft pilot license is unnecessary for safe operation of a UA 18

 2. The FAA does have, and has already, exercised the authority to exempt petitioners from the airman certificate requirement 20

Exhibit List

Exhibit 1: Inspire 1 Quick Start Guide	Submitted seaparely due to upload constraints
Exhibit 2: Inspire 1 User Manual.....	Submitted separately due to upload constraints
Exhibit 3: Safety Guidelines	21
Exhibit 4: Disclaimer and Warning	31
Exhibit 5: Intelligent Flight Battery Safety Guidelines	50
Exhibit 6: Inspire 1 Maintenance Manual.....	54
Exhibit 7: Inspire 1.....	56
Exhibit 8: Inspire 1 Features	64
Exhibit 9: Inspire 1 Specifications	78

I. Publishable Summary

Pursuant to 14 C.F.R. §11, the following summary is provided for publication in the Federal Register, should it be determined that publication is needed:

Petitioner seeks an exemption from the following rules:

14 C.F.R. 21(h); 14 C.F.R. 43.7; 14 C.F.R. 43.11; 14 C.F.R. 45.11; 14 C.F.R. 45.27; 14 C.F.R. 45.29; 14 C.F.R. 61.23(a) and (c); 14 C.F.R. 61.101(e)(4) and (5); 14 C.F.R. 61.113(a); 14 C.F.R. 61.315(a); 14 C.F.R. 91.7(a); 14 C.F.R. 91.9(b)(2); 14 C.F.R. 91.9(c); 14 C.F.R. 91.103(b)(2); 14 C.F.R. 91.105; 14 C.F.R. 91.109; 14 C.F.R. 91.113(b); 14 C.F.R. 91.119 (c); 14 C.F.R. 91.121; 14 C.F.R. 91.151(a); 14 C.F.R. 91.203(a) and (b); 14 C.F.R. 91.215; 14 C.F.R. 91.403; 14 C.F.R. 91.405(a); 14 C.F.R. 91.407(a)(1); 14 C.F.R. 409(a)(1) and (2); and 14 C.F.R. 91.417(a) and (b) to operate commercially small unmanned aircraft systems (UAs) (6.5 lbs. or less).

Approval of the exemption requested by petitioner will allow commercial operation of the DJI Inspire 1 for the purpose of aerial cinematography in Class G airspace nationwide, unless otherwise prescribed by an ATO-issued COA. The requested exemption should be granted because operation of a small UA weighing approximately 6.5 lbs. (2.9 kg.), inclusive of battery and payload, conducted in the strict conditions outlined below, will provide an equivalent level of safety, while still allowing commercial operations. The lightweight aircraft covered by the exemption are far safer than conventional operations conducted with helicopters and fixed-wing aircraft weighing thousands of pounds and carrying highly flammable fuel, and operating in close proximity to the ground and people. The seven factors Congress directed the FAA to consider when approving Section 333 exemption petitions - size, weight, speed, operational capability, proximity to airports, proximity to populated areas, and operation within visual line of sight – each support the request. In particular, the aircraft are small, and will operate at slow speeds, and close to the ground. The substantial increase of safety and decrease of risk to human life, coupled with the low risk use of UAs to conduct these operations, weigh heavily in favor of granting the exemption.

II. Petitioner's Contact Information

Jeremy Richter
CEO
Richter Studios
1143 W Rundell Place
Chicago, IL 60607

Counsel for Petitioner:

Antonelli Law
35 E Wacker Drive
Suite 1875
Chicago, IL 60601
Tel: 312-201-8310
Email: jeffrey@antonelli-law.com

III. Proposed Operations

A. The UAs

The requested exemption will permit petitioner to operate the DJI Inspire 1. The Inspire 1 has been previously approved for commercial operation in Exemption Nos. 11204, 11224, 11254, 11279, 11280, 11288, 11295, 11301, 11303, 11313, 11314, 11318, 11323, 11327, 11336, 11342, 11359, 11377, 11384, 11385, and 11394.

This petition, along with Exhibits 1-9 which include the supporting documentation of the UA, are hereinafter referred to as the “operating documents.” The specific conditions of the proposed exemption that relate to the characteristics of the UAs are numbers 1, 5, and 16-20 in Section VI below. Each has been adopted or imposed by the FAA in numerous previous grants of Section 333 exemption petitions. The Inspire 1 has the ability to hover and move in the vertical and horizontal planes simultaneously.

The Inspire 1 has the following specifications or equivalent:

Airframe: DJI Inspire 1

Control system: internal to the Inspire 1. This includes the main controller (MC), which receives the battery voltage, capacity, and current, the internal measurement unit (IMU), which receives telemetry data, compass, and GPS.

