WINGS:

PROBLEM STATEMENT
Design and construct a powered, remote controlled glider that will be powered for the first one minute, by an electric motor and then glide in air without Throttle and land on a pre-defined position.

ARENA SPECIFICATIONS

Details of arena will be will be up dated soon…

LAUNCHING ZONE
Participants will have to hand-launch their glider from within the launching Zone.
The gliders can be launched in any direction.
The launching zone would be a circle of 4.5m radius.

LANDING ZONE

1. The landing zone and the launch zone are the concentric circles. A flag will Mark the site of landing. A circle of 15metre radius will be made to help the Participants see the landing/launch zone.

2. The competition will be in an open area and there might be some variations in wind conditions.
3. Participants are required to take these factors into consideration while fabricating their glider. It should be noted that there are trees in the vicinity.

GLIDER SPECIFICATIONS

4. A glider is defined as an object that has exactly 3 forces of flight, namely lift, drag and weight (gravity).
   Note: Parachutes and Para gliders do not qualify as gliders since they do no have lift. Also aircrafts lighter than air are not considered as gliders and hence will not be allowed.
   However, in a power glider, the initial thrust is to be provided by an electric motor.

5. Use of launching mechanisms is prohibited. The glider should be hand launched.

6. The potential difference, between any two points on the machine, must be lower than or equal to 12V (recommended voltages 7.2V, 7.4V, 8.4V, 9.6V, 11.4V or 12V) at any point of time during the competition.

7. Use of IC engines is prohibited. Only electrical motors are allowed (either brushed or blushless).

8. There are no restrictions on the size of the glider. Though it is recommended to have a wingspan of not more than 1.5 meters.

9. Thrust cannot be provided to the glider after the first minute of flight.

10. Participants must make all parts of the gliders themselves. Usage of Ready-to-Fly (RTF) and Almost-Ready-to-Fly (ARF) kits are strictly prohibited.
    However, the kit comprising of unassembled cut-pieces of balsa wood is allowed since it requires skilled work to be done upon it
    and one can assemble it to his or her advantage.
11. Also use of readymade
    Actuators/motors, remote controls and propellers are allowed.
    Note: Any team violating the above rule will be disqualified immediately.
12. Use of Gyroscope (Gyro) is prohibited.

COMPETETION

Participants will hand launch their glider from the launching zone. Once airborne, the glider will be allowed to use the powered motors to attain height in 1 minute, after which the power to the motor of the glider will be switched off. The participants will then control their gliders using a remote control so that it glides in air and then lands as close to center of landing zone i.e. the flag post as possible.
The 1 min for a hand launch glider will start when the glider leaves the hand of the participant. In this 1 minute time the participant can control the throttle of the motor so that the glider gains height.
Each team will be given 2 runs. A run is defined when the glider leaves the launching zone. Best of the two runs will be considered for final scores.
Note: The runs will not be consecutive and participants will have sufficient time for making any small changes in their glider if required.
The participants will be allowed 3 chances to launch the glider in every run i.e. if the glider doesn't fall out of the launching zone in an attempt to launch it, then they can re-launch their glider. However, only a total of 3 launch opportunities will be allowed in each run.
Time of flight is defined as the time starting from the moment the glider is released from the hands of the participants up to the moment when glider comes to a halt.
No additional points will be awarded after 3 minutes of time of flight.
The participants must devise a mechanism to kill the power supply to their glider. This mechanism must be demonstrated before the start of the flight.
The run of the participant will be disqualified if the throttle runs after the 1st min.

landing distance is the distance from the flag post to the nose of the glider. This distance will be measured from the position where glider finally comes to a halt. Nose will be defined as the front 3inch portion of the fuselage.
No part of the glider can detach itself while it is in flight. The glider must fly as a single entity.
If during landing the fuselage of the glider breaks the run will be disqualified.
The points system is as follows:

POINTS OF LANDING
A = 100 - 10z. Where 'z' is the zone given by the following table.

Distance range in meters Zone (z)
Within 2m-0
1.5m - 3m-1
3m - 4.5m-2
4.5m - 6m-3
6m - 7.5m-4
7.5m - 9m-5
9m - 10.5m-6
10.5m - 12m-7
12m - 13.5m-8
13.5m - 15m-9
Outside 15m-10

The landing score will be zero if the glider's nose lies outside 15 meters when it halts.

POINTS FOR TIME OF FLIGHT:
B = [no. of seconds in flight - 60]
The participant will get 0 points if the flight time is less than 1 minute.

Net points = A + B
Participant with maximum net points will be declared as winner.

The score will be taken for both the runs and the best run score will be used for judging.
In case of a tie, the team with maximum average score (average of the two runs) will be declared as winner. If average scores are also same, the one With maximum average time of flight wins.

GENERAL RULES

1. The teams must adhere to the spirit of healthy competition. The teams must not damage the opponent's aircraft in any way. Judges reserve the right to disqualify any team indulging in misbehavior.
2. Any team that is not ready at the time specified will be disqualified from the Competition automatically.
3. The aircraft would be checked for its safety before the event and would be discarded if found unsafe for other participants and spectators.
4. The organizers reserve all rights to change any or all of the above rules as they deem fit. Change in any rule, if any, will be highlighted on the website.

TEAM SPECIFICATIONS
A team must consist of a maximum of 4 members. Students from different Educational institutes can form a team.

RESOURCES

TUTORIALS WILL BE UPDATED SOON…

aeroclubvignan.com

aeroclubvignan.webs.com

For further queries on WINGS….

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