The NOVAAR Free Press

35 Years of Flight
1970 to 2005

March – April 2005

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NAR

Section 205

NOVAAR *Free Press*

March - April 2005

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: ..... John Hochheimer
john.hochheimer@verizon.net

Secretary: ..... Trip Barber
ahbarber@alum.mit.edu

Treasurer: ..... Keith Wancowicz
keith@thaicustomcrafts.com

Senior Advisor: ..... Ken Brown
brown007@bellatlantic.net

Membership and Dues

To maintain the clubs launch equipment, pay for our website, and produce this newsletter 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 most current schedule and directions to our meeting room can be found 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
dwinings@adelphia.net

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
fjprekel@aol.com

Calendar

June 2005

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

Summer Solstice

Father's Day

July 2005

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

Great Meadow Demo Launch

August 2005

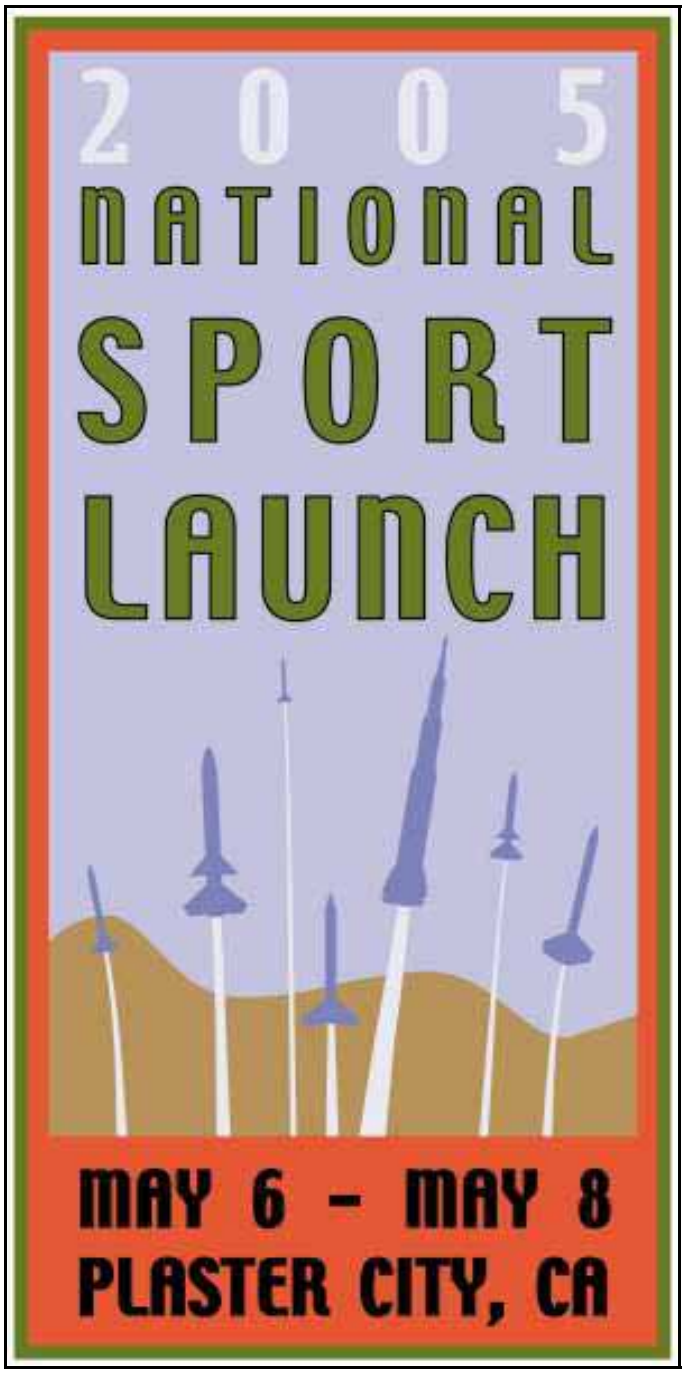
SUN	MON	TUE	WED	THU	FRI	SAT
	1	2 NOVAAR Meeting	3	4	5	6
7	8	9	10	11	12	13
14	15	16 NOVAAR Meeting	17	18	19	20 NOVAAR Launch
21 Launch Backup	22	23	24	25	26	27
28	29	30	31	1	2	3

Competition Rocketry

May 6th, 7th and 8th – National Sport Launch, Plaster City, CA

The National Association of Rocketry annual National Sport Launch (NSL -- *nsl2005.org/* will be held in the desert near Plaster City, California. This year's launch is sponsored by the "Diego Area Rocket Team" (DART -- *www.dartrocketry.com/*), and will be held at the Plaster Blaster launch site. This promises to be an exceptional rocketry gathering with exciting launches and great camaraderie.

