

English Translation/Interpretation for Class F3B-RES Thermal Gliders (Rudder, Elevator, Spoilers)

This rule set was derived from a German-language, Google-English-derived document reflecting revisions made in 2017. There are deviations from the original, German document. The deviations fall under three categories: explanatory, deletions (if the intent of the original is not clear), and errors. Any errors are the fault of the person doing the transcription, and may be discussed in RCGroups.com

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1. General Provisions:

- 1.1. "F3RES" is a competition class for radio-controlled glider models with a maximum of two (2) meter span in "predominantly" wood construction. Control is via elevator, rudder and spoiler. Launch is by hi-start. Restricting construction and equipment should make it possible to be flying with minimum effort. This class should make competitive RC soaring accessible to all age groups. The intent above all is to inspire and engage young people and neophytes.
- 1.2. Definition of a radio-controlled glider: A model aircraft which is not provided with propulsion, and depends on aerodynamic forces on fixed surfaces for lift. Models must be remotely controlled by a pilot standing on the ground, using a radio transmitter for control.
- 1.3. In competition, at least four preliminary rounds must be flown. For each preliminary round, contestants are divided by the contest director into groups. The result of each flight group is normalized with the highest score receiving 1000 points, and all other scores being proportionately rewarded. Participants with the highest total normalized preliminary scores shall compete in a "fly off" (minimum two rounds) to determine final standings. Fly offs will have a minimum of four, and a maximum of eight contestants, at the discretion of the Contest Director.
- 1.4. A contestant may use a maximum of two (2) models in a competition. Models may be exchanged within a round, only when the first model is returned to within 15 meters of the assigned landing target before the second model is hooked to the hi-start for launching.
- 1.5. A contestant may employ as many as three (3) helpers. Helpers may also be fellow contestants, and this is encouraged. A helper may launch the model, retrieve it for re-launch, inform the pilot of signs of lift, flight conditions, remaining window time or any other aspects of competitive soaring. At least one helper must supervise the hi-start to make sure it does not

hinder other contestants during launch, and this includes positioning the hi-start in readiness for an immediate re-launch.

- 1.6. In crosswinds, the Contest Director can direct launches be made in sequence, starting from down-wind, to avoid line entanglements.
- 1.7. The organizers of a contest may provide official timers, or may elect to allow helpers to time flights, with periodic checks from a designated official. If any helper-recorded time deviates from a checked time by more than three (3) seconds, that flight is scored as a zero.
- 1.8. Landing points are always verified by a contest official.

2. Model:

- 2.1. A model usually consists of wing, fuselage and tail surfaces. Flying wing models are also allowed, if there are only two (2) surfaces for pitch and roll control, each with only one servo for actuation. Otherwise, construction rules apply to both model types.
- 2.2. A model must be predominately wood construction. The following methods are allowed:
 - 2.2.1. Open ribbed wing surface, solid wood surface, "D-box" wood surface, or a combination of solid wood and ribs.
 - 2.2.2. Exceptions: leading edges, spars and spar caps of composite such as carbon are allowed, if formed of rods or extrusions.
 - 2.2.3. The surface of the wing and tails may be iron-on foil, silk, paper or polyester fabric.
 - 2.2.4. The spoiler must be upper surface only, and at least 5cm forward of the trailing edge. Spoilers may be single or dual, but no more than one servo each.
 - 2.2.5. The fuselage must be wood, but a tail boom of composite material in the form of a tube is allowed. The tail boom may not extend further forward than the midpoint of the wing chord, at the wing root.
 - 2.2.6. The wood fuselage may be covered with composite material such as fiberglass, carbon or Kevlar, for strength. Otherwise, covering is the same as for the wing and tails.
- 2.3. Not allowed are the following:
 - 2.3.1. The use of positive or negative molding forms for fuselage, wing or tail construction.
 - 2.3.2. Fixed or retractable devices to decelerate the model when landing (examples: skegs, bolts, teeth). Nothing may protrude except one (1) or two (2) tow hooks, which are a maximum of 5mm wide by 15mm high. Tow hooks may be adjustable, but only on the ground, without use of remote control.
 - 2.3.3. Nose radius of less than 5mm.
 - 2.3.4. Ballast that is not inside the model, and not securely attached to it.
 - 2.3.5. Any transfer of information from the model to the contestant, with the exception of telemetry signal strength, receiver temperature and receiver battery voltage. No variometers or altimeters at any time.
 - 2.3.6. Telecommunications on the flight field between competitors and helpers (radios and telephones included).

