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October 7, 2014

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

Re: Exemption Request; Section 333 of the FAA Modernization & Reform Act and Part 11 of the Federal Aviation Regulations from 14 C.F.R. 45.23(b);14 CFR Part 21;14 CFR 61.113 (a) & (b); 91.7 (a); 91.9 (b) (2); 91.103(b); 91.109; 91.119; 91.121; 91.151 (a); 91.203(a) & (b); 91.405 (a); 91.407(a) (1); 91.409 (a) (2); 91.417 (a) & (b).

Dear Sir or Madam:

Petitioner Aerial Production Services, Inc., hereby petitions the Secretary of Transportation and Federal Aviation Administration ("FAA") for exemption to the above referenced and below more fully described Federal Aviation Regulations, ("FARs") that currently may or may not apply to the recreational/ business operations of model aircraft including small unmanned aerial vehicles/systems ("SUAVS").

1. Prefatory Statement to Petition

In June, 1981, the FAA published an advisory circular, AC 91-57, (an advisory publication giving non-regulatory information/guidance. Advisory circulars do not create or change regulations and are not binding on the public.) AC 91-57 was entitled "Model Aircraft Operating Standards" and gave non-regulatory suggestions to model aircraft operators on suggested procedures for operating their models. This was the sole publication by the FAA which addressed model aircraft, SUAV for the next nearly 25 years.

In September 2005, the FAA appeared to turn its' attention toward unprecedented attempts at regulating model aircraft specifically the more modern SUAVS. The FAA, for the first time in history now termed these devises as Unmanned Aerial Systems ("UAS") seemingly to align with their attempts at enforcement. The FAA published "AFS-400 UAS POLICY 05-01 - Unmanned Aircraft Systems Operations in the U. S. National Airspace System - Interim Operational Approval Guidance." This interim internal FAA memo expressly confirms that "[t]his policy is not meant as a substitute for any regulatory process." Still, it purported to "require" a Certificate of Authorization ("COA") or Waiver to use SUAVS. The new FAA policy relied for legal/regulatory "authority" on the non-regulatory, AC 91-57.

In February, 2007 the FAA, published a 2007 "policy statement" in the Federal Register. The 2007 Policy Statement starts by defining "unmanned aircraft" as "a device that is used or intended to be used, for flight in the air with no onboard pilot" and it purported to include "a remotely controlled model airplane used for recreational purposes." The FAA termed these devices UAS and then purported to articulate the new FAA "policy" for "UAS" operations was that "no person may operate a "UAS" in the National Airspace System without specific authority." For the first time ever, the 2007 Notice purported to articulate two new alleged "rules": (1) Model aircraft can no longer be operated for a "business" purpose; and (2) a Model aircraft operated for a business purpose requires a COA, or special Certificate of Operating Authority and therefore is subject to the FAR's.

Thereafter beginning in 2007 and continuing to present apparently based on these two new FAA internal "policies" and without citing to any actual federal law, or FARs, the FAA then sent various cease and desist notices to model aircraft SUAVS operators describing the COA process and threatening to impose a $10,000 fine if they did not comply with the new FAA policies which the FAA indicated created a "ban" on using SUAVS for an "business purpose."

In 2012, following the FAA's attempts to regulate using internal policy memos, Congress enacted the Federal Aviation Administration Reform and Modernization Act, ["FRMA"]. The FRMA allows the Secretary of Transportation to "exempt" SUAVS from existing Federal Law, FARs to the extent any federal law or FAR actually currently applies to SUAVS.

As the Secretary/FAA are no doubt aware these issues are presently pending before the NTSB full panel of Judges in *Pirker v. FAA*, Docket No. CP-217. Pending the NTSB president setting decision in the Pirker case, Petitioner respectfully makes this request as suggested by the FMRA and the FAA. See http://www.faa.gov/news/press_releases/news_story.cfm?newsId=16294. In the only other case in history where the FAA's attempts to regulate Model Aircraft/UAVs has been tested, in Texas Equuisearch v. Federal Aviation Administration, the U.S. Court of Appeals for the District of Columbia Circuit, Case No. 14-1061, the Court ruled that FAA informal email/mail orders attempting to enforce its Model Aircraft/UAVs internal policies are not legally binding.