All pre-registrations must be post-marked no later than Friday April 29th. Those post-marked later will be returned unopened.



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June 5th – NOVAAR Section Meet Now an Open Meet

On June 5th (a Sunday), on our field at Great Meadow, NOVAAR will hold what was originally a Section Meet will hold an Open Meet.

Events to be flown are:

- B Superroc Altitude
- A Streamer Duration,
- ½A Boost Glider, and
- ¼A helicopter Duration

The Contest Range will be open Sunday from 9am to 5pm. Joe Woodford will serve as the Contest Director.

☆☆☆

July 30th to August 5th – NARAM-47 at VOA Park, West Chester, OH

From July 30th to August 5th, 2005, NARAM-47 will be conducted at the Voice of America Park in West Chester, OH and is to be hosted by the Queen City Area Rockey Klub (QUARK, NAR section 624 – *http://www.naram.org/*).

Events to be flown are:

- ¼A Helicopter Duration
- ½A Boost Glider Duration
- A Cluster Altitude
- B Super Roc Altitude
- C Streamer Duration (Multi-round)
- Set Duration
- D Dual Eggloft Duration
- Open Spot Landing
- Giant Sport Scale
- Plastic Model Conversion, and
- Research and Development

The Contest Director is Mark Fisher (*micronzen@hotmail.com*).

☆☆☆

QCR

Qualified Competition Rockets

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

QCR kits have placed in
NARAM's 31 – 46

For catalog, send Self-Addresses Envelope to …
Kenneth Brown
7021 View Drive
Springfield, VA 22150 Phone: 703-451-2808
www.cybertravelog.com/qcr

March Events and Activities

March 1st Meeting – Testing Rocket Motors in the Desert

The First meeting of March opened with a discussion of the meetings, building and launch schedule for the next three to four months.

The presentation for the evening will be by Dr. Wes Cox (Colonel, USAF(ret)) on his assignment as the commander of the US Air Force Rocket Testing Laboratory. (*www.afrl.af.mil/*) Wes shared stories about his experiences commanding a launch range whose mission is to "*Lead the discovery, development, and integration of affordable warfighting technologies for our air and space force*". He also described the test firing of the Titan 4 booster motor and the efforts to not cook the endangered desert tortoises.

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March 12th Launch -- Cancelled by the threat of Heavy Weather

Because of incoming heavy weather, the Club's website (*www.novaar.org*) relayed the news that the launch had been postponed to Sunday.

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March 13th Launch -- A Sunday Launch Day

Sunday dawned a day far different from Saturday, clear skies, a light wind and comfortable temperatures made the rescheduled Sunday launch a great day. And, the best attended of the year to date.

March 13, 2005 Launch Day Totals – 115 flights

⅛A	¼A	½A	A	B	C	D	E	F	G	H	I	J	CLU	STA
0	0	1	3	7	13	10	12	8	10	3	3	0	6	39

CLU cluster, motors used not reported.
STA staged, motors used not reported.

March Events and Activities

March Events and Activities

March 15th Meeting – Homemade Parachutes and Delayed Recovery

The second meeting of March began with a report from Trip Barber about his trip to NARCON (*www.narcon2005.org/*). In addition to attending NARCON as the Vice-President of the NAR, he gave a presentation on Building and Flying competitive Boost Gliders – a presentation that will be made a future NOVAAR meeting. Over 200 people attending the convention held March 11th to 13th at the University of Wisconsin-Parkside in Kenosha, WI.

This year's NARCON included a meeting of the NAR's Board of Directors and Trip reported that the board is working in "big plans" for the 50th anniversary (2008) of the Sport Rocketry Hobby and the National Association of rocketry. To coincide with the golden anniversary, the association is planning several events that will end with NARAM 50 including a drive to introduce more people to the hobby and hopefully grow the ranks of the NAR.

Jonathan Rains reported that the books from NARAM-46 have been balanced and the remaining funds ($1,381.28) will be transferred to the club in the next few weeks.

Zac Yarasshus who did his Science Fair Project on the design and testing of parachutes made the first of the nights two presentations. With the sewing assistance of his mother he designed and tested parachutes to determine which was the best design. He won Second Place at the Science Fair.

