

F3J — Thermal Hand-Tow

Object

To provide a man-on-man contest for competitors flying radio controlled thermal duration soaring gliders. In the contest several rounds are flown. For each qualifying round competitors are divided into groups. The scores in each group are normalised to give them meaningful scores irrespective of changing weather conditions during a round.

The competitors with the top aggregate scores in the qualifying rounds then fly at least two but not more than four further fly-off rounds as a single group to determine the final placings. The scheduled number of fly-off rounds shall be announced by the CD before the start of the contest.

Helpers

Each competitor is allowed three helpers, but only two of these helpers may be used for towing.

The Flying Site

- a The flying site shall include a (crosswind) marked corridor 6 metres wide with a central launch line on which shall be marked launchmarks, at least 15 metres apart, one for each competitor in a group.
- b The flying site shall include landing spots, the centre of which must be marked, one for each competitor, each corresponding to one of the launchmarks and at least 30 metres downwind of the launch corridor.

Safety Rules

- a No part of a model may land or come to rest within the safety area.
- b No model may be flown below 3 metres over the safety area.
- c The penalty for any infraction of the safety rules shall be 100 points.

Contest Flights

- a The competitor shall be allowed a minimum of five (5) preferably more official flights.
- b The competitor shall be allowed two (2) attempts at each official flight.
- c There is an official attempt at a flight when the model has left the hands of the competitor or those of a helper under the pull of the tow-line.
- d The official flight for a round is the last flight performed during the working time.

- e All flights are to be timed by at least two stopwatches. In the event both stopwatches malfunction the group will be flown again.

Reflights

The competitor is entitled to a new working time in an incomplete group or with his original group at the end of a task if —

- a His model collides with another model in flight or with a model in the process of being launched.
- b The flight has not been judged by the official time-keepers.
- c His flight was hindered or aborted by an unexpected event not within his control.

Note that crossed lines do not constitute grounds for a reflight.

In the case of additional attempts during a round for the reason of re-flights, the better of the two results will be the official score, except for pilots who are allocated the new attempt. For those the result of the repetition flight is the official score.

Cancellation of a Flight and/or Disqualification

- a The flight is cancelled and recorded as a zero score if the competitor used a model not conforming to any items of the Rule defining a Radio Controlled Glider. In the case of intentional or flagrant violation of the rules in the judgement of the Contest Director, the competitor may be disqualified.
- b The flight in progress is nullified and recorded as a zero score if the model loses any part during the launch or the flight, except where this occurs as the result of a mid-air collision with another model or tow-line.
- c The loss of any part of the model during the landing (coming into contact with the ground) is not taken into account.
- d The flight is cancelled and recorded as a zero score if the model is piloted by anyone other than the competitor.
- e The flight is cancelled and recorded as a zero score if, during landing, some part of the model does not come to rest within 75 m measured from the competitor's designated landing circle.

Organization of the Flying

Rounds and Groups

- a The flying order for the qualifying rounds shall be arranged in accordance with the transmitter frequencies in use to permit as many simultaneous flights as possible. A minimum of 6, and preferably 8 to 10 competitors should be scheduled in each group.

- b The flying order must be scheduled in rounds sub-divided into groups.
- c The flying order shall be determined by a matrix system that minimises situations where competitors fly together more than once.

Flying in Groups

- a Competitors are entitled to five (5) minutes preparation time which is counted from the moment his/her group is called to take position at the designated launching area, to the start of the group's working time.
- b The working time allowed to each competitor in a group shall be of exactly ten (10) minutes duration.
- c Audible and visual signals must indicate very positively —
 - the start of the group's working time
 - when eight (8) minutes of the working time has elapsed
 - the end of the group's working time.
- d Any model airborne at the completion of the working time must land as soon as possible.

Control of Transmitters

- a The Contest Director will not start the contest until all competitors have handed over ALL transmitters to the organisers.
- b Failure to hand in a transmitter before the official starting time of the contest may result in the competitor forfeiting his/her first round flight.
- c Any transmission during the contest without permission of the Contest Director, is forbidden and could result in disqualification.
- d The competitor must hand over the transmitter to the designated official (usually the time-keeper) as soon as possible after finishing his/her flight.

