

March to April 2009

The NOVAAR Free Press



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Section 205
Flying Since 1970

NOVAAR Free Press

March – April 2009

This is the official newsletter of the Northern Virginia Association of Rocketry (NOVAAR), Section 205 of the National Association of Rocketry (NAR). This newsletter is a benefit of being a member – *You are a member, aren't you?*

Section Officers

President:.....Joe Woodford
president@novaar.org
Secretary:.....Trip Barber
secretary@novaar.org
Treasurer:.....Will Marchant
treasurer@novaar.org
Senior Advisor:.....John Hochheimer
senioradvisor@novaar.org
High Power Coordinator:.....Mitch Guess
hp@novaar.org

Membership and Dues

To maintain the clubs launch equipment and pay for our website we collect dues. Dues are collected annually and are; \$5 for members age 13 and younger, \$8 for members age 14 to 18 and \$10 for everyone else. A membership application can be found at many local hobby shops and on our website.

Meetings

NOVAAR holds meetings on the first and third Tuesday of the month, from 7:00 pm to 8:30 pm, at the King's Park Community Center in Springfield, VA. The most current topics to be discussed and directions to our meeting room can be found on our website.

Build Sessions

Once a month, on the third Sunday of the month from 1:00 pm to 5:00 pm, at the King's Park Community Center, the club gets together to build rockets and share construction techniques. The schedule and directions to our meeting room are on our website.

Launches

NOVAAR conducts monthly launches at [Great Meadow](#) which is located in The Plains, VA – approximately 50 minutes south of Washington DC on Route 66. Launches start at noon to 5 pm (noon to 4 pm during the winter). The most current schedule and directions to [Great Meadow](#) can be found on our website.

There is no charge to fly at club launches (*motor sizes A to F*). However, there is a \$5 charge to launch high-powered rockets (*motor sizes G to I -- the field is not large enough for bigger motors*). **AND**, you don't have to be a member to fly with us. Though, after you meet us and, realize that we don't bite – *as long as we take our medication – we know you will want to join.*

If weather threatens the launch day, our website will report the status of the launch by 8:00 pm the day before.

Website

The club's website (www.novaar.org) is where the most current information about future club activities can be found. The site is maintained by...

Webmaster:.....Dan Winings
webmaster@novaar.org

Newsletter

The club's newsletter is published 6 times a year or, as close to that schedule that is humanly possible for the editor to achieve. The newsletter reports on the club's activities and features articles written by club members about their endeavors within the Model Rocketry Hobby. The articles include, *but are not limited to*, topics on sport rocketry, competitive rocketry and high-powered rocketry. Send submissions to ...

Editor:.....Frank Prekel
nfp@novaar.org



Calendar

June 2009

SUN	MON	TUE	WED	THU	FRI	SAT
	1	2 NOVAAR Meeting	3	4 D-Day (1944)	5	6 NOVAAR Launch
7	8	9	10	11	12	13
14 Flag Day	15	16	17 US Army established (1775)	18	19	20 ECRM-26 Regional
21 ECRM-26 Regional	22	23 Father's Day First Day of Summer	24	25	26	27
28	29	30				

July 2009

SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3	4 July 4 th Demo
5	6	7 NOVAAR Meeting	8	9	10	11
12	13	14	15	16	17	18 NOVAAR Launch
19	20	21	22	23	24	25
26	27	28	29	30	31	

August 2009

SUN	MON	TUE	WED	THU	FRI	SAT
						1 U.S. Coast Guard's Anniversary (1790)
2	3	4 NOVAAR Meeting	5	6	7	8
9	10	11	12	13	14 Victory in Japan Day (1916)	15
16	17	18	19	20	21	22 NOVAAR Launch
23	24	25	26	27	28	29 U.S. Marine Corp Reserve Anniversary (1916)
30	31					

Editor's Ramblings

The cover picture features Tom's Level 3 rocket. Take a look at the running/tracking lights on the fins. Tom hopes that they will help him speed the rocket's recovery.

And as usual, here is my plea for pictures and articles about any rocketry topic – a completed design, research, or anything you just learned about and you want everyone else to now.

