

**5.12 CLASS F3S – RADIO CONTROLLED AEROBATIC POWER JET MODEL AIRCRAFT****5.12.1 Definition of a Radio Controlled Aerobatic Power Jet Model Aircraft**

Model aircraft, but not a helicopter, which is aerodynamically manoeuvred by control surface(s) in attitude, direction, and altitude by a pilot on the ground using radio control.

**5.12.2 General Characteristics of a R/C Aerobatic Power Jet Model Aircraft**

- a) The R/C Aerobatic Power Jet Model Aircraft shall use as a propulsion device either
  - a) turbo jet/s or
  - b) ducted fan/s.

Ducted fans may use piston engines or electric motors as a power source.

- b) The number of model aircraft eligible for entry is two (2).
- c) Paragraph B.3.1.a) of Section 4B (Builder of Model Aircraft) is not applicable to class F3S.
- d) For power device limitations, noise rule, and radio equipment: See 5.1.2
- e) Noise limits apply to model aircraft with piston engines only.

**5.12.3. Definition and number of helpers**

See 5.1.3

**5.12.4 Number of flights**

Each competitor has the right to three official flights.

**5.12.5 Definition of an attempt**

See 5.1.5.

**5.12.6 Number of attempts**

See 5.1.6.

**5.12.7 Definition of an official flight:**

See 5.1.7.

**5.12.8 Marking:**

- a) Each manoeuvre may be awarded marks, in half (0.5) increments, between 10 and 0 by each of the judges during the flight. These marks are multiplied by a coefficient that varies with the difficulty of the manoeuvre. Any manoeuvre not completed shall be scored zero (0). Manoeuvres must be performed where they can be seen clearly by the judges. If a judge, for some reason outside the control of the competitor, is not able to follow the model aircraft through the entire manoeuvre, he may set the «Not Observed» (N.O.) mark. In this case, the judge's mark for that particular manoeuvre will be the average of the numerical marks given by the other judges.
- b) Centre manoeuvres should be performed in the centre of the manoeuvring area while turn around manoeuvres should not extend past a line 75 degrees left and right of centre. Also, manoeuvres should be performed along a line of approximately 150 to 200 m (depending on the size of the model aircraft) in front of the competitor.
- c) Infractions to this rule will be cause for downgrading by each judge individually and in proportion to the degree of infraction.
- d) The manoeuvring area will be clearly marked with white vertical poles, a minimum of 100mm in diameter and a minimum of 4m high, placed on centre, and at 75 degrees each side of centre. Flags and/or streamers of contrasting colour should be mounted on the poles to improve visibility. White (or contrasting) lines originating at the competitor's position and extending outward at least 50m will also be used to mark the centre and extreme limits (75 degrees left and right of centre) of the manoeuvring zone. Audible and visual signals to indicate violations of the manoeuvring zone are not to be employed.
- e) The judges shall be seated no more than 10m, and not less than 7m behind the competitor's position (the apex of the 75 degree lines) and within an area described by the extension of the 75 degree lines to the rear of the competitor.
- f) If a model aircraft is in the opinion of the safety steward or the judges, unsafe or being flown in an unsafe manner, they may instruct the competitor to land the model aircraft.
- g) The scores given by each judge for each competitor shall be made public at the end of each round of competition.

**5.12.9 Classification:**

- a) For every competitor the individual result of each round is normalised to the points of the best competitor of that round as follows:

$$\text{Points}_x = \frac{S_x}{S_w} \times 1000$$

$\text{Points}_x$  = points awarded to competitor X

$S_x$  = score of competitor X

$S_w$  = score of winner of round

- b) The normalised points shall be recorded to the first decimal number.  
 c) The final classification will be done considering the sum of the scores of the best two attempts.  
 d) In order to decide the winner when there is a tie, the discarded flight score shall be taken into (a) account.  
 e) The TBL statistical averaging system is not to be applied

**5.12.10 Judging:**

- a) The criteria to be applied for judging the manoeuvres in this class, are identical to class F3A. However, the judges will have to consider the dimensions, inertia and speed of the jet model aircraft.  
 b) The organiser must appoint a panel of least three up to five judges, preferably. When five judges are used the lowest and highest scores for each manoeuvre will be discarded.

**5.12.11 Organisation for Aerobatic Power Jet Model Aircraft Contests**

- a) For transmitters and frequency control, see section 4B, paragraph B.11.  
 b) The flight order for the first round will be determined by draw. In case of frequency conflicts the flight order may be changed by the contest director. For second round, the flight order will start at 1/3 down the list. For third round, the flight order is the reversed ranking after second round.  
 c) During the flight, the competitor must stay in front of the judges in the designated area and under the supervision of the Flight Line Director and safety steward.  
 d) The prohibited flying area is observed by the judges. If the safety line is crossed the flight will be scored zero points.  
 e) Competitors must be called at least ten (10) minutes before they are required to occupy the starting area.

