

F3E — Electric Soaring

Definition

- 1 Electric Powered Model — a model aircraft in which lift is generated by aerodynamic forces acting on surfaces remaining fixed during flight (except for control surfaces) and which performs manoeuvres controlled by the pilot on the ground, using radio control connection. The propulsion is effected by fixed or foldable propeller(s), driven by an electric motor which can be regulated during flight.

The Contest

- 2 The contest is a two-task event, namely—
 - a Distance (Partial Score A) and
 - b Duration (Partial Score B).
- 3 The two tasks are executed without interruption in one flight.
- 4 A minimum of two flights must be flown.

Distance Task

- 5 This task must be completed within 180 seconds from the moment the model, with running motor is hand-launched. Time of release is to be taken by one timekeeper.
- 6 This task must be carried out with at least two climbs with motor running. The pilot has to decide how much time he will use for each climb (motor running) and how much for gliding.
- 7 Starting and stopping the motor must be announced to his timekeepers.
- 8 When, after stopping the motor, the model in gliding flight, first crosses base A in the direction to base B, the timekeepers starts counting the laps. The model must complete as many laps as possible from the starting point base A to the base B and return.
- 9 Restarting the motor causes the counting of laps to stop (temporarily), until motor is switched off. Expiring of the 180 seconds stops counting permanently.
- 10 A timekeeper announces to the pilot when his model crosses base A and a flagman (or audio system) is used to signal crossing base B. If a timekeeper or flagman fails to indicate / signal, this means the model has failed to cross the base. The instruments used to check the crossing of the vertical plane must assure the parallelism of such planes.
- 11 The pilot must remain at base A until the distance part of his flight is completed.

- 12 Every completed lap will be awarded 10 points. When the model fails to complete at least one lap after either of the first two climbs, 30 points will be deducted from the score of his task.
- 13 After this task, the pilot has to fly, within a minute, through the gate in the direction from base B to A. Passing the gate with the motor off at the end of the lap is allowed.
- 14 When the model passes the gate, timekeeper number 2 starts his watch, signalling the start of the second task. The absence of a signal will indicate that the model has failed to correctly cross the base.

Duration and Landing Task

- 15 This task must be completed within 300 seconds from the moment the model passes the gate.
- 16 The pilot has to decide how much and how often he will switch on the motor.
- 17 The gliding-time timekeeper (#1), starts his watch every time the motor is switched off. Gliding time stops either when the motor is switched on again or when the model comes to rest after landing. The pilot must announce the switching on and switching off of his motor to the time keeper with the word “ON” and “OFF”.
- 18 Gliding time is cumulative and one point will be awarded for each full second the model is gliding.
- 19 One point will be deducted for each full second flown in excess of 300 seconds.
- 20 Additional points will be awarded for landing when the model comes to rest, measured from the centre of the circle to the model’s nose, as follows —
 - a 15 points within 30m of centre spot and
 - b 30 points within 15m of centre spot.
- 21 No additional points will be awarded if the landing occurs 330 seconds after beginning of this task.

Power Source

- 22 The voltage must not exceed 42 volts and consists of a maximum of 30 cells. If the voltage is measured, this shall be done at the moment the preparation time for the pilot starts. After measurement has been taken, the pilot is allowed 5 minutes preparation time.
- 23 The weight of the power source, including insulation, cables and connectors shall not exceed 1,1kg.
- 24 If the weight is taken, this shall be done at the moment the preparation time for that pilot starts. After the measurement the pilot is allowed 5 minutes preparation time.

- 25 The power pack for the electrical motor may not have any fixed connection with the ground or with another model in the air.
- 26 Recharging of the power pack during flight in the air by solar cells is permitted.

Course Layout and Organisation

- 27 There are two imaginary vertical planes 150m apart. These planes determine turnlines and are named base A and base B. Base A is the line where the models are launched. In the plane of base A stands an imaginary gate, consisting of two poles 3m high, separated by a distance of 20m. For each pilot in a group, the organisers provide a flagman at base B and two timekeepers at base A. (See diagram — Site Layout).

Scoring

- 28 For each flight the total score is compiled by adding the Partial Scores A and B for each competitor.
- 29 If more than two flights are flown, the lowest flight score of each competitor will be discarded and the others added to obtain the final score which will determine his position in the final classification.
- 30 In order to decide the winner when there is a tie, the distance part of a flight is repeated.

Launching

- 31 Before launching, the pilot must show his timekeeper how he controls his motor(s) on his transmitter (on, off, reversing).
- 32 The launch will occur outside the course, and within 10m of base A.
- 33 The model, with running motor, is released or thrown into flight directly from the hands of the pilot or his helper(s), without additional assistance. The model shall not be launched from a height greater than the flier's normal reach above the ground.

Landing

- 34 For the landing, the organisers must provide two concentric circles of 30 and 15m diameter respectively, located at a place of the field where there is no danger of collision with models simultaneously flying either the distance or the gate task.

Definition of an Official Flight

- 35 During the two minutes starting period, the competitor is allowed an unrestricted number of attempts (hand-launch or Rise Off Ground (ROG) — if possible with the propeller).
- 36 After the first attempt, it is no longer allowed to take another model.

- 37 The time keeper will start his watch at each attempt.
- 38 After the two minutes limit, no further launching or take-off may happen and the flight is considered as official, the model being airborne or not.
- 39 The pilot may repeat a second two minute starting period, subject to the definition of an Attempt and an Official Flight discussed in the General Rules.

Cancellation of a Flight or Disqualification

- 40 The flight is annulled if —
 - a the model was already used by another competitor in the same contest.
 - b the pilot uses more than two helpers.
 - c any part of the model does not come to rest and remain at rest within 100m of the landing spot after the task has been started.
 - d the task has not been started and the landing does not occur within 100m from base A or base B.

Helpers

- 41 Each pilot is permitted two helpers during his flight. The Team Manager may be one of those helpers.

Ten Cell Gliders (New Provisional Class)

- 42 To provide for an international class for those who find the F3E class too expensive, difficult, or intensive, a 10 Cell class has been introduced, the aim being to promote good performance, enjoyment and a simpler transition to F3E.
- 43 All the above rules apply with the exception of the following —
 - a In the case of a contest where both classes are flown, a competitor in the F3E class is not allowed to participate in the Ten Cell Class.
 - b The total projected surface area of the model shall not be less than 36dm².
 - c The power source shall consist of not more than 10 cells.
 - d The weight of the power source including insulation, cables and connectors shall not exceed 550 grams.
 - e If the weight is to be taken this shall be done immediately after landing.