Most recently, Petitioner is aware the FAA has granted similar exemptions for aerial photography in Alaska and is on the verge of granting similar exemptions for the Motion Picture Association of America ("MPAA") on behalf of seven UAV camera operators.

Petitioner at all times has and operates his SUAVS following the safety guidelines of AC 91-57.

2. Petition for Exemption

With that preface, pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 ("FMRA") and 14 C.F.R. Part 11, Aerial Production Services, Inc., developer and operator of Small Unmanned Aerial Vehicles ("SUAVS") equipped to conduct aerial photography/Inspection/ included but not limited to the following Commercial Operations:

- Real Estate listings
- Yacht brokerage/listings
- Private events: weddings, parties, etc...
- Commercials/promotions for businesses, communities, golf courses, marinas, resorts, etc...
- Agriculture: imaging for crop health and/or production estimates
- Private land owners: pictures/video of their property
- As needed/requested to support law enforcement and/or first responders

Petitioner hereby applies for an exemption from the listed Federal Aviation Regulations ("FARs") to allow commercial operation of its SUAVs, so long as such operations are conducted within and under the conditions outlined herein or as may be established by the FAA as required by Section 333.

As described more fully below, the requested exemption would permit the operation of SUAVS under controlled conditions in airspace that is 1) limited 2) predetermined; and 3) controlled as to access. The exemption would also provide safety enhancements to the already safe operations within the aerial photography industry presently using conventional aircraft and small, unmanned and relatively inexpensive SUAVS.

Approval of this exemption would thereby enhance safety and fulfill the Secretary of Transportation's (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 FMRA.

3. Name and Address of the Petitioner

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4. Regulations Petitioner Petitions for Exemption, If Such Regulations Apply to SUAVS

14 CFR Part 21 14 C.F.R. 45.23(b) 14 CFR 61.113 (a) & (b) 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 91.405 (a) 14 CFR 407 (a) (1) 14 CFR 409 (a) (2) 14 CFR 417 (a) & (b)

This exemption application is expressly submitted to fulfill Congress' goal in passing Section 333 (a) through (c) of the Reform Act. This law 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 FMRA. In making this determination, the Secretary is required to determine which types of SUAVS/UAS 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:

A. The SUAVS size, weight, speed, and operational capability;
B. Operation of the SUAVS in close proximity to airports and populated areas; and
C. Operation of the SUAVS within visual line of sight of the operator. FMRA § 333 (a).

Lastly, if the Secretary 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 Petitioner interprets this provision to place the duty on the Secretary/FAA Administrator to not only process applications for exemptions under section 333, but for the Secretary/Administrator to affirmatively craft conditions for the safe operation of the SUAVS, if it should be determined that the conditions set forth herein do not fulfill the statutory requirements for approval.

The Federal Aviation Act expressly grants the Secretary/FAA Administrator the authority to issue exemptions. This statutory authority, by its terms, includes exempting civil aircraft, as the term is defined under §40101 of the Act, which currently may or hereafter may include SUAVs, from the requirement that all civil aircraft must have a current airworthiness certificate.

The Secretary/FAA 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 this title if the Secretary/FAA 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).

The Aerial Production Services, Inc. SUAVS are multi-rotorcraft equipped as follows;

- The most innovative, safe and reliable craft available
- Similar to Phantom 2, s1000 (multi-rotor, > 55lbs, 5-40 KIAS)
- 9" carbon fiber props for more efficient airfoils
- Naza-M, A2 flight controllers with GPS waypoint navigation for increased safety
- GoPuck 5x for increased battery power; reducing risk of lost power
- Anti-gravity motors
- Long Range FPV
- Minimum of 4 extra (charged) batteries and 2 battery chargers on hand per flight
- Larger UAS (such as the s1000) will have a second controller used only for filming/directing the camera...leaving operators sole focus on safe operation of the craft

They will operate, under normal conditions, at speeds of 5-40 KIAS and at speed of no more than 50 KIAS and have the capability to hover and move in the vertical and horizontal plane independently/simultaneously. They will operate in line of sight and will operate only

within the areas described herein. Such operations will insure that the SUAVS will "not create a hazard to users of the NAS or the "public" as described in the FMRA §333(b).

