

6th Annual Reach for the Stars ~ National Rocket Competition Rules Synopsis

***CC – Collegiate Challenge Rule Exceptions**

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.”

Minimum of 10 Competitors required per local event

Rockets must be constructed, prepared and launched by the competitor

***Only Collegiate Challengers may redesign their rockets and parachutes.**

Other Levels must follow the manufacturers instructions.

Ready-to-fly rockets Do Not qualify / Assistance is limited to verbal coaching

See complete competition rules for details

Two on-site adult Judges required

One must be a Public Official

School Admin or Full Time Staff (required for CC), Police or Fire Dept. Ranking Officer, Scout District Leader, Elected Official (i.e. Mayor), etc.

Host may act as judge / Judges should not be competitors

1. Target (clearly marked & easily visible) should be placed 20' 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 and landed by parachute
3. In an order selected at random, each competitor will launch and mark their landing spot.
 - a. Touchdown spot of the tip of the nosecone should be immediately marked.
Note: a golf tee or similar device makes a good marker
 - b. A launching angle of less than thirty degrees from the 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. At least 3 competitors with the closest landings launch again and mark the second landing spot. It is preferred that all competitors launch twice. ***CC all competitors launch twice.**
 - a. **IMPORTANT:** No repairs may be made prior to the second launch.
 - b. The distances from the target will then be measured.
5. Measurements must be taken in feet and inches to the nearest 1/4 inch.
 - a. Metric measure may be used but must be carefully converted before submitting the National Entry.
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!
(landing one distance, plus landing two distance, divided by 2, equals average distance)
8. Fill out, sign and submit National Competition Entry Form
9. Award certificates. This can be done at a later date if desired. parent night, awards banquet, etc.

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Quick Reference Guide (See rules for details)

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<p>Rocket</p> <p><i>Examples</i> Estes - Alpha (#1225) Alpha III (#1256) Generic E2X (#1764) Quest - Astra (#1004) Astra III (#1610) Custom – Freedom (#10024) Sierra (#10031)</p>	<p>Length 11 ½” to 15 ½”</p> <p>*CC – no limit on length</p>	<p>Diameter .95” to 1.25”</p> <p>*CC – no limit on diameter</p>	<p>Weight not to exceed 2 ½ oz (71 grams)</p> <p>*CC 3 ½ oz (100 grams) *including parachute *without engine / motor</p> <p>Note: Only *CC Level may add weight to affect altitude. A postal scale is helpful in weighing rockets.</p>
<p>Parachute</p>	<p>Minimum six shrouds 8” to 14” in length</p>	<p>Diameter 11 ½” to 14 ½”</p> <p>*CC – surface area must be at least 50 sq in</p>	<p>All or part of spill-hole <u>may</u> be removed (max 4 ¼” diam.)</p> <p>Note: nothing may be done to prevent the parachute from opening fully</p>
<p>Fins</p>	<p>3 to 5</p>	<p>Non-metal</p>	<p>*CC – fins of any design are acceptable</p>
<p>Engines / Motors</p>	<p>A8-3</p>	<p>A6-4</p>	<p>0.11 to 0.12 oz of Propellant Total Impulse of 2.5 Newtons 3 to 4 second delay</p>
<p>Launch Rod</p>	<p>Length 38” maximum</p>	<p>Launch Angle less than 30° from vertical</p>	
<p>Target</p>	<p>20’ downrange</p>	<p>Clearly Visible</p>	<p>Stationary</p>

A. Purpose

1. The purpose of this competition is to foster an interest in model rocketry, STEM subjects and space science.
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* – **First 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 at least ten years of age at time of launch.
3. A minimum of 10 Competitors are required for each local Competition.
4. Groups must register before running Competition.
5. Competitors in the **Collegiate Challenge** must be currently enrolled at a college or university.

C. Prizes

1. One national winner at each level (Kids, Intermediate, Open) for each Celebration will be awarded the Grand Prize – maximum 6 winners.

Note: There is only one **Collegiate Challenge** National Winner. Celebration is at the **US Astronaut Hall of Fame, Kennedy Space Center, Florida**

2. Competition hosts are encouraged to award prizes at the local level.