

Regulations of competitions and classes of flying models



1. Basics

1.1 Basic rules

All EU rules for UAVs and their R/C equipment must be followed with the changes given in these regulations. The competitor is personally responsible for the flying model used in the competition and any personal and material damage it may cause. The competitor's RC insurance is required (providing the policy number on request), the obligation to register the pilot and the model obliges the pilot.

The organizers of the competition and the main judge of the competition are responsible for ensuring the safety of the competitors and the audience during the competition, compliance with the provisions of the above regulations, control of the frequency of the transmitters during the competition and the discipline and sporting nature of the competitors' competition.

1.2 Safety

Safety always has the highest priority. Any behavior or incident considered by the main judge or competition organizers to be dangerous may result in the immediate disqualification of the competitor from the event. Each competitor may be asked to make a test flight to prove that they are able to fly a model aircraft made in accordance with the national regulations.

2. Competition place

The choice of the place of the competition belongs to the organizer.

It is recommended that the area intended for the competition should not be smaller than 200 x 100 m and the flight area, calculated in a radius from the place of take-off, is clear of trees or buildings at a distance greater than 100m

2.1 Zoning

The diagram below shows a typical suggested flight area layout for an FPV combat competition. The safety line is the boundary of the flight area that must not be exceeded during the competition and is intended to keep the models at a safe distance from the line of pilots and spectators

The safety line is of a contractual nature and should be marked with a white and red tape in the competition area, and in the airspace it is understood as a half-plane perpendicular to the flight area.

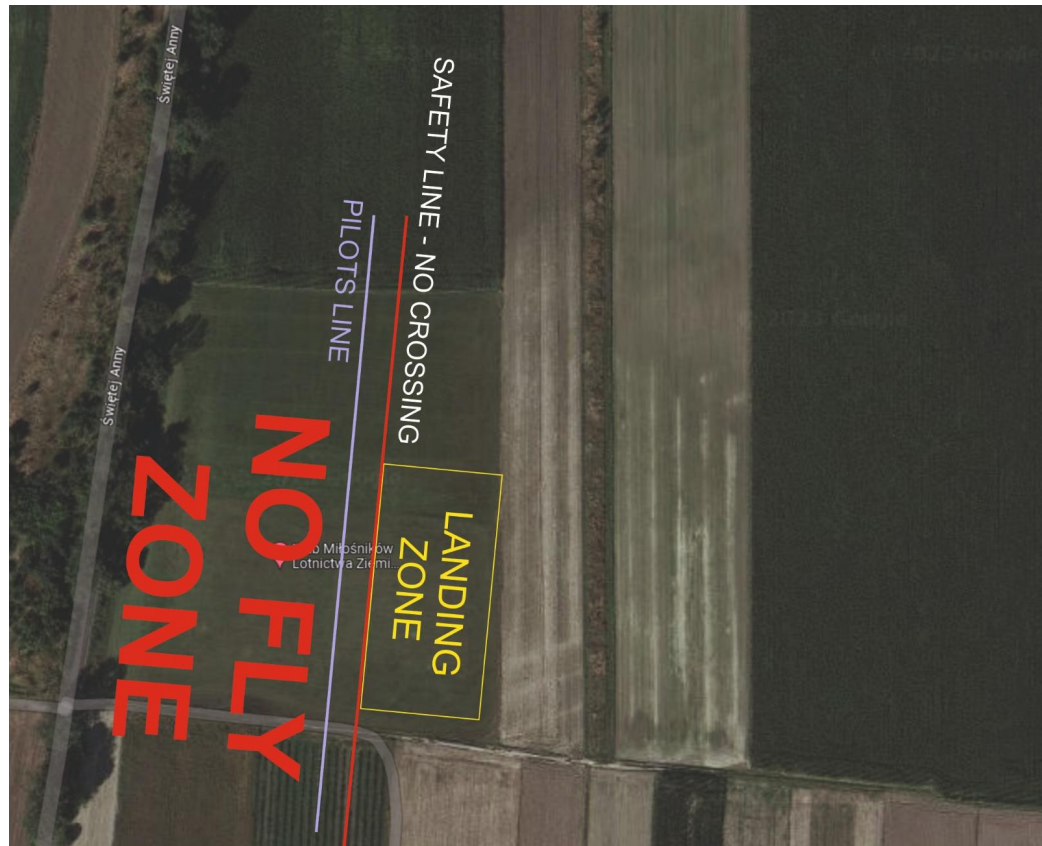
The organizer is responsible for the control of the safety line (flight zone), which applies to all pilots from the opening until the end of the competition. The organizer should leave as much distance as possible between the flight area and the spectators. Suggested distances are given in the diagram below:

