

Texas A&M SEDS  
(Students for Exploration and Development of Space)  
Detail Operations Manual for Model Rocket projects  
As TAMU SEDS activity

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03/11/2005

Revised 4/20/2005

**Texas A&M SEDS (Students for Exploration and Development of Space) Detail Operations  
Manual for Model Rocket projects.**

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## II. Launch site

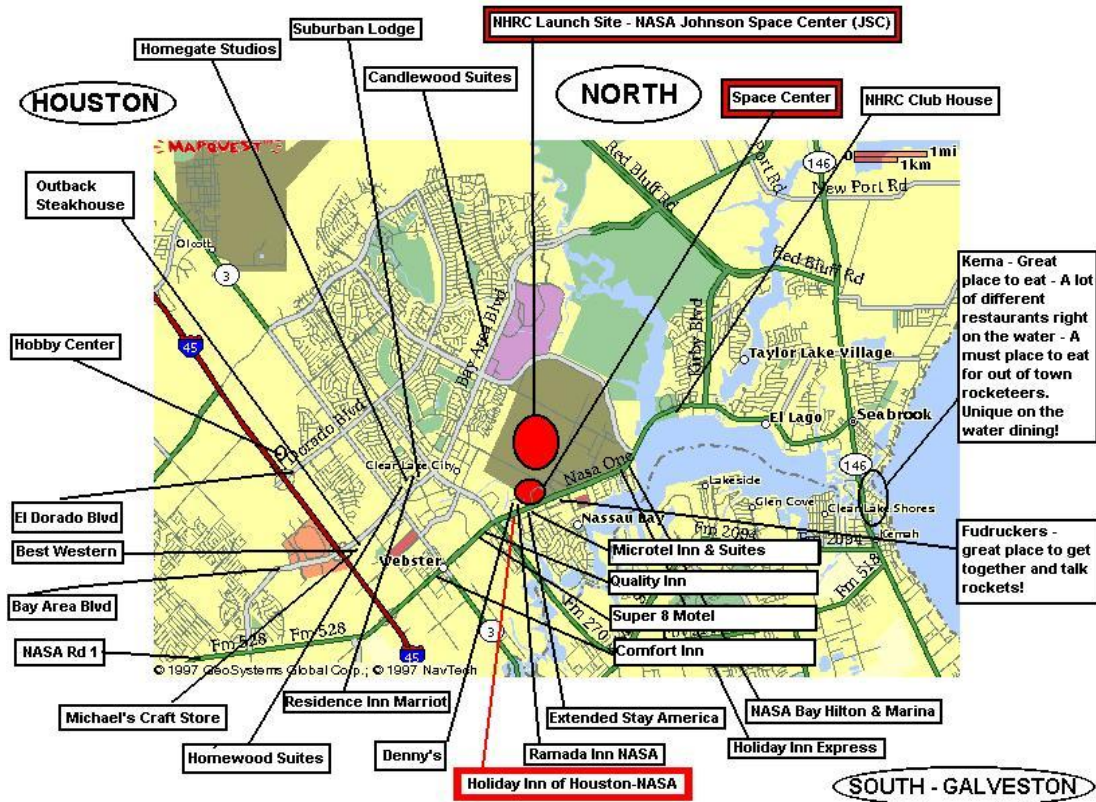
### (1) Hearne, TX



Date: May 28-29, 2005 / After May: TBA  
Location: Hearne, TX  
Event: May Memorial Meet  
Class of Event: Regional Meet  
Contest Events: A BG, A HD, A PD, A SRD, G SD, PRD  
Sponsor: Alamo #661 and HCR #671  
Contact: Art Applewhite [rocket877@aol.com](mailto:rocket877@aol.com) 830-896-6331  
Waiver: 3,500  
Notes: This launch is open to everyone, especially children and people new to model rocketry. Launch fees will be 25 cents per flight until the \$100 airport use fee is collected and free after that. Donations are gratefully accepted. Children 12 and under fly free regardless. There will be no contest fees. Non-NAR members are welcome to participate in contest events.

