

January - February 2007



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Section 205
Flying Since 1970

NOVAAR Free Press

January – February 2007

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

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 9 am and run until 5 pm (10 am 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

April 2007

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

May 2007

SUN	MON	TUE	WED	THU	FRI	SAT
		1 NOVAAR Meeting	2	3	4	5 Exhibit NASM
6	7	8	9	10	11	12
13 Mother's Day	14	15 NOVAAR Meeting	16	17	18	19 TARC 2007
20	21	22	23	24	25	26
27	28 Memorial Day	29	30	31		

June 2007

SUN	MON	TUE	WED	THU	FRI	SAT
					1	2
3	4	5 NOVAAR Meeting	6	7	8	9 NOVAAR Launch
10	11	12 Father's Day	13	14 Flag Day	15	16
17 NOVAAR Build	18	19 NOVAAR Meeting	20	21 First Day Summer	22	23
24	25	26	27	28	29	30

Editor's Ramblings

Thanks to Mike Knouse for the photos of the January Launch. And, to Bart Markley for his article about his level-3 certification.

As always I am looking for articles about any project you may be working on, a review of a kit you just completed, a rocket you just designed or an unusual rocket related thing that caught your attention.

☆☆☆

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.

Competition Rocketry

National Sport Launch 2007 in June

NSL 2007 will be hosted by ROCI (The Rocketeers of Central Indiana -- NAR #625) at the International Aeromodeling Center in Muncie, Indiana on June 1st to 3rd.

The National Sport Launch (NSL) was first held in 1990, shortly after the National Association of Rocketry (NAR) moved into the field of high-power sport rocketry. Since then it has been held annually around the country. While the NSL is the NAR's premier annual high-power rocket event, it is not just about adults flying large rockets. It includes rocketeers of all ages and interests and encompasses model rocket sport flying as well. There are no formal competitive or NAR business events at an NSL; it is purely about informal, safe flying for sport and fun.

NSL 2007 website

<http://nsl2007.org/>

Club website:

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

☆☆☆

June Club Competition Set

A Club competition Date has been set for the June Club Launch (June 9, 2007). The scheduled events are:

- ❖ A B/G
- ❖ A SD (multiround)
- ❖ A H/D
- ❖ Random Duration

Come-on out and show your stuff.

☆☆☆

NAR Annual Meet #49 Announced

NARAM 49 will be hosted by SMASH (the Southwest Michigan Association of Spacemodeling Hobbyists -- NAR 500) in Delton/Kalamazoo, Michigan on July 28, 2007 to August 3, 2007:

- ❖ Research & Development
 - ❖ C-Scale Altitude
 - ❖ C-Rocket Glide Duration
 - ❖ A-Helicopter Duration
 - ❖ B-Egg Loft Altitude
 - ❖ A-Boost Glide Duration
 - ❖ E- Super-Roc Altitude -- A&B Division
 - ❖ G- Super-Roc Altitude -- C&T Division
- 6' x 1/4" rod and 6' rails are provided
- ❖ B- Streamer Duration
 - ❖ Open Spot Landing

Club website:

<http://smashnar500.homestead.com/>

NARAM-49 website

<http://smashnar500.homestead.com/NARAM-49.html>

☆☆☆



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

January Sport Launch

Special thanks to Mike Knowles for the Pictures of the January Sport Launch.





High Powered Rocketry

The Long Road to Level 3

by: Bart Markley

My brother Monty called me from Arizona last November and said, "Bart, I have bought you an airline ticket to come to the Arizona Rocket Gathering in February and get your level 3." Rockets and wide-open Arizona spaces go very well together; this plus the super-friendly atmosphere generated by the local rocket enthusiasts have drawn me to fly rockets in the West once or twice a year since 1997. In fact, I got my level 1 at the Bonneville Salt Flats and my Level 2 in Nevada. So I thought, "Level 3 in Arizona, why not?"



My road to level 3 began in earnest in the fall of 2004 when I bought a LOC Big Nuke and extra tubing to extend it 2 ft in length. I bought this 5.5 inch kit because I wanted to build a traditional but big rocket using the skills I have learned along the way in high power rocketry. Basically, this meant building a large rocket with a sturdy airframe and using a proven

electronic ejection system. The building process included the following techniques: fiberglassing the body tube, strengthening the fins with Kevlar, building a super strong internal fin can with ¼ inch steel all-thread and hardware, and installing a heavy-duty thrust ring composed of one 1/8 inch steel and three ¼ inch plywood centering rings. My dual deployment ejection system consisted of two G-Wiz altimeters; one acting as primary and the second as backup. My son-in-law helped paint the rocket to a fine glossy burgundy, black and silver sheen.



