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

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

August 19, 2015

Exemption No. 12512
Regulatory Docket No. FAA−2015−1577

Mr. Robert Koplar
Koplar Communications, LLC
50 Maryland Plaza
St. Louis, MO 63108

Dear Mr. Koplar:

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

By letter dated April 27, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Koplar Communications, LLC (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial photography to be used in production for commercials and other promotional videos, and newsgathering.

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 Phantom 2 Vision +.

The petitioner requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*. In accordance with the statutory criteria provided in Section 333 of Public Law 112−95 in reference to 49 U.S.C. § 44704, and in

consideration of the size, weight, speed, and limited operating area associated with the aircraft and its operation, the Secretary of Transportation has determined that this aircraft meets the conditions of Section 333. Therefore, the FAA finds that the requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates,* and any associated noise certification and testing requirements of part 36, is not necessary.

The Basis for Our Decision

You have requested to use a UAS for aerial data collection[1] or/and closed set motion picture and filming. 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, Koplar Communications, LLC is granted an exemption from 14 CFR §§ 61.23(a) and (c), 61.101(e)(4) and (5), 61.113(a), 61.315(a), 91.7(a), 91.119(c), 91.121, 91.151(a)(1), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b), to the extent necessary to allow the petitioner to operate a UAS to perform aerial data collection. This exemption is subject to the conditions and limitations listed below.

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

Conditions and Limitations

In this grant of exemption, Koplar Communications, LLC 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 Phantom 2 Vision + when weighing less than 55 pounds including payload. Proposed operations of any other aircraft will require a new petition or a petition to amend this exemption.

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

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

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

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

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

7. This exemption and all documents needed to operate the UAS and conduct its operations in accordance with the conditions and limitations stated in this grant of exemption, are hereinafter referred to as the operating documents. The operating documents must be accessible during UAS operations and made available to the Administrator upon request. If a discrepancy exists between the conditions and limitations in this exemption and the procedures outlined in the operating documents,

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Sincerely,

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

Enclosures

50 Maryland Plaza, Ste. 300
St. Louis MO 63108
(314) 345-1024

April 27, 2015

Federal Aviation Administration
U. S. Department of Transportation
Docket Management System
1200 New Jersey Ave., SE
Washington, DC 20590

Re: Exemption Request under Section 333 of the FAA Reform Act and Part 11 of the Federal Aviation Regulations from certain parts of the FARs.

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, Koplar Communications (the "Petitioner"), a company that owns and operates television station KRBK-TV and associated production facilities, hereby applies for an exemption from the listed Federal Aviation Regulations ("FARs") to allow it to operate a small Unmanned Aircraft System ("UAS") under the conditions and limitations set forth in this Petition.

The requested exemption would permit the operation of small, unmanned UAS under controlled conditions for aerial photography to be used in production for commercials and other promotional videos, and newsgathering in certain limited circumstances. Approval of this exemption would enhance safety and fulfill the FAA Administrator's responsibilities to "…establish requirements for the safe operation of such aircraft systems in the national airspace system." Section 333(c) of the Reform Act.

The name and address of the applicant is:

Koplar Communications, LLC
Attn: Robert Koplar
Telephone: (314) 345-1024
Email: bob@koplar.com
Address: 50 Maryland Plaza, Ste. 300, St. Louis, MO 63108

Regulations from which the exemption is requested:

14 CFR Part 21, 14 C.F.R. § 45.23(b), 14 CFR § 61.3, 14 C.F.R. § 91.7 (a), 14 CFR § 91.9 (b)(2), 14 C.F.R. § 91.103, 14 C.F.R. § 91.109, 14 C.F. R. § 91.119, 14 C.F.R. § 91.121, 14 CFR § 91.151 (a), 14 CFR § 91.203 (a) & (b), 14 CFR § 91.205(b), 14 CFR § 91.215, 14 CFR § 91.405 (a), 14 CFR § 407 (a)(1), 14 CFR § 409 (a)(2), 14 CFR § 417 (a) & (b)

