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

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

August 26, 2015

Exemption No. 12617
Regulatory Docket No. FAA−2015−2468

Mr. Gregory B. Mays
2220 Swamp Fox Road
Midlothian, VA 231112

Dear Mr. Mays:

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 posted June 26, 2015 and letter dated July 12, 2015, you petitioned the Federal Aviation Administration (FAA) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial photographs of residential real estate.

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

**Conditions and Limitations**

In this grant of exemption, Mr. Gregory B. Mays is hereafter referred to as the operator.

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

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

1. Operations authorized by this grant of exemption are limited to the DJI Phantom 2 Vision and DJI 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 August 31, 2017, unless sooner superseded or rescinded.

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

Enclosures

regulations.gov
Your Voice in Federal Decision-Making

# Gregory B. Mays - Exemption/Rulemaking

This Other document was issued by the **Federal Aviation Administration** (FAA)

For related information, **Open Docket Folder**

Comment Now!

**ID:** FAA-2015-2468-0001

## Content

Gregory B. Mays
2220 Swamp Fox Rd.
Midlothian, VA 23112
804-378-9655
gregbm@verizon.net
Pilot Certification Number 229988008

I respectfully request a Section 333 exemption/waiver for drone flight in an effort to conform with client requests to provide aerial photographs of residential real estate. I provide professional real estate related services as a Realtor and Appraiser.
I have reviewed the current 2015 FAR/AIM and am aware of the current regulations regarding drone flight therein. As a certificated private pilot I am aware of the necessity to remain compliant with FAR's and to safely operate my aircraft and comply with the IAMSAFE checklist for myself as an airman prior to any flight that may also include UAV's.

Specifically, Chapter 7, Safety of Flight, Section 7-5-5(a)(b)(c)(d)(e), Unmanned Aircraft Systems (UAS) provides for the safe operation of UAV's. I have reviewed these sections of the FAR's and am quite prepared to adhere to these guidelines/requirements.

It is extremely unlikely that the operation of any drone for the specific use indicated in this request would ever require a flight level that exceeds 200' AGL. It is my intent to be properly recognized by the FAA for such instances that may require a flight level that would exceed an altitude (MSL) that does.

In the event that an operation would require photographs of residential property within close proximity to a class B, C, D or G airport I would certainly comply with any NOTAM requirement.

I have great familiarity flying small model aircraft for many years. I believe that along with my pilot rating and comprehensive knowledge of airspace, safety of flight, aircraft certification, and the Federal Aviation Regulations place me in a unique position to

## Document Information

**Date Posted:**
Jun 26, 2015

Show More Details

## Submitter Information

**Submitter Name:**
Gregory Mays

**Mailing Address:**
2220 Swamp Fox Rd.

**City:**
Midlothian

**Country:**
United States

**ZIP/Postal Code:**
23112

## Comments

0
Comments Received *

## Docket Information

*This document is contained in*
FAA-2015-2468

**Related Dockets:**
None

**Related RINs:**
None

**Related Documents:**

safely operate a UAV for business purposes.

Thanking you in advance for your consideration,
Greg B. Mays

None

* This count refers to the total comment/submissions received on this *document*, as of 11:59 PM yesterday. Note: Agencies review all submissions, however some agencies may choose to redact, or withhold, certain submissions (or portions thereof) such as those containing private or proprietary information, inappropriate language, or duplicate/near duplicate examples of a mass-mail campaign. This can result in discrepancies between this count and those displayed when conducting searches on the Public Submission document type. For specific information about an agency's public submission policy, refer to its website or the Federal Register document.

**PETITION FOR SECTION 333 EXEMPTION –**

**GREGORY B. MAYS**

July 12, 2015

U.S. Department of Transportation
Docket Operations
800 Independence Ave., S.W.
Washington, DC 20591

**Re: Petition of Gregory B. Mays for Exemption Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 and 14 C.F.R. Part 11**

Dear Sir or Madam:

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 ("Reform Act") and 14 C.F.R. Part 11, Gregory B. Mays (individual) hereby applies for an exemption from the Federal Aviation Regulations ("FARs") identified below, to allow civil operation of small unmanned aerial systems ("sUAS" or "UAS") as part of daily business operations.

**TABLE OF CONTENTS**

## I. Description of Petitioner

Gregory B. Mays provides real estate services to clients that often require photographs. In recent months clients have requested aerial photographs that would require hiring an outsider to provide services related to taking said photographs.

These photos are often utilized for marketing purposes, however, the request for aerial photos has been extended to clients who require same in an effort to lend money for mortgage purposes in conformance with FNMA/FHLMC, FHA, and others, guidelines.