I used two dish pack boxes pushed together to form a large shipping container and shipped it via FedEx from Virginia.

Everything arrived safely and I spent one full day finishing up my documentation. I spent all Saturday morning getting my rocket ready, and having the Tripoli Technical Advisory Panel (TAP) members do a final inspection of my documentation and rocket. In the early afternoon, the rocket was ready and it launched flawlessly into a beautiful blue, mostly clear sky. At liftoff, the 10.5 foot rocket weighed 40 lbs even and reached an altitude of 6738 feet; just 95 feet short of the Winroc prediction. The altimeters did their job and separated the rocket at apogee. At 800 feet, the 100 inch main parachute deployed and brought the rocket safely to the ground about half a mile south of the launch site. A little friendly help from an off-road vehicle rocket recovery team finished a perfect flight. My first level 3 attempt was a successful and verified. I can't wait to see what is next in my rocketry odyssey.



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Rocket Stuff

Astronaut Farmer features Mercury Rocket

<http://www.collectspace.com/news/news-013107a.html>

January 31, 2007 — In the upcoming Warner Brothers' feature film *The Astronaut Farmer*, Billy Bob Thornton plays the role of Charles Farmer, a former astronaut who never flew in space but who decides to accomplish his dream of reaching orbit by building his own rocket. To do so, Farmer draws from designs of the past, basing "The Dreamer," his spacecraft, on the historic Mercury-Atlas that carried the first Americans to orbit in the 1960s. *The Astronaut Farmer* opens in theaters 45 years (plus three days) after astronaut John Glenn rode his Mercury-Atlas into U.S. history.

The Astronaut Farmer is a movie directed by Michael Polish and stars Billy Bob Thornton. Polish and his brother Mark also serve as writers and producers of the film. The movie takes place in Texas, but was filmed in New Mexico and was released on February 23, 2007.

Charles Farmer (Thornton) is a former astronaut in training who gave up his dream job to save his family's farm. Never having traveled into space, he decides to build his own space craft, a replica of the historic Mercury-Atlas, with his own time and materials. He encounters interference as the United States government tries to stop him.

Personally inspired and fascinated by the 1960s space race, independent filmmakers Mark and Michael Polish gave their hero a similar passion. "Charles Farmer is a guy who watched the first man step foot on the moon and that was probably the single most dramatic moment of his childhood," suggested Mark Polish, who co-wrote and was a producer on the film.

Movie Quote

Will Beacon: Mr. Farmer, how do we know you aren't constructing a WMD?

Charles Farmer: Sir, if I was building a weapon of mass destruction, you wouldn't be able to find it.

Added Michael, his brother, "The story was sparked by our interest in space exploration, but beyond that, it's about a need to dream of adventures, whether it's Neil Armstrong or Lewis and Clark. I think that, as a society, we've stopped dreaming about exploration. With space being the contemporary frontier, we got to thinking how would a common person do this?"

Rocket man

Outside the constructs of the film's plot, it was important to production designer Clark Hunter to accurately rebuild the space hardware used in *The Astronaut Farmer*.

It was imperative that the rocket be built as nearly to scale as possible, "based on research and drawings of the Atlas-Mercury rockets and capsules, which are still very recognizable to many people," said Hunter. "For the skin, we used a company that makes skins for 747s. We built it in sections, then stacked them up and fastened them together."



Not only is the vintage design appropriate for the story's timeline, it has become an iconic image.

As Michael Polish explains, "That was the era when everyone was getting interested in the space program for the first time, and that was its primary image. Plus, from Farmer's point of view, it's easier to build a rocket like this than to build the Space Shuttle. If someone wanted to build a car for the first time he would go back to a simpler way of doing it, back to the original Ford design and the combustion engine."



"[Farmer] goes to great lengths to build a replica, based on the Atlas-Mercury model," Michael continued, noting that Farmer is dedicated to, quite literally, the nuts and bolts of his dream."



"It was an old Air Stream trailer. Inside we packed in a lot of vintage gadgetry and 1960s technology intermixed with modern computer equipment in a kind of Rube Goldberg design, which is what it might realistically look like if he had collected and integrated

everything in bits and pieces over the years," said Hunter.

"When I first saw the rocket in the barn, finished and assembled, I was very impressed," said actor Billy Bob Thornton.

Have spacesuit, will travel

In addition to the rocket and control room, Hunter raised a new barn big enough to accommodate a 50-foot rocket, with roof panels that could be folded open in preparation for launch.



When Charles Farmer isn't in standard work clothes, tending to his ranch or, more likely, hammering or welding the finishing touches to the rocket in his barn, he occasionally dons his old spacesuit for inspiration or to wow the kids on Career Day at his daughter's school.