Section 333's Mandate and the Federal Aviation Act

The Petition is submitted to fulfill Congress' goal under Section 333(a) through (c) of the Reform Act, which directs the Secretary of Transportation to consider whether certain unmanned aircraft systems may operate safely in the national airspace system (NAS) before completion of the rulemaking required under Section 332 of the Reform Act. In making this determination, the Administrator must determine which types of UASs do not create a hazard to users of the NAS or the public or pose a threat to national security in light of the following:

- The UAS's size, weight, speed, and operational capability;
- Operation of the UAS in close proximity to airports and populated areas; and
- Operation of the UAS within visual line of sight of the operator.

Reform Act § 333 (a).

If the Adminstrator determines that such vehicles "may operate safely in the national airspace system, the Secretary shall establish requirements for the safe operation of such aircraft in the national airspace system." Id. § 333(c) (emphasis added).

The Secretary has delegated his aviation authority to the Administrator of the FAA.

The Federal Aviation Act expressly grants the FAA the authority to grant exemptions from its regulatory requirements for civil aircraft, a term defined under §40101 of the Act, which includes UASs. The Administrator may grant an exemption from a requirement of a regulation prescribed under subsection (a) or (b) of this section or any sections 44702-44716 of the Federal Aviation Act if Administrator finds the exemption in the public interest. 49 U.S.C. §44701(f) See also 49 USC §44711(a); 49 USC §44704; 14 CFR §91.203 (a)(1).

INTENDED USE

The Petitioner owns and operates KRBK-DT, a Fox-affiliated television station licensed to Osage Beach, Missouri and covering the Springfield, Missouri Designated Market Area (DMA). In its regular course of business the Petitioner engages in video production for use in (1) commercials for local businesses that air on KRBK, (2) promotional spots and public service announcements (PSAs) for local charitable organizations and (3) news stories that feature local businesses or issues of local importance.

The use of a UAS can aid the petitioner in capturing footage that cannot be obtained from a traditional camera, allowing businesses such as golf courses, marinas, car dealerships and many others to showcase their facilities in ways that were previously impossible. In addition, the UAS may be used in certain limited circumstances for newsgathering. For example, the Springfield economy relies heavily on farming, and an agricultural report might include aerial footage of crops to demonstrate the impact of a drought. In all uses of the UAS, Petitioner will comply with the strict rules it has in place for flight operations, which are set forth in this Petition.

The Petitioner will fly the Phantom only over the following types of areas in Missouri and northern Arkansas:

- Over farms, lakes and rivers in predominantly rural areas;

- Over lines of railroad and rail classification yards;
- Over nonresidential and noncommercial large-scale industrial areas;
- Over private property when Petitioner has been granted permission by the person in legal possession of the property to do so.

THE AIRCRAFT

The Petitioner will fly a DJI Phantom 2 Vision + (the "Phantom" or "UAS"). The Phantom is equipped with a three-axis gimbal and 14 megapixel, 1080p camera. The Phantom has built in capability to limit the height it flies above the ground, to limit the radius of the distance it flies from the operator, and to exclude it from class B, C, and D airspace. It also has the built-in capability to return to the launching point if the wireless control link is interrupted, the battery is low, or if the operator attempts to exceed any of the height, radius, or airspace limitations programmed into it.

The Phantom weighs about 7.5 pounds and has a maximum payload of approximately 3.0 pounds, although the Petitioner does not intend to load the UAS with any additional equipment not pre-installed. The Phantom has a top speed of about 33 miles per hour. It has four fixed-pitch rotors, thrust from which is varied by changing RPM. It is powered by a lithium polymer battery.

The Phantom is paired with a wireless Remote Controller communication device using the 5.8GHz frequency band. In addition, the Phantom has a Range Extender that operates within the 2.4 GHz frequency band. Both the Remote Controller and the Range Extender comply with Federal Communications Commission requirements.

