

14.11 Section 4C Volume F5 – Electric Powered Motor Gliders

Category F5 – Electric Powered Motor Gliders

a) 5.5.1. General Rules

Switzerland

Modify 5.5.1.7 'Competitor and Helper', as shown below:

5.5.1.7 Competitor and Helper

Each competitor must operate his radio equipment personally. ~~Each competitor is permitted two helpers and the team manager.~~

Each competitor is permitted 1 (one) helper. In competitions where there is a team/nation ranking, a team manager (or another team member, if the pilot is also team manager) will be allowed as second helper. A person that launches the plane (launcher) and leaves base A after launch is not counted as a helper. The helper can be exchanged during the flight (for example different helpers for distance and duration task).

Reason: The flight line gets sometimes too crowded (up to 4 persons on the field plus official timekeeper) and the pilot gets rather distracted by irrelevant communications. With only one helper the pilot has to take more responsibility in the flight tactics. Less conflicts for starting orders (team protection). Team manager (as an additional helper) not needed in competitions without team ranking.

b) 5.5.2 Contest Rules

Bulgaria

Delete sub-paragraph a) in 5.5.2.1 'Definition of an Official Flight', and replace it with the text shown below:

5.5.2.1 Definition of an Official Flight

~~a) During a two (2) minute starting period, the competitor is allowed an unrestricted number of attempts, hand launches or starts from the ground (except F5B, para 5.5.4.4 d). An attempt starts when the model aircraft is released by the competitor or his helper(s). After the first attempt, it is no longer allowed to take another model aircraft. The timekeeper will start the timing device at each attempt. After two minutes, no further launching or take off is allowed and the flight is being considered as official, the model aircraft being airborne or not. The pilot may repeat a second two-minute starting period only if:~~

a) During a two (2) minute starting period, the competitor is allowed an attempt which starts when the model aircraft is released by the competitor or his helper. After two minutes, no further launching or take off is allowed and the flight is scored with 0 points.

Reason: F5D was moved to F3 Pylon SC and present rule is not useful anymore.

Technical Secretary Comment: The final sentence: 'The pilot may repeat a second two-minute starting period only if:' relates to b) and c) sub-paragraphs which follow and should not be deleted.

Annex 5E – Rules for Electric Flight World Cup Events

- c) **5E.2. Procedure for Nomination of World Cup Contests** **F5 Subcommittee & Bulgaria**

Amend paragraph 5E.2.1 as follows:

5E. 2.1 The Electric Flight World Cup will be organised in classes F5B (**Multi Task** Gliders) ~~F5D (Pylon Racing Aeroplanes)~~ and F5J (Thermal Duration Gliders) during the years in which there are no World Championships. **every year.**

Reason: F5 FAI World Cup events becomes more and more events and competitors (F5 Subcommittee). World Cups are very popular events (Bulgaria).

- d) **5E.2.4 Procedure for Nomination of World Cup Contests** **F5 Subcommittee**

Amend the paragraph 5E.2.4 as follows:

5E. 2.4 The ~~Subcommittee Chairman~~ **World Cup Coordinators** collects results of each competition, produces and distributes the World Cup positions.

Reason: World Cup Coordinators are necessary in booming classes.

Technical Secretary Comment: Please confirm if one or more World Cup Coordinators are intended. As the proposal stands, the grammar is incorrect.

- e) **5E.3. Classification** **Bulgaria**

Delete the paragraph 5E.3.1 and replace it with the text shown below:

5E. 3.1 ~~During a year, a maximum of three (3) contests will be counted. If a competitor flies in more than three contests, his three (3) best results will be allocated.~~

5E. 3.1 **In the case of twenty (20) or fewer World Cup contests during a year, a maximum of three (3) contests will be counted. In the case of more than 20 World Cup contests during a year, a maximum of four (4) contests will be counted. If a competitor flies in more than three (or four contests), his best three (or four results) will be allocated.**

Reason: In last few years, F5J World cups are well over 25 and best 3 results are not fair enough to give good presentation for overall result.

Technical Secretary Comment: This proposal has been amended to correct the English grammar.

- f) **5E.3. Classification** **Bulgaria**

Add a sentence to paragraph 5E.3.2 as follows:

5E. 3.2 Not more than one (1) contest could be counted in the same country. **In case of counties with more than 2 time zones, two (2) contests could be counted.**

Reason: This will be fairer for pilots living in big countries.

g) 5E.3. Classification

Bulgaria

Replace paragraph 5E.3.3 with a table of points.

