Delaware Technology Student Association

2018
MODEL ROCKETRY

Delaware Only Competition

"SERVING TECHNOLOGY EDUCATION STUDENTS"
SPONSORED BY THE DEPARTMENT OF EDUCATION

Updated - September 17, 2017

MODEL ROCKETRY

Overview: Delaware TSA contestants entering the model rocketry competition will design and construct an original scratch built model rocket that must take a size "A" engine. Any design is acceptable as long as safety standards are observed when designing and constructing the rocket.

Contest Purpose: The model rocketry design and competition will provide a means for TSA members to demonstrate their understanding of aerodynamics, the design process, and physics of rocketry through the construction of an original model rocket.

Eligibility for Entry: Entries are limited to one rocket per student. Competition will be for level I and level II. Rockets must meet safety criteria set forth in the Estes - Education Safety Rules for Model Rocketry.

Levels of Competition: Level I and Level II.

Time Limitations: The contest will run throughout the conference.

Specific Regulations:

a. **The Rocket** - Students must prepare a rocket made from "scratch". No kit components are allowed, except for the engine mount and launch lug. All other components are all to be designed and fabricated by the student including the nose cone and recovery system.
b. A recovery system must be part of the rocket - However, full parachutes cannot be used. They must have a hole or holes accounting for 1/2 the total area size of the parachute. No store purchased parachutes allowed.
c. Students will bring the rockets and reports to competition site at time of registration.
d. One "A" size engine and electronic launcher will be supplied by the Delaware TSA.
e. The rocket's body tube diameter cannot be any larger than 1 1/2" and its body tube length must be 8" ~~between 6 and 12".~~

Procedures:

a. Students will submit during the display events registration.
b. Weather permitting, all rockets will be launched at conference according to schedule.
c. Rockets will be launched and the rocket that has the longest flight time will be given the maximum points. A student entering the rocketry competition must be in attendance for their rocket launch, so he/she can adjust the angle prior to the launch.

Criteria for Judging:

<u>Please note</u>: Any model rocket that includes components from a kit other than those identified in the regulations will be disqualified.

a. Originality and appearance ..... 20 pts.

b. Rocket design adheres to concepts, meets specifications and safety codes? ..... 20 pts.

c. Rocket Flight..... 20 pts.
   _____ Flight is free of flutter, shuttle cocking.....15 pts.
   _____ Student has cooperated with judges and follows safety rules.....5 pts.

d. Flight time - Rockets will be timed from liftoff to point when rocket no longer descends

   Longest..... 20 pts.
   2nd..... 15 pts.
   3rd ..... 10 pts.

f. Rules violation ..... - 20 pts.

TSA STATE CONFERENCE

Competitive Event Evaluation

MODEL ROCKETRY

Student's ID: _____ Level: _____

Chapter/School: _____

*PLEASE NOTE: In event of unsuitable launch conditions the only judging criteria will be originality/appearance, design specifications/safety (A, B & F).

A. _____ **ORIGINALITY & APPEARANCE**.....**20 pts**.

_____ Fin design & alignment..... **5 pts.**

_____ Nose cone design & aerodynamic ..... **5 pts.**

_____ Overall aesthetic & finish ..... **5 pts.**

_____ Proper balance and weight distribution ..... **5 pts.**

B. _____ **DOES ROCKET MEET SPECIFICATIONS & SAFETY CODES** ..... **20 pts.**

_____ Tail fin, nose cone & recovery system are fabricated by student..... **10 pts.**

- Engine tube & launch lug can be "store bought".
- No full parachutes!
- Any rocket that does not meet the specifications will not be launched.

_____ Design meets safety standards ..... **10 pts.**

Any design that is a health hazard will not be launched.

C. _____ **ROCKET FLIGHT**..... **20 pts.**

D. _____ **FLIGHT TIME** ..... **20 pts.**

F. _____ **RULES VIOLATION** ..... - **20 pts.**

_____ **POINT TOTAL (80 possible)**

_____ **RANKING**

Judge's Signature _____