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

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

August 26, 2015

Exemption No. 12602
Regulatory Docket No. FAA–2015–1810

Mr. Peter Sachs
3 Weir Street
Branford, CT 06405

Dear Mr. Sachs:

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 12, 2015, you petitioned the Federal Aviation Administration (FAA) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial photography and videography.

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 Tailor Toys PowerUp 3.0.

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]. 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, Mr. Peter Sachs 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

[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.

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.

Conditions and Limitations

In this grant of exemption, Mr. Peter Sachs 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 Tailor Toys PowerUp 3.0 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

PETER SACHS, ESQ.

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May 12, 2015

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

RE: Petition for Exemption from Certain Federal Aviation Regulations, Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012.

Dear Sir/Madam:

In 2012, Congress passed the FAA Modernization and Reform Act ("FMRA"). In Section 333 of that Act, Congress directed the Secretary of Transportation to consider whether certain unmanned aircraft ("UA") may be operated safely in the national airspace system ("NAS") prior to the Federal Aviation Administration's ("FAA") completion of the rulemaking Congress had ordered under the Act's Section 332. *(FMRA §333(a)).*

In making that determination, the Secretary is required to consider whether a UA, "as a result of [its] size, weight, speed, operational capability, proximity to airports and populated areas, and operation within visual line of sight do[es] not create a hazard to users of the national airspace system or the public or pose a threat to national security," and "whether a certificate of waiver, certificate of authorization, or airworthiness certification under section 44704 of title 49." *(FMRA §333(b)).*

If the Secretary determines "that certain unmanned aircraft systems may operate safely in the national airspace system, the Secretary shall establish requirements for the safe operation of such aircraft systems in the national airspace system." *(FMRA §333(c)).*

To that end, and pursuant to the FMRA's Section 333, and in accordance with the procedures set forth in 14 C.F.R. Sections 11.15, 11.61 and the relevant portions of 14 C.F.R. Sections 11.63 through 11.103, I hereby submit this petition for an exemption from certain of the Federal Aviation Regulations ("FARs") addressed more specifically below, so that I may operate a small UA commercially in the NAS.[1]

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[1] Petitioner takes no position with respect to what FAA regulations, if any, apply to the proposed operations. Petitioner assumes solely for purposes of this petition that the FAA's position is an exemption from the indicated aviation regulations may be required.

THE PETITIONER:

My name and contact information is:

Peter Sachs
3 Weir Street
Branford, CT 06405
(203) 871-3393
peter@dronelawjournal.com

I am an FAA-certified airman and have been for over 30 years, since 1983. I hold an FAA-issued Commercial Pilot license with a rotorcraft-helicopter rating, and an FAA-issued Ground Instructor license with an Advanced Rating. (FAA Certificate #3614280)[2].

I received my flight training at FlightSafety Academy in Vero Beach, FL. I have managed two fixed-based operations— one at Tweed-New Haven Airport in New Haven, CT and the other at Van Nuys Airport in Van Nuys, CA. I have flown small UAs regularly for hobby and recreation, and in the course of my duties as a volunteer member of a fire department for several years.

Given my aviation training, certification and background, I already possess sufficient aeronautical knowledge and experience to operate safely at all times in the NAS. By virtue of having certified me as a Commercial Helicopter Pilot and an Advanced Ground Instructor, it stands to reason that the FAA would equally believe I possess sufficient aeronautical knowledge and experience to operate safely at all times in the NAS.

I am also an attorney with a concentration in drone law, the publisher of DroneLawJournal.com, the founder of the Drone Pilots Association and an avid photographer. I am in good health and I have no vision problems. My valid, Connecticut-issued driver license contains no restrictions.

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[2] At this writing, neither of my FAA-issued licenses is current, and I do not hold any current medical certificate.

THE UNMANNED AIRCRAFT:

The UA that I am requesting to operate commercially is a "powered" paper airplane known as the "PowerUp 3.0[3]," manufactured by Tailor Toys L.L.C. The specifications of the UA are:

Structure:	Carbon fiber; glass reinforced nylon impact resistant cockpit and motor mount; and a rubber tip for dampening impacts on crashes and avoiding injury.
Control Software:	iOS & Android mobile applications.
Connectivity:	Bluetooth 4.0
Battery:	Internal lithium polymer 75mAh, with built-in protection circuit.
Dimensions:	20cm (7.9in) length. Width varies depending upon paper size and paper folding method.
Weight of motor:	9gr (0.32oz).
Weight of camera:	5gr (0.18oz).
Weight of paper:	5gr (0.18oz).
Total takeoff weight:	19gr (0.67oz).
Speed:	5 m/s (18 km/h) or 16.4 f/s (11.184 mph).
Control range:	40-50m / (120-180f) radius from operator.
Safety system:	If communication with UA is lost due to it flying beyond the control range, the smart phone app will automatically shut the airplane's motor off, allowing the UA to glide down to the surface.
Flight time:	5-10 minutes.