(2) Houston, TX

<http://www.nhrc.homestead.com/>



Date: First and Third Saturday of every month.  
Location: Johnson Space Center, Houston, TX  
Event: NASA/Houston Rocket Club Sport Launch  
Class of Event:  
Contest Events:  
Sponsor: NASA/Houston Rocket Club, NAR #365, TRA#2  
Contact: Warren Benson- [warren@prodigy.net](mailto:warren@prodigy.net)  
Waiver:  
Notes: No waiver, model rockets to FAA notice limits only 3.3lbs total weight and 125 grams total propellant weight (small H motors). **Membership in the NHRC is required to gain admittance to the JSC launch site.** High Power launches are held at other venues outside the Houston area. Please see our website at <http://www.nhrc.homestead.com> for more information and membership application.

# NASA/HOUSTON ROCKET CLUB

## Membership Application

### Reasons to join NASA/Houston Rocket Club:

- Gain access to one of the best metropolitan flying areas in the nation (Johnson Space Center in Clear Lake).
- Launches are supervised by trained and experienced rocketeers.
- NASA approved safety procedures are followed.
- Stay informed by receiving the NHRC newsletter, the Rendezvous.
- Fly and share information with other rocketeers of all skill levels.
- NAR competition. Test your skills with all sorts of altitude and duration events in a competitive environment.
- NAR and TRA high power certification and access to commercial motors through M class.
- Waivered launches several times a year to fly those really big birds like 1/2 scale patriot missiles.
- Support Club BBQ and Christmas parties

The NHRC flies inside NASA's LBJ Space Center in Clear Lake on the first and third Saturdays of every month. Vote at our monthly meetings and direct the club's future rocket activities. 9 a.m. until 2 p.m. You will need this NHRC membership (or other NASA pass) to enter Johnson Space Center. We also fly at other fields outside the city limits of Houston where we obtain FAA waivers to fly really big and really high. Our meetings are held on the third Saturday from approximately 12:30 to 3:00 (immediately following an abbreviated launch) at the Clear Lake park meeting room on NASA road 1.

### NASA/Houston Rocket Club Membership Dues

Yearly membership in the NHRC is \$15 for individuals and \$20 for Families. Renewals are due March 1 of each year. See chart to the left for proper payment:

Name \_\_\_\_\_ Age \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Home Phone(\_\_\_\_) \_\_\_\_\_ Work Phone(\_\_\_\_) \_\_\_\_\_  
NAR # \_\_\_\_\_ TRA# \_\_\_\_\_ Certification Level 1, 2, 3  
E-Mail \_\_\_\_\_  
Address \_\_\_\_\_

#### Please circle yes or no to the following:

Are you NASA employee? yes / no Are you a NASA Contractor? yes / no

Do you want your address, phone number and e-mail address published in the club roster? yes / no

\*NASA/Houston Rocket Club (NHRC) will not publish or release this information without your permission to anyone other than NASA (required for access.)

Complete for family memberships only:

Name \_\_\_\_\_ Age \_\_\_\_\_ NAR# \_\_\_\_\_ TRA# \_\_\_\_\_

Enrolment Month	Individual Dues	Family Dues
March	\$15.00	\$20.00
April	\$13.75	\$18.33
May	\$12.50	\$16.67
June	\$11.25	\$15.00
July	\$10.00	\$13.33
August	\$8.75	\$11.67
September	\$7.50	\$10.00
October	\$6.25	\$8.33
November	\$5.00	\$6.67
December	\$3.75	\$5.00
January	\$2.50	\$3.33
February	\$0.00	\$0.00

Name\_\_\_\_\_Age\_\_\_\_\_NAR#\_\_\_\_\_TRA#\_\_\_\_\_  
Name\_\_\_\_\_Age\_\_\_\_\_NAR#\_\_\_\_\_TRA#\_\_\_\_\_

Mail completed form along with your check or money order made payable  
to: [NASA/Houston Rocket Club](#)

c/o Linda Dehart

**Got more questions? See our WEB SITE at [www.nhrc.homestead.com](http://www.nhrc.homestead.com)**  
25603 Spring Ridge Dr NAR web site [www.nar.org](http://www.nar.org) Tripoli web site [www.tripoli.org](http://www.tripoli.org)  
Spring, TX 77386

Ref. from <http://nar.org/NARhpsc.html>

## Model Rocket Safety Code

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.
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. 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.
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.

<b>LAUNCH SITE DIMENSIONS</b>		
<b>Installed Total Impulse (N-sec)</b>	<b>Equivalent Motor Type</b>	<b>Minimum Site Dimensions (ft.)</b>
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

## High Power Rocket Safety Code

1. **Certification.** I will fly high power rockets only when certified to do so by the National Association of Rocketry.

