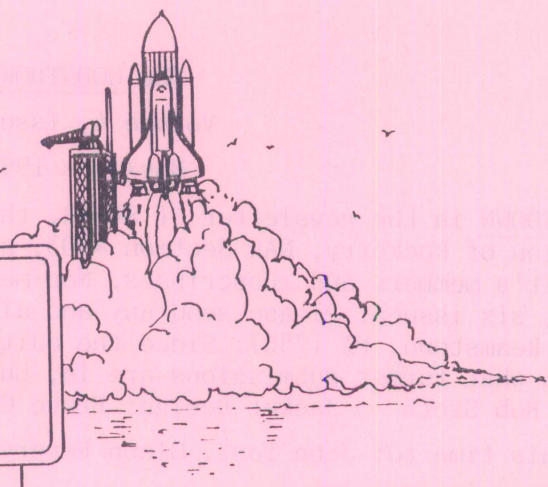


COUNTDOWN



OFFICIAL NEWSLETTER OF
THE SOUTHERN PENNSYLVANIA AREA ASSOCIATION OF ROCKETRY

Volume 4, Issue 3 May/June 1991

SPAARSEV-IV: AND THE WINNERS ARE:

C Division: Ed Miller



A Division: Derek Yost



The COUNTDOWN
Volume 4, Issue 3
May/June 1991

The COUNTDOWN is the newsletter of SPAAR, the Southern Pennsylvania Area Association of Rocketry, NAR Section #503, and is intended for the enjoyment of it's members and subscribers. Non-member subscription rate, \$5 per year, six issues. Please send any and all submissions to: SPAAR, PO Box 127, Reamstown, PA 17567. Since the editor doesn't have a PC, we could care less what format submissions are in, but Crayola is preferred.

Cover: Bob Stott Jacket Design: Bruce Canino Editor: George Beever

Thanks this time to: John Yost, Glenn Feveryear, Cliff Claven, Norm Peterson

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ON THE COVER

A Divsion SPAARSEC-IV winner Derek Yost takes his B Egglofter to check-in;
C Division winner Ed Miller displays his First Place Sport Scale Aerobee-Hi.

UPCOMING EVENTS

JUNE

June 15/16: WUBBA-14 Regional Meet, Centre Valley, PA. Events: F SRD, ½A SRD, ½A RG (multi), E HD, FAI S6A (A SD multi), & ½A FW.

June 17: Section Meeting, 7-9PM, Lancaster County Public Library, N. Duke St., Lancaster.

June 30, 3-7PM, Sport launch, Cocalico High School, Denver, PA.

JULY

July 15: Section Meeting, 7-9PM, Lancaster County Public Library, N. Duke St., Lancaster.

July 22: Sport Launch, 9AM-5PM, Schuykill Valley School Complex; altitude and Spot Landing events for NOAHS; for directions see Art Babiarz.
*** NOTE LOCATION AND TIME***

AUGUST

August 11: Sport Launch, 3-7PM, Cocalico High School, Denver PA. (Manned Launch Vehicle Day)

August 19: Section Meeting, 7-9PM, Lancaster County Public Library, N. Duke St., Lancaster.

SEPTEMBER

September 1: Sport Launch, 3-7PM, Cocalico High School, Denver, PA. (Sounding Rocket Day)

September 16: Section Meeting, 7-9PM, Lancaster County Public Library, N. Duke St., Lancaster.

September 22: SPAARSEC-V Section Meet, events to be announced.

M E E T I N G S

March 18, 1991

Present: Glenn & Rita Feveryear, Gary Feveryear, J. Yost, A. Babiarz, D. Greene, D. Rhoat, G. Beever, E. Miller.

I. Treasurer: Ed Miller reported that there are 36 members, with 3 renewals received today. This brings the total to 39. General Fund balance at the end of the last meeting was \$320.52. Since that time, \$25.00 was paid out for materials to build the trackers, giving a current balance of \$295.52.

II. Newsletter: G. Beever thanked John Yost and Dale Greene for helping to copy the newsletter. Art Babiarz stated that he could help, also. The March/April issue was then passed out to those present.

The SRB's section in New York has initiated a newsletter exchange.

III. Competition: Glenn had a couple of reminders: The SPAMBAM-1 Open Meet will be held on April 28, from 9 to 5 at Cocalico. The NARAM On A Half Shell contest will begin with the Sport Launch scheduled for April 14. Entry fee for C Division members is still a rocketry-related product worth at least \$5, and there is no fee for the A and B Divisioners. There have been only 4 entries received thus far, all C Division people.

IV. Section Advisor: John Yost had no report.

Old Business

Glenn stated that he still has the trackers under construction, and hopes to have them done soon.

The members present discussed the on-going efforts to locate and purchase an acceptable battery for the launch system, as well as a P.A. system.

New Business

Art Babiarz passed around an example of a home-made decal produced on a Xerox machine.

Glenn stated that since no one renewed their AMA insurance, we are no longer an AMA club. The indifference expressed by those present was deafening.

The standing committees were re-appointed for 1991 (Competition, Education, Newsletter, and Range Operations.)

Discussion followed, and the meeting adjourned at 8:45PM.

April 15, 1991

Present: Glenn & Rita Feveryear, D. Rhoat, D. Greene, J. Yost, E. Miller, G. Beever.

I. Treasurer: Ed Miller reported that there are 37 paid members, down 2 from last month; the balance at the end of the last meeting was \$295.52. Since that time there was an income of \$15 in dues, and outlays of \$26 for postage, \$3.70 in post office box rent, and \$7 in NAR A Division dues; this leaves a balance of \$274.82.

II. Newsletter: G. Beever reported that 55 copies of the Mar/Apr newsletter were made, of which 54 were sent to members, subscribers, and exchange sections, and one was sent out as a freebie.

Reported that he could obtain what amounts to a year's supply of copier paper for approx. \$30 or less. A proposal was made by Dick Rhoat, seconded by John Yost, to authorize the expenditure of up to \$30 for this purpose. The motion passed by voice vote.

Asked for submissions to the newsletter.

III. Competition: Glenn reminded those present that SPAMBAM-1 will be April 28 at Cocalico HS.

The trackers are completed, and brought one of them in for display.

The sport launch was postponed from April 14 to April 21 due to weather.

Discussed the possibility of having a $\frac{1}{4}$ A event as well as an FAI event included in SPAARSEC-5 this fall. $\frac{1}{4}$ A BG, $\frac{1}{4}$ A SRD, $\frac{1}{4}$ A PD and FAI S3A (A PD) were discussed. The $\frac{1}{4}$ A motors should be available soon through Apogee Components.

IV. Section Advisor: John Yost discussed a letter that he has received from NAR president J. Pat Miller concerning insurance. There are 2 proposals in hand; investigation continueing. Stated that the section charter has been renewed.

Old Business

Dick Rhoat purchased 4 new stop-watches on behalf of the club.

Dale Greene and John Yost stated that they are still checking into a battery and a PA system, respectfully.

New Business

Ed Miller proposed a workshop for high power construction/H motor certification. This would involve constructing a high-power model which would fly on a G and an H motor. After discussion, Ed was asked to develop a proposal for such a workshop program for presentation at a future meeting.