Maximum speed: 43 knots

Weight, inclusive of battery and technical payload: 6.5 lbs. (2.9 kg.)

Transmitter (Tx): DJI Inspire Remote Control

Receiver (Rx): internal to the control system

Motors: DJI 3510

Propellers: 13” x 4

Combined data and video link: HD Lightbridge

Gimbal: Zenmuse X3

Batteries: Lithium Polymer 6S High voltage battery with 4500-5700 mAh capacity

Telemetry display: DJI Pilot App

Automatic return to home procedure: If Tx signal is lost for more than three seconds and the UA is under 65 ft. (20 m.) AGL, the UA will rise to 65 ft. AGL, travel horizontally to the pre-designated home spot, hover for 15 seconds, then land. If the UA is above 65 ft. AGL, travel horizontally to the pre-designated home spot, hover for 15 seconds, then land.

B. The Crew

The crew will consist of a pilot in command (PIC) and a visual observer (VO). The PIC and VO will have been trained in operation of UAs generally and received up-to-date information on the UA to be operated pursuant to this grant. The PIC will receive Inspire-specific training to ensure proficiency on the platform.

The specific conditions of the proposed exemption that relate to the training and characteristics of the crew are numbers 3 and 6-9 in Section V below. Each has been adopted or imposed by the FAA in numerous previous grants of Section 333 exemption petitions.

C. Flight Conditions

The UA will be used for aerial cinematography in Class G airspace (unless otherwise prescribed by an ATO-issued COA) under 200 feet above ground level (“AGL”) and under controlled conditions over restricted property. Petitioner will work with the local FSDO when planning operations. Petitioner will only operate its UA in visual meteorological conditions (VMC). The UA will at all times be no less than 500 feet below and no less than 2,000 feet horizontally from a cloud, and petitioner will not conduct operations unless visibility is at least 3 statute miles from the PIC. The flight crew will always make a safety assessment of the risk of every operation, and will only operate when it is determined that no hazards are present.

Additionally, petitioner will follow DJI’s guidelines for flight conditions. These are found in Exhibit 2, beginning on page 45 of that document.

The specific conditions of the proposed exemption that relate to the flight conditions in which the UA will be operated are numbers 2, 4, 16, and 28-29 in Section V below. Each has been adopted or imposed by the FAA in numerous previous grants of Section 333 exemption petitions.

D. Flight Operations

The purpose of the UA flights for which exemption is requested will be for aerial cinematography. Every UA flight will use at minimum a two person flight crew: a PIC and a VO.

Petitioner will limit flights to 200 ft. AGL, and requests the FAA to allow it to operate no closer than 175 ft. from nonparticipating individuals when operating at or below 65 ft. AGL. Petitioner will be able to maintain the safety of nonparticipants while decreasing the nonparticipant parameter, by applying the same ratio the FAA has previously determined to be safe.

Petitioner anticipates that every flight, even one that is planned to be at 30 ft. AGL, may rise to 65 ft. AGL if the automatic return-to-home program is activated.

Petitioner has selected the 175 ft. “nonparticipant parameter” by looking at the FAA’s “safety ratio” for previous Section 333 approvals. Under the new “blanket 200 ft. COA” procedure, an approved operator may operate their UA up to 200 ft. AGL while keeping nonparticipants 500 ft. away from operations, giving the following ratio:

$$\frac{\text{Nonparticipant parameter}}{\text{Maximum height AGL}} = \text{Safety Ratio}$$

$$\frac{500 \text{ ft.}}{200 \text{ ft.}} = 2.5$$

By multiplying the maximum height AGL of an operation by 2.5, petitioner will maintain this same “safety ratio” previously approved by the FAA. For example, if an operation will have a maximum AGL of 100 ft., petitioner will require nonparticipants to remain at least 250 ft. from the operational area.

For operations that will take place at or below 65 ft. AGL, application of the “safety ratio”

would require nonparticipants to remain at least 162.5 ft. from the operational area. In an abundance of caution, petitioner will increase this distance an additional 12.5 ft. to maintain a 175 ft. perimeter from the operational area. Regardless of this minimum, petitioner will require a greater perimeter should it determine one is necessary for a given operation.

Before conducting an operation, the flight crew will examine the operational area to identify at least two potential safe emergency landing areas, should nonparticipating individuals enter into the flight area.

Additionally, petitioner will follow DJI's guidelines for flight operations, including DJI's preflight checklist. Please refer to the following exhibits:

Exhibit 2 beginning on page 49 of that document

Exhibit 3

Petitioner will follow DJI's maintenance guidelines found in Exhibit 6. Only individuals who have experience and training on the Inspire 1 system will be approved to conduct inspection and maintenance. If it is determined that the UA requires more specific maintenance than can be conducted in-house, petitioner will send the UA to the manufacturer or manufacturer-certified repair center to be repaired.