☆☆☆

NOVAAR Hatpins



Available from Frank Prekel -- fjprekel@aol.com.

The NAR pin is available from NARTS

(www.nar.org/narts)

The Flag Ribbon is out-of-print and no longer available.

Club News

Great Meadows Field Rules

NOVAAR is privileged to have access to the fields of Great Meadow. NOVAAR works hard to maintain its relationship with the Great Meadows Foundation and does not wish to lose its access to what is not only our flying field but is also home of the Virginia Gold Cup Steeple Chase.

The Virginia Gold Cup is one of the oldest organized steeplechase races in the United States. Founded originally in 1922, The Virginia Gold Cup (VGC) came to Great Meadow in 1984.



The Virginia Gold Cup, like no other race, tests the stamina of horse and jockey. A four-mile course over four-foot post and rail timber fences across the rolling hillside of the Virginia Piedmont challenges the equine athletes while exciting the crowds. The races are held twice annually, The

Virginia Gold Cup in May, and the International Gold Cup in October.

The following rules apply to all persons flying rockets with NOVAAR on the Great Meadow field.

1. Park in designated areas.
2. Pick up any trash that you see.
3. No pets except on leash.
4. Do not climb on fences, trees, or structures.
5. Cross fences at gates (hinge side) if possible.
6. Ask for assistance to recover rockets from trees.
7. Do not attempt to recover rockets from overhead wires.
8. Do not go onto private property without permission.
9. The flying of rockets is permitted only when NOVAAR is operating the range.

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NOVAAR Range Safety Rules

The National Association of Rocketry (NAR) strives to conduct the hobby of model rocketry in the safest way possible. To this end, rules pertaining to the flying and operation of launch ranges have been established. The following rules are in place whenever the Northern Virginia Association of Rocketry (NOVAAR), a section of the NAR, is flying.

1. Follow the directions of the Range Safety officer
2. All rockets must go through our safety check-in.
3. Bring your rocket to check-in ready to fly
4. Flight card must be filled out for each flight.
5. Rocket flights must occur on our range only.
6. Spectators stay behind the flag line.
7. Air horn is a flight danger warning -- look up.

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NOVAAR Safety Check-in Guidelines

The following guidelines will be used by the Safety Check-in Officer to verify that your rocket is ready to fly from the NOVAAR range.

1. Is the rocket structurally sound -- fins and launch lug solidly glued (not taped) onto the body and an appropriate strength/size for the model, body tube not crimped?
2. Does the rocket appear to be stable -- center of gravity one or more body diameters ahead of the center of pressure (which is normally just forward of the fin leading edge)?
3. Is the rocket motor on the list of NAR Certified Rocket Motors?
4. Does the rocket motor have sufficient thrust to give the rocket a safe liftoff velocity and a delay time that will not result in the rocket having excessive upward or downward velocity at ejection?

5. Is the motor properly restrained in the model -- with an engine hook, or with enough tape that the ejection charge will not pop it out and it cannot be easily removed by hand?
6. Does the nose cone fit properly -- not loose enough to fall off of its own weight, not so tight that significant force is required to remove it?
7. Does the rocket have a recovery system that will return it at a safe landing speed, and is the recovery system packed properly and recently, structurally sound, and protected with sufficient flame-proof wadding that it will properly deploy?
8. If the rocket is high-power (H or larger motor), is the modeler certified for the power level of its motor? (Note: HPR check-in must be done by an HPR-certified person.)
9. If the rocket is high-power, did another HPR certified modeler do a "peer review" of the recovery system's packing? If not, disassemble and inspect it.

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NAR Announces New Member Based email Distribution Service

by Joe Woodford

The NAR has announced a new member based email service. This was first discussed when the decision was made to reduce distribution of the Model Rocketeer to a single copy per year from six. The final copy is reserved for the annual election of officers. Check out the details at <http://nar.org!electronic.html>.

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NOVAAR Update and Important NAR News

by: Trip Barber ahbarber@alum.mit.edu

If you are a current member of the National Association of Rocketry (NAR), our parent organization, you should sign up to receive important news updates from the NAR on topics of interest to you as described in NAR President Mark Bundick's message below. This is a new rapid and direct means of communication that we are just initiating, replacing the previous hard-copy bimonthly Model Rocketeer L newsletter mailouts. Sport Rocketry Magazine continues, but we don't put lots of inside-the-NAR organizational news in that publication.