For a full list of specs, please see pages 48-49 of the attached User Manual attached as the Appendix.

OPERATIONAL PROCEDURES

Petitioner considers safety first and foremost when operating the UAS. All flights will utilize a team of at least two individuals, comprising a Pilot in Command ("PIC") and a Visual Observer ("VO"). The Phantom shall not be piloted in a wild or reckless manner, and shall remain at least 500 feet from non-operational personnel at all times. The UAS shall remain below 400 feet AGL at airspeeds not to exceed 20 miles per hour.

When operating the Phantom, both the PIC and the VO must maintain visual line of site (VLOS) of the UAS at all times, and remain within hearing distance of each other. The PIC will maintain VLOS by staying within 1500 feet of the UAS at all times and not flying the UAS behind any obstructions. The VO will provide a backup set of eyes in case the PIC were to lose visual contact. If visual contact is lost by the PIC, the PIC will engage the Phantom's "return to home" function, which will cause the Phantom to return to the point of takeoff.

The UAS must remain clear and give way to all manned aviation operations and activities at all times. In the unlikely event the PIC encounters a manned aircraft below 400 feet in close proximity to the UAS, the PIC will land the UAS or take other appropriate evasive action. The PIC will be required to land the UAS when the battery reaches 25% power, as indicated on the linked smartphone.

The PIC is responsible for ensuring the Phantom is maintained in a condition of safe operation. In the event the UAS has undergone maintenance or alterations that affect the UAS operation or flight characteristics, e.g. replacement of a flight critical component, the PIC will perform a functional test

flight prior to conducting further operations. 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 will be conducted in such a manner so as to not pose an undue hazard to persons and property.

The PIC is responsible for completing the pre-flight checklist and ensuring compliance with the Environmental Flight Restrictions.

Pre-Flight Checklist

Petitioner will perform the following pre-flight checklist prior to every flight:

- Cross reference area of flight with map to ensure compliance with flight environment requirements (below).
- Check area of flight to ensure there are no people (except for non-operations personnel) within 500 feet of the flight zone.
- Ensure remote controller, battery, Range Extender and smartphone are fully charged.
- Ensure propellers are mounted correctly.
- Ensure gimbal clamp and camera lens has been removed.
- Ensure damping absorbers are in good condition, not broken or worn.
- Ensure anti-drop kits have been mounted correctly.
- Calibrate compass.
- On startup, ensure motors are functioning as normal.

Environmental Flight Restrictions

In accordance with Section 333 of the Reform Act, the Phantom will not be flown 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 Petitioner. In addition, Petitioner will adhere to the following flight environment requirements:

- All flights must be conducted in the daytime under visual meteorological conditions. No night time operations will be performed.
- The UAS 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.
- The UAS shall not be used in severe weather conditions, including wind speed over 10 miles per hour, snow, rain or smog.
- The Flight should be confined to open fields with no tall buildings or over water.
- The UAS shall be kept away from obstacles, crowds, power lines and trees while in flight.
- The UAS may not be flown within class B, C or D airspace or in any no-fly zone specified by local laws and regulations.

All flights will be conducted strictly within designated flight zones. The VO is responsible for inspecting the flight zone prior to flight and for ensuring the flight zone remains free of people during the operation.

Pilot in Command Requirements

The 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. The PIC must have at least 20 hours of experience flying the Phantom. The VO must be a person over the age of 18 with qualified eye site. The VO will have detailed knowledge of how to operate the UAS and the onboard camera.

The initial PIC will be Robert Koplar. Mr. Koplar holds a private pilot certificate with an instrument rating, has approximately 600 hours of total flight time and approximately 40 hours with the Phantom. Mr. Koplar holds a Third Class Medical Certificate.