The members present then discussed the NAR High Power Certification program that went into effect on April 1 on an interim basis. The direction that the club will take in this area was considered. After discussion, it was proposed that a standing committee be formed concerning High Power rocketry. This will require an amendment to the by-laws. G. Beaver was

directed to write this proposed amendment for the membership to vote on, as well as to write a suggested charge for the committee. As an interim measure, Ed Miller volunteered to head the committee, and Dale Greene and John Yost volunteered to assist. Further discussion followed, and the meeting adjourned at 9PM.!

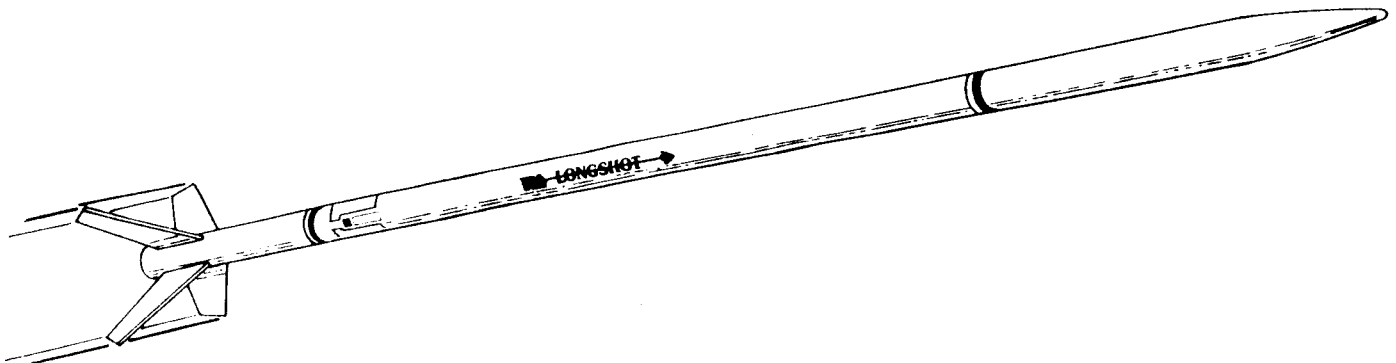
COMPETITION PLAN

(next page)

The competition design featured on the next page was developed a couple of years ago by SPAAR prez Glenn Feveryear. It is truly an example of a contest model being designed around it's recovery system, as opposed to adapting the recovery system to the model.

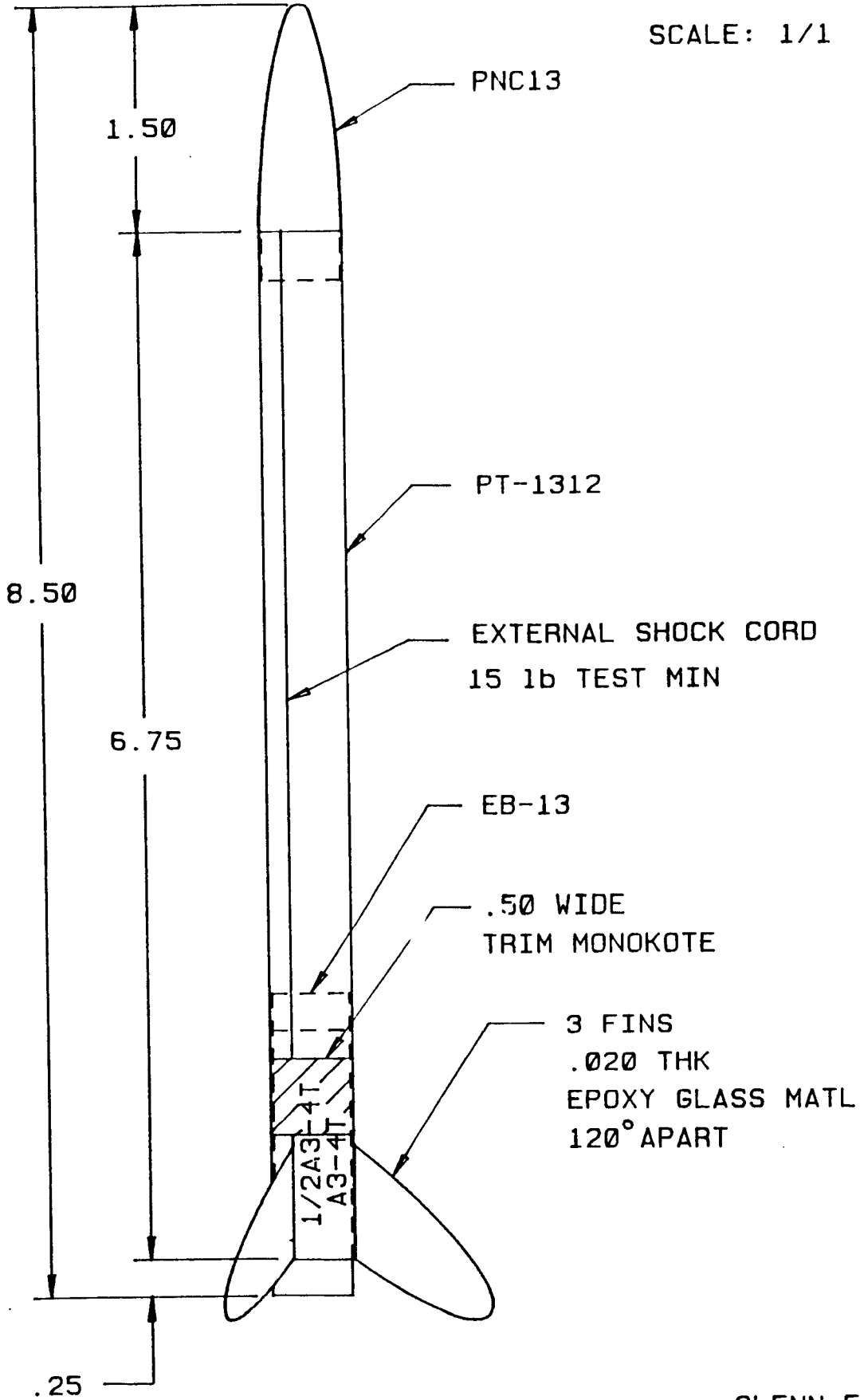
This is Streamer Duration bird designed around a 4" X 40" streamer. With a body tube which is 6.75" long, there is just enough interior room for the mini-motor, a small bit of wadding, the streamer, the shock cord, and the nose cone shoulder. Maximum use of available space, to say the least.

The prototype was constructed with parts available from Apogee Components, but Estes parts can be used, however attention must be paid to weight. The model was built using cyano (super-glue), with thin epoxy fillets. A tower was used to launch the model, thereby eliminating the excess drag of the launch lug. It has flown well on $\frac{1}{2}$ A and A mini-motors, and should also fly well on the soon to be reintroduced $\frac{1}{4}$ A motors. The original streamer was a 4" X 40" tissue paper design, with accordion folds over at least half of it's length. The shock line was epoxied to one fin root/fillet.



1/2A/A CLASS STREAMER DURATION

SCALE: 1/1



GLENN FEVEYER
NAR 24931

LETTERS

Hey, even we get mail once in a while!

"Yo George,

...A note about the "SCUD-B" kitbash article. The reason the D.A.R.T kit was discontinued wasn't because of lack of sales, but because of what the kit was in the first place. Estes, with plastic parts, has a policy of if they have an excess inventory of an unwanted part, build an easy rocket around it and sell it! The D.A.R.T was such a kit. The model that didn't sell was the SCUD-B!

