



RC-X

RULES AND REGULATIONS

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I. Team Requirements

- Each team must consist of a minimum of 3 and a maximum of 4 members.
- Teams are responsible for bringing all necessary equipment, tools, spare parts, repair materials, batteries, and other equipment required for the construction, maintenance, and operation of their aircraft.
- Teams must be prepared to carry out on-site repairs and necessary maintenance during the competition.
- No spare or replacement aircraft may be brought or used during the competition.
- Only the aircrafts that have undergone and cleared the technical inspection may be used for the competition.
- Teams must ensure that their aircraft remains compliant with all specified technical requirements throughout the event.
- Any replacement component or repair made during the event must not cause the aircraft to violate the specified rules and constraints.
- Teams are responsible for the safe handling and operation of all equipment brought to the competition.

II. Aircraft Design Constraints

i. Dimensions

- The aircraft must have a maximum wingspan of 650 mm.
- There is no specified maximum aircraft weight.

ii. Structural Materials

- Only balsa wood, Depron, and carbon fiber (only for structural support) may be used for the aircraft structure.

iii. Propulsion

- The aircraft must use an electric motor.
- IC engines and gearboxes are prohibited
- NO VTOL
- MAX MOTOR LIMIT - 2

iv. Propeller

- The propeller must be made of plastic, fiberglass, or balsa wood.
- The maximum propeller diameter is 10 inches.
- The propeller may have a maximum of 3 blades.
- Metal propellers are prohibited.

v. Battery

- Only standard commercial batteries are permitted.
- Maximum battery rating: 4S.
- Maximum battery capacity: 2200 mAh.
- Special energy-storage technologies are prohibited.

vi. Flight Control & Avionics

- Gyroscopes are strictly prohibited.
- Flight-stabilization systems are strictly prohibited.
- Programmed receivers are prohibited.
- Auto-leveling receivers are prohibited.

vii. Payload & Drop Mechanism

- The aircraft must carry a up to 20 g missile-shaped payload measuring 10 cm × 3 cm × 3 cm provided by the organiser .
- The dropper must be permanently fixed to the aircraft.
- The dropper must not detach during or after the payload drop.
- 3D-printed droppers are prohibited.

viii. Performance

- The aircraft must have a maximum thrust-to-weight ratio of 1:1.

III. Event Progression

i. Technical Inspection

- All aircraft must undergo technical inspection before flight.
- Teams must comply with all specified construction, propulsion, battery, avionics, dimensional, and payload requirements.
- The thrust-to-weight ratio will be verified during inspection.
- Aircraft that fail to satisfy the specified technical requirements will not qualify for the subsequent flight stages.

ii. Round I – Qualification Round

- Teams must demonstrate a safe take-off.
- Teams must complete a stable basic flight pattern.
- Teams must demonstrate a safe landing.
- Only teams that successfully complete the required flight operations will qualify for Round II.

iii. Round II – Final Round

- Qualified teams must complete 2 full loops around the field , 1 in the very beginning of the round and 1 at the very end of the round before landing.
- Teams are to navigate through 2 designated obstacles.
- Only the pilot will be allowed inside the flight arena and 1 helper outside the area in case of a crash and no more. Any unauthorized entries or involvement will lead to disqualification.
- Each team is given 5 min. They are free to use that time to fly or fix the aircraft in case of a crash but only one helper is allowed inside the arena.
- Teams are to accurately drop the payload over the designated target zone.
- The aircraft is to be operated safely throughout the flight and land safely as well and will be the pilots responsibility.

IV. Safety and Conduct

- Participants must operate their aircraft safely and follow all instructions given by event officials.
- Team members are permitted to observe the stopwatch and any loop of their choice to ENSURE TRANSPARENCY ONLY, provided they do not obstruct the view of the judges or volunteers. Observers must remain strictly passive and have no authority to intervene in or influence volunteer actions and volunteer final say will be binding.
- Any unsafe operation, rule violation, or unsportsmanlike conduct may result in penalties or disqualification.
- The organizing committee reserves the right to stop or terminate a flight on safety grounds.
- The decisions of the judges shall be final and binding.

V. Points Distribution

- The competition carries a total of 100 points, distributed equally across five criteria.
- The first loop and last loop is mandatory and must be completed to proceed with the remaining course.
- Points will be awarded based on the team's performance in each criterion:
 - **Loops:** *20 points (10 points each)*
 - **Obstacles:** *20 points, based on successful completion of the designated obstacles(points vary based on difficulty).*
 - **Time:** *20 points, based on the time taken to complete the course.*
 - **Target Precision:** *20 points, based on the accuracy of the payload drop.*
 - **Landing:** *20 points, based on the quality and accuracy of the landing.*
- The exact points awarded within each criterion will depend on the team's performance.
- The points will not be revealed until the end of the techfest at the valedictory session and will be digitally uploaded after the same.

Good luck!