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

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

September 16, 2015

Exemption No. 12864
Regulatory Docket No. FAA−2015−2162

Mr. David B. Churchill
Professional Claims Services, Inc.
1235 Holmgrove Drive
San Marcos, CA 92078

Dear Mr. Churchill:

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

By letter dated May 15, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Professional Claims Services, Inc. (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial imaging to perform site inspections.

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 DJI Phantom 2, DJI Phantom 3, and the DJI Inspire 1.

The petitioner requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*. In accordance with the statutory criteria provided in Section 333 of Public Law 112−95 in reference to 49 U.S.C. § 44704, and in

consideration of the size, weight, speed, and limited operating area associated with the aircraft and its operation, the Secretary of Transportation has determined that this aircraft meets the conditions of Section 333. Therefore, the FAA finds that the requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*, and any associated noise certification and testing requirements of part 36, is not necessary.

The Basis for Our Decision

You have requested to use a UAS for aerial data collection[1]. The FAA has issued grants of exemption in circumstances similar in all material respects to those presented in your petition. In Grants of Exemption Nos. 11062 to Astraeus Aerial (*see* Docket No. FAA−2014−0352), 11109 to Clayco, Inc. (*see* Docket No. FAA−2014−0507), 11112 to VDOS Global, LLC (*see* Docket No. FAA−2014−0382), and 11213 to Aeryon Labs, Inc. (*see* Docket No. FAA−2014−0642), the FAA found that the enhanced safety achieved using an unmanned aircraft (UA) with the specifications described by the petitioner and carrying no passengers or crew, rather than a manned aircraft of significantly greater proportions, carrying crew in addition to flammable fuel, gives the FAA good cause to find that the UAS operation enabled by this exemption is in the public interest.

Having reviewed your reasons for requesting an exemption, I find that—

- They are similar in all material respects to relief previously requested in Grant of Exemption Nos. 11062, 11109, 11112, and 11213;
- The reasons stated by the FAA for granting Exemption Nos. 11062, 11109, 11112, and 11213 also apply to the situation you present; and
- A grant of exemption is in the public interest.

Our Decision

In consideration of the foregoing, I find that a grant of exemption is in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. 106(f), 40113, and 44701, delegated to me by the Administrator, Professional Claims Services, Inc. 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, Professional Claims Services, Inc. is hereafter referred to as the operator.

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

1. Operations authorized by this grant of exemption are limited to the DJI Phantom 2, DJI Phantom 3, and Inspire 1 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

May 15, 2015

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

RE: Professional Claims Services, Inc. - Exemption Request Section 333 of the FAA Reform Act and Part 11 of the Federal Aviation Regulations from 14 C.F.R. Part 21; 14 C.F.R. 45.23(b); 14 C.F.R. 61.113(a) & (b); 91.7 (a); 91.9 (b) (2); 91.103(b); 91.109; 91.119; 91.121; 91.151(a); 91.203(a) & (b); 91.405(a); 91.407(a) (1); 91.409(a) (2); 91.417(a) & (b); 61.3(a); 61.23(a).

Dear Sir or Madam:

In accordance with Section 333 of the FAA Modernization and Reform Act of 2012 and 14 C.F.R. Part 11, Professional Claims Services, Inc., a California Corporation licensed by the California Department of Insurance as an insurance adjusting entity, hereby applies for an exemption from the listed Federal Aviation Regulations (FARs) to allow commercial operation of Small Unmanned Aircraft Systems (sUASs) for aerial imaging to perform site inspections.

The requested exemption would permit the commercial operation of small, unmanned and relatively inexpensive sUAS by trained sUAS operators. The President of Professional CLaims Services, Inc. (ProClaims), David B. Churchill, has been a licensed pilot for 47 years and a licensed insurance adjuster for 30 years and is the designated sUAS operator for ProClaims.

ProClaims is involved in damage assessment for insurance companies and responds to catastrophe losses such as Hurricanes Katrina, Ivan, Jean, Charlie, Frances, Wilma and Sandy. The Section 333 exemption will allow safer documentation, and ease of assessment, of damages.

