

Electric Combat Proposed Rules

Electric Class One

Object

The object of this class is to promote combat by encouraging flyers to enter a class which is inexpensive to participate in and where the equipment is easily available..

Definition of a Combat Event

A combat event is a competition during which two competitors with their model aircraft fly in the same circle at the same moment for a predetermined time, the object being to cut a streamer attached on the longitudinal centre line of the opponent's model aircraft, points being awarded for each cut taken and time spent in the air

Definition of an Electric Combat Model Aircraft

- (a) Model aircraft in which the propulsion energy is provided by electric power and in which lift is obtained by aerodynamic forces acting on surfaces which remain fixed in flight, except for control surfaces.
- (b) The longitudinal centre line shall be defined as the axis of the propeller in case of a single engine model aircraft and the axis of symmetry in the case of multi-engine model aircraft.

Electric Combat Class One Combat Site

The flight circle must be laid out on grass. The centre piloting circle may be laid out on grass or any other material having a maximum radius of 4 metres.

- (a) The centre (piloting) circle: radius 2 metres.
- (b) A launch area shall be marked at 17.5 metres with 2 launch positions marked on the circumference approximately 15 metres apart.
- (c) A Scorers area and pit area shall be marked at 25 metres with marking tape or cones. .

Competitor

The pilot must wear protective headgear fitted with an effective retaining strap. To avoid the catching of the opponent's lines the protruding parts of the helmet must be covered. No communication using electronic devices is allowed between the pilot and mechanics/persons outside the flying circle.

Characteristics of a 1/2A Combat Model

- (a) The electric motor, Esc and Lipo battery are specified in appendix 1
- (b) There are no restrictions on model size, construction or materials used.
- (c) A Radio Controlled 2.4ghz Transmitter Receiver will control the motor functions
- (d) Propellers MUST be commercially available thermoplastic 8 by 4
- (e) The model shall not carry any artificial aid to assist the cutting of the streamers.

Controls

- (a) The control line length must be 14.00 metres plus or minus 75 mm. It is measured from the inboard face of the grip of the control handle to the longitudinal centre line of the model.
- (b) The control lines shall be multistrand braided fishing line with a minimum breaking strain of 25 lb. (12 kg) Steel or Stainless steel lines are not allowed. No free ends capable of entangling an opponents lines and no line splices shall be permitted. A safety strap connecting the competitor's wrist to the control handle must be provided by the competitor.
- (c) Before each heat any sets of lines which may be used must be checked for correct length. A pull test shall be applied to the assembled handle, control lines and model used in that heat. The pull test shall be equal to 10 kgf

Number of Models

Only one model will be allowed per bout.

Streamer

- (a) The streamer shall be crepe paper 2 metres long by 20 mm wide and shall be attached to the model by 2 metres of sisal string.
- (b) The streamer shall be attached to the model within the longitudinal centre line and a 3 inches maximum distance outboard on the model and must not become detached under normal flying conditions.

Method of Starting

- (a) All signals shall be both acoustic and visual.
- (b) During the starting period the launching positions must be separated by at least a quarter of a lap.
- (c) The motor(s) must be started and stopped by a push button on the transmitter
- (d) A signal, given by the Official Timer, shall signify the beginning of the combat period on or after which the model aircraft may be launched. The Pilots will press their start buttons. The person launching the model in the front position will launch first, walk toward the pit area and once clear the second launcher will launch their model and return to the pits. Both Launchers now take up their scoring position, each scores the pilot of the model they launched
- (e) From the moment the Official Timer has given the signal to launch the combat heat lasts for four minutes.
- (f) When the Circle Marshal is satisfied that each model aircraft has completed two level laps, anti clockwise, separated by approximately half a lap, he will give a signal that combat may commence.
- (g) If a pilot crashes, this ends their bout. Their scorer stops his stopwatch.

Termination of the Contest

- (a) The Circle Marshal shall give an acoustic signal to terminate the combat heat four minutes after the signal to launch, i.e. five minutes after the first signal to run and adjust motors.
- (b) The same acoustic signal shall be given if the heat has to be terminated for any reason.

- (c) The Circle Marshal shall signal both pilots to fly level and anti-clockwise and to cease combat when both streamer strings have been cut.

Method of Scoring

- (a) Scoring shall commence from the signal to launch and continue for the four minute period.
- (b) 100 points shall be awarded for the first distinct cut off the opponent's streamer. 200 points for the second cut, 250 for the third cut and subsequent cuts.
- (c) A cut must contain at least one part of the streamer. A cut that contains string alone will not count.
- (d) Should the string become detached from the model aircraft while airborne the competitor must immediately on a signal from the Circle Marshal stop his motor and land. His airtime ends at this point
- (e) two points shall be awarded for each whole second that a model aircraft is airborne during the four minute period.
- (f) A bonus will be awarded if a pilot reaches the end of the bout.
- (g) Each warnable offence shall be penalised by the deduction of 40 points from the competitor's score.
- (h) In the case of a line tangle where the circle marshal estimates the tangle cannot be cleared, he can require both pilots to land immediately. This ends the bout

Attempts

Only one attempt will normally be allowed to complete a combat heat except for when:

- (a) In the event of a model aircraft fly-away, Both pilots will be asked to stop their motors and land. The bout ends at this point and the current scores stand

Conduct

- (a) A pilot must remain inside the centre circle while his model is flying except at the moment of release of his model by the pitman.
- (b) After a midair collision the heat shall continue as if both models had landed.