The specific conditions of the proposed exemption that relate to flight operations are numbers 11-12, 17-25, and 32-35 in Section V below. Each has been accepted or imposed by the FAA in numerous previous grants of Section 333 exemption petitions.

IV. Aircraft and Equivalent Level of Safety

Petitioner proposes that the exemption apply to UAs that have the characteristics and that operate with the limitations proposed herein. These limitations provide for a level of safety at least equivalent to or higher than manned aircraft operations under the current regulatory structure. Section V below identifies the limitations and conditions to which petitioner agrees to be bound when conducting commercial operations under a grant of this petition. Appendix A contains a matrix connecting (i) the specific proposed condition with (ii) the FAR provision for which it provides equivalent level of safety and (iii) one or more recent Section 333 exemption grants in which the FAA recognized this equivalent level of safety.

Approval of the commercial operations outlined in this petition presents no national security issue. Petitioner is willing to require its PICs to undergo a background check, including the proposed Transportation Security Administration Vetting process, to ensure that no national security threat is present. Operation and Certification of Small Unmanned Aircraft, 80 Fed. Reg. 9543 at 9572 (proposed Feb. 23, 2015 (to be codified at 14 C.F.R. Parts 21, 43, 45, et al.)).

V. Proposed Conditions of the Exemption

1. The UAs, including battery and technical payload will weigh no more than approximately 6.5 lbs. (2.9 kg.).
2. UA operations under this exemption will be limited to conducting operations for the purpose of utility and infrastructure inspections in Class G airspace nationwide, unless otherwise prescribed by an ATO issued COA.

3. Flights will be operated within line of sight of a PIC and VO.
4. Flights will be operated at an altitude of no more than 200 feet AGL, as indicated by the procedures specified in the operating documents. All altitudes reported to ATC must be in feet AGL.
5. The UA will not be flown at an indicated airspeed exceeding 43 knots.
6. Minimum flight crew for each operation will consist of the UA PIC and a VO.
7. The PIC will have completed UA-specific training provided by the manufacturer prior to commercial operations.
8. The petitioner will not permit any PIC to operate unless the PIC meets its qualification criteria and demonstrates the ability to safely operate the UA in a manner consistent with how the UA 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 will be logged in a manner consistent with 14 CFR §61.51(b). A record of the PIC training will be documented and made available upon request by the Administrator. Training operations will only be conducted during dedicated training sessions. During training, proficiency, and experience-building flights, all persons not essential for flight operations will be considered nonparticipants, and the PIC will operate the UA with appropriate distance from nonparticipants in accordance with 14 CFR § 91.119.
9. The VO will not perform any other duties beyond assisting the PIC with seeing and avoiding other air traffic and other ground based obstacles/obstructions, and will not be permitted to operate the camera or other instruments.
10. The PIC will be designated before the flight and will not be allowed to transfer his or her designation for the duration of the flight. The PIC will ensure that the VO can perform the functions prescribed in these conditions and the operating documents.
11. A briefing will be conducted in regard to the planned UA operations prior to each day's activities. It will be mandatory that all personnel who will be performing duties in connection with the operations be present for this briefing.
12. Prior to each flight, the PIC will inspect the UA, including the Ground Control Station, to ensure it is in a condition for safe flight. If the inspection reveals a condition that affects the safe operation of the UA, the PIC will not operate the UA until the necessary maintenance has been performed and the UA is found to be in a condition for safe flight. All maintenance and alterations will be properly documented in the aircraft records.
13. Petitioner will conduct a functional flight test on any UA that has undergone maintenance or alterations that affect the UA operation or flight characteristics, e.g. replacement of a flight critical component. The PIC who conducts the functional test flight will make an entry in the aircraft records.
14. The petitioner will carry out its maintenance, inspections, and record keeping requirements, in accordance with the UA manufacturer's aircraft/component, maintenance, overhaul,

replacement, inspection, and life limit requirements set forth in the operating documents. Maintenance, inspection, alterations, and status of replacement/overhaul component parts will be noted in the aircraft records, including total time in service, description of work accomplished, and the signature of the authorized person returning the UA to service. The authorized person will make an entry in the aircraft record of the corrective action taken against discrepancies discovered between inspections.

