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

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

September 10, 2015

Exemption No. 12812
Regulatory Docket No. FAA−2015−2602

Mr. Jonathan Martin
582 Coatesville Road
West Grove, PA 19390

Dear Mr. Martin:

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 June 3, 2015, you petitioned the Federal Aviation Administration (FAA) for an exemption. You requested to operate an unmanned aircraft system (UAS) to conduct aerial photograph and videography, including film sets.

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 Tarot 650 Sport.

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 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. Jonathan Martin 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.

Conditions and Limitations

In this grant of exemption, Mr. Jonathan Martin is hereafter referred to as the operator.

[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.

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 Tarot 650 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 September 30, 2017, unless sooner superseded or rescinded.

Sincerely,

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

Enclosures

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, DC

IN THE MATTER OF THE PETITION FOR EXEMPTION OF:
Jonathan Martin

FOR AN EXEMPTION SEEKING RELIEF FROM THE REQUIREMENTS OF TITLE 14 OF THE CODE OF FEDERAL REGULATIONS SECTIONS 91.7(a), 91.121, 91.151(b), 91.405(a), 91.407(a)(1), 91.409(a)(1) & (a)(2), AND 91.417(a) & (b) CONCERNING COMMERCIAL OPERATION OF TAROT 650 SPORT UNMANNED AIRCRAFT SYSTEMS PURSUANT TO SECTION 333 OF THE FAA MODERNIZATION AND REFORM ACT OF 2012 (PUBLIC LAW 112-95)

Submitted on JUNE 3, 2015

Jonathan Martin
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West Grove, PA 19390
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TABLE OF CONTENTS

	Page
GLOSSARY OF ABBREVIATIONS	3
SUMMARY	4
INTRODUCTION AND INTERESTS OF PETITIONER	4
BACKGROUND	5
BASIS FOR PETITION	5
NAME AND ADDRESS OF PETITIONER	7
THE SPECIFIC SECTIONS OF 14 C.F.R. FROM WHICH JONATHAN MARTIN SEEKS EXEMPTION	8
THE EXTENT OF RELIEF JONATHAN MARTIN SEEKS AND THE REASON JONATHAN MARTIN SEEKS THE RELIEF	11
THE REASONS WHY GRANTING JONATHAN MARTIN REQUEST WOULD BE IN THE PUBLIC INTEREST	13
THE REASONS WHY GRANTING THE EXEMPTION WOULD NOT ADVERSELY AFFECT SAFETY	15
CONCLUSION	26

GLOSSARY OF ABBREVIATIONS

AGL	Above Ground Level
AOI	Area of Interest
ATC	Air Traffic Control
ATO	Air Traffic Organization
AV	Aerial Vehicle
CFR	Code of Federal Regulations
COA	Certificate of Authorization
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
GCS	Ground Control Station
GPS	Global Positioning System
LOL	Loss of Link
NAS	National Airspace System
NOTAM	Notice to Airman
PIC	Pilot In Command
Section 333	FAA Modernization and Reform Act of 2012 (FMRA)
Section 333	
SO	Safety Observer
SOP	Standard Operating Procedures
UA	Unmanned Aircraft
UAS	Unmanned Aircraft System
VFR	Visual Flight Rules
VLOS	Visual Line of Site
VMC	Visual Meteorological Conditions
VTOL	Vertical Takeoff and Landing

SUMMARY

Jonathan Martin seeks exemption from the requirements of 14 C.F.R §§ 91.7(a), 91.121, 91.151(b), 91.405(a), 91.407(a)(1), 91.409(a)(1) & (a)(2), and 91.417(a) & (b), to operate an Unmanned Aircraft System pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (FMRA). This exemption will permit Jonathan Martin to operate an Unmanned Aircraft System (UAS) for the commercial purpose of conducting aerial video and photography for videography, real estate photography, special events, film sets, and landscape over certain areas of the United States. Jonathan Martin will increase public awareness and knowledge of UAS and promote safe operations.

INTRODUCTION AND INTERESTS OF THE PETITIONER

Jonathan Martin provides its clients with expertise and knowledge in advanced technologies and solutions to increase efficiency, productivity and effectiveness. Jonathan Martin also provides its clients with the highest quality digital content for use in their commercial, personal, and non-profit multimedia projects. Jonathan Martin has over 10 years of professional experience in aviation, photography and graphic design and work with remotely piloted aircraft. Jonathan Martin has his Commercial Pilot's license (2784208) and his Certified Instructor Rating (2784208CFI). The objective of Jonathan Martin's operation is to provide high quality imaging for a variety of commercial, public, and residential uses, and promoting safe operations and airspace awareness while piloting UAS's specifically targeting:

- Aerial imaging for advertising and marketing brochures
- Real Estate Photography
- Land survey & appraisals
- Equipment Inspections
- Increase public knowledge of UAS and promote safe UAS operations.

BACKGROUND

Unmanned Aircraft Systems: Tarot 650 Sport UAS

Jonathan Martin, Commercial Pilot #2784208 seeks an exemption to operate Tarot systems for compensation or hire within the NAS. The 650 Sport is a vertical takeoff and landing (VTOL) Unmanned Aircraft (UA) with a Ground Control Station (GCS) utilizing a LED monitor display. The Tarot 650 Sport has a maximum gross weight of approximately 7 pounds, while having a length of 20 inches, width of 20 inches, height of 12 inches, and a maximum speed of approximately 29 knots. The Tarot 650 Sport is equipped with four main rotors; driven by Lithium Polymer battery powered electric motors and utilizes the Eagle Tree Vector stabilization system.

The Tarot 650 Sport UAS that will be operated by Jonathan Martin and will be registered in accordance with 49 U.S.C. 44103, *Registration of Aircraft*, as well as 14 C.F.R Part 47, *Aircraft Registration*, and marked in accordance with 14 C.F.R. Part 45, *Identification and Registration Marking*.

BASIS FOR PETITION

Petitioner, Jonathan Martin, pursuant to the provisions of the Federal Aviation Regulations (14 C.F.R. § 11.61) and the FAA Modernization and Reform Act of 2012 (FMRA), Section 333, *Special Rules for Certain Unmanned Aircraft Systems*, hereby petitions the Administrator to commercially operate the Tarot 650 Sport UAS in the National Airspace System (NAS), and for an exemption from the requirements of 14 C.F.R §§ 61.113(a) & (b), 91.7(a), 91.121, 91.151(b), 91.405(a), 91.407(a)(1), 91.409(a)(1) & (a)(2), and 91.417(a) & (b).