5E. 3.3. Points awarded at a World Cup Contest

~~1st place = 100 points,~~

~~2nd place = 75 points~~

~~3rd place = 60 points~~

~~4th place = 50 points~~

~~5th place = 49 points~~

~~6th place = 48 points, etc.~~

~~54 points - R = World Cup points (R = individual ranking)~~

Position	Number of competitors (with valid results)			Position	Number of competitors (with valid results)			Position	Number of competitors (with valid results)		
	70 and more	40 - 69	39 and less		70 and more	40 - 69	39 and less		70 and more	40 - 69	39 and less
1.	100	90	80	31.	50	39	9	61.	20	9	
2.	90	80	70	32.	49	38	8	62.	19	8	
3.	85	75	65	33.	48	37	7	63.	18	7	
4.	80	70	60	34.	47	36	6	64.	17	6	
5.	77	67	55	35.	46	35	5	65.	16	5	
6.	75	65	50	36.	45	34	4	66.	15	4	
7.	74	63	45	37.	44	33	3	67.	14	3	
8.	73	62	42	38.	43	32	2	68.	13	2	
9.	72	61	39	39.	42	31	1	69.	12	1	
10.	71	60	36	40.	41	30		70.	11		
11.	70	59	34	41.	40	29		71.	10		
12.	69	58	32	42.	39	28		72.	9		
13.	68	57	30	43.	38	27		73.	8		
14.	67	56	28	44.	37	26		74.	7		
15.	66	55	26	45.	36	25		75.	6		
16.	65	54	24	46.	35	24		76.	5		
17.	64	53	23	47.	34	23		77.	4		
18.	63	52	22	48.	33	22		78.	3		
19.	62	51	21	49.	32	21		79.	2		
20.	61	50	20	50.	31	20		80.	1		
21.	60	49	19	51.	30	19		81 - last	1		
22.	59	48	18	52.	29	18					
23.	58	47	17	53.	28	17					
24.	57	46	16	54.	27	16					
25.	56	45	15	55.	26	15					
26.	55	44	14	56.	25	14					
27.	54	43	13	57.	24	13					
28.	53	42	12	58.	23	12					
29.	52	41	11	59.	22	11					
30.	51	40	10	60.	21	10					

Reason: This will be fairer for pilots competing in bigger contests. All participants will take World Cup points depending on ranking. Less advance for top ranking than the present rule.

h) 5E.3. Classification **Bulgaria**

Add a new paragraph 5E.3.4 as follows. Please consider the suggested amendment to the wording of this proposal below:

5E. 3.4. In case of more than 10 juniors or women participants in World Cup overall results. FAI medals must be awarded for Junior and Woman World cup ranking.

Technical Secretary Comment: Suggested modification to this proposal in line with the CGR Volume 2020 follows:

5E. 3.4. Juniors and Women

There will be a separate classification for juniors and women, provided that more than 10 such competitors are listed in the World Cup ranking. Medals and diplomas shall be awarded in accordance with CGR C.2.2.3.

Reason: As in some other FAI classes already done it will encourage junior and woman participation in World cup events.

F5B – RC Electric Powered Multi Task Gliders

i) 5.5.4.1 Definition **F5 Subcommittee**

Delete a section from sub-paragraphs b), and replace it with the text shown below:

b) Model Aircraft specifications:

Minimum weight without battery 1000 g

Minimum surface area 26.66 dm²

Type of battery Any type of rechargeable batteries

Maximum number of equivalent cells in series. At any point in the flight, the maximum voltage of the flight battery must not exceed 42 volts.

Minimum weight of battery pack 400 g

~~The maximum amount of energy to be used in one flight is 1750 W*min.~~

~~Anything over this will result in a deduction of 1 point per 3 W*min over 1750 W*min.~~

The maximum allowed amount of energy to be used in one flight is 1750 watt-minutes. If this limit is exceeded a penalty of 1 point for every 3 watt-minutes will be applied to the score. In the case where less than 1750 watt-minutes is used there will be a bonus of 10 points for every 3 watt-minute less than the 1750 limit applied to the score.