Also, another kit that would work with this article, and also came with a full 18" BT-60 tube was the "Mach-2" kit (1982-84), which we still have a few of over here."

Robert Stott

Thanks for the information on the use of the "Mach-2" kit, Bob. So, you say ya have a bunch of them? Hmmm.....

We also received a very nice note from Maj. Mike Robel, serving with the US 1st Infantry Div. (Mechanized) in the Kuwait Theater of Operations:

"11 March 1991

Dear George,

Thank you for writing and sending the newsletter. Obviously, I've not had the opportunity to fire any model rockets here (might be confused for Scuds).

However, as we were displacing to our assembly areas for the attack, going through a town named Hafir Al Batin, a disintegrating Scud did hit the ground around my convoy. It made a tremendous bang, and several plumes of smoke, and then dirt rose into the air. Some people in the town were injured, but none killed, and we continued on our way. It was NOT like trying to catch your rocket in the air before it hit the ground, even without a

parachute.

Now that I am relatively sure I'll be home (hopefully by August), I can start to think about my other projects: my Saturn IB is unfinished as I said before, as is my GEO SAT LV. I'm still looking for a Gemini-Titan, a Mercury-Redstone, and I'm thinking about scratchbuilding a Mercury-Atlas. I didn't spend much money on models for obvious reasons before my departure.

I also have several other projects to work on: completing my gaming table (I play war games), remodeling a room in the basement, reconstructing the model train layout following my move from California, and God knows what else my wife has got lined up for me.

I have to ask: Did the Coke bottle on the cover fly?

Again, thanks for the newsletter. Have any of you tried the reloadable motors? How do they work? How do you load them? Exciting times ahead, obviously.

Take care, see you on CIS sooner or later.

Mike"

Mike:

I think you might have it backwards...our thanks goes to you and all of the service personell for a great job done well! I think I can speak for the vast majority of the folks back home by saying that we are proud of what you people did, and we hope you all are home soon!

As for the Coke bottle on the cover of the Jan/Feb Countdown.....oh yes, it flies! Just ask Ed Miller, who built it. Ed has built a whole series, all the way up to the 3 Liter size, powered by an F100. (no kidding!)

HIGH POWER ROCKETRY: BIG CHANGES AHEAD!!

For those of us who have been around the hobby/sport of model rocketry for some time, the changes that have taken place within the past five years or so are mind boggling, so say the least. For example, when I started flying, in 1968, Estes Industries was the giant in the field, followed at a distant second by Centuri; a black powder C6-5 was about as high a power as you could get. Flight Systems was around then, and the F100 motor was on the market, but no one I can think of ever really saw one. Good old Elmer's glue was the adhesive of choice; it did just fine on balsa-to-balsa or balsa-to-paper applications. Good thing, because that's just about all there was at the time! Many of the things around today weren't even heard of back then. Cyano? Sounds like a character in an Italian opera. Epoxy? Only used to lay tile in a kitchen floor. Composite rocket motors, phenolic body tubes, kevlar shock cords and the like were not around. And as far as motors were concerned... I can distinctly recalled when Estes introduced the "D" motor. Wow! What unbelievable power! Oh, don't get me wrong. Obviously, the theory of E through M class motors existed, but the motors themselves were not generally available to the consumer. Which brings us around to the purpose of this article.

Up until this past winter, the National Association of Rocketry, the NAR (the parent organization of clubs like SPAAR), did not concern itself with rocketry which exceeded G motor power. For those who wished to become involved in flying high power rockets, in other words rockets which exceeded NAR power limits, were directed towards the Tripoli Rocketry Association, Inc. Tripoli was founded in the Pittsburgh area (no, not Libya) in the early '80s, as the governing body of high power enthusiasts. For reasons which have been documented elsewhere, the NAR and Tripoli carried on a relationship that was more antagonistic than cooperative.

However, within the past 12 months, things began to change. An open dialogue was opened between the two groups. And in the most significant development, the NAR adopted the recommendations of a special High Power Rocketry Commission, and embraced HPR, as High

Power is referred to. The NAR is not absorbing Tripoli; however, the two groups appear sincere in their desire to work together in the field of HPR, to the benefit of the HPR flyer.

As part of the NAR's move into the HPR field, an interim High Power Safety Code has been enacted, effective April 1, 1991.

What all of this means is that in the future, many more people will be exposed to a new area of rocketry that many had only heard of before.

What does all of this mean to SPAAR? How will it affect our club, and how it conducts it's business and launches? These questions were first addressed at the April club meeting. Many ideas were discussed, and options considered. Many things were left unresolved, but many issues are well on their way to being worked out.

First, a High Power Rocketry Committee was proposed, to oversee the HPR activities of the club and it's members. Official implementation of this idea will require a revision to the club's by-laws, but in the interim Ed Miller volunteered to chair this committee, and Dale Greene and John Yost offered to help.

Second, Ed proposed a comprehensive HPR Workshop Program for implementation during the winter of 1991-92. This would involve the construction, finishing, and flight of an existing, proven HPR kit first with a G class motor, then with an H class motor. All of the kits would be alike, in order to facilitate the workshop format. In other words, Ed will show us how to build and fly the big ones, and at the same time, those participating would be certified through the NAR's motor certification program to fly H motors. (A list of kits under consideration is located on Page 17).

Third, a number of special HPR launches will be scheduled for 1992, much in the same way as NAR sanctioned contests are scheduled now. This of course depends on the location of a suitable launch site; Cocalico High School is not the place to fly a rocket vehicle powered by an I or J class motor. The good old run-of-the-mill SPAAR Sport Launches are still OK at Cocalico, but not HPR ones.

Many other topics and concerns were voiced. Among them, were safety procedures, (See P.17)

THE NATIONAL ASSOCIATION OF ROCKETRY
HIGH POWER ROCKET SAFETY CODE

-INTERIM-

This code will be replaced with a safety code established by the National Fire Protection Association Committee on Pyrotechnics. The new code should be in place by January 1, 1992.

In order for you as an NAR member to fly advanced high power rockets (AHPR) on an NAR range, you must become certificated following the steps shown on the "Application for Certification for NAR High Power Rocketry - Interim". (This form is included in member's editions). Your high power rockets must be flown in accordance to the specifications of the interim safety code.

At this time the NAR has not tested for certification any of the high power motors, although the NAR is in the midst of developing a testing program to be in place by August 1991. The NAR will accept the motor certification of the Tripoli Rocketry Association, Inc.