In consideration of the speed, weight, size, and limited operating area associated with the unmanned aircraft and its operation, Jonathan Martin's operation of 650 Sport UAS meets the conditions of FMRA Section 333 and therefore, will not require an airworthiness certificate in accordance with 14 C.F.R. Part 21, Subpart H.

Accordingly, Jonathan Martin requests relief from Sections 91.405(a), 91.407(a)(1), 91.409(a)(1) & (a)(2), and 91.417(a) & (b), as these sections set forth requirements for maintenance that only apply to aircraft with an airworthiness certificate.

Jonathan Martin submits that the requested relief is proper since an equivalent level of safety will be ensured. Jonathan Martin will use experienced personnel or technicians to perform maintenance, alterations, or preventive maintenance on the UASs using the methods, techniques, and practices prescribed in the operating documents (i.e., Monthly Maintenance Log, and Tarot 650 Sport Instruction Manual). Furthermore, Jonathan Martin will document and maintain all maintenance records for the Tarot 650 Sport UAS.

Jonathan Martin seeks relief from Section 91.7(a), entitled *Civil aircraft airworthiness,* because the Tarot 650 Sport UAS does not require an airworthiness certificate in accordance with 14 C.F.R. Part 21, Subpart H. As such, Jonathan Martin submits that he will ensure that the Tarot 650 Sport UAS is in an airworthy condition, prior to every flight, by determining that the UAS is in compliance with the operating documents (i.e., Monthly Maintenance Log, and Tarot 650 Sport Instruction Manual), and that the aircraft are in a condition for safe flight.

Jonathan Martin also seeks an exemption from the requirements of Section 91.121, entitled *Altimeter Settings,* as the Tarot 650 Sport UAS will not have a typical barometric altimeter onboard. However, altitude information of the Tarot 650 Sport UAS will be provided to the PIC via Eagle Tree Vector Global Positioning System (GPS) equipment and radio communications telemetry data link, which downlinks from the UA to the GCS for active monitoring of the flight path. This altitude information, combined with Jonathan Martin's operation of the Tarot 650 Sport UAS within visual line of sight, at or below 200 feet AGL, will ensure a level of safety equivalent to Section 91.121.

Additionally, Jonathan Martin seeks an exemption from the requirements of Section 91.151(b), entitled *Fuel requirements for flight in VFR conditions*. Jonathan Martin submits that safety will not be affected by operation of the Tarot 650 Sport UAS during daylight hours in visual meteorological conditions (VMC) under visual flight rules (VFR), with enough battery power to fly for a total duration of approximately 13 minutes to the first point of intended landing and, assuming normal cruising speed, to fly after that for at least 4 minutes.

In accordance with 14 C.F.R. § 11.81, Jonathan Martin provides the following information in support of its petition for exemption:

A. Name And Address Of The Petitioner.

The name and address of the Petitioner and point of contact is:

Jonathan Martin
582 Coatesville RD
West Grove PA 19390
Email:FutureAviatorsUSA@gmail.com
610-476-1702

B. The Specific Sections Of 14 C.F.R. From Which Jonathan Martin Seeks Exemption.

1. Jonathan Martin Seeks Exemption From The Requirements Of Section 91.7(a).

Section 91.7, entitled *Civil aircraft airworthiness*, subsection (a), states the following:

(a) No person may operate a civil aircraft unless it is in an airworthy condition.

2. Jonathan Martin Seeks Exemption From The Requirements Of Section 91.121.

Section 91.121, entitled Altimeter settings, subsection (a), states the following, in part:

(a) Each person operating an aircraft shall maintain the cruising altitude or flight level of that aircraft, as the case may be, by reference to an altimeter that is set, when operating--

(1) Below 18,000 feet MSL, to--

(i) The current reported altimeter setting of a station along the route and within 100 nautical miles of the aircraft;

(ii) there is no station within the area prescribed in paragraph (a)(1)(i) of this section, the current reported altimeter setting of an appropriate available station; or

(iii) the case of an aircraft not equipped with a radio, the elevation of the departure airport or an appropriate altimeter setting available before departure.

3. Jonathan Martin Seeks Exemption From The Requirements Of Section 91.151(b).

Section 91.151, entitled *Fuel requirements for flight in VFR conditions*, subsection (b), states the following:

(b) No person may begin a flight in a rotorcraft 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, to fly after that for at least 20 minutes.

4. Jonathan Martin Seeks Exemption From The Requirement Of Section 91.405(a).

Section 91.405, entitled *Maintenance required*, subsection (a), states the following: Each owner or operator of an aircraft—

(a) 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[.]

5. Jonathan Martin Seeks Exemption From The Requirements Of Section 91.407(a)(1)

Section 91.407, entitled *Operation after maintenance, preventive maintenance, rebuilding, or alteration*, subsection (a)(1), states the following:

(a) No person may operate any aircraft that has undergone maintenance, preventive maintenance, rebuilding, or alteration unless--

(1) It has been approved for return to service by a person authorized under § 43.7 of this chapter[.]

6. Jonathan Martin Seeks Exemption From The Requirements Of Sections 91.409(a)(1) And 91.409(a)(2).

Section 91.409, entitled *Inspections*, subsection (a), states the following:

(a) Except as provided in paragraph (c) of this section, no person may operate an aircraft unless, within the preceding 12 calendar months, it has had --

(1) An annual inspection in accordance with part 43 of this chapter and has been approved for return to service by a person authorized by § 43.7 of this chapter; or

(2) An inspection for the issuance of an airworthiness certificate in accordance with part 21 of this chapter.

7. Jonathan Martin Seeks Exemption From The Requirements Of Sections 91.417(a) And 91.417(b).

Section 91.417, entitled *Maintenance records*, subsections (a) and (b), state the following:

(a) Except for work performed in accordance with §§ 91.411 and 91.413, each registered owner or operator shall keep the following records for the periods specified in paragraph (b) of this section:

(1) Records of the maintenance, preventive maintenance, and alteration and records of the 100-hour, annual, progressive, and other required or approved inspections, as appropriate, for each aircraft (including the airframe) and each engine, propeller, rotor, and appliance of an aircraft. The records must include--

(i) A description (or reference to data acceptable to the Administrator) of the work performed; and

(ii) The date of completion of the work performed; and

(iii) The signature, and certificate number of the person approving the aircraft for return to service.

(2) Records containing the following information:

(i) The total time in service of the airframe, each engine, each propeller, and each rotor.