Mitch Guess spoke about his efforts at dual deployment recovery applying the "*Kiss the Wheel*" engineering approach. And, Mitch showed the group how he incorporates a bungee cord shock absorber into his tubular Kevlar shock cord.

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March 20th Build Session -- Taking a Turn with Helicopter Recovery

The March building session featured the construction of one of two Competition Helicopter Recovery models from Ken Brown's QCR. One model features a rotating hub and the other a fixed rotor design.

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VERTICAL FORCE ROCKETRY

Vertical Force Rocketry is a Woodbridge based dealer that sells model rockets from FlisKits, Semroc, Rockethead Rockets, Estes, Quest, Custom, Loc Precision, Edmonds Aerospace, and Aerotech. And, model rocket motors from Estes, Quest, and Aerotech.

Check-out our website and sign=up for our newsletter to get the latest information about our products and services.

Look for us on the field on NOVAAR launch days.

www.vforcerocketry.com/

April Events and Activities

April 2nd Launch -- Horizontal Rain cancels RAMTEC-12 and the Saturday Launch.

I think the title says it all.

☆☆☆

April 3rd Launch -- A Sunday Launch Day.

Braving the high winds and closing skies, the range was open for business, though slightly abbreviated – 3 pads were set-up and the club's backup launcher was used..

April 3, 2005 Launch Day Totals – 2 flights

⅛A	¼A	½A	A	B	C	D	E	F	G	H	I	J	CLU	STA
0	0	0	0	0	0	0	0	0	0	0	0	0	2	0

and 2 igniters

CLU cluster, motors used not reported.
STA staged, motors used not reported.

Only 3 TARC teams were on the field and one left without flying. The launch button was pressed only 4 times; twice to test the launcher and once each for the two teams on the field. As the morning progressed, wind speed rose and the ceiling lowered. The range was closed shortly after 1pm.

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April Events and Activities

April 5th Meeting – Oakton High School and the Student Launch Initiative – Part 3

The first meeting of April started with a review of the weekend's launch – rain, rain, wind and more rain. The logistics of next weekend's launch were discussed. In addition to the anticipated TARC teams – this is the last weekend to qualify –several scout, Indian guide and family groups have indicated that they will be on the field as well.

In addition, in order to compensate for missing contest points because of the canceling of RAMTEC-12, an Open Meet is planned – the inaugural "*Spring Open Meet – Emergency*" (SOME-1). It will feature "B" Streamer, "B" Rocket Glide, "1/4A" Parachute Duration and "D" Helicopter Duration.

Because of the anticipated busy launch day, it was planned that all 24 pads that the club's controller is designed to control would be set-up.

The Oakton High School NASA Student Launch Initiative team visited the club again, this time with their rocket. The team reported that they were having problems with their electronic payload and the altimeter. A test launch is planned for the club's next launch.

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April 9th Launch -- A Quickly Planned Open Meet and a Sunny Saturday Launch Day.

What a difference one week makes. Last weekend rain was traveling horizontally across the launch field and today, the sky was clear and the sun bright.

Because of last weekends rain-out, and the cancellation of RAMTEC-12 the "Spring Open Meet – Emergency" (SOME-1) was held in addition to TARC, Scout and Indian Guide launches. Not to mention everyone else that wanted to fly on what turned out to be one great day!

April 9, 2005 Launch Day Totals – 193 flights

⅛A	¼A	½A	A	B	C	D	E	F	G	H	I	J	CLU	STA
0	0	0	15	19	26	24	14	8	2	10	3	2	3	67

CLU cluster, motors used not reported.
STA staged, motors used not reported.

April Events and Activities

April Events and Activities

April 10th Launch -- A Sunny Sunday Launch Day.

This was the last day to qualify for TARC on the Club's field and multiple TARC teams were expected. However, a second sunny day brought a crowd of flyers.

The flight total exceeded Saturday's launch and is second only to the total flights on the sport range at NARAM last year. It surpasses last years best attended launch by 47 – November 6, 2004 (260 launches).

April 10, 2005 Launch Day Totals – 307 flights

⅛A	¼A	½A	A	B	C	D	E	F	G	H	I	J	CLU	STA
0	2	4	25	50	95	29	23	15	9	5	5	2	9	34

CLU cluster, motors used not reported.
STA staged, motors used not reported.