2. **Operating Clearances.** I will fly high power rockets only in compliance with [Federal Aviation Regulations Part 101](#) (Section 307, 72 Statute 749, 49 United States Code 1348, "Airspace Control and Facilities," Federal Aviation Act of 1958) and all other federal, state, and local laws, rules, regulations, statutes, and ordinances.
3. **Materials.** My high power rocket will be made of lightweight materials such as paper, wood, rubber, and plastic, or the minimum amount of ductile metal suitable for the power used and the performance of my rocket.
4. **Motors.** I will use only commercially-made, NAR-certified rocket motors in the manner recommended by the manufacturer. I will not alter the rocket motor, its parts, or its ingredients in any way.
5. **Recovery.** I will always use a recovery system in my high power rocket that will return it safely to the ground so it may be flown again. I will use only flame-resistant recovery wadding if wadding is required by the design of my rocket.
6. **Weight and Power Limits.** My rocket will weigh no more than the motor manufacturer's recommended maximum liftoff weight for the motors used, or I will use motors recommended by the manufacturer of the rocket kit. My high power rocket will be propelled by rocket motors that produce no more than 40,960 Newton-seconds (9,204 pound-seconds) of total impulse.
7. **Stability.** I will check the stability of my high power rocket before its first flight, except when launching a rocket of already proven stability.
8. **Payloads.** My high power rocket will never carry live animals (except insects) or a payload that is intended to be flammable, explosive, or harmful.
9. **Launch Site.** I will launch my high power rocket outdoors in a cleared area, free of tall trees, power lines, buildings, and dry brush and grass. My launcher will be located at least 1,500 feet from any occupied building. My launch site will have minimum dimensions at least as great as those in the Launch Site Dimension Table. As an alternative, the site's minimum dimension will be one-half the maximum altitude of any rocket being flown, or 1,500 feet, whichever is greater. My launcher will be no closer to the edge of the launch site than one-half of the minimum required launch site dimension.
10. **Launcher.** I will launch my high power rocket from a stable launch device that provides rigid guidance until the rocket has reached a speed adequate to ensure a safe flight path. To prevent accidental eye injury, I will always place the launcher so the end of the rod is above eye level or I will cap the end of the rod when approaching it. I will cap or disassemble my launch rod when not in use and I will never store it in an upright position. My launcher will have a jet deflector device to prevent the motor exhaust from hitting the ground directly. I will always clear the area for a radius of ten feet around my launch device of brown grass, dry weeds, or other easy-to-burn materials.
11. **Ignition System.** The system I use to launch my high power rocket will be remotely controlled and electrically operated. It will contain a launching switch that will return to "off" when released. The system will contain a removable safety interlock in series with the launch switch. All persons will remain at a distance from the high power rocket and launcher as determined by the total impulse of the installed rocket motor(s) according to the accompanying Safe Distance Table.
12. **Launch Safety.** I will ensure that people in the launch area are aware of the pending high power rocket launch and can see the rocket's liftoff before I begin my audible

five-second countdown. I will use only electrical igniters recommended by the motor manufacturer that will ignite rocket motors within one second of actuation of the launching switch. If my high power rocket suffers a misfire, I will not allow anyone to approach it or the launcher until I have made certain that the safety interlock has been removed or that the battery has been disconnected from the ignition system. I will wait one minute after a misfire before allowing anyone to approach the launcher.

13. **Flying Conditions.** I will launch my high power rocket only when the wind is no more than 20 miles per hour and under conditions where the rocket will not fly into clouds or when a flight might be hazardous to people, property, or flying aircraft. Prior to launch, I will verify that no aircraft appear to have flight paths over the launch site.
14. **Pre-Launch Test.** When conducting research activities with unproven designs or methods I will, when possible, determine the reliability of my high power rocket by pre-launch tests. I will conduct the launching of an unproven design in complete isolation from persons not participating in the actual launching.
15. **Launch Angle.** I will not launch my high power rocket so its flight path will carry it against a target. My launch device will be pointed within 20 degrees of vertical. I will never use rocket motors to propel any device horizontally.
16. **Recovery Hazards.** If a high power rocket becomes entangled in a power line or other dangerous place, I will not attempt to retrieve it. I will not attempt to catch my high-power rocket as it approaches the ground.

