5.5.10   F5K – RC THERMAL DURATION GLIDERS FOR MULTIPLE TASK COMPETITION WITH ELECTRIC MOTOR AND ALTIMITER/MOTOR RUN TIMER (AMRT) – (PROVISIONAL)

5.5.10.1 F5K Introduction

The F5K event is a multi-task contest where the RC gliders must start and land in a specific "Pilot Area" and perform specific tasks.

Each launch is scored with points made up of:

- flight time in seconds (may be zero)

- altitude bonus or penalty points

- penalties (if applicable)

If the total of all points is negative, the score is zero (0). The score is the accumulation of the flight times, adjusted for penalties and bonuses for launch altitude and any other penalties (if applicable).

5.5.10.2 Task Overview:

Task A: 1, 2, 3, 4 minute flights in any order

- Four launches maximum within a 10 minute window

- 1, 2, 3 and 4 minutes target times, flown in any order within a 10 minute window

- Each flight counts even if the target time is not achieved

- Maximum total flight time used for scoring: 9.59 min.

- After 10 minutes the competitor will have 15 seconds to land. If he lands after these 15 seconds, the flight penalty is 100 points

Task B: Last flight, 5 out of 7 minutes

- Three launches maximum within a 7 minute window

- All competitors of a group must launch their model gliders simultaneously

- Only the last flight counts

- Maximum measured flight time is 5 minutes. It is allowed to overfly the 5 minutes target time

- There will be a launch penalty in case a competitor uses more than 1 launch

  First launch   : no launch penalty – zero penalty points

  Second launch : launch penalty is 10 points

  Third launch   : additional launch penalty of 10 points (20 points total penalty)

  The number of flights is registered on the scorecard

- After 7 minutes the competitor will have 15 seconds to land. If he lands after these 15 seconds, the flight penalty is 100 points

Task C: All up, 4 minutes maximum (3x)

- Three (3) flights of 4 minutes maximum

- The maximum measured flight time is 4 minutes during each all up task

- After 4 minutes the competitor will have 15 seconds to land. If he lands after these 15 seconds, the flight penalty is 100 points

- After the 15 second landing window, the preparation time for the next All-up flight is 15 seconds

Task D: 3, 3, 4 minute flights in any order

- Three launches maximum within a 10 minute window

- 3, 3 and 4 minutes target times, flown in any order within a 10 minute window

- Each flight counts even if the target time is not achieved

- Maximum total flight time used for scoring: 9.59 min.

- After 10 minutes the competitor will have 15 seconds to land. If he lands after these 15 seconds, the flight penalty is 100 points

Task E: Poker

- Working time is 10 minutes
- Each competitor has a maximum of three launches to achieve up to three self-nominated target times within the working time
- The target and maximum allowable flight time is 9 minutes and 59 seconds
- The pilot can announce "**all in**" for his first launch. Only *one launch* is then allowed.
- **Before the first launch of any new target, each competitor announces a target time to the timekeeper**. The timekeeper records the nominated target time on the score card
- The pilot can any use remaining launches to try to reach his target time up until the end of working time
- If the target is reached (or exceeded) the timekeeper will mark the flight with "Y" (time achieved). The pilot is credited with the target time. **Any time over the target time is not counted**
- The launch bonus or penalty applies where the target time is achieved. If the pilot has unused launches, before launch he must announce the next target time (less, more or "end of working time") to the timekeeper
- The timekeeper writes this against the next flight number on the scorecard and the pilot takes his new launch
- Only one attempt is allowed if the pilot announces *"end of working time"*
- **If the target time is not reached**, the timekeeper will mark the flight with "**N**" (not achieved). The launch bonus or penalty does not apply where the target time is not achieved. While the pilot has unused launches, the target time remains the same for the next launch. The timekeeper writes this target time against the next flight number and the pilot takes his new launch
- Flights with achieved target times are scored, adjusted for height, bonus or penalty, landing out of the pilot area and any flight penalties
- Launch penalty applies whenever a launch is made. **The penalty applies even if the flight fails to achieve the target time**

