BOEING National Aeromodelling Competition

AIM:

A team must design, fabricate and demonstrate a fixed wing aircraft system that can perform tasks mentioned in following rounds with given constraints.

DESCRIPTION:

This competition is launched with the vision to provide a unified national platform for students interested in aerospace and related engineering disciplines - to demonstrate their aero-modelling expertise.

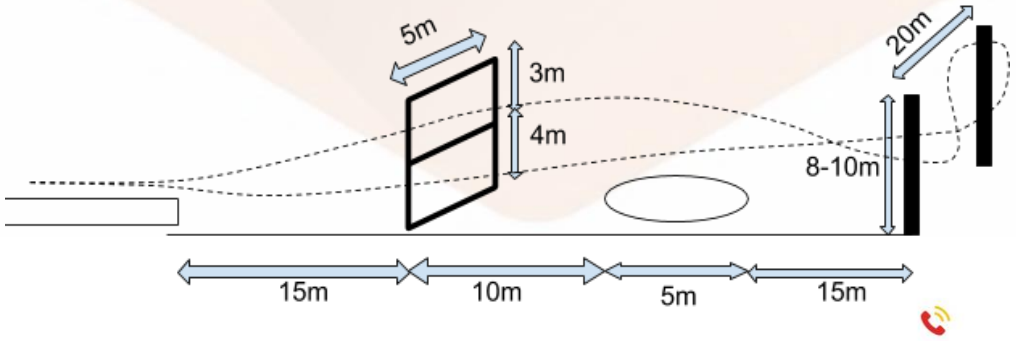
GAME PLAY:

The competition requires participants to design and fabricate an RC Aircraft (no readymade aircraft like RTF, ARF, and BNF etc. are permitted) and perform a set of tasks. Propellers, Motors, ESC, Servos, Receiver and Transmitter are allowed as off- the-shelf items.

Competitive Round:

In this round, the design w.r.t. to the payload handling capability of the aircraft is put to test.

The aircraft should carry one or more than one payload (the organizers will supply golf balls of weight - 45g, diameter - 43mm- during the competition) and drop them in a circular drop zone of 5m diameter. All the payloads in/on the aircraft should be released in a single drop. The payloads should fall as independent objects and should not be put together as one bigger payload (sticking them together or putting payloads into a single box etc. are not allowed). The drop zone is at a distance of 25m from the take-off and landing zone. (For a better understanding of the arena, refer to the illustrations).

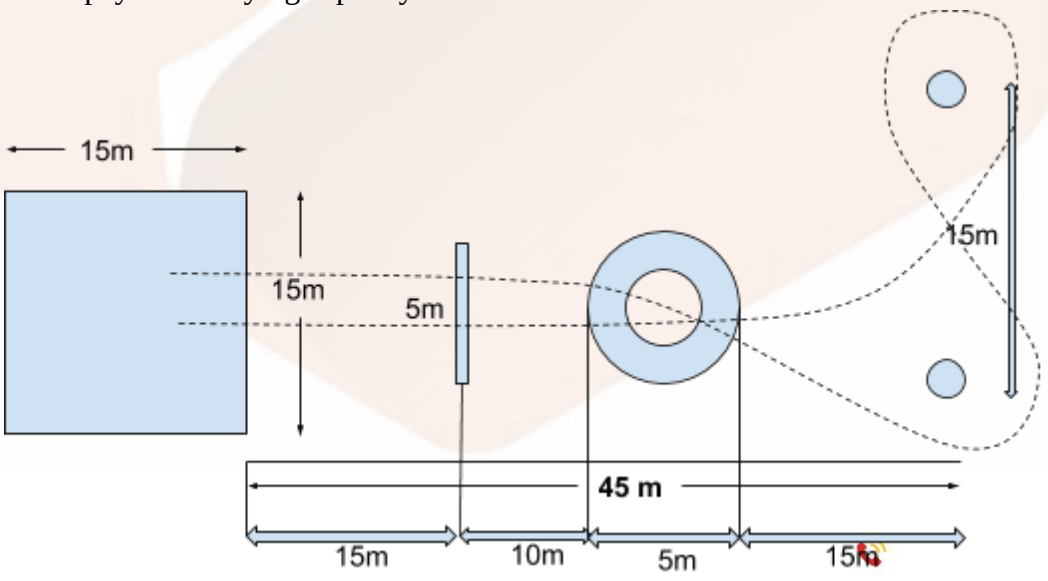


The figure illustrates an isometric layout of the arena with the dotted line indicating the trajectory the airplane is expected to perform for a perfect score.

POINTS AND SCORING:

1. Scoring Details: (Number of Payloads dropped in the drop zone)
    1. Takeoff and Landing area (Hand launch allowed)- 50 points
    2. Gate obstacle - 25 points
    3. Payload Drop - 25,20, 15, 10 points * (No. of payloads dropped)
    4. Figure 8 loop - 25 points
    5. Percentile Time - 75 points

2. As is evident from the scoring, high advantage is given to Aircraft that are designed to be capable of carrying and dropping multiple payloads in a single drop within the zone. No points for payloads that fall outside the dropping zone.
3. Each team must complete the problem profile. However, each section of the profile has individual weightage and none is mandatory.
4. Entire payload should be released using only one channel in the transmitter.
5. Partial dropping of payloads consecutively without reloading is not allowed. All payloads in the aircraft should be either released while dropping or removed from the aircraft or loaded again for next attempt.
6. 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.
7. In case of a tie, each team shall be given 4 minutes to iterate the given circuit for maximum number of laps. Therefore, it is important to design the aircraft for quick loading (for multiple attempts) and quick releasing of payloads (to ensure they drop within the zone when released) in addition to the payload carrying capacity.



General Guidelines:

1. The use of 2.4 GHz radio is required for all aircraft competing in the competition. If the participants want to use any other frequency, they will have to inform the organizers in advance.
2. Receivers installed in the aircraft must be in 'receiver mode only'.
3. All the systems (Servos, motor, etc.) will be checked by organizers for functionality before the competition. If found not working, teams will be dismissed from the competition.
4. Pilot can position himself at any point in the arena to fly the aircraft during the rounds.
5. In view of stringent safety requirements, if a pilot flies out of the designated flying zone he/ she is disqualified and has to immediately turn back and land at any cost.
6. Teams are suggested to carry additional components (motors, batteries, propellers etc.) as needed to avoid last minute surprises at the venue.
7. Metal propellers are not allowed**.**
8. A team member can't be a part of more than one team.
9. Any of the above-mentioned rules, if found violated, teams would not be allowed to participate in the competition.
10. Each team is advised to bring all components for their aircraft although they are coming from same college. Any delay due to sharing of components might result in your team losing the time available for your attempt or lose the entire attempt itself.
11. **Decision Taken by Judges and Organizers will be final and binding for all.**

PRIZES:

1. *1st Position – Rs. 15,000/-*
2. *2nd Position – Rs. 10,000/-*
3. *3rd Position- Rs. 5,000/-*