Given the small size of the SUAVS involved, and the limited environment within which they will operate, the Petitioner falls squarely within that zone of safety (an equivalent level of safety) in which Congress envisioned that the FAA must, by exemption, allow commercial operations of SUAVS to commence immediately. Also, due to the size of the SUAVS and the restricted areas in which the relevant SUAVS will operate, approval of the application presents no national security issue.

Given the clear direction in FMRA §333, the authority contained in the Federal Aviation Act, as amended, the strong equivalent level of safety surrounding the proposed operations, and the significant public benefit, including enhanced safety, reduction in environmental impacts (including reduced emissions associated with allowing SUASV for filming operations rather than full-sized aircraft, the grant of the requested exemptions is in the public interest. Accordingly, the Petitioner respectfully requests that the FAA grant the requested exemption without delay.

5. Limitations and Conditions

The Petitioner proposes that the exemption requested herein be issued pursuant the limitations and conditions listed herein. These conditions/limitations provide for an even higher level of safety to operations under the current regulatory structure which apply to actual certificated aircraft because the proposed operations represent a safety enhancement to the already very safe SUAV's filming operations conducted by recreational SUAVS and conventional aircraft.

Petitioner's primary Missions include but are not limited to the following;

- Real Estate listings
- Yacht brokerage/listings
- Private events: weddings, parties, etc…
- Commercials/promotions for businesses, communities, golf courses, marinas, resorts, etc…
- Agriculture: imaging for crop health and/or production estimates
- Private land owners: pictures/video of their property
- As needed/requested to support law enforcement and/or first responders

Petitioner's primary locations shall be primarily in Maryland and the Northeast US region

These limitations and conditions to which Aerial Production Services, Inc., LLC agrees to be bound when conducting business/commercial operations under this FAA issued exemption are consistent with the Administrators grant of Exemption to the MPAA include:

1. The SUAV must weigh less than 55 pounds (25 Kg), including energy source(s) and equipment. Operations authorized by this grant of exemption are limited to the following

aircraft: DJI Phantom 2, DJI s800/1000, or similar SUAVs. Proposed operations of any other aircraft will require a new petition or a petition to amend this grant.

2. The SUAV may not be flown at a speed exceeding a ground speed of 50 knots.

3. Flights must be operated at an altitude of no more than 400 feet above ground level (AGL), as indicated by the procedures specified in the operator's manual. All altitudes reported to ATC must be in feet AGL.

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

5. All operations must utilize a visual observer (VO). 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.

6. The operator's checklist is considered acceptable to the FAA, provided the additional requirements identified in these conditions and limitations are added or amended. The operator's checklist and this grant of exemption must be maintained 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 checklists the conditions and limitations herein take precedence and must be followed. Otherwise, the operator must follow the procedures as outlined in its checklists.

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

7. Prior to each flight the PIC must inspect the SUAV to ensure it is in a condition for safe flight. If the inspection reveals a condition that affects the safe operation of the SUAV, the aircraft is prohibited from operating until the necessary maintenance has been performed and the SUAV is found to be in a condition for safe flight. The Ground Control Station, if utilized, must be included in the preflight inspection. All maintenance and alterations must be properly documented in the aircraft records.

8. Any SUAV that has undergone maintenance or alterations that affect the UAS operation or flight characteristics, e.g. replacement of a flight critical component, must undergo a functional test flight in accordance with the operator's manual. The PIC who conducts the functional test flight must make an entry in the UAS aircraft records of the flight. The

requirements and procedures for a functional test flight and aircraft record entry must be added to the operator's manual.

9. The operator must follow the manufacturer's SUAV aircraft/component, maintenance, overhaul, replacement, inspection, and life limit requirements. When unavailable, aircraft maintenance/ component/overhaul, replacement, and inspection/maintenance requirements must be established and identified in the operator's manual. At a minimum, the following must be included in the operator's manual:

   a. Actuators / Servos
   b. Transmission (single rotor)
   c. Powerplant (motors)
   d. Propellers
   e. Electronic speed controller
   f. Batteries
   g. Mechanical dynamic components (single rotor)
   h. Remote command and control
   i. Ground control station (if used)
   j. Any other components as determined by the operator

10. The Operator In Command (OIC) must possessed a certificate of graduation from a pilot training course conducted by an FAA-approved pilot school, or a statement of accomplishment from the school certifying the satisfactory completion of the ground-school portion and at least a current third-class medical certificate.