Thanks very much to all of you who came out to Great Meadow one or more days during the past two weekends to help run the range and assist the huge numbers of local-area student Team America Rocketry Challenge (TARC) teams who showed up to get their qualification flight attempts in here at the last minute before the April 7 deadline. The weather wasn't always that great and the stress was pretty high at times, but

every team that wanted to fly and was ready go their flights off with official NAR observers. That was some great community service, thanks!

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NAR PREZ - A Message From Mark Bundick

Clear, persistent communication with NAR members is a key component of the NAR's work in 2008. I need your assistance in this effort. The NAR has signed up with Constant Contact, an industry leading service that maintains your email contact information and preferences in a safe, secure environment. Once registered there, you will have direct control of the NAR news items you want delivered to your email inbox.

Please visit: <http://www.nar.orgLelectronic.html> and begin the sign up process by typing in your email address below and then checking off your news and announcement preferences. As we build out this capability, we will work with NAR committees and members to insure you receive the latest communications about ONLY those topics you select. You alone will have access to those preferences, and may update your selections at any time.

If possible, section leaders should feel free to forward this announcement to their section websites and email lists. I'd like to encourage as many NAR members as possible to sign up for this free service. Thank you in advance for your assistance!

Mark B. Bundick, President
National Association of Rocketry

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NOVAAR Online Meetings

At the meeting some of us agreed to have regular meeting online here in our chat room. We will try to meet on the 2nd and 4th Tuesday at 7:00 am.

Meeting will not have a formal topic for the time being. If we start getting enough interest we may discuss specific topic. To join the meeting login to the BB and click on "Chat". It should take you straight to the room. If you get a login window instead just login using your BB username and password. You must register for the BB before you can go to the chat room.

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HP Certification Level: 3

by: Will Marchant

Congrats to Mark Blicharz for a successful L1 flight and to Ed Seward for a successful L2 flight.

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Hobbies Etc. Warrenton

by: Steve Schowiak

Susan Spindel, owner of Hobbies Etc. in Warrenton is eager to do business with us in our rocketry endeavors. She wants to have a decent supply of the stuff that we need, but needs input on just what it is she should order and have on hand. I advised her on stocking up with consumables like engines, wadding, parts, balsa, basswood, plywood, etc. Estes, Quest, Aerotech parts and supplies are no problem to her.

Because it is a small business, she can't have a lot of high-dollar specialty items laying around, so special orders are no problem.

It's the same location as the old hobby shop that was there, on the lee highway and US 17. There's lots of room for building sessions.

Phone numbers are 540-347-9212 and 540-347-3899

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Rocketry Vendors on our Field

NOVAAR is pleased to have two vendors that frequent our field on launch days. They are not on the field for every launch and their respective schedules can be seen on their websites.

Performance

Hobbies – Ken Allen has a full line of rocket kits, motors, hardware, and accessories to satisfy all of your rocketry needs.

web site: <http://www.performancehobbies.com/>
phone: (202) 723-8257



Dragon's Hoard – Is a purveyor of Fine Games, Cards, Miniatures, Dice and Rockets. Orders for high-power motors can be delivered to the field on launch day but have to be ordered before the launch.

web site: <http://www.thedragonshoard.com/>
phone: (540) 885-5530

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Join the NAR and
experience the joy of
flight.

www.NAR.org



Competition Rocketry

TARC-2009 in May



The Dates:

~~Registration opens: Wednesday, September 3, 2008~~

~~Registration closes: Monday, December 1, 2008~~

~~Qualified flight deadline: Monday, April 6, 2009~~

Final fly-off: Saturday, May 16, 2009

The Location:

Great Meadow, in The Plains, Virginia – the home field of NOVAAR

The Notes:

Registration for the 7th Annual Team America Rocketry Challenge is now closed. The flight deadline is looming. And, the final fly-off is in a few months.