3. Competition Area

- 3.1. The competition must take place on terrain that is relatively flat, that offers little chance for wave or slope flying.
- 3.2. The airfield must have a designated "start line". The start line is perpendicular to prevailing wind direction, and has a designated start point for each competitor. The start point for each competitor is at least eight meters from adjacent start points. The start line is at least 150

meters from the stake point for each hi-start (see possible exception, Section 6). A maximum of eight (8) hi-starts may be employed in a contest.

- 3.3. Marked landing points (one for each start point) must be at least eight meters apart, and 15 meters downwind of the start line.
- 3.4. Start points and landing points must be clearly marked. The landing distance is measured with a cord or tape from the designated landing point to the nose of the model.
- 3.5. The Contest Director will designate a landing field. Landings outside the designated landing field result in zero points for the flight. See also Section 8.2

4. Competition Flights

- 4.1. For an official contest, each competitor must have the opportunity to fly at least four (4) official flights.
- 4.2. A competitor is allowed an unlimited number of flight attempts within a nine (9) minute working window.
- 4.3. A flight is official if the model has left the hand of a contestant or his helper under the tension of the stretched hi-start.
- 4.4. In the case of several flights within a working window, only the result of the last flight is recorded as the official result or score.
- 4.5. The Contest Director may interrupt the competition at any time. He may do so for safety considerations, for changing launch direction in the event of crosswinds or tail winds, or if the wind velocity exceeds six (6) meters per second measured at the start line at two meters altitude for at least one (1) minute duration.

5. Re-Flights

- 5.1. A contestant is entitled to a re-flight in another working window if:
 - 5.1.1. His model collides with another, either on launch or in flight.
 - 5.1.2. Is prevented from launching by an adjacent hi-start lying across his or her own.
 - 5.1.3. Has a flight hindered or terminated by an event beyond his control.
- 5.2. To claim a re-flight in accordance with the reasons above, the contestant must land immediately, and notify the Contest Director. To continue a flight or take a re-launch indicates that the right to a re-flight is renounced.
- 5.3. Re-Flights are organized with the aggrieved pilot flying in a new group, selected by random means. Other participants in the re-flight may either keep their original score, or take their new score, whichever is higher.

6. Launching

- 6.1. Hi-starts are selected and provided by the contest organizers.
- 6.2. A hi-start consists of 15-meter (+/-0.2 meter) of rubber hose, and 100-meter (+/- 1 meter) of nylon line of at least 0.7mm diameter. A knotted flag at the line end is used to spot the line, and prevent tangles.
- 6.3. The rubber hose may not exceed a force equivalent to 4kg when pulled to 45 meters. Deviation between hoses used for a contest may not exceed +/- 0.4kg, when stretched to 45 meters. A minimum force equivalent to 2.75kg at 45 meters extension is allowed.

- 6.4. On airfields that may not allow stretching a hi-start to 145 nominal meters, the Contest Director may direct that the nylon line may be shortened. The Contest Director may also direct that the maximum flight time be shortened.

7. Landing

- 7.1. Each contestant is assigned a separate and designated landing target for each of his flights. Contestants are responsible landing at the designated landing target.
- 7.2. During the landing approach, only the pilot and one (1) helper is allowed within a radius of ten (10) meters of the landing target. All other helpers and timers must remain at the starting position.
- 7.3. After landing, pilots or their helper are allowed to retrieve their models when doing so does not hinder other contestants. As a safety matter, gliders being retrieved for re-launch may not be thrown, but must be carried back for re-launch.
- 7.4. If the landing is to be scored, the model must not be touched until after the official landing judge has recorded the landing distance. Touching the model before then results in zero landing score.