The exemption will allow ProClaims the opportunity to invest in the sUAS and other equipment and software to develop inspection programs that are beneficial to not only our clients, but the safety of our inspectors and the public in general.

Approval of this exemption would fulfill the Secretary of Transportations' (the FFA Administrator's) responsibilities to "…establish requirements for the safe operation of such aircraft systems in the national airspace system" based on Section 333(c) of the FAA Modernization and Reform Act of 2012. Our request falls within the most recent set of Operational Limitations proposed by the FAA regarding commercial use of sUASs.

ProClaims understands that the intent of the Act is to promptly approve such requests for the overall good of the public to help in determining the proper implementation of sUASs into our NAS. This will exemption will allow damages to be documented promptly so that those who have suffered covered losses can be compensated.

Respectfully,

David B. Churchill – dchurchill@proclaims.com
President – Professional Claims Services, Inc.

TABLE OF CONTENTS

REGULATIONS FROM WHICH THE EXEMPTION IS REQUESTED:

14 CFR Part 21
14 C.F.R. 45.23(b)
14 CFR 61.113 (a) & (b)
14 C.F.R. 91.7 (a)
14 CFR 91.9 (b) (2)
14 C.F.R. 91.103
14 C.F.R. 91.109
14 C.F. R. 91.119
14 C.F.R. 91.121
14 CFR 91.151 (a)
14 CFR 91.203 (a) & (b)
14 CFR 91.405 (a)
14 CFR 407 (a) (1)
14 CFR 409 (a) (2)
14 CFR 417 (a) & (b)
14 CFR 61.3 (a)
14 CFR 61.23 (a)

INTRODUCTION AND INTERESTS OF THE PETITIONER

Professional Claims Services, Inc. (ProClaims) is an insurance claims adjusting and appraising company licensed by the California Department of Insurance.

An integral part of the business operations of ProClaims is damage assessment, documentation, and estimating the cost to repair damaged insured property. Damage to higher building elevations and roofs require large ladders, rope devices, and lift buckets for inspections and that dramatically increases the risk of injury to our adjusters and appraisers in the field. sUASs will eliminate the need to climb high and steep roofs to photo document any damage.

Exemption will allow ProClaims adjusters and appraisers to inspect and photo damage that may otherwise not be accessible or safe to access due to roof pitch or height. Currently the appraiser that climbs on the roof is not only is exposed to increased danger, any walking on a roof can lead to broken tiles, shingles, and leaks.

ProClaims, 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 allow ProClaims to commercially operate the DJI Phantom 2 Vision v3.0, or similar commercially manufactured sUAS, in our National Airspace System (NAS), and for an exemption from the requirements of 14 CFR above.

As set forth below, ProClaims meets all of the criteria for exemption. Each exemption requested is set forth with our rationale as to why each exemption should be granted. Also included is a checklist of limitations applicable to our operations and our exemption request.

DESCRIPTION OF RELIEF SOUGHT FOR SPECIFIC REGULATIONS

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

Subpart H, entitled Airworthiness Certificates, establishes the procedural requirements for the issuance of airworthiness certificates as required by FAR §91.203 (a) (1). Given the size and limited operating area associated with the aircraft to be utilized by the Applicant, Victory Improvement Professionals, 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. The Federal Aviation Act (49 U.S.C.§44701 (f)) and Section 333 of the Reform Act both authorize the FAA to exempt aircraft from the requirement for an airworthiness certificate, upon consideration of the size, weight, speed, operational capability, and proximity to airports and populated areas of the particular UAS. In all cases, an analysis of these criteria demonstrates that the UAS operated without an airworthiness certificate, in the restricted environment and under the conditions proposed will be at least as safe, or safer, than a conventional aircraft (fixed wing or rotorcraft) operating with an airworthiness certificate without the restrictions and conditions proposed. The sUAS to be operated hereunder meets the definition of Section 333 (6) being less than the 55 lbs. fully loaded, carries neither a pilot nor passenger, carries no explosive materials or flammable liquid fuels, and operates within an area with written or verbal approval. Unlike other civil aircraft, operations under this exemption will be tightly controlled and monitored by the operator, and in compliance with both Federal and local public safety requirements. The FAA will receive advance notice of all operations with the required filing of a Certificate of Waiver. These safety enhancements, which are already greater than currently required by hobbyist, provide a greater degree of safety to the public and property owners than conventional operations conducted with airworthiness certificates issued under 14 C.F.R. Part 21, Subpart H. Application of these criteria demonstrates that there is no credible threat to national security posed by the UAS, due to its size, speed of operation, location of operation, lack of explosive materials or flammable liquid fuels, and inability to carry a substantial external load.

