11th Annual **2016-2017**

Reach for the Stars ~ National Rocket Competition

Rules Synopsis

Revised 8-16

From National Association of Rocketry / Pink Book - Spot Landing Event

"The purpose of this competition is to land the entry so that
the tip of its nose cone is closest to a predetermined spot on the ground."

A minimum of 10 Competitors (age 10 - 18) required per local event
Host may run several RFTS Competitions throughout the year
Annual Deadline - June 30th
Results from local Competitions determine the 5 National Winners.
Annual National Winners' Celebrations under an 'October Sky'
Space Camp, **U.S. Space & Rocket Center**, Huntsville, Alabama

Rockets must be constructed, prepared and launched by the competitor*
One rocket per competitor
Must follow the manufacturer's instructions
Ready-to-fly rockets Do Not qualify / Assistance is limited to verbal coaching*
***Exceptions** - At host's discretion hands-on help can be offered to:
1. Insert starter / igniter 2. Competitors with disabilities -
***See complete competition rules for details**

In dry or windy conditions check with your local Fire Department to determine launch safety.

Three (3) on-site adult Judges required - One must be a Public Official
School Admin (Principal, Asst. Principal), Police or Fire Dept. (Ranking Officer),
Scout District or Council Leader, Elected Official (i.e. Mayor), etc.
Host may act as judge / Relatives of participating competitors cannot be judges
This is a National Competition and Should be Treated Seriously

1. Target (clearly marked & easily visible) should be placed **50' downrange** from launch pad.
   a. Target must be fixed to ground to prevent accidental movement.
      ex: a nail through a piece of paper or small flag on dowel
2. Rocket must be propelled by an "A" engine (ex: A8-3 / A6-4) and landed by parachute
3. In an order selected at random, each competitor will launch and mark their landing spot.
   a. Judges will determine if the rockets are safe for launch.
   b. Touchdown spot of the tip of the nosecone should be immediately marked.
      buried cable marking flags, golf tees, bamboo skewers, nails with tape flags or similar device make good markers
   c. A launching angle of less than thirty degrees from vertical must be used. (**NAR** Pink Book)

Note: In the event that the judges cannot agree on the touchdown spot - the touchdown will be determined as a point halfway between the two points in question.

4. All competitors launch for the second time and mark the landing spot.
   IMPORTANT: No repairs may be made prior to the second launch.
5. Measurements must be taken in feet and inches to the nearest 1/4 inch.
   a. Metric measure may be used - but must be converted before submitting the Entry Form.

Note: Only the winning competitor needs to be measured with accuracy. All others may be estimated.

6. Record as 50 feet any:
   a. landing at a distance greater than 50 feet.
   b. landing that does not reach the ground (landings in trees, ponds, etc.)
   c. rocket unable to fly.
   d. rocket that cannot be returned to the judges.
   e. rocket that separates into two or more unattached pieces.
7. Closest average distance wins! (D1 + D2 / 2 = average distance)
   (landing one distance) plus (landing two distance) divided by 2, equals (average distance)
   Note: It is best to convert measurements to inches before averaging.
8. Collect required signatures, fill out and submit **Entry Form**
   ***Note**: For accuracy – Entry Form should be completed on launch day if possible.*
9. Award certificates - can be done at a later date if desired. (Parent night, awards banquet, etc.)

11th Annual **Reach for the Stars ~ National Rocket Competition** **2016-17**

Quick Reference Guide (See complete rules for details)

Rocket **These models qualify** ***Estes -*** *Alpha* (#1225) *Alpha III* (#1256) *Gen E2X* (#1764) ***Quest -*** *Astra* (#1004) *Astra III* (#1610) ***Custom –*** *Freedom* (#10024) *Sierra* (#10031)	Length 11 ½" to 15 ½"	Diameter .95" to 1.25"	Weight not to exceed 2 ½ oz (71 grams) *including parachute *without engine / motor Most commercial kits that fit the dimensions have acceptable weight. **No weight may be added to effect flight and landing**
Parachute	Minimum six shrouds 8" to 14" in length	Diameter 11" to 15"	All or part of spill-hole may be removed (max 4 ¼"diam.) **Note: nothing may be done to prevent the parachute from opening fully**
Fins	3 to 6	Non-metal	
Engines / Motors	A8-3	A6-4	0.11 to 0.12 oz of Propellant Total Impulse of 2.5 Newtons 3 to 4 second delay
Launch Rod	Length 38" maximum	Launch Angle less than 30° from vertical	
Target	**50' downrange**	Clearly Visible	Stationary

A. Purpose

1. The purpose of this competition is to foster an interest in model rocketry, STEM (Science, Technology, Engineering, Math) subjects and aeronautics.
2. The goal of the program is to give kids the unique educational experience of building and launching their own solid-fuel powered rocket.
3. The mission of the program is to keep alive the memory of *Christa McAuliffe* / 1st Teacher-in-Space.

B. Eligibility

1. Open to anyone residing in any of the United States except where prohibited by law.
2. Competitor must be between the ages of ten (10) and eighteen (18) at time of launch.
3. **A minimum of 10 Competitors are required for each local Competition.**
4. Host must register before running Competition.
   Host may run several Local Competitions per year.
5. **Each competitor must build, prep* and launch their own rocket. One rocket per competitor.**
   ***Exceptions** - At host's discretion hands-on help can be offered to:
   1. Insert starter / igniter 2. Competitors with disabilities -
   ***See complete rules for details**
6. Competition hosts are encouraged to award prizes at the local level.
7. National Winners are determined from the local competition entries submitted by the deadline.

C. National Winners' Celebration

Five (5) National Winners will be invited to celebrate under an "October Sky" at **Space Camp / U.S. Space & Rocket Center**, Huntsville, Alabama.

Go to www.RocketCompetition.com for details.