15. The UA will be operated within visual line of sight (VLOS) of the PIC and VO at all times. This requires the PIC to be able to use human vision unaided by any device other than corrective lenses. PIC and VO will at all times be able to communicate verbally. They will not be permitted to use electronic messaging or texting to communicate during flight operations.
16. The PIC will not begin 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 prepare to land with at least 25% battery power remaining.
17. Actual total flight time for each operational flight will result in no less than a 25% battery reserve.
18. The UA will have the capability to abort a flight in case of unexpected obstacles or emergencies.
19. The UA will be programmed so that if it loses communications or loses its GPS signal, it will return to a pre-determined location within the planned operating area and land or be recovered in accordance with the operating documents
20. If the UA and its radio control link disconnect during flight, the system's failsafe protection will be triggered and the multirotor will return to home and land automatically, rather than flying off uncontrollably or landing at an unknown location.
21. The operating documents required under 14 CFR §§ 91.9 and 91.203 will be maintained and available to the PIC at the Ground Control Station of the UA any time the UA is operating. These documents will be made available to the Administrator or any law enforcement official upon request. If a discrepancy exists between the conditions and limitations in the exemption grant and the procedures outlined in the operating documents, the grant conditions and limitations will take precedence and will be followed. Otherwise, the petitioner will follow the procedures outlined in its operating documents. If it updates or revises its operating documents, it will present updated and revised documents to the Administrator upon request. If the petitioner determines that any update or revision would affect the basis upon which the FAA granted the exemption, then the Petitioner will petition for an amendment to the grant of exemption.
22. Petitioner will obtain written and/or oral permission from the landowners/authorized agents of the landowners over which flights will be conducted.
23. Petitioner will obtain all required permissions and permits from territorial, state, county or city jurisdictions, including local law enforcement, fire, or other appropriate governmental agencies.

24. UA operations will not be conducted during night, as defined in 14 CFR § 1.1. All operations will be conducted under visual meteorological conditions (VMC). Flights will not be conducted under special visual flight rules (SVFR).
25. The petitioner will obtain an Air Traffic Organization (ATO) issued Certificate of Waiver or Authorization (COA) prior to conducting any operations under the grant of exemption. Petitioner will request a Notice to Airman (NOTAM) not more than 72 hours in advance, but not less than 24 hours prior to the operation. All operations will be conducted in accordance with airspace requirements in the ATO issued COA, including class of airspace, and altitude level.
26. The UA will not be operated within 5 nautical miles of tower-controlled airport reference point as denoted on a current FAA-published aeronautical chart unless a letter of agreement with that airport's management has been obtained, and the operation is conducted in accordance with a NOTAM as required by the operator's COA. Any letter of agreement with the airport management will be made available to the Administrator upon request.
27. The UA will 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.
28. All operations shall be conducted in Class G airspace or as otherwise prescribed in an ATO issued COA.
29. All aircraft operated in accordance with this exemption will 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 will be as large as practicable.
30. Before conducting operations, petitioner will 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.
31. The UA will remain clear and yield the right of way to all manned aviation operations and activities at all times.
32. The UA will not be operated by the PIC from any moving device or vehicle.
33. Petitioner will conduct all flight operations at least 175 feet from all nonparticipating persons, vessels, vehicles, and structures unless one of the following three conditions is met:
 - a. Barriers or structures are present that sufficiently protect nonparticipating persons from the UA and/or debris in the event of an accident. The petitioner will ensure that nonparticipating persons remain under such protection. If a situation arises where nonparticipating persons leave such protection and are within 175 feet of the UA, the PIC will ensure that flight operations cease immediately.
 - 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.
 - 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).

34. Petitioner will report any incident, accident, or flight operation that transgresses the lateral or vertical boundaries of the operational area as defined by the applicable COA to the FAA's UAS Integration Office (AFS-80) within 24 hours. Petitioner will report accidents to the National Transportation Safety Board (NTSB) per instructions contained on the NTSB Web site: www.nts.gov.

VI. Privacy

There is little concern that the proposed flights will cause invasions of privacy. All flights will occur over either (a) public rights of way where there is no expectation of privacy; or (b) over private property with permission of the landowner/authorized agent and consent of participating individuals.

If data collected is made available for public view, all images containing uninvolved persons will be blurred or blacked-out. No attempt will be made to identify any individuals filmed during the flights except in cases where they are trespassing upon or damaging customer property, or interfering with the petitioner's or its customers' operations.

VII. Public Interest and Safety

The planned UA use will increase ground safety for aerial cinematography operations. This type of data collection has previously been done by manned aircraft or by individuals on the ground. Both are more time consuming and are more expensive than using a UA. Use of manned aircraft poses enhanced risk to the pilot and onboard crew, who would be several hundred feet in the air. Additionally, manned aircraft carry highly flammable fuel.

The enhanced safety and reduced environmental impact achieved using a UA 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 UA operation enabled by this exemption is in the public interest.