11. Prior to operations conducted for the purpose of motion picture filming (or similar operations), the OIC must have accumulated and logged, in a manner consistent with 14 CFR § 61.51 (b), a minimum of 25 hours of total time as a SUAV rotorcraft pilot and at least ten hours logged as a SUAV pilot with a similar SUAV type (single blade or multirotor). Prior documented flight experience that was obtained in compliance with applicable regulations may satisfy this requirement. Training, proficiency, and experience-building flights can also be conducted under this grant of exemption to accomplish the required flight cycles and flight time. During training, proficiency, and experience-building flights, all persons not essential for flight operations are considered non-participants, and the OIC must operate the SUAV with appropriate distance from non-participants in accordance with 14 CFR § 91.119. Prior to operations conducted for the purpose of motion picture filming (or similar operations), the PIC must have accumulated and logged, in a manner consistent with 14 CFR § 61.51 (b), a minimum of five hours as SUAV pilot operating the make and model of SUAV to be utilized for operations under the exemption and three take-offs and three landings in the preceding 90 days. Training, proficiency, experience-building, and take-off and landing currency flights can be conducted under this grant of exemption to accomplish the required flight time and 90 day currency. During training, proficiency, experience-building, and take-off and landing currency flights all persons not essential for flight operations are considered non-participants, and the OIC must operate the UA with appropriate distance from non-participants in accordance with 14 CFR § 91.119.

12. Prior to operations conducted for the purpose of motion picture filming (or similar operations), a flight demonstration, administered by an operator-approved and -qualified pilot must be successfully completed and documented. This documentation must be available for review upon request by the Administrator. Because the knowledge and airmanship test qualifications have been developed by the operator, and there are no established practical test standards that support a jurisdictional FAA FSDO evaluation and approval of company designated examiners, the petitioner will conduct these tests in accordance with the operator's manual.

13. The SUAV may not be operated directly over any person, except authorized and consenting production personnel, below an altitude that is hazardous to persons or property on the surface in the event of a UAS failure or emergency.

14. Regarding the distance from participating persons, the operator's manual has safety mitigations for authorized and consenting production personnel. At all times, those persons must be essential to the closed-set film operations. Because these procedures are specific to participating persons, no further FSDO or Aviation Safety Inspector (ASI) approval is necessary for reductions to the distances specified in the petitioner's manuals. This is consistent with the manned aircraft procedures described in FAA Order 8900.1, V3, C8, S1 *Issue a Certificate of Waiver for Motion Picture and Television Filming.*

15. The SUAV may not be operated directly over any person, except authorized and consenting production personnel, below an altitude that is hazardous to persons or property on the surface in the event of a UAS failure or emergency.

16. Regarding distance from non-participating persons, the OIC must ensure that no persons are allowed within 500 feet of the area except those consenting to be involved and necessary for the filming production. This provision may be reduced to no less than 200 feet if it would not adversely affect safety and the Administrator has approved it. For example, an equivalent level of safety may be determined by an aviation safety inspector's evaluation of the filming production area to note terrain features, obstructions, buildings, safety barriers, etc. Such barriers may protect non-participating persons (observers, the public, news media, etc.) from debris in the event of an accident. This is also consistent with the same FAA Order 8900.1, V3, C8, S1.

17. If the SUAV loses communications or loses its GPS signal, the SUAV must return to a pre-determined location within the security perimeter and land or be recovered.

18. The SUAV OIC must abort the flight in the event of unpredicted obstacles or emergencies. The Operator shall carry/use appropriate LIPO battery protective bags and fire extinguishing equipment.

19. Each SUAV operation must be completed within 30 minutes flight time or with 25% battery power remaining, whichever occurs first.

20. In addition to the conditions and limitations proposed by the operator, the FAA has determined that any operations conducted under this grant of exemption must be done pursuant to the following conditions and limitations:

21. The operator must obtain an Air Traffic Organization (ATO) issued Certificate of Waiver or Authorization (COA) prior to conducting any operations under this grant of exemption. This COA will also require the operator to request a Notice to Airman (NOTAM) not more than 72 hours in advance, but not less than 48 hours prior to the operation.

