



**Radio Controlled Model Aircraft Operation
Utilizing "First Person View" Systems for Indoor Flying
Of Ultra-Micro & Micro-Aircraft**

1. DEFINITION OF TERMS:

Please refer to section 7 which contains a listing of the definitions of the terms in italics that are used in this document.

2. GENERAL:

Indoor *FPV* flying of radio control ultra-micro or micro model aircraft by AMA members is allowed only for noncommercial purposes as a hobby/recreational and/or competition activity and must be conducted in accordance with AMA's current National Model Aircraft Safety Code and any additional rules specific to an indoor flying site/location.

3. OPERATIONS – REQUIREMENTS – LIMITATIONS:

- a) *AMA FPV pilots* (novice/experienced) may fly *FPV ultra-micro or micro* aircraft indoors without the need for an *AMA spotter or buddy-box system*.
- b) *AMA FPV pilots* must first be capable of flying *FPV* model aircraft manually before utilizing *FPV flight systems*.
- c) When an *AMA FPV pilot* is flying an *FPV ultra-micro or micro aircraft* indoors and experiences a problem such as the loss of video link, orientation, or any other safety issue, that doesn't appear to be a brief glitch, he/she should abandon *FPV* mode and fly *VLOS* providing the aircraft isn't *BVLOS* or attempt to terminate the flight.
- d) Before the initial *FPV* flight of an *FPV ultra-micro or micro aircraft* and/or after any changes or repairs to *essential flight systems*, the *FPV ultra-micro or micro* aircraft must have an *R/C test flight* by conventional *VLOS*.
- e) *AMA FPV pilots* flying *FPV micro aircraft* indoors may fly *FPV BVLOS* providing the flying space that's *BVLOS* isn't occupied by people or pets.
- f) *AMA FPV pilots* flying *FPV ultra-micro* aircraft indoors may fly *FPV BVLOS* providing that any people occupying the flying space that's *BVLOS* are notified of such activity and no pets are in the area.

- g) *FPV ultra-micro or micro aircraft* must use frequencies approved by the FCC for both the R/C system and the wireless video system. Pilots must meet applicable FCC licensing requirements if they choose to operate the R/C flight control system or the wireless video system on Amateur Band frequencies.

4. RANGE – WEIGHT – SPEED:

- a) *Indoor AMA FPV flying of ultra-micro or micro aircraft* is allowed *BVOS* when conducted in accordance with Section 3 of this document and any additional rules specific to the building facility or conditions required by facility management.
- b) *AMA FPV Ultra-Micro* model aircraft are limited to an *AUW* of 150grams/5.29oz.
- c) *AMA FPV Micro* model aircraft are limited to an *AUW* of 300grams/10.58oz.
- d) Indoor speeds should be reasonably slow to accommodate the size and obstacles encountered in the permitted flying areas.

5. RECOMMENDATIONS & INFORMATION:

- a) *AMA FPV novice pilots* should consider using a cockpit view flight simulator to become accustomed to flying *FPV*.
- b) Depending on the size of the indoor facility and the number of people present, consideration should be given to supply safety eye glasses for the pilots not using *FPV* goggles and spectators.
- c) When purchasing *FPV* operational systems, always try to select quality equipment, verify its compatibility, install components for interference rejection, and determine that signal strength is adequate for maximum range.

6. PRIVACY PROTECTION SAFEGUARDS:

The use of imaging technology for aerial surveillance with radio control model aircraft having the capability of obtaining high-resolution photographs and/or video, or using any types of sensors, for the collection, retention, or dissemination of surveillance data information on individuals, homes, businesses, or property at locations where there is a reasonable expectation of privacy is strictly prohibited by the AMA unless written expressed permission is obtained from the individual property owners or managers.

7. DEFINITIONS OF TERMS:

All Up Weight (AUW) is the total flying weight of the model aircraft which includes the aircraft, and the following systems - propulsion, R/C, FPV, autopilot and batteries.

FPV Aircraft is an R/C model aircraft equipped with a video transmitter to send real-time video images from an onboard camera to a ground based receiver for display on a pilot's video monitor/goggles. (*FPV model aircraft* types include: Fixed Wing, Rotary Wing, and Multi-Rotor Platforms).

AMA FPV Micro Aircraft is an R/C model aircraft equipped with an *FPV* system and having *AUW* of 300grams/10.58oz.

AMA FPV Ultra-Micro Aircraft is an R/C model aircraft equipped with an *FPV* system and having *AUW* of 150grams/5.29oz.7

AMA FPV Pilot is an AMA member who is capable of maintaining stable flight of a model aircraft within its intended flight envelope when flown *FPV* without losing control or having a collision.

Essential Flight Systems are any systems or components necessary to maintain stable flight within a model aircraft's flight envelope. (This includes primary radio control systems and any stabilization or gyros required to maintain stability and heading in certain types of model aircraft that would be uncontrollable/unstable without their use).

First Person View (FPV) refers to the operation of a radio controlled (R/C) model aircraft using an onboard camera's cockpit view to orient and control the aircraft.

Flight Envelope is defined as the range of airspeeds, attitudes, and flight maneuvers which a model aircraft can safely perform/operate for its intended use.7

FPV Novice Pilot is an AMA member learning to fly *FPV* utilizing a buddy-box system with an experienced AMA *RC pilot* operating the master transmitter and serving as the *FPV spotter*.

FPV Spotter is an experienced AMA *RC pilot* who has been briefed by the *FPV pilot* on the tasks, responsibilities and procedures involved in being a spotter; is capable and mature enough to perform the duties and is able to assume conventional *VLOS* control of the aircraft.

Non-Essential Flight Systems are any systems or components that are not necessary to maintain stable flight within the model aircraft's *flight envelope*. (This includes *autopilot* or *stabilization systems* that can be activated and deactivated in flight by the pilot without affecting stable flight).

R/C Test Flight requires an *AMA Pilot* to manually operate an R/C transmitter to control a model aircraft's flight path and determine if the aircraft is capable of maintaining stable flight within its *flight envelope*.

Visual Line Of Sight (VLOS) is the distance at which the pilot is able to maintain visual contact with the aircraft and determine its orientation without enhancements other than corrective lenses.

Beyond Visual Line Of Sight (BVLOS) refers to flying a model aircraft beyond the pilot's visual line of sight utilizing an *FPV System*.