

COUNTDOWN

OFFICIAL NEWSLETTER OF
THE SOUTHERN PENNSYLVANIA AREA ASSOCIATION OF ROCKETRY

Volume 5, Issue 6 November/December 1992

IN THIS ISSUE:

- * SPAARSEC-VII Section Meet Results
- * WARP DRIVE Phase III Plans
- * Section News

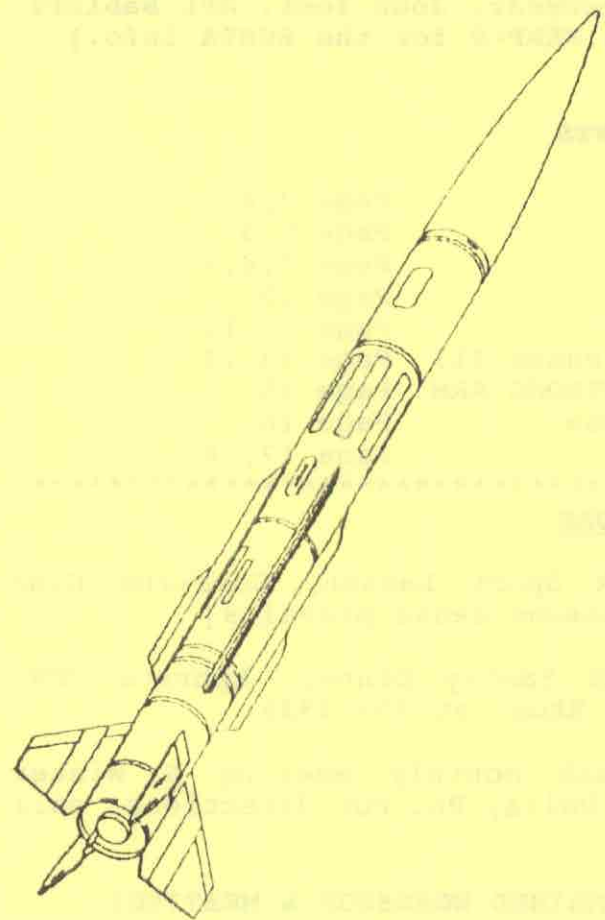
PLUS:

KIT REVIEW: The AeroTech

STRONG ARM

The RCHTA Trade Show

Sport Launch Coverage



SEASON'S GREETINGS

The Countdown

Volume 5, Issue 6

November/December 1992

The Countdown is the newsletter of SPAAR, the Southern Pennsylvania Area Association Of Rocketry, NAR Section #503, PO Box 127, Reamstown, PA 17567. Non-member subscription rate, \$6 per year, six issues. Please make all submissions to address above. Material may be used with proper credit.

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

Contributors: **Ed Miller, Glenn Feveryear, John Yost, Art Babiarz**
[Special Thanks to **Bob Sanford & WARP-9** for the RCHTA info.]

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CALENDAR

Sunday, December 27, 1992: SPAAR Sport Launch, Cocalico High School, 1PM until ? [Or whenever common sense prevails]

Saturday, January 16, 1993: SPAAR Family Dinner, Ephrata VFW, 6:30PM. For information, call Dick Rhoat at 733-3335.

Saturday, January 23, 1993: SPAAR Monthly Meeting & Winter Workshop, 9AM - ?, Delta Fire Co., Delta, PA. For directions, call Glenn Feveryear, [717] 456-5570.

PLEASE MAKE NOTE THAT THIS IS A COMBINED WORKSHOP & MEETING!

Sunday, January 31, 1993: SPAAR Sport Launch, Cocalico High School, 1PM until ?. **This is the annual Ground Hog Day Launch!!!!**

In the next Countdown: The annual "Almanac Issue"; 1993 Schedule, Club Roster, Club Records, plus a review of the Estes "Maxi-Force".

