

# What's Happening in Our NAR

April, 2012

Trip Barber

NAR 4322

NAR President





# How Are We Doing?

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- Our membership levels are at an all-time high
  - Around 5300 thanks to concerted NAR-wide efforts including the \$5 recruiting bonus to members and hobby shops
- Our finances are very good as a result
  - About \$300K unrestricted fund balance
  - Increasing services significantly because we can afford to
- Our magazine is the best it has ever been
  - Paying for top-quality “how to” and technical articles has brought us great new content to sustain 56-page issues
  - Now the only rocketry magazine available in hobby shops
- Our outreach programs are doing well and growing
  - TARC, 4-H partnership, NASA SLI



# My Priorities

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- Make flight safety our organization's first priority
- Increase our organization's size: members and sections; then increase member services as our size goes up
- Expand our high-power programs and launches
- Provide full and open communication to our members about everything going on in their NAR and take their NAR in the direction they want it to go
- Provide better national support to our local sections

**Be safe, have fun, pay forward**



# Areas of Concern

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- Rockets that should not be flown still too often do get flown
- We are still not attracting and retaining enough young NAR members to sustain our future
  - Our junior membership is only ~600, used to be over 1000
  - Not enough age 25 – 40 adults to grow into key positions in future
- Development encroachment and landowner fear of “safety” or litigation continue to reduce access to launch sites
- We do not have as many sections as we should, and too many members do not belong to one
- We need more NAR volunteers to improve our services and programs, both locally and nationally



# Membership Surveys

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- About 2000 NAR member responses to our 2008 and 2011 online surveys
  - Almost all adults: demographics typical of our Senior members
  - 100+ pages of text comments in addition to answers to 30 questions
- Three areas for improvement stood out as priorities on both surveys and we are working hard on all of them
  - Increase support to sections
  - Completely redo the NAR website
  - Enhance the “how to” article content in Sport Rocketry
- Number one impediment to members’ enjoyment of the hobby is access to launch sites
- Lots of divergence of opinion on the direction or need for changes to the competition and HPR programs

Your survey feedback drives the Board’s agenda of initiatives



# NAR Board Actions

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- Set new organizational goals: 5800 members (2900 HPR certified), 140 sections with 3500 members – by NARAM in 2014
- Working to increase national support for sections
  - Abolished the \$25 section charter fee for future new and renewals
  - Will have a new section recognition program this year
  - Will have a new section grant program by NARAM
- Restructuring NAR website for rollout later this year
  - Under construction now by volunteer Bruce Canino
- Sent free NAR banner to each section, and started sending free HPR certification pin to each member who earns a new level
- Shifting to credit-card style NAR membership cards with graphics within next 60 days: everyone will get one by July
- Decided that HPR certifications carry over after membership lapse of any length as long as we have proof of prior NAR certification



# Other Developments

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- Igniter issue with BATFE is progressing
  - We meet with them each year in March to maintain a dialogue
  - May issue letter ruling soon exempting igniters sold with motors
- Will award 10 Cannon teacher grants (\$500 each), 10 NAR scholarships (\$1000), \$10K in section grants this year
  - Plus \$2200 in R&D prizes, \$3200 in NARAM travel grants for B Div
- Our insurance coverage was increased in April 2011
  - \$2M limit vs \$1M, covers Canada as well as US
  - \$300K for fire damage to launch site vs \$100K
  - Teams participating in TARC & SLI covered at section launches
- New editions of NFPA Codes 1122 & 1127 out in July
  - Matching updates to NAR Safety Codes take effect August 1
  - Primarily affects multi-rocket simultaneous launches, and procedures for handling HPR rockets with onboard electronic staging/deployment systems



# Volunteer Needs

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- The programs and services that your dues make possible need more volunteers so we can deliver them
- If you have something to contribute somewhere in our national service programs, let the NAR President know
  - Every committee is just 1-2 deep and needs more people to share the work and improve their services
  - We always need new people with new ideas
- Local (section) volunteers are the foundation of our NAR, don't let them get burned out, get them help





# Our NAR's Value Proposition

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- At \$62/year (senior) dues we are the best value in the hobby and should say it proudly:
  - Includes a great 56-page bimonthly magazine
  - Includes insurance that is valid anywhere in the US & Canada, anytime, not just at sanctioned launches
  - Includes HPR certification through Level 3
  - Includes US & international competition programs
  - Includes family member discount of \$12
  - Includes a 60-page Member Guidebook with discount coupons

**We all need to recruit personally to keep our NAR going and growing!**



# What Can You Do?

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- Fly safely and ensure that others around you do the same
- Recruit new NAR members, HPR certifications, competitors
- Volunteer to help with your section or a national committee
- Do community outreach to community leaders, young people, parents, and to those who work with young people