The amount of energy in one flight must be stored by a logger.

Reason: Makes the malus-bonus system more interesting.

j) 5.5.4.1 Definition **Switzerland**

Delete sections from sub-paragraphs b), g) and h) as follows. Rename h) as g):

b) Model Aircraft specifications:

Minimum weight without battery 1000 g

Minimum surface area 26.66 dm²

Type of battery Any type of rechargeable batteries

Maximum number of equivalent cells in series. At any point in the flight, the maximum voltage of the flight battery must not exceed 42 volts.

Minimum weight of battery pack 400 g

~~The maximum amount of energy to be used in one flight is 1750 W*min.~~

~~Anything over this will result in a deduction of 1 point per 3 W*min over 1750 W*min.~~

The amount of energy in one flight must be stored by a logger.

~~g) With the logger, 1 (one) point is deducted for every 3 (three) watt-min used over the limit.~~

~~h) **g)** Starting order for World and Continental Championships: the starting order for the first round will be established by random draw. For the next rounds the starting order will follow the reversed ranking list. ~~Frequency will not follow frequency and t~~ **T**eam member will not follow team members.~~

Reason: Replaced by energy bonus/penalty. See item p).

k) 5.5.4.1 Definition

Switzerland

Add a sentence to sub-paragraph h) or g) (if renumbered) as follows:

~~h) **g)** Starting order for World and Continental Championships: the starting order for the first round will be established by random draw. For the next rounds the starting order will follow the reversed ranking list. ~~Frequency will not follow frequency and t~~ **T**eam member will not follow team members.~~

In competitions with more than 4 foreseen rounds, the starting order of the last round should be the reversed ranking. Team members that follow each other in the ranking should not be separated by more than 2 other competitors.

Reason: Starting order: in big international championships the last round will be more interesting for spectators as they will easily know when the “good ones” are flying.

l) 5.5.4.4 Launching

Switzerland

Modify 5.5.4.4 with the following deletions and additions:

~~a) Before launching, the competitor has to show to his timekeeper how he controls his motor(s) on his transmitter (on, off, reversing);~~

~~b) **a)** The launch will occur behind the safety line **plane** within 10 m from Base A.~~

~~c) **b)** The model aircraft is released into flight directly from the hands of the competitor or his helper, without assistance. The model aircraft shall not be launched from a height greater than the flier's normal reach above the ground.~~

d) **c)** After the aircraft is hand-launched and the timing device is started, no further launching is allowed. The flight is considered official, whether the model aircraft is airborne or not.

d) The competitor is given a 90 second preparation time.

Reasons:

a) Control receiver takes care of monitoring motor on/off. a) is obsolete, therefore deleted.

b) Safety line is not mentioned in course layout, correct: safety plane.

d) Stop the tactical waiting for “good” conditions... this will speed up the rounds.

m) 5.5.4.5 Distance Task

Switzerland

Modify sub-paragraph a) as follows:

a) This task begins when the model aircraft is hand-launched and ends after 200 seconds. ~~Time of release is to be taken by one timekeeper.~~ **Time is started when motor on is detected by control receiver during the launch.**

Reason: Starting of the task time by electronic device is more precise than a button pressed by an official. If the model leaves the hand of the helper and the motor does not switch on when full throttle is given the time will start. No restart or switching to model B is allowed as mentioned in 5.5.4.4.

n) 5.5.4.5 Distance Task

Switzerland

Add a sub-paragraph h) to paragraph 5.5.4.5 as follows:

a) – g) unchanged

h) After reaching 1500Wmin. the on-board limiter/logger/telemetry device must stop the motor and not allow it to start again until 200sec. after first motor start (start of duration task).

Reason: Limiting energy during distance task reduces the risk of excessive power consumption and gambling with weather conditions. Reduces also the motivation for a short “rocket climb” at the end of the distance task.