(ii) The current status of life-limited parts of each airframe, engine, propeller, rotor, and appliance.

(iii) The time since last overhaul of all items installed on the aircraft which are required to be overhauled on a specified time basis.

(iv) The current inspection status of the aircraft, including the time since the last inspection required by the inspection program under which

the aircraft and its appliances are maintained.

(v) The current status of applicable airworthiness directives (AD) and safety directives including, for each, the method of compliance, the AD or safety directive number and revision date. If the AD or safety directive involves recurring action, the time and date when the next action is required.

(vi) Copies of the forms prescribed by § 43.9(d) of this chapter for each major alteration to the airframe and currently installed engines, rotors, propellers, and appliances.

(b) The owner or operator shall retain the following records for the periods prescribed:

(1) The records specified in paragraph (a)(1) of this section shall be retained until the work is repeated or superseded by other work or for 1 year after the work is performed.

(2) The records specified in paragraph (a)(2) of this section shall be retained and transferred with the aircraft at the time the aircraft is sold.

(3) A list of defects furnished to a registered owner or operator under § 43.11 of this chapter shall be retained until the defects are repaired and the aircraft is approved for return to service.

C. The Extent Of Relief Jonathan Martin Seeks And The Reason Jonathan Martin Seeks The Relief.

1. Extent Of Relief Jonathan Martin Seeks And The Reason Jonathan Martin Seeks Relief From Section 91.7(a).

Relief from Section 91.7(a) entitled *Civil aircraft airworthiness*, is requested to the extent required to allow Jonathan Martin to determine that the Tarot 650 Sport UAS are in airworthy condition prior to every flight by ensuring that the UAS is in compliance with the operating documents (i.e., the Jonathan Martin Aerial Operations Manual, Monthly Maintenance Log, and Tarot 650 Sport Instruction Manual).

Jonathan Martin seeks the requested relief because the Tarot 650 Sport UAS does not require an airworthiness certificate in accordance with 14 C.F.R. Part 21, Subpart H. Therefore, Jonathan Martin will ensure that the Tarot 650 Sport UAS is in airworthy condition based upon its compliance with the operating documents (i.e., Monthly Maintenance Log, and Tarot 650 Sport Instruction Manual) prior to every flight, and further, determine that the aircraft are in condition for safe flight, as stated in the conditions and limitations below.

2. Extent Of Relief Jonathan Martin Seeks And The Reason Jonathan Martin Seeks Relief From Section 91.121.

Relief from Section 91.121, entitled Altimeter settings, may be required to allow flight operations of the Tarot 650 Sport UAS, which utilize a barometric pressure sensor, GPS equipment, and a radio communications telemetry data link to downlink altitude information from the UA to the PIC at the ground control station (GCS). Since the FAA requires that any altitude information concerning UAS operations be reported to air traffic control (ATC) in feet above ground level (AGL), Jonathan Martin seeks the requested relief because the Tarot 650 Sport UAS altimeter may be set on the ground to zero feet AGL, rather than the local barometric pressure or field altitude, before each flight.

Considering the limited altitude of the proposed operations, relief from 14 CFR 91.121 is sought to the extent necessary to comply with the applicable conditions and limitations stated below. As more fully set forth herein, an equivalent level of safety will be maintained since the Tarot 650 Sport UAS is equipped with a barometric pressure sensor and GPS equipment, which automatically ensures that a ground level pressure setting will be established prior to each flight, and provides the PIC with altitude information of the UA on the heads-up display of the GCS.

3. Extent Of Relief Jonathan Martin Seeks And The Reason Jonathan Martin Seeks Relief From Section 91.151(b).

Relief from Section 91.151(b) entitled Fuel requirements for flight in VFR conditions, is requested to the extent required to allow flights of the battery powered Tarot 650 Sport UAS during daylight hours in visual meteorological conditions (VMC), under visual flight rules (VFR), for a total duration of 13 minutes to the first point of intended landing and, assuming normal cruising speed, to fly after that for at least 4 minutes. Jonathan Martin seeks the requested relief because without an exemption from Section 91.151(b), the flight time duration of the battery powered Tarot 650 Sport UAS will severely constrain the practicality of any aerial video or still photo flight operations that Jonathan Martin proposes to conduct pursuant to this Petition.

Significantly, as set forth below, the technical specifications of the Tarot 650 Sport UAS, the Tarot 650 Sport operating documents, and Jonathan Martin's proposed operating limitations, ensure that Jonathan Martin will safely operate the battery powered Tarot 650 Sport UAS during daylight hours in visual meteorological conditions (VMC), under visual flight rules (VFR), with enough battery power to fly for a total duration of 13 minutes to the first point of intended landing and, assuming normal cruising speed, to fly after that for at least 4 minutes.

4. Extent Of Relief Jonathan Martin Seeks And The Reason Jonathan Martin Seeks Relief From Sections 91.405(a), 91.407(a)(1), 91.409(a)(1) & (a)(2), And 91.417(a) & (b).

Since Sections 91.405(a), 91.407(a)(1), 91.409(a)(1) & (a)(2), and 91.417(a) & (b) only apply to aircraft with an airworthiness certificate, Jonathan Martin requests relief from these Sections because the Tarot 650 UAS does not require airworthiness certificates. As set forth more fully below, the Tarot 650 Sport UAS meet the conditions of FMRA Section 333 for operation without an airworthiness certificate. Accordingly, Jonathan Martin will use trained technicians to perform maintenance, alterations, or preventive maintenance on the UAS using the methods, techniques, and practices prescribed in the UAS operating documents (i.e., the Jonathan Martin Aerial Operations Manual, Monthly Maintenance Log, and Tarot 650 Sport Instruction Manual). Furthermore, Jonathan Martin will document and maintain all maintenance records for the Tarot 650 Sport UAS.

D. The Reasons Why Granting Jonathan Martin's Request Would Be In The Public Interest; That Is, How It Would Benefit The Public As A Whole.

Granting the present Petition will further the public interest by allowing Jonathan Martin to safely, efficiently, and economically perform aerial video and photography of construction sites, real estate, and landscape over certain areas of the United States.

Additionally, use of the Tarot 650 Sport UAS will decrease congestion of the NAS, reduce pollution, and provide significant benefits to the economy. Notably, the benefits of Jonathan Martin's proposed operation of the Tarot 650 Sport UAS will be realized without implicating any privacy issues.