- Greg B. Mays & Associates, LC is a small real estate appraisal company that has been in business since 1991.
- Services include real estate consultation, appraisal, sales, and property management.
- Greg B. Mays & Associates, LC is properly licensed in the Commonwealth of Virginia to provide said services.
- Greg B. Mays holds the following licenses/certifications; Realtor and Real Estate Agent, Certified Residential Real Estate Appraiser, Private Pilot.

In accordance with 14 C.F.R. § 11.81(a), Gregory B. Mays provides the following information in support of its Petition for Exemption.

Name and Address for Petitioner:

Gregory B. Mays
2220 Swamp Fox Rd.
Midlothian, VA 231112
804-378-9655
gregbm@verizon.net

Point of contact for this Petition and specific contact information is as follows:

Greg B. Mays, RAA
Owner
2220 Swamp Fox Rd.
Midlothian, VA 23112

## II. Description of Proposed Operation

Gregory B. Mays proposes to conduct the operation of a UAS, specifically the DJI Phantom 2 or DJI Inspire, within the parameters of providing aerial photographs of single family residences and or large acreage parcels of land…

The Pilot in Command ("PIC") for each operation will, at a minimum, be Gregory B. Mays. Gregory B. Mays has adopted and incorporated many of the AMA's UAS Safety Code (the "Code") and Operating Guide's (the "Guide") procedures into its own safety code and guide, which sets forth the mandatory standard operating procedures for its proposed UAS operations as detailed herein. The exception would be the location of operations that will take place at private residences with the authorization of the owner and not on property leased or owned by the AMA. These procedures provide a baseline to ensure that the Phantom 2 Vision or Inspire 1 pilot possess sufficient knowledge of both airspace and the technology to operate safely in the National Airspace System ("NAS"). Any other assistant or photographer will operate with Gregory B. Mays as the PIC in each operation and will meet the standards specified in the Guide, as well as any other additional requirement the FAA requires under this application.

## III. Proposed UAS Operations Meet the Requirements of Section 333

Proposed operations in this Petition for Exemption qualify for expedited approval pursuant to Section 333 of the Reform Act as each of the statutory criteria and relevant factors are satisfied.

### a. Approval is Warranted Based on the UAS's Size, Weight, Speed, and Operational Capability

Gregory B. Mays will employ the DJI Phantom 2 Vision ("Phantom 2V") or DJI Inspire 1 quadcopter for the operations described in this Petition for Exemption. Both of these UAS are classified as a small drone or hobby craft and are lawfully used for recreational operations. The Phantom 2V has a maximum take-off weight of 5.53 pounds. The flight speed is limited to a maximum of 33.5 miles per hour and it will not be flown at an altitude that exceeds 200 feet AGL. All flights will be managed in such a way that they can be safely terminated with a reserve battery power of 25% of the battery's maximum charge. Neither the Phantom 2Vor the Inspire 1 carry any flammable propellant or fuel. Both UAS also has an integrated GPS system that calculates the UAS's position and height and relays that information via a secure connection to the operator. Through use of this GPS system and the installed firmware, the user is able to set maximum height and radius in relation to a pre-determined home point, restricting flight to a zone that is both approved by the FAA and the owner of the property being photographed. This system also automatically restricts flight within a range of airports that is greater than the 5 miles that the FAA requires. Additionally, the UAS contains a failsafe mode if its connection to the remote control is lost, and this system permits the UAS to return to a predetermined location and land without injury or damage.

**b. Approval is Warranted Based on the Operational Restrictions Set Forth in the UAS Standard Operating Guide**

Together, the Guide and the Phantom 2V's and or Inspire 1's User Manual contain all of the procedures and limitations necessary to successfully perform the operations specified in this Petition for Exemption. To assist the FAA in making a safety assessment of Gregory B. Mays proposed operations, below is a summary of operational limitations and conditions which will ensure an equivalent or higher level of safety to operations conducted under current regulatory guidelines:

1. The Phantom 2 weighs 5.53 +/- pounds and the Inspire 1 weighs 6.50 +/- pounds.
2. Flights will be operated within the VLOS of the PIC and or an observer, at a minimum.
3. Maximum total flight time for each operational flight will be limited to 25% reserve battery power remaining.
4. Flights will be operated at an altitude of no more than 200 feet AGL.
5. All operations will be conducted in class G airspace.
6. Flights will be restricted to pre-determined areas of the owner/clients property, which will always be located outside of 5 miles radius from an airport of any size or the necessary NOTAM will be filed for safe operation in advance of operations.
7. Flight zones will be located at the maximum distance away from persons, inhabited structures, and vehicles that is possible given the layout of the property. The flight zone in which operations occurs will be assigned based on the real time traffic, activities, and weather conditions.