Participating teams are challenged to design, build, and fly a model rocket (3.3 pounds or less, using NAR-certified model rocket motors) that carries a payload of a single Grade A Large egg (oriented sideways across the rocket's diameter) for a precise flight duration of 45 seconds, and to an altitude of exactly 750 feet (measured by an onboard altimeter), and that then returns the eggs to earth un-cracked.

Local qualifying scores must be submitted to AIA by Monday, April 7, 2008 to be eligible for the National Finals. Teams whose score is one of the 100 best will be invited to compete for a share of the \$60,000 prize package at the 2009 National Finals at Great Meadow, in The Plains, Virginia, on Saturday May 17, 2009. AIA and the National Association of Rocketry (NAR) are proud to sponsor the annual Team America Rocketry Challenge, the largest model rocket showcase on the planet.

The Website:

<http://www.aia-aerospace.org/tarc/index.cfm>

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National Sports Launch 2009 in May

The Dates:

Saturday,
Sunday and
Monday (a
Memorial
Federal
Holiday)
May 23-25, 2009

The Sponsor:

Wisconsin Organization of Spacemodeling
Hobbyists (WOOSH, NAR Section 508)



The Location:

Richard Bong State Recreation Area

26313 Burlington Rd.
Kansasville WI 53139

The Richard Bong State Recreation Area is 8 miles southeast of Burlington, Wisconsin, on State Highway 142. The entrance is a mile west of State Highway 75.

<http://www.dnr.state.wi.us/org/LAND/parks/specific/bong/>

The Events:

- ❖ Raffle - Tickets \$1 or 6 for \$5
- ❖ Saturn V mass launch
- ❖ L1 Certified Scramble - Fastest team of four to build and successfully fly a rocket
Parts donated by LOC Precision.
All six openings have been filled.
- ❖ Secret payload duration contest
- ❖ Vern Hoag's Saturn V rocket on display, weather permitting
- ❖ A visit to the Racine Astronomical Society, Saturday night from 8:00 pm until 11:00 pm and see the planet Saturn, star clusters, galaxies, and nebulas.



The Contact:

Scott Goebel zapjolt@yahoo.com – (262) 634-3971

The Website:

<http://www.nsl2009.org/>

<http://www.wooshrocketry.org/>

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Qualified Competition Rockets

Complete Line of NAR Competition Kits and Parts
Sport Model Rocket Kits and Micro Maxx Kits

QCR kits have placed at
NARAM's 31 – 50

For catalog, send Self-Addresses Envelope to ...
Kenneth Brown -- 7021 View Drive,
Springfield, VA 22150 -- Phone: 703-451-2808

www.cybertravelog.com/qcr

***Remember: You can't fly the
packaging or the illustrations***

East Coast Regional Meet (ECRM-36) in June

The Dates:

Saturday and Sunday,
June 20 and 21, 2009

The Events:

- ❖ Random Altitude
- ❖ A Altitude
- ❖ B Rocket Glide
- ❖ A Streamer Duration
- ❖ 1/2A Parachute Duration, *multi-round*
- ❖ Future Fiction Sport Scale

The Sponsor:

National Association of Rocketry Headquarters Astro-Modeling Section (NARHAMS -- NAR 139)

The Contact:

Jim Filler (zog139@yahoo.com) – (301) 524-4447

The Location:

New Market, MD

Take I-70 to Exit 62 (MD Route 75 North toward Libertytown, about 8 miles east of Frederick). Turn right at the second light on to Old National Pike (MD Route 144). Park entrance is about 2 miles on the left (there is a large sign on the left). Follow the main road to the back of the park. Launch area is about 300 yards from the parking lot. If the gate is open, you may drive on to the field to unload, but you must still park in the parking lot.

The Notes:

It is suggested to fly "A" altitude with 18mm engines. A picnic is planned on Sunday after the event is over.