REASON FOR REQUESTING AN EXEMPTION:

I intend to operate my UA commercially by conducting aerial photography and videography, both at the request of others and absent anyone's request, but in either case with the intent to create saleable art.

THE EQUIVALENT LEVEL OF SAFETY:

Due to the size, weight, speed and limited operational capabilities of the UA I intend to operate pursuant to an FAA-granted exemption, an equivalent or higher level of safety will exist than performing the same operations with a manned aircraft under existing regulations. I agree to be bound by the following limitations and conditions when conducting commercial operations with the UA under an FAA-granted exemption include:

- The majority of the UA structure (fuselage and wings) will be composed of paper, a frangible material.

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[3] Manufacturer's website: http://www.poweruptoys.com

- The UA will have a weight of 19-grams, which is approximately 1/1,232th of the maximum allowable weight of 55 lbs, and approximately 1/110th of the 4.4 lbs weight limit proposed under the NPRM's "Micro UAS" proposal.
- The UA will have a maximum operating speed of no more than 12 mph, which is no more than 12% the speed of the maximum allowable operating speed of 100 mph and less than 50% the speed of the 30 knots proposed under the NPRM's Micro UAS proposal.
- All flights will be operated within line of sight of the Pilot in Command ("PIC").
- The average maximum flight time for each operational flight will be approximately 5-10 minutes.
- All flights will be operated at an altitude no greater than 180 feet Above Ground Level ("AGL"), which is slightly more than one-half the length of a football field.
- The UA operator will be a designated PIC.
- The PIC will plan the operations prior to each flight.
- The PIC will inspect the UA prior to each flight to ensure the UA may be flown safely and not present any actual hazard to any persons or property.
- The PIC will be trained in the operation of the UA, and will have the requisite experience flying the type of UA to be flown.

REGULATIONS FROM WHICH EXEMPTION IS REQUESTED:

- 14 C.F.R. Part 21, Subpart H;
- 14 C.F.R. 45.23(b);
- 14 C.F.R. 61.3;
- 14 C.F.R. 61.113(a)&(b);
- 14 C.F.R. 91.7(a);
- 14 C.F.R. 91.9(b)(2);
- 14 C.F.R. 91.103(b);
- 14 C.F.R. 91.109;
- 14 C.F.R. 91.119;
- 14 C.F.R. 91.121;
- 14 C.F.R. 91.126;
- 14 C.F.R. 91.127;
- 14 C.F.R. 91.129;
- 14 C.F.R. 91.130;
- 14 C.F.R. 91.131;
- 14 C.F.R. 91.133;
- 14 C.F.R. 91.137;
- 14 C.F.R. 91.138;
- 14 C.F.R. 91.139;
- 14 C.F.R. 91.141;
- 14 C.F.R. 91.143;
- 14 C.F.R. 91.144;
- 14 C.F.R. 91.145;
- 14 C.F.R. 91.151(a);
- 14 C.F.R. 91.203(a)&(b);

- 14 C.F.R. 91.405(a);
- 14 C.F.R. 91.407(a)(1);
- 14 C.F.R. 91.409(a)(2); *and*
- 14 C.F.R. 91.417(a)&(b).

REASONS EXEMPTIONS FROM CERTAIN REGULATIONS ARE REQUESTED:

14 C.F.R. Part 21, Subpart H: Airworthiness Certificates. 14 C.F.R. §91.203(a)(1) establishes the procedural requirements for the issuance of airworthiness certificates required under FAR §91.203(a)(1). If the FAA believes this regulation applies to my UA, I request an exemption.