8. Flights will be limited to a speed of 30 mph and vertical ascent will be limited to 15 mph.
9. The UAS will be operated and maintained in accordance with the requirements of the Phantom 2V or Inspire 1 User Manual and any manufacturer Safety Bulletins.
10. Prior to the operation, the flights will be fully preplanned and briefed, including possible contingencies and emergency procedures.
11. The UAS will have the capability to abort flight in the case of unpredicted obstacles or emergencies.
12. All required permissions and permits will be obtained from territorial, state, county or city jurisdictions, including local law enforcement, fire or other appropriate governmental agencies.
13. All UAS operations will occur in daylight, Visual Flight Rules ("VFR") conditions. Instrument flight rules flights are prohibited and no flights will occur at night, or in adverse weather conditions.
14. The UAS will be controlled by the Phantom 2 or Inspire 1 Remote Control System and the radio frequency spectrum used for operation and control of the UA shall comply with the Federal Communications Commission ("FCC") or other appropriate government oversight agency requirements.

## IV. Regulations From Which Exemption is Sought

The Federal Aviation Act expressly grants the FAA the authority to issue exemptions. This statutory authority, by its terms, includes exempting civil aircraft, as the term is defined under § 40101 of the Act, including UASs, from its safety regulations and minimum standards when the Administrator decides a requested exemption is in the public interest. Gregory B. Mays seeks an exemption from several interrelated provisions of 14 C.F.R. Parts 21, 45, 61 and 91 for purposes of conducting the requested operations using UAS. Listed below are: (1) the specific sections of 14 C.F.R. for which exemption is sought, and; (2) reasons why the exemption would not adversely affect safety or provide a level of safety equivalent to the rule, including any operating procedures and safeguards that Gregory B. Mays has adopted which will ensure a level of safety better than or equal to the rules from which exemption is sought.

### a. 14 C.F.R. Part 21, Subpart H: Airworthiness Certificates

Part 21 Subpart H prescribes procedural requirements for the issue of airworthiness certificates. Gregory B. Mays requests exemption from this subpart to operate the Phantom 2V or Inspire 1 without the requirement for an airworthiness certificate. Based on the proposed UAS being limited in size, weight, speed, operating capabilities, and operating within VLOS, Gregory B. Mays believes that an airworthiness certificate is not necessary to ensure an equivalent level of safety to manned aircraft operations.

*Equivalent Level of Safety*

The UAS indicated is safe when taking into account its size, weight, speed, and operational capability. As set forth above, the Phantom 2V and or Inspire 1 weigh less than 7 pounds and will be flown at less than 30 mph and completely outside controlled airspace. Additionally, neither craft carries pilots nor passengers, carries no explosive materials and or flammable liquid fuels, and operates exclusively within the parameters stated in the Guide.

Operations conducted under this exemption will be closely controlled and monitored by the PIC and will be conducted in compliance with local public safety requirements, to provide security for the area of operation. In all cases, the UAS operated under the proposed conditions, will be at least as safe as, or safer than conventional rotorcraft operating with an airworthiness certificate without the restrictions and conditions of the proposed UAS operations.

Further, the Phantom 2V does not need a means to communicate with other aircraft or ATC, because those capabilities will be possessed by the PIC and Observer, who are not onboard the UAS. *See* Grant of Exemption, Docket FAA-2014-0352 at 13. In addition, the UAS will be operated at all times in visual line-of-sight and in VFR conditions. *Id*.

**b. 14 C.F.R. Part 27: Airworthiness Standards for Normal Category Rotorcraft**

Title 14 C.F.R. Part 27 sets forth the procedural requirements for airworthiness certification of normal category rotorcraft. To the extent Gregory B. Mays UAS would otherwise require certification under Part 27, it seeks an exemption from Part 27's airworthiness standards for the same reasons identified in the request for exemption from 14 C.F.R. Part 21, Subpart H.

**c. 14 C.F.R. §§ 45.23(b) and 45.27(a): Marking of the Aircraft**

Gregory B. Mays seeks an exemption from the aircraft marking and identification requirements contained in 14 C.F.R. §§ 45.23(b) and 45.27(a).

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.

14 C.F.R. § 45.27(a), Rotorcraft, states:

> Each operator of a rotorcraft must display on that rotorcraft horizontally on both surfaces of the cabin, fuselage, boom, or tail the marks required by § 45.23.

Even though the UAS will have no airworthiness certificate, an exemption may be needed as the Phantom 2V and or Inspire 1 is by definition “unmanned” and so has no entrance to a cabin, cockpit, or pilot station on which the above stated words can be placed. Given the size

of the UAV, two-inch lettering may be impossible. The word "Exempt" can be placed on the fuselage in compliance with 14 C.F.R. § 45.29(f).

*Equivalent Level of Safety*

The equivalent level of safety will be provided by having the Phantom 2V or Inspire 1 marked on its fuselage as required by 14 C.F.R. § 45.29(f) where the pilot, observer and others working with the UAS will see the identification of the Phantom 2V or Inspire 1 as "Exempt" if so desired. The FAA has issued the following exemptions to this regulation to Exemptions Nos. 10700, 8738, 10167 and 10167A.