**LAUNCH SITE DIMENSION TABLE**

<b>Total Impulse All Engines (Newton-Seconds)</b>	<b>Equivalent Motor Type</b>	<b>Minimum Site Dimensions (ft.)</b>	<b>Equivalent Dimensions</b>
160.01 -- 320.00	H	1,500	
320.01 -- 640.00	I	2,500	Half mile
640.01 -- 1,280.00	J	5,280	One mile
1,280.01 -- 2,560.00	K	5,280	One mile
2,560.01 -- 5,120.00	L	10,560	Two miles
5,120.01 -- 10,240.00	M	15,840	Three miles
10,240.01 -- 20,480.00	N	21,120	Four miles
20,480.01 -- 40,960.00	O	26,400	Five miles

**SAFE DISTANCE TABLE**

<b>Total Impulse All Engines (Newton- Seconds)</b>	<b>Equivalent Motor Type</b>	<b>Minimum Distance From Rocket With Single Motor (ft.)</b>	<b>Minimum Distance From Rocket With Multiple Motors (ft.)</b>
160.01 -- 320.00	H	100	200
320.01 -- 640.00	I	100	200

640.01 -- 1,280.00	J	100	200
1,280.01 -- 2,560.00	K	200	300
2,560.01 -- 5,120.00	L	300	500
5,120.01 -- 10,240.00	M	500	1,000
10,240.01 -- 20,480.00	N	1,000	1,500
20,480.01 -- 40,960.00	O	1,500	2,000

Revision of July, 1995

## Radio Control Rocket Glider Safety Code

The following code is to be used in conjunction with the NAR [Model Rocket Safety Code](#) and [High Power Rocket Safety Code](#). In areas where the R/C RBG code overlaps these other codes, the R/C RBG code takes precedence.

1. **Definition.** A Radio-Controlled (R/C) Rocket Boosted Glider (RBG) is defined as a rocket boosted model capable of gliding flight and equipped with a radio control system capable of controlling the direction of flight during glide and, optionally, boost.
2. **Radio Control.** I will use only approved radio equipment operating on frequencies allocated for use in flying models. I will check the radio and reception range of any new model, repaired model, or any new combination of model and radio system. I will only fly if the radio system is operating properly and there is no interference. I will ensure that a frequency control method is being used at the flying site, then check I am transmitting on an unused frequency.
3. **Flightworthiness.** I will check that the model is in safe and controllable condition for glide as well as in proper trim for rocket boost before each flight. I will not fly in the presence of spectators until I can safely boost, fly, and land models of the type I am flying.
4. **Motor Thrust.** My R/C RBG will weight no more than the motor manufacturer's recommended maximum lift-off weight for the motors when used in R/C RBGs.
5. **Launch Angle.** An R/C RBG may be launched at angles of 30 to 45 degrees from vertical provided that it is capable of having its flight path controlled safely during rocket boost and provided that the launcher is pointed away from specified spectator areas. Otherwise the R/C RBG may not be launched at an angle exceeding 30 degrees from vertical.
6. **Air-starts.** During stable, gliding flight of the R/C RBG, an attached motor may be air-started to increase the model's altitude or airspeed without diving. This is permitted if:

The onboard R/C ignition system is designed to not to be triggered accidentally, possesses an arm/disarm system, and is not armed until the model is on the pad with the radio system turned on and verified.

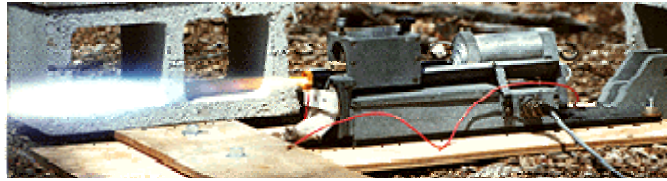
- a. The proposed airstart was reviewed and approved by the Range Safety Officer (if present) prior to launch.
- b. The model heading is not toward spectators.
- c. The model is at least 100 feet above the launch site.
- d. The pilot gives a loud countdown for the air-start.

If the model descends below the minimum altitude for air-starts or the air-start fails, the model will be landed in a safe area, clear of people, and only the pilot or pilot's appointed helper will be allowed to approach the model until the ignition system has been disarmed.