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. The OIC must develop procedures to document and maintain a record of the UAS maintenance, preventative maintenance, alterations, status of replacement/overhaul component parts, and the total time in service of the SUAV. These procedures must be added to the operator's manual/checklists.

24. Each SUAV operated under this exemption must comply with all manufacturer Safety Bulletins.

25. The OIC must develop SUAV technician qualification criteria. These criteria must be added to the operator's manual/Checklists.

26. The preflight inspection section in the operator's checklists manual must be amended to include the following requirement: The preflight inspection must account for all discrepancies, i.e. inoperable components, items, or equipment, not covered in the relevant preflight inspection sections of the operator's manual.

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

28. At least three days before scheduled filming, the operator of the SUAV affected by this exemption must submit a written Plan of Activities to the local 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 SUAV filming production conducted under this grant of exemption
    c. Name and phone number of the person responsible for the on-scene operation of the SUAV
    d. Make, model, and serial or N-number of UAS to be used

e. Name and certificate number of SUAV OICs involved in the filming production event
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
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

29. The documents required under 14 CFR § 91.9 and § 91.203 must be available to the OIC 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.

30. The SUAV must remain clear and yield the right of way to all other manned operations and activities at all times (including, but not limited to, ultra light vehicles, parachute activities, parasailing activities, hang gliders, etc.).

31. SUAV 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.

32. The SUAV cannot be operated by the PIC from any moving device or vehicle.

33. The SUAV 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.

34. The SUAV may not operate in Class B, C, or D airspace without written approval from the FAA. The UA may not operate within 5 nautical miles of the geographic center of a non-towered airport as denoted on a current FAA-published aeronautical chart unless a letter of agreement with that airport's management is obtained, and the operation is conducted in accordance with a NOTAM as required by the operator's COA. The letter of agreement with the airport management must be made available to the Administrator upon request.

35. Any 1) incident, 2) accident, or 3) flight operation that transgresses the lateral or vertical boundaries of the operational area as defined by the applicable COA must be reported to the Federal Aviation Administration's (FAA) 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. Further flight operations may not be conducted until the incident, accident, or transgression is reviewed by AFS-80 and authorization to resume operations is provided.

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

6. Description of Regulations Which May Apply From Which Petitioner Requests Exception 14 C.F.R. Part 21, Subpart H: Airworthiness Certificates 14 C.F.R. §91.203 (a) (1)

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 SUAVS 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 FMRA. The Federal Aviation Act (49 U.S.C.§44701 (f)) and Section 333 of the FMRA 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 SUAVS. 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 SUAVS to be operated hereunder is less than 55 lbs. fully loaded, is by definition unmanned and carries neither a pilot nor passenger, carries no explosive materials or flammable liquid fuels, and operates exclusively within a limited flight area. Unlike other civil aircraft, operations under this exemption will be tightly controlled and monitored by the PIC/Operator and will also remain within the requirements of, and in compliance with, local public safety requirements. These safety enhancements, which already apply to civil aircraft 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 SUAVS will have no airworthiness certificate, an exemption may be needed as the SUAVS will have no entrance to the cabin, cockpit or pilot station on which the word "Experimental" can be placed. Given the size of the SUAVS, 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 SUAVS marked on its fuselage as required by §45.29 (f) where the pilot, observer and others working with the

SUAVS will see the identification of the SUAVS 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 SUAVS is unmanned and 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 FAA ground school rather than a commercial pilot's license to operate this small SUAVS. Unlike a conventional aircraft that carries the pilot and passengers, the SUAVS 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. The level of safety provided by the requirements included herein exceeds that provided by a single individual holding a commercial pilot's certificate operating a conventional aircraft. The risks associated with the operation of the SUAVS are so diminished from the level of risk associated with commercial operations contemplated by Part 61 when drafted, that allowing operations of the SUAVS as requested with a private pilot as the PIC exceeds the present level of safety achieved 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 herein for the use of safety check lists prior to each flight, 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 SUAVS, given its size and configuration has no ability or place 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 SUAVS operation manual and appropriate checklists at the ground control point where the pilot flying the SUAVS 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: Pre-flight action

This regulation requires each pilot in command to take certain actions before flight to insure the safety of flight. As FAA approved rotorcraft flight manuals will not be provided for the aircraft an exemption will be needed. An equivalent level of safety will be provided as set forth hereinabove. The PIC will take all actions including reviewing weather, flight battery requirements, landing and takeoff distances and aircraft performance data before initiation of flight using appropriate checklists.

