FÉDÉRATION AÉRONAUTIQUE INTERNATIONALE

FORM FOR SUBMITTING PROPOSALS FOR THE CIAM PLENARY MEETING

(Refer to Section 4a, A.6 of the Sporting Code)

DATE: 8-4-99

Proposal submitted by: Terry Edmonds / United States Academy of Model Aeronautics

Sporting Code					Supplement to the Sporting Code		
Section	Part	Class	Paragraph	Page	Subject	Page	Paragraph
		F3K			hand launch tasks	see below	see below

Proposed alteration or addition:

1. Page 1, Definition of Round, first sentence change to read:
"The contest is organized in rounds, each of which allocates a competitor a working time identified in the task list."
2. Page 1, Definition of Tasks, change to read:
"Before the start of each round, the organizer announces the kind of task to be flown. The ~~five~~ tasks of the program are defined below. Depending on the weather conditions and the number of competitors, the working time may be reduced by decision of the organizer. ~~Minimum working time is indicated in the definition of each task~~. .....
3. Page 2, replace entire hand launch task list with the attached list.

Reason: The proposed tasks are well tested, proven and used in the International Hand Launch Glider Festival hosted by the Torrey Pine Gulls. The list includes additional tasks that the contest organizer can chose from.

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Section	Part	Class	Paragraph	Page	Subject	Page	Paragraph
		F3K			flight time	1	5

Proposed alteration or addition:

Add "ground based object" to the things that stop the flight time.

"The flight time is measured from the moment the model leaves the hands of the competitor (or his helper, see above) to the moment the model comes to rest on the ground or ground based object or the competitor catches the model by hand (or his helper, see above) or the working time expires."

Reason: The current rules do not have any provision for stoping the flight time if the model hits a ground based object.

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Sporting Code					Supplement to the Sporting Code		
Section	Part	Class	Paragraph	Page	Subject	Page	Paragraph
		F3K			group size	1	6

Proposed alteration or addition: Delete maximum number of competitors in a group reference in the Definition of Round section as below:

"The competitors are arranged in as few groups as possible, with two competitors minimum ~~and seven competitors maximum (this number may vary depending on the total number of entries)~~."

Reason: There is no need to limit the group size in the rules.

Class F3K

Provisional rules for Hand launch RC-gliders

General

A competition for Hand launch RC-gliders is a multitasking contest where RC gliders must be hand-launched and accomplish specific tasks. The contest shall consist of at least five rounds. The organiser must provide a sufficient number of timekeepers in order to allow 7 simultaneous flights at all time. In principle, each competitor is allowed one helper who should not become physically involved in the flight. Handicapped persons may ask for assistance at launching and retrieving (catching) their models. During a competition with only one class, the competitors of less than 1.5 m height may be assisted for launching-catching. If junior and senior classes are scored separately, the limit is 15 years of age for juniors. The organiser should provide a transmitter impound where all transmitters are kept in custody while not in use during a flight or the corresponding preparation time.
Competitors not involved in flying or helping another competitor may be asked by the organiser to operate as timekeepers.

Definition of models

Models are gliders, with the following limitations:
Wingspan max. 1500 mm
Weight max. 600 g
Radius of the nose, minimum 5 mm in all orientations (see F3B nose definition for measurement technique)
The models must be launched by hand and are controlled by radio equipment acting on an unlimited number of surfaces.
The competitor may at all times exchange parts among his models.
Each competitor must provide two frequencies on which his models may be operated, and the organiser may assign any of these frequencies for the duration of any round or the complete contest.

Definition of the flying field

The flying field should be reasonably level and large enough to allow several models to fly simultaneously. The main source of lift should not be slope. The organiser must define the launching and landing area before the start of the contest and all landings should happen within this area. Any landing outside the area gets a null score for the specific flight.
A typical launching and landing area could be a rectangle 100m x 50m oriented with longer side perpendicular to the wind direction.

Definition of landing

A landing is considered valid if
- the model comes to rest and at least one part of it touches the launching and landing area
- the competitor catches the model by hand (or if competitor is handicapped, his helper, if launching was made by this person), while standing with both feet inside the launching and landing area

Flight time

The flight time is measured from the moment the model leaves the hands of the competitor (or his helper, see above) to the moment the model comes to rest on the ground or the competitor catches the model by hand (or his helper, see above) or the working time expires.
The flight time is official if:
- the launching happens from inside the launching and landing area - the landing happens inside this area
- the launching happens within the working time of the task

Definition of round

The contest is organised in rounds, each of which allocates a competitor a working time of maximum of 10 minutes. The start and end of the working time are announced with a sound-signalling device. The competitors are arranged in as few groups as possible, with two competitors minimum and seven competitors maximum (this number may vary depending on the total number of entries). The results are normalised within each group, 1000 points being the basis for the winner of the group.
For each round, the competitors receive at least 2 minutes preparation time, as announced by the organiser. Alternatively, the working time of the preceding group may be declared the preparation time for the next group. During the preparation time, the competitor is allowed to turn on and check his radio, but is not allowed any launch of his model, either outside or inside the launching and landing area.