-----safety line 0m-----

----- pilot line 5 m -----

----- spectator zone 10 - 15 m -----

Event host can make changes in flying area according to local circumstances and it will be host's responsibility to guarantee that all participants are informed of eventual changes



2.2.1 Flight Zone

The flight zone is always ahead of the safety line. This is an area where temporary landings are allowed during combat. Its dimensions are determined by the organizer depending on the area where the competition is held.

Any model that lands outside the landing zone cannot be picked up during combat or while other models are airborne. Only models landing in this zone are allowed to be picked up during combat and take off again.

2.2.2 Landing field

A rectangular area 50 x 40 m (counting from the safety line) in the flight zone, marked by the Organizer with white and red tape.

2.2.4 Safety line

The safety line runs parallel to the pilots line at a distance of 5 meters. The model cannot fly closer to the pilots than indicated by this line. Any model that crosses this line is subject to a penalty and disqualification rules. This point applies at all times from the opening of the competition to the official end. This applies to all flights (combat, test, demonstration), all models in any case.

2.2.5 Pilots line + possible Starting Boxes

All pilots and helpers should start from behind this line. The line is located 5 m behind the line safety. Starting boxes should provide a distance of 3-5 meters between pilots.

2.3. Audience

The audience should stay at a safe distance, not less than 10 m, behind a safety line or be protected by net-type safeguards. The area protected by the net is defined as the area starting at the net to a distance equal to its height, i.e.: for a 3 m high net, the safe area is up to 3 meters behind the net.

2.4 First aid

A first aid point should be marked at the competition site. At this point there should be a first aid kit available at any time in case of an accident.

3. Models and Equipment depending on the class

3.1 Model

The material from which the model is made is all kinds of foam types: EPP, polystyrene, styrodur, depron.

3.1.1 Model in the *RAPTUS* CLASS

<https://www.fpv-combat.com/download/raptus/>

The only model allowed in the *Raptus Class* is the [*Raptus*](#) (slightly modified version of the original design by **Depa de Padova**) flying wing.

- **Wingspan:** 600-700mm
- **Length:** 600-700mm
- **Engine:** electric
- **Li-po battery:** 2-6S
- **Propeller:** 5-7"
- **max take-off weight:** 1200g
- **Extra Equip. allowed:** No Restrictions

3.1.2 Model in the *WARBIRD* CLASS

Any Scale Model of a Propeller or jet driven Warbird (World War 2 era)

- **Weight:** up to 2500g, (can be adjusted by host to meet local law)
- **Motor:** electric
- **Li-po battery:** 2-6S
- **Propeller:** any size is accepted
- **Wingspan:** 800mm- 1400mm
- **Extra Equip. allowed:** No Restrictions

3.1.2 Model in the *WW I BIPLANE* CLASS

Any Scale Model of a Propeller driven Biplane Warbird (World War 1 era)

- **Weight:** up to 1200g
- **Motor:** electric 700-1100kv
- **Li-po battery:** 3S
- **Propeller:** 8-13 inch
- **Wingspan:** 1000mm- 1200mm
- **Extra Equip. allowed:** No Restrictions

3.2 Installation of the power supply

Each model participating in the competition must be able to quickly disconnect the battery from the ESC without the use of tools in event of a breakdown or fire. Each competitor is required to have at least 2 batteries.

3.3 Head protection

Every participant and every person in front of the spectator line is recommended to wear and use head protection.

3.4 Radio and FPV equipment (video)

Each competitor should check the range (operation) of his RC equipment before the competition. The competitor is responsible for the proper operation of his RC equipment.