SAFETY CODE

1. CERTIFICATION - I will fly high power rockets only if 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 37, 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, plastic or the minimum amount of ductile metal suitable for the power used and the performance of the rocket.
4. MOTORS - I will use only commercially made, NAR certified high power rocket motors in the manner recommended by the manufacturer. I will not alter a high power rocket motor, it's parts, or it's 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 the rocket.
6. WEIGHT AND POWER LIMITS - My high power rocket will weigh no more than the rocket motor manufacturer's recommended liftoff weight for the rocket motor(s) I use for the flight, or I will use the rocket motor(s) recommended by the rocket motor manufacturer. My high power rocket will be propelled by rocket motors that produce no more than 40,960 Newton-Seconds (9,205 Pound-Seconds) of total impulse.
7. STABILITY - I will check the stability of my high power rocket before it's first flight, except when launching a rocket of already proven stability.
8. PAYLOADS - Except for insects, my high power rocket will never carry live animals, or a payload that is intended to be flammable, explosive, or cause harm.
9. LAUNCH SITE - I will launch my high power rockets outdoors in a cleared area, free from tall trees, power lines, buildings, and dry brush and grass. My launcher will be located more than 1,500 feet from any occupied building. My launch site will be at least as large as that recommended in the following table:

(Continued On Next Page)

LAUNCH SITE DIMENSIONS

Intalled Total Impulse (N-Sec)	Equivalent Motor Type	Minimum Site Dimensions (ft)	Equivalent
160.01 - 320.00	H	1,500	-----
320.01 - 640.00	I	2,500	½ mile
640.00 - 1280.00	J	5,280	1 mile
1280.01 - 2560.00	K	8,800*	1-1½ miles
2560.01 - 5120.00	L	12,320*	2 miles
5120.01 - 10,240.00	M	15,840	3 miles
10,240.01 - 20,480.00	N	21,120	4 miles
20,480.01 - 40,960.00	O	26,400	5 miles

* Approximations

10. LAUNCHER - I will launch my high power rocket from a stable device that provides rigid guidance until the rocket 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 will cap the end of the rod when approaching it. I will cap or disassemble my launch rod when not in use and will never store it in an upright position. My launcher will have a jet deflector device to prevent the rocket motor exhaust from hitting the ground directly. I will always clear the area 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, and 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 by the total impulse of the installed rocket motor(s) according to the following safe distance table:

SAFE DISTANCE TABLE

Installed Total Impulse (N-Sec)	Equivalent Motor Type	Minimum Safe Dimensions (ft)	Minimum Safe Distance (ft) (Complex Rockets*)
160.01 - 320.00	H	50	100
320.01 - 640.00	I	150	200
640.01 - 1280.00	J	150	200
1280.01 - 2560.00	K	200	300
2560.01 - 5120.00	L	300	500
5120.01 - 10,240.00	M	300	500
10,240.01 - 20,480.00	N	500	1000
20,480.01 - 40,960.00	O	500	1000

*NOTE: A "Complex" high power rocket is one that is multi-staged or propelled by a cluster of motors.

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 rocket motor manufacturer that will ignite my rocket motor(s) within one second of the actuation of the launching switch. If my high power rocket suffers a misfire, I will not let anyone approach it or the launcher until I have made sure 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, when a flying aircraft is in sight, or when a flight might be hazardous to people or property.
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 it's 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.

PROPOSED BY-LAW REVISION CONCERNING HIGH POWER ROCKETRY

The proposed revision to the Section By-Laws concerning the formation of a High Power Rocketry Committee is printed below. This revision would affect Article 9, Committees, and would create a standing committee to oversee the club's HPR activities. This revision will be voted upon at the Section Meeting on June 17, 1991. The meeting, as usual, will be held at the Lancaster County Public Library, N. Duke St., Lancaster, from 7 to 9PM. All members are urged to attend.

ARTICLE 9, COMMITTEES

There shall be four (change from three) standing committees, plus such additional committees as the Board of Directors may from time to time deem necessary or desirable. The standing committees are as follows:

D. HIGH POWER ROCKETRY COMMITTEE

The High Power Rocketry Committee (hereafter referred to as "HPR") shall consist of a volunteer chairperson, who shall be a "C" Division NAR member in good standing, and any other section member who is 18 years of age or older.

The HPR Committee shall:

- I. Be in charge of making all necessary arrangements for section HPR launches, including but not limited to launch sight determination and FAA Waiver acquisition.
- II. Monitor the NAR HPR Certification Program within the section, keeping a written record of the various HPR levels attained by section members.
- III. The chairperson of the HPR Committee or his/her designee shall act as the Range Safety Officer at section HPR launches.

SPAAR LAUNCH ACTIVITIESApril/May, 1991

It was one of "those" days.
Worse yet, it was one of "those" months!

The month of April was supposed to have seen a Sport Launch on April 14 and the SPAMBAM-1 Open Meet on the 28th. Not quite.

For the first time since September, 1988, a SPAAR event was canceled due to weather problems. Not once, but twice. Threatening (read that "just plain lousy") weather on April 14 forced a postponement until the following Sunday, the 21st. Of course, it rained on the 21st. Come to think of it, it seemed to have rained throughout the month of April.

The weather cooperated a bit more for the Open Meet scheduled for the 28th. At least it didn't rain. The wind blew and it was a bit chilly, but it didn't rain. The only problem was, only three people, all SPAAR members, showed up to compete. Even worse, only a like number of other club members attended to help out with the range or to sport fly. In a sense, SPAMBAM went SPAMBUST. The launch was supposed to have been from 9 to 5, but things got wrapped up by 3 o'clock.

All was not completely lost, however. Ten contest flights were made before it was decided that that undertaking was a lost cause, so the sport flying commenced. Ed Miller flew a North Coast Phantom with a G42-8WL to earn his NAR G motor certificate; Renee and Daniel Feveryear flew their EStes Starhawk and Gnome, respectively; and Dan Weinhold gave a new meaning to "re-cycled rocketry". We have to go all the way back to June, 1989, for the beginning of this story. At a sport launch back then, Ed Miller flew a Flight Systems Hercules on an F100. Unfortunately, the parachute did not deploy, and the model plowed into the ground, causing major (we're talking big time) damage to the body. At that time, Dan asked Ed what he was going to do with the wreckage, and was told it would most likely find it's way to the nearest dumpster.

Dan asked for a last minute reprieve, and was awarded with a pile of Hercules smegma.

Almost two years later, the re-conditioned Hercules reappeared with a couple of wrinkles still in the body, a new paint job, and quite flyable. The "Re-Con" Hercules turned in a textbook flight on an Aerotech E30. As it turned out, this wasn't the end of Dan's heroics.

Glenn brought out his Aerotech IQSY Tomahawk, a Christmas present that turned into a winter-long project. Glenn superdetailed the model, and was justifiably proud of the result. Not trusting the rather small 'chute that comes with the kit, he substituted a much larger nylon one. In any event, the model flew perfectly on an E15-4WL; unfortunately, it found the top of a very tall thick tree at the edge of a plowed field. (Remember: Model Rocketry is fun!) On the following Tuesday, Glenn received, in the mail, an unsigned note stating that the Tomahawk was safe, sound, and undamaged, and would be returned soon. Hmmmmm.....

The mystery was solved the following Sunday, when Dan turned up with Glenn's model. The explanation? Simple. After everyone went home

FLIGHT LOG, APRIL 28, 1991

<u>Flight #</u>	<u>Name</u>	<u>Model</u>	<u>Motor(s)</u>	<u>Time</u>	<u>Misc.</u>
1	E. Miller	1/2A RG	1/2A3-2	25.32	GF
2	" "	1/2A RG	1/2A3-2	21.53	GF
3	" "	A B/G	A3-4	60.78	GF
4	" "	Phantom	G42-8WL	79.76	GF*
5	" "	Nike-Smoke	C6-5	NT	GF
6	D. Greene	1/2A SD M	1/2A3-4	61.44	GF
7	" "	1/2A SD M	1/2A3-4	51.62	GF
8	" "	1/2A SD M	1/2A3-4	14.8	ND
9	" "	Big Brute	F25-6WL	NT	GF
10	" "	Big Brute	F32-5WL	NT	GF
11	" "	2 Ton Helix	B4-2	8.5	PRG
12	T. Smedley	Rotaroc B/C	B6-2	NT	PRG
13	" "	MegaSizz	D12-7	NT	GF
14	" "	SS Columbia	C6-3	NT	PRG
15	" "	Pathfinder	D12-5	NT	SEP
16	Glenn Feveryear	IQSY Tomahawk	E15-4WL	NT	NR
17	Daniel Feveryear	Gnome	1/2A3-4	15.6	GF
18	Renee Feveryear	Starhawk	B4-2	34.5	GF
19	Dan Weinhold	Rotaroc	B4-2	NT	GF
20	" "	Re-Con Hercules	E30-4	36.2	GF
21	G. Beever	1/2A RG	1/2A3-2	21.5	GF
22	" "	1/2A RG	1/2A3-2	21.4	GF
23	" "	Rotaroc C HD	C6-3	13.9	ND/DQ
24	" "	Rotaroc C HD	C6-3	121.35	NR
25	" "	NARTREK D	D12-7	NT	NR
26	" "	NARTREK 2-Stage	B6-0/A8-5	NT	GF

on the 28th, Dan returned to Cocalico, all the way from Lancaster, with his ladder and rocket-snaring pole and retrieved the Tomahawk. A big thanks from everyone, Dan!