April Events and Activities

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April Events and Activities

Sporting a fresh coat of paint, The Club's Rocket's Arrive on the Field

Thanks to the efforts of Bart Markley, the Club's Rockets build during the winter made their first appearance on the launch field.

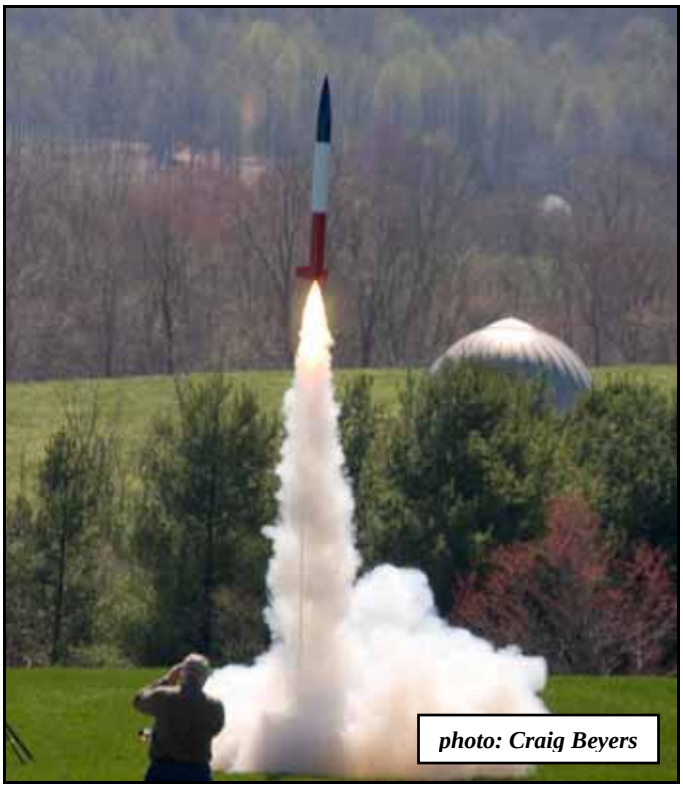


photo: Craig Beyers

April 19th Meeting – Building Competition Rocket Gliders

The last meeting of the month opened with a report by John HochHeimer sharing comments he received from Great Meadow that they are very happy with NOVAAR's use of the field and facilities. They stated that the club leaves the field in better shape than all the other groups.

The results of last weekend's SOME-1 Open Meet were announced and Certificates of achievement we handed-out.

The rental of the Port-o-Lets has placed a crimp on the clubs budget and the possibility of either charging for winter launches or soliciting for donations from flyers as a means of offsetting their cost was discussed.

The month of May will be focused on TARC. The meeting on May 3rd will feature representative from AIA and will discuss last minute issues for TARC. The May 17th meeting will focus on last minute TARC coordination.

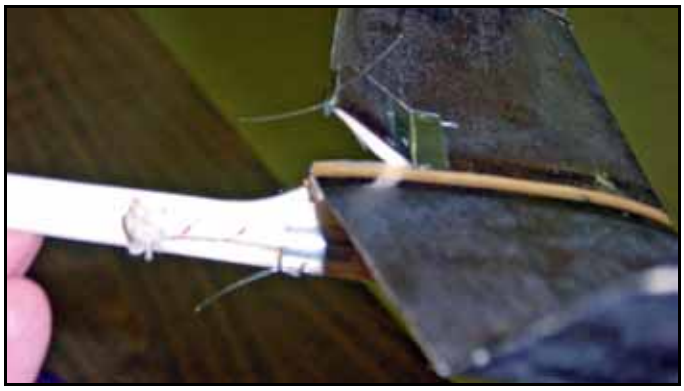
The next club launch is set for June 5th (a Sunday) and what was originally scheduled, as a Section meet will be an Open Meet. The events will be "B" SuperRoc Altitude, "1/2A" Boost Glide, "A" Streamer Duration and "1/4A" helicopter duration. The Contest Director will be Joe Woodford.

Will Marchant presented a proposal from the "*Prince William County R/C Flyers*" – a Radio Control Airplane Club – and National Capital Area Council of the Boy Scouts o America. The Scouts are developing a "merit badge center" where the scouts can go and earn merit badges that require space and specialty equipment. The new facility called "Camp Snyder", located in Haymarket, VA, will feature a Radio Control Aviation field (the home field for the Prince William County R/C Flyers) and the council would like to include Sport Rocketry as well. Assisting in the establishment of a single well appointed and maintained, site/facility that the Scouts would fly at would be preferential to the conditions that NOVAAR has conducted Scout launches before. A team was assembled to investigate the situation and develop a list of requirements that the club could consider.

