

**CLASS F5L – 2-AXIS THERMAL GLIDERS WITH ELECTRIC MOTOR & AMRT****F5L (New Electric Class) 2-AXIS THERMAL GLIDERS WITH ELECTRIC MOTOR AND AMRT**

## Preface:

*F5L differs from F3L only by the starting procedure with electric motor.*

*Due to the restrictions for construction and equipment it will be possible to take part in competitions at low costs and with average skills. The introduction into RC tournaments should be achievable for everybody at all ages.*

*The competitions can be held on small airfields without wind orientation. All participants start the thermal flight at >90m altitude. Almost the same models and the same conditions make the task of the class interesting for all age groups. Young people can participate in demanding competitions with relatively little effort.*

## Contents:

1. General provisions	1
2. Model	2
3. The flying site	3
4. Contest flights	3
5. Re-flights	4
6. Launching	4
7. Landing	4
8. Scoring flight performance and landings	5
9. Final classification	6
10. Advice for contest notice	6

## 1. General provisions

- a) F5L is a class for radio-controlled 2-axis gliders with electric motor and a logger.

The models feature max. two (2) meter span and are primarily of wooden construction. The models are controlled by rudder, elevator and spoiler(s). For launching the electric motor is allowed for 30 sec.

## b) Definition of a radio controlled glider:

A model aircraft which lift is generated by aerodynamic forces acting on surfaces remaining fixed.

The model must be controlled by the competitor on the ground using radio control.

**CLASS F5L – 2-AXIS THERMAL GLIDERS WITH ELECTRIC MOTOR & AMRT**

- c) In competition at least six (6) qualifying rounds shall be flown. For each qualifying round, participants shall be divided into flight groups. The results of each flight group shall be normalized to arrive at comparable scores between the flight groups. The highest score within each flight group will be assigned 1000 points and the remaining scores within that group shall be proportional to each participant's raw flight score relative to the best raw flight score within that group. The group size in the "Fly-Off" shall be the same as the group size in the preliminary rounds. Participants flying with the highest total normalized scores from the preliminary round will compete in a "fly-off" (minimum 2 rounds) to determine the final classification.
- d) The competitor may use three (3) models in the contest. The competitor may change the models at any time, but within a round only if the model that was used at first is placed within a radius of 15 meters of the assigned landing spot.
- e) The competitor may use up to two (2) helpers. These are to assist him in launching and retrieving the model, informing him of weather conditions and flight time and to manage the start.
- f) The organizer should have official scorekeeper / timekeeper available. If this is not the case, the pilot's helper will keep time, and the organizer will regularly sample the flight times. Deviations of more than three (3) Seconds in favour of the participant shall lead to a zero score flight.
- g) The landing points shall always taken by an official scorekeeper.

## 2. Model specifications

A model normally consists of wings, fuselage and tail. Flying wing models that do not have a fuselage and rudder or vertical stabilizer, or none of these components are also allowed if they have only two (2) control surfaces. Each of these panels has to be actuated by only one servo. Otherwise, the construction rules for conventional models described herein are applicable.

### 2.1.

The model is build-on mainly with wooden parts. Following methods are permitted:

- a) Wings build with ribs, open or covered by wood, „D-box“, solid wood wings or a combination of solid wood and ribs.
- b) All parts must be made from wood with exception of leading edge, spar(s) and connecting parts of the wing panels and the motor mount frame.
- c) The surface of the wings may be covered by film, silk, paper or polyester-fabric.

Specifications a) to c) are applicable for the tail planes too.

d) The space between the rear edge of the spoilers and the trailing edge must be at least 5 cm. The spoilers may be activated by one or two servos.

e) The fuselage must be made entirely from wood, or with a tail boom made from fibre glass/carbon (GRP/CFRP) or Kevlar tube or profile. The tube/profile must not extend the front half of the wing area.

**CLASS F5L – 2-AXIS THERMAL GLIDERS WITH ELECTRIC MOTOR & AMRT**

f) The wooden surface of the fuselage may be covered with fibre glass/carbon (GRP/CFRP) or Kevlar, but not more than a maximum of 1/3rd of the total area. The surface may be protected with varnish or like described at c).

g) Hinges and control rods are exempted from the GRP/CFRP constraint.

h) The selection of the electric motor is free.

g) The selection of battery is free

## 2.2 Not allowed is the use of

a) positive or negative moulds for construction of the fuselage or wings or the surface treatment.

b) a fixed or retractable arresting device (i.e. bolt, saw tooth-like protuberance, etc.) to slow down the model on the ground during landing. The underside of the model must not have any protuberances.

c) a fuselage nose with a radius less than 5 mm.

d) ballast which is not carried internally and fastened securely within the airframe.

e) any telemetry with the exception of radio signal strength, receiver temperature and battery voltage. No variometer permitted.

f) any telecommunication between competitor and helpers, including mobile phones or walkie-talkies.

## 3. The flying site

a) The competition must be held on a site having reasonably level terrain, which will minimise the possibility of slope and wave soaring.

b) There must be a marked start/landing spots for each competitor that are at least eight (8) meters apart. Take-off is within two (2) meters of the assigned start/landing point. This also applies when starting again.

c) The distance between fuselage nose and landing point will be measured by a tape or string which may be fixed at the landing point.

e) The Contest Director shall determine the landing boundaries. Landing outside the boundary shall result in a zero score for that flight. (see also 8.2).