**d. 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 of the Phantom 2V and the Inspire 1 the description of proposed operations above, an equivalent level of safety will be provided.

**e. 14 C.F.R. §§ 91.9(b)(2), 91.203(a) and (b): Civil Aircraft Flight Manual in the Aircraft**

14 C.F.R. § 91.9(b)(2) states:

> (b) No person may operate a U.S.-registered civil aircraft
> …
> (2) For which an Airplane or Rotorcraft Flight Manual is 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.

14 C.F.R. § 91.203(a) and (b) state:

> (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.

Given the small size and configuration of the Phantom 2V, it would be impossible to keep airworthiness documents and other aircraft manuals on board the UAS because there is simply no room. Also the UAS has no cabin or cockpit.

*Equivalent Level of Safety*

In an FAA Office of Chief Counsel's Opinion dated August 8, 2014, and prepared by Dean E. Griffith, Attorney, AGC-220, it was acknowledged that the intent of 14 C.F.R. 91.9(b) and 91.203(a) and (b) is met if the pilot of the unmanned aircraft has access to the UAS flight manual, registration certificate, and other required documents from the ground control station from which he or she is operating the aircraft. As this FAA Office of Chief Counsel Opinion clarifies, the intent of the rule is to ensure the pilot has access to these key documents during flight. Therefore, an equivalent level of safety will be achieved be ensuring that the pilot has access to the documents at the ground control station or point of control from which he or she is piloting the Phantom 2V or Inspire 1.

**f. 14 C.F.R. § 91.103: Preflight Actions**

This regulation requires each pilot in command to take certain actions before flight to ensure the safety of flight. As FAA approved flight manuals will not be provided for the aircraft an exemption will be needed.

*Equivalent Level of Safety*

An equivalent level of safety will be provided through the PIC following the procedures set forth in the Guide and Manufacturer's User Manual. The PIC will take all actions including reviewing weather, flight battery requirements, landing and takeoff distances and aircraft performance data before initiation of flight. The PIC will account for all relevant site-specific conditions in the preflight procedures. The FAA has granted exemption from this regulation to other small UAS operators. *See* Exemption No. 11109.

Additionally, the PIC, Gregory B. Mays, also being a licensed pilot, understands the importance of being prepared to fly as an airman and will always adhere to the same IAMSAFE checklist followed when flying manned aircraft.

**g. 14 C.F.R. § 91.109(a): Flight Instruction**

Gregory B. Mays seeks an exemption from flight instruction requirements contained within 14 C.F.R. § 91.109(a). This section 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.

*Equivalent Safety Protocol*

For student training purposes the PIC and student may use a "buddy box" system that utilizes two transmitters when applicable. The transmitter of the student is connected by a trainer cable to another transmitter (master transmitter) controlled by the PIC instructor. The PIC Instructor is able to control the UAS with his or her transmitter then flip a switch to turn control over to the student and flip the switch again to reclaim control. In this way, the PIC Instructor can easily demonstrate how to fly the UAS or rescue the UAS if the student makes a poor aeronautical decision without passing the same transmitter back and forth to preserve safety to the NAS and manned aircraft operations.

Given the size and speed of the UAS that the Gregory B. Mays intends to use, an equivalent level of safe training can still be performed without dual controls because no pilot or passengers are aboard the UAS, and as required by the Guide, all persons will be a safe distance away in the event that any difficulties during flight instruction occurs.

Moreover, Petitioner will conduct training in a controlled and sterile environment. As required by the Guide, training and instruction will be conducted in a sterile area on property that is owned and controlled by the Gregory B. Mays. These facilities will not be open to the public during UAS operations, and access will be restricted to authorized business personnel involved with the company.

**h. 14 C.F.R. § 91.119: Minimum Safe Altitudes**

Gregory B. Mays requests an exemption from the minimum safe altitude requirements of 14 C.F.R. § 91.119. Section 91.119 prescribes the minimum safe altitudes under which aircraft may not operate, including 500 feet above the surface and away from any person, vessel, vehicle, or structure in non-congested areas. *See* 14 C.F.R. § 91.119(c). Section 91.119(d) allows for a helicopter to operate at less than those minimum altitudes when it can be operated "without hazard to persons or property on the surface," provided that "each person operating the helicopter complies with any routes or altitudes specifically prescribed for helicopters by the FAA."

An exemption is required because the proposed UAS operations will occur at under 200 feet AGL. Further, while the Phantom 2V and or Inspire 1 will never be flown in or over congested areas, due to the nature and location of the proposed operations, the PIC, Observer(s), Instructors and/or Students may at times be less than 200 feet away from the UAS.

