Project 1 - Flying wing

The project involves the design and construction of an electrically powered flying wing with the challenge of covering 4 lengths in a figure of 8 pattern as fast as possible. The time will be measured from when the airplane passes the start line, it must fly along the length of the course and then make a turn to the right around a pylon and return to another pylon where it must turn to the left to form a figure of 8 flight pattern. The best 4 times of 6 passes will be added to give the final score.

RULES
The rules of the competition are:

- Battery power output will be limited to 200W. 3 cell Lithium polymer batteries are recommended (11.1 volts) . Thus the current draw is limited to less than 20 A.
- Maximum airframe mass is 1 Kg.
- The aircraft must take off from and land on the ground and be flyable after landing for the flight to qualify.
- The aircraft must be airborne before entering the course.

Project 2 - Short take-off aircraft

The project involves the design of a short take-off and landing aircraft. Due to the difficulties in accurately measuring the landing distance (for safety and practical reasons) only the take-off distance will be measured.

RULES
The rules of the competition are:

- Battery power output will be limited to 200W. 3 cell Lithium polymer batteries are recommended (11.1 volts) . Thus the current draw is limited to less than 20 A.
- Maximum airframe mass is 1 Kg.
- A fuselage needs to carry a full can of beer (340 ml).
- The aircraft must take off and land on the ground and be flyable after landing to qualify.
- The weighted mark assigned for each wing (and hence group) is a function of the weight of the wing, the load carried, the distance required to get airborne and a subjective pilot factor (related to the flight characteristics of the aircraft).
- The equation used is:

$$FF=(M/m)(100/D)PF$$

where FF is the Flight Factor, M is the total take-off mass in kilograms, m is the mass of the combined wing and aircraft in kilograms, and D is the distance to take-off. FF scores are added for all flights for each group. The group with the highest total FF wins.

Project 3 - Fastest speed 4 lengths

The time will be measured from when the airplane passes the start line, it must fly along the length of the course and then make a turn to the right around a pylon and return to another pylon where it must turn to the left to form a figure of 8 flight pattern. The best 4 times of 6 passes will be added to give the final score.

RULES
The rules of the competition are:

- Battery power output will be limited to 200W. 3 cell Lithium polymer batteries are recommended (11.1 volts) . Thus the current draw is limited to less than 20 A.
- Maximum airframe mass is 1 Kg.
- The aircraft must carry a (full) can of beer.
- The aircraft must take off from and land on the ground and be flyable after landing for the flight to qualify.
- The aircraft must be airborne before entering the course.

Project 4 - Glider

The project involves the building of a glider with the challenge of flight endurance from a given height.

RULES
The rules of the competition are:

- A radio control system of up to 6 channels may be used.
- The glider will be dropped from a fixed height
- The longest flight endurance from release to first contact with the ground or any other obstacle will win the task.
- Wing span must be of no more than 2 m.
- The mass may not exceed 1 kg
- The aircraft must be flyable after landing to qualify.
- A stop watch will use in measuring the time of the flight.

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