Satisfaction of the criteria provided in Section 333 of the Reform Act of 2012 – size, weight, speed, operating capabilities, proximity to airports and populated areas and operation within visual line of sight and national security – provide more than adequate justification for the grant of the requested exemption allowing commercial operation of petitioner's UA in the utility and infrastructure inspection industries, pursuant to Richter's rules of operation.

The FAA has previously approved the Inspire 1 for similar commercial operations in the following Exemptions:

- 11279 (aerial photography);
- 11288 (aerial photography);
- 11313 (aerial cinematography and photography);
- 11359 (photography);
- 11336 (aerial photography);
- 11377 (aerial videography and cinematography); and
- 11385 (aerial videography and cinematography).

VIII. Regulations from Which Exemption is Requested

Appendix A: FARs as to which Richter wishes the same determination to be made as has been made previously.

FAR Provision	Applicable condition(s) in Section 5 of petition	FAA Exemption Decision
21(h)	1, 2, 3, 4, 5, 16, 25, 28, 29	Nos. 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11111, 11110, 11114, 11136, 11138, 11150, 11153, 11156, 11157, 11166, 11167, 11170, 11171, 11172, 11174, 11176, 11177, 11178, 11184, 11185, 11188, 11189, 11191, 11192, 11193, 11195
43.7	13, 14	No. 11208
43.11	12	No. 11208
45.11	29	No. 11208
45.27	29	No. 11188
45.29	29	Nos. 11136, 11157, 11170, 11185, 11193
61.23(a) and (c), 61.101(e)(4) and (5), 61.113(a), 61.315(a),	7	See Appendix B for argument regarding why petitioner should be exempted from the sport pilot license requirement
91.7(a)	12	Nos. 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11110, 11136, 11138, 11150, 11153, 11156, 11157, 11158, 11160, 11161, 11166, 11167, 11170, 11171, 11172, 11174, 11177, 11178, 11184, 11185, 11188, 11189, 11191, 11192, 11193, 11195, 11204
91.9(b)(2)	22	Nos. 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11110, 11111, 11112, 11114, 11136, 11138, 11150, 11153, 11156, 11157, 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11110, 11111, 11112, 11114, 11136, 11138, 11150, 11153, 11156, 11157, 11174, 11177, 11178, 11184, 11185, 11189, 11192, 11193, 11195
91.9(c)	30	Nos. 11136, 11170, 11171, 11174, 11185
91.103(b)(2)	3, 9, 15, 16, 17, 18, 19, 20	Nos. 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11138, 11150, 11153, 11156, 11158, 11160, 11161, 11166, 11167, 11171, 11172, 11176, 11177, 11178, 11184, 11185, 11188, 11188, 11189, 11191, 11192, 11193, 11195, 11204
91.105	6	No. 11185
91.109	7, 8	Nos. 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11110, 11112, 11136, 11138, 11150, 11153, 11156, 11157, 11166, 11167, 11170, 11171, 11174, 11177, 11184, 11185, 11189, 11191, 11192, 11193, 11194, 11195, 11206, 11208

FAR Provision	Applicable condition(s) in Section 5 of petition	FAA Exemption Decision
91.113(b)	3, 31	No. 11238
91.119(c)	4, 33	Nos. 11162, 11163, 11164, 11165, 11166, 111080, 111109, 11110, 11111, 11112, 11114, 11136, 11138, 11150, 11153, 11156, 11160 11161, 11166, 11167, 11170, 11171, 11172, 11174, 11176, 11178, 11185, 11188, 11189, 11190, 11193
91.121	4	Nos. 11162, 11163, 11164, 11165, 11166, 111080, 111109, 11136, 11138, 11150, 11153, 11156, 11160 11161, 11166, 11167, 11170, 11171, 11174, 11176, 11178, 11185, 11188, 11189, 11190, 11193
91.151(a)	16, 17	Nos. 11110, 11153, 11156, 11161; 111109, 11110, 11112, 11136, 11138, 11150, 11153, 11156, 11160 11161, 11166, 11167, 11170, 11171, 11172, 11174, 11176, 11178, 11185, 11188, 11189, 11190, 11193
91.203 (a) and (b)	22	Nos. 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11110, 11111, 11112, 11114, 11136, 11138, 11150, 11153, 11156, 11157, 11170, 11171, 11172, 11174, 11176, 11177, 11178, 11184, 11185, 11188, 11188, 11189, 11191, 11192, 11193, 11195
91.215	25, 26	No. 11185, 11195
91.403	12, 13, 14	No. 11185
91.405(a)	12, 13, 14	Nos. 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11110, 11111, 11112, 11114, 11136, 11138, 11150, 11153, 11156, 11157, 11158, 11160, 11161, 11166, 11167, 11170, 11171, 11172, 11174, 11176, 11177, 11178, 11184, 11185, 11188, 11188, 11189, 11191, 11192, 11193, 11195, 11204
91.407(a)(1)	14	Nos. 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11110, 11111, 11112, 11114, 11136, 11138, 11150, 11153, 11156, 11157, 11158, 11160, 11161, 11166, 11167, 11170, 11171, 11172, 11174, 11176, 11177, 11178, 11184, 11185, 11188, 11188, 11189, 11191, 11192, 11193, 11195, 11204
91.409(a)(1)	12, 13, 14	Nos. 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11110, 11111, 11112, 11114, 11136, 11138, 11150, 11153, 11156, 11157, 11158, 11160, 11161, 11166, 11167, 11170, 11171, 11172, 11174, 11176, 11177, 11178, 11184, 11185, 11188, 11188, 11189, 11191, 11192, 11193, 11195, 11204