1. The Public Will Benefit From Decreased Congestion Of The NAS.

Tarot 650 Sport is battery powered and serve as a safe, efficient, and economical alternative to the manned aircraft traditionally utilized to obtain aerial imagery. By reducing the amount of manned aircraft needed to perform aerial acquisitions, an exemption allowing the use of a Tarot 650 Sport UAS would reduce the amount of manned aircraft in the NAS, reduce noise and air pollution, as well as increase the safety of life and property in the air and on the ground.

Furthermore, by reducing the number of manned aircraft operating in the NAS, congestion around airports caused by arriving and departing aircraft will be reduced. The Tarot 650 Sport UAS do not require an airport to takeoff or land.

Likewise, a reduction of manned aircraft conducting aerial video and photography missions would result in fewer aircraft that must be handled by air traffic control during the ground, takeoff, departure, arrival, and landing phases of flight operations.

2. The Public Will Benefit From The Safety And Efficiency Of The Tarot 650 Sport UAS.

Conducting aerial acquisitions with the Tarot 650 Sport and UAS, instead of manned aircraft, will greatly benefit the public by drastically reducing the levels of air and noise pollution generated during traditional aerial video and still photography flight operations. By using battery power and electric motors, the Tarot 650 Sport UAS produce no air pollution, and is the most viable environmentally conscious alternative to the cabin class, six cylinder internal combustion engine aircraft that are typically utilized for aerial video and photography, while burning approximately 15 gallons per hour of AVGAS. The

Tarot 650 Sport UAS, while reducing the carbon footprint of aerial acquisitions, also eliminates noise pollution, as the UAS are propelled by battery powered electric motors, rather than an internal combustion engine.

By using the Tarot 650 Sport UAS to perform aerial acquisitions, the substantial risk to life and property in the air and on the ground, which is usually associated with traditional manned aircraft flight operations, will be substantially reduced or completely eliminated. Aside from the lack of flight crew members located onboard the aircraft, the Tarot 650 Sport UAS (weighing approximately 7 pounds, at their maximum gross weights with lengths of 20 inches and, widths of 20 inches, and with no fuel on board), has less physical potential for collateral damage to life and property on the ground, and in the air, compared to the manned aircraft that typically conduct similar operations (weighing approximately 6,000 pounds with a wingspan of approximately 36 feet, a length of 30 feet, and a fuel capacity of 70 gallons).

3. Performing Aerial Video and Photography Operations With The Tarot 650 Sport UAS Will Benefit The Economy.

In addition to being safe and efficient, the Tarot 650 Sport and UAS is also an economical alternative to using manned aircraft to conduct similar aerial operations. As such, operation of the Tarot 650 Sport UAS will allow United States based companies, like Jonathan Martin, to remain competitive and contribute to growth of the U.S. economy. Specifically, with the rising cost of aviation fuel and the Environmental Protection Agency ("EPA") regulatory actions phasing out leaded aviation fuels, U.S. owned and operated companies must adopt new and alternative technology in order to remain competitive. Operating the battery powered Tarot 650 Sport UAS is one such technology that not only allows companies greater operational flexibility compared to manned aircraft, but provides such flexibility without the high operational cost of a traditional manned aircraft.

By operating the Tarot 650 Sport, companies such as Jonathan Martin, can remain competitive and profitable, and therefore, provide greater job stability to employees and contractors, which will ultimately contribute to growth of the U.S. economy. Improved

financial performance of U.S. companies, through commercial use of the Tarot 650 Sport UAS, provides a stable workforce that increases consumer spending; improves local, state, and federal tax revenues; and allows companies to invest in research and development in order to remain competitive both in the United States and abroad.

4. There Are No Privacy Issues.

Similar to the manned aerial acquisition flight operations that have been conducted for decades, Jonathan Martin's proposed operation of the Tarot 650 Sport UAS will not implicate any privacy issues. Specifically, the Tarot 650 Sport UAS will be operated only in compliance with operating documents (i.e., the Jonathan Martin Aerial Operations Manual, Monthly Maintenance Log, and Tarot 650 Sport and Instruction Manual) which requires property owner involvement as well as local law enforcement notification, and in accordance with the Federal Aviation Regulations, including the minimum altitude requirements of 14 C.F.R. § 91.119.

E. The Reasons Why Granting The Exemption Would Not Adversely Affect Safety, Or How The Exemption Would Provide A Level Of Safety At Least Equal To That Provided By The Rule From Which Jonathan Martin Seeks Exemption.

1. Reasons Why The Tarot 650 Sport UAS Meet The Conditions Of The FAA Modernization and Reform Act of 2012 (FMRA) Section 333.

In consideration of the size, weight, speed, and limited operating area associated with the unmanned aircraft and its operation, Jonathan Martin's operation of the Tarot 650 Sport UAS meets the conditions of FMRA Section 333, and will not require an airworthiness certificate in accordance with 14 C.F.R. Part 21, Subpart H.

Section 333 provides authority for a UAS to operate without airworthiness certification and sets forth requirements for considering whether a UAS will create a hazard to users of the NAS or the public, or otherwise pose a threat to national security. Specifically, FMRA Section 333 states the following, in part:

> *(a) In General.--Notwithstanding any other requirement of this subtitle, and not later than 180 days after the date of enactment of this Act, the Secretary of Transportation shall determine if certain unmanned aircraft systems may operate safely in the national airspace system before completion of the plan and rulemaking required by section 332 of this Act or the guidance required by section 334 of this Act.*
>
> *(b) Assessment of Unmanned Aircraft Systems.--In making the determination*

under subsection (a), the Secretary shall determine, at a minimum--

(1) which types of unmanned aircraft systems, if any, as a result of their size, weight, speed, operational capability, proximity to airports and populated areas, and operation within visual line of sight do not create a hazard to users of the national airspace system or the public or pose a threat to national security; and whether a certificate of waiver, certificate of authorization, or airworthiness certification under section 44704 of title 49, United States Code, is required for the operation of unmanned aircraft systems identified under paragraph (1).

(c) Requirements for Safe Operation.--If the Secretary determines under this section that certain unmanned aircraft systems may operate safely in the national airspace system, the Secretary shall establish requirements for the safe operation of such aircraft systems in the national airspace system.

In seeking this exemption, Jonathan Martin submits that the Tarot 650 Sport UAS can operate safely in the NAS pursuant to FMRA Section 333, as demonstrated by: (a) the characteristics of the Tarot 650 Sport UAS; (b) the pilot certification requirement; and (c) the specific operating limitations.

a. The Specifications Of The Tarot 650 Sport UAS Demonstrate Its Safe Characteristics.