## 4. Contest flights

a) The competitor is entitled to at least four (4) official flights.

b) The competitor is entitled to an unlimited number of attempts during the working time.

Before restarting, the flight battery must be briefly disconnected from the controller to reset the AMRT.

- c) An official attempt begins when the model leaves the hand of the competitor or his helper with electric motor running.
- d) In case of multiple attempts, the result of the last flight will be the official score.
- e) The contest director has the right to interrupt the competition and reset the start/landing points.
- f) The contest shall be interrupted by the contest director if the weather condition for the models are no longer reasonable.

### 5.Re-flights

The competitor is entitled to a new working time if:

- a) his model in flight or in the process of being launched collides with another model flying or being launched.
- b) When his flight is hindered or aborted by an event beyond his control.

To claim a re-flight considering the above mentioned conditions, the competitor has to make sure, that the official timekeepers have noticed the hindering conditions and land his model as soon as possible after this event.

Note that in the case the competitor continues to launch or continues to fly after hindering conditions affected his flight or does re-launch after clearing of the hindering condition(s), he is deemed to have waived his right to a new working time.

### 6. Launching

Starting is after the beginning of the frame time with running engine.

For designs that do not permit a safe start with the engine running (e.g., wing-mounted aircraft with rear-mounted engine) the engine is switched on as soon as possible after the start, and the time begins when the engine is switched on.

The engine runtime (30 sec) and the starting height (90m) are limited by an EDIC-approved e logger (eg: Altis V4, Altis V4+, Altis Micro, Altis Nano). The settings of the AMRT are checked by the organizer before the competition. The organizer can check the AMRT at any time after a flight. If the settings differ from the pre-sets, the flight is recorded as zero score.

Requirements for the AMRT:

- a) Time and altitude shutdown.
- b) No telemetry during competitive flight.
- c) No change in the setting values via the transmitter.
- d) Storage of the (last) flight with switch-on and switch-off point (altitude and time) of the electric motor.

**CLASS F5L – 2-AXIS THERMAL GLIDERS WITH ELECTRIC MOTOR & AMRT**

(e) it shall be possible to check after a flight;

## 7. Landing

- a) Before each flight each competitor will be assigned a start/landing spot. It shall be the responsibility of the competitor to use the correct assigned landing spot.
- b) During the landing process only the pilot and his assistant are allowed in within 10 meters of the landing spot. Any other helpers and timekeepers shall stay at distance.
- c) After landing, competitors may retrieve their model aircraft before the end of their working time providing they do not impede other competitors or model aircraft in their group. A model thus retrieved may be relaunched during the working time. No landing score may be recorded for a model that has been touched before scoring the landing.

## 8. Scoring

### 8.1 Scoring of the flight time:

The attempt will be timed from moment of release from the hand of the starter device to either:

- a) the model aircraft first touches the ground; or
- b) completion of the group's working time.

The maximum flight time is 6 minutes and 30 seconds (390s) within nine (9) minutes (540s) working time. If the flight is longer than (6:30) minutes (390s), the overflying time will be deducted from (6:30) minutes (390s). The flight time will be recorded in full seconds. Each second of flight time will be scored two (2) points. The highest score within each flight group will be assigned 1000 points and the remaining scores within that group shall be proportional to each participant's raw flight score relative to the best raw flight score within that group.

### 8.2 Scoring of the landing:

A landing bonus will be awarded in accordance with distance from the landing spot marked by the organisers according to the following tabulation:

Distance from spot	points	Distance from spot	points
up to m(meters)		up to m(meters)	
0.2	100	5	80
0.4	99	6	75
0.6	98	7	70
0.8	97	8	65
1.0	96	9	60
1.2	95	10	55
1.4	94	11	50
1.6	93	12	45

## Agenda Item 14.8 k)

**CLASS F5L – 2-AXIS THERMAL GLIDERS WITH ELECTRIC MOTOR & AMRT**

1.8	92	13	40
2.0	91	14	35
3.0	90	15	30
4.0	85	over 15	0

Zero points for landing will be recorded for the competitor, if

- a) the model sheds any parts.
- b) the model is not airworthy after landing. If there is any doubt about this, the airworthiness must be demonstrated.
- c) the model is overflying the groups working time.
- d) the model is touching by the competitor or helper during landing.
- e) the model is touched by the competitor or helper before the official scorekeeper made the distance measuring.

**Zero points** for the entire task (flight and landing) are awarded if:

- a) The model comes to rest outside a landing boundary specified by the originator. Within the working time the competitor may launch for another attempt.
- b) the model is overflying the working time more than 30 seconds.

#### 9. Final classification

If five (5) or fewer qualifying rounds are flown, the aggregate score achieved by the competitor, will be the sum of his scores for all rounds flown. If more than five (5) rounds are flown, then his lowest score will be discarded before determining his aggregate score.

The final ranking of the competition is determined for the competitors qualified to the fly-off by the ranking at the fly-off, and by the ranking of the qualifying rounds for the other competitors.

#### 10. Advice for contest notice

The contest notice will state any expected modifications of space limitations.