



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

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

August 18, 2015

Exemption No. 12503
Regulatory Docket No. FAA–2015–1894

Mr. Nathan Factor Sacharow
Factor Aerial Imagery
2209 22nd Street
Santa Monica, CA 90405

Dear Mr. Sacharow:

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

By letter dated May 11, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Factor Aerial Imagery (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial photography.

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. However, the FAA received one comment in support of the petition made to the docket.

Airworthiness Certification

The UAS proposed by the petitioner is a DJI S1000.

The petitioner requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*. In accordance with the statutory criteria

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

The Basis for Our Decision

You have requested to use a UAS for aerial data collection¹. The FAA has issued grants of exemption in circumstances similar in all material respects to those presented in your petition. In Grants of Exemption Nos. 11062 to Astraesus 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, Factor Aerial Imagery 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, Factor Aerial Imagery 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 S1000 when weighing less than 55 pounds including payload. Proposed operations of any other aircraft will require a new petition or a petition to amend this exemption.
2. Operations for the purpose of closed-set motion picture and television filming are not permitted.
3. The UA may not be operated at a speed exceeding 87 knots (100 miles per hour). The exemption holder may use either groundspeed or calibrated airspeed to determine compliance with the 87 knot speed restriction. In no case will the UA be operated at airspeeds greater than the maximum UA operating airspeed recommended by the aircraft manufacturer.
4. The UA must be operated at an altitude of no more than 400 feet above ground level (AGL). Altitude must be reported in feet AGL.
5. The UA must be operated within visual line of sight (VLOS) of the PIC at all times. This requires the PIC to be able to use human vision unaided by any device other than corrective lenses, as specified on the PIC's FAA-issued airman medical certificate or U.S. driver's license.
6. All operations must utilize a visual observer (VO). The UA must be operated within the visual line of sight (VLOS) of the PIC and VO at all times. The VO may be used to satisfy the VLOS requirement as long as the PIC always maintains VLOS capability. The VO and PIC must be able to communicate verbally at all times; electronic messaging or texting is not permitted during flight operations. The PIC must be designated before the flight and cannot transfer his or her designation for the duration of the flight. The PIC must ensure that the VO can perform the duties required of the VO.
7. This exemption and all documents needed to operate the UAS and conduct its operations in accordance with the conditions and limitations stated in this grant of exemption, are hereinafter referred to as the operating documents. The operating documents must be accessible during UAS operations and made available to the Administrator upon request. If a discrepancy exists between the conditions and limitations in this exemption and the procedures outlined in the operating documents, the conditions and limitations herein take precedence and must be followed.

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

8. Any UAS that has undergone maintenance or alterations that affect the UAS operation or flight characteristics, e.g., replacement of a flight critical component, must undergo a functional test flight prior to conducting further operations under this exemption. Functional test flights may only be conducted by a PIC with a VO and must remain at least 500 feet from other people. The functional test flight must be conducted in such a manner so as to not pose an undue hazard to persons and property.
9. The operator is responsible for maintaining and inspecting the UAS to ensure that it is in a condition for safe operation.
10. Prior to each flight, the PIC must conduct a pre-flight inspection and determine the UAS is in a condition for safe flight. The pre-flight inspection must account for all potential discrepancies, e.g., inoperable components, items, or equipment. If the inspection reveals a condition that affects the safe operation of the UAS, the aircraft is prohibited from operating until the necessary maintenance has been performed and the UAS is found to be in a condition for safe flight.
11. The operator must follow the UAS manufacturer's maintenance, overhaul, replacement, inspection, and life limit requirements for the aircraft and aircraft components.
12. Each UAS operated under this exemption must comply with all manufacturer safety bulletins.
13. Under this grant of exemption, a PIC must hold either an airline transport, commercial, private, recreational, or sport pilot certificate. The PIC must also hold a current FAA airman medical certificate or a valid U.S. driver's license issued by a state, the District of Columbia, Puerto Rico, a territory, a possession, or the Federal government. The PIC must also meet the flight review requirements specified in 14 CFR § 61.56 in an aircraft in which the PIC is rated on his or her pilot certificate.
14. The operator may not permit any PIC to operate unless the PIC demonstrates the ability to safely operate the UAS in a manner consistent with how the UAS will be