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.

SUAVs and remotely piloted aircraft, by their design do not have fully functional dual controls. Flight control is accomplished through the use of a radio transmitter that communicates with the aircraft via a receiver in the SUAVS. 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 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. Section 91.119 (d) allows helicopters to be operated at less than the minimums prescribed, provided the person operating the helicopter complies with any route or altitudes prescribed for helicopters by the FAA. This exemption is for a SUAVS and the exemption requests authority to operate at altitudes up to 400 AGL underneath navigable airspace and in class E and G airspace maintaining safe separation from actual aircraft, an exemption may be needed to allow such operations.

The equivalent level of safety will be achieved given the size, weight, speed of the UAS as well as the location where it is operated. No flight will be taken without the permission of the property owner or local officials. Because of the advance notice to the property owner and participants in the filming activity, attempts will be made to contact all affected individuals regarding the planned flight operations. Compared to flight operations with aircraft or rotorcraft weighting far more than the maximum 55lbs. proposed herein, and the lack of flammable fuel, any risk associated with these operations is far less than those presently presented with conventional aircraft. In addition, the low-altitude operations of the SUAVS will ensure separation between these SUAVS operations and the operations of conventional aircraft that must comply with Section 91.119.

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 SUAVS 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."

The battery powering the SUAVS provides approximately between 10-60 minutes of powered flight. To meet the 30 minute reserve requirement in 14 CFR §91.151, SUAVS flights would be limited to approximately 10 minutes in length. Given the limitations on the SUAVS proposed flight area and the location of its proposed operations within a predetermined area, a longer time frame for flight in daylight or night VFR conditions is reasonable.

Petitioner believes that an exemption from 14 CFR §91.151(a) falls within the scope of prior exemptions. *See* Exemption 10673 (allowing Lockheed Martin Corporation to operate without compliance with FAR 91.151 (a)). Operating the SUAVS in controlled area where only people and property owners or official representatives who have signed waivers will be allowed, with less than 30 minutes of flight operation time, does not give rise to the type of risks that Section 91.151(a) was intended to alleviate particularly given the size and speed of the SUAVS. Additionally, limiting SUAVS flights to 20 minutes would greatly reduce the utility for which the exemption will be granted.

Petitioner believes that an equivalent level of safety can be achieved by limiting flights to 60 minutes or no less than 10% of battery power, whichever happens first. This restriction would be more than adequate to return the SUAVS to its planned landing zone from anywhere within its limited operating area.

Similar exemptions have been granted to other operations, 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 SUAVS fully loaded weighs no more than 55 lbs and typically less than 20 lbs., and is operated without an onboard pilot. As such, there is no ability or place to carry certification and registration documents or to display them on the SUAVS.

An equivalent level of safety will be achieved by keeping these documents at the ground control point where the pilot flying the SUAVS will have immediate access to them; to the extent they are applicable to the SUAVS. 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 section and Part 43 apply only to aircraft with an airworthiness certificate, and the requirements of pre-flight inspection required herein, these sections will not apply to the applicant. Routine and pre-flight maintenance will be accomplished by the operator. An equivalent level of safety will be achieved because these SUAVS are very limited in size and will carry a very small payload and operate only in restricted areas for limited periods of time. If mechanical issues arise the SUAVS can land immediately and given its small size poses very little risk to persona or property. The operator will ensure that the SUAVS is in working order prior to initiating flight, perform required maintenance, and keep a log of any maintenance performed. Moreover, the operator is the person most familiar with the aircraft and best suited to maintain the aircraft in an airworthy condition to provide the equivalent level of safety.

7. Publication Summary

Pursuant to 14 C.F.R. Part 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, subpart H; 14 C.F.R 45.23(b);14 C.F.R. §§ 61.113(a) & (b);91.7 (a); 91.9 (b) (2);91.103(b);91.109; 91.119; 91.121; 91.151(a);91.203(a) and (b); 91.405 (a);

91.407 (a) (1); 91.409 (a) (2); 91.409 (a) (2) and 91.417 (a) & (b) to operate commercially a SUAVS vehicle (55lbs or less) for Aerial Photography Operations.