The Tarot 650 Sport UAS does not create a hazard to users of the NAS or the public, or otherwise pose a threat to national security considering its size, weight, speed, and operational capability.

i. Technical Specifications Of The Tarot 650 Sport UAS.

The technical specifications of the Tarot 650 Sport UAS is set forth by the Tarot 650 Sport Specifications and Data Sheet, attached here to as Exhibit A.

ii. The Tarot 650 Sport UAS Autonomous Flight And Navigation Modes Enable The UAS To Remain Within A Defined Operational Area.

The Tarot 650 Sport UAS may be operated in both manual and fully autonomous flight modes.

iii. The Tarot 650 Sport UAS Are Designed For Automatic Return To Home Point Or Hover In The Event Of Loss Of The Control Link Or Navigation.

When the Control Link is lost, the Tarot 650 Sport UAS will remain stationary, in flight, for 3 seconds or more. If, after 3 seconds, the Tarot 650 Sport UAS do not reacquire control link data from the GCS, the UAS will assume that the Control Link is lost and the UAS will return to the home position (i.e., failsafe mode) via GPS, and will descend to the takeoff position and shutdown.

iv. The Tarot 650 Sport GCS And Its Operation.

A complete description of the operation and specifications of the Tarot 650 Sport GCS and flight control software from Eagle Tree Systems is provided in the Tarot 650 Sport User Manual. Tarot 650 Sport Eagle Tree Systems Vector User Manuals are attached hereto as Exhibits C.

b. Flight Operations Of Tarot 650 Sport UAS Are Limited To The Line Of Sight Of A Certificated Pilot in Command With A Safety Observer.

Jonathan Martin will only utilize certificated pilots who possess a current and valid airman medical certificate to act as a pilot in command (PIC) of the Tarot 650 Sport UAS. Additionally, a safety observer will assist all pilots during flight time.

c. Flights Of Tarot 650 Sport UAS Will Be Conducted Pursuant To Specific Operating Limitations.

In seeking this exemption, Jonathan Martin proposes to commercially operate Tarot 650 Sport UAS for the special purpose of conducting aerial video and photography over certain areas of United States, pursuant to the following specific operating limitations:

1. Operations authorized by this grant of exemption will be limited to the following aircraft described in the operating documents, rotorcraft UASs weighing less than 55 pounds maximum gross weight: Tarot 650 Sport Unmanned Aircraft Systems. Proposed operations of any other aircraft will require a new petition or a petition to amend this grant.

2. UAS operations under this exemption will be limited to conducting operations for the purpose of aerial video and photography.

3. The UAS may not be flown at an indicated airspeed exceeding 20 knots.

4. The UA must be operated at an altitude of no more than 200 feet above ground level (AGL), as indicated by the procedures specified in the operating documents unless a special request is made and approved by ATC. All altitudes reported to ATC must be in feet AGL.

5. The UAS 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.

6. The use of first person view (FPV) by the PIC or safety observer (SO) is not permitted.

7. All operations must utilize a safety observer (SO). The SO may be used to satisfy the VLOS requirement as long as the PIC always maintains VLOS capability. The SO 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 SO can perform the functions prescribed in the operating documents.

8. The SO must not perform any other duties beyond assisting the PIC with seeing and avoiding other air traffic and other ground based obstacles/obstructions and is not permitted to operate the camera or other instruments.

9. The operating documents and the grant of exemption must be accessible during UAS operations and made available to the Administrator upon request. If a discrepancy exists between the conditions and limitations contained in the grant of exemption and the procedures outlined in the operating documents, the conditions and limitations contained in the grant of exemption 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 upon request. The operator must also present updated and revised documents if it petitions for extension or amendment to the grant of exemption. If the operator determines that any update or revision would affect the basis upon which the FAA granted the exemption, then the operator must petition for 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.

10. Prior to each flight the PIC must inspect the UAS to ensure that it is in a condition for safe flight. 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. The Ground Control Station must be included in the preflight inspection. All maintenance and alterations must be properly documented in the aircraft records.

11. 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. The PIC who conducts the functional test flight must make an entry in the aircraft records.

12. The pre-flight inspection must account for all potential discrepancies, e.g. inoperable components, items, or equipment, not already covered in the relevant sections of the operating documents.

13. The operator must follow the UAS manufacturer's aircraft/component, maintenance, overhaul, replacement, inspection, and life limit requirements.

14. The operator must carry out its maintenance, inspections, and record keeping requirements, in accordance with the operating documents. Maintenance, inspection, alterations, and status of replacement/overhaul component parts must be noted in the aircraft records, including total time in service, description of work accomplished, and the signature of the authorized person returning the UAS to service.

15. Each UASs operated under this exemption must comply with all manufacturer Safety Bulletins.

16. The authorized person must make an entry in the aircraft record of the corrective action taken against discrepancies discovered between inspections.

17. The PIC must possess at least a private pilot certificate and at least a current third- class medical certificate.

18. The operator may not permit any PIC to operate unless the PIC meets the operator's qualification criteria and demonstrates the ability to safely operate the UAS in a manner consistent with how the UAS will be operated under the exemption, including evasive and emergency maneuvers and maintaining appropriate distances from persons, vessels, vehicles and structures. PIC qualification flight hours must be logged in a manner consistent with 14 C.F.R. § 61.51(b). Flights for the purposes of training the operator's PICs are permitted under the terms of the 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 C.F.R. § 91.119.

19. UAS operations may not be conducted during night, as defined in 14 C.F.R. §

All operations must be conducted under visual meteorological conditions (VMC). If flight at night is required, a special request will be made at the FAA office closest to proposed area of operations. Flights under special visual flight rules (SVFR) are not authorized.

20. The UA may not operate within 5 nautical miles of an airport reference point 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.

21. 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.

22. If the UA loses communications or loses its GPS signal, it must return to a pre- determined location within the planned operating area and land or be recovered in accordance with the operating documents.

23. The PIC must abort the flight in the event of unpredicted obstacles or emergencies in accordance with the operating documents.

24. The PIC is prohibited from beginning a flight unless (considering wind and forecast weather conditions) there is enough power to fly at normal cruising speed to the intended landing point and land the UA with 25% battery power remaining.

25. The operator must obtain an Air Traffic Organization (ATO) issued Certificate of Waiver or Authorization (COA) prior to conducting any operations under the 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. All operations shall be conducted in accordance with airspace requirements in the ATO issued COA including class of airspace, altitude level and potential transponder requirements.

26. All aircraft operated in accordance with the exemption must be identified by serial number, registered in accordance with 14 C.F.R. part 47, and have identification (N- Number) markings in accordance with 14 C.F.R. part 45, Subpart C. Markings must be as large as practicable.

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

28. The documents required fewer than 14 C.F.R. 91.9 and 91.203 must be available to the PIC at the Ground Control Station of the UAS any time the UAS is operating. These documents must be made available to the Administrator or any law enforcement official upon request.

29. The UA must remain clear and yield the right of way to all manned aviation operations and activities at all times.

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

31. Flight operations must be conducted at least 500 feet from all nonparticipating persons (persons other than the PIC, SO, operator trainees or essential 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 and/or;

    b. The aircraft is operated near vessels, vehicles or structures where the owner/controller of such vessels, vehicles or structures has granted permission and the PIC has made a safety assessment of the risk of operating closer to those objects and determined that it does not present an undue hazard, and;

    c. Operations nearer to the PIC, SO, operator trainees or essential persons do not present an undue hazard to those persons per § 91.119(a).

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

33. 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.

2. Reasons Why An Exemption From The Requirements Of Section 91.7(a) Would Not Adversely Affect Safety.

The equivalent level of safety established by Section 91.7(a) will be maintained because prior to every flight, Jonathan Martin will ensure that the Tarot 650 Sport UAS is in an airworthy condition based upon the UAS's compliance with its operating documents and as stated in the conditions and limitations herein.

Additionally, the FAA has previously granted relief from Section 91.7(a) specific to UAS, in circumstances similar, in all material respects, to those presented herein (e.g. Exemption Nos. 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11110, 11112, 11136, 11138, 11150, 11153, 11156, 11157, 11158, 11159, 11160, 11161).

3. Reasons Why An Exemption From The Requirements Of Section 91.121 Would Not Adversely Affect Safety.

The equivalent level of safety established by Section 91.121 will be maintained because the altitude information of the Tarot 650 Sport UAS will be provided to the PIC via GPS equipment and a radio communications telemetry data link, which downlinks from the UA to the GCS for active monitoring of the flight path and altitude. This altitude information, combined with Jonathan Martin's operation of the Tarot 650 Sport within visual line of sight, at or below 200 feet AGL, will ensure a level of safety equivalent to Section 91.121. The altitude information will be generated by GPS equipment installed onboard the aircraft. Prior to each flight, a zero altitude initiation point is automatically established by the UASs at ground level.

The FAA has previously granted relief from Section 91.121 specific to UAS, in circumstances similar, in all material respects, to those presented herein (e.g. Exemption Nos. 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11112, 11136, 11138, 11150, 11153, 11156, 11157, 11158, 11159, 11160, 11161).

4. Reasons Why An Exemption From The Requirements Of Section 91.151(b) Would Not Adversely Affect Safety.

A grant of this exemption would ensure an equivalent level of safety established by 14 C.F.R. Section 91.151(b) as a result of (1) the technical specifications of the Tarot 650 Sport and Tarot X4; (2) the limitations on the proposed flight operations; and (3) the location of the proposed flight operations. Accordingly, Jonathan Martin will ensure that it will safely operate the battery powered Tarot 650 Sport UAS during daylight hours in VFR conditions, with enough battery power to fly for a total duration of 13 minutes to the first point of intended landing and, assuming normal cruising speed, to fly after that for at least 4 minutes.

Here, as in Exemption No. 11109, the technical specifications of the Tarot 650 Sport; the limitations on the proposed flight operations; and the location of the proposed operations, will ensure an equivalent level of safety established by 14 C.F.R. Section 91.151(b). Furthermore, safety will be ensured as the Tarot 650 Sport UAS provide audible and visual warnings to the PIC at the GCS when the UAS experiences low battery voltage, the first warning occurring at approximately 33% remaining battery power, and again at approximately 10% remaining battery power. At the critically low battery level, the Tarot 650 Sport UAS will descend and land automatically.

Significantly, previous exemptions granted by the FAA concerning Section establish that safety is not adversely affected when the technical characteristics and operating limitations of the UAS are considered. Relief has been granted for manned aircraft to operate at less than the minimums prescribed in Section 91.151, including Exemption Nos. 2689, 5745, and 10650. Moreover, the FAA has previously granted relief from Section 91.151 specific to UAS, in circumstances similar, in all material respects, to those presented herein (e.g. Exemption Nos. 8811, 10808, 10673, 11042, 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11110, 11136, 11138, 11150, 11153, 11156, 11157, 11158, 11159, 11160, 11161).

5. Reasons Why An Exemption From The Requirements Of Sections 91.405(a), 91.407(a)(1), 91.409(a)(1) & (a)(2), And 91.417(a) & (b) Would Not Adversely Affect Safety.

In seeking this exemption, Jonathan Martin submits that the equivalent level of

safety with regard to the regulatory maintenance and alteration requirements established by Sections 91.405(a), 91.407(a)(1), 91.409(a)(1) & (a)(2), and 91.417(a) & (b) will be met because Jonathan Martin will use trained technicians to perform maintenance, alterations, or preventive maintenance on the UASs using the methods, techniques, and practices prescribed in the operating documents (i.e., the Jonathan Martin Aerial Operations Manual, Monthly Maintenance Log, and Tarot 650 Sport Instruction Manual). Furthermore, Jonathan Martin will document and maintain all maintenance records for the Tarot 650 Sport UAS.

Since the Tarot 650 Sport UAS will be inspected as prescribed by the operating documents, Jonathan Martin will maintain the equivalent level of safety established by Sections 91.405(a), 91.409(a)(1), and 91.409(a)(2). A copy of the Tarot 650 Sport User Manuals are attached hereto as Exhibit C; a copy of the Tarot 650 Sport and UAS Maintenance LOG is attached hereto as Exhibit D.

Likewise, the exemption sought will not adversely affect safety because Jonathan Martin will use trained technicians to perform maintenance, alterations or preventive maintenance on the UAS using the methods, techniques, and practices prescribed by the operating documents.

Furthermore, the exemption sought would maintain an equivalent level of safety established by Sections 91.407, 91.417(a) and 91.417(b), because all maintenance of the Tarot 650 Sport and Tarot X4 UASs will be performed by trained technicians. Maintenance will be documented and maintained utilizing the monthly maintenance log.

Significantly, previous exemptions granted by the FAA concerning Sections 91.405(a), 91.407(a)(1), 91.409(a)(1) & (a)(2), and 91.417(a) & (b) establish that safety is not adversely affected when the technical characteristics and operating limitations of the UAS are considered.