7. **Launch.** The pilot will verify the glider's radio system and transmitter are turned on, in the desired configuration, and working prior to signaling the Launch Control Officer (LCO) the model is ready for launch. The LCO will coordinate with the pilot when to launch the model, remaining alert to possible calls from the pilot for the count to be stopped. Pilots may launch their models with their own launch controller if the LCO agrees. In the event of an apparent misfire, the pilot should remain ready to control the model until the ignition system has been disabled.

## Rocket Motor Information

State and federal law require all rocket engines to be independently tested before they may be sold in the United States.



At its testing facilities at the Massachusetts Institute of Technology, the NAR Standards and Testing Committee performs this quality assurance for every individual rocket

engine type and classification available to general consumers.

S&T not only tests new engine offerings, but re-tests each approved engine type once in every three-year cycle to ensure repeatability and help identify creeping degradation in manufacturing or distribution practices. In addition, S&T collects and reduces data from [motor malfunction reports](#) sent in by consumers, using this data to trigger special testing of questionable engines and engine lots.

Model rocket engines are tested according to criteria found in [National Fire Protection Association \(NFPA\)](#) Codes 1122 (for model rocket motors) and 1127 (for high-power rocket motors). These include accurate total impulse and time delay; sensitivity to shock, temperature, and other environmental considerations; adequacy of safety instructions; and gross operational correctness.



S&T's computer-controlled engine testing fixtures can process motors as fast as they can be prepared for firing, and can measure variations in performance to hundreds of parts of a second.

For each motor type certified, S&T publishes a data sheet, available from [NAR Technical Services \(NARTS\)](#), containing various static and operational parameters of the motor and including a typical thrust curve.

NAR grants certification to two levels. The first, "NAR Certification," denotes that a given motor satisfies the requirements of NFPA 1122 or NFPA 1127. The second, "Contest Certification," specifies that a NAR-certified model rocket motor is widely enough available to the general consumer to allow its fair use in sanctioned model rocket competition.

## Standard Motor Codes

### How To Interpret Rocket Motor Codes

Sport rocket motors approved for sale in the United States are stamped with a three-part code that gives the modeler some basic information about the motor's power and behavior:



1. A letter specifying the total impulse ("C");
2. A number specifying the average thrust ("6");
3. A number specifying the time delay between burnout and recovery ejection ("3").

### **Total Impulse**

Total impulse is a measure of the overall total energy contained in a motor, and is measured in Newton-seconds. The letter "C" in our example motor above tells us that there is anywhere from 5.01 to 10.0 N-sec of total impulse available in this motor.

In a typical hobby store you will be able to find engines in power classes from 1/2A to D. However, E, F, and some G motors are also classified as model rocket motors, and modelers certified for high power rocketry by the NAR can purchase motors ranging from G to K.

Since each letter represents twice the power range of the previous letter, total available power increases rapidly the further you progress through the alphabet.

### **Average Thrust**

Average thrust is a measure of how slowly or quickly the motor delivers its total energy, and is measured in Newtons. The "6" in our example motor tells us that the energy is delivered at a moderate rate (over about 1.7 seconds). A C4 would deliver weaker thrust over a longer time (about 2.5 seconds), while a C10 would deliver a strong thrust for a shorter time (about a second).

As a rule of thumb, the thrust duration of a motor can be approximated by dividing its total impulse by its average thrust.

Keep in mind that you cannot assume that the actual total impulse of a motor lies at the top end of its letter's power range -- an engine marked "C" might be engineered to deliver only 5.5 Newton-seconds, not 10.

### **Time Delay**

The rocket is traveling very fast at the instant of motor burnout. The time delay allows the rocket to coast to its maximum altitude and slow down before the recovery system (such as a parachute) is activated by the ejection charge.

The time delay is indicated on our sample motor is 3 seconds. Other typical delay choices for C engines are 5 and 7. Longer delays are best for lighter rockets, which will coast upwards for a long time. Heavier rockets usually do better with shorter delays -- otherwise the rocket might fall back down to the ground during the delay time.

Motors marked with a time delay of 0 (e.g., "C6-0") are booster engines. They are not designed to activate recovery systems. They are intended for use as lower-stage engines in multi-stage rockets. They are designed to ignite the next stage engine immediately once their own thrust is finished. Often their labels are printed in a different color to help prevent you from using them in a typical rocket. In a multi-stage rocket, you would usually select a very long delay for your topmost engine.