REQUESTED EXEMPTIONS AND JUSTIFICATION

14 C.F.R. Part 21, Subpart H: Airworthiness Certificates

Subpart H, entitled Airworthiness Certificates, establishes the procedural requirements for the issuance of airworthiness certificates as required by FAR §91.203(a)(1). Given the size and limited operating area associated with the aircraft to be utilized by the Petitioner, an exemption from Part 21 Subpart H meets the requirements of an equivalent level of safety under Part 11 and Section 333 of the Reform Act. The Federal Aviation Act (49 U.S.C.§44701 (f)) and Section 333 of the Reform Act both authorize the FAA to exempt aircraft from the requirement for an airworthiness certificate, upon consideration of the size, weight, speed, operational capability, and proximity to airports and populated areas of the particular UAS. In all cases, an analysis of these criteria demonstrates that the UAS operated without an airworthiness certificate, in the restricted environment and under the conditions proposed will be at least as safe, or safer, than a conventional aircraft (fixed wing or rotorcraft) operating with an airworthiness certificate without the restrictions and conditions proposed.

The UAS to be operated hereunder weighs less than 7.5 pounds, carries neither a pilot nor passenger, carries no explosive materials or flammable liquid fuels, and operates exclusively within a secured area as set out in the Manual. Unlike other civil aircraft, operations under this exemption will be tightly controlled and monitored by both the operator, pursuant to the Manual's requirements, and in compliance with local public safety requirements to provide security for the area of operation. The FAA will have advance notice of all operations. These safety enhancements, which already apply to civil aircraft operated in connection with motion picture and television production, provide a greater degree of safety to the public and property owners than conventional operations conducted with airworthiness certificates issued under 14 C.F.R. Part 21, Subpart H. Lastly, application of these same criteria demonstrates that there is no credible threat to national security posed by the UAS due to its size, speed of operation, location of operation, lack of explosive materials or flammable liquid fuels, and inability to carry a substantial external load.

14 C.F.R. § 45.23 (b): Marking of the Aircraft

The regulation requires: When marks include only the Roman capital letter "N" and the registration number is displayed on limited, restricted or light-sport category aircraft or experimental or provisionally certificated aircraft, the operator must also display on that aircraft near each entrance to the cabin, cockpit, or pilot station, in letters not less than 2 inches nor more than 6 inches high, the words "limited," "restricted," "light-sport," "experimental," or "provisional," as applicable.

Even though the UAS will have no airworthiness certificate, an exemption may be needed as the UAS will have no entrance to the cabin, cockpit, or pilot station on which the word "Experimental" can be

placed. Given the size of the UAS, two-inch lettering will be impossible. The word "Experimental" will be placed on the fuselage in compliance with §45.29 (f).

The equivalent level of safety will be provided by having the UAS marked on its fuselage as required by §45.29 (f) where the pilot, observer, and others working with the sUAS will see the identification of the UAS as "Experimental." The FAA has issued the following exemptions to this regulation to Exemptions Nos. 10700, 8738, 10167 and 10167A.

14 C.F.R. § 61.113 (a) & (b): Private Pilot Privileges and Limitations: Pilot in Command

Sections 61.113 (a) & (b) limit private pilots to non-commercial operations. Because the UAS will not carry a pilot or passengers, the proposed operations can achieve the equivalent level of safety of current operations by requiring the PIC operating the aircraft to have a private pilot's license rather than a commercial pilot's license to operate this small UAS. Unlike a conventional aircraft that carries the pilot and passengers, the UAS is remotely controlled with no living thing on board. The area of operation is controlled and restricted, and all flights are planned and coordinated in advance as set forth in the Manual. To provide for the differences in knowledge level the chief pilot for Petitioner is a private pilot that will oversee all planned flight operations and will approve all operating areas and operating plans. The risks associated with the operation of the UAS are so diminished from the level of risk associated with commercial operations contemplated by Part 61 when drafted, that with the above oversight and plans will achieve a level of safety commiserate with the current rules set forth by 14 C.F.R. §61.113 (a) & (b).