*Equivalent Safety Protocol*

Compared to flight operations with rotorcraft weighing far more than the maximum weights proposed herein, and given the lack of flammable fuel onboard the Phantom 2V and Inspire 1, any risk associated with these operations is far less than those that presently exist with conventional aircraft. An equivalent level of safety will be achieved given the size, weight, and

speed of the Phantom 2V and or Inspire 1, as well as the controlled and sterile location where the operations will occur. In order to avoid any risk to manned aircraft, flight operations will be restricted to 200 feet AGL or below. As set forth in the Guide, the Phantom 2V's or Inspire 1 flight height and radius restrictions will be set according to each operator's level of experience which will be judged by the PIC. The Phantom 2V and or Inspire 1 will be operated in an area that is owned by the client and closed to the public when in use. These restrictions will ensure that the proposed UAS operations are performed in a manner that protects the safety of participants, nonparticipants, the UAS, and other property.

**i. 14 C.F.R. § 91.121: Altimeter Settings**

This petition seeks an exemption from 14 C.F.R. § 91.121, which requires a person operating an aircraft to maintain cruising altitude or flight level by reference to an altimeter that is set to the elevation of the departure airport or barometric pressure. An exemption is required to the extent that the Phantom 2V does not have a barometric altimeter, but rather a GPS altitude read out.

*Equivalent Safety Protocol*

The Guide requires compass calibration prior to each operation of the Phantom 2V to ensure the GPS functions correctly. The Phantom 2V User Manuel contains instructions for achieving this and the manufacturer, DJI, will provide additional support if necessary.

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

Gregory B. Mays requests an exemption from 14 CFR § 91.151(a)'s fuel requirements for flight in VFR conditions. Section 91.151 states:

> (a) 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 –
>
> i. During the day, to fly after that for at least 25 minutes; or
>
> ii. At night, to fly after that for at least 45 minutes.

Here, the technological limitations on the energy capabilities of the 5200mAh LiPo battery used in the Phantom 2V and the 5700mAh LiPo battery used in the Inspire 1 means that no meaningful flight operations can be conducted with the Phantom 2V or Inspire 1 while still maintaining a 30 minute battery reserve. An exemption from the fuel requirements of 14 C.F.R. § 91.151(a) is therefore required.

*Equivalent Safety Protocol*

The batteries powering the Phantom 2V and or Inspire 1 provide approximately 25 minutes of flight time. Training operations will be limited to a minimum voltage to ensure appropriate reserve battery to maintain an equivalent level of safety at all times. The UAS will notify the operator when they are approaching and they are required to land at their home point and either switch out the battery or pause operations for recharging. If both the operator and PIC fail to land the UAS prior to the allotted minimum voltage, the UAS will autonomously return to its original launch position.

### k. 14 C.F.R. §§ 91.405, 91.407, 91.409, 91.417: Maintenance and Inspections

Gregory B. Mays seeks an exemption from the maintenance inspection requirements contained in 14 C.F.R., sections 91.405, 91.407, 91.409, and 91.417. These rules specify maintenance and inspection standards in reference to 14 C.F.R. Part 43. *See*, *e.g.*, 14 C.F.R. § 91.405(a) (stating that each owner or operator of an aircraft "[s]hall have the aircraft inspected as prescribed in subpart E of this part and shall between required inspections …have discrepancies repaired as described in part 43 of this chapter.") Exemption from these rules is requested because these sections of Title 14 require the aircraft to be maintained and inspected in accordance with Part 43, which only applies to aircraft with an airworthiness certificate. Therefore, based on the exemptions sought, these sections do not apply to Gregory B. Mays proposed UAS operations.

*Equivalent Safety Protocol*

Maintenance will be accomplished by authorized operators, staff, and/or contracted labor pursuant to the Guide and the Manufacturer's User Manual. An equivalent level of safety will be achieved because a UAS like the Phantom 2V or like craft and its platform are very limited in size, will carry a small payload, and will operate only in defined areas for limited periods of time. If mechanical issues arise the Phantom 2V and or Inspire 1 will be able to land immediately on property owned by the client and or owner of the craft to receive immediate maintenance. As provided in the Guide and Manufacturer's User Manual, the operator will ensure that the UAS is in working order prior to initiating flight, perform required maintenance, and will keep a log of any maintenance performed.

### l. 14 C.F.R. Part 61, 14 C.F.R. §§ 61.3, 61.113: Private Pilot Privileges and Limitations

Gregory B. Mays will serve as the PIC for all flight operations and the instructor/co-instructor of any course including an element of drone flight. This should qualify persons with a private pilot's certificate, among other qualifications, to instruct drone operation education when necessary. However, as is the nature of the proposed operations, introductory flight instruction using the Phantom 2V UAS will be provided to staff who will likely not have a private, or any type of, pilot's license. Accordingly, Gregory B. Mays seeks exemption from 14 CFR Part 61, including 14 CFR § 61.3 to the extent that these regulations are interpreted as requiring a student

receiving UAS operation instruction to have a private pilot's certificate. All student instruction flights will be conducted under closely controlled circumstances, outside of navigable airspace and away from persons or property not involved in the instruction. In addition, the student instruction flights will be conducted under the close supervision of an instructor acting as PIC.