8. Scoring Flight and Landing Performance

- 8.1. Timing begins when the model releases from the hi-start, and ends with:
- 8.2. The model stopped and at rest on the ground.
- 8.3. At the end of the working window.
- 8.4. Maximum flight time allowed is six (6) minutes (or, 360 seconds) within the working window. If the flight lasts longer than six (6) minutes within the working window, the overtime is deducted from the six (6) minutes. Flight time is recorded in whole seconds, without rounding. Two (2) points are awarded for each second of flight time.
- 8.5. Landing distance is measured between the designated landing target and the nose of the fuselage of the model at the point of final rest. Points are awarded based on the following table:

<0.2m 100pts	1.2m 95pts	3.0m 90pts	8.0m 65pts	13.0m 40pts
0.4m 99pts	1.4m 94pts	4.0m 85pts	9.0m 60pts	14.0m 35pts
0.6m 98pts	1.6m 93pts	5.0m 80pts	10.0m 55pts	15.0m 30pts
0.8m 97pts	1.8m 92pts	6.0m 75pts	11.0m 50pts	>15.0m 0pts
1.0m 96pts	2.0m 91pts	7.0m 70pts	12.0m 45pts	

- 8.6. A pilot receives zero points for landing if any of the following apply:
- 8.6.1. The model is imbedded in the ground or upside down.
- 8.6.2. The model loses one or more parts upon landing.
- 8.6.3. The model is no longer capable of flight.
- 8.6.4. The model has not landed by the end of the working window.

8.6.5. The model touches the pilot, his helper or any other human during the landing approach.

8.6.6. The model is touched by the pilot or his helper before the landing judge has recorded a landing measurement.

8.7. The entire task receives zero points for both flight time and landing if:

8.7.1. The model lands outside the designated landing field.

8.7.2. The model has not landed within 30 seconds of the end of the working window.

8.8. Total flight score is a sum of: two (2) points per each second of flight time, up to six (6) minutes or 360 seconds, minus two (2) points for each second of flight after six minutes, plus the number of landing points as determined in the Table in #3 of this section.

9. Final Score

9.1. The contestant receives two (2) points for every second flown, up to six (6) minutes, for a maximum of 720 time points.

9.2. For every second over six (6) minutes flown, two points are deducted from the maximum of 720 time points.

9.3. Landing points are awarded according to the table in 6.3 above, and added to the time points.

9.4. The total points (time and landing) are then normalized against the highest total points, in a given flight group. The highest total points are assigned a value of 1000 points, and lower scores are assigned values proportionate to the highest total points in a group.

9.5. At the end of the final preliminary round, all scores are added and the contestants ranked accordingly. The highest-ranking contestants may then participate in a minimum of two (2) fly off rounds to determine final contest standings. The Contest Director, before the contest starts, announces how many of the highest ranking pilots may fly in the fly off, selecting any number from four (minimum) to eight (maximum).

9.6. The fly off is conducted as a "mini-contest", with all fly-off contestants starting with zero scores,

10. Information for Contest Notice

10.1. In the United States, contests organizers are encouraged to request a contest sanction from the Academy for Model Aeronautics, and conduct contests under AMA-recognized rules and guidelines.

10.2. In the United States, contestants are encouraged to enroll in the AMA.

10.3. Local conditions may require deviations from these rules. The Contest Director may employ deviations to satisfy requirements of space, time or safety. Deviations should be announced well before the contest, and discussed in detail at the initial pilot's meeting.

10.4. Always bear in mind that this class is designed to encourage participation by neophytes and young RC flyers. Be prepared to conduct your affairs accordingly.