14 C.F.R. §91.7(a): Civil aircraft airworthiness

The regulation requires that no person may operate a civil aircraft unless it is in airworthy condition. As there will be no airworthiness certificate issued for the aircraft, should this exemption be granted, no FAA regulatory standard will exist for determining airworthiness. Given the size of the aircraft and the requirements contained in the operating procedures and safety checklists, an equivalent level of safety will be provided.

14 C.F.R. § 91.9 (b)(2): Civil Aircraft Flight Manual in the Aircraft

Section 91.9 (b) (2) provides: No person may operate a U.S.-registered civil aircraft …(2) For which an Airplane or Rotorcraft Flight Manual is not required by §21.5 of this chapter, unless there is available in the aircraft a current approved airplane or Rotorcraft Flight Manual, approved manual material, markings, and placards, or any combination thereof. The UAS, given its size and configuration has no ability to carry such a flight manual on the aircraft, not only because there is no pilot on board, but because there is no room or capacity to carry such an item on the aircraft.

The equivalent level of safety will be maintained by keeping the flight manual at the ground control point where the pilot flying the UAS will have immediate access to it. The FAA has issued the following exemptions to this regulation: Exemption Nos. 8607, 8737, 8738, 9299, 9299A, 9565, 9565B, 10167, 10167A, 10602, 32827, and 10700.

14 C.F.R. § 91.103: Preflight Action

This regulation requires each pilot in command to take certain actions before flight to ensure the safety of flight. As FAA approved rotorcraft flight manuals will not be provided for the aircraft an exemption will be needed. The PIC will take all actions including reviewing weather, flight battery requirements and aircraft performance data before initiation of flight.

14 C.F.R. §91.109: Flight Instruction

Section 91.103 provides that no person may operate a civil aircraft (except a manned free balloon) that is being used for flight instruction unless that aircraft has fully functioning dual controls.

UASs and remotely piloted aircraft, by their design, do not have fully functional dual controls. Flight control is accomplished through the use of a control box that communicates with the aircraft via radio communications. The FAA has approved exemptions for flight training without fully functional dual controls for a number of aircraft and for flight instruction in experimental aircraft. See Exemption Nos. 5778K & 9862A. The equivalent level of safety is provided by the fact that neither a pilot nor passengers will be carried in the aircraft and by the size and speed of the aircraft.

14 C.F.R. § 91.119: Minimum Safe Altitudes

Section 91.119 establishes safe altitudes for operation of civil aircraft. Specifically, Section 91.119(c) limits aircraft flying over areas other than congested areas to an altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.

As set forth herein, the UAS will never operate at higher than 400 feet AGL. Because aerial photography must be accomplished at relatively low altitudes, i.e., less than 500 feet AGL, an exemption from Section 91.119(c) is required.

The equivalent level of safety will be achieved given the size, weight, speed, and material with which the UAS is built. Additionally, no flight will commence without the permission of the land owner or the party controlling the operating area. With advance notice to the landowner, all affected individuals will be aware of film or television production flights. Compared to similar operations conducted with conventional aircraft or rotorcraft, which weigh thousands of pounds and carry flammable fuel, any risk associated with these operations will be significantly reduced from those currently allowed for conventional aircraft operating at or below 500 feet AGL.

14 C.F.R. §91.121 Altimeter Settings

This regulation requires each person operating an aircraft to maintain cruising altitude by reference to an altimeter that is set "…to the elevation of the departure airport or an appropriate altimeter setting available before departure." As the UAS may not have a barometric altimeter, but instead a GPS altitude read out, an exemption may be needed. An equivalent level of safety will be achieved by the operator, pursuant to the Manual and Safety Check list, confirming the altitude of the launch site shown on the GPS altitude indicator before flight.