In addition, to the extent that Gregory B. Mays **may** be employing persons with a private pilot's license to operate its UAS, an exemption is also sought from 14 C.F.R § 61.113, which restricts private pilot certificate holders from flying aircraft for compensation or hire, and which would also require a second class medical certificate. The purpose of this section is to ensure the skill and competency of any PIC where the aircraft is carrying passengers or cargo for hire. In this case, while instructors acting as PIC during UAS operations will be doing so for educational purposes as part of Gregory B. Mays staff, the Phantom 2V or like craft carries neither passengers nor cargo. Moreover, in the Astraeus Aerial Grant of Exemption (FAA Docket No. FAA-2014-0352), the FAA determined that the unique characteristics of UAS operation outside of controlled airspace did not warrant the additional cost and restrictions attendant with requiring the PIC to have a Commercial Pilot Certificate and Class I or II Medical Certificate.

*Equivalent Level of Safety*

Gregory B. Mays will ensure an equivalent level of safety to the regulatory requirements of 14 C.F.R. Part 61, including 14 C.F.R. §§ 61.3 and 61.113 by following the safety procedures provided in the Guide. In addition to training and experience requirements and limitations, Gregory B. Mays has placed additional restrictions on its proposed UAS operations to ensure an extra margin of safety. The UAS will only operate in a controlled and sterile area away from persons and property not involved in the operation. It will be flown based on VLOS at no more than 200 feet AGL. Collectively, these procedures ensure that the proposed UAS operations can be conducted safely.

## V. Public Interest

Because the technology to provide photographs that can better facilitate clients desires to either market real estate or lend money for the purchase and or refinance of real estate has advanced to a degree that is not possible from traditional photography the public will be well served by offering aerial photographs that can better produce the desired results. Some of which include the depiction of the beauty and aesthetics of a property for marketing purposes or the location of a property to surrounding adverse conditions that may affect the decision process of an institutional lender when making a loan for a particular property.

## VI. Privacy

All of Gregory B. Mays UAS operations shall be conducted in accordance with applicable federal, state, or local laws regarding privacy. Gregory B. Mays will not conduct flight operations over property that it does not own or control without the prior consent and knowledge of the property owner. Moreover, Gregory B. Mays will not capture or use images from restricted areas requiring privacy and or confidentiality under any circumstance. This does not

mean, however, that images may not be taken that are permitted by law and do not require a level of privacy that is an exception to the norm.

## VII. Federal Register Summary

Pursuant to 14 C.F.R. Part 11, the following summary is provided for publication in the FEDERAL REGISTER, should it be determined that publication is needed:

Petitioner seeks an exemption from the following sections in Title 14 of the Code of Federal Regulations:

Part 21, Subpart H; Part 27; 45.23(b); 45.27(a); 61.3; 61.113; 91.7(a); 91.9(b)(2); 91.103; 91.109(a); 91.119; 91.121; 91.151(a); 91.203 (a) & (b); 91.405(a); 91.407(a)(1); 91.409(a)(1) & (2); 91.417 (a) & (b).

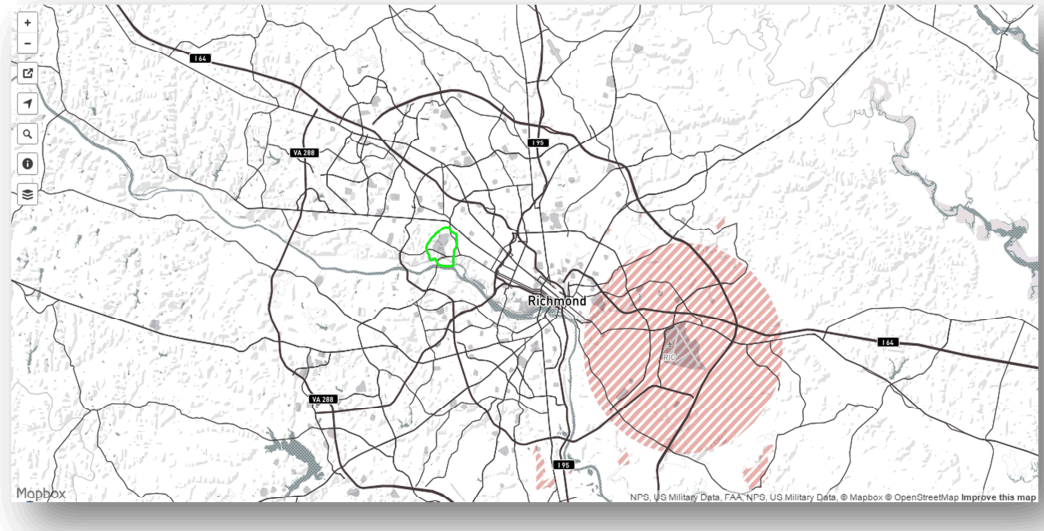
The exemption will enhance safety by reducing risk to the general public and property owners by (a) ensuring that the operations of the UAS described above are recognized by the FAA in the form of an exemption (b) how to safely operate small UAS in furtherance of career objectives and to the benefit of public safety while providing a valuable service as it relates to the real estate business provided by Gregory B. Mays.

