

RC Plane



Content

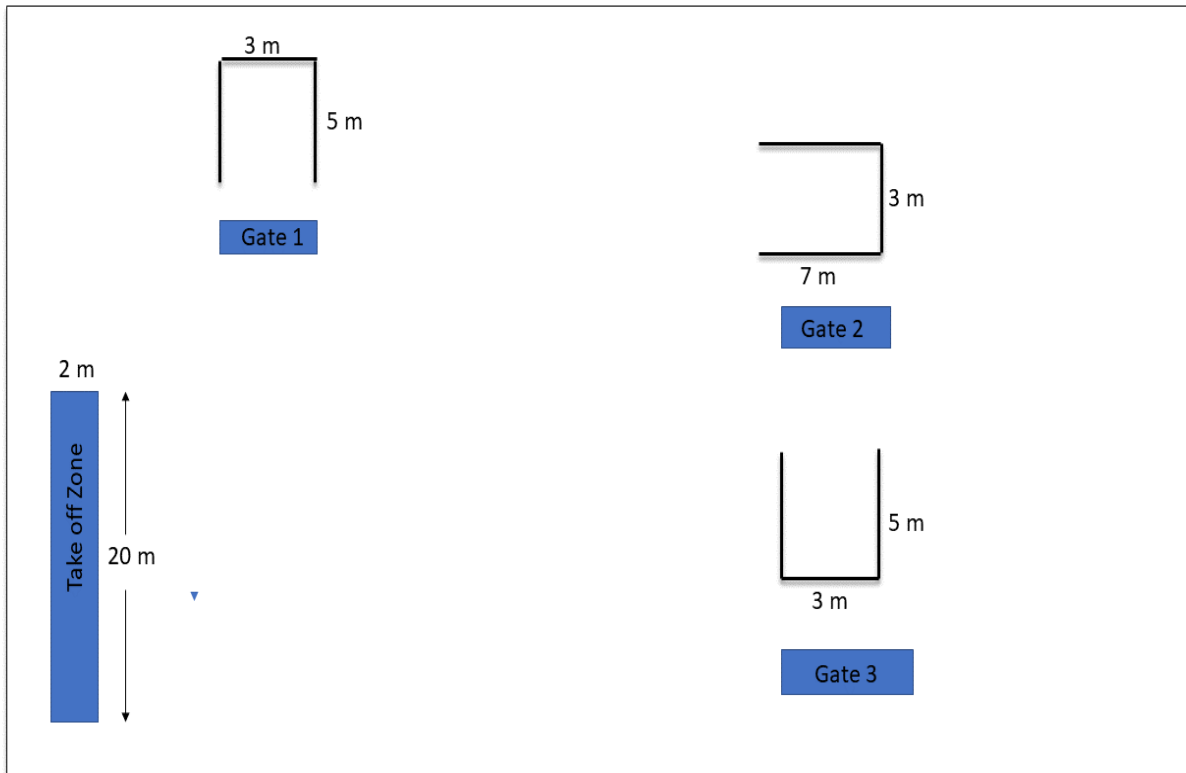
1. Task
2. Arena
3. Machine Specifications
4. Game rules
5. Judging Criterion

1. Task

The competition requires the participants to design and fabricate a RC Plane (no Readymade Planes are allowed) and perform a set of maneuvers. Propellers, Motors, ESC, Servos, Receiver and Transmitter are allowed as off-the-shelf items.

2. Arena

The Arena consists of 3 gates - "Gate 1" and "Gate 2" and "Gate 3". The gates have a horizontal bar at 3 meters, 7 meters and 5 meters height respectively from the ground. Each gate would have 3 meters space for planes to pass through, yet only the skills of the pilot can guarantee a swift manoeuvre.



3. Machine Specifications

1. $T/W < 0.75$ (if excess thrust is found, it will be neutralized by adding weight below the plane at centre of gravity).
2. Propeller diameter should not be greater than 10 inches.
3. Battery weight should not be more than 120 gm.
4. Only electrical motors are allowed. The use of IC engines or any other means of providing thrust is prohibited.
5. Use of gyroscope(gyros) and programming assistance in receivers is prohibited
6. One of team members should fly the aircraft and another should call the stunts as they are performed.
7. Wing Span = S ($0.9 \text{ m} < S < 1\text{m}$).

Game Rules

- 1.The timer will start from the moment the aircraft is in the air for both the rounds.
- 2.Awards will be announced based on the performance of the teams in the Manoeuvre Round

General Guidelines for Manoeuvre Round:

1. The pilot has to choose Gate 1 as the entry gate to perform the manoeuvres.
2. The Gate 3 automatically becomes the exit gate.
3. The Pilot will try to perform vertical and loop between Gate 1 and Gate 3 only.
4. Use of gyroscope(gyros) and programming assistance in receivers is prohibited
5. One of team members should fly the aircraft and another should call the stunts as they are performed.

4. Judging Criterion

All decisions taken by the organizing team will be deemed as final, and no more changes will be encouraged, thus holding the full authority to change any of the above rules as per circumstances.

A maximum time of 10 minutes will be given between the take off and the final landing. Any further instructions would be given before the competition, on the spot.

Step 1	Take Off from Take Off Zone	10 points
Step 2	Passing through Gate1-2-3	30 points
Step 3	Performing a Vertical loop	50 points
Step 4	Performing a roll	50 points
Step 5	Landing in Landing Zone	20 points

Scoring Guidelines for Manoeuvre Round

1. The team should keep attempting the manoeuvre until they complete all steps in that order in one attempt without landing.
2. After completing all steps mentioned in the manoeuvre, teams are eligible to score additional points as mentioned below.
3. The following guidelines should be followed for additional points:
 - i. The teams can attempt the same manoeuvre maximum two times within the time limit
 - ii. For each attempt, partial step-wise points will be awarded i.e. if the team completes steps 1&2, they get points for 1&2 and so on.
 - iii. The steps have to be performed only in the given order. No points will be awarded for steps done in incorrect order. For example, if a plane does steps 1&3 without doing 2, points for step 1 will only be awarded.

- iv. It is mandatory for the team to land before attempting the manoeuvre again. Landing can happen outside landing zone but will not be awarded any points.

If there is a tie, winner will be decided by a separate round framed by the Judges on the spot. Judges' decisions would be considered final in all cases.