SECTION MEETINGS**Date: 19 October 1992****Present: Glenn & Gary Feveryear, E. Miller, J. Yost, R. Dwyer, D. Greene, D. Rhoat, B. Rhoat, R. Hackman, G. Beever, K. Heller.****Treasurer: Ed Miller reported 38 members; balance at the end of the last meeting was \$193.49; no income reported; \$32.53 for postage. Current balance: \$160.96.****Newsletter: G. Beever reported that 80 copies of the Sept/Oct Countdown were made and distributed; thanked members who helped with copying; brought up the idea of advertising to help defray costs; discussed ideas for special NARAM-35 issue.****Section Advisor: G. Beever read letter from Chuck Weiss regarding his petition to the NAR regarding the FAI competition issue.****High Power: Ed Miller reported that there will be a Tripoli-sanctioned HPR Launch in Culpeper, VA. during the weekend of Nov. 7/8.****Competition: Glenn F. discussed VACUUM-18; the Shock 'Em Open Meet in New Jersey, Nov. 1; SPAARSPAM-IV will be Nov.8, and the "event" will be B Big Bertha Duration, 1 flight per person; SPAARSEC-VII will be flown the same day, starting at**

9AM; stated that NARAM-35 will be hosted by NARHAMS the week of 1-7 August 1993 in Middletown, MD; ECRM will be the first week in June; and that SPAAR will host a Regional Meet 12/13 June 1993 at Allentown College, as a replacement for WUBBA.

Education: No report.**OLD BUSINESS**

The by-laws revision, published in the last issue of the Countdown was read, and passed by voice vote; G. Beever reported that the new membership cards were picked up; Dick Rhoat will make arrangements for the Family Dinner.

NEW BUSINESS

G. Beever discussed entering the FOX-43TV Balloon Festival in 1993.

The special events for next year's schedule were discussed.

The Winter Workshops for 92/93 were discussed.

General discussion followed; meeting adjourned at 9PM.

=====

Date: 16 November 1992**Present: Glenn & Rita Feveryear, R. Hackman, J. Yost,**

A. Babiarez, R. Dwyer, D. Greene, G. Beever.

1. Treasurer: Ed Miller reported 35 members. Balance at end of last meeting: \$160.96. Expenditures: \$30.99 in postage, \$20 for membership cards. Income: \$20 in dues. Current balance: \$129.97. Also reported that the savings account will be moved to Lebanon Valley National Bank.

2. Newsletter: G. Beever reported that 85 copies of the Sept/Oct Countdown were made, and distributed to members, subscribers, exchanges, prospective members, and attendees at CAPCON-92.

Also discussed the expenditure of club funds in the future to help cover the costs of copying.

3. Competition: Glenn Feveryear discussed the results of SPAARSEC-VII and SPAARSPAM-IV. Also announced the dates and events for SPAARSEC-VIII; announced that SPAAR will host REMTEC-1 over the weekend of June 12/13, 1993. The location will be Allentown College in Quakertown, where WUBBA was held. All members were encouraged to help in running the meet, regardless of their involvement in competition.

4. Section Advisor: G. Beever read a letter he had sent to NAR President Miller concerning the petition circulated by Chuck Weiss regarding NAR involvement in FAI-sanctioned competition. This letter was sent in early October, and as of the time of the meeting, no

answer has been received from either Miller or Weiss.

High Power: Ed Miller stated that he may make an order to Aerotech in the spring of '93.

Education: Art Babiarez offered the use of his home for meetings, etc.

Old Business

George Beever, on behalf of Dick Rhoat, discussed the plans for the Family Dinner. The Ephrata VFW appears to be the choice, but there were concerns expressed about the minimum number of people required.

New Business

Glenn proposed holding a raffle involving a number of kits. George proposed an auction to help build club funds. After discussion, it was decided to proceed with both ideas. Rita Feveryear will handle the raffle, and George will take care of the auction.

The meeting adjourned at 9PM.

CLASSIFIED

FOR SALE: Collection of out-of-production kits, mostly from the 70's and 80's. Send SASE to: George Beever, 129 Ashley Drive, Ephrata, PA 17522.

NOTICE: The SPAAR Countdown will print Classified free of charge for members. Non-members, \$2 per issue (6 issues) or \$10 per year. Send all correspondence to address on page 2.

SPAAR LAUNCH ACTIVITIES**11 October 1992**

SPAAR's October 11 Sport Launch was attended by only five die-hards who braved the threatening weather to come out and fly. Dave Bender, Ed Miller, Dale Greene, Rick Hackman and George Beever got in a total of 29 flights.

The weather, which has played such a big role in the club's launch plans this year, looked like it was going to deteriorate at any minute. However, the rain held off until later in the evening, and in fact, the sun did peek through on occasion.

Dave Bender flew Ed Miller's old [and we mean old] Estes Big Bertha on a C6-5 for a good flight. Ed says that this model dates back about 20 years! Ed got a tremendous flight out of an Estes Sentinel flown on an Aerotech D13 RMS. It should be noted that Ed builds 'em extra strong; combining composite power with standard white glue construction techniