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

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

June 23, 2015

Exemption No. 11886
Regulatory Docket No. FAA–2015–0781

Mr. DeWitt M. Harkness
Managing Partner
FlightWink LLC
3910 Southwest Friar Road
Topeka, KS 66610

Dear Mr. Harkness:

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 March 24,2015, you petitioned the Federal Aviation Administration (FAA) on behalf of FlightWink LLC (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct commercial operations for the agriculture, oil and gas, aerial photography and wildlife preservation industries.

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 are the Volantex Raptor and Tarot T−18.

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, FlightWink LLC is granted an exemption from 14 CFR §§ 61.23(a) and (c), 61.101(e)(4) and (5), 61.113(a), 61.315(a), 91.7(a), 91.119(c), 91.121, 91.151(a)(1), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b), to the extent necessary to allow the petitioner to operate a UAS to perform aerial data collection. This exemption is subject to the conditions and limitations listed below.

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

Conditions and Limitations

In this grant of exemption, FlightWink LLC is hereafter referred to as the operator.

Failure to comply with any of the conditions and limitations of this grant of exemption will be grounds for the immediate suspension or rescission of this exemption.

1. Operations authorized by this grant of exemption are limited to the Volantex Raptor and Tarot T−18 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 June 30, 2017, unless sooner superseded or rescinded.

Sincerely,

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

Enclosures

FlightWink
UAV aviation

March 24, 2015

US Department of Transportation
Docket Operations
West Building, Ground Floor
Room W12-140
1200 New Jersey Ave., SE
Washington, DC 20590

Re: Request for authorization to conduct unmanned aircraft systems operations allowed by *Section 333 of the FAA Modernization and Reform Act of 2012* **through the exemption process identified under** *14 C.F.R. Section 11.81.*

Dear Sir/Madam;

Located in the heart of America's "Ag belt," FlightWink LLC is a Kansas LLC founded by four members of the business, agriculture, and aviation community, Arman A. Miller, John S. Harkness, Cody L. Betsworth, and DeWitt M. Harkness.

Over the past year and one half we, as FlightWink LLC, have amassed many hours of operational experience in unmanned aerial systems (UAS). We have conducted many practice non-commercial missions on our 160-acre rural Wabaunsee County, Kansas, land. FlightWink LLC's commitment is unparalleled when it comes to UAS experience, study, craft maintenance, safety practices, and safety instruction.

DeWitt M. Harkness, has several decades of experience as a current private pilot with a current Class 3 Medical (please see attached) and holds a *VSO Line of Sight Operator Certification* from the Unmanned Safety Institute (please see attached).

All FlightWink LLC's personnel and all business, agriculture, and aviation activities will be properly and fully insured.

FlightWink LLC is poised to bring safety and experience to the United States civilian UAS operations industry. Our exemplary business and aviation experience plus our emphasis on the practice and teaching of UAV safety, we feel, makes us more than worthy for the Secretary to approve our exemption request.

Pursuant to Section 333 of PL 112-95 commonly known as the *"FAA Modernization and Reform Act of 2012"* or *"The Reform Act"*, FlightWink LLC, hereby applies for authorization to conduct commercial unmanned aerial systems (UAS) operations for the agriculture, oil and gas, aerial photography and wildlife preservation industries, within the United States National Airspace System (NAS) within Class G and occasionally E airspace, along with additional restrictions identified herein.

We are submitting the attached detailed information specifically outlining why approval of this request is in the best public interest and how this approval will provide a level of safety at least equal to that provided by the rules FlightWink LLC seeks exemption from.

In addition, through our continued operational experience in the UAS field, FlightWink LLC will show how the approval of this request will facilitate our ability to work with the FAA to safely accelerate the integration of civil unmanned aircraft into the national airspace system as directed by Congress.

By strictly adhering to the guidelines presented herein, FlightWink LLC will insure a safety level greater than that directed by the rules for which we seek exemption. This is especially true when you compare the same operating procedures against a manned aircraft. SUAS are inherently safer due to the fact that they are much smaller, fly at much lower speeds with no human operators on board, and there is zero fuel to be concerned with in the event of a crash.

As processes are further refined, FlightWink LLC's operations will only add to an already higher level of safety compared to manned flight operations which will serve the best public interest in the FAA's endeavor to integrate UAS into the NAS.

We certainly look forward to gaining approval of commercial UAV operations for FlightWink LLC.

Sincerely,

DeWitt M. Harkness, Managing Partner/Pilot
Flight Wink LLC
3910 SW Friar Rd.
Topeka, KS 66610
dewitt2@wolfes.com
785-640-3229

Training & Operations

Section 333 of "The Reform Act" states:

> *"...the Secretary of Transportation shall determine if certain unmanned aircraft systems may operate safely in the national airspace system...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..."*

FlightWink LLC will utilize the ***Volantex Raptor*** (fixed wing) and the ***Tarot T-18*** (octocopter) to conduct operations for the agriculture, oil and gas, aerial photography and wildlife preservation industries. Both crafts meet the requirements for exemption per the *"Performance and Specifications"* section to follow.

Operating within visual line of sight (VLOS) and remaining below 400 feet AGL are standard operating procedures for FlightWink LLC, and will remain so until further advances in safety of flight are introduced to the market and regulated by the FAA.

As described below, all operations will be confined to those areas no closer than 5 statue miles of any airfield and the proper authorities will be notified with any operations within five statue miles.

Safety is of the utmost priority in any and all FlightWink LLC operations.

The Aircraft:

Design: Both crafts are built from a variety of durable, lightweight, and modular components that aid in their capability to safely conduct flights in a variety of conditions. The modularity of construction allows for easy exchange of structural, propulsion, and sensor components in the field as per each manufacturer's specifications and repair/maintenance instruction manuals.

Aircraft Performance/Specifications:

- Craft Composition: *Raptor*--Thermoplastic; *Tarot*--Carbon Fiber
- Flight Controls: (both craft)
  - Primary: GPS Guided Autopilot (Ground Control Station)
  - Backup: Standard Flight Controls (RC Transmitter)
- Power Supply: (both craft) Electric Motor/Next-Gen Battery Technology
- Wingspan: *Raptor*--72"/6 ft.
- Diameter: *Tarot*—60"/5 ft. with 8ea. 18" props.
- Speed in knots: *Raptor*-- Max: 45/Cruise: 25/Stall: 10; *Tarot*—Max: 25
- Empty Weight: *Raptor*--5.5 lbs.; *Tarot*—18 lbs.
- Max Payload: *Raptor*--5 lbs.; *Tarot*—15 lbs.
- Launch (Take Off): *Raptor*--Hand-launch or catapult; *Tarot*—Ground launch
- Recovery (Landing): *Raptor*--Skid Recoverable (belly landing); *Tarot*—Ground landing

Operator Training: All initial flight operations and maintenance training will be conducted in accordance with each manufacturer's training manuals. Once operator candidates have met FlightWink LLC's management's requirements, they will enter into FlightWink LLC's qualification training program which includes FAA authorized ground school training and a Class III medical examination. Upon successful completion, the operator will earn their Co-Operator/Observer rating. Co-Operators/Observers will be required to conduct 50 operational hours and complete the Visual Line of Sight Operator's course through the Unmanned Safety Institute to be considered for Operator in Command qualification testing. The operator candidate will then be required to complete an oral test and "check ride" upon successful completion of which, the operator will receive their Operator in Command rating.

NOTE: King Schools will conduct Ground school training on-line. DeWitt M. Harkness will, in the future, conduct the VSO training.

Initial certification training requirements instructed by each include:

Pre-Flight Training:

- Unpacking and assembly
- Power requirements, set-up and connectivity
- System end-to-end set-up and test inspections
- Preflight, run-up and system checks

Flight Operations Training:

- Proper Handling
- Motor Operations

- GCS Flight Programming and Test
- Launch
- Basic Flight (climb, cruise, descent, landing)
- Maneuvering
- Airspace and Landing Zone Operations
- Flight Reprogramming
- Flight Monitoring
- In-Flight Emergency Procedures

Post Flight:

- Shut Down Procedures
- Data Retrieval and Storage
- End-to-End Test and Maintenance Logs
- Disassembly
- Packing, Storage and Transportation

Co-Operator/Observer qualification training requirements instructed by FlightWink LLC:

- Understanding FAA Rules / Regulations
- Collection Requirements
- Operational Planning
- Flight Planning
- Area of Operations ~ Hazard Mitigation
- Daily Flight and Inspection Log Completion
- Proper Authority Notification Process

Operator in Command qualification testing requirements instructed by FlightWink LLC:

- Visual Line of Sight VSO written e xam consisting of 30 questions with a pass rate of 80% following the guidelines set forth by the Unmanned Safety Institute
- "Check Ride" and Oral exam consisting of:
  - Airport Operations
  - Maintenance Inspections
  - Flight Plan Development
  - Area of Operations Hazard Mitigation
  - Weather Hazard Mitigation
  - Emergency Procedures
  - Pre-Flight Operations
  - Flight Operations
  - Post-Flight Operations

FlightWink LLC's Operations Execution:

Given the fact commercial UAS operations are restricted due to the lack of regulations, a logical and safe solution is to utilize the safety guidance provided for hobbyist use of sUAS and other model aircraft as identified by *Advisory Circular 91-57 and Section 336 of the "Reform Act"*. FlightWink LLC operations will be conducted in a methodical, efficient, and most importantly, safe manner adhering to strict guidelines which addresses safety concerns with proximity to airports and populated areas in the interim of official guidance from the FAA as the rules and regulations are being further developed.

The following list provides specific rules and guidelines all FlightWink LLC operations will adhere to ensuring at least an equivalent or higher level of safety when compared to manned aircraft performing the same functions as outlined within *14 C.F.R.*

All FlightWink LLC's crews will:

Be comprised of a minimum of two certified operators with one serving as Operator in Command (OIC) and the other(s) as Co-Operator/Observer(s).

Consist of one certified air vehicle maintenance technician to conduct pre and post flight inspections.

NOTE: OIC/Observer may also fill the role of the maintenance technician

Attend pre and post flight mission briefs which will consist of weather information, flight information to include operational area and mission objectives, hazard mitigation actions and most importantly emergency and abort procedures; also included will be any NOTAMs or improvements to standard operating procedures through further refinements in operations.

Sign applicable documentation verifying their attendance to mandatory briefs as well as produce daily pre and post flight inspections and flight logs.

All FlightWink LLC's operations will:

At no time fly within 5 statute miles of any operational airfield.

Provide prior notification to airfield operator and airfield air traffic control tower (when applicable) when operating within five statute miles of any active airfield no later than 24 hours prior to air operations.

Provide prior written notification to local/county sheriff and fire departments in the event assistance is required to include: flight plans, type and capabilities of air vehicle(s) operated and operator's contact information no later than 24 hours prior to operations.

Be conducted using sUAS as defined by the FAA weighing less than 55 lbs. All operations authorized through this exemption request will be done with our *Raptor* and/or *Tarot* with all future aircraft presented to FAA for approval prior to operational use.

Be conducted in Class G and occasionally E airspace and shall not exceed 400 feet above ground level (AGL).

Be conducted within visual line of sight (VLOS) of the qualified OIC and Co-Operator/Observers.

Give right-of-way to and avoid flying near manned aircraft at all times.

Be conducted in rural environments and outside of city limits.

Be conducted with prior written consent from landowner.

Ensure air vehicles do not encroach within 250 feet of any improved road, person, vehicle or structure that is not associated with operations.

Abort/Cancel in the event of detrimental weather to include wind speeds exceeding the allowable limits as defined within operations manuals.

FlightWink LLC's Emergency Procedures:

- In the event the air vehicle losses GPS signal, automated landing will immediately commence. The flight plan is built in such a way that hazards are identified prior to launch and an immediate landing within the flight plan will ensure all hazards are avoided. *(This safety feature is inherent to sUAS and no further assistance from the OIC is necessary; however, the OIC will retain option for manual control at all times.)*
- In the event the OIC loses signal with the air vehicle, automated landing will immediately commence. The flight plan is built in such a way that hazards are identified prior to launch and an immediate landing within the flight plan will ensure all hazards are avoided. *(This safety feature is inherent to the sUAS and with operations being conducted in the rural environment as previously stated, there are no concerns to personnel, vehicles or structures with an autonomous landing.)*
- In the event hazardous weather unexpectedly approaches and may affect operations, the OIC will immediately abort the operation and conduct landing activities.
- In the event an in-flight emergency occurs, (ie. air vehicle maintenance issues), the OIC will immediately abort flight and conduct landing activities; air vehicle inspection will immediately be achieved and the air vehicle will not return to service without proper authorization from certified maintenance technicians.
- In a "significant" event (ie. air vehicle crashes and outside assistance is needed), OIC will conduct notification procedures to include county sheriff and fire departments, airfield operator/tower if applicable and any other authority required to mitigate situation.
    - A "significant" event report will be generated by the OIC, verified by the Co/Observer and maintenance technician and immediately provided to the OIC and FlightWink LLC management.

NOTE: Notification can be made to the FAA to assist in future prevention techniques

As stated in the cover letter, FlightWink LLC, by following our many strict self-imposed guidelines, will achieve a safety level greater than that directed by the rules from which we seek exemption. This will be especially true when you compare the same operating procedures against a manned aircraft. Again, sUAS are inherently safer due to the fact that they are much smaller, fly at much lower speeds with no human operators on board, and there is zero fuel to be concerned with in the event of a crash. As processes are further refined, FlightWink LLC's continued extremely conscientious operations will only add to an already higher level of safety compared to manned flight. FlightWink LLC's operations will serve the public's best interests as they relate to the FAA's endeavor to integrate UAS into the NAS.

Regulations – Exemption Requested by FlightWink LLC:

Pursuant to *14 C.F.R. § 11.81(e)*, FlightWink LLC seeks exemption from the below mentioned regulations and provides reason as to why the exemption should be approved based on the level of safety at least equal to that of which the rules require.

- *14 C.F.R. Part 21 Subpart H* – **Airworthiness Certificates:**
  - **Establishes:** ***The procedural requirements for the issuance of airworthiness certificates as required by 14 C.F.R. § 91.203(a)(1)***

Given the small size of the UAS, the limited operating areas and meticulous procedures defined within the training and operations section, an exemption from *Part 21 Subpart H* meets the requirements of an equivalent level of safety under *Part 11 and Section 333* of the "Reform Act" with consideration "of the size, weight, speed, operational capability, and proximity to airports and populated areas of the particular UAS."

> *NOTE: The FAA has recently set precedence to this regulation within like given parameters and an exemption should be approved on this basis. See exemption approvals for Blue Chip, Astraeus Aerial, Aerial MOB, HeliVideo Productions, RC Pro Productions, Snaproll Media, and Pictorvision.*

- *14 C.F.R. § 45.23(b)* – **Aircraft Marking and Identification Requirements:**

  - *14 C.F.R. § 45.23(b),* Markings of the Aircraft, states:
    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.

FlightWink LLC will ensure compliance with *§ 45.29(f)* to meet the intent of the regulation by placing the word *"Experimental,"* for all to see, on each craft plus a unique FlightWink LLC identification number in the event several craft of the identical like and type are acquired.

NOTE: The FAA has set precedence to this regulation within like given parameters and an exemption should be approved on this basis along with previous exemptions: Nos. 10700, 10167 and 10167A. Also, see most recent exemption approvals for Blue Chip, Astraeus Aerial, Aerial MOB, HeliVideo Productions, RC Pro Productions, Snaproll Media, and Pictorvision for further justification of approval.

- *14 C.F.R. 61.113 (a)(b) and 61.133(a)(1)(ii)* – **Private and Commercial Pilot Privilege and Limitations:**

  - *14 C.F.R. § 61.113: (a) Except as provided in paragraphs (b) through (g) of this section, no person who holds a private pilot certificate may act as pilot in command of an aircraft that is carrying passengers or property for compensation or hire; nor may that person, for compensation or hire, act as pilot in command of an aircraft. (b) A private pilot may, for compensation or hire, act as pilot in command of an aircraft in connection with any business or employment if:*

  - *14 C.F.R. § 61.133: (a) Privileges – (1) General. A person who holds a commercial pilot certificate may act as pilot in command of an aircraft – (ii) For compensation or hire, provided the person is qualified in accordance with this part and with the applicable parts of this chapter that apply to the operation.*

Currently, there are no applicable areas identified for sUAS in either the private or commercial sector and therefore an exemption is required to conduct commercial operations. As flight operations will be conducted in a restricted environment as described in the operations section, these strict guidelines will achieve an equivalent level of safety for each individual flight especially when compared to commercial flights identified in *Part 61* when originally developed. In addition, each craft's primary control system will utilize GPS waypoints for guidance and control, FlightWink LLC's flight operations will be conducted by qualified Operators with ground school certification, a Class III medical, and a VSO Operator's Certification.

NOTE: Operators may or may not hold a private pilot license.

Due to the fact not all operators will be rated pilots, all flight operations will be overseen and directed by, DeWitt M. Harkness, a current FAA certified private pilot with current FAA ground school certification, a current Class 3 medical, and holding a current VSO Operator's certification from the Unmanned Safety Institute. This will give all FlightWink LLC's operations an equivalent level of safety.

- *14 C.F.R. 91.7(a)* – **Civil Aircraft Airworthiness:**
  - **States:** *No person may operate a civil aircraft unless it is in an airworthy condition.*

Currently there is no airworthiness certificate for either of the craft. FlightWink LLC will submit same to the FAA as soon as the manufacturer's supply one. In the interim, daily pre and post flight inspections will be accomplished in accordance with manufactures maintenance manual(s) and guidance. During flight, the OIC will adhere to *§ 91.7(b)* and abort air operations immediately upon identification of an in flight emergency. All maintenance performed will be conducted by our maintenance technicians and/or by the manufacturer's themselves. By applying the prescribed operations, inspection, and maintenance procedures within the operations section, an equivalent level of safety will be achieved.

NOTE: The FAA has set precedent by previously issuing exemptions for § 91.7(a): Exemption Nos. 8607, 8737, 8738, 9299, 9299A, 9565, 9565B, 10167, 10167A, 10602, 32827, and 10700. Also, see most recent exemption approvals for Blue Chip, Astraeus Aerial, Aerial MOB, HeliVideo Productions, RC Pro Productions, Snaproll Media and Pictorvision for further justification of approval.

- *14 C.F.R. 91.103* – **Preflight Action:**
  - *States: Each pilot in command shall, before beginning a flight, become familiar with all available information concerning that flight. This information must include- (paragraphs a, b, 1 and 2)*

A *"Pre-flight Mission"* brief must be attended by all crewmembers. This "PMB" will contain weather and all flight information including emergency and abort procedures. A signature will be required by all crew members indicating they have received the PMB and have read any NOTAMs or other procedural updates which may have an impact on standard operating procedures. In addition, the OIC will verify the craft is ready for flight by coordinating with the maintenance technician during pre-flight inspection.

The exemption requested for this section is specifically addressed toward the requirements that do not apply to sUAS operations such as runways and air traffic control integration.

NOTE: As previously stated, air traffic control and airport operator will be notified prior to any operations being executed within five statute miles

NOTE: The FAA has recently set precedence to this regulation within like given parameters and an exemption should be approved on this basis. See exemption approvals for Blue Chip, Astraeus Aerial, Aerial MOB, HeliVideo Productions, RC Pro Productions, Snaproll Media, and Pictorvision.

- *14 C.F.R. 91.109(a)* – **Flight Instruction:**
  - *States: 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.*

The majority of sUAS by design are developed with single operational control through the use of pre-determined GPS enabled waypoints programmed before or during flight in addition to the use of a single hand held transmitter or control station controlled by the

OIC. The design does not allow for dual controls during flight training and therefore the exemption is requested to qualify/certify operators as required by the manufacturer along with specific operations training and procedures identified above within section II.

An equivalent level of safety will be ensured during training operations by utilizing the same flight planning process for normal operations. As identified in the flight-planning document, all ground hazards will be identified and mitigation techniques will be enacted to ensure flights stay outside of 250 feet of any improved roads, vehicles, persons or structures. Training operations will be conducted within a confined space on our 160-acre private land in rural Wabaunsee County, Kansas.

NOTE: The FAA has set precedent by previously issuing exemptions for § 91.109(a): Exemption Nos. 5778K and 9862A. Also, see most recent exemption approvals for Blue Chip, Astraeus Aerial, Aerial MOB, HeliVideo Productions, RC Pro Productions, Snaproll Media, and Pictorvision for further justification of approval.

- *14 C.F.R. 91.119 (c)* – **Minimum Safe Altitudes:**
  - **States:** *Except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes: (c) Over other than congested areas. An altitude of 400 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 400 feet to any person, vessel, vehicle, or structure.*

FlightWink LLC operations will be conducted at 400 feet AGL or below in uncontrolled Class G and occasionally E airspace. As sUAS are inherently safer than traditional aircraft due to their small size, light weight, battery operated vice fuel and no human on-board; FlightWink LLC will not operate within 250 feet to any improved roads, vehicles persons or structures (other than those being inspected as part of the flight operation). In addition, objects/hazards will be identified and geo-located prior to flight.

NOTE: See Flight Planning Document

- *14 C.F.R. 91.121* – **Altimeter Settings:**
  - **States:** *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...*

SUAS are equipped with Global Positioning System (GPS), which provide altitude and geo-location data to the operator. Due to this fact, an exemption is required for this system to be utilized in flight. GPS's are precise within a few feet and therefore meet a safety level equal to if not higher than regulatory guidance.

As described in the emergency procedures section, in the event the air vehicle losses GPS signal, automated landing will immediately commence. The flight plan is built in such a way that hazards are identified prior to launch and an immediate landing within the flight plan will ensure all hazards are avoided.

NOTE: The FAA has recently set precedence to this regulation within like given parameters and an exemption should be approved on this basis. See exemption approvals for Blue Chip, Astraeus Aerial, Aerial MOB, HeliVideo Productions, RC Pro Productions, Snaproll Media, and Pictorvision.

- *14 C.F.R. 91.151(a)* – **Fuel Requirements for Flight in VFR Conditions:**
  - **States:** *No person may begin 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;*

This regulation is written based on the capabilities of a traditional aircraft which have flight times of several hours or greater. Since our crafts have flight times of only an hour or less, this regulation would effectively deny the ability of the air vehicle to operate.

Using our Cessna 172 as an example, approximately 8% remaining fuel is required to meet the 30-minute flight time. To meet this regulation's intent, FlightWink LLC will operate its air vehicles to no less than 10% remaining battery power to ensure safe landing and retrieval. This 10% buffer is greater than the Cessna 172. Our ability to quickly and safely land our crafts in non-traditional environments ensures at least an equal level of safety.

NOTE: The FAA has set precedent by previously issuing exemptions for § 91.151(a): Exemption Nos. 10673, 2689F, 5745, 10673 and 10808. Also, see most recent exemption approvals for Blue Chip, Astraeus Aerial, Aerial MOB, HeliVideo Productions, RC Pro Productions, Snaproll Media and Pictorvision for further justification of approval.

- *14 C.F.R. 91.405(a), 91.407(a)(1), 91.409(a)(2) and 91.417(a) & (b)* – **Maintenance Inspections:**
  - *91.405(a) States: 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.*
  - *91.407(a)(1) States: (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.*
  - *91.409(a)(2) States: (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—(2) An inspection for the issuance of an airworthiness certificate in accordance with part 21 of this chapter. No inspection performed under paragraph (b) of this section may be substituted for any inspection required by this paragraph unless it is performed by a person authorized to perform annual inspections and is entered as an "annual" inspection in the required maintenance records.*
  - *91.417(a) & (b) States: (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: (paragraphs 1 (i – iii), 2 (i – vi)); (b) The owner or operator shall retain the following records for the periods prescribed: (paragraphs 1 – 3).*

Due to the fact our crafts at present do not have an airworthiness certificates, these regulations do not apply and therefore an exemption is required. Pre/Post and routine inspections (not to exceed 50 flight hours) and maintenance will be conducted in accordance with the manufacturer's guidance as stated in the operations manual. In addition, to meet the intent of these regulations, FlightWink LLC, will maintain daily logs of pre and post flight inspections and have maintenance performed by certified technicians and/or the manufacturer themselves. In the event maintenance is required, certified technicians will verify the air vehicle is in flight readiness status prior to releasing to OIC for use in operations.

Unscheduled maintenance will be accomplished in the event of a mechanical or structural failure during flight. Upon completion of unscheduled maintenance, documentation will be provided to the OIC to sign off and verify that the air vehicle is once again ready for flight and accept the level of risk associated with returning the air vehicle to flight status. At no time will there be changes made to any craft that would impact the structural integrity of the airframe without the manufacturer making such changes and verifying the craft is airworthy.

All inspection and maintenance will be documented and maintained in-house. These actions will meet the intent of the regulation exemption is being requested and lead to an equivalent level of safety.

NOTE: The FAA has recently set precedence to this regulation within like given parameters and an exemption should be approved on this basis. See exemption approvals for Blue Chip, Astraeus Aerial, Aerial MOB, HeliVideo Productions, RC Pro Productions, Snaproll Media and Pictorvision.

Public Interest:

The public's best interest is achieved by the safe integration of UAS into the NAS. With the ongoing exemption process, the FAA has to identify those exemption requests with the public's best interest in mind and select the companies who will be able to achieve this in a safe and responsible manner.

Two of the main problems the public has with UAS are the fear of what they will be used for and whether or not they are safe to fly within the same airspace as commercial airliners.

FlightWink LLC is more than willing to help with public education and that starts with conducting operations within strict operating environments and then providing the results to the public to start to sway opinion in a positive light.

With the UAV experience this team has built over the past year and one half, the FAA will provide a great service to the American public by approving FlightWink LLC's exemption request.

FlightWink LLC will provide any additional information requested and will diligently work with to make this approval a reality as it is in the best interests of and safety of the public as directed by Congress.

Privacy Concerns:

Another concern the public has with the integration of UAS into the NAS is privacy and spying especially recently with the disclosure of the NSA's communication programs.

The media has also placed a negative light on UAS when it comes to privacy by showing how the military has used this technology to conduct combat operations through the use of the visual and infrared sensors they carry.

Fortunately with this matter, FlightWink LLC is well versed in the privacy and oversight concerns which are addressed by federal government regulations: *Executive Order 12333, DOD Directive 5240.1-R and AFI 14-104.* Although the regulations do not apply to private commercial entities, our knowledge and experience in working within these regulations will assist and ensure any and all privacy concerns will be minimal and immediately mitigated.

In addition, the most efficient and successful avenue to combat these concerns is to educate the public in how UAS technology will be used to exponentially improve all of our lives and place emphasize on how we should embrace the technology instead of fearing it.

With this constantly in mind, FlightWink LLC will look at actions we can take to move forward with this endeavor and assist the FAA and all UAS employment companies as a whole to better public perception and create a cohesive environment we all can operate in safely.

FAA Collaboration:

FlightWink LLC is and will always be committed to the safe integration of UAS into the NAS and will provide any requested information on its flight operations to the FAA to assist in the rules making process.

As stated in the operations section, post flight logs will be required to be completed to produce monthly flight summaries which will include both positive and negative reporting placing emphasize on any issues which may arise during any segment of the operations.

Federal Register:

Pursuant to *Section 333 of PL 112-95* commonly known as the "FAA Modernization and Reform Act of 2012" or "The Reform Act", FlightWink LLC hereby applies for authorization to conduct commercial unmanned aerial systems (UAS) operations for the agriculture, oil and gas, aerial photography and wildlife preservation industries, within the United States National Airspace System (NAS); within Class G and occasionally E airspace.

Rules from which FlightWink LLC seeks exemption:

- *14 C.F.R. Part 21 Subpart H*
- *14 C.F.R. § 91.7(a)*
- *14 C.F.R. § 45.23(b)*
- *14 C.F.R. § 61.113 and 61.133(a)(1)(ii)*
- *14 C.F.R. § 91.7(a)*
- *14 C.F.R. § 91.103*
- *14 C.F.R. § 91.109(a)*
- *14 C.F.R. § 91.119*
- *14 C.F.R. § 91.121*
- *14 C.F.R. § 91.151(a)*
- *14 C.F.R. § 91.405(a)*
- *14 C.F.R. § 91.407(a)(1)*
- *14 C.F.R. § 91.409(a)(2)*
- *14 C.F.R. § 91.417(a) & (b)*

Throughout this exemption request, FlightWink LLC has shown how our expertise and knowledge with UAS safety and technology will ensure the public's best interest is always strictly adhered to. We will assist the FAA with their charge to *"safely accelerate the integration of civil unmanned aircraft systems into the national airspace system"* as directed by Congress.

We have also shown how the approval of our request will meet and exceed the FAA's requirement for *"at least an equivalent level of safety"* from the regulations we seek exemption.

At each level through process refinement, FlightWink LLC, will capture and document the best practices to develop proven tactics, techniques, and procedures for each and every UAS operation.

When it comes to the public and what is in their best interest, you will be hard pressed to find a team more qualified for an exemption under Section 333 than FlightWink LLC.

It will be a great service to the country and in the *"public's best interest"* to include our team in the UAS integration endeavor.

UNMANNED SAFETY INSTITUTE™

VISUAL LINE OF SIGHT OPERATOR™

DeWitt M. Harkness Jr.

Has successfully completed all requirements and is herby designated by the Unmanned Safety Institute™ as a Visual Line-of-sight Operator ™ on this the 2nd day of January 2015.

Alexander Mirot
President
Unmanned Safety Institute™

15-43200-100-43258