FAR Provision	Applicable condition(s) in Section 5 of petition	FAA Exemption Decision
91.409(a)(2)	12, 13, 14	Nos. 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11110, 11111, 11112, 11114, 11136, 11138, 11150, 11153, 11156, 11157, 11158, 11160, 11161, 11166, 11167, 11170, 11171, 11172, 11174, 11176, 11177, 11178, 11184, 11185, 11188, 11188, 11189, 11191, 11192, 11193, 11195, 11204
91.417(a)	12, 13, 14	Nos. 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11110, 11111, 11112, 11114, 11136, 11138, 11150, 11153, 11156, 11157, 11158, 11160, 11161, 11166, 11167, 11170, 11171, 11172, 11174, 11176, 11177, 11178, 11184, 11185, 11188, 11188, 11189, 11191, 11192, 11193, 11195, 11204
91.417(b)	12, 13, 14	Nos. 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11110, 11111, 11112, 11114, 11136, 11138, 11150, 11153, 11156, 11157, 11158, 11160, 11161, 11166, 11167, 11170, 11171, 11172, 11174, 11176, 11177, 11178, 11184, 11185, 11188, 11188, 11189, 11191, 11192, 11193, 11195, 11204

Appendix B: Richter’s argument for exemption from 14 CFR §§ 61.23(a) and (c), 61.101(e)(4) and (5), 61.113(a), 61.315(a).

Richter requests an exemption from 14 CFR §§ 61.23(a) and (c), 61.101(e)(4) and (5), 61.113(a), 61.315(a), so that the PIC of the UA will not be required to possess any pilot license (sports, recreational, private or commercial). As the FAA and numerous other national airspace regulators have recognized, UA operations conducted by persons who do not hold a pilot’s license can still achieve the equivalent level of safety of current operations by manned aircraft with pilots holding any level of pilot’s license.

Although it recognizes that a pilot’s license is unnecessary for safe UA operation, the FAA has to date declined to allow grant exemptions under Section 333 that would permit individuals who possess any pilot license (sports, recreational, private or commercial) to conduct commercial UA operations. It has specified two reasons for declining to do so. First, it has stated that it does not possess the authority under Section 333 to exempt individuals from the requirement under 49 U.S.C. §44711 to hold an airman certificate authorizing the airman to serve in the capacity for which the certificate was issued. Exemption No. 11110 at 14. Second, the FAA has concluded that the Department of Homeland Security (DHS) security screening required of all certified airmen meets the statutory requirement in Section 333 that operations not pose a threat to national security. Exemption No. 11110 at 15.

Richter respectfully requests that the FAA reconsider its position. There is no dispute that it is unnecessary for an operator of a UA to go through the rigorous process of becoming a certified pilot in order to safely operate a UA. In addition, the FAA does have the authority to exempt UA operators from the requirement in 49 U.S.C. §44711 to hold an airman certificate for “serv[ing] in the capacity for which the certificate was issued.” Indeed, it has exercised that authority repeatedly in the Section 333 process. Finally, the FAA’s security concerns can be addressed by a variety of methods involving operator background checks to be conducted by government agencies.

1. The FAA and foreign regulators recognize that obtaining a manned aircraft pilot license is unnecessary for safe operation of a UA.

The FAA, like the other national airspace regulators that have considered the issue, has concluded that UA operations conducted by persons who do not hold a pilot’s license can still achieve the equivalent level of safety of current operations by manned aircraft with pilots holding any level of pilot’s license. In its recent UAS NPRM, the FAA stated:

“While these airman certification requirements are necessary for manned aircraft operations, they impose an unnecessary burden for many small UAS operations. This is because a person typically obtains a private or commercial pilot certificate by learning how to operate a manned aircraft. Much of that knowledge would not be applicable to small UAS operations because a small UAS is operated differently than manned aircraft. In addition, the knowledge currently necessary to obtain a private or commercial pilot certificate would not equip the certificate holder with the tools necessary to safely operate a small UAS... Thus, requiring persons wishing to operate a small UAS to obtain a private or commercial pilot certificate imposes the cost of certification on those persons, but does not result in a significant safety benefit because the process of obtaining the certificate does not equip those persons with the tools necessary to mitigate the public risk posed by small UAS

operations.” Operation and Certification of Small Unmanned Aircraft, 80 Fed. Reg. 9543 at 9550 (proposed Feb. 23, 2015 (to be codified at 14 C.F.R. Parts 21, 43, 45, et al.).