14 C.F.R. § 91.151(a): Fuel Requirements for Flight in VFR Conditions

Section 91.151(a) prohibits an individual from beginning "a flight in an airplane under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed – (1) During the day, to fly after that for at least 30 minutes; or (2) At night, to fly after that for at least 45 minutes." 14 C.F.R. § 91.151(a).

The Phantom batteries provide between 10 and 30 minutes of powered flight. Without an exemption from 14 C.F.R. § 91.151, the Phantom flights would not be possible. Given the limitations on its

proposed operations and the location of those proposed operations, a longer duration for flight in daylight VFR conditions is reasonable.

Petitioner believes that an exemption from 14 C.F.R. § 91.151(a) is safe and consistent with the scope of a prior exemption. Operating the Phantom without 30 minutes of reserve fuel does not engender the type of risks that Section 91.151(a) was meant to prevent. The fact that the Phantom carries none of a pilot, passenger, nor cargo enhances the reduced risk to overall safety. In the unlikely event that the Phantom should run out of battery, it would land per its autopilot instructions before the batteries are completely depleted. Given its weight and construction material, the risks are significantly less than contemplated by the current regulation.

Petitioner believes that an equivalent level of safety can be achieved by maintaining 25% battery life as being the equivalent of minimum fuel, this would be more than adequate to return the UAS to its planned landing zone from anywhere in its planned operating area.

Similar exemptions have been granted to others, including Exemptions 2689F, 5745, 10673, and 10808.

14 C.F.R. §91.203 (a) and (b): Carrying Civil Aircraft Certification and Registration

The regulation provides in pertinent part: (a) Except as provided in § 91.715, no person may operate a civil aircraft unless it has within it the following: (1) An appropriate and current airworthiness certificate. . . .(b) No person may operate a civil aircraft unless the airworthiness certificate required by paragraph (a) of this section or a special flight authorization issued under §91.715 is displayed at the cabin or cockpit entrance so that it is legible to passengers or crew.

The UAS weighs no more than 7.5 lbs and is operated without an onboard pilot. As such, there is no ability to carry certification and registration documents or to display them on the UAS.

An equivalent level of safety will be achieved by keeping these documents at the ground control point where the pilot flying the UAS will have immediate access to them, to the extent they are applicable to the UAS. The FAA has issued numerous exemptions to this regulation. A representative sample of other exceptions includes Exemption Nos. 9565, 9665, 9789, 9789A, 9797, 9797A, 9816A, and 10700.

14 C.F.R. §91.405 (a); 407 (a)(1); 409 (a)(2); 417(a) & (b): Maintenance Inspections

These regulations require that an aircraft operator or owner “shall have that aircraft inspected as prescribed in subpart E of this part and shall between required inspections, except as provided in paragraph (c) of this section, have discrepancies repaired as prescribed in part 43 of this chapter...,” and others shall inspect or maintain the aircraft in compliance with Part 43.

Given that these sections and Part 43 apply only to aircraft with an airworthiness certificate, these sections will not apply to the applicant. Maintenance will be accomplished by the operator pursuant to the flight manual. An equivalent level of safety will be achieved because these small UASs are very limited in size and will carry a small payload and operate only in restricted areas for limited periods of time. If mechanical issues arise the UAS can land immediately as it will be operating from no higher than 400 feet AGL. As provided in the Manual, the operator will ensure that the UAS is in working order prior to initiating flight, perform required maintenance, and keep a log of any maintenance performed.

Certificate of Waiver or Authorization

As required, Petitioner will obtain a Certificate of Waiver or Authorization (COA) from the FAA Air Traffic Organization prior to conducting operations.

The Petitioner's proposed operations satisfy the criteria provided in Section 333 of the Reform Act relating to size, weight, speed, operating capabilities, proximity to airports and populated areas and operation within visual line of sight and national security. The Petition justifies grant of the requested exemptions allow the Petitioner to obtain aerial photography with its UAS.

Respectfully submitted,

Robert Koplar
President, Koplar Communications, LLC

Appendix
User Manual