Sport Launch, May 5, 1991

The weather was a bit better on the following Sunday, May 5. A rather smallish crowd got in 42 flights.

Mike Angell came and flew a model he calls the "Not-So-Mean Machine". It started life as an Estes Mean Machine, but a series of mishaps have reduced it in length. Mention! was made of the fact that this was May 5, and Mike usually doesn't make it to any launches until August or September. In any event, it was nice to see him.

Dave Bender made three A Division record attempts with the X-1, -2, and -3. Karl "I love D12's" Fehrenbach flew his LOC Starburst, Viper III and Viper IV on (you guessed it) D12's. He also flew

a T.H.O Y. Robin, the first T.H.O.Y. kit flown at a SPAAR launch..

The Feveryears were out flying in force. (Say that 5 times, fast) Glenn sport-flew a "Gull", by now a very familiar B Rocket/Glide model. It was last seen heading north, losing parts along the way. Of more interest was his Estes Saturn 1B flight. Glenn had modified the kit into a two-stager, using plans that were published some time ago in the old Model Rocketeer magazine. These plans originally were for modifying the Centuri Saturn 1B. This was another winter-long project. The breeze at the time was probably a bit too strong, but as Glenn said, "I just wanted to fly the thing". The D12-0 lifted the model off of the pad well enough, but the Saturn weathercocked into the wind. By the time that the upper stage B4-2 ignited, the model was traveling parallel to the ground and very fast. Parts kinda went all over the place, but when it was all said and done the only missing pieces were the Apollo Launch Escape tower. Replacement parts are on the way.

FLIGHT LOG, MAY 5, 1991

<u>Flight #</u>	<u>Name</u>	<u>Model</u>	<u>Motor(s)</u>	<u>Time</u>	<u>Misc.</u>
1	D. Bender	IRIS	B4-4	32.0	GF
2	" "	Sky Demon	B6-0/C6-5	NT	GF
3	" "	X-1	1/2A3-2	22.09	GF*
4	" "	X-2	1/2A3-2	12.6	GF*
5	" "	X-3	A3-4	50.88	GF*
6	Dan Feveryear	Gnome	1/2A3-4	17.25	GF
7	M. Angell	Helio Nose	C5-3	35.91	GF
8	" "	Helio Nose	C5-3	36.0	GF
9	" "	Not So Mean Machine	D12-5	49.05	GF
10	" "	Not So Mean Machine	D12-5	?	?
11	J. Yost	Mars Lander	C5-3	NT	GF
12	Kevin Powley	Der V-3	D12-3	NT	GF
13	" "	Silver Streak	B4-6	NT	GF
14	K. Fehrenbach	Starburst	D12-3 (2)	17.59	GF
15	" "	Robin	E15-10WL	NT	SEP
16	" "	Viper III	D12-5 (3)	NT	GF
17	" "	Viper IV	D12-7 (4)	NT	GF
18	D. Greene	Big Brute	G80-10	NT	GF
19	Gary Feveryear	CHR Rear Ejt	C6-5	28.2	GF
20	" "	Corsair	A8-3	NT	GF
21	" "	Bull Pup	B6-4	NT	GF
22	" "	Mean Machine	D12-5	NT	GF
23	E. Miller	Tazmanian Devil	C5-3	5.6	Shred
24	" "	Calypso	A8-3	13.3	GF
25	" "	UFO	D12-0	8.9	GF
26	" "	Super Big Bertha+	F100-6	80.26	GF
27	" "	Magnum Wizard	D12-5 (3)	NT	GF
28	" "	Eliminator	F25-6WL	NT	GF
29	Glenn Feveryear	Gull B RG	B4-2	145.35	NR
30	" "	Saturn 1B	D12-0/B4-2	NT	SEP
31	D. Weinhold	Big Bertha	B6-4	NT	GF
32	" "	RotaRoc	B4-2	NT	GF
33	G. Beever	Der V-3	D12-5	NARTREK	GF
34	" "	Straight Up 1	A8-5	NARTREK 32.4	GF
35	" "	Cox Saturn 1B	D12-5	NT	GF
36	" "	Super Big Bertha+	E25-7	NT	GF
37	" "	Mercury Redstone	C6-3	NT	GF
38	" "	Cox Honest John	C6-7	NT	GF
39	Glenn Feveryear	A SD	A3-4	77.78	GF@
40	" "	A SD	A3-4	76.81	GF@
41	D. Greene	A SD	A3-4	91.14	GF@
42	" "	A SD	A3-4	72.84	GF@

NOTES: * = Club A Division Record Attempts
@ = NOAHS Flights

Brother Gary brought out his classic CMR rear-ejection model, as well as some more recent Estes kits, such as the Bullpup, Corsair, and Mean Machine. Son Daniel flew his Gnome.

Section Advisor John Yost flew his beautifully reconditioned Estes Mars Lander. This intricate model was available in the late '60s through the the mid-'70s, and turned in a nice flight on a C6-3.

Dale Greene earned his NAR HPR certificate for G motors, flying his NCR Big Brute with an Aerotech G80-10. The "Masking Tape Special" made a very nice flight.

Dale and Glenn flew the first of the NOAHS flights, both flying A Streamer Duration. NOAHS, of course, stands for NARAM On A Half-Shell, our stay-at-home version of this summer's NARAM-33. So far, Dale's two flights of 91.14s and 72.84s, for a total of 163.98 lead Glenn's flights of 77.78 and 76.81, for a total of 154.59. For more information on NOAHS, see Glenn.

The launch wound up with a launch of a Mercury-Redstone, commemorating the flight of Alan Shepard in "Freedom 7", America's first space flight, on May 5, 1961.

WHERE WE WERE

A visit was made recently to the deep, dark, musty old vault where the SPAAR Archives are stored. Despite the age of some of these documents, they yielded up these little nuggets:

1 Year Ago

From the May/June 1990 issue of the Count-down, Vol. 3, Issue 3:

The club patches arrive....the SPARROW-1 Open Meet scheduled for September, is changed to a Section Meet, due to the unavailability of a suitable launch sight (Hershey).... the club decides to keep section performance records by age division....at a sport launch on April 22, Ed Miller unveils his Magnum Wizard, flying it on 3 Estes D12's.... our second Section Meet, SPAARSEC-2, was flown on May 27. John Yost took first in Streamer Spot Landing, Glenn Feveryear took first in B RG, Mark Snyder took B ELD, and George Beaver took A SRD and C HD.... Ed Miller takes a look at the new Aerotech "Mantis" launch pad.