In consideration of Jonathan Martin’s proposed operating limitations, the operating documents, and the technical aspects of the Tarot 650 Sport UAS, Jonathan Martin submits that safety will not be adversely affected by granting exemption from 14 C.F.R. Sections 91.405(a), 91.407(a)(1) and (a)(2), 91.409(a)(2), and 91.417(a) and (b).

The FAA has previously granted relief specific to UAS in circumstances similar, in all material respects, to those presented herein (e.g. Exemption Nos. 11062, 11063, 11064, 11065, 11066, 11067, 11080, 11109, 11110, 11112, 11136, 11138, 11150, 11153, 11156, 11157, 11158, 11159, 11160, 11161).

6. The FAA May Prescribe Any Other Conditions For Safe Operation.

In accordance with Section 333 of the FAA Modernization and Reform Act of 2012 (FMRA) and 14 C.F.R. § 21.16 entitled Special Conditions, Jonathan Martin requests that the FAA prescribe special conditions for the intended operation of the Tarot 650 Sport and UAS, which contain such safety standards that the Administrator finds necessary to establish a level of safety equivalent to that established by 14 C.F.R. Part 21, Subpart H, and 14 C.F.R §§ 61.113(a) & (b), 91.7 (a), 91.121, 91.151(b), 91.405(a), 91.407(a)(1), 91.409(a)(1) & (a)(2), and 91.417(a) & (b). Such special conditions will permit safe operation of the UAS for the limited purpose of conducting aerial video and photography over certain areas of the United States for compensation or hire. FMRA Section 333 sets forth the requirements for considering whether a UAS will create a hazard to users of the NAS or the public, or otherwise pose a threat to national security; and further, provides the authority for such UAS to operate without airworthiness certification in accordance with any requirements that must be established for the safe operation of the UAS in the NAS.

Likewise, the Administrator may prescribe special conditions pursuant to 14 C.F.R. § 21.16, for operation of the Tarot 650 Sport, since the airworthiness regulations of 14 C.F.R. Part 21 do not contain adequate or appropriate safety standards, due to the novel or unusual design features of the aircraft. Section 21.16, entitled Special Conditions, states the following:

If the FAA finds that the airworthiness regulations of this subchapter do not contain adequate or appropriate safety standards for an aircraft, aircraft engine, or propeller because of a novel or unusual design feature of the aircraft, aircraft engine or propeller, he prescribes special conditions and amendments thereto for the product. The special conditions are issued in accordance with Part 11 of this chapter and contain such safety standards for the aircraft, aircraft engine or propeller as the FAA finds necessary to

establish a level of safety equivalent to that established in the regulations. See 14 C.F.R. § 21.16.

Therefore, in accordance with FMRA Section 333 and 14 C.F.R. § 21.16, the FAA may prescribe special conditions for Jonathan Martin's intended operation of the Tarot 650 Sport UAS, which contain such safety standards that the Administrator finds necessary to establish a level of safety equivalent to that established by 14 C.F.R. Part 21, Subpart H, and 14 C.F.R Sections 91.7(a), 91.121, 91.151(b), 91.405(a), 91.407(a)(1), 91.409(a)(1) & (a)(2), and 91.417(a) & (b).

- **A Summary That Can Be Published In The Federal Register, stating: The Rules From Which Jonathan Martin Seeks Exemption:**

  Jonathan Martin commercial pilot certificate number 2784208 seeks exemption from the requirements of 14 C.F.R Sections 91.7(a), 91.121, 91.151(b), 91.405(a), 91.407(a)(1), 91.409(a)(1) & (a)(2), and 91.417(a) & (b).

  A Brief Description Of The Nature Of The Exemption Jonathan Martin Seeks:

  This exemption will permit Jonathan Martin commercial pilot certificate number 2784208 to commercially operate an Unmanned Aircraft System (UAS) for the purpose of conducting aerial video and photography over certain areas of the United States.

- **Any Additional Information, Views, Or Arguments Available To Support Jonathan Martin's Request.**

This Petition is made pursuant to the FAA Modernization and Reform Act of 2012 (FMRA) Section 333, which directs the Secretary of Transportation to determine if certain UAS may operate safely in the NAS. As such, Jonathan Martin's request for exemption may be granted pursuant to the authority of FMRA Section 333 and 14 C.F.R. Part 11, as set forth above.

FMRA Section 333 sets forth the requirements for considering whether a UAS will create a hazard to users of the NAS or the public, or otherwise pose a threat to national security; and further, provides the authority for such UAS to operate without airworthiness certification.

As discussed in detail above, Jonathan Martin will operate the Tarot 650 Sport UAS safely in the NAS, without creating a hazard to users of the NAS, or the public, or otherwise

pose a threat to national security.

CONCLUSION

As set forth herein, Jonathan Martin commercial pilot certificate number 2784208 seeks an exemption pursuant to 14 C.F.R. §11.61 and Section 333 of the FAA Modernization and Reform Act of 2012 (FMRA), which will permit safe operation of the Tarot 650 Sport and UASs commercially, without an airworthiness certificate, for the limited purpose of conducting aerial video and photography over certain areas of the United States. By granting this Petition, the FAA Administrator will be fulfilling the Congressional mandate of the FAA Modernization and Reform Act of 2012, while also advancing the interests of the public, by allowing Jonathan Martin to safely, efficiently, and economically operate the Tarot 650 Sport UAS commercially within the NAS.

WHEREFORE, in accordance with the Federal Aviation Regulations and the FAA Modernization and Reform Act of 2012, Section 333, Jonathan Martin respectfully requests that the Administrator grant this Petition for an exemption from the requirements of 14 C.F.R Sections 91.7(a), 91.121, 91.151(b), 91.405(a), 91.407(a)(1), 91.409(a)(1) & (a)(2), and 91.417(a) & (b), and permit Jonathan Martin to operate the Tarot 650 Sport UAS commercially for the purpose of conducting aerial video and photography over certain areas of the United States.