The presentation for the evening was made by Trip Barber who explained why "*a finger rest and a tail splice are proof that a flyer knows*

April Events and Activities

what they are doing when competing in Boost Glide events." Trip presented to the club the presentation he made at NARCON 2005.



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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.

SOME-1 – Meet Champions

C Division

Place	Contestant	NAR Number	Section Number	Total Points
1	Barber, Trip	4322	205	1200
2	Ash-Poole, Jennifer	61415	Ind	336
3	Kidwell, Chris	45225	Ind	108
4	Prekel, Frank	35189	205	46
5	Edmonds, Robert	37700	205	0

T Division

Place	Contestant	NAR Number	Section Number	Total Points
1	Trash Always Wins	T-007	205	944
2	HoHo	T-207	205	796
3	Calvin and Hobbs	T-721	205	588

SOME-1 – Event Standings

1/4A Parachute Duration – C Division

Place	Contestant	Flight 1	Flight 2	Event Points	NAR Points
1	Barber, Trip	143	56	199	140
2	Ash-Poole, Jennifer	3		3	84
--	Prekel, Frank	SEP		0	0

1/4A Parachute Duration – T Division

Place	Contestant	Flight 1	Flight 2	Event Points	NAR Points
1	Trash Always Wins	199	15	214	140
2	HoHo	58		58	84
3	Calvin and Hobbs	11	43	54	56

B Streamer Duration – C Division

Place	Contestant	Flight 1	Flight 2	Event Points	NAR Points
1	Barber, Trip	124	112	236	180
2	Kidwell, Chris	40		40	108
--	Prekel, Frank	SEP		0	0

B Streamer Duration – T Division

Place	Contestant	Flight 1	Flight 2	Event Points	NAR Points
1	Calvin and Hobbs	66	59	125	180
2	Trash Always Wins	18	EJ	18	108
--	HoHo	SEP	SEP	0	0

D Helicopter Duration – C Division

Place	Contestant	Flight 1	Flight 2	Event Points	NAR Points
1	Barber, Trip	NDP	110	110	460
--	Prekel, Frank	109 NR		0	46

D Helicopter Duration – T Division

Place	Contestant	Flight 1	Flight 2	Event Points	NAR Points
1	HoHo	94	102	196	460
2	Trash Always Wins	56	118	174	276
3	Calvin and Hobbs	80	NDP	80	184

B Rocket Glider Duration – C Division

Place	Contestant	Flight 1	Flight 2	Event Points	NAR Points
1	Barber, Trip	54	53	107	420
2	Ash-Poole, Jennifer	48	35	83	252
--	Edmonds, Robert	NG		0	0

B Rocket Glider Duration – T Division

Place	Contestant	Flight 1	Flight 2	Event Points	NAR Points
1	Trash Always Wins	59	145	204	420
2	HoHo	69	70	139	252
3	Calvin and Hobbs	41	50	91	168

☆☆☆

Are you missing something?
How about your NOVAAR Hatpin!!

And, it is available from Frank Prekel -- fjprekel@aol.com.

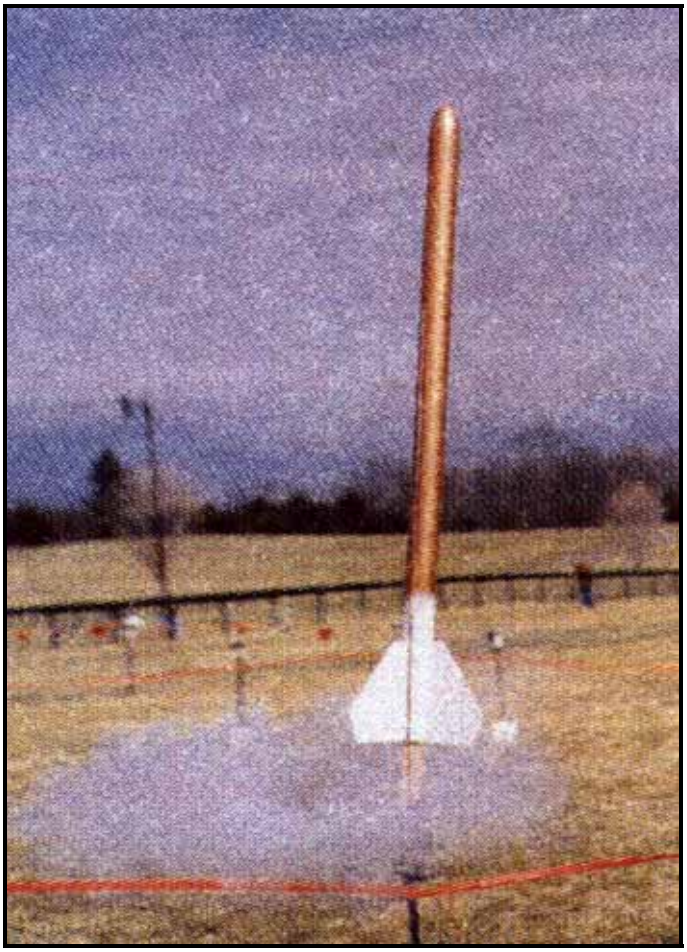
The NAR pin is available from NARTS (www.nar.org/narts)
The Flag Ribbon is out-of-print and no longer available.