Movie Quote

Charles Farmer: Somewhere along the line, we stopped believing that we can do anything.

But it's not just any old spacesuit, as costume designer Danny Glicker explained.

"It's a detailed replica of the 1960s-era suit used for the Mercury missions. It's important to the story that Farmer's suit evokes a more innocent and exciting time in American history when space travel played significantly in the public's imagination," he said. "All its elements — the silver material, the globe helmet, the charmingly low tech items like laces on the gloves — recall the romance of space travel."

Although mercifully lighter than an authentic space suit, the garment's challenge was in its "unconventional access," noted the designer. "A full-body sideways zipper forces the wearer to contort into highly unusual poses in order to get the thing on and off. It was a time-consuming process at first, but, by the end of the shoot, Billy Bob was a pro and could make the change in seconds flat."

Behind the movie: the true Mercury

On February 20, 1962, John Glenn launched on Mercury Atlas 6, the United States' first orbital space flight. Three of his fellow 'Original 7' Mercury astronauts would also ride the Atlas to space, culminating in Gordon Cooper's Mercury 9 flight in May 1963.

Movie Quote

Charles Farmer: If we don't have our dreams, we have nothing.

A modified intercontinental ballistic missile, the real Atlas stood 95 feet tall with its Mercury spacecraft and escape tower. It differed from other ICBMs and rockets due to its structure-supporting pressurized fuel tanks and attached "stage-and-a-half" boosters. A total of nine Mercury-Atlas rockets launched, five unmanned, of which two failed.



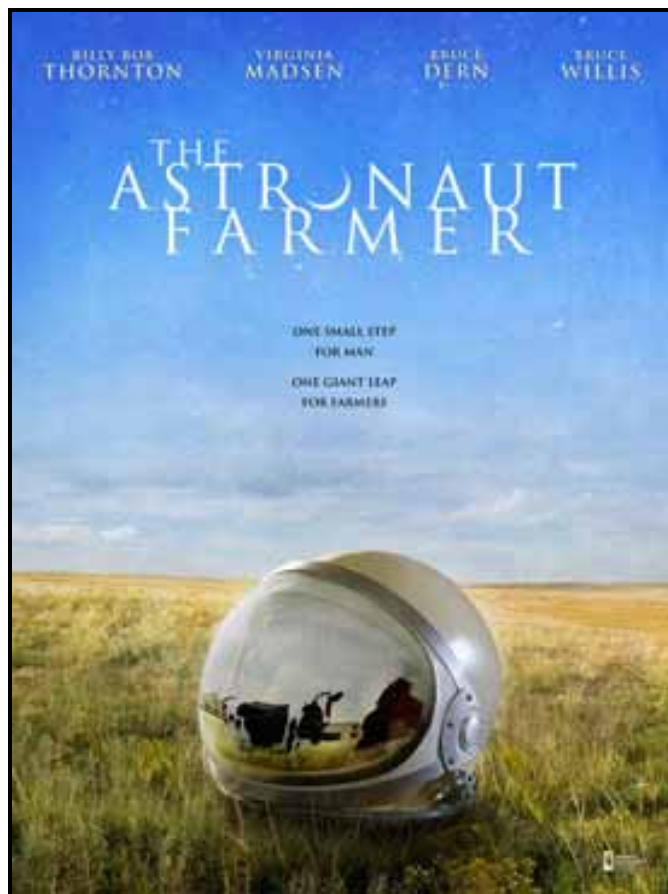
Mercury was America's first manned spacecraft. Barely large enough to fit one astronaut, it was often said that its pilot didn't get inside but rather wore the capsule. Conical in shape, its blunt end was covered by a heat shield for reentry into the Earth's atmosphere. Six men rode inside Mercury capsules to space, including Alan Shepard and Gus Grissom on sub-orbital missions.

The Mercury spacesuit was modified from a high-altitude pressure suit used by the U.S. Navy and designed by the B.F. Goodrich Company. Its trademark

silver outer layer was made of aluminized nylon. Worn unpressurized, each suit was custom-fitted to its intended wearer.



The Astronaut Farmer opened in theaters on February 23.



Are you a member of the National Association of Rocketry?

If not, Why Not ??

Visit the association's website

www.NAR.org

To learn the benefits of membership



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- Test the CanSat in a vacuum chamber
- Build a high powered rocket to launch the CanSat
- Set up a ground station to collect and process the data
- Tour the Udvar-Hazy Museum (*no transportation provided, will need parent car-pooling volunteers*)
- Launch the CanSat!



**Class
limited to
20 students!**

Launch site information:

Great Meadow
The Plains, VA (*no transportation provided
– will need parent car-pooling volunteers*)
www.novaar.org

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