14 C.F.R. § 45.23 (b). Marking of the Aircraft

The regulation requires: When marks include only the Roman capital letter "N" and the registration number is displayed on limited, restricted or light-sport category aircraft or experimental or provisionally certificated aircraft, the operator must also display on that aircraft near each entrance to the cabin, cockpit, or pilot station, in letters not less than 2 inches nor more than 6 inches high, the words "limited," "restricted," "light-sport," "experimental," or "provisional," as applicable. Even though the sUAS will have no airworthiness certificate, an exemption may be needed as the sUAS will have no entrance to the cabin, cockpit or pilot station on which the word “Experimental” can be placed. Given the size of the sUAS, two-inch lettering will be impossible. The word “Experimental” will be placed on the fuselage in compliance with §45.29 (f). The equivalent level of safety will be provided by having the sUAS marked on its fuselage as required by §45.29 (f) where the pilot, observer and others working with the sUAS will see the identification of the UAS as “Experimental.” The FAA has issued the following exemptions to this regulation to Exemptions Nos. 10700, 8738, 10167 and 10167A.

14 C.F.R. § 61.113 (a) & (b): Private Pilot Privileges and Limitations: Pilot in Command.

David B. Churchill, president of ProClaims, is the designated Pilot. His FAA Certificate Number is 2174907. He maintains a California Driver’s License. Sections 61.113 (a) & (b) limit private pilots to non-commercial operations**.** Because the sUAS will not carry a pilot or passengers, the proposed operations can achieve the equivalent level of safety of current operations by requiring the PIC operating the aircraft to have specific training to the sUAS along with in house training to current FAA regulations regarding our NAS and civic responsibility. Unlike a conventional aircraft that carries the pilot and passengers, the sUAS is remotely controlled with no living thing on board. The area of operation is controlled and restricted, and all flights are planned and coordinated in advance. These types of sSUAs are currently being flown by hobbyist without any certifications. The level of safety provided by the requirements included in the manufacturer’s Manual exceeds that provided by a single individual currently operating an sUAS as a hobbyist. The risks associated with the

operation of the sUAS are substantially diminished from the level of risk associated with conventional manned operations contemplated by Part 61 when drafted, that allowing operations of the sUAS as requested with specific training as the operator exceeds the present level of safety achieved by 14 C.F.R. §61.113 (a) & (b) or what is allowed currently by hobbyists.

14 C.F.R. §91.7(a): Civil aircraft airworthiness.

The regulation requires that no person may operate a civil aircraft unless it is in airworthy condition. As there will be no airworthiness certificate issued for the aircraft, should this exemption be granted, no FAA regulatory standard will exist for determining airworthiness. Given the size, speed and flight restrictions placed on the UAS along with the preflight and maintenance required, an airworthiness certificate is not needed since our practice will exceed all current FAA guidelines pertaining to airworthiness of sUASs.

