

# 2022 4-H Rocket Exhibit Information

This document supersedes and replaces all previous revisions of the form.

Please complete this form and glue to a 10 X 13 envelope. **Place plans, pages of photos, & other required documentation inside the envelope.**

NAME: \_\_\_\_\_ COUNTY or DISTRICT: \_\_\_\_\_

YEARS IN \_\_\_\_\_ YEARS AT COUNTY FAIR \_\_\_\_\_ 4-H  
PROJECT: \_\_\_\_\_ EXHIBITING ROCKETRY: \_\_\_\_\_ AGE: \_\_\_\_\_

CLUB: \_\_\_\_\_

TYPE:  Kit  Original Design  Scale Model  MPR  HPR  Model

*Original designs, add at least 1 written page documenting stability:*  YES  Does Not Apply

*High Power (HPR)/Mid-power Rockets (MPR) additional form(s) included:*  YES  Does Not Apply

Name of Rocket: \_\_\_\_\_ Skill Level: \_\_\_\_\_

## Launch Data:

Weather Conditions: \_\_\_\_\_

(Example: Clear, Cloudy, South wind, etc.)

Is the wind speed greater than 20 Miles per Hour:  YES  NO

(Entire Trees Move back and forth)

Is a burn ban in effect for the county you will launch in:  YES  NO

(If so do not launch your rocket)

Did your rocket have flight damage:  YES  NO

(If so, on a separate page, document & include photo(s))

Did you make changes to your rocket which are not part of the plans:  YES  NO

(If so, on a separate page, document the modifications and swing test results)

Launch Date: \_\_\_\_\_ Engine Size used to launch: \_\_\_\_\_

(Example: B6-2)

Altitude Achieved when you launched \_\_\_\_\_ (Feet or Meters)

(Visit <https://www.kansaspacetech.com/rocketry/> for a simple altitude tracker)

Example: 750 ft.

Explain how you measured the altitude (include additional pages if needed).

Explain in 1 - 5 sentences your construction experiences this year in rocketry.

I have complied with the rules that set forth by the NAR for building and launching the rocket I am exhibiting.

Members Signature: \_\_\_\_\_

This information can be found at your County Extension Office, <http://www.nar.org>, or <http://www.STEM4KS.com/rocketry/>

Check off each item as you prepare your rocket for the fair. Either place completed list inside of envelope OR keep at home. (*This list has no impact on judging and does not need included in the packet.*)

- Read the fair rules
- At least one page of pictures and no more than five pages. (one side only)
- Plans for the rocket (or copy) included.
- Measured the altitude (**NO estimating**)
- No more than one 'D' engine (2 'C's, 4 'B's, 8 'A's) without a NAR or Tripoli membership.
- NO Engines or igniters (in the rocket or as part of the display)
- NO launch pads
- Contact the FAA **IF** the rocket weighs more than one pound (453 grams) at liftoff or has more than four ounces (113 grams) of propellant; per:  
*CFR Title 14 → Chapter I → Subchapter F → Part 101 → §101.27 "ATC notification for all launches" [http://www.ecfr.gov/cgi-bin/text-idx?rgn=div5&node=14:2.0.1.3.15#se14.2.101\\_127](http://www.ecfr.gov/cgi-bin/text-idx?rgn=div5&node=14:2.0.1.3.15#se14.2.101_127)*
- Act safely.
- Have fun!

# NAR Model Rocket Safety Code

Effective August 2012

1. **Materials.** I will use only lightweight, non-metal parts for the nose, body, and fins of my rocket.
2. **Motors.** I will use only certified, commercially-made model rocket motors, and will not tamper with these motors or use them for any purposes except those recommended by the manufacturer.
3. **Ignition System.** I will launch my rockets with an electrical launch system and electrical motor igniters. My launch system will have a safety interlock in series with the launch switch, and will use a launch switch that returns to the “off” position when released.
4. **Misfires.** If my rocket does not launch when I press the button of my electrical launch system, I will remove the launcher’s safety interlock or disconnect its battery, and will wait 60 seconds after the last launch attempt before allowing anyone to approach the rocket.
5. **Launch Safety.** I will use a countdown before launch, and will ensure that everyone is paying attention and is a safe distance of at least 15 feet away when I launch rockets with D motors or smaller, and 30 feet when I launch larger rockets. If I am uncertain about the safety or stability of an untested rocket, I will check the stability before flight and will fly it only after warning spectators and clearing them away to a safe distance. When conducting a simultaneous launch of more than ten rockets I will observe a safe distance of 1.5 times the maximum expected altitude of any launched rocket.
6. **Launcher.** I will launch my rocket from a launch rod, tower, or rail that is pointed to within 30 degrees of the vertical to ensure that the rocket flies nearly straight up, and I will use a blast deflector to prevent the motor’s exhaust from hitting the ground. To prevent accidental eye injury, I will place launchers so that the end of the launch rod is above eye level or will cap the end of the rod when it is not in use.
7. **Size.** My model rocket will not weigh more than 1,500 grams (53 ounces) at liftoff and will not contain more than 125 grams (4.4 ounces) of propellant or 320 N-sec (71.9 pound-seconds) of total impulse.
8. **Flight Safety.** I will not launch my rocket at targets, into clouds, or near airplanes, and will not put any flammable or explosive payload in my rocket.
9. **Launch Site.** I will launch my rocket outdoors, in an open area at least as large as shown in [the accompanying table](#), and in safe weather conditions with wind speeds no greater than 20 miles per hour. I will ensure that there is no dry grass close to the launch pad, and that the launch site does not present risk of grass fires.
10. **Recovery System.** I will use a recovery system such as a streamer or parachute in my rocket so that it returns safely and undamaged and can be flown again, and I will use only flame-resistant or fireproof recovery system wadding in my rocket.
11. **Recovery Safety.** I will not attempt to recover my rocket from power lines, tall trees, or other dangerous places.

LAUNCH SITE DIMENSIONS		
Installed Total Impulse (N-sec)	Equivalent Motor Type	Minimum Site Dimensions (ft.)
0.00–1.25	1/4A, 1/2A	50
1.26–2.50	A	100
2.51–5.00	B	200
5.01–10.00	C	400
10.01–20.00	D	500
20.01–40.00	E	1,000
40.01–80.00	F	1,000
80.01–160.00	G	1,000
160.01–320.00	Two Gs	1,500

Revision of August, 2012