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

15. UAS operations may not be conducted during night, as defined in 14 CFR § 1.1. All operations must be conducted under visual meteorological conditions (VMC). Flights under special visual flight rules (SVFR) are not authorized.
16. The UA may not operate within 5 nautical miles of an airport reference point (ARP) as denoted in the current FAA Airport/Facility Directory (AFD) or for airports not denoted with an ARP, the center of the airport symbol as denoted on the current FAA-published aeronautical chart, unless a letter of agreement with that airport's management is obtained or otherwise permitted by a COA issued to the exemption holder. The letter of agreement with the airport management must be made available to the Administrator or any law enforcement official upon request.
17. The UA may not be operated less than 500 feet below or less than 2,000 feet horizontally from a cloud or when visibility is less than 3 statute miles from the PIC.
18. If the UAS loses communications or loses its GPS signal, the UA must return to a pre-determined location within the private or controlled-access property.
19. The PIC must abort the flight in the event of unpredicted obstacles or emergencies.
20. The PIC is prohibited from beginning a flight unless (considering wind and forecast weather conditions) there is enough available power for the UA to conduct the intended operation and to operate after that for at least five minutes or with the reserve power recommended by the manufacturer if greater.
21. Air Traffic Organization (ATO) Certificate of Waiver or Authorization (COA). All operations shall be conducted in accordance with an ATO-issued COA. The exemption holder may apply for a new or amended COA if it intends to conduct operations that cannot be conducted under the terms of the attached COA.
22. All aircraft operated in accordance with this exemption must be identified by serial number, registered in accordance with 14 CFR part 47, and have identification

(N-Number) markings in accordance with 14 CFR part 45, Subpart C. Markings must be as large as practicable.

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

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

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

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

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

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

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

Sincerely,

/s/

John S. Duncan

Director, Flight Standards Service

Enclosures

May 11, 2015

United States Department of Transportation
Docket Management System
1200 New Jersey Ave., SE
West Building Ground Floor Room W12-140
Washington, DC 20590

Re: Exemption Request Pursuant to Section 333 of the FAA Reform Act of 2012

Dear Sir or Madam:

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (the Reform Act) and C.F.R. Part 11, Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery, owner and operator of Small Unmanned Aircraft Systems (UAS's), request to be exempted from the Federal Aviation Regulations (FAR) listed below so that Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery may operate UAS's commercially in airspace regulated by the Federal Aviation Administration; as 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.

The Name and address of the applicant is:

Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery

Nathan Factor Sacharow
2209 22nd St Santa Monica, CA 90405
Business Name: Factor Aerial Imagery
Phone: (310) 383-2238
[email: nsacharow@verizon.net](mailto:nsacharow@verizon.net)

As described below, the requested exemption would permit the operation of lightweight (less than 55 lbs total take off gross weight) UAS's under controlled conditions for commercial use by professional certificated pilots thereby enhancing 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 Reform Act.

Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery

Respectfully requests the grant of an exemption to the following specific sections of the Title 14 Code of federal Regulations allowing it to operate lightweight UAS's for commercial use:

14 CFR 21, subpart H, 14 CFR 45.23(b), 14 CFR 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)

Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery
Submits this application in accordance with the Reform Act, 112 P.L. 95 331-334, and seeking relief from any currently applicable FAR's operating to prevent Nathan F.

Sacharow, operating under the business name of Factor Aerial Imagery, future commercial use of small UAS's to operate in the national airspace system as described below. The Reform Act Section 332 provides for such integration of civil unmanned aircraft systems into our national airspace system as it is in the public's interest to do so Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery lightweight UAS's meet the definition of "small unmanned aircraft" as defined in section 331 and therefore the integration of Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery lightweight UAS's are expressly contemplated by the Reform Act. Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery would like to operate its lightweight UAS's prior to the time period by which the Reform Act requires the FAA to promulgate rules governing such aircraft.

The Reform Act 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 Secretary is required to determine which types of UAS's 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
- Operation of the UAS within visual line of sight of the operator Reform Act 333 (a)

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."

Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery UAS's are rotorcraft weighing less than 55 pounds including payload. They operate at a speed of less than 50 knots and have the capability to hover and move in the vertical and horizontal plane simultaneously. The UAS will operate only within the line of sight of the pilot within a protected flight area as described below. Such operations will insure that the UAS's will not create a hazard to the users of the national airspace system or the public.