The Website:

<http://www.narhams.org>

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National Association of Rocketry Annual Meet (NARAM 51) in August

The Dates:

Saturday to Friday,
August 8 to 14, 2009

The Events:

- ❖ 1/8A Helicopter Duration
- ❖ A Streamer Duration
- ❖ 1/2A Parachute Duration (*multi-round*)
- ❖ Random Altitude
- ❖ B Rocket Glide Duration
- ❖ B Altitude
- ❖ D Dual Egg Lofting Duration
- ❖ Research and Development
- ❖ Peanut Sport Scale
- ❖ Science Fiction and Future Scale



The Prices:

A/B Contestant.....	\$30
C/T Contestant	\$45
Full-week of Sport flying	\$30
Weekend Sport Flying	\$15
Single day Sport Flying	\$10
Picnic	\$14
Banquet, adult	\$28
Banquet, child (<12 yoa)	\$14
extra patch.....	\$7
t-shirt S/M/L, XL, 2XL, 3XL	\$16, \$17, \$18, \$19

The Sponsor:

Pittsburgh Space Command (PSC -- NAR 473)

The Contact:

Steve Foster
naram51@nar.org

The Location:

Johnstown, PA

The Website:

<http://www.naram.org>

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The Capital Cup – A FAI World Cup Spacemodeling Contest – this October at Great Meadows

The Dates:

Saturday and Sunday,
October 24th and 25, 2009

The Location:

Great Meadows,
The Plains, VA

The Host:

Northern Virginia Association of Rocketry
(NOVAAR -- NAR 305)

The Events and Schedule:

SATURDAY

- ❖ Model check in and contestant briefing 9 AM
 - ❖ S4A (A-engine boost-glider) 1st round..... 9:30 AM
 - ❖ S9A (A engine gyrocopter) 1st round..... 10:30 AM
 - ❖ S6A (A engine streamer duration) 1st round 11:30 AM
 - ❖ S6A (A engine streamer duration) 2nd round 12:30 PM
 - ❖ Lunch 1:30 - 2:15 PM
 - ❖ S4A (A-engine boost-glider) 2nd round 2:15 PM
 - ❖ S9A (A engine gyrocopter) 2nd round..... 3:15 PM
 - ❖ S4A (A-engine boost-glider) 3rd round..... 4:15 PM
 - ❖ S9A (A engine gyrocopter) 3rd round 5:15 PM
 - ❖ S6A (A engine streamer duration) 3rd round 6:15 PM
- US 2008 Team Meeting At end of flying

SUNDAY

- ❖ Model check in..... 9 AM
- ❖ Flyoff Round S6..... 9:00 AM
- ❖ S8E/P (E-engine radio-controlled rocket glider)
1st Round 9:15 AM
- ❖ Flyoff Round S9..... 10:00 AM
- ❖ S8E/P (E-engine radio-controlled rocket glider)
2nd Round 10:15 AM
- ❖ Flyoff Round S4..... 11:00 AM
- ❖ S8E/P (E-engine radio-controlled rocket glider)
3rd Round..... 11:15 AM
- ❖ Lunch 12:15 - 1:00 PM
- ❖ S8E/P (E-engine radio-controlled rocket glider)
Flyoff Round..... 1:00 AM
- ❖ S1 (A-engine Altitude) 3 flights Open Round
..... 1:00 – 3:30 PM

The Entry Fee:

\$15, advance registration not required

The Contest Rules:

This event is flown under the FAI Space Models
Sporting Code.

All S1 flights will use altimeters. For details
http://www.spacemodeling.org/WC2008/s1_guide.pdf

www.fai.org/aeromodelling/documents/sc4. Fliers
with FAI Sporting Licenses, remember to bring
them.

This event will be flown using rocket motors
having current NAR approval for contest use in the
US, as listed at

www.nar.org/SandT/NARenglist.shtml.

The Contest Director:

Contest Director: Tony Reynolds, tonyr@night.net,
Richardson, TX (214) 869-6645

The On-site Coordinator:

Trip Barber, ahbarber@alum.mit.edu, Springfield, VA
(703) 866-4710

The Directions to the Field:

Take Interstate 66 to Exit 31, 16 miles west of
Manassas, VA. At the exit, turn left and follow the signs
1.5 miles to the Great Meadow Outdoor Center at "Old
Tavern".

The Lodging:

All motels are at I-66W exit 47B in Manassas, VA
(I-66E exit 47).