APPENDIX A
Gregory B. Mays UAS Standard Operating Guide

- Any UAS in operation must weigh less than 55 pounds at its maximum take-off weight.
- Flights will be operated within the VLOS of the PIC and an observer, at a minimum.
- Maximum total flight time for each operational flight will be limited to 25% reserve battery power remaining.
- Flights will be operated at an altitude of no more than 200 feet AGL.
- Radius and altitude limitations will be set according to an assessment of the experience level of the operator for each flight.
- All operations will be conducted in class G airspace.
- Flights will be restricted to pre-determined areas of the client/owners property.
- Flight zones will be located at the maximum distance away from persons, inhabited structures, and vehicles that is possible given the layout of the property. The flight zone in which operations occurs will be assigned based on surface and air traffic, activities, and weather conditions.
- Flights will be limited to a speed of 30 mph and vertical ascent will be limited to 15 mph.
- The UAS will be operated and maintained in accordance with the requirements of the Phantom 2V or Inspire 1 User Manual and any manufacturer Safety Bulletins.
- Prior to the operation, the flights will be fully preplanned and briefed, including possible contingencies and emergency procedures.
- The UAS will have the capability to abort flight in the case of unpredicted obstacles or emergencies.
- All required permissions, NOTAM's and permits will be obtained from territorial, state, county or city jurisdictions, including local law enforcement, fire or other appropriate governmental agencies.
- All UAS operations will occur in daylight, Visual Flight Rules ("VFR") conditions. Instrument flight rules flights are prohibited and no flights will occur at night, or in adverse weather conditions.
- The UAS will be controlled by the Phantom 2 Remote Control System or like system and the radio frequency spectrum used for operation and control of the UA shall comply with the Federal Communications Commission ("FCC") or other appropriate government oversight agency requirements.

APPENDIX B

Don't Fly Drones Here Map: Restricted Areas near the City of Richmond and the area of operation most often occurring



Maps are pulled from the "Drones Don't Fly Here" project website at https://www.mapbox.com/drone/no-fly/.

APPENDIX C
AMA Advisory Circular

# ADVISORY CIRCULAR

DEPARTMENT OF TRANSPORTATION
Federal Aviation Administration
Washington, D.C.

***Subject:*** *MODEL AIRCRAFT OPERATING STANDARDS*

1. PURPOSE. This advisory circular outlines, and encourages voluntary compliance with, safety standards for model aircraft operators.

2. BACKGROUND. Modelers, generally, are concerned about safety and do exercise good judgement when flying model aircraft. However, model aircraft can at times pose a hazard to full-scale aircraft in flight and to persons and property on the surface. Compliance with the following standards will help reduce the potential for that hazard and create a good neighbor environment with affected communities and airspace users.

3. OPERATING STANDARDS.

a. Select an operating site that is of sufficient distance from populated areas. The selected site should be away from noise sensitive areas such as parks, schools, hospitals, churches, etc.

b. Do not operate model aircraft in the presence of spectators until the aircraft is successfully flight tested and proven airworthy.

c. Do not fly model aircraft higher than 400 feet above the surface. When flying aircraft within 3 miles of an airport, notify the airport operator, or when an air traffic facility is located at the airport, notify the control tower, or flight service station.

d. Give right of way to, and avoid flying in the proximity of, full-scale aircraft. Use observers to help if possible.

e. Do not hesitate to ask for assistance from any airport traffic control tower or flight service station concerning compliance with these standards.

R.J. VAN VUREN
Director, Air Traffic Service

Initiated by: AAT-220

APPENDIX D
AMA Safety Code

## *Academy of Model Aeronautics National Model Aircraft Safety Code*

**Effective January 1, 2014**

A. **GENERAL**: A model aircraft is a non-human-carrying aircraft capable of sustained flight in the atmosphere. It may not exceed limitations of this code and is intended exclusively for sport, recreation, education and/or competition. All model flights must be conducted in accordance with this safety code and any additional rules specific to the flying site.

