

Certificate of Model Rocket Launch

Student:

I have read the National Association of Rocketry (NAR) Model Rocket Safety Code. All model rockets I launch for my project being entered in the Synopsys Science and Technology Championship will conform to this safety code.

I will launch my model rockets under the supervision of a representative of a local chapter of the NAR. The weight at liftoff, amount of propellant and the installed total impulse for each model rocket is listed on this certificate:

Rocket No.	Weight (gm or oz)	Amount propellant (gm or oz)	Installed total impulse (N-sec)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Student Signature

Student name printed

Date

NAR Representative:

I have observed the above model rocket launches and find that they conform to the NAR Model Rocket Safety Code and comply with the California State Fire Code Title 19 which governs the launch of model rockets in California.

NAR Representative Signature

Print name

Date

Location of launch

Local NAR organization

NAR Model Rocket Safety Code

Materials. I will use only lightweight, non-metal parts for the nose, body, and fins of my rocket.

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.

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.

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.

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.

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.

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. If my model rocket weighs more than one pound (453 grams) at liftoff or has more than four ounces (113 grams) of propellant, I will check and comply with Federal Aviation Administration regulations before flying.

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.

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.

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.

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 February, 2001

From the web site of NAR:

[Http://www.nar.org/NARmrsc.html](http://www.nar.org/NARmrsc.html)

Local NAR Affiliate Organizations which supervise model rocket launches in compliance with the California State Fire Code Title 19 include:

Livermore Unit of the NAR (LUNAR) # 534

Jack Hagerty
785 Jefferson Avenue
Livermore, CA 94550
(925) 455-1143
Jhagerty@juno.com
www.lunar.org

Launches: Third Saturday each month at Robertson Park practice field at the whim of the landowner. Check web page for latest schedule.

San Francisco Bay Area NAR (BAYNAR) # 359

Louis Dick
6273 Paso Los Cerritos
San Jose, CA 95120
(408) 268-6071
info@baynar.org
www.baynar.org

Pioneer Rocketry and Space Group (PRSG) # 631

William D. Lewis
469 Heatherbray Court
San Jose, CA 95136
(408) 267-1915

Web site for National Association of Rocketry is <http://www.nar.org>