Best Western Battlefield Inn - 10820 Balls Ford Rd.,
Manassas, VA 20109 - (703) 361-8000

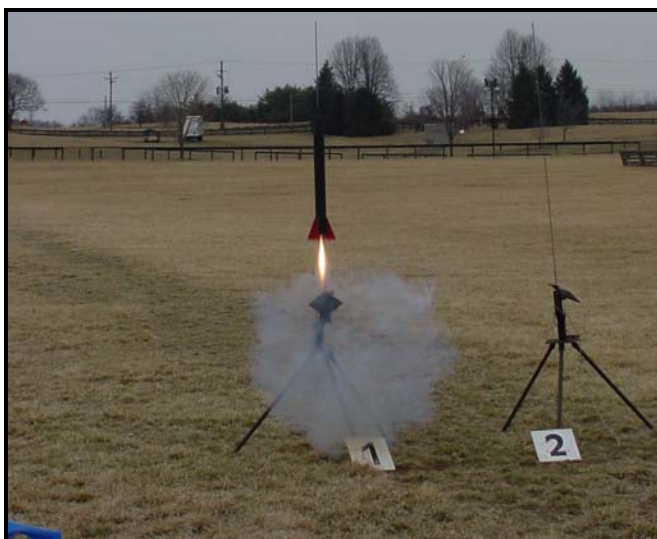
Quality Inn Manassas - 10653 Balls Ford Road,
Manassas, VA 20109 - (703) 368-2800

Red Roof Inn Manassas - 10610 Automotive Drive,
Manassas, VA 20109 - (703) 335-9333

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March 7TH Club Launch

There were two launches in March. The first, on the 7th, brought with it the TARC Teams with hopes of qualifying for the approaching big event. Add a gathering of Cub Scouts and of course, the club's own members – the turn-out was impressive.



If you like to fly
Join the NAR











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The Capitol Cup



FAI World Cup Spacemodeling Contest October 24 - 25, 2009 Great Meadow at The Plains, VA

Flown under the FAI Space Models Sporting Code, www.fai.org/aeromodelling/documents/sc4. Fliers with FAI Sporting Licenses, remember to bring them.

Flown only with rocket motors having current NAR approval for contest use in the US, as listed at www.nar.org/SandT/NARenglist.shtml.

Events and schedule:

Model check in and contestant briefing

S4A (A-engine boost-glider)

S9A (A engine gyrocopter)

S6A (A engine streamer duration)

S6A (A engine streamer duration)

Lunch

S4A (A-engine boost-glider)

S9A (A engine gyrocopter)

S4A (A-engine boost-glider)

S9A (A engine gyrocopter)

S6A (A engine streamer duration)

US 2008 Team Meeting

9 AM Saturday

First round 9:30 AM Saturday

First round 10:30 AM Saturday

First round 11:30 AM Saturday

Second round 12:30 PM Saturday

1:30 - 2:15 PM Saturday

Second round 2:15 PM Saturday

Second round 3:15 PM Saturday

Third round 4:15 PM Saturday

Third round 5:15 PM Saturday

Third round 6:15 PM Saturday

At end of flying Saturday

Model check in

Flyoff Round S6

S8E/P (E-engine radio-controlled rocket glider)

Flyoff Round S9

S8E/P (E-engine radio-controlled rocket glider)

Flyoff Round S4

S8E/P (E-engine radio-controlled rocket glider)

Lunch

S8E/P (E-engine radio-controlled rocket glider)

S1 (A-engine Altitude): 3 flights Open Round

All S1 flights will use altimeters. For details http://www.spacemodeling.org/WC2008/s1_guide.pdf

9 AM Sunday

9:00 AM Sunday

First Round 9:15 AM Sunday

10:00 AM Sunday

Second Round 10:15 AM Sunday

11:00 AM Sunday

Third Round 11:15 AM Sunday

12:15 - 1:00 PM Sunday

Flyoff Round 1:00 AM Sunday

1:00 - 3:30 PM Sunday

Entry fee: \$15, advance registration not required

Directions to the field: Take Interstate 66 to Exit 31, 16 miles west of Manassas, VA. At the exit turn left and follow the signs 1.5 miles to the Great Meadow Outdoor Center at "Old Tavern".