Activation of Video Transmitters (both analog and digital) is forbidden during official flying sessions for all the pilots that are not participating in the match. Penalty for acting against this rule will be -50 Points

Judge/organizer will communicate the moment when pilots of the upcoming flying session can turn on their VTX.

The same announcement indicates that other pilots must keep OFF their VTX until the "end of the match" announcement.

The Organiser provides a board with Video-Frequency/Channel tokens. Each pilot that wants to fly or power up his equipment for testing - has to pick his frequency Token BEFORE he flies and put it back on the board AFTER his flight or testing has ended.

In all times, when a pilot wants to fly or powerup his vtx for testing it is required to take the Video-Frequency/Channel Token to ensure that no one blocks another one's Video Channel during flight.

Powering up VTX without having the required token results on the first occasion in a penalty of -50 Points - on Second occasion pilots will be publicly pelted with rotten fruit and a penalty of -100 points.

Tokens have to be put back on board immediately after flight or end of testing.

It is the responsibility of each pilot to communicate to others that he is going to power on his system.

Activation of Video FPV transmitters is only allowed during times announced by the judge/organizer so as not to disturb the vision of pilots with aircraft in the air. Both analog and digital video links are allowed. The maximum transmitting power must be according to the actual local regulamentation.

The organizer assigns the video channels to the Players

3.5 FPV Combat equipment

General:

- lives, ammos, shooting rate, defense level, shooting power will be set by host remotely for each match (**default will be: 10 Lives// 30 Ammo// Defense Level 3// Shooting Power 3 // Shooting Rate 3**)
- The HC-12 module (433MHz) shall be removable
- The connection of the FPV-Combat Board and HC-12 module must be realized using female or male Servo Style Connector (pitch 2.54mm)

FPV-Combat Hardware & Firmware

- The **latest firmware** has to be installed **before the Combat Camp** to save time at the event itself for FIGHTING!
- Please note! The related **hardware-mod for 2.4/2.5 Boards has to be applied.**

Raptus Class:

- **2 Guns max**
- **2 Sensors**, one on each wing tip facing outwards according to latest model build plans
- **433Mhz HC12 telemetry module**
- Combat Board must be accessible for inspection

Warbird Class:

- **2 Guns max**
- **2 Sensors**, placed to allow maximum coverage (judges will check setup)
- **433Mhz HC12 telemetry module**
- Combat Board must be accessible for inspection

WW I Biplane Class:

- **2 Sensors**, placed to allow maximum coverage (judges will check setup)
- **433Mhz HC12 telemetry module**
- Combat Board must be accessible for inspection

4. Competitions

4.1 Round structure

A round is the execution of exactly one fight by each pilot.

The number of rounds that will be played in a given competition should be determined before the competition. It is recommended to run at least 4-6 rounds.

The competition ends with the final, which is a consequence after all the announced rounds have been completed and the best players have been tallied and selected. Therefore the pilots who scored the most points during the rounds meet for the final. The pilot who has the highest sum of points counted from individual rounds together with the achievements of the final fight wins the competition.

4.2 Scoring

Points will be assigned in the following way:

- | | |
|-------------------------------------|-------------|
| - 1 Successful Hit on other planes | = +3 Points |
| - 1 Successful Hit on Static Target | = +2 Points |
| - 1 Received Damage | = -1 Point |

4.3 Fights

The fight is understood as a sports competition of competitors (pilots) using their models. Each fight is divided into three parts: preparation, readiness, flight.

4.3.1 Preparation

The length of the preparation time is determined by the organizer; five minutes is recommended. It is signaled by the main referee announcing the preparation for the next fight.

4.3.2 Getting Ready

The readiness takes place immediately after the preparation time and is announced by the head referee with a call. During standby, all pilots and helpers should be on the standby line. The standby time varies depending on the referee's decision.

Make sure to have a system to keep your VTX cool for several minutes standby.

4.3.3 Flight

The flight part begins when the chief judge gives one long signal (whistle or verbal command "start"). Pilots and helpers can run to their planes and take off. **TAKEOFF is allowed AFTER THE COUNTDOWN ENDED AND THE HORN BLOWS** The flight part ends when the chief judge gives another long signal (whistle or verbal command). The pilots must now end combat and land when they decide they can. As soon as the last model lands, another preparation time may be announced.

4.3 Observers

Each player must have an observer. Only one observer and a pilot per model may be in the line of pilots during the flight (**helmet recommended**).

The observer must be ready to help in case of loss of control, loss of video link or other technical problems etc.

The Observer is allowed to help with tactical advice.

4.4 Start

Participation of the competitor's helper in the start of the model is allowed (hand throw).

Each competitor after the start must go back to the pilots' line so as not to obscure the flight area of other competitors. In the case of model capotage starting from the wheels, entering the flight zone and re-setting the model for take-off is possible only after the start of other competitors

The Main Judge will provide the Start signal

- models are not allowed to take off before the "START" signal (penalty: forced to land and take off again)

4.5 Flight time

Combat Time is 4 Minutes.

Maximum flight time is 5 min = 300s, the model setup must allow for a flight of this length

4.6 Restart in combat

There is no maximum number of starts per fight. When a pilot wants to take a model from the flying area (during a fight) he must have permission from the chief judge. The chief judge alerts the pilots and makes sure they are warned of the situation. The re-start must be made from the place where the first start took place, i.e. a return to the line of pilots is required.

4.7 Model change

Only one model can be used per battle. The new model can be used in the next battle.

4.8 Landing

Planes should land after fight in a designated landing zone - will be awarded with 5 extra points

4.9 Collisions

There are no penalty points for collisions or model loss.

4.10 The principle of non-involvement (avoiding combat)

If a pilot remains out of combat for more than 30 seconds, he should be warned by the main judge. A pilot who, after the first warning, tells the judge that he has technical problems should immediately attempt to land his model in a place that is safe for the competitors and spectators.

4.11 Draw

If after the final battle the pilots have an equal number of points, the pilot who scored more points in the final itself wins. If these scores are equal, the pilot with the highest number of points during one of the fights in that competition wins.

4.12 Video Frequencies / Bandwidth / Power

Standard Videoband is Raceband and DJI

All users must be able to set their transmitters in Raceband or DJI range!

DJI users have to set their system to 25 MBIT

The used channels will be :

The assigned channels will be displayed at the Rooster board.

- **CH 1: RB-5658 Mhz / DJI 5660 Mhz**
- **CH 3: RB-5732 Mhz / DJI 5735 Mhz**
- **CH 5: RB-5806 Mhz / DJI 5805 Mhz (not to be used by Analog Players)**
- **CH 7: RB-5880 Mhz / DJI 5914 Mhz**

The competitor must be prepared to change the frequency of his video transmitter.

In the event of a channel collision during the final, the player with fewer points should change the frequency. Additional time must be given to the competitor for this substitution. Also preparation time for the final fight cannot be enabled until this change is made. The competitor is responsible for selecting the channel so that there are no channel collisions after the change.

- 50 point for turning on VTX during official fights

4.13 Deterioration/interference/complaint

If the weather or other conditions during the competition deteriorate, or the participating competitors complain about the weather or other conditions to the organizer, the organizer should hold a vote for the majority of pilots to decide whether the competition is to be postponed, canceled and how to treat previous results

5. Judges

5.1 Main Judge

The main judge is responsible for checking the weight of the models and timing during the round. The main referee is obliged to observe the entire fight and in the absence of a line judge, to check the safety zone. The referee is also responsible for keeping the competitors in front of the safety line when the planes are in the air.

Cheating or attempted cheating shall result in disqualification of the competitor. The referee's decision should be based on the vote of the other players.

5.2 Safety judge

The safety judge is primarily responsible for safety at the competition. This judge has a higher rank than the head judge when it comes to safety. The safety referee should warn about the dangers during the fights. He should be positioned so that he can clearly see crossings of the safety line. He is also responsible for ensuring that no person stays without a helmet outside the zone protected by the net or closer to the safety line than the designated distance at the competition

5.3 Pilot observer

The pilot observer's duty is to help assist the pilot at starting his plane and to locate the plane in case of crash landing.