**5.12.12 Execution of manoeuvres**

- a) The manoeuvres must be executed during an uninterrupted flight in the order in which they are listed in the rules.  
 b) The competitor may make only one attempt at each manoeuvre during the flight.  
 c) The pilot has six (6) minutes to start his motor, and five (5) minutes to complete his flight. The six minutes start when the competitor is given permission to start his motor. The last minute of preparation time (ie after the expiry of five minutes) must be announced to the competitor. The five minute flight time starts with either the expiry of the six minute preparation time or when the model aircraft starts the take-off sequence, whichever occurs first.  
 d) The model aircraft must take-off and land unassisted, that is, no hand launched flights. If any part of the model aircraft is dropped during the flight, scoring will cease at that point and the competitor must be instructed to land his model aircraft immediately.  
 e) The direction of the manoeuvres is determined by the heading of the model aircraft during the take-off. After completion of manoeuvre 13 the model aircraft has to be landed immediately. The flight ends when the landing sequence is completed.  
 f) Scoring will cease with the expiry of the five-minutes flight period.

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**5.12.13 Schedule of manoeuvres**

Take-off sequence, including single free pass (not judged, not scored)

	K-Factor
01: Triangle loop with full roll on top	3
02: Half reverse Cuban 8 with 2/4-point roll	2
03: Opposite knife-edge	5
04: Immelmann with full roll, exit inverted	2
05: Half reverse Cuban 8 from top with 2/4-point rolls, exit inverted	4
06: Half square loop on corner	2
07: Figure 9 with full roll up	3
08: Pull-push-pull humpty bump with half roll down	3
09: 45 degree ascent with 4/8-point roll, exit inverted	3
10: Half positive loop	1
11: Half slow roll, 2/4-point roll opposite	5
12: Pull-pull-pull humpty bump with half roll down	3
13: Loop with full roll integrated on top 90 degrees	4
Landing (not judged, not scored)	-----
	Total    K 40

For the description of the manoeuvres, judging notes, and Aresti diagrams, see Annex 5X.

For the Manoeuvre Execution Guide, see Annex 5B.

**ANNEX 5X****F3S – RADIO CONTROLLED AEROBATIC JET MODEL AIRCRAFT****DESCRIPTION OF MANOEUVRES**

- 5X.1 Triangle loop with full roll on top**  
From upright, pull to a 45 degree upline. Pull through  $\frac{3}{8}$  of an inside loop to horizontal inverted and perform a full roll. Pull through  $\frac{3}{8}$  of an inside loop to a 45 degree downline. Pull to exit upright.
- 5X.2 Half reverse Cuban 8 with 2/4-point roll**  
From upright, pull to a 45 degree upline and perform 2 points of a 4-point roll. Pull through  $\frac{5}{8}$  of an inside loop to exit upright.
- 5X.3 Opposite knife-edge**  
From upright, on a horizontal line, perform a 1/4 roll to knife-edge. Perform a 1/2 roll in the opposite direction, to knife-edge, and perform a 1/4 roll to exit upright.
- 5X.4 Immelmann with full roll, exit inverted**  
From upright, pull through a half inside loop, followed immediately by a full roll. Exit upright.
- 5X.5 Reverse cuban 8, 2/4-point rolls, exit inverted**  
From inverted, pull to a 45 degree inverted downline, and perform 2 points of an 4-point roll. Pull through a  $\frac{3}{4}$  inside loop to a 45 degree inverted downline, perform 2 points of a 4-point roll, and pull through  $\frac{5}{8}$  inside loop to exit inverted.
- 5X.6 Half square loop on corner**  
From inverted, pull to a 45 degree downline. Pull through 90 degrees to a 45 degree downline and pull through  $\frac{1}{8}$  loop to exit upright.
- 5X.7 Figure 9, full roll up**  
From upright, pull through  $\frac{1}{4}$  loop to a vertical upline, and perform a roll. Pull through a  $\frac{3}{4}$  inside loop to exit upright.
- 5X.8 Pull-push-pull humpty bump, half roll down**  
From upright, pull through  $\frac{1}{4}$  loop to a vertical upline, and push through 1/2 outside loop. On the vertical downline, perform a half roll, and pull through  $\frac{1}{4}$  loop to exit upright. Judging notes: • Exit lower than entry
- 5X.9 45 degree ascent with 4/8-point roll, exit inverted**  
From upright, pull to a 45 degree upline and perform 4 points of a 8-point roll. Pull through  $\frac{1}{4}$  loop to exit inverted.
- 5X.10 Half positive loop**  
From inverted, pull through 1/2 loop to exit upright.
- 5X.11 Half slow roll, 2/4-point roll opposite**  
From upright, perform a slow roll, followed by 2 points of a 4-point roll in the opposite direction, to exit upright.
- 5X.12 Pull-pull-pull humpty bump, half roll down**  
From upright, pull through  $\frac{1}{4}$  loop to a vertical upline, and pull through 1/2 inside loop. On the vertical downline, perform a half roll, and pull through  $\frac{1}{4}$  loop to exit upright.
- 5X.13 Loop, with full roll integrated over top 90 degrees**  
From upright, perform an inside loop with a fully integrated full roll over the top 90 degrees of the loop.

*The Aresti diagrams appear overleaf.*

# F3S Schedule of Manoeuvres (2011)