    First launch   : no launch penalty – zero penalty points

    Second launch : launch penalty is 10 points

    Third launch   : additional launch penalty of 20 points (30 points total penalty)

    The number of flights is registered on the scorecard

- After 10 minutes the competitor will have 15 seconds to land. If he lands after these 15 seconds, the flight penalty is 100 points

5.5.10.3 Nominal Launch Height (NLH)

One (1) day before the start of the competition, the Contest Director will announce the nominal launch height for the competition day. For this he will take the average windspeed between 11h and 17h.

Wind Forecast	Between [m/s]		Nominal Launch Height (NLH)	Motor time [sec] in AMRT
Light breeze	0	3	60	
Moderate wind	4	6	70	7 sec
Strong wind	over 6 m/s		80	

*The maximum wind speed for F5K contests is eight (8) m/sec

The motor stop is controlled by two parameters: the "Nominal launch height" or the "Motor time". Both parameters are set in an altitude device (AMRT, for example an Altis Nano from Aerobtec).

However, the pilot can stop the engine earlier or at a lower altitude to gain additional launch bonus points.

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5.5.10.4 Penalty and Bonus Rules During Launch:

Penalty or bonus points apply to launches that are over or under the NLH. The launch height is the highest altitude reached from launch until 10 seconds after the motor is stopped.

- For each metre under the NLH, 0.5 points per metre bonus applies.
- For each metre from 1 to 10 metre over the NLH, 1.0 points per metre penalty applies.
- For each metre from 11 metre over the NLH, 3.0 points per metre applies.

The bonus or penalty is always calculated with reference to the announced NLH.

5.5.10.5 Launch and Start Flight Time:

a) The Contest Director will announce the direction of launch. All competitors must launch and land in that direction.

b) The AMRT is activated before the start of the working time with the model glider still on the ground to set the zero meter offset correct.

c) The flight time starts at launch, meaning the moment the model glider is released from the helper's or competitor's hands, not at the start of the acoustic signal. Starting the motor without launching the plane does not count as start flight time.

d) A helper may launch the model glider for the competitor.

5.5.10.6 Land and End Flight Time:

a) The flight timing ends when the model comes to rest on the ground or at the acoustic signal, even is the competitor is still flying.

b) It is not permitted to catch a model glider for a landing, all flights must conclude with a ground landing. This includes the landings between flights as well as the final landing of the last flight of the task.

c) At the end of each task the model glider must land within the Pilot Area boundary.

d) Landing outside the Pilot Area but within the flying field results in a 10 points penalty per landing.

e) Landing outside the flying field will result in a zero score for the round.

f) If any part of the model glider is inside a boundary, it is considered to have landed inside the boundary.

g) No points are deducted for flying over the maximum flight time or past the end of the working time.

h) For all Tasks a 15 seconds landing window will begin at the end of the working time.

5.5.10.7 Launch Altitude – Altimeter / Motor Run Timer (AMRT):

a) Each model must be fitted with an approved AMRT in accordance with the Technical Specification published in F5K Altimeter/Motor Run Timer Technical Documentation.

b) The launch altitude is recorded in the AMRT. After the task, the launch altitudes for each flight are shown on the display. The pilot only has to record his launch altitude on the scorecard. The competition software converts the launch altitude into any bonuses or penalties.