Launching

- a At all times models must be launched upwind from within the marked launch corridor. An attempt is annulled and recorded as zero if the model is launched from outside the launch corridor.
- b The launch of the model will be by hand held tow-line only.
- c Tow-persons are allowed no mechanical aids, other than hand-operated pulleys, to facilitate towing, but may use a hand-reel (hand-winch), to recover the tow-line after launching is complete.
- d Immediately after release of the model from the launching cable, the towline helpers must, without delay, either recover the towline on a hand-reel or, when

a pulley is used, they must continue to pull the towline until it is completely removed from the towing area to avoid cutting other lines.

- e If towing with a pulley, there shall be an unbreakable shield not less than 15 cm diameter between the pulley and the tow-persons to protect them against broken, whipping line ends.
- f Any model launched prior to the start of a group's working time must be landed as soon as possible and relaunched within the working time.
- g The CD shall designate a launching area. Tow-persons must remain within this area whenever they are launching a model.

Tow-Lines

- a Tow-lines for each competitor must only be laid out during the competitor's five minute preparation time, and must be retrieved by the end of his/her working time.
- b The length of the tow-line shall not exceed 150m when tested under a tension of 20 N
- c The tow-line must be made of polyamide monofilament material throughout its length and must be equipped with a pennant having a minimum area of five (5) dm². A parachute of five (5) dm² minimum area may be substituted for the pennant, provided it is not attached to the model and remains inactive until the release of the tow-line.
- d Linkages (couplings, knots, loops etc) up to a total length of 1,5 metres may be of a different material but their length shall be included in the 150 metres overall length.

Landing

- a Before the contest commences, Organisers must allocate a landing circle to each competitor, normally decided by his/her transmitter frequency. It is the competitor's responsibility to ensure that he/she always uses the correct circle for landing.
- b Officials (time-keepers) must remain upwind of the launch-line during the landing process.
- c After landing, competitors may retrieve their models before the end of working time provided that they do not impede other competitors or their models in the process.

Scoring

- a The attempt shall be timed from the moment of release from the launching device to either —
- the model first touches the ground, **or**
 - the model first touches any object in contact with the ground. Parts of launching devices (tow-lines) extending away from the ground shall not be interpreted as objects in contact with the ground, **or**
 - completion of the group's working time.
- b The flight time in seconds shall be recorded to one decimal.
- c A penalty of thirty (30) points shall be deducted from the flight score for overflying the end of the group's working time up to a maximum of one minute.
- d A zero score shall be recorded for overflying the end of the group's working time by more than one minute.
- e 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 (m)	1	2	3	4	5	6	7	8
points	100	95	90	85	80	75	70	65
distance from spot	9	10	11	12	13	14	15	>15
points	60	55	50	45	40	35	30	0

- f The distance is measured from the centre of the landing spot to the nose of the model at rest.
- g If the model touches either the pilot or his helpers during the landing manoeuvre, no landing points will be given.
- h The competitor who achieves the highest aggregate of points comprising of flight points, plus landing bonus minus penalty points, shall be the group winner and shall be awarded a corrected score of one thousand points for that group.
- i The remaining competitors in the group shall be awarded a corrected score based on their percentage of the group winner's total score before normalization for that group.

$$\text{competitor's score} = 1000 \times \frac{\text{score}_c}{\text{score}_w}$$

where score_c is the competitor's score (flight + landing – penalty) and score_w is the group winner's score

Final Classification

- a If five or fewer qualifying rounds are flown, the aggregate score achieved by the competitor shall be the sum of his/her scores for those rounds. If more than five rounds are flown, then his/her lowest score shall be discarded before determining his/her aggregate score.
- b At the end of the qualifying rounds a minimum of nine (9) competitors with the highest aggregate scores shall be placed together in a single group to fly a further two (minimum) to four (maximum) fly-off rounds. At the Organisers discretion, if frequencies permit, the number of competitors qualifying for the fly-off may be increased.
- c The working time for each competitor who qualifies for the fly-off rounds shall be of fifteen minutes duration. As before, audible and visible warnings shall be given at the start of the group working time, at exactly thirteen minutes and at exactly fifteen minutes.
- d The scoring for the fly-off rounds shall be as for the qualifying rounds.
- e Final placing of the competitors who qualify for the fly-off shall be determined by their aggregate scores over the fly-off rounds, their scores in the qualifying rounds being discarded. If fewer than four fly-off rounds are flown, all are included in the final score. If four fly-off rounds are flown, then the lowest score is discarded. In the event of a tie in the fly-offs, the competitors' positions in the qualifying rounds shall decide their positions in the fly-off.