Both 49 U.S.C. §44701(f)) and Section 333 of the FMRA authorize the FAA to exempt certain aircraft from the requirement for an airworthiness certificate, upon consideration of the size, weight, speed and operational capabilities. Due to the size, weight, speed and limited operational capabilities of the UA I intend to operate, an exemption from Part 21 Subpart H would satisfy the requirements of an equivalent level of safety under Part 11 and Section 333 of the FMRA, as the FAA might believe is required for me to fly my UA commercially.

The UA I intend to operate weighs *far* less than 55 lbs — $1/110^{th}$ of that to be precise. It carries neither a pilot nor a passenger. It carries no flammable liquid fuels. As such, the UA I wish to operate *without* an airworthiness certificate will be at least as safe, and indeed far safer than any manned aircraft (fixed wing or rotorcraft) operating *with* an airworthiness certificate issued under 14 C.F.R. Part 21, Subpart H. Moreover, the size, weight, speed and limited operational capabilities of the UA I intend to operate demonstrate that it would present no credible threat whatsoever to national security.

14 C.F.R. §45.23(b). Marking of the Aircraft. This 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 UA will have no airworthiness certificate, the FAA might believe an exemption would be required, as the UA has no entrance to any cabin, and no cockpit or pilot station on which the word "Experimental" could be placed. Given the size of the UA, two-inch lettering will be impossible. If it is determined to be required, the word "Experimental" will be displayed

on the fuselage in compliance with §45.29(f), and the equivalent level of safety will be provided.

14 C.F.R. §61.3 Requirement for certificates, ratings, and authorizations. This regulation requires, in relevant part, that no person may serve as a "required pilot flight crewmember" of a civil aircraft of the United States, unless that person has a pilot certificate issued under Part 61. 14 C.F.R. 1.1 defines "crewmember" as "a person assigned to perform duty *in* an aircraft during flight time." I request an exemption from this regulation.

Although my FAA-issued commercial pilot license with a rotorcraft-helicopter rating and ground instructor license with an advanced rating are not current, I nonetheless have over 30 years of aeronautical, meteorological, and airspace knowledge and experience. Incurring the enormous expense of becoming current in a manned helicopter to be considered qualified to fly a 19-gram paper airplane would be excessively burdensome.

Moreover, as an operator of a UA, I would never be performing *any* duties *in* an aircraft since it would be impossible for me to do so. I would, at all times, be *outside* of the UA. Thus, I would not be a crewmember at all under 14 C.F.R. 1.1, much less a "required pilot flight crewmember" under 14 C.F.R. §61.3. As such, the latter regulation would not even apply to me, as it contains no requirement for airman certification for non-crewmembers.

I am aware that the FAA has stated that it believes FMRA Section 333 does not provide it with the flexibility to exempt persons from what it perceives to be statutory requirements to hold an airman certificate found under §44711. Even if that were true, that statute would not require me to hold an airman certificate in any instance to conduct commercial activities with the UA I intend to fly.

49 U.S. Code §44711 reads, in relevant part, that "a person may not operate a civil aircraft *in air commerce* … without an airman certificate authorizing the airman to serve in the capacity for which the certificate was issued." 49 U.S. Code §44711 (a)(1) and 49 U.S. Code §44711(a)(2). *(Emphasis added.)*

"Air commerce," in turn, is defined under 49 U.S. Code §40102(a)(3). It reads, "'air commerce' means foreign air commerce, interstate air commerce, the transportation of mail by aircraft, the operation of aircraft within the limits of a Federal airway, or the operation of aircraft that directly affects, or may endanger safety in, foreign or interstate air commerce.

If the requested exemption is granted, I have neither the intent nor the ability to engage in "air commerce" as defined by statute. I would not be able to fly my UA in "foreign air commerce," "interstate air commerce" or operate my UA "within the limits of a Federal airway." Nor would my 19-gram paper airplane remotely "endanger safety in foreign or interstate air commerce." Therefore, and for the aforementioned reasons, I request an exemption from 14 C.F.R. §61.

The FAA has further stated that it believes FMRA Section 333 does not provide it with the flexibility to exempt persons from §44711 because "the Transportation Security Administration (TSA) conducts security screenings of certificated airmen. UAS operations authorized under Section 333 will only be conducted by airmen with valid airmen certificates, which have been screened by TSA, thereby meeting the statutory requirement in Section 333 for operations to not pose a threat to national security." However, as a certified airman, I have already been vetted by the TSA[4], and I was obviously not considered to be a threat to national security since my certificate remains valid.