Recommended Motels: All motels are at I-66W exit 47B in Manassas, VA (I-66E exit 47).

Best Western Battlefield Inn - 10820 Balls Ford Rd., Manassas, VA 20109 - (703) 361-8000

Quality Inn Manassas - 10653 Balls Ford Road, Manassas, VA 20109 - (703) 368-2800

Red Roof Inn Manassas - 10610 Automotive Drive, Manassas, VA 20109 - (703) 335-9333

Contest Director: Tony Reynolds, tonyr@night.net, Richardson, TX (214) 869-6645

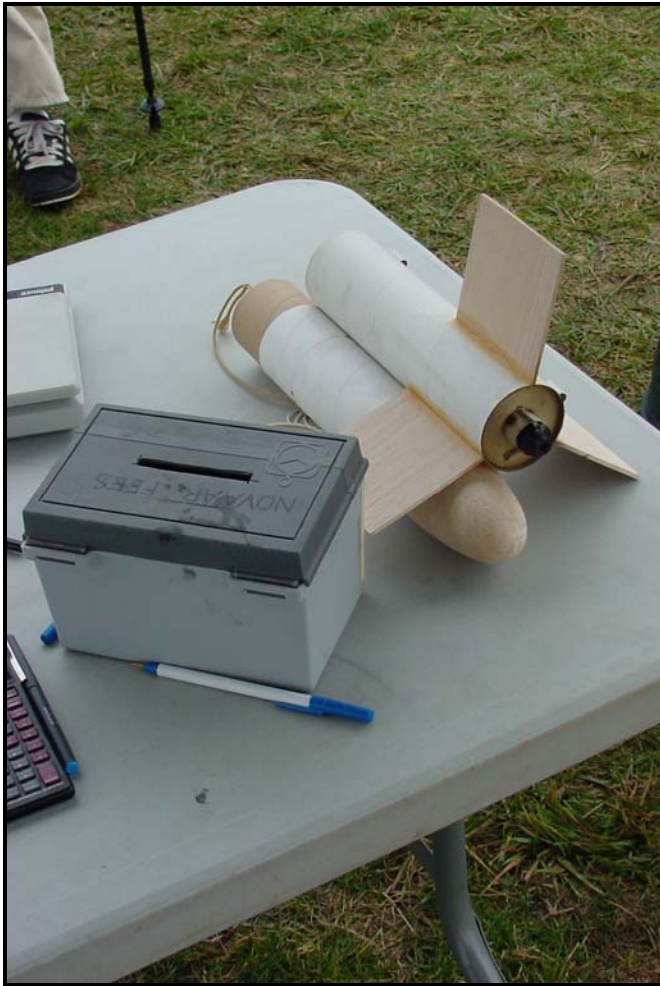
On-site coordinator: Trip Barber, abbarber@alum.mit.edu, Springfield, VA (703) 866-4710

Hosted by the Northern Virginia Association of Rocketry, www.novaar.org

March 28TH Club Launch

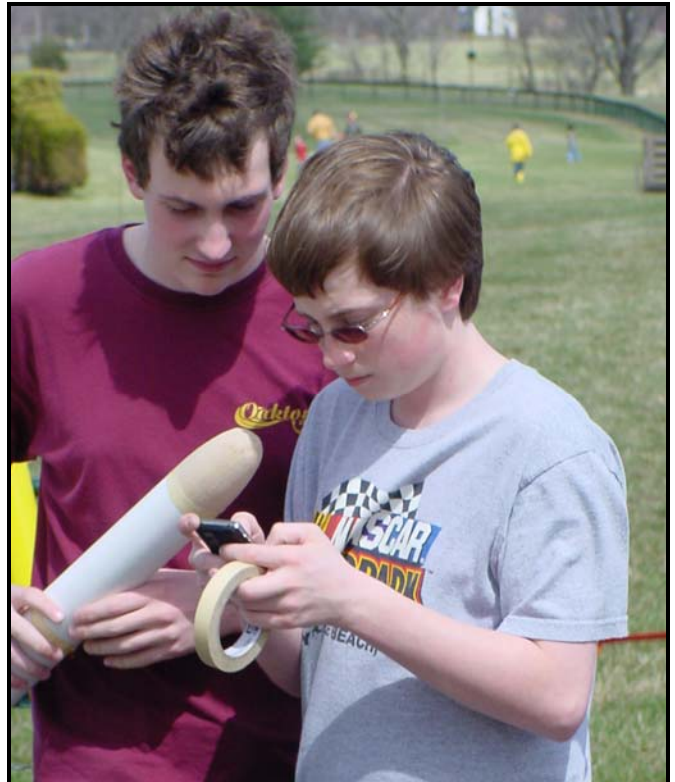
The second launch of March was as well attended as the first. This one ended with a large thunderstorm bringing with it a darkening sky, a cold down draft which inspired the range crew to pack and load the range in a record 25 minutes.

