## Membership & Insurance for NAR

### **Membership Category**

Membership dues entitle you to twelve months of membership, and automatically include \$1-million liability insurance for all sport rocketry activities conforming to the NAR Safety Codes.

<input checked="" type="checkbox"/> <b>JUNIOR</b> (ages 15 and under)	\$25.00
<input type="checkbox"/> <b>LEADER</b> (ages 16 to 20)	\$25.00
<input type="checkbox"/> <b>SENIOR</b> (ages 21 and older)	\$62.00

**1. What activities does NAR individual insurance cover?**

NAR insurance is general liability coverage included as part of your membership benefits. Individual insurance covers the insured NAR member for accident losses solely arising out of NAR sport rocketry activities, including both model and high power rockets. It protects the owner of the model in the event his rocket causes damage or injury to the person or property of another. Please remember that NAR insurance is secondary -- i.e., other coverage you may have (for example, under homeowners' policy) must be exhausted first before NAR insurance would pay.

**2. What are the coverage limits of the insurance?**

The NAR policy limit is \$1,000,000 per occurrence and \$2,000,000 aggregate per annum.

**3. What are the deductibles for the insurance?**

The NAR policy has a \$5,000 deductible per Bodily Injury & Property Damage Claim. Members are personally responsible for payment of the first \$500 of the deductible. In the event of a claim filing, failure to pay the deductible may be cause for the loss of membership benefits.

**4. When do NAR insurance benefits kick in on a claim? After my personal insurance has been exhausted?**

Yes. NAR individual insurance is secondary coverage, meaning it applies only after all other applicable coverages you might have (such as a homeowners' policy) are exhausted. (There normally is no deductible on your personal liability insurance coverage.) This coverage is primary when no other insurance is available.

**5. If my rocket hurts someone at a club launch (with or without my own stupidity contributing to the accident) does the NAR insurance cover it completely?**

NAR insurance will cover individual members up to the existing limits in the policy (up to \$1 million annually). However, "stupidity" in disregarding any part of the NAR Safety Codes is never covered. Your insurance is void if you violate the NAR Safety Codes.

**6. If a family member or I get hurt at an NAR sponsored activity, does the NAR insurance cover medical expenses?**

Yes. The NAR policy has a medical payments provision for accidents during NAR operations. The applicable limit for this coverage is \$5,000. This would also apply if a fellow club member were to be injured. Other medical insurance coverage you possess (for example, from your employer) must be exhausted first. (The \$500 per claim deductible also applies for ?medical expense claims.)

**7. My Section often has non-members attending our launch. Are they covered by NAR insurance when they fly with us?**

No. Non-members are not covered by NAR insurance. To obtain coverage, they must join and become members of the NAR. However, your Section's coverage and your individual NAR members' coverage remains, and they are covered by the policy.

**8. Does this cover rocket-related injuries only? What if I trip over a hole on the launch field and break a leg?**

Coverage applies to losses arising out of NAR sport rocketry activities. "Activity" would include meetings, field trips, launches, etc. An injury on the premises of such an activity would be part of the activity. (The \$500 per claim deductible also applies for ?medical expense claims.)

**9. Does the NAR insurance cover property damage? If my rocket damages a car (including mine) is this covered? Are we covered if a rocket hits a house and causes damage?**

Property damage to "third parties" are covered. Coverage for property damage to the member's owned property is also covered. Any existing member insurance (in this case, auto insurance) would be primary. (The \$500 per claim deductible also applies for ?medical expense claims.)

Fire damage coverage is limited to \$100,000 per occurrence.

**10. Are we covered if a rocket hits someone who is not part of the launch?**

Yes. The individual NAR member has coverage over and above any existing personal liability coverage (e.g., homeowner's policy). The NAR, and the applicable NAR Section, are also covered. Non-NAR members are not covered. (The \$500 per claim deductible also applies for ?medical expense claims.)

**11. Can NAR offer a rider to allow the individual rocketeer to purchase extra coverage above the policy limits?**

Currently the NAR's insurance provider has no provisions for additional coverage.

**12. Does my insurance expiration date match my membership expiration date?**

All NAR members are additional insureds on the NAR policy as long as they have paid their membership dues and are entered on the NAR membership list.

**13. Does my insurance (as a Senior member) cover my minor children too?**

Only if they are also members of the NAR. If your children are not members, then your NAR member insurance does not cover them when they fly rockets. They must also be NAR members.

**14. Will the NAR insurance cover claims related to use of non-certified motors?**

No. NAR insurance is null and void if the accident involves a Safety Code violation. Use of uncertified motors is prohibited by the NAR Safety Codes.

**15. Who is protected under NAR Section insurance?**

Section insurance protects the group, corporately, against liability claims during activities sponsored by the club. If the Section, as a group, is sued as a result of a rocket accident, insurance would pay for the expenses resulting from the lawsuit, plus damages awarded. Individual members may still be held liable for their own actions. Some additional protection may be achieved if the club is a registered nonprofit corporation -- contact an attorney in your state for guidance.

**16. Any difference between individual and Section insurance as far as what stuff it can cover?**

No. Policy limits, deductibles, and coverage are the same for individuals, Sections, and site owners.

**17. OK, what about the site owner insurance we get after we've covered our Section? What does it cover?**

The coverage to the site owner is to defend him from third-party liability claims brought against him as the owner of the property, due to covered activities of the Section.

**18. How do I convince Farmer Brown that this is real insurance backed by a reputable provider, so that he'll let me launch on his land? What benefits can I show him?**

The NAR Section can deliver "Farmer Brown" an insurance certificate listing the landowner as an additional insured regarding NAR activities on their site. This certificate will be delivered directly to the NAR contact and it provides the site owner with policy facts such as limits, effective dates, and the insurance company providing the coverage. We strongly recommend the section keep one copy on file with your Section records. You can then deliver the original copy to your landowner. If your

landowner has additional questions or concerns, they can then contact our insurance agency directly.

- 19. A rocket launched is responsible for seriously injuring a human being. The loss of income and medical damages comes to several millions. The NAR covers up to \$1 million. The landowner's personal policy does not fully cover the difference. What happens to the owner?**

The landowner is the least likely party to be found negligent and legally liable for injuries from a rocket. If, however, a court found the owner legally liable for the loss, and his NAR insurance, and all other personal liability insurance, he has become exhausted, he would be personally liable for the balance. (Personal umbrella insurance increases your personal liability coverage, and personal asset protection, in increments of \$1,000,000. *This coverage is very inexpensive and is strongly recommended for all members to purchase.* Contact your personal insurance agent for at least a \$1,000,000 quotation.)

- 20. Why is that we need to list launch sites in the Section renewal form in order for them to be covered by the insurance?**

Our insurer needs to know the locations at which Section-sponsored events are held. Listing your Section's sites is a policy requirement.

- 21. When an insured Section is flying, do club officers of that Section need to be present?**

There is no requirement for officers to be present at a Section launch. However, we strongly encourage a responsible club officer to attend all flying events. In all cases, we strongly recommend that a Range Safety Officer be appointed and on duty at all times.

- 22. Is there anything that clubs can do to minimize the risk of paying a judgment?**

Yes! Follow the Safety Codes. Use only certified motors at your launches. Make sure there is a designated Range Safety Officer (RSO) supervising your launches at all times. If in doubt, err on the side of safety.

- 23. When should an NAR insurance claim be filed?**

You should file a claim anytime there is an incident at an NAR event which results in more than \$500 in property damage or personal injury. If in doubt about the amount of damage, err on the side of caution and file the claim as soon as possible after the incident. Prompt reporting of claims is a policy requirement.

- 24. If a claim must be filed, how do I file it?**

Contact NAR HQ immediately after any accident for which you believe you might have to file a claim. They'll have complete information available for you to file a claim. You can also file a preliminary report of your claim by using the [Online Claim Form](#) at the NAR website. After completing the form, you will be contacted for further information in order to complete the claim filing.

**25. How many claims have been filed to date? For what?**

Since NAR first offered insurance in 1993, three claims for approximately \$2,100 have been filed. All of these were for property damage claims.

**26. Can I contact someone if I have questions about insurance?**

NAR members may call or email [Bob Blomster](#) at the J. A. Price Agency: (952) 944-8790, Ext. 127. Please understand that Bob is there to address and help with your insurance issues only. Questions about Safety Codes, By-Laws, Section activities, other NAR services and other sport rocketry issues should be directed to the NAR.

**Disclaimer**

These scenarios listed above are for reference purposes only. Coverage acceptance, or denial, depends on the material facts of the incident and the applicable coverages, or exclusions, on the policy. Final coverage determination can only be made by the respective insurance company.