Therefore, for the aforementioned reasons, the FAA *does* have flexibility to exempt me from 14 C.F.R. 61.3 and I request an exemption from this regulation.

14 C.F.R. §61.113(a) and (b): Private Pilot Privileges and Limitations. Pursuant to 14 C.F.R. 61.113 (a) & (b), no person who holds a private pilot certificate may act as a pilot in command of an aircraft that is carrying passengers or property for compensation or hire. I request an exemption from this regulation.

Given the size, weight, speed and limited operational capabilities of the UA to be flown, my UA may achieve an equivalent level of safety as achieved by current regulations because it does not carry any pilots, nor any passengers or property for compensation or hire. The risks attendant to the operation of my UA are far less than the risk levels inherent in the commercial activities outlined in 14 C.F.R. 61.

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4 *"In early 2009, TSA performed a biographic name-based security threat assessment for every individual airman certificate issued by FAA."* Transportation Security Administration (TSA) Vetting of Airmen Certificates and General Aviation Airport Access and Security Procedures (OIG-11-96 July 2011) (Page 2, last paragraph, sentence 2.) See: http://www.oig.dhs.gov/assets/Mgmt/OIG_11-96_Jul11.pdf

"Since 2009, TSA has continuously vetted all new and existing FAA airman certificate holders against the Terrorist Screening Database" GAO Report: General Aviation Security: TSA's Process for Ensuring Foreign Flight Students Do Not Pose a Security Risk Has Weaknesses (GAO-12-900T: Jul 18, 2012) (Paragraph 7, sentence 1.) See: http://gao.gov/products/GAO-12-900T

14 C.F.R. §91.7(a): Civil Aircraft Airworthiness. This 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 if this exemption is granted, no FAA regulatory standard will exist for determining airworthiness. I request an exemption from this regulation.

Given the size, weight, speed and limited operational capabilities of the UA to be flown, regular maintenance and use of a safety checklist prior to each flight will provide an equivalent level of safety.

14 C.F.R. §91.9(b)(2): Civil Aircraft Flight Manual in the Aircraft. This regulation provides that "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." I request an exemption from this regulation.

Given the size, weight, speed and limited operational capabilities of the UA to be flown, it is not possible to carry such a flight manual onboard the aircraft, and there would be no pilot on board to read it. The equivalent level of safety will be maintained either by writing the operating instructions on the UA itself, or by keeping the operating instructions at the ground control point where I will be flying my UA, where I will have immediate access to it.

14 C.F.R. §91.103: Preflight Action. This regulation requires, in relevant part, that each pilot in command take certain actions before each flight to ensure the safety of flight, including familiarizing oneself with "runway lengths at airports of intended use, takeoff and landing distance information," and "other reliable information appropriate to the aircraft, relating to aircraft performance under expected values of airport elevation and runway slope, aircraft gross weight, and wind and temperature." I request an exemption from this regulation.

Since I will not be taking off from or landing upon any airport runways, takeoff and landing distance information, airport elevation and runway slope will not be relevant to my UA operations. Given the size, weight, speed and limited operational capabilities of my UA, aircraft gross weight, and wind and temperature will also not be relevant to my UA operations. Lastly, FAA-approved flight manuals do not exist for my UA.

Nonetheless, I will still take all actions necessary pre-flight actions to ensure the airworthiness of

the UA and the safety of each flight. Given the size, weight, speed and limited operational capabilities of the UA to be flown the equivalent level of safety will be provided.

14 C.F.R. §91.109: Flight Instruction. This regulation 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. I request an exemption from this regulation.

I have no intention to, nor will I, use my UA to conduct flight instruction, nor are dual controls technically possible with my UA. Therefore, an equivalent level of safety will be provided.

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. I request an exemption from this regulation.

As set forth above, the UA I intend to operate will never operate above 180 feet. The equivalent level of safety will be provided due to the size, weight, speed and limited operational capabilities of the UA. Compared to flight operations with manned aircraft weighing far more than the 19-gram UA I intend to fly, coupled with the lack of flammable fuel, any risk associated with my intended operations is essentially nonexistent when compared to those presented by manned aircraft operating at or below 500 AGL. In addition, the extremely low-altitude operations of the UA I intend to fly will ensure significant separation between the UA operations and the operations of manned 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." I request an exemption from this regulation.

Since the UA I intend to fly does not have and cannot have a barometric altimeter or a GPS altitude read out, an exemption is necessary. An equivalent level of safety will be achieved by the size, weight, speed and limited operational capabilities of the UA.