Final score

The final score for a competition is the addition of the normalised scores for all tasks flown, with the exception of the lowest score, if more than 5 rounds were flown.

Definition of tasks

Before the start of each round, the organiser announces the kind of task to be flown. The five tasks of the program are defined below. Depending on the weather conditions and the number of competitors, the working time may be reduced by decision of the organiser. Minimum working time is indicated in the definition of each task. No points are deducted for flying over the maximum flight time or for flying after the end of working rime. All competitors must land as soon ,as their flight or task has been completed.

Task A

During the working time, the competitor must try to accomplish the greatest number of flights, lasting 30 seconds or multiples of 30 seconds. Each completed slice of 30 seconds is scored 1 point.
Examples: 1st flight is 15 sec. - 0 points
2nd flight is 63 sec. - 2 points
3rd flight is 48 sec. - 1 point
etc.
Minimum working time is 5 minutes.

Task B

During the working time, the competitor may launch the model an undefined number of times, but only the last flight is taken into account to determine the final result. The length of the flight is limited to 5 minutes. Any additional release of the model annuls the proceeding timing. When the competitor announces that he has completed his last flight (his official flight for this task), he must leave the launching and landing area, together with his timekeeper.
Minimum working time for this task is 7 minutes.

Task C

During the working time, the competitor may launch his model not more than 6 times. The maximum measured flight time is 3 minutes. This time may be reduced to 2 minutes if the number of competitors is large. The sum of the three longest flights is taken for the final score.
Minimum working time for this task is 7 minutes.

Task D

All competitors of a group must launch their models simultaneously, within 3 seconds after the signal of the organiser. Maximum measured flight time is 3 minutes. The model that lands as first gets 1 point, all successive models get an additional point. The last landing model gets an additional point. Two models landing within the same second, according to the official timing, get the same score. The next model gets two points more. All models still flying at the end of the 3 minutes slot time get the same number of points (previous + 2), provided they land inside the launching and landing area. This procedure of mass launch is repeated up to 3 flights in total during a 10 minutes working time. The new launch may be ordered after all models from the previous launch have landed. The scores of all three flights are added to obtain the final score for this task.
Time of a slot may be reduced to 2 minutes if the number of competitors is large.
Minimum working time for this task is 7 minutes.

Task E

During the working time, the competitor may accomplish as many launches as he likes. Each competitor must try to complete a flight of 30 seconds. Once this is accomplished, the next two flight times must be incremented by 15 seconds. So flight times should be: 30 sec. - 45 sec. - 60 sec. - 75 sec. - 90 sec. The longest flight time is 90 seconds. To reach any specific flight time, the number of launches is unlimited. The time of the last flight is taken into account. In adverse weather conditions, the organiser may reduce the increment to 10 seconds (30 sec. - 40 sec., etc. up to 70 sec.). Flight score are given 1 point per completed second of flight.
Example: (increment 15 seconds)

1st flight	32 sec.	the max of 30 sec. is reached. Next flight should reach 45 seconds. Partial score is 32 points
2nd flight	38 sec.	flight is zero
3rd flight	42 sec.	flight is zero
4th flight	47 sec.	the max of 45 sec. is reached. Next flight should reach 60 seconds. Partial score is 32 + 47 = 79 points
5th flight	81 sec.	the max is reached. Next flight should reach 75 seconds. But the remaining working time is only 65 seconds Total score of the task is 32 + 47 + 81 = 160 points

etc.

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DATE: 11-11-98

Proposal submitted by: Joe Wurts/Terry Edmonds/ United States Academy of Model Aeronautics

Sporting Code					Supplement to the Sporting Code		
Section	Part	Class	Paragraph	Page	Subject	Page	Paragraph
4c	5	F3J	5.6.11.4.	124			

Proposed alteration or addition:

Change rule 5.6.11.4. to read:
Final placings of the competitors who qualify for the fly-off shall be determined by their aggregate scores of the qualifying rounds plus the fly-off rounds. In the event that two or more competitors have the same aggregate score, final positions of those competitors shall be determined by their respective position in the qualifying rounds; the higher positioned competitor being awarded the higher final position.

Reason:

Scores accumulated over more rounds are more accurate in determining the most consistent performance.

Annexes:

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Proposal submitted by: Joe Wurts/Terry Edmonds / **United States Academy of Model Aeronautics**

Sporting Code					Supplement to the Sporting Code		
Section	Part	Class	Paragraph	Page	Subject	Page	Paragraph
4c	5	F3J	5.6.6.2.	122 & 124			

Proposed alteration or addition:

Delete existing rule 5.6.6.2. sub-paragraphs b), c), d), and e) and replace with:
b) "The working time in a group shall be (11) minutes. One point will be awarded for each full second flight time from the time the model is released from the towline until one of the conditions of rule 5.6.10.1. is met up to 600 points (10 minute maximum). Overflying the 10 min. max will be penalized as per rule 5.6.10.3."