2 Years Ago

May 1989: Glenn Feveryear proposes a comprehensive Range Operations procedure, which was adopted....a "Tech Tip" from Ed Miller showed how to make ejection baffles for your smaller diameter models....new members: Eric Marcella, Jimmy Lausch

June 1989: July 23 is the date set for the club's first Section Meet, SPAARSEC-1.... Ed Miller discusses the virtues of nylon parachutes in another installment of "Tech Tips"....new members: Fred Hoke, Bob Stott.

3 Years Ago

From Vol. 1, Issue 1, June, 1988: The club's first meeting was held on May 13, 1988. Attending were: John Yost, Bill Rhoat, Rick Hackman, Tim Singles, Dave and Jess Wenrich, and George Beaver....the first

club launch is held on June 5 at Cocalico High School, during which 20 flights are made. At this point, the club still does not have a name.

GOOD LUCK TREV!!!!



SPAARSEC - IV SECTION MEET

SPAAR's fourth Section Meet, SPAARSEC-IV, was held on May 26, 1991 at Cocalico High School under hot but breezy conditions. The events scheduled were B Helicopter Duration, B Eggloft Duration, 1/2A Rocket Glider, and Sport Scale. The Contest Director was Glenn Feveryear.

For the first time at a SPAAR Section Meet, a separate and distinct A Division was flying, in the form of Section Advisor John Yost's two sons, Dan and Derek. Five C Division members flew, including Ed Miller, Dale Greene, John Yost and George Beever. Mark Snyder, who had planned to attend but had to cancel when his plans changed, was entered on a proxy basis in two events.

Those who were present and flying seemed to like the four-event format, which made for a more relaxed pace. A good portion of the contest flying was done prior to the noon turn-in time for the Sport Scale entries, leaving the afternoon for sport flying.

In B Helicopter, the single best flight of the day was in A Division, where Dan Yost turned in a first flight of 56.6s with a Ken Brown Kotaroc; this model was a veteran of NARAM-31, but unfortunately was destroyed on it's second flight. The second and third best flights in the event were also in A Division, by Derek Yost! Dan's younger brother turned in times of 39 and 42s, for a total of 81s, to take first in A Division. In C Division, Ed Miller flew a version of the Helix design with Apogee composite mini-B's. Some deployment problems kept the model from flipping over properly, but the altitude gained from the boost still allowed the model to total 69s in 2 flights, enough to finish in first place. Second was your editor at 66s total. There was a tie for third place between Dale Greene and John Yost, both at 23s. George Beever proxy-flew for Mark Snyder, who came in 4th at 20s.

B Eggloft was a real crack-up. (sorry) In A Division, Derek Yost flew to 17s, which gave him first place when brother Dan's egg went splat (!). For the older guys, Ed Miller flew an Apogee egglofter to 84s and first place. We'll have to check, but that might also be a club record for that event. Dale Greene and George Beever flew to second and third place finishes at 27s and 21s, respectively, while John Yost broke his egg, to DQ.

1/2A Rocket/Glide also showed that the younger guys can still teach the gray-beards a few things. The best single 1/2A RG flight of the day was Dan Yost's 26s first flight. He coupled this with a 13s second flight, to take first in A Division over brother Derek at 18s total. In fact, Dan's 39s total in the event was the best of any entrant, regardless of age division, for the whole day! Your editor turned in times of 18s and 17s, for a total of 35s, for first place; Mark Snyder proxy-flew to second place at 23s; and Ed Miller took third at 17s. Dale Greene and John Yost both DQ'd the event.

In Sport Scale, the only entries were from C Division. Dale Greene took third with 705 points with a sharp Gemini-Titan, built from the Estes kit; your editor came in second with a Jupiter-C/Juno-1, also built from an Estes kit, with 790 points. Ed Miller took first with 846 points with a beautiful 1/9 scale Aerobee-Hi, specifically the US Navy's NRL-42 round. Ed's model featured functional upper and lower stages. The booster was powered by an Aerotech E25-4; the upper stage contained an Estes B8-5, which was ignited by means of a mercury switch. The model experienced a bit of damage to the booster (from the E25's ejection charge), and a small 'chute problem did not result in any damage to the upper stage.

There were also 16 sport flights made. The Art Babiarz's, Jr. and III, flew the Talos, Honest John, Mercury-Redstone and Sputnik. Dave Bender his 2-stage "Sky Demon", as well as others; Dr. Bob? flew his Uprated Phoenix with an E30, for a perfect flight.

Making his "Swan Song" (or should that be "Chicken Song"?) unfortunately, was Trevor Smedley, who is moving to Nova Scotia (thats in Canada). Trevor flew a new, improved version of the the "Super Chicken", this time on a D21-4, and it worked! He also flew a big North Coast R/G, built for B or C motors, on an A8-3. It's too bad no one timed the flight, as the model just hung in the air!

A special thanks goes out to Art Babiarz and to Gary Feveryear, who did lots of range duty, allowing the contestants to fly. Thanks again to them and to all who helped out with timing and other range duties. SPAARSEC-V will be held September 22, and the events will be announced soon. If you are an NAR member, give it a try. You'll like it!

SOUTHERN PENNSYLVANIA AREA ASSOCIATION OF ROCKETRY
SECTION 503
SPAARSEC-4 RESULTS

B HELICOPTER DURATION

	FLHT1	FLHT2	FINAL	PTS
DEREK YOST	38.58	42.08	81	100
DANIEL YOST	56.65	7.00	57	60
ED MILLER	30.91	37.70	69	100
GEORGE BEEVER	30.74	35.05	66	60
DALE GREENE	DQ	22.70	23	40
JOHN YOST	22.53	-	23	40
MARK SNYDER	DQ	19.56	20	20

1/2A ROCKET GLIDER DURATION

	FLHT1	FLHT2	FINAL	PTS
DANIEL YOST	26.41	12.89	39	80
DEREK YOST	10.99	7.00	18	48
GEORGE BEEVER	17.68	17.36	35	80
MARK SNYDER	23.40	-	23	48
ED MILLER	DQ	17.08	17	32
DALE GREENE	DQ	-	DQ	-
JOHN YOST	DQ	-	DQ	-