## 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.

<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



## NAR High Power Rocket Safety Code

Effective August 2012

1. **Certification.** I will only fly high power rockets or possess high power rocket motors that are within the scope of my user certification and required licensing.
2. **Materials.** I will use only lightweight materials such as paper, wood, rubber, plastic, fiberglass, or when necessary ductile metal, for the construction of my rocket.
3. **Motors.** I will use only certified, commercially made rocket motors, and will not tamper with these motors or use them for any purposes except those recommended by the manufacturer. I will keep smoking, open flames, and heat sources at least 25 feet away from these motors.
4. **Ignition System.** I will launch my rockets with an electrical launch system, and with electrical motor igniters that are installed in the motor only after my rocket is at the launching or prepping area. My launch system will have a safety interlock that is in series with the launch switch that is not installed until my rocket is ready for launch, and will use a launch switch that returns to the "off" position when released. ~~If my rocket has onboard ignition systems for motors or recovery devices, these will have safety interlocks that interrupt the current path until the rocket is at the launch pad.~~ **The function of onboard energetics and firing circuits will be electrically inhibited except when my rocket is in the launching position.**
5. **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.
6. **Launch Safety.** I will use a 5-second countdown before launch and will ensure that **a means is available to warn participants and spectators in the event of a problem.** ~~everyone in the launch site is paying attention and I will ensure~~ that no person is closer to the launch pad than allowed by the accompanying Minimum Distance Table. **When arming onboard energetics and firing circuits I will ensure that no person is at the pad except safety personnel and those required for arming and disarming operations.** I will check the stability of my rocket before flight and will not fly it if it cannot be determined to be stable. **When conducting a simultaneous launch of more than one high power rocket I will observe the additional requirements of NFPA 1127.**
7. **Launcher.** I will launch my rocket from a stable device that provides rigid guidance until the rocket has attained a speed that ensures a stable flight, and that is pointed to within 20 degrees of the vertical. If the wind speed exceeds 5 miles per hour I will use a launcher length that permits the rocket to attain a safe velocity before separation from the launcher. I will use a blast deflector to prevent the motor's exhaust from hitting the ground. I will ensure that there is no dry grass within a clear distance of each launch pad determined by the accompanying Minimum Distance table, and will increase this distance by a factor of 1.5 **and clear that area of all combustible material** if the rocket motor being launched uses titanium sponge in the propellant.

8. **Size.** My rocket will not contain any combination of motors that total more than 40,960 N-sec (9208 pound-seconds) of total impulse. My rocket will not weigh more at liftoff than one-third of the certified average thrust of the high power rocket motor(s) intended to be ignited at launch.
9. **Flight Safety.** I will not launch my rocket at targets, into clouds, near airplanes, or on trajectories that take it directly over the heads of spectators or beyond the boundaries of the launch site, and will not put any flammable or explosive payload in my rocket. I will not launch my rockets if wind speeds exceed 20 miles per hour. I will comply with Federal Aviation Administration airspace regulations when flying, and will ensure that my rocket will not exceed any applicable altitude limit in effect at that launch site.
10. **Launch Site.** I will launch my rocket outdoors, in an open area where trees, power lines, **occupied** buildings, and persons not involved in the launch do not present a hazard, and that is at least as large on its smallest dimension as one-half of the maximum altitude to which rockets are allowed to be flown at that site or 1500 feet, whichever is greater, **or 1000 feet for rockets with a combined total impulse of less than 160 N-sec, a total liftoff weight of less than 1500 grams, and a maximum expected altitude of less than 610 meters (2000 feet).**
11. **Launcher Location.** My launcher will be at least one half the minimum launch site dimension, or 1500 feet (whichever is greater) from any ~~inhabited~~ **occupied** building, or from any public highway on which traffic flow exceeds 10 vehicles per hour, not including traffic flow related to the launch. It will also be no closer than the appropriate Minimum Personnel Distance from the accompanying table from any boundary of the launch site.
12. **Recovery System.** I will use a recovery system such as a parachute in my rocket so that all parts of my rocket return safely and undamaged and can be flown again, and I will use only flame-resistant or fireproof recovery system wadding in my rocket.
13. **Recovery Safety.** I will not attempt to recover my rocket from power lines, tall trees, or other dangerous places, fly it under conditions where it may recover in spectator areas or outside the launch site, or attempt to catch it as it approaches the ground.

MINIMUM DISTANCE TABLE				
Installed Total Impulse (N-sec)	Equivalent Motor Type	Minimum Clear Distance (ft.)	Minimum Personnel Distance (ft.)	Minimum Personnel Distance (Complex Rocket) (ft.)
0 - 320.00	H or smaller	50	100	200
320.01 - 640.00	I	50	100	200
640.01 - 1280.00	J	50	100	200
1280.01 - 2560.00	K	75	200	300
2560.01 - 5120.00	L	100	300	500
5120.01 - 10,240.00	M	125	500	1000
10,240.01 - 20,480.00	N	125	1000	1500
20,480.01 - 40,960.00	O	125	1500	2000

**Note: A complex rocket is one that is multi-staged or that is propelled by two or more rocket motors**