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Competition Rocketry

A Side of Peanut Butter with a Raw Egg

Over the last seven years of TARC we have seen an ever increasing level of sophistication in the rockets that the students are flying. We have seen a fair amount of innovation as well. During the run-up to this year's deadline I observed an unique method to protect a flight bound raw egg – peanut butter.





LAUNCH!

YOUR ROCKETRY ADVENTURE

You Get Sport Rocketry, Clubs, Launches, High Power Certification, and the Rocketry Guidebook when you join the NAR today!



**SEE WHAT
ROCKETRY
CAN BE.
Join Today!**



SPORT ROCKETRY MAGAZINE

- Unique "How To" Articles
- Electrifying Launch Coverage
- Stunning Rocket Plans
- Six Great Issues Annually
- Timely Informative Product Reviews
- Comprehensive Scale Drawings

HIGH POWER CERTIFICATION

- Monster Rocket Motors
- Superior Vehicles
- Awesome Achievement
- Thundering Technology

LOCAL NAR CLUBS

- Practical, Proven Rocketry Experts
- Bigger, Better Fields
- Wonderful Friends
- Increase Your Launch Audience

NAR ROCKET LAUNCHES

- Awesome Rocket Flights
- Mind-Blowing Models
- Thousands to Choose From
- National Launch Coverage

NAR MEMBER GUIDEBOOK

- Field Tested Rocketry Secrets
- NAR Member Information
- Power Your Rocketry Experience

Name _____ Phone (____) _____

Address _____

City _____ State _____ Zip _____

Application Date _____ Date of Birth _____

- ☐ New Membership ☐ Renewal Member # _____
☐ Teacher
☐ Section # _____ ☐ HP Certification # _____

MEMBERSHIP CATEGORY - check one only:

- ☐ JUNIOR (ages 15 and under) \$25.00
☐ LEADER (ages 16-20) \$25.00
☐ SENIOR (ages 21 and older) \$62.00
 These prices include \$2,000,000 liability insurance.

MEMBERSHIP OPTIONS

- ☐ FIRST-CLASS POSTAGE for Sport Rocketry (US only) \$17.00
☐ FOREIGN MAIL for Sport Rocketry (Canada/Mexico) \$ 15.00
☐ FOREIGN MAIL for Sport Rocketry (Foreign/Overseas) \$ 30.00
☐ TAX-DEDUCTIBLE DONATION to help improve/expand NAR programs \$ _____

Charge to: ☐ Mastercard ☐ VISA

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Expiration Date

CLUB/CLC code (last 3 digits of code on back of card) _____

- ☐ I pledge to conduct all my model and high power rocketry activities in compliance with the applicable NAR Safety Codes: Model Rocket Safety Code, High Power Safety Code and Radio Control Rocket Glider Safety Code.

X _____

Your signature is required for processing of application.

Family Membership: One family member joins at full price; others deduct \$12 (one negative per family). Rights, privileges, and responsibilities of membership begin upon acceptance of this application by the NAR. Prices and services subject to change without notice.

Complete your application and send to:

NAR, P.O. Box 407, Marion, Iowa 52302-9998

VISIT OUR WEB SITE AT WWW.NAR.ORG FOR QUICK, EASY, ON-LINE SIGN UP.