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

Section 91.9 (b) (2) provides: No person may operate a U.S.-registered civil aircraft …
(2) For which an Airplane or Rotorcraft Flight Manual is not required by §21.5 of this chapter, unless there is available in the aircraft a current approved airplane or Rotorcraft Flight Manual, approved manual material, markings, and placards, or any combination thereof.
The sUAS, given its size and configuration has no ability or place to carry such a flight manual on the aircraft, not only because there is no pilot on board, but because there is no room or capacity to carry such an item on the aircraft. The equivalent level of safety will be maintained by keeping the flight manual at the ground control point where the pilot flying the sUAS will have immediate access to it. The FAA has issued the following exemptions to this regulation: Exemption Nos. 8607, 8737, 8738, 9299, 9299A, 9565, 9565B, 10167, 10167A, 10602, 32827, and 10700.

14 C.F.R. § 91.103: Preflight action

Visual pre-flight of all physical components will be conducted prior to rotor initiation. The regulation requires each pilot in command to take defined actions before flight to insure the safety of the flight. As FAA approved rotorcraft flight manuals will not be provided for the aircraft an exemption will be needed. An equivalent level of safety will be provided as set forth in the attached Operator Preflight form. The Operator will take all actions including reviewing weather, flight battery requirements, landing and takeoff distances and aircraft performance data before initiation of flight.

14 C.F.R. §91.109: Flight instruction:

Section 91.103 provides that no person may operate a civil aircraft (except a manned free balloon) that is being used for flight instruction unless that aircraft has fully functioning dual controls. sUASs and remotely piloted aircraft, do not have fully functional dual controls. Flight control is accomplished through the use of a control box that communicates with the aircraft via radio, wi-fi, or bluetooth communications. The FAA has approved exemptions for flight training without fully functional dual controls for a number of aircraft and for flight instruction in experimental aircraft. See Exemption Nos.5778K & 9862A. The equivalent level of safety provided as neither a pilot nor passengers will be carried in the aircraft and by the size and speed of the aircraft. The safety of those on the ground is protected by the fact that each structure that is the subject of the documented flight will have verbal or written authorization and will be conducted in a defined area where we can limit non-participating individuals.

14 C.F.R. §91.119: Minimum safe altitudes

Section 91.119 establishes safe altitudes for operation of civil aircraft. Section 91.119 (d) allows helicopters to be operated at less than the minimums prescribed, provided the person operating the helicopter complies with any route or altitudes prescribed for helicopters by the FAA. As this exemption is for a sUAS that is a helicopter and the exemption requests authority to operate at altitudes up to 400 AGL, or not more than 200 above an elevated platform from which filming is planned, an exemption may be needed to allow such operations. As set forth herein, except for the limited conditions stated in the Manual, the UAS will never operate at higher than 400 AGL. It will however be operated in a restricted area with security perimeter, where buildings and people will not be exposed to operations without their pre-obtained consent.The equivalent level of safety will be achieved given the size, weight, speed of the UAS as well as the location where it is operated. No flight will be taken without the permission of the property owner or local officials. Because of the advance notice to the property owner and participants in the filming activity, all affected individuals will be aware of the planned flight operations as set forth in Section K of the Manual. Compared to flight operations with aircraft or rotorcraft weighting far more than the maximum 55lbs. proposed herein and the lack of flammable fuel, any risk associated with these operations is far less than those presently presented with conventional aircraft operating at or below 500 AGL in the movie industry. In addition, the low-altitude operations of the sUAS will ensure separation between these small-UAS operations and the operations of conventional aircraft that must comply with Section 91.119.

14 C.F.R. §91.121 Altimeter Settings

This regulation requires each person operating an aircraft to maintain cruising altitude by reference to an altimeter that is set "…to the elevation of the departure airport or an appropriate altimeter setting available before departure." As the sUAS may not have a barometric altimeter, but instead a GPS altitude read out, an exemption may be needed. An equivalent level of safety will be achieved by the operator, pursuant to the Manual and Safety Check list, confirming the altitude of the launch site shown on the GPS altitude indicator before flight.

14 C.F.R. § 91.151(a): Fuel Requirements for Flight in VFR Conditions

Section 91.151 (a) prohibits an individual from beginning "a flight in an airplane under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing, and, assuming normal cruising speed – (1) During the day, to fly after that for at least 30 minutes; or (2) At night, to fly after that for at least 45 minutes." The battery powering the sUAS provides approximately 7-30 minutes of powered flight. The DJI Phantom 2 v3.0 has 25 minutes of flight time. There is less than the minimum to meet the 30 minute reserve requirement in 14 CFR §91.151. sUAS flights would be limited to using 2/3 of the battery capacity. Given the limitations on the UAS's proposed flight area and the location of its proposed operations within a predetermined area, a longer time frame for flight in daylight or night VFR conditions is reasonable. ProClaims believes that an exemption from 14 CFR §91.151(a) falls within the scope of prior exemptions. *See* Exemption 10673 (allowing Lockheed Martin Corporation to operate without compliance with FAR 91.151 (a)). Operating the small UAS, in a tightly controlled area where only people and property owners or official representatives who have signed waivers will be allowed, with less than 30 minutes of reserve fuel, does not engender the type of risks that Section 91.151(a) was intended to alleviate given the size and speed of the small UAS. Additionally, limiting sUAS flights to 30 minutes of fuel remaining would greatly reduce the utility for which the exemption will be granted. ProClaims believes that an equivalent level of safety can be achieved by limiting flights to 30 minutes or 25% of battery power whichever happens first. This restriction would be more than adequate to return the sUAS to its planned landing zone from anywhere in its limited operating area. Similar exemptions have been granted to other operations, including Exemptions 2689F, 5745, 10673, and 10808.

14 C.F.R. §91.203 (a) and (b): Carrying Civil Aircraft Certification and Registration

The regulation provides in part: (a) Except as provided in § 91.715, no person may operate a civil aircraft unless it has within it the following: (1) An appropriate and current airworthiness certificate. . . .
(b) No person may operate a civil aircraft unless the airworthiness certificate required by paragraph (a) of this section or a special flight authorization issued under §91.715 is displayed at the cabin or cockpit entrance so that it is legible to passengers or crew. The UAS fully loaded weighs no more than 55 lbs and is operated without an onboard pilot. As such, there is no ability or place to carry certification and registration documents or to display them on the sUAS. An equivalent level of safety will be achieved by keeping these documents at the ground control point where the pilot flying the sUAS will have immediate access to them, to the extent they are applicable to the sUAS. The FAA has issued numerous exemptions to this regulation. A representative sample of other exceptions includes Exemption Nos. 9565, 9665, 9789, 9789A, 9797, 9797A, 9816A, and 10700.

14 C.F.R. §91.405 (a); 407 (a) (1); 409 (a) (2); 417(a) & (b): Maintenance Inspections

These regulations require that an aircraft operator or owner "shall have that aircraft inspected as prescribed in subpart E of this part and shall between required inspections, except as provided in paragraph (c) of this section, have discrepancies repaired as prescribed in part 43 of this chapter...," and others shall inspect or maintain the aircraft in compliance with Part 43. Given that these section and Part 43 apply only to aircraft with an airworthiness certificate, these sections will not apply to the applicant. Maintenance will be accomplished by the operator pursuant to the flight manual and operating handbook attached with this exemption request. An equivalent level of safety will be achieved because these small UASs are very limited in size and will carry a small payload and operate only in restricted areas for limited periods of time. If mechanical issues arise the UAS can land immediately and will be operating from no higher than 400 feet AGL. As provided in the Manual, the operator will ensure that the UAS is in working order prior to initiating flight, perform required maintenance, and keep a log of any maintenance performed. Moreover, the operator is the person most familiar with the aircraft and best suited to maintain the aircraft in an airworthy condition to provide the equivalent level of safety.

14 C.F.R. §61.3 Requirement for certificates, ratings, and authorizations.

These regulations require that no person may serve as a required pilot of a civil aircraft unless that person holds a current pilot certificate in accordance §61.19; §61.77; §61.17; or §61.29(e). Given the size and nature of the flights that this aircraft will make along with their currently being no current certification or licensing process specific to sUASs, the current licensing process is for aircraft carrying at least an onboard pilot. This presents an undue hardship for a small business owner to proceed to develop this technology. It is apparent by the directive of Congress in the Modernization Act in Section 333 along with the recent FAA Comprehensive Plan that an exemption can be granted. By simply going through the steps of the exemption process afforded in Section 333 demonstrates that our commitment to a more superior level of safety in comparison to a hobbyist flying under the same restrictions without the requirement of 14 C.F.R. §61.3

§61.23 Medical certificates: Requirement and duration.

This regulation requires medical certificates for all pilots operation in the NAS, or to maintain a Drivers License from their home state. ProClaims meets the requirement with its designee. Given the size and nature of the flights that this aircraft will make along with their currently being no current certification or licensing process specific to sUASs, the current licensing process is for aircraft carrying at least an onboard pilot. This presents an undue hardship for a small business owner to proceed to use this technology. It is apparent by the directive of Congress in the Modernization Act in Section 333 along with the recent FAA Comprehensive Plan that an exemption can be granted.

REQUEST FOR SECTION 333 EXEMPTION

Subject to the following limitations, the exemption request is for the commercial use of sUASs for video and still aerial photography to be used in documenting damage caused by insured perils and other insurable risks.

The exemption sought is to be able to operate the DJI Phantom series (2.0 v2, v3, 3.0 pro when released, Inspire 1) and similar commercially available sUAS and suitable to the Admininstrator: but specifically the DIJ Phantom 2 v3.0. The specifications are attached as appendix 1. These UAS have added safety enhancements that include upgraded flight controller with:

☐7" Field Monitor with integrated Diversity Rx (5.8 GHz 32 CH)

☐ Integrated 5200 mAh Battery – 25 minute flight time

☐ 400 mW 5.8 GHz 32 CH Video Transmitter– wi-fi and smartphone compatible

☐ Quick Detach Radio Mount

☐Self-tightening rotors/props

☐Automated Return to launch port

☐GPS attitude mode - autopilot system keeps the unit stable and holds it in a fixed horizontal and vertical position upon release of the controls.

☐LED on tail that can be seen in flight showing battery charge.

(See Appendix 1 for Specifications)

The Operational Limitations to our exemptions are as follows:

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: DJI Phantom or similar commercially manufactured Professional 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 will not be flown at an indicated airspeed exceeding 85 knots or the manufacturer's recommended indicated airspeed maximums.

4. The UA will be operated at an altitude of no more than 400 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 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.

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 UAS 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. § 1.1. 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.

CONCLUSION

The benefit of granting this exemption falls within the parameters set by Section 333(c) of the FAA Modernization and Reform Act of 2012. Our commitment is to the safe operation of sUASs in our NAS.

ProClaims meets all of the criteria necessary for granting the exemption and seeks to safely operate sUASs as an important business tool for documenting damages to property. It will substantially lessen the risk of injury to adjusters and appraisers that now climb on roofs.

I hope you will process our request in a timely fashion and contact me regarding any questions you may have.

Respectfully,

David B. Churchill
President – Professional Claims Services, Inc.

Appendix 1

The version 3.0 (released late 2014) **Phantom 2 Vision+ Quadcopter with Gimbal-Stabilized 14MP, 1080p Camera** from **DJI** features a number of notable hardware updates over the previous Phantom 2 Vision+ model, including more efficient motors, redesigned self-tightening props, a new transmitter (radio controller) with built-in battery and gimbal control dial, and other improvements.

The Phantom 2 Vision+ is based on the same air frame as the Phantom 2 and Phantom 2 Vision. Unlike its siblings, however, it features a 14MP camera that is stabilized and controlled with an integrated 3-axis gimbal. Gimbal stabilization makes the Phantom 2 Vision+ ideal for shooting aerial footage and photos. The camera can take 14MP, Adobe DNG RAW photos, and can record video in 1080p Full HD at 30 fps or 720p at 60 fps for creating slow motion effects.

The Phantom 2 Vision+ ships ready-to-fly, meaning that a radio controller--often referred to as a transmitter is included with it and is pre-bound to the aircraft and that only minimal assembly using common household tools is required. It features a 5200mAh battery that can sustain the quadcopter in the air for up to 25 minutes. The transmitter features a line-of-sight range of up to 2625', depending on conditions.

The camera is controlled via 2.4 GHz Wi-Fi using an app available for iOS and Android devices. Using the supplied mount, you can attach your smartphone directly to the controller, giving you a "heads up" display directly from the camera's point-of-view. From the app you will also be able to start and stop video recording, take a snapshot and even tilt the camera up or down.

Because of the complexity associated with multi-rotor aircraft the Phantom 2 Vision+ relies on a GPS-based navigation system to maintain flight stability and provide other features. While fully manual operation is possible, most users, especially videographers hoping to get the smoothest possible shoots, will opt for GPS attitude mode. GPS attitude mode is an autopilot system that keeps the Quadcopter stable and right-side-up when moving, and holds it in a fixed horizontal and vertical position whenever you release the controls. This is ideal for shooting video because you can compensate for light or moderate wind that might otherwise cause the aircraft to drift.

As with the other Phantom 2 models, 5200mAh battery system is simplified over the original version 1 Phantom. The battery now slots in, and provides LED indicators on outside, tail-end of the aircraft so they can be seen in flight. Charging is also simplified, with all of the charging circuitry built into the battery itself. You simply need to plug it into the wall with the supplied universal AC adapter. A DC car charger can also be used.

The Phantom 2 Vision+ includes a Wi-Fi Range extender that will increase the wireless range of the smartphone used for FPV camera operation up to nearly 2300' line-of-sight. The range extender mounts on the transmitter (radio controller) along with the smartphone.

Finally, there is a 4GB MicroSD card included to help get you started filming and taking photos with the 14MP camera.

What's New for Version 3.0?

Redesigned Transmitter (Radio Controller)

The radio controller (more commonly known as a transmitter in RC lingo) has been updated with some notable additions:

- **Left Dial:** Use this to operate the tilt function of the gimbal
- **Trainer Port:** Connect the remote control to the computer to run a simulation application
- **Throttle Lock:** Pull down the throttle stick to descend; the stick will lock into place and the aircraft will descend steadily. Push the throttle stick upward to release throttle lock
- **LED Battery Indicator:** Foregoing AAs, the transmitter now runs on a built-in LiPo battery. Four LEDs on the front tell you how much charge is left
- **Micro-USB Port:** Use the micro-USB port to recharge the built-in battery. The LED indicators will display charging status as the battery tops up

New 2312 / 960 KV Motors

The new motors features a stator winding structure for a neater designed and improved heat dissipation. The new motors offer:

- Up to 200g per axis more thrust than the previous design
- The single wire stator design improves motor efficiency and its ability to withstand a larger current
- New bearings, with a higher durability and ability to withstand greater impacts, are used to avoid damage in the event of an accident
- New insulation coating powder is used to improve the stator voltage capacity, helping extend the working life and stability of the motor
- A new ESC (electronic speed controller) - ESC v2.0 - is used to ensure the efficiency improvements of the motors are maximized

Updates Self-Tightening Props - Model 9450

Computational fluid dynamics (CFD) have been applied to the prop redesign, providing them with increased thrust and better efficiency. Combined with the new motors, up to 200g per axis of thrust has been achieved - especially beneficial when flying with a heavy payload

Improved Compass

The compass is now encased in a protective shell, and features added protection against static interference

Features

Gimbal Stabilized 14MP HD Camera

The Phantom 2 Vision+ features a 14MP camera with a specially integrated 3-axis gimbal designed specifically for use with the Quadcopter. In addition to photos, the camera can record 1920 x 1080 resolution video at 30 fps and 720 video at 60 fps. The camera is controlled wirelessly via Wi-Fi using an app available for smartphones with Android or iOS. Internal recording is to a MicroSD memory card. Additionally, captured footage can be uploaded from your smartphone to social media websites such as Facebook

Attitude and GPS Attitude Flight Modes

The Phantom 2 Vision+ flight control system has two computer-assisted flight modes for you to choose from. Of the two, GPS attitude mode is the most automatic. In GPS attitude mode the Quadcopter will stop as soon as you release the controls and stay hovering at a fixed horizontal and vertical position. This setting is the easiest to fly and is generally preferred for shooting video as the Quadcopter won't sway or drift because of light wind gusts

The second, attitude mode, is a more manual flying mode in which the Phantom Vision does not try and maintain a fixed spatial position. When you release the controls it will continue to drift unless friction slows it down or you stop it. And in this mode it will be more likely to be blown around if there is any wind. This not a true manual mode, however, in that the GPS navigation system is still used to maintain flight stability and by the "return to home" feature in the event of signal loss.

Return to Home Failsafe

If the Quadcopter loses the signal from the controller for any reason the "return to home" feature will initialize. The aircraft will ascend to 60 feet then make a straight-line course back to the "home position" you will have defined during the GPS calibration process. Once there, it will safely descend to the ground and power itself off

Intelligent Orientation Control (IOC)

IOC is designed to help make flying more intuitive. Nominally, the yaw control will allow the Quadcopter to rotate continuously, which can quickly become confusing if you lose track of which way is "front". Suddenly your controls can get mixed up, where pressing right causes the craft to move left and pressing forward causes it move backward. Intelligent Orientation Control prevents this from happening, keeping the "tail" of the Quadcopter pointed roughly toward the pilot at all times

DJI Vision iOS and Android App

The DJI Vision App for iOS and Android smartphones provides many functions apart from just FPV monitoring, such as telemetry of vital flight stats including remaining battery and number of GPS satellites and a radar scope to help avoid collisions. It also features full camera control, letting you set parameters such as camera tilt, ISO, Shutter Speed, White balance as well as set video start/stop and take photos. Once recorded, photos and video footage can be downloaded directly to the phone allowing them to be shared on Facebook, Instagram or other social media networks, even while the Quadcopter is still in the air

Assistant Software

Windows- and OSX-based software allows you to enable Intelligent Orientation Control (IOC), update firmware, and adjust other aircraft and transmitter parameters. In addition, the software allows you to unlock the manual flying mode. Manual Mode will override all autopilot redundancy and failsafes, therefore should only be engaged by experienced pilots

Slot-In Battery with LED Status Indicators

A 5200mAh battery slots into the "tail" of the Phantom 2 and enables up to 25 minutes of flying time. It features and on/off switch and four LED charge indicators that are visible while flying so you can keep track of remaining flight time. For recharging, balance and power regulation is handled internally within the battery itself. You simply plug it into a wall outlet with the supplied power cord and you are good to go

Included 5.8 GHz Transmitter

The Phantom 2 Vision+ features an included 5.8 GHz RF remote transmitter, with dual toggle joystick controls similar to the kind found on other multi-rotor RC aircraft. The left stick controls throttle (up/down) and yaw (essentially rotation). And the right stick controls roll (side-to-side tilt) and pitch (tilting the nose up or down). A switch on the top right lets you choose between Attitude and GPS flight modes and a similar switch on the left lets you select between IOC modes. The control unit also features a detachable mount for holding your smartphone

LED Status Indicator

LED status light on the rear struts of the Phantom 2 Vision provides you with various feedback as well as warnings. Colors alternate between green, amber, and red and can either be flashing or solid. These messages give you valuable information such as whether the GPS system is properly calibrated, warning you the battery is getting low or telling you the remote's signal is out of range

Self-Tightening Rotor

The Phantom 2 features a rotor design that is new for this model. There is no longer a separate prop nut and the threading is designed to be self-tightening, so there is no danger of a loose prop coming off in flight