Sport Rocketry

Building the Super Behemoth

by Mark Blicharz

If you can't afford high power rockets, this design may be for you. This design is powered by 3 Estes E9-6 motors. I designed this rocket back in 1967, and it was 38 inches tall. It used 2 BT-60 body tubes and a PNC-60A nose cone. I launched it with one D12-5 motor and it was recovered by a 12-inch parachute. Back then, I could only afford Estes motors and I thought that 38 inches was big.



The parts for the super behemoth are:

1. 4 BT-60 body tubes
   (one cut at 14' long - the rest stay at 14 1/4 long.)
2. 1 PNC-60 nose cone
3. 3 BT-50 body tubes cut at 8" long and glued together.
4. 2 centering rings for the motor tubes
   (made out of 1/16' thick cardboard stock – see pattern)
5. 4 1/8" thick balsa wood fins (see pattern)
   (the fins are made out of 2 pieces of balsa wood glued together)(use a sheet of wax paper underneath fins when gluing them together)
6. 1 bottle of Weldbond glue to put it together and use Elmers glue as sanding sealer for the fins.
7. 1 piece of elastic cord for the shock cord 30' long (cord can be bought at any fabric store)
8. 1 parachute (Estes 24" chute)
9. 3 BT-80 tube couplers (1" wide each)
10. 1 launch lug (3/16' x 53/8' long)

When assembling the rocket, put the 14" tube as the top tube. Cut a slit II" down from top tube to place the elastic shock cord. Place a second slit I" below first slit. Make a double knot at one end of the cord and place it in the second slit. Put the other end of cord into the 1st slit and run it up until all of the cord is coming out of the top of the tube. Smear some glue over the exposed cord against the tube so it'll seal the slits and cord together.

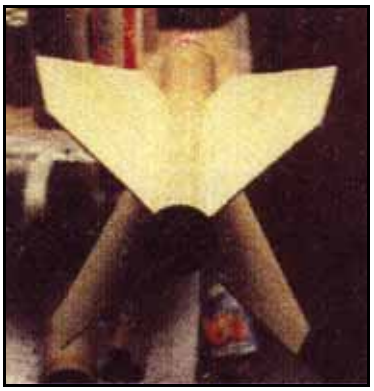
(NOTE: assemble the fins and the motor mount together to one tube before connecting the other tubes together. It's easier to put the rocket together)

Enclosed is a fin marking guide. Cut out guide and wrap it around bottom tube and mark where fins are to be glued to the tube. Glue fins to tube with Weldbond glue. Make sure fins are straight for stable flight~ I assembled mine with the tube standing upright and then attaching each fin one at a time. Apply glue fillets to joints. For the sanding sealer for the fins, I used Elmers glue.

Next, assemble the motor tubes together with rubber bands to keep them together. Apply Weldbond glue into seams between tubes and let dry filly. From the pattern sheet, make two motor mount centering rings from cardboard stock. Slide each ring onto tube assembly 1/2" from each end. Put extra glue around where tube and rings touch each other. After mount is dry, smear glue into bottom end of the bottom tube (the one with the fins attached) and slide motor mount in until

Sport Rocketry

tube ends are even with the end of the BT-80 tube. Add extra glue to all joints on both ends of motor mount in BT-80 tube. Use a scrap piece of dowel to apply the glue.

