RC-Rotary Wing(Helicopter/Tri-copter/Quad-copter)

Introduction:

The hobby industry is exploding with model aircrafts, and Multirotors are no exception. These fascinating aircrafts combine the flight characteristics of both a plane and a helicopter. This time **Aerobuzz-14** is giving you the opportunity to showcase your talents through Multirover. Amaze the audience with your models and make this competition a great success with your performances. Let's bring a revolution in Indian Aeromodelling technologies by changing the trends.

There will be 2 rounds in the competition:

Round 1: **Hovering**

This round will emphasize to test the stability of the rotor.
The controller will be given 3 minutes in which he/she has to take off from a starting point and then land the rotor in the circular region 6m from the starting point as given in the arena section.

ARENA:

Spot Landing:

1. Model should land in the inner most circle to get maximum points.

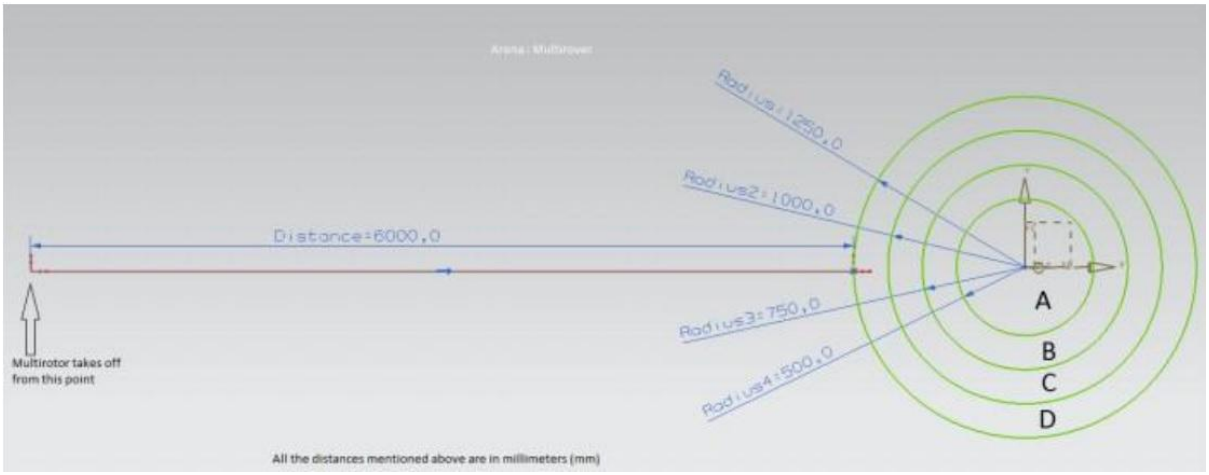
2. No points will be given for landing outside the biggest circle

3. Diameter of innermost circle is 1 m.

4. Diameter of outermost circle is 2.5m.

(Arena Layout in the next page)

There are 4 regions (i.e. regions formed between the concentric circles):
1. **Region A -** It is the area covered by the innermost circle which will be of 50 cm in radius.
2. **Region B -** It is the region which is enclosed by the circles with radius 50 cm and 75cm respectively.
3. **Region C -** It is the region which is enclosed by the circles with radius 75cm and 100 cm respectively.
4. **Region D -** It is the region which is enclosed by the circles with radius 100cm and 125 cm respectively.



Points Distribution:

- Landing the rotor in:
a) Region A will earn the team 100 points
b) RegionB will earn 75 points
c) Region C corresponds to 50 points, and
d) Region D corresponds to 25 points.
e) Landing outside this circle, a team will not get any point for this round.
- In case the multirotor is landing in more than 1 region, the points given to the team will be the average of the scores of the individual regions.
- Along with this, the time taken from take-off to the first point of contact on the ground after take-off will be noted(say time is t(sec)) and, (180-t) points will be added to your score in the Round 1.

No time points will be awarded if landed outside the outermost circle.
- Exceeding the total time of 3 minutes, penalty will be added as half per second till 5 minutes. After 5 minutes zero point will be awarded for the first round.
In case of a tie breaker, the team which completed the task in lesser time will win.

Round 2: Maneuver Round

The Arena consists of 3 wooden gates of 2m height and 2m width. The gates would have enough space for robots to pass through, yet the skills of pilot could only guarantee a swift maneuver.

The participants get the scoring as below

1	Safe Fly Through.	25 points per gate (none for incomplete passage).
2	2nd Attempt Fly Through.	15 points per gate.
3	Safe landing before completion of 5 minutes in the landing zone	10 points (no points for crash landing anywhere in the field)

Teams will have to perform all the above maneuvers (excluding landing) at least once. After they have completed the mandatory maneuvers, the teams can perform additional maneuvers in any extra time they have remaining before landing for extra points. Any further instructions would be given before the competition, on the spot. If there is a tie, winner will be decided based on a separate round in which time taken to complete Fly Through will be considered. Judges' decisions would be considered final in all cases.

TEAM STRUCTURE:

A team can consist of maximum 3 members. Students from different colleges can form a team.

ELIGIBILITY:

Any student of any academic institution is eligible to participate.

RULES:

There will be no trial in the first round.

Each team must have its own model. Exchanging of models is not allowed.

No restriction on material used in making the machine but metal propellers are not allowed.

A team can use only one model throughout the event in both the rounds.

The multirotor will be controlled by a human pilot (manual flight) and you are not allowed to use GPS navigation. However if you want to use auto pilot for stabilization, it will be permitted. But GPS navigation and autonomous flight will be prohibited during the competition.

The organizers reserve all rights to change any or all of the above rules. Changes will be highlighted on the website and will also be mailed to all the registered participants. However, you are suggested to keep checking the website regularly.

MODEL SPECIFICATIONS:

1. The model should fit within a circle of diameter 1m .

2. RTF models will not be allowed.

3. Arduino and other boards can be directly used. You may or may not use self programmed board.

4. No restriction on material used in making the machine but metal propellers are not allowed.

5. Each team must have its own model. Exchanging of models is not allowed.

6. A team can use only one model throughout the event in both the rounds.