14 C.F.R. §91.126 Operating on or in the vicinity of an airport in Class G airspace. This regulation requires, in relevant part, that each person operating an aircraft on or in the vicinity of an airport in a Class G airspace area must maintain two-way radio communications with the

control tower prior to 4 nautical miles from the airport. I request an exemption from this regulation.

Since the UA to be flown does not and cannot have a two-way radio, and given the size, weight, speed and limited operational capabilities of the UA, an equivalent level of safety will be provided.

14 C.F.R. §91.127 Operating on or in the vicinity of an airport in Class E airspace. This regulation requires, in relevant part, that each person operating an aircraft on or in the vicinity of an airport in a Class E airspace area must maintain two-way radio communications with the control tower prior to 4 nautical miles from the airport. I request an exemption from this regulation.

Since the UA to be flown does not and cannot have a two-way radio, and given the size, weight, speed and limited operational capabilities of the UA, an equivalent level of safety will be provided.

14 C.F.R. §91.129 Operations in Class D airspace. This regulation requires, in relevant part, that each person operating an aircraft in Class D airspace must comply with §§91.126 and 91.127 and the two-way radio communications with the control tower prior to entering that airspace and thereafter maintain those communications while within that airspace. I request an exemption from this regulation.

Since the UA to be flown does not and cannot have a two-way radio, and given the size, weight, speed and limited operational capabilities of the UA, an equivalent level of safety will be provided.

14 C.F.R. §91.130 Operations in Class C airspace. This regulation requires, in relevant part, that each person operating an aircraft in Class C airspace must comply with §91.129 and that the aircraft must be equipped with the applicable equipment specified in §91.215 (a transponder and automatic altitude reporting equipment). I request an exemption from this regulation.

Since the UA to be flown does not and cannot have a two-way radio or a transponder, and given the size, weight, speed and limited operational capabilities of the UA, an equivalent level of safety will be provided.

14 C.F.R. §91.131 Operations in Class B airspace. This regulation requires, in relevant part,

that each person operating an aircraft in Class B airspace, must comply with §91.129; must receive prior ATC clearance from the ATC facility having jurisdiction for that area; must hold a certain level of pilot certification; and the aircraft must be equipped with the applicable equipment specified in §91.215 (a transponder and automatic altitude reporting equipment). I request an exemption from this regulation.

Since the UA to be flown does not and cannot have a two-way radio or a transponder, an equivalent level of safety will be achieved by virtue of the size, weight, speed and limited operational capabilities of the UA.

14 C.F.R. §91.133 Restricted and prohibited areas. This regulation requires, in relevant part, that no person may operate an aircraft within a restricted area (as designated in Part 73), contrary to the restrictions imposed, or within a prohibited area, unless that person has the permission of the using or controlling agency, as appropriate. I request an exemption from this regulation.

Since the UA to be flown would not present any credible threat to anything or anyone restricted and prohibited areas are intended to protect, and given the size, weight, speed and limited operational capabilities of the UA, an equivalent level of safety will be provided.

14 C.F.R. §91.137 Temporary flight restrictions in the vicinity of disaster/hazard areas. This regulation requires, in relevant part, that no person may operate an aircraft within an area designated by the Administrator though a Notice to Airmen (NOTAM), as one in which temporary flight restrictions apply due to certain hazards or conditions unless certain conditions are met. I request an exemption from this regulation.

Since the UA to be flown would not present any credible hazards to persons or property on the surface, and given the size, weight, speed and limited operational capabilities of the UA, an equivalent level of safety will be provided

14 C.F.R. §91.138 Temporary flight restrictions in national disaster areas in the State of Hawaii. This regulation requires, in relevant part, that no person may operate an aircraft within an area in Hawaii, designated by the Administrator though a Notice to Airmen (NOTAM), as one in which temporary flight restrictions apply due to certain hazards or conditions unless certain conditions are met. I request an exemption from this regulation.

Since the UA to be flown would not present any hazards to persons and property on the surface,

an equivalent level of safety will be achieved by virtue of the size, weight, speed and limited operational capabilities of the UA.