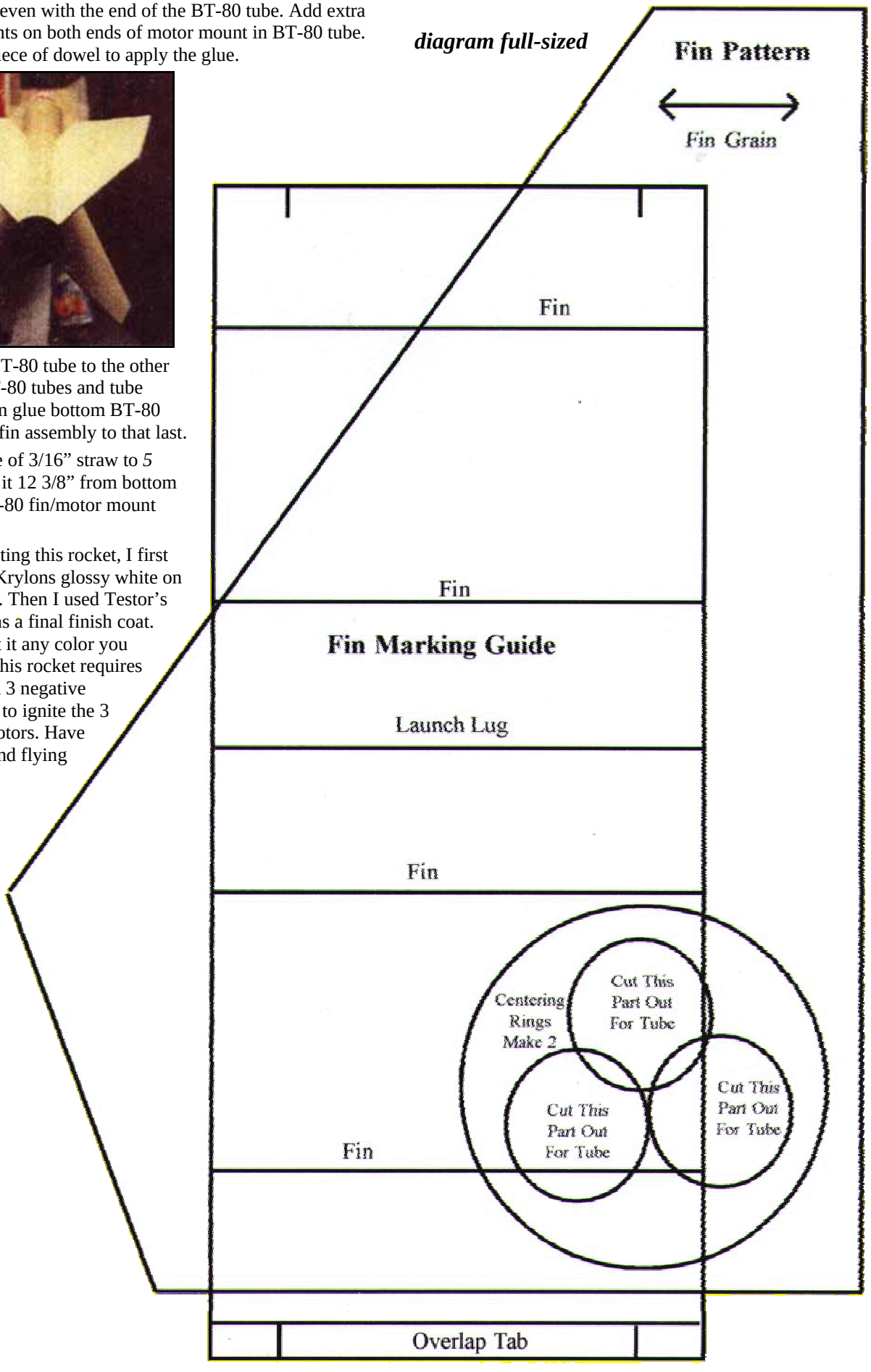


Glue top BT-80 tube to the other remaining BT-80 tubes and tube couplers. Then glue bottom BT-80 motor mount/fin assembly to that last.

Cut a piece of 3/16" straw to *5* 3/8" and glue it 12 3/8" from bottom of bottom BT-80 fin/motor mount assembly.

When painting this rocket, I first put a coat of Krylons glossy white on as a base coat. Then I used Testor's 1251 copper as a final finish coat. You can paint it any color you wish. Flying this rocket requires 3 positive and 3 negative ignition leads to ignite the 3 Estes E9-6 motors. Have fin building and flying this rocket!