The small nature of the UAS's utilized by Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery combined with the safety protocols outlined below will allow for a greater than equivalent level of safety in which Congress envisioned that the FAA must, by exemption allow commercial operations of UAS's to commence immediately. Also due to the size of the UAS's and the areas and altitudes they will operate, approval of the exemption presents no national security issue and absolutely minimal safety concerns which have been mitigated through a rigorous risk management process. Given the clear direction given in Section 333 of the Reform Act, the authority contained in the Federal Aviation Act, as amended; the strong equivalent level of safety surrounding the proposed operations, the significant public benefit, including enhanced safety, reduced emissions utilizing UAS's verse traditional aircraft as

well as the economic impact of greatly reducing the cost of aerial photography thereby benefiting the greater public's interest. Accordingly, the applicant requests that the FAA grant the requested exemption without delay.

The following limitations are considered to be binding for the operation of UAS's for commercial purposes by Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery:

1. Flights will be operated within the line-of-sight of a ground-based pilot.
2. Flights will only occur in the daytime and clear of clouds.
3. The UAS's will weigh less than 55lbs at takeoff and during flight.
4. Flights will be terminated with 25% of battery life remaining.
5. Flights will be operated at an altitude at or below 400' AGL.
6. Pilots, camera operators and observers will be trained as to the applicable portion of the UAS's manual as well as the SOP's.
7. Minimum UAS crew will be one certificated Commercial pilot or higher rating with a current FAA medical. A camera operator and or observer may be added as required to further reduce the possibility of task saturation by the pilot depending on the mission requirements.
8. Pilot, observer and camera operator will maintain real time communication capability throughout flight operations.
9. The UAS Pilot will conduct a full site survey to determine the Area of Responsibility (AOR). This AOR is the actual area for UAS operations for a particular day. Each survey will include the assessment of potential hazards to include but not limited to airspace classification, NOTAMS, temporary flight restrictions, closest airport proximity, natural and manmade obstacles, and unnecessary persons which may pose a risk to operations or safety. If deemed necessary, the crew will employ additional personal as safety observers.
10. Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery, will employ safety observers as well as sign notifications in areas close to public activity.
11. A thorough briefing will be conducted, prior to the first flight of the day in an AOR, utilizing the briefing guide in the SOPs. All persons who will be in the AOR while UAS flights are conducted will be present for this briefing.
12. Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery, will obtain consent (verbal or written) for any persons who need to be within 100 feet of UAS flight operations.
13. Written and or verbal permission from the relevant property owners will be obtained prior to flight.
14. All required permissions and permits would be obtained from territorial, state, county or city jurisdictions, including local law enforcement, fire or other governmental agencies.
15. If the UAS loses communications or loses its GPS signal, the UAS will have the capability to return to a pre-determined location within the AOR and land autonomously.
16. The UAS will have the ability to abort a flight in case of unpredicted obstacles or emergencies.

14 C.F.R Part 21 Subpart H: Airworthiness Certificates 14 C.F.R. 91.7(a), 91.203 (a)(1)

Subpart H, entitled Airworthiness Certificates, sets forth requirements for procurement of necessary airworthiness certificates in relation to FAR 91.203(a)(1) The size, weight and defined area of operations for Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery UAS flights permits exemption from Part 21 because Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery meets an equivalent level of safety pursuant to Section 333 of the Reform Act. The FAA is authorized to exempt aircraft from the airworthiness certificate requirement under both the ACT (49 U.S. C. 44701(f)) and Section 333 of the Reform Act. Both pieces of legislation permit the FAA to exempt UAS's from the airworthiness certificate requirement in consideration of weight, size, speed, maneuverability and proximity to areas such as airports and dense populations. Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery meets or exceeds each of these elements.

14 C.F.R. 91.203 (a &b) provides for carrying of civil aircraft certifications and registrations. They are inapplicable for the same reasons stated above. The equivalent level of safety will be achieved by maintaining such certifications and registrations at SCI's flight operations center.

14 C.F.R. 91.7(a) prohibits the operation of an aircraft without an airworthiness certificate. As no such certificate will be applicable in the form contemplated by the FARs, this regulation is inapplicable.

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

14 C.F.R. 91.9(b)(2) requires an aircraft flight manual in the aircraft. As there are no pilots of passengers, and given the size of the UAS's, this regulation is inapplicable. An equivalent level of safety will be achieved by maintaining an operators manual at the flight operations center. The FAA has previously issued exemptions to this regulation in Exemption Nos. 8607, 8737, 8738, 9299, 9299A, 9565, 9565B, 10167, 10167A, 10602, 10700 and 32827.