14 C.F.R. §91.139 Emergency air traffic rules. This regulation requires, in relevant part, that no person may operate an aircraft, or other device governed by the regulation concerned, within airspace designated by the Administrator though a Notice to Airmen (NOTAM), whenever the Administrator determines that an emergency condition exists, or will exist, relating to the FAA's ability to operate the air traffic control system and during which normal flight operations under this chapter cannot be conducted consistent with the required levels of safety and efficiency. I request an exemption from this regulation.

Since the UA to be flown, given its size, weight, speed and limited operational capabilities, would not be conducted inconsistent with the required levels of safety and efficiency, an equivalent level of safety will be provided.

14 C.F.R. §91.141 Flight restrictions in the proximity of the Presidential and other parties. This regulation requires, in relevant part, that no person may operate an aircraft over or in the vicinity of any area to be visited or traveled by the President, the Vice President, or other public figures contrary to the restrictions established by the Administrator and published in a Notice to Airmen (NOTAM). I request an exemption from this regulation.

Since the UA to be flown would present no credible danger whatsoever to those intended to be protected by the regulation, an equivalent level of safety will be provided.

14 C.F.R. §91.143 Flight limitations in the proximity of space flight operations. This regulation requires, in relevant part, that when a Notice to Airmen (NOTAM) is issued in accordance with this section, no person may operate any aircraft of U.S. registry, or pilot any aircraft under the authority of an airman certificate issued by the Federal Aviation Administration, within areas designated in a NOTAM for space flight operation except when authorized by ATC. I request an exemption from this regulation.

Since the UA to be flown would present no credible danger whatsoever to any space flight operation intended to be protected by the regulation, and given the size, weight, speed and limited operational capabilities of the UA, an equivalent level of safety will be provided.

14 C.F.R. §91.144 Temporary restriction on flight operations during abnormally high

barometric pressure conditions. This regulation requires, in relevant part, that absent a waiver, no person may operate an aircraft or initiate a flight when any information indicates that barometric pressure on the route of flight currently exceeds or will exceed 31 inches of mercury. I request an exemption from this regulation.

Given the size, weight, speed and limited operational capabilities of the UA to be flown, operation can be conducted with a more than acceptable level of safety, and an equivalent level of safety will be provided.

14 C.F.R. §91.145 Management of aircraft operations in the vicinity of aerial demonstrations and major sporting events. This regulation provides that the FAA will issue a Notice to Airmen (NOTAM) designating an area of airspace in which a temporary flight restriction applies when it determines that a temporary flight restriction is necessary to protect persons or property on the surface or in the air, to maintain air safety and efficiency, or to prevent the unsafe congestion of aircraft in the vicinity of an aerial demonstration or major sporting event. I request an exemption from this regulation.

Given the size, weight, speed and limited operational capabilities of the UA to be flown, the UA would not present any credible hazard to persons or property on the surface or in the air; will not have any effect on air safety and efficiency; and will not cause any unsafe congestion of aircraft in the vicinity of an aerial demonstration or major sporting event, and an equivalent level of safety will be provided.

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." I request an exemption from this regulation.

The UA I intend to fly provides approximately 5-10 minutes of sustained flight and uses no liquid fuel. Given the size, weight, speed and limited operational capabilities of the UA to be flown, none of the risks that Section 91.151(a) was intended to alleviate even apply, and an equivalent level of safety will be provided.

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 … is displayed at the cabin or cockpit entrance so that it is legible to passengers or crew. I request an exemption from this regulation.

The UA I intend to fly when fully loaded weighs .03 lbs, or 54.97 lbs less than 55 lbs. and is operated without a pilot or any passengers onboard. If an exemption from obtaining an airworthiness certificate is granted, as I would expect, there would be no airworthiness certificate to display. Nor would there be any pilot or passengers to view any such certificate. Lastly, there is no ability or place to carry an airworthiness certificate on or within the UA.

Given the size, weight, speed and limited operational capabilities of the UA to be flown an equivalent level of safety will be provided.

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. I request an exemption from this regulation.

Given that these section and Part 43 apply only to aircraft with an airworthiness certificate, these sections will not apply to me if my UA is exempted from having an airworthiness certificate, which I expect would be the case. Maintenance will be accomplished by me and in accordance with my personal knowledge and experience, and given the size, weight, speed and limited operational capabilities of the UA to be flown, an equivalent level of safety will be provided.