Dated: June 3, 2015

Respectfully submitted,

Jonathan Martin

582 Coatesville RD
West Grove PA 19390

Appendices:

A – Tarot 650 Sport Specifications Data Sheet
B – Tarot 650 Sport Manufactures User Manual
C – Eagle Tree Systems Vector User Manuel
(ATTACHED)
D – Monthly Maintenance Log

EXHIBIT – A

TAROT 650 SPORT UAS TECHNICAL SPECIFICATIONS

The Tarot 650 Sport and Tarot X4 UAS's are professional grade all carbon fiber UAS's which are installed with Eagle Tree Vector software enabling the user to set parameters which will not allow flight into controlled airspace. Parameters can also be set to limit flight to no higher than a predetermined and set altitude as well as limit flight to a predetermined and set distance. In addition, the installed Eagle Tree Vector software provides real-time altitude and location information to the PIC via the linked monitor and on screen display visually as well as audibly.

Tarot 650 Sport

Aircraft
Supported Battery – Storm 5500mAH LiPo Battery
Weight (Battery & Propellers Included) – 5 lbs
Hover Accuracy (Ready to Fly) – Vertical: .8m; Horizontal: 2.5m
Max Yaw Angular Velocity - 2001/s
Max Tilt Angel - 351
Max Ascent Speed – 6m/s
Max Descent Speed – 2m/s
Max Flight Speed – 15m/s (NOT RECOMMENDED)

Gimbal
Tarot 2D Vs. 2
Operating Current – 200mA-500mA
Control Accuracy - ±0.1
Controllable Range – Pitch: -135 - 90
Maximum Angular Speed – Pitch: 2000/s

Camera
GoPro Hero 3+
Lens Aperature – f/2.8
Effective Pixels – 12mp
Resolution – 12 mega pixels
HD Video Recording – 1080p30 & 720p

Transmitter
Operating Frequency – 5.728GHz – 5.85GHz
Communication Distance (unobstructed) – FCC Compliance: 800m
Receiver Sensitivity (1%PER) - -93dBm
Transmitter Power – FCC Compliance: 100mW
Working Voltage – 120mA@3.7V

Range Extender
Operating Frequency – 2412-2462MHz
Communication Distance (unobstructed) – 500-700m
Transmitter Power – 20dBm
Power Consumption – 2W

EXHIBIT-B
Tarot 650 SPORT USER MANUEL

Tarot FY650 Sport - A Portable size Quadcopter with Motorized Landing Gear
This is Tarot's only Quadcopter frame, 650 size, came with Motorized Landing Gear and it takes maximum 15" propeller. The Tarot FY650 Sport has a lot in common with the bigger Tarot FY680-Pro (it has Six rotors), both have a Carbon Fiber Deck and a Integrated PCB Board, user can solder the ESC's power cable directly onto this PCB board and save a lot of heavy and messy cables. The movable battery mount is also a good feature to balance the best C.G., because when you put a Tarot T-2D gimbal in the front of the drone, you need to off-set the weight with battery. The best of all is the Motorized Landing Gear, they connected to a Controller (included) and through a switch on your RC transmitter, you can retract and deploy the legs, so you will not see the legs in your Video anymore, this is a nice touch as the Motorized Landing Gear usually is "DIY" item, now Tarot includes them in the package.

The Tarot FY650 Sport airframe is versatile, you can put small but high speed motors and smaller props on it to become an agile GoPro Camera platform, or use with big motors and props on it to be a long flight time platform, it's a great choice for you in Price and Performance for shooting beautiful scenery or interesting footage for YouTube.

We recommend 4S 14.8V, Tarot 4006 620kv and 13" prop, or even more powerful config like 6S 22.2V Li-Po, Tarot 4008 380kv motor 13" propeller, this can carry payload up to 1kg to 1.3kg, that means GoPro and similar size camera are no problem. Remember that if you put the camera in front, please adjust the battery's position at the rear to have best C.G.

Great all around drone
You can put a lot of different gadgets on the drone, for lighter payload you can use lighter and cheaper config like small motors and battery, if you want to go big, just increase the size of the motor and props, we like this FY650 Sport.

Motorized Landing Gear
Came with the package, 100% made by Tarot, fully integrated with the FY650 Sport Airframe.

Retract and Deploy with a flip of a switch
The two landing gears connect to a controller, and connect the controller to the RC receiver.

Four rotor drones will have longer flight time, but less payload capacity
Two motor less then Hexacopter, that means less energy consumption and fly longer.

The new designed Integrated PCB Upper Deck
The Tarot FY650 Sport has a PCB Upper Deck and Carbon Fiber Lower Deck. You can solder the ESC's power directly onto the PCB Upper Deck, no need to handle a bunch of power cables, much clean layout in the drone.

The soldering points on the PCB Board
This is the PCB Board of the FY680 Pro, very similar to the FY650 Sport.

Light weight and easy to adjust motor mount

Support motor up to 45mm Dia., with 16mm, 19mm, 25mm and 27.7mm hole spacing.

Came with Mounting Rail and Movable Battery Mount

No need to spend money for the mounting rail. It is 60mm apart, you can put T-2D Gimbal on it and move that battery position for best C.G.

A Portable 650 Size Hexacopter Frame

Easy transportation is very important, especially when you try to put it in the car by yourself...

Fold it up, it's very portable

It's foldable, easy to put in the back seat of your car.

Specifications :

- Frame weight : 750g
- Arms diameter : 16mm
- Drone dia : 650mm
- Center body dimension : 190 x 200 x 2.0mm
- Mount mounting hole : 16mm hole x 2 / 19mm hole x 2 / 25mm hole x 4 / 28mm hole x 3
- Drone's weight (everything it needs to fly) : around 2.3kg
- Payload (it can carry) : 1~1.3kg

Our Flight Reference :

- Battery Supply : One 4S 14.8V 5500mah for 13 minutes
- Motor : Tarot 4006 620kv Motor
- ESC : Hobbywing Platinum 30A-OPTO
- Propeller : Tarot 1355 Carbon Propellers
- Carrying : Tarot T-2D Brushless Motor Gimbal, TS352 FPV Transmitter, GoPro Hero 3+ (They weight about 700g)

This package includes :

1. 1 X Tarot 650 Sport Airframe and Motorized Landing Gear
2. 1 X Controller for the Landing Gears
3. 1 X Manual with English
4. Battery Velcro Tape

EXHIBIT-C

Eagle Tree Systems Vector Manuel

(Attached)

EXHIBIT – D

MONTHLY$MAINTENANCE$LOG

month: (year:

UAS$#:$_____	Date(Issue(Discovered	Date(Issue(Addressed	Issue(Description(&(Maintenance(Conducted	Maintenance(Performed(By:(((Print(&(Sign
Software(Updates				
Airframe(				
Engines				
Propellers				
Camera(Gimbal				
Landing(Gear				
Vibration(Dampening				
Other:				