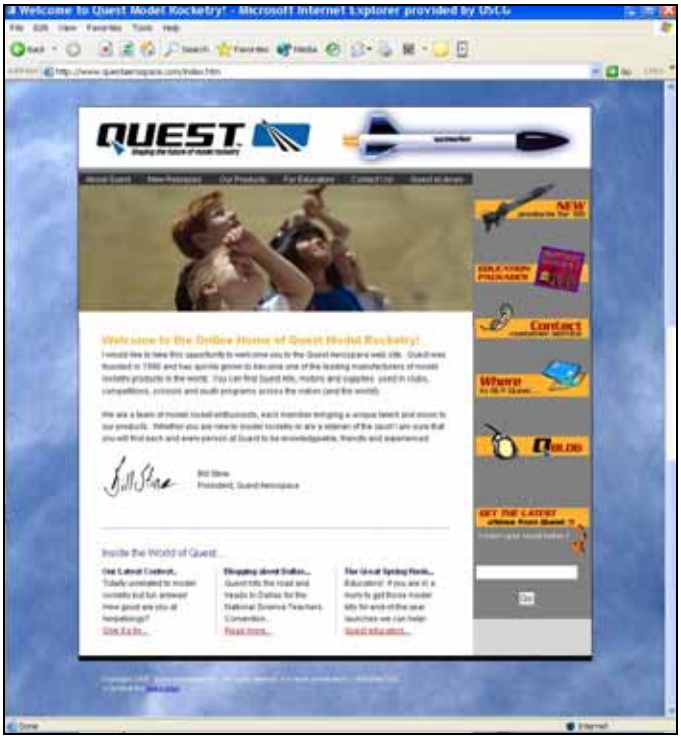
diagram full-sized



General Rocketry

Quest Aerospace updates its website and adds two noteworthy additions

After being only a signpost on the information highway, Quest Aerospace has made several major revisions to its website (*http://www.questaerospace.com*).



Of particular not are two additions that have recently appeared.

First up is a new introduction to rocketry called …

Ground to Sky "An Educators Field Guide to Starting a Model Rocketry Program."

A 36-page guide filled with answers to the most common questions asked by educators considering - or continuing - a model rocketry program or unit. G2S covers issues such as range safety, construction techniques, finding and managing resources, program building and more!

Ground to Sky is available as a free, downloadable, 3.3mb Adobe Acrobat file and is available in Quest's "*eLibrary*" section of their website (*http://www.questaerospace.com/images/elibrary/guides/G2S/G2S_complete.pdf*).

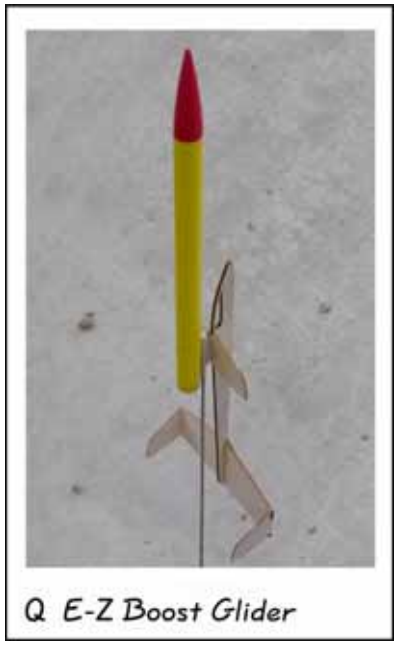
Located in the "*For Educators*" section of Quest's website (*http://www.questaerospace.com/pages/products_edu.htm*), the second item of interest involves a member of the NOVAAR.

Does the Design of this glider look familiar?

Quest calls it the "Quest E-Z Boost Glider"

The website describes it as "*A rocket boosted glider is the perfect tool to teach both aerodynamics and rocketry science at once. This easy-to-assemble kits features balsa wood glider parts that are laser-cut for a perfect fit.*

Build the glider first (to teach principles of basic aerodynamics) and then build the booster rocket to bring your vehicle to altitudes of nearly 500 feet. The booster rocket returns by streamer and the glider circles back to earth!"



The website states that the kit will be available on May 15th and be sold in packages of 25 at a suggested retail price of $225 ($180 directly from Quest)

Congratulations Rob!!

★★★

April Launch Photos by Craig Beyers

April Launch Photos by Craig Beyers