BELUGA

Pool Event **Points: 30**

TASK

Design and make a light weight wireless remote controlled aircraft, which can fly around a specified path while having a maximum payload fraction in the least possible time.

Problem Statement

The competition requires the participants to design a RC plane and achieve maximum payload fraction.

The specifics of the task:

1. Start from the launch/landing zone.
2. Take a turn after crossing the first line.
3. Then cross the second line.
4. Enter the safe landing zone and land.
5. Complete the whole task in the least time possible.

Rules and Regulations

- Initially the team will get a trial chance for testing and checking the proper working of the plane.
- Then each pool will get two attempts for flying.
- The best score out of the two attempts will be considered for scoring.
- Crash landing (harm to plane, electronics or other accessories except propeller) or landing before completing the whole track will lead to disqualification.
- Participants should not disturb the flyer in any case otherwise it will attract a penalty of -50 points of total score evaluated for that team in that round.

Judging

Participants will be considered for the scoring only if they are able to complete the whole track, otherwise his score will be considered as zero.

Score = Structural quotient + Speed quotient + Landing

a) Structural quotient = 1000 X (Payload Fraction)
Payload Fraction is the ratio of weight of payload to the total weight of the aircraft including payload.

b) Speed quotient = 240-Time

Time is the time calculated by the organizer in seconds from the moment the plane is in the air to when it finally lands.

c) Landing = Safe Landing
Safe landing is defined as a smooth landing where the whole plane structure and electronics (except propeller) are undamaged. The pool will be allotted 100 points for 'Safe Landing' at any place after crossing the second line.

Model Specifications
- An aircraft is defined as an object that has the four forces of flight, namely lift, drag, weight (gravity) and thrust due to propeller acting on it at any point of time.
- The aero model must be hand-made.
- Size of plane should not exceed 1m in any direction.
- The Aero model must weigh less than 1 kg.
- The model must be hand launched.
- Use of landing gear is prohibited.
- The participants are free to use the materials of their choice. . Use of CF rods are allowed for strengthening.
- Participants must make all parts of the aircraft themselves. Usage of Ready-to-Fly (RTF) and Almost Ready-to-Fly (ARF) kits is strictly prohibited.
- Use of readymade actuators/motors, remote controls and propellers is allowed.
- Use of gyroscopes (gyros) is prohibited.
- If anyone is found not following above rules, they will be disqualified

Team Structure:
It is a pool event with only one team from each pool.
**Flyers in both attempts must be from Y14 or Y15 only.

Note:
** It is your responsibility to handle the electronics with care. No other electronics will be provided in case of any damage or failure.
** If, at any point of time coordinators feel that the aircraft is going out of control or out of the field then the transmitter will be immediately taken from the flyer and score will be considered as zero for that attempt.
**If coordinator or judges feel the flyer is not capable enough to fly then he won't be allowed.
**In case of any Tie, one more attempt will be given to the pools involved and track can be modified on discretion of coordinators.
** In case of any disputes, the decision of the coordinators would be final and binding to all.

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