Note: Refer to the Sporting Code volume EDIC – Electronic Devices in Competition, Section 1 "Technical Specifications & Guidance" for the documentation regarding specifications and guidance for the altimeter/motor run timer (AMRT).
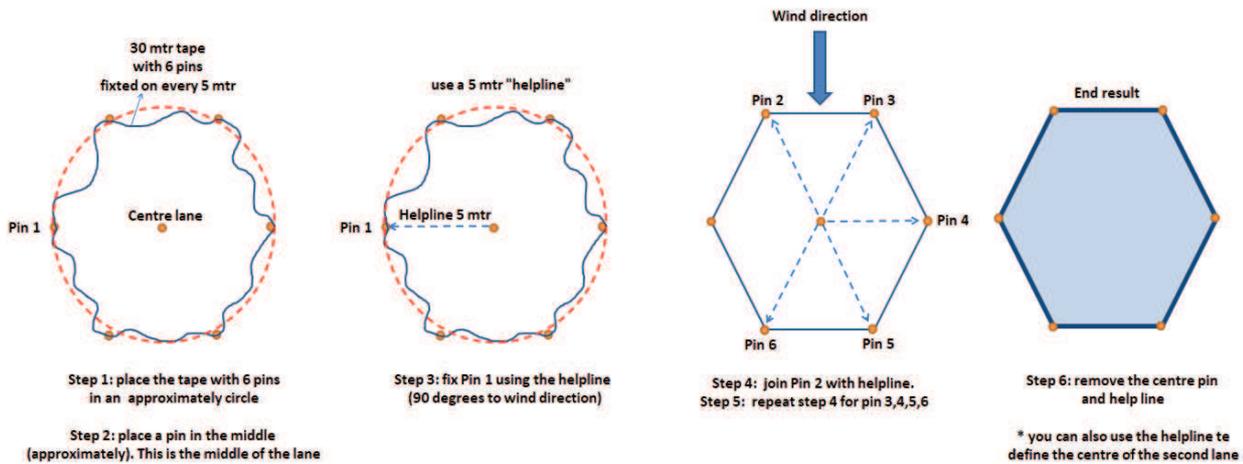
5.5.10.8 Helper / Timekeepers:

a) The helper / timekeeper may coach the pilot during flight.

b) The helper / timekeeper may help to retrieve the model glider, if it has landed outside the flying field or Pilot Area.

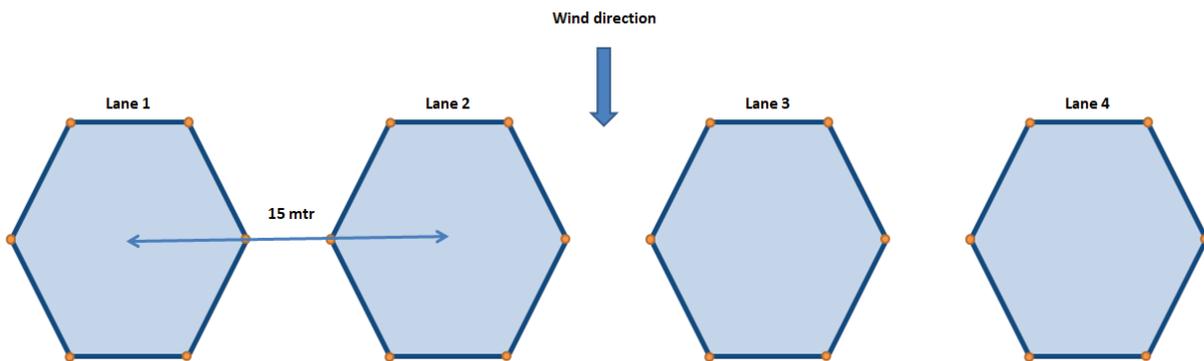### 5.5.10.9 Definition of the Model Glider

a) Maximum wingspan - 1500 mm

b) Minimum loading - 12 g/dm2

c) Maximum flying weight - 600 gram

d) Maximum 3 cell (3S) batteries are allowed

e) The use of any automatic flight control or stabilization is not allowed

f) Any construction materials are permitted

5.5.10.10 Launch and Landing area (Pilots Area):

Wind direction

30 mtr tape with 6 pins fixted on every 5 mtr

use a 5 mtr "helpline"