14 C.F.R. 91.103(b) Preflight actions

14 C.F.R. 91.103 Each pilot in command shall, before beginning a flight, become familiar with all available information concerning that flight. This information must include: (b) For any flight, runway lengths at airports of intended use, and the following takeoff and landing distance information. This subparagraph is not applicable due to our off airfield operations.

14 C.F.R. 91.109 Flight instructions; simulated instrument flight and certain flight

tests.

14 C.F.R. 91.109 and all the subparagraphs address the operation of a civil manned aircraft in conjunction with training and flight tests. The UAS to be employed by are not Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery, designated in this category.

14 C.F.R. 91.121 Altimeter Settings

14 C.F.R. 91.121 regarding altimeter settings is inapplicable because Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery, UAS's utilize GPS systems and internal gyroscopes to provide spatial stability and a reference datum.

14 C.F.R. 91.151 Fuel Requirements for Flight in VFR Conditions

14 C.F.R. 91.151 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 UAS provides approximately 25 minutes of powered flight, which is less than the reserve requirement alone by FARs for day or night VFR flight. Given the limitations on the UAS's flight envelope, proposed AOR size, battery life and its ability to land immediately it is reasonable to allow an exception.

An equivalent level of safety can be achieved by limiting flights to 25% of battery power. This restriction would be more than adequate to return the UAS to its planned landing zone in the AOR.

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

14 C.F.R. 45.23 Marking of the Aircraft

Applicable Codes of Federal regulations require aircraft to be marked according to certain specifications. Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery UAS's are unmanned; do not have a cabin, cockpit or pilot station on which to mark certain words or phrases. Further, two-inch lettering is impractical to place on such small aircraft. Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery will, however, place the word "EXPERIMENTAL" on its fuselage as required by 14 C.F.R. 45.29 (f) so that the pilot, camera operator, observer and any other persons operating in the AOR can see the markings on the UAS. The FAA has previously

issued exemptions to this regulation through Exemptions Nos. 8738, 10167, 10167 A, and 10700.

14 C.F.R. 91.119 Minimum Safe Altitudes

14 C.F.R. 91.119 prescribes safe altitudes for the operation of civil aircraft. It allows helicopters to be operated at lower altitudes in certain conditions. Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery will only operate its UAS's at or below 400 AGL. SCI will operate its UAS's in a defined AOR that has been carefully reviewed for hazards and minimizes the presence of any persons not essential for operations. Flights will only be conducted over private property with consent of the property owner. The equivalent level of safety will be achieved given the size, weight and speed of the UAS as well as the location where it is operated. Compared to flight operations with traditional aircraft or rotorcraft weighing far more than 55lbs, operating below 500 AGL with flammable fuel UAS operations present a far smaller risk.

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 the aircraft inspected as prescribed in subpart E of this part and shall between required inspections, except as prescribed 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.

These regulations only apply to aircraft with an airworthiness certificate. They will not, therefore, apply to Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery UAS's should its requested exemption be granted. As an equivalent level of safety Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery requires its pilots to conduct a preflight, through flight and post flight inspection of the UAS to ensure flight worthiness prior to launch. Each UAS is flown in compliance with the applicable manufactures manual to include all software update cycles as well as flight checklists. In the event of a malfunction the UAS can land immediately.

Privacy

All flights will occur over private or controlled access property with the property owner's prior consent and knowledge.

Summary

Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery is seeking exemption from the following rules:

14 CFR 21, subpart H, 14 CFR 45.23(b), 14 CFR 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).

Approval of the above exemptions allowing commercial operations of small UAS's in the service of aerial photography will greatly enhance safety by reducing the overall risk associated with traditional aircraft. Traditional aerial photography requires large aircraft weighing thousands of pounds and carrying hundreds of pound of fuel presenting a significant risk to life and property. With Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery use of small UAS's weighing less than 55 lbs, powered by batteries and operating at or below 400 AGL they virtually eliminate all of the risk associated with traditional aerial photography. The UAS's will carry no people thereby eliminating the exposure to the risks associated with flying while accomplishing the same task in a much safer manner.

Granting Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery the above exemptions will allow for the expansion of UAS systems into the future, in a professional, safety conscious culture steep in the tradition of Aviation.

Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery, respectfully requests that the FAA grant its exception without delay. The FAA has the authority to issue the exemption sought by Nathan F. Sacharow, operating under the business name of Factor Aerial Imagery pursuant to the Federal Aviation Act, 85 P.L. 726 (1958), as amended (the "Act").

Sincerely,

Nathan F. Sacharow
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