Change rule 5.6.10.3. to read:
"A penalty of thirty (30) points will be deducted from the flight score for overflying the 10 min. max flight time"

Change rule 5.6.10.7. to read:
"No landing bonus points will be awarded if the model overflies the maximum flight time."

Change rule 5.6.11.2. to read:
"The working time for each competitor who qualifies for the fly-off rounds will be (16) minutes with a 15 minute maximum flight time. "

Reason:

Safety; numerous unnecessary mid-air collisions occur in F3J because of the simultaneous launching and landing inherent in the existing rules. The extra minute working time allows competitors to stagger launching to avoid such collisions and still retains the man-on-man concept of the event. Additionally the proposal eliminates undesirable speed launching.

Annexes:

J 4

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Sporting Code					Supplement to the Sporting Code		
Section	Part	Class	Paragraph	Page	Subject	Page	Paragraph
4c	5	F3J	5.6.8.	123			

Proposed alteration or addition:

Change launching in F3J from hand tow to electrically powered winches as attached.

Reason:

Safety: current two man towing methods with pulley generate high launching power that creates danger for tow men in the form of snapping broken lines and anchor stakes coming out of the ground. Additionally tow men are in a hazardous location and not looking up for falling aircraft accident debris. This proposal reduces the towing power and eliminates the tow men and associated athletic aspect.

Annexes:

2 pages

Delete existing rules 5.6.8. through 5.6.8.7. and replace with the following:

5.6.8. **Launching Equipment**

The launch of the glider will be by an electrical powered winch. The winch shall meet the following specifications:

a) The total line length must not exceed 300 meters. Upwind turn-around devices, which must be used, shall be no more than 150 meters from the winch. The height of the axis of the turn-around pulley to the ground must not-exceed 0.5 meter. Release of the model must occur within approximately 3 meters of the winch. An automatic means must be provided to prevent line reel from unwinding during launch.

b) The towline (which must be of non-metallic material except for linkages) must be equipped with a pennant having a minimum area of 5 dm^2. A parachute (5 dm^2 minimum area) may be substituted for the pennant provided it is not attached to the model and remains inactive until the release of the cable.

c) The winch shall be fitted with a single production starter motor having an internal resistance of at least 15.0 milliohms at ambient temperature corrected to 20^0C using the formula:
$R(20^0C) = R(T)/(1 + 0.003 \times (T-20^0C)$
where R = internal resistance and T = ambient temperature in degrees centigrade.

The measurement has to be made by a digital storage instrument no less than 150 milliseconds and no more than 200 milliseconds after the test voltage is applied and during which time the motor shall have stopped rotating. The measurement should be made using the test equipment and procedure shown in Annex 5C.

Battery voltage, current flow and voltage at the motor terminals (including any additional adjusting resistor), shall be instantaneously displayed and then recorded to enable calculation of motor internal resistance. The resistance may be attained by adding an external resistor, bur the design must not allow any change of total resistance (e.g. by overbridging the resistor). Resistance of any control device does not count.

The rotor of the motor may be fitted at each end with ball or needle roller bearings. Any further change of the original motor will lead to immediate disqualification of the competitor who used it.

d) The drum must have a fixed diameter and the width between winch drum flanges shall be at least 75 mm.

e) The power source shall be a 12-volt lead/acid battery. The maximum cold cranking ampere capacity should be not more than:
275 Amperes DIN, or
310 Amperes IEC, or
460 Amperes SAE.
(This fixation of the maximum cold cranking ampere capabilities is in accordance with an internal resistance of the battery of about 6 milliohms). If the battery is controlled by the organizer the measured internal resistance of the battery should not be lower than 5.4 milliohms (6 milliohms minus 10%). Details of battery specifications and measuring procedure are given in Annex 5C. The battery must supply the winch motor with current through a magnetically or mechanically actuated switch. The use of any electronic device

between the winch motor and the battery is forbidden. The battery may not be charged on the launching line.

f) The motor must not be cooled, and the battery must not be heated.

g) The purpose of this rule is to prohibit the use of significant energy storage devices other than those mentioned. With the exceptions of the single winch battery, line stretch, and the small amount of energy in the rotating motor and winch drum, no energy storage devices shall be allowed. This includes, but is not limited to, flywheels, springs, weights, and hydraulic or pneumatic devices. The flywheel-like properties of the winch drum shall not be exploited.

5.6.8.1. **Launching Operations**

After release of the model from the towline, the towline should be rewound without delay by operating the winch, until the parachute (or pennant) is approximately 10 meters above the ground level. Then, the parachute should be retrieved by hand to the winch. A winch must not be operated when the towline:
-is lying on the ground and across other towlines;
-strikes another towline during launching.
During complete rewinding of the line on the winch, the parachute, when used, must be removed and inactivated