SPORT SCALE

	STATIC	FLHT	TOTAL	PTS
ED MILLER	706	140	846	100
GEORGE BEEVER	655	135	790	60
DALE GREENE	545	160	705	40

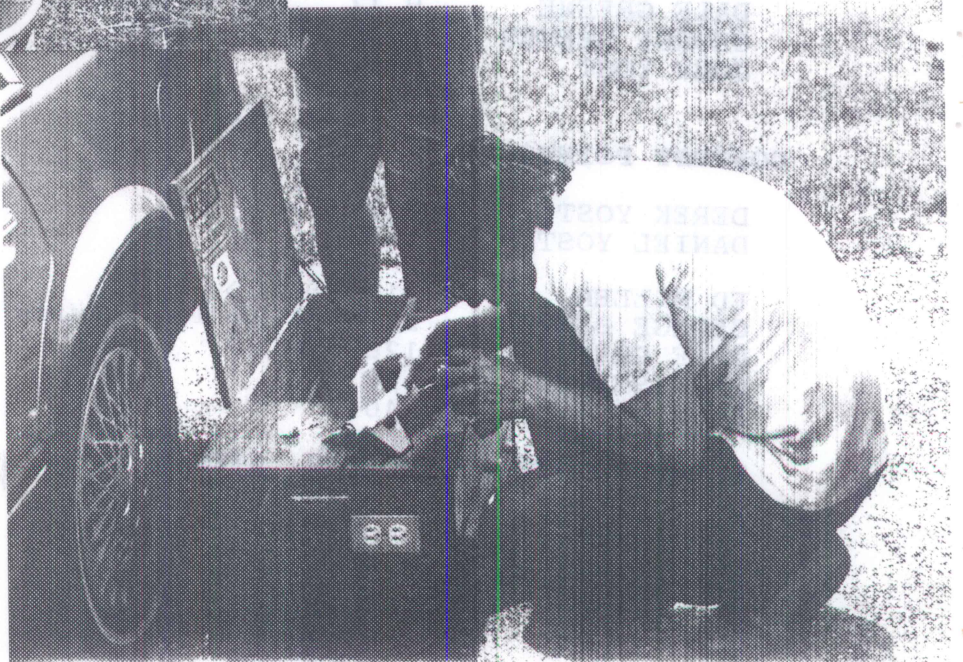
B EGGLOFT DURATION

	FLHT1	FLHT2	FINAL	PTS
DEREK YOST	17.22	-	17	80
DANIEL YOST	DQ	-	DQ	-
ED MILLER	83.89	-	84	80
DALE GREENE	9.11	27.08	27	48
GEORGE BEEVER	15.85	20.66	21	32
JOHN YOST	DQ	-	DQ	-

CONTEST POINTS

DEREK YOST	228	
DANIEL YOST	140	
ED MILLER	312	(600) >
GEORGE BEEVER	232	(744) > Total points to date
DALE GREENE	128	(498) >
MARK SNYDER	68	
JOHN YOST	40	

TOTAL POINTS TO SECTION 1148



SPAARSEC-IV:
Clockwise from top: John Yost,
Dale Greene, Ed Miller, Bob
Balogh. Whole lotta preppin
goin' on!

(Continued from page 7)

heavy duty construction techniques, FAA Waiver concerns, and the like. Also discussed were such questions as, "should we require anyone flying at a Section HPR launch be a club member, as opposed to "guests", as we allow now at section sport launches?"; and "should we require our members to attend a club-sponsored HPR construction techniques/safety course prior to flying at a club HPR launch?"

Obviously, these are exciting, fast-moving times for our hobby. We must do all that we can to ensure that our club stays in step with these changes. This is your club; all members are urged to try to attend upcoming club meetings, in which many of these issues will be decided. End of sermon.

HIGH POWER WORKSHOP PROGRAM

As mentioned, SPAAR intends to sponsor an HPR workshop this coming winter, in order to allow members to become familiar with High Power construction and finishing techniques, as well as allowing members to become certified to fly G and H class motors. Those who participate will purchase the same kit, as well as a G class motor and the appropriate construction materials.

The kits under consideration at this time are:

<u>NAME</u>	<u>MANUFACTURER</u>	<u>PRICE</u>
Phantom 4000HD also requires MA-3 Motor Adapter features through-the-wall plywood fins OD 4.00" Length 56"	NCR	\$40 \$4.50
Caliber ISP 29mm adapter (MMA-2) 38mm adapter (MMA-3) features through-the-wall plywood fins OD 3.1" Length 59.25"	LOC/Precision	\$54 \$2.50 \$3.00
EZI-65 adapters as listed above OD 4.00" Length 56.5"	LOC/Precision	\$56
Falcon adapters as above; through-the-wall fins OD 4.00" Length 67"	THOY (through Rocket Research)	\$53.45

Phoenix THOY (through Rocket Research)\$38.95
features 38mm mount and 29mm adapter;
through-the-wall fins
OD 4.00" Length 46"

A decision will be made this fall on which kit will be purchased. The possibility of a group discount for the kits will be explored. In deciding which kit you will vote for, keep in mind that the goal is to choose a kit that will allow you to fly a G class motor first, and then an H class; if the same model can be flown with an I class motor, this maybe a worthwhile feature. Also keep in mind that this project involves some bucks, so it may be a good idea to start putting some away now.

OUR LOSS IS CANADA'S GAIN: We are sad to say that we are losing one of our members, Trever Smedley. Trever has accepted a position with the Technical University of Nova Scotia (TUNS), and attended his last SPAAR launch on May 26.

Trever, of course, was the creator of "Super Chicken"; a rubber chicken turned egglofter. "Super Chicken" made it's debut last fall at SPAARSPAM-2. It was at that time that Trev uttered the immortal words, "I was concerned that this thing might weigh over a pound." Well, does it? "I don't know. I didn't weigh it." Unfortunately, "Super Chicken" didn't fly too well that day, but a revised version did fly very well this past May 26.

But more than just "Super Chicken", Trever will be remembered for his sense of humor, his willingness to help out, and just generally being a nice guy. (Gee, sounds like an obituary. Sorry.)

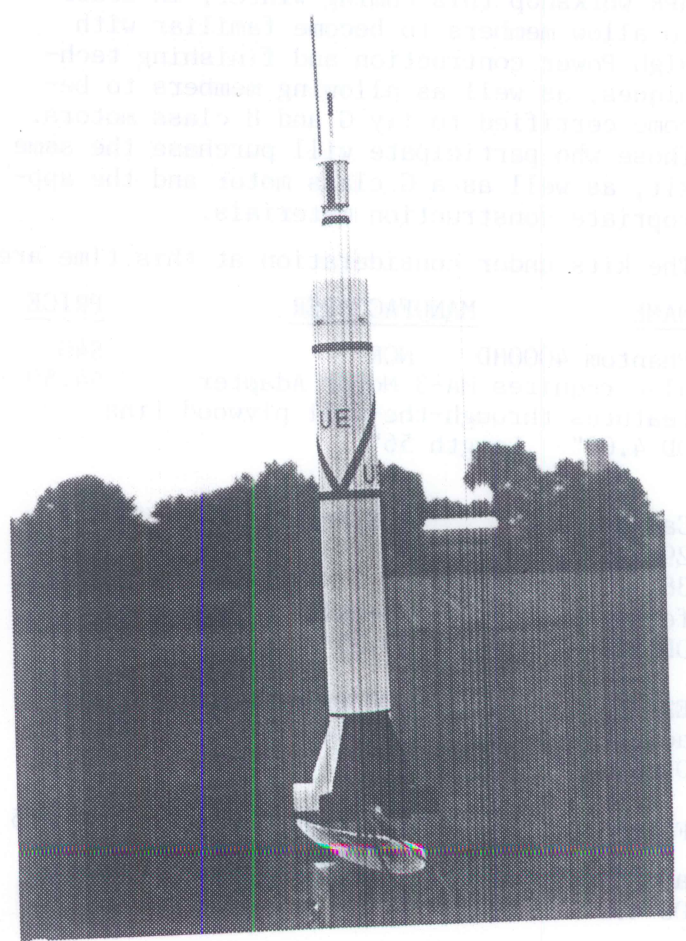
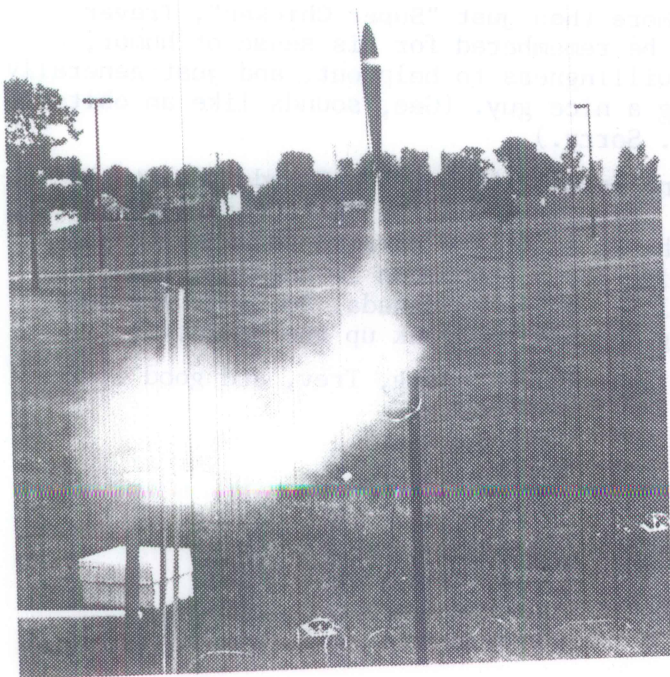
Moving back to his native Canada is not the only thing Trev will be up to this coming month. He's getting married on June 15, and leaving for a honeymoon in England, then he'll be moving to Canada. So, what are you doing in July to break up the boredom?