Offences

The following are warnable offences and each and every occurrence will attract the appropriate penalty points

- (a) If a pilot unintentionally leaves the centre circle while his model is airborne.
- (b) If the model is launched prior to the starting signal.

Cancellation of the Flight (Disqualification)

An entrant will be eliminated from the heat and his opponent declared the winner if:

- (a) He deliberately attacks the streamer of his opponent's model prior to the Circle Marshal's signal to commence.
- (b) He interferes with his opponent, or forces his opponent to leave the centre circle.
- (c) He deliberately flies in a dangerous manner.
- (d) He attacks his opponents streamer without his own, or the remaining

parts, attached to his model.

- (e) He flies other than level in an anti-clockwise direction when only his model is in the air and there is no line entanglement.
- (f) For any other flagrant breach of the rules
- (g) He releases the handle, or removes the safety strap, for any reason, while the model is flying.
- (h) He deliberately attacks or interferes with his opponents continuously level flying model, which clearly has no paper streamer left.

Classification

- (a) The contest shall be run as a series of rounds. Minimum of 4 rounds
- (b) The Competitor who obtains the highest score in points shall be the winner of each bout. The competitor who accumulates the highest points score at the competition shall be the winner of the competition
- (c) The draw for all rounds will be undertaken before the competition starts. If a pre entry system is available it can be drawn the day before
- (d) In the event of an unattached competitor remaining in any round, that competitor shall be included in the next round and so on in each round. At the end of the competition all competitors with less than the optimum number of flights, will fly against each other to equalise the number of flights all competitors have undertaken.
- (e) At the end of all rounds, the scores will be totalled and the winner, runner up and third place competitors announced. The score sheet will be available to view.

Procedure

Under normal circumstances the contest will be run as 4.8.2.17 (a) to (h) except where the number of entries does not permit this. Should this situation arise the following system will be used:

- (a) Competitors will normally compete with each other in a knockout competition chosen by random draw. The losers of each of the first round flights will be allowed to compete in a further losers re-fly round.
- (b) The winners from this round will be drawn with winners from the first round to provide a second round of contests.
- (c) The rounds will continue until eight Competitors are left so that quarter, semi and final round provide an overall winner.

Judges and Timekeepers

The following is the minimum organisational requirement:

- (a) A Centre Circle Marshal, who shall be the Contest Director.
- (b) Two launcher/scorers, these should be the pilots of the next bout.
- (c) The Centre Marshal may at his own discretion remain outside the circle for safety purpose.

Appendix 1

The equipment used in this class is strictly controlled, Only the items listed in appendix 1 will be eligible. This is to ensure total equality of equipment ensuring a level playing field.

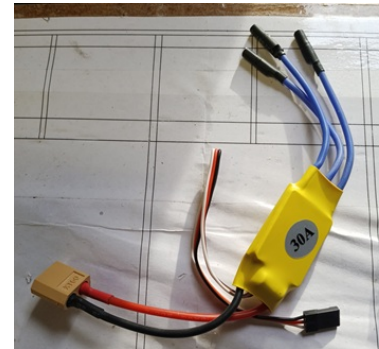
Motor

2212 1400kv. brushless outrunner. Comes with mount and spinner. No brand name other than occasionally known as XXD Gold coloured. Typical price on Aliexpress is about £4.00.



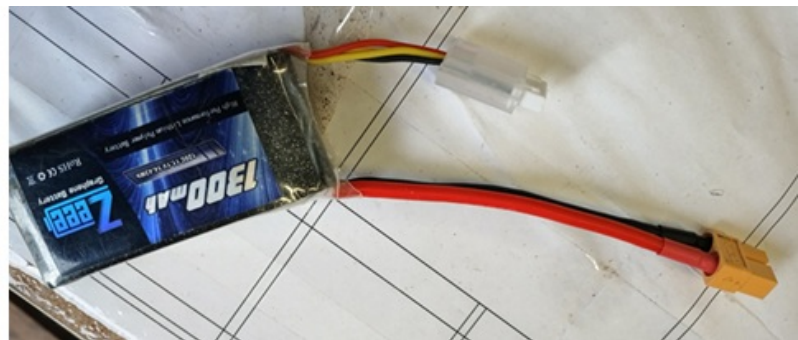
ESC. Electric Speed Controller

30 amp, with 3.5 mm bullet connectors for the motor and XT60 battery plug. Again, no brand name, Price on Aliexpress is again around £4.00



Battery

3s 11.1 volt 1300 mah Lipo. Recommended is the Zeee make, Free, quick delivery from UK warehouse. Price is normally around £22 for 2 batteries. This battery gives a 4 minute run with 28% charge remaining. Aliexpress again.



Props

Plastic size 8/4 electric motor props Sold in packs of 10. Price is around £2.75 for a pack of 10 on Aliexpress. They suit the motor battery setup well but they are quite flimsy,



Whilst Aliexpress is named as a supplier, all the above items are available at a range of other suppliers, Zeee have their own website and UK warehouse and are also stocked in some model shops, the motors and ESC's are also available at UK models shops as well as Amazon and Ebay.

Regarding a suitable transmitter/ receiver, a simple 2 or 4 channel 2.4ghz boat or car set is fine. It is worth pointing out that the pilot will hold the transmitter whilst flying his model so something compact is advisable.