The FAA’s conclusion that manned aircraft flying experience is unnecessary for the operation of a UA is supported by research by the FAA and the Army Research Laboratory. They demonstrate that UAs, even those much larger than the UAs proposed by petitioner, can be safely flown by non-certificated pilots with a small amount of training. For example, one Army Research Laboratory study concluded:

“[T]he specific motor skills needed to control the radio-controlled UAV would have to be learned by aviators independently of the motor skills learned in flying an aircraft. In particular, the somatic and visual cues that pilots use during aircraft landings would not be useful (and perhaps even counter-productive) for the different skill sets and perceptual viewpoint necessary for radio-controlled landings.”¹

Additional research reports lend further support for the exclusion requested. For example, a report sponsored by the FAA concluded that “We know that certain systems, like the U.S. Army Hunter and Shadow systems, are successfully flown by pilots with no manned aircraft experience.”²

In addition, foreign government airspace regulators that have examined the issue have consistently recognized that the skills required to fly a manned aircraft are irrelevant to operating a UA. For that reason, they have concluded that UA operators do not need to have a private or commercial pilot’s license. Canada, for example, does not require a pilot’s license to operate a UA. Transport Canada requires training of UA operators, but that training is limited to pilot ground school and flight operation training on UAs, not manned aircraft.³ Moreover, Canada allows this training to be “provided by other pilots, manufacturers, [UA] flight training organizations or . . . self taught.”⁴

¹ Michael J. Barnes, Beverly G. Knapp, Barry W. Tillman, Brett A. Walters & Darlene Veliki, *Crew systems analysis of unmanned aerial vehicle (UAV) future job and tasking environments*, Technical Report ARL-TR-2081, Aberdeen Proving Ground, MD: Army Research Laboratory, page 12 (2000), available at <http://www.dtic.mil/dtic/tr/fulltext/u2/a374230.pdf>.

² Kevin W. Williams, *Unmanned Aircraft Pilot Medical Certification Requirements*, Report DOT/FAA/AM-07/3, FAA Civil Aerospace Medical Institute, page 2, (2007), available at <http://fas.org/irp/program/collect/ua-pilot.pdf>. While the authors speculated that UA use in populated areas may change this assessment, indicating further research was needed to address this concern, this concern is inapplicable as petitioner’s flights will not be in congested areas. See also Jason S. McCarley & Christopher D. Wickens, *Human Factors Implications of UAVs in the National Airspace*, Institute of Aviation, Aviation Human Factors Division, University of Illinois at Urbana-Champaign, 13 (2004), available at <http://www.tc.faa.gov/logistics/grants/pdf/2004/04-G-032.pdf>.

³ See Civil Aviation, Standards, Transport Canada, Advisory Circular: Guidance Material for Operating Unmanned Air Vehicle Systems under an Exemption at 14 and 18-22, (Nov. 27, 2014) available at <http://www.tc.gc.ca/media/documents/ca-opssvs/ac-600-004.pdf>.

⁴ *Id.* at 14.

Similarly, the United Kingdom’s Civil Aviation Authority (CAA) recognized that determining “Remote Pilot qualification requirements on the same basis as manned aircraft may yield requirements that are too inflexible, too onerous and inappropriate for UAS operations.”⁵ As a result, the CAA only requires UA operators to demonstrate UA operator competence.⁶ While there are a variety of ways to demonstrate competence, the most common is to complete a course that will lead to a ground exam and flight test. Australia, too, requires only passage of a UA-specific ground school program in lieu of a manned airman certificate.⁷ Finally, more than a dozen countries, including Germany, Italy, France, Spain and the Netherlands, have adopted the National UAS Certificate for Small Unmanned Aircraft (BNUC-S) Standard for UA pilot certification.⁸ This standard results in a type-specific UA certificate and does not require the operator to have a pilot’s license. The process involves taking a short ground school course, passing a ground school test and then passing a practical test on commercial operation of the specific UA per the UA manufacturer’s operations manual.