Approval of exemptions allowing commercial operations of SUAVs for aerial photography/Inspection for the following; Business Operations: over land, water-ways, and oceans; operation over/in non restricted National Parks, National Forests, flight in non-navigable airspace, using non-intrusive recording devices, operation in otherwise unrestricted US States/Territories will enhance safety by reducing risk. Conventional film operations, using jet or piston power aircraft, operate at extremely low altitudes, just feet from the subject being filmed, and in extreme proximity to people and structures; and present the risks associated with vehicles that weigh in the neighborhood of 4,000lbs, carrying large amounts of jet A or other fuel. In addition such actual certificated aircraft must fly to and from the film location. In contrast, a SUAVS weighing fewer than 55 lbs., and powered by batteries rather than fuel, eliminates virtually all of that risk. The SUAV is driven/carried to the film set, not flown. The SUAVS will carry no passengers or crew and, therefore, will not expose any crew to the risks associated with manned aircraft flights.

The operation of SUAVS, weighing less than 55 lbs., conducted in the strict conditions outlined above, will provide at least an equivalent level of safety supporting the grant of the exemptions requested herein, including exempting the Petitioner from the requirements of Part 21 and allowing commercial operations. These lightweight aircraft operate at slow speeds, close to the ground, and in a line of sight, relatively sterile environment and are, as a result, far safer than conventional operations conducted with actual aircraft/helicopters operating in close proximity to the ground and people.

8. Privacy

All business/commercial flights which occur over private or controlled access property will be with the property owner's prior consent and knowledge. Filming will be of people who have also consented to being filmed or otherwise have agreed to be in the area where filming will take place. Petitioner will not infringe on any individual or landowner privacy rights.

Limited nighttime operations may be conducted. Nighttime as defined FAR's in Section is as follows 1.1. "Night means the time between the end of evening civil twilight and the beginning of morning civil twilight, as published in the American Air Almanac, converted to local time." Night operations may be conducted by the SUAVS following the guidelines above and provided such operations have sufficient lighting so that Petitioner/Operator maintains visual line of sight. Allowing SUAVS this exemption will provide a far safer nighttime filming alternative to the current full size aircraft operations.

9. Conclusion

The FAA's purported "ban" on business/commercial Model Aircraft/UAVs operations has actually had the current effect of causing American skies to be less safe. There are many actual certificated pilots who are exceptionally qualified to fly model aircraft/SUAVS with their model aircraft/SUAVS experience, private, commercial or ATP pilot training, licenses and

instructor ratings. However, these experienced operators and licensed pilots familiar with the FARs, airspace and safe operating procedures are currently reluctant to commercially operate model aircraft/SUAVS or be involved, for fear of the FAA seeking an enforcement action against them or their actual pilot's licenses.

Presently, during the pendency of these issues in the *Pirker* case, it defies safety or regulatory logic that according to the FAA's current alleged "ban" on business operations of SUAVS, your average enthusiastic 12 year old, who's well meaning Father bought him a quad copter SUAVS equipped with a camera, can operate his SUAVS wherever he wants and take whatever recreational video/pictures subject only to the suggestions of FAA AC 91-57 and yet an FAA certificated private/commercial/ATP pilot cannot be paid to use a far higher quality and equipped SUAVS to take an aerial photo or aerially inspect a farmers field, despite the significant improvement in safety over non-pilots operating SUAVS recreationally and real aircraft used for aerial photography.

Satisfaction of the criteria provided in Section 333 of the FMRA of 2012, and requiring the SUAVS PIC to have or obtain medical certificate and a actual pilots license and considering the small size, weight, speed, operating capabilities, limited operations in proximity to airports and populated areas and operation within visual line of sight and national security – all of which provide more than adequate justification for the grant of the requested exemptions allowing business /commercial operation of applicant's SUAVS for aerial photography/ Inspection as requested herein.

If this firm can be of any further assistance in processing this request, or you have any other questions or concerns, please do not hesitate to contact me directly, in writing.

CURRAN & CURRAN LAW

Michael D. Curran, Esq./ATP/CFII/MEI

cc: James Williams, FAA
Les Dorr, FAA, Allison Duquette, FAA

Ex. 1.