It adds new element for tactics: Power/energy saving during distance task can help to save energy for duration task if energy bonus is introduced (additional proposal, see item p)).

o) 5.5.4.6 Duration and Landing Task

F5 Subcommittee

Delete a section from 5.5.4.6 d) as follows:

d) Duration time is cumulative. ~~and one point will be awarded for each full second the model aircraft is flying. 3 points will be deducted for each 1 second of motor running time.~~

Reason: The consideration of the energy consumption makes the deductions of motor running time unnecessary.

p) **5.5.4.6 Duration and Landing Task**

Switzerland

Delete sections of sub-paragraph c) and d) and replace with new sub-paragraph i) as follows:

- a) This task must be completed within 600 seconds from the moment the audio signal is given.
- b) The competitor has to decide how much and how often he will switch on the motor.
- c) The duration task score-keeping device keeps track of ~~the motor run time as well as~~ the glide time. Duration task scoring ends when the model aircraft comes to rest after landing.
- d) Duration time is cumulative and one point will be awarded for each full second the model aircraft is flying. ~~3 points will be deducted for each 1 second of motor running time.~~
- e) – h) remain unchanged.

i) The consumed energy for the whole flight will be read out after landing. An energy bonus/penalty will be awarded according to the following scheme:

Total energy:

a) <1700Wmin: bonus of 1 point per 10Wmin

b) 1700 - 1800 Wmin: energy penalty: -1 point per 10Wmin over 1700Wmin, until 1800Wmin

c) >1800 Wmin: energy penalty: -1 point per 3 Wmin over 1800Wmin in addition to b)

Reason: Motor runtime will be replaced by energy management bonus/malus system. Within a range of 1700-1800Wmin flights as we see them now will be possible. Energy penalty is similar to motor runtime penalty. It will favour more efficient (slower) climbs and prevent single rocket-like climbs.

A bonus can encourage lower power setups that are not competitive right now. High risk (high energy) tactics will be “punished” stronger than now.

q) **5.5.4.6 Duration and Landing Task**

Switzerland

Modify sub-paragraph f) in 5.5.4.6 with deletions and additions as follows:

- f) Additional points will be awarded for landing; when the model aircraft comes to rest in the 30 m circle, ~~10 points will be given while coming to rest in the 20 m circle gives 20 points, and when coming to rest in the 10 m circle 30 points will be given.~~ **A maximum of 30 points is given when the nose of the plane comes to a rest within 2.5m of the centre (5m circle). 5 points less will be given for each additional 2.5m.** The distances are measured from the centre of the circle to the nose of the model aircraft. **If possible the 5m/10m/20m and 30m landing circles are marked on the ground. Distances will always be measured with a band attached to the centre point.**
- g) No additional points will be awarded if the landing occurs more than 630 seconds after beginning of this task (as per 5.5.4.6.a)).

Reason: Refining the landing points will add a little more weight on the duration and landing task.

F5J – RC Electric Powered Thermal Duration Gliders

r) 5.5.11.10. Launching Bulgaria

Add text to sub-paragraph 5.5.11.10. e) as follows:

- e) The launches must be straight forward **for at least three (3) seconds**, with the motor running. Any other type of launch is not allowed. A penalty of 100 points will be applied for any breach of this rule.

Reason: **Safety** – This rule was successfully used as local rule at F5J ECh 2018 and F5J WCh 2019. Prevent dangerous manoeuvres close of over access corridor at launch.

Technical Secretary Note: Because this is an urgent safety proposal a request will be made for early implementation under CGR A.11.1. A Technical Notice will be placed on the CIAM website. Note that the rule A.11.1 b) states that: 'Any amended or new safety rule(s) shall appear in the Organiser Bulletins of the appropriate championship(s) being held that year.'

F5K (old class was deleted in 2019) – Thermal Duration Gliders For Multiple Task Competition With Electric Motor And Altimeter/Motor Run Timer (AMRT)

s) F5K Netherlands

*Insert a new set of rules for F5K. Refer to **Annex 7e** for the rules and **Annex 7f** for a description of the F5K class.*

Technical Secretary Comment: If accepted, the numbering for this class could be 5.5.10 to slot between F5G and F5J in the volume or 5.5.12 to follow F5J in the volume (before the World Cup Annex 5E). The numbering in the Annex has been left as proposed.

Reason: Many pilots fly F5J, but also like the dynamic tasks of F3K, they are unable to participate due to physical problems (injury). Launch height in the current F3K competition is very important. To be competitive, you must launch at least 60 meters plus. Some of the younger pilots launch the plane up to 80 meters or even more. That is why we decided to start a new competition that still revolves around thermal soaring, but where everyone can participate in this “F3K Multi Task Competition”. We call it F5K.

Volume F9 Drone Sports begins overleaf