End result

Pin 1   Centre lane

Pin 1   Helpline 5 mtr

Pin 2   Pin 3

Pin 4

Pin 6   Pin 5

Step 1: place the tape with 6 pins in an approximately circle

Step 2: place a pin in the middle (approximately). This is the middle of the lane

Step 3: fix Pin 1 using the helpline (90 degrees to wind direction)

Step 4: join Pin 2 with helpline.
Step 5: repeat step 4 for pin 3,4,5,6

Step 6: remove the centre pin and help line

* you can also use the helpline te define the centre of the second lane

a) The Launch and Landing area is defined using a 30 metre tape pinned around the centre making a hexagon with an outer enclosing circle with a diameter of 10 metres, called the individual "Pilot Area".

Wind direction

Lane 1   Lane 2   Lane 3   Lane 4

15 mtr

b) The distance between two Pilot Areas is 15 metres from centre to centre, perpendicular to the wind direction.
c) The boundary of the rectangular flying field will nowhere be closer than 15 meters from the centre of any Pilot Area.

5.5.10.11 Flight and Round Penalties:

5.5.10.11.1 Flight Penalty:

a) Flying in a no fly zone will result in a 300 point penalty for the flight score.
b) Overfly landing window will result in a 100 point penalty for the flight score.

5.5.10.11.2 Round Penalty:

a) Hitting some else in another Pilot area will result is a zero (0) for the round.
b) Motor restart during flight will result in a zero (0) for the round.
c) Landing outside the flying field (as defined by the CD) will result in a zero (0) for the round.

In case of a mid-air collisions of two or more model gliders the competitors will not be granted reflights nor will penalties be applied.

5.5.10.12 Preparation time

For each round, the competitors receive at least 5 minutes of preparation time.

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5.5.10.13 Scoring

a) The scores are normalized within each group, 1000 points being the basis for the best score of the winner of the group. The result of a task is measured in points and truncated down to the whole points.

b) The normalized scores within a group are calculated by using the following formula: normalized score (points) = competitor's result (points) / best competitor's result (points) x 1000.

c) The normalized scores are rounded to whole numbers (points).

5.5.10.14 Final Score

The final score is the sum of the normalized scores of all rounds. If eight (8) or more rounds are flown then the lowest score is dropped.

5.5.10.15 Resolution of a Tie

In the case of a tie, the best dropped score defines the ranking. If the tie still exists, a separate fly-off for the relevant competitors will be flown to achieve a ranking. In this case the contest director will define one task that will be flown for the tie-break fly-off.

5.5.10.16 Fly-off

The organiser may announce a fly-off prior to the beginning of the event. For World and Continental Championships, the fly-off is mandatory for seniors. The fly-off should consist of at least three (3) rounds with a maximum of six (6) rounds. If less than three (3) fly-off rounds can be completed, the result of the preliminary rounds determine the final ranking. A junior fly-off may be held with the maximum number of competitors being 2/3 of the seniors fly-off. A separate junior fly-off is not mandatory. If a fly-off is flown, the points of the previous rounds are not considered for the final score.

5.5.10.17 Team Classification

To establish the ranking for international team classification, the final individual scores of the three best members of the team are added together. Teams are ranked according to the highest numerical score to lowest. In the case of a national team tie, the team with the lower sum of the place numbers, given in order from the top, wins. If still equal, the best individual placing decides.

5.5.10.18 Contest Director and Jury:

The above rules are taken as a starting point. The CD makes the best decision to the best of his knowledge. The CD can install a jury. The total of the CD and the jury must be an unequal number. If an incident occurs, the CD and the jury can force a decision by voting.

ANNEX of F5K Thermal Duration Gliders for Multiple Task Competition Rule

Local rules, The Netherlands 2021:

FAI rule	Local rule	Explanation
Minimum loading 12 g/dm2	<12 g/dm2	Planes with lower loading are also allowed (e-dlg planes)
Motor restart	100 point penalty	Only if the motor accidentally restarts during landing. The penalty applies to the flight.