HOW GRANTING AN EXEMPTION WOULD BE IN THE PUBLIC INTEREST:

Granting an exemption is in the public's interest because:

(1) it would further the goals of Congress and, in turn, the interests of the people it represents. Congress ordered the safe integration of UA into the NAS. I am requesting to be part of that safe integration and therefore I am furthering Congress's (and the people's goals);

(2) the risk presented to life and property (both in the air and on the ground) would be reduced significantly or eliminated entirely as compared to similar operations using manned aircraft. The level of safety surrounding my proposed operations benefits the public because it presents a *significantly* lower, if any, risk to persons or property in the air or on the ground. Its environmental impact is all but non-existent— it emits no emissions and minimal noise. And it presents no danger to national security; *and*

(3) it would further demonstrate the guarantees provided to all persons under the First Amendment to the United States Constitution to express oneself freely. I want to express myself by creating art. The desire to sell that art is irrelevant. Newspapers, books, magazines, paintings and sculptures are all different types of protected expressions of speech, and each type may be sold without losing that protection.

Therefore, for the above-stated reasons, my request for exemption is in the public interest.

SUMMARY OF REQUEST FOR FEDERAL REGISTER:

In accordance with 14 C.F.R. §11.81(f), a summary of my Petition for Exemption request is provided for publication in the Federal Register. Peter Sachs ("the Petitioner"), is requesting exemptions from the following Federal Aviation Regulations to the extent the FAA believes they would apply to my UA:

- 14 C.F.R. Part 21, Subpart H;
- 14 C.F.R. 45.23(b);
- 14 C.F.R. 61.3;
- 14 C.F.R. 61.113(a)&(b);
- 14 C.F.R. 91.7(a);
- 14 C.F.R. 91.9(b)(2);
- 14 C.F.R. 91.103(b);
- 14 C.F.R. 91.109;
- 14 C.F.R. 91.119;
- 14 C.F.R. 91.121;
- 14 C.F.R. 91.126;
- 14 C.F.R. 91.127;
- 14 C.F.R. 91.129;
- 14 C.F.R. 91.130;
- 14 C.F.R. 91.131;
- 14 C.F.R. 91.133;
- 14 C.F.R. 91.137;
- 14 C.F.R. 91.138;
- 14 C.F.R. 91.139;

- 14 C.F.R. 91.141;
- 14 C.F.R. 91.143;
- 14 C.F.R. 91.144;
- 14 C.F.R. 91.145;
- 14 C.F.R. 91.151(a);
- 14 C.F.R. 91.203(a)&(b);
- 14 C.F.R. 91.405(a);
- 14 C.F.R. 91.407(a)(1);
- 14 C.F.R. 91.409(a)(2); *and*
- 14 C.F.R. 91.417(a)&(b).

The exemption is requested since the FAA might consider my UA to be an "aircraft" under the federal definitions of the word, and that an exemption from certain FARs would be required in order to operate a small, 19-gram, camera-equipped unmanned powered paper airplane to create saleable art.

If granted, the exemption would permit the Petitioner to use the UA to operate in any class of airspace and at any time of day. If granted, the Petitioner intends to operate the UA at all times below an altitude of 400ft AGL, but in accordance with no relevant FAA regulations. Nonetheless, the Petitioner will conduct all operations with the full regard for the safety of manned aircraft in flight and persons and property on the ground.

CONCLUSION:

I am entitled to submit a petition for exemption from regulations that would burden me if (1) I can provide a level of safety at least equal to that provided by the rules from which I seek the exemption, and (2) my request is in the public interest.[5]

With this petition I believe I have done just that. It is my belief that this request for exemption from certain FARs is reasonable, logical and is exactly what Congress intended FMRA Section 333 to contemplate, and that it fulfills procedurally what a Petition for Exemption requires.

I have explained how my intended UA operations would provide an equivalent level of safety to each of the relevant FARs, mostly based upon the extremely small size, diminutive weight, low speed and limited operational capabilities of the UA to be flown.

I have also explained how my intended UA operations would be in the public interest. It would further the goals of Congress, it would reduce the risk of hazard to persons and property and it would be in harmony with the First Amendment.

I believe I have provided more than enough justification for the grant of the requested exemption the FAA might believe is necessary for me to operate my UA commercially in the NAS. Accordingly, I request that the FAA grant the requested exemption without undue delay.

Thank you in advance for your time and consideration.

Sincerely,

Peter Sachs, Esq.

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[5] See FAA's "Guidelines for Submitting a Petition for Exemption" at **http://aes.faa.gov/Petition/**