Aerial Production Services, Inc., Procedures/Checklists

Preflight Checklists

Inspect Vehicle

1. Check props
2. Check screws
3. Check Radio
4. Check body/arms for cracks
5. Prepare log book
6. Review mission/Check review weather
7. Check/test batteries record voltages
8. Prepare nav/gps system
9. Radio RX/TX distance test/Check timers
10. Satellite localization/lock

Narrative Descriptions. Inspect the vehicle for previous damage like cracked chassis, loose props, motors and wires, this will ensure the safe operation of the vehicle and not a catastrophic failure of parts. Tighten all screws and record which ones are becoming loose over time. This will indicate problems with the vehicle structure and you should use more CA or thread locking liquid to keep this problem to a minimal. If you are repeatedly tightening the screws in the same spot then there is a problem with the screw hole and should be tapped or corrected. Prepare a logbook, this will ensure that you are recording the proper flight times and will indicate battery health, saving you from a failure and possible loss of vehicle. Pull out the document you use for logging your flight fill out the information that is most important: date, time, and mission information. Weather affects the performance of a vehicle and should be calculated to ensure proper weights given to your flight and battery time totals. Weather information to include as follows: Temperature, wind speed, maximum gusts, ambient temperature, humidity, dew point, barometric pressure, and any solar information that can effect your GPS. Review your mission so that you know exactly what you plan to do and what data you will gather. Check and test your batteries so that you have sufficient power for your mission. If you followed this checklist your batteries should have been charged the last time you put your vehicle away. Turn on the navigation system if applicable and verify the appropriate settings to localize the satellite signal. Check for solar flare information and gps outages in your area connected to your mission.

II. Before Flight

1. Turn on transmitter; Check set flight mode
2. Set throttle down
3. Clear flight area
4. Connect battery on the vehicle
5. Start motors

6. Verify indicator lights for proper indications/GPS locks
7. Throttle up slowly
8. Maintain visual separation from all obstructions

Narrative Descriptions: You should always be near your transmitter so that in the case of a failure you can control the vehicle to the best of your abilities and get the vehicle safely to the ground. First turn the transmitter on, with the throttle turned all the way down. Next walk over to the vehicle that you plan to fly clear area and connect the battery. You should connect the battery in a way that does not disturb the vehicle from sitting on the ground, when you plug the vehicle up it is calibrating the flight system and powering up safely. When the lights give proper indications it is safe to either pick up the vehicle safely and move it or walk away from it with your controller in your hand. To begin your flight move the sticks up slowly until the vehicle leaves the ground maintain visual separations from people, buildings, obstructions, other UAV/aircraft.

III. Post Flight/After Landing

1. Unplug battery on vehicle while near the controller
2. After battery is unplugged turn off the controller
3. Fill out log books

Narrative Descriptions: Once the vehicle has returned to the ground, walk over with your controller and disconnect the wire to the vehicle battery, this will essentially kill the power and render the vehicle in the safe to transport mode. Next you can power the controller off to save the battery life. Return the vehicle to a safe place and then locate your logbooks and recover your data.

IV. Debrief

1. Fill out logs
2. Complete calculations for batteries and flight times
3. Put away gear, vehicle and log books

DECLARATION OF SERVICE

I am employed in the County of San Diego, State of California. I am over the age of 18 and not a party to the within action. My business address is 90 N. Coast Hwy. 101, Suite 103, Encinitas, CA 92024. On October 8, 2014, I served the foregoing documents, described as:

1. Letter to the U.S. Department of Transportation dated October 7, 2014

on the parties of interest as follows:

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

(X) **BY U.S. MAIL**
I placed a true and correct copy of said document(s) in sealed a envelope(s) addressed according to the above listed parties and deposited such envelope(s) in the mail at Encinitas, California. The envelope(s) was/were mailed with postage thereon fully prepaid.

I am "readily familiar" with the firm's practice of collection and processing correspondence for mailing. It is deposited with U.S. postal service on that same day in the ordinary course of business. I am aware that on motion of the party served, service is presumed invalid if postal cancellation date or postage meter date is more than one day after date of deposit for mailing in affidavit.

( ) STATE I declare under penalty of perjury under the laws of the State of California that the above is true and correct.

(X) FEDERAL I declare that I am employed in the office of a member of the bar of this Court at whose direction the service was made.

Executed on October 8, 2014 at Encinitas, California.

Shelli Steele