1. Model aircraft will not be flown:
   (a) In a careless or reckless manner.
   (b) At a location where model aircraft activities are prohibited.
2. Model aircraft pilots will:
   (a) Yield the right of way to all human-carrying aircraft.
   (b) See and avoid all aircraft and a spotter must be used when appropriate. (AMA Document #540-D.)
   (c) Not fly higher than approximately 400 feet above ground level within three (3) miles of an airport without notifying the airport operator.
   (d) Not interfere with operations and traffic patterns at any airport, heliport or seaplane base except where there is a mixed use agreement.
   (e) Not exceed a takeoff weight, including fuel, of 55 pounds unless in compliance with the AMA Large Model Airplane program. (AMA Document 520-A.)
   (f) Ensure the aircraft is identified with the name and address or AMA number of the owner on the inside or affixed to the outside of the model aircraft. (This does not apply to model aircraft flown indoors.)
   (g) Not operate aircraft with metal-blade propellers or with gaseous boosts except for helicopters operated under the provisions of AMA Document #555.
   (h) Not operate model aircraft while under the influence of alcohol or while using any drug that could adversely affect the pilot's ability to safely control the model.
   (i) Not operate model aircraft carrying pyrotechnic devices that explode or burn, or any device which propels a projectile or drops any object that creates a hazard to persons or property.
      Exceptions:
      - Free Flight fuses or devices that burn producing smoke and are securely attached to the model aircraft during flight.
      - Rocket motors (using solid propellant) up to a G-series size may be used provided they remain attached to the model during flight. Model rockets may be flown in accordance with the National Model Rocketry Safety Code but may not be launched from model aircraft.
      - Officially designated AMA Air Show Teams (AST) are authorized to use devices and practices as defined within the Team AMA Program Document. (AMA Document #718.)
   (j) Not operate a turbine-powered aircraft, unless in compliance with the AMA turbine regulations. (AMA Document #510-A.)
3. Model aircraft will not be flown in AMA sanctioned events, air shows or model demonstrations unless:
   (a) The aircraft, control system and pilot skills have successfully demonstrated all maneuvers intended or anticipated prior to the specific event.
   (b) An inexperienced pilot is assisted by an experienced pilot.
4. When and where required by rule, helmets must be properly worn and fastened. They must be OSHA, DOT, ANSI, SNELL or NOCSAE approved or comply with comparable standards.

B. **RADIO CONTROL (RC)**

1. All pilots shall avoid flying directly over unprotected people, vessels, vehicles or structures and shall avoid endangerment of life and property of others.
2. A successful radio equipment ground-range check in accordance with manufacturer's recommendations will be completed before the first flight of a new or repaired model aircraft.
3. At all flying sites a safety line(s) must be established in front of which all flying takes place. (AMA Document #706.)
    (a) Only personnel associated with flying the model aircraft are allowed at or in front of the safety line.
    (b) At air shows or demonstrations, a straight safety line must be established.
    (c) An area away from the safety line must be maintained for spectators.
    (d) Intentional flying behind the safety line is prohibited.
4. RC model aircraft must use the radio-control frequencies currently allowed by the Federal Communications Commission (FCC). Only individuals properly licensed by the FCC are authorized to operate equipment on Amateur Band frequencies.
5. RC model aircraft will not knowingly operate within three (3) miles of any pre-existing flying site without a frequency-management agreement. (AMA Documents #922 and #923.)
6. With the exception of events flown under official AMA Competition Regulations, excluding takeoff and landing, no powered model may be flown outdoors closer than 25 feet to any individual, except for the pilot and the pilot's helper(s) located at the flightline.
7. Under no circumstances may a pilot or other person touch an outdoor model aircraft in flight while it is still under power, except to divert it from striking an individual.
8. RC night flying requires a lighting system providing the pilot with a clear view of the model's attitude and orientation at all times. Hand-held illumination systems are inadequate for night flying operations.
9. The pilot of an RC model aircraft shall:
    (a) Maintain control during the entire flight, maintaining visual contact without enhancement other than by corrective lenses prescribed for the pilot.
    (b) Fly using the assistance of a camera or First-Person View (FPV) only in accordance with the procedures outlined in AMA Document #550.
    (c) Fly using the assistance of autopilot or stabilization system only in accordance with the procedures outlined in AMA Document #560.

C. **FREE FLIGHT**

1. Must be at least 100 feet downwind of spectators and automobile parking when the model aircraft is launched.
2. Launch area must be clear of all individuals except mechanics, officials, and other fliers.
3. An effective device will be used to extinguish any fuse on the model aircraft after the fuse has completed its function.

D. **CONTROL LINE**

1. The complete control system (including the safety thong where applicable) must have an inspection and pull test prior to flying.
2. The pull test will be in accordance with the current Competition Regulations for the applicable model aircraft category.
3. Model aircraft not fitting a specific category shall use those pull-test requirements as indicated for Control Line Precision Aerobatics.
4. The flying area must be clear of all utility wires or poles and a model aircraft will not be flown closer than 50 feet to any above-ground electric utility lines.
5. The flying area must be clear of all nonessential participants and spectators before the engine is started.