From all of us, 'slong, Trev, and good luck!



SPAARSEC-IV:

Top Left: John Yost helps son Derek prep his B Eggloft entry;
Below Left: The same model at launch;
Below Right: A Sport Scale entry.



**SOUTHERN PENNSYLVANIA AREA
ASSOCIATION OF ROCKETRY**
NATIONAL ASSOCIATION OF ROCKETRY, SECTION 503
PO BOX 127, REAMSTOWN, PENNSYLVANIA 17567

_____ YES, I WANT TO JOIN SPAAR! HERE ARE MY DUES

_____ PLEASE CONTACT ME WITH MORE INFORMATION

NAME _____

STREET ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE: AREA CODE () _____ AGE _____

DATE OF BIRTH _____

_____ I HAVE NEVER FLOWN ROCKETS. _____ I HAVE BEEN FLYING
MODEL ROCKETS FOR _____ MONTHS/YEARS.

_____ I AM A MEMBER OF THE NAR. MY NAR NUMBER IS _____
_____ I AM NOT YET AN NAR MEMBER.

DUES: _____ 14 YEARS OF AGE OR YOUNGER, \$5.00
 _____ 15, 16 OR 17 YEARS OF AGE, \$7.00
 _____ 18 YEARS OF AGE OR OLDER, \$10.00
 _____ FAMILY PLAN: OLDER MEMBER JOINS AT THE FULL RATE
 THEN ALL YOUNGER MEMBERS JOIN AT HALF PRICE.
 (FAMILY PLAN PROVIDES ONLY ONE COPY OF THE
 NEWSLETTER PER FAMILY.)

DUES ARE PAYABLE FOR 12 MONTHS. RETURN THIS FORM TO:
 SPAAR, PO BOX 127, REAMSTOWN, PENNSYLVANIA 17567

Membership Application

NATIONAL ASSOCIATION OF ROCKETRY
 1311 EDGEWOOD DRIVE, DEPT M
 ALTOONA, WI 54720

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

DATE OF BIRTH: Month ____ Day ____ Year ____

I pledge to conduct all my model rocket activities in compliance with the NAR/HIA Safety Code. I will never fly model rockets at the same time or in the same vicinity as other types of rockets.

SIGNATURE: _____

DATE: _____

MEMBERSHIP CATEGORY (Check one only):

- JUNIOR MEMBERSHIP (Under 16 as of January 1)..... \$15.00
- LEADER MEMBERSHIP (Under 21 as of January 1)..... \$15.00
- SENIOR MEMBERSHIP (21 or over as of January 1)..... \$25.00

FOR OVERSEAS MEMBERS ONLY

- SURFACE POSTAGE (Required)..... \$ 6.75
- OPTIONAL AIRMAIL POSTAGE (Replaces surface)..... \$33.00

OPTIONAL MEMBERSHIP SERVICES

- FAI STAMP for US Team eligibility and world records \$10.00
- FIRST-CLASS POSTAGE (U.S. & Canada only) .. \$10.50

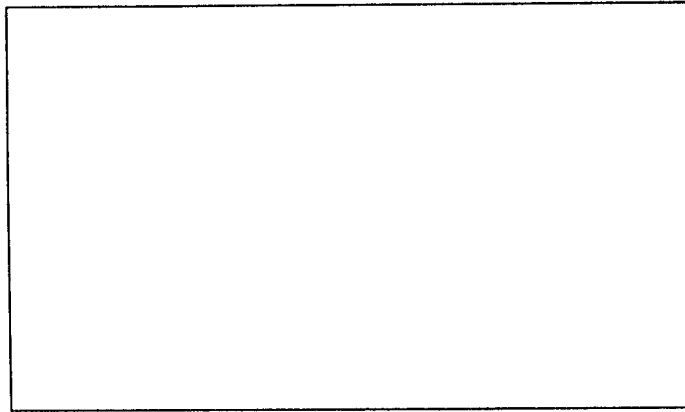
DISCOUNTS (Select only one)

- RENEWAL (NAR # _____ Section # _____); Deduct \$1. _____
- FAMILY PLAN (Details below); Deduct \$8. _____

Amount Enclosed..... \$ _____

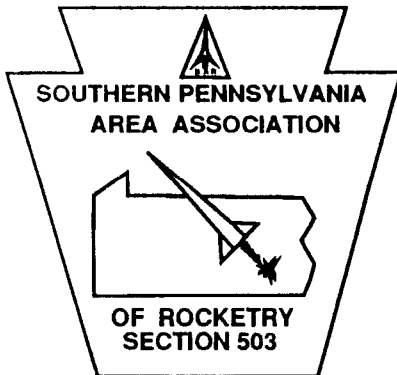
Family Plan: Full rate for one family member, others at \$8 discount — one American Spacemodeling per family.
 NAR Membership dues include \$8.88 for a subscription to American Spacemodeling.

Canadian Modelers: Write to the Canadian Association of Rocketry, P.O. Box 1031, Postal Station B, Mississauga, Ontario, Canada L4Y 3W3.
 Rights, privileges, and responsibilities of membership begin upon acceptance of this application by the NAR. All memberships are for twelve months from the date of acceptance. Rates and services subject to change without notice. Please allow 6-8 weeks for delivery of of American Spacemodeling.



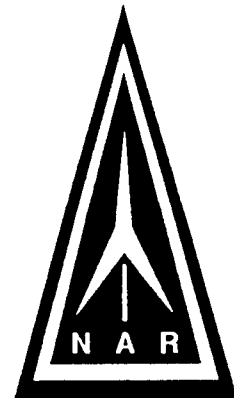
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P.O. Box 127
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**SOUTHERN PENNSYLVANIA
AREA ASSOCIATION
OF ROCKETRY**

PROMOTING SAFE MODEL ROCKETRY
IN SOUTHERN PENNSYLVANIA
AND NORTHERN MARYLAND



*The Southern Pennsylvania Area
Association of Rocketry*

COUNTDOWN

Volume 4 No. 3

MAY/JUNE 1991