All of this experience and evidence indicates that the proposed exemption will provide a greater level of safety than operations under 14 C.F.R. §61.113. In this instance, the PICs will have gone through training as described above in Section III B. This training and education is focused on UAs generally, and in particular on the aircraft to be operated, rather than taking additional time and risk to train on a manned aircraft, weighing several thousand pounds and carrying highly flammable fuel.

The FAA has concluded in the NPRM that such UA-specific training is more than sufficient to provide an equivalent level of safety for UA operations. Sometime in the next 18-24 months, that position will be enshrined in a valid regulation. However, in the meantime, the FAA claims it lacks the authority to relax the requirement to possess a pilot certificate. As we show in the next section, that position is both incorrect and contradicted by the FAA’s recent decisions.

2. The FAA does have, and has already, exercised the authority to exempt petitioners from the airman certificate requirement.

The FAA claims that it lacks authority to exempt UA operators from the requirement of 49 U.S. §44711 to hold an airman certificate authorizing the airman “to serve in the capacity for which the certificate was issued.” See, e.g., Exemption No. 11110 at 14. This claim is inconsistent with both (i) the statutory language of that section and Section 333, and (ii) numerous recent FAA decisions.

The operative part of 49 USC §44711 provides that a “person may not . . . serve in any capacity as an airman with respect to a civil aircraft, . . . used, or intended for use, in air commerce — (A) without an airman certificate authorizing the airman to serve in the capacity for which the

⁵ Civil Aviation Authority, Safety Regulation Group, Unmanned Aircraft System Operations in UK Airspace – Guidance, Section 2, Chapter 5, Page 2 (Aug. 10, 2012), *available at* <https://www.caa.co.uk/docs/33/CAP722.pdf>.

⁶ Civil Aviation Authority, Unmanned Aircraft and Aircraft Systems, *available at* <http://www.caa.co.uk/default.aspx?catid=1995&pagetype=90>.

⁷ Australian Government Civil Aviation Safety Authority, *available at* http://www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC_100374.

⁸ See EuroUSC International, “Pilot Qualification,” *available at* <http://eurousc.com/services/pilot-qualifications/>.

certificate was issued . . . “ If the FAA’s interpretation were correct, this language would require that any person wishing to operate a UA for commercial operations have an airman certificate authorizing the person to serve as an airman in commercial operations.

However, in all of its recent grants of Section 333 petitions, the FAA has – without explicitly acknowledging the fact - exempted commercial UA operators from the §44711(A) requirement that they hold an airman certificate authorizing them “to serve in the capacity for which the certificate was issued.” It has done so by allowing them to operate UA so long as they hold a private pilot’s or sport pilot’s authorization, even though such a certificate does not permit commercial operations. Exemption No. 11062 at 15-18; Exemption No. 11110 at 14-16; Exemption No. 11191 at 3-5; and Exemption No. 11229 at 3 and 8.

The FAA argues that it cannot exempt petitioners from the requirements of §44711 because, while the specific language of Section 333 grants it limited statutory flexibility relative to 49 U.S.C. §44704 for the purposes of airworthiness certification, Section 333 does not provide flexibility relative to §44711 and other sections of Title 49. Exemption No. 11110 at 14. This argument ignores the plain language of Section 333. The relevant language of Section 333 is:

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

(b) **ASSESSMENT OF UNMANNED AIRCRAFT SYSTEMS.**—In making the determination under subsection (a), the Secretary shall determine, at a minimum—

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

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

(c) **REQUIREMENTS FOR SAFE OPERATION.**—If the Secretary determines under this section that certain unmanned aircraft systems may operate safely in the national airspace system, the Secretary shall establish requirements for the safe operation of such aircraft systems in the national airspace system.

The language of Section 333(b) is permissive: it requires that the Secretary “determine, at a minimum . . . whether a certificate of waiver, certificate of authorization, or airworthiness certification under section 44704 of title 49, United States Code, is required for the operation of unmanned aircraft systems identified under paragraph (1).” Nothing in (b) precludes the Secretary from determining whether or not a pilot’s license is required for operation of a UA identified under paragraph (b)(1).

Indeed, the FAA has implicitly conceded the point by granting exemptions from the requirement that commercial UA operators hold a commercial pilot certificate. From an analytical standpoint, there is no difference between granting an exemption from the commercial pilot's license requirement and granting an exemption from the private or sport pilot's license requirement. Both are clearly exemptions from a specific statutory requirement in 49 U.S.C. §44711. If the FAA has the statutory authority under Section 333(b) to do the former, it has the same authority to do the latter.⁹

⁹ The FAA has not specifically identified the statutory provision that underpins its authority to grant the exemptions from the commercial pilot's license requirement. Whether the statutory basis is Section 333 or some other provision makes no difference. If there is a basis for a partial exemption from in 49 U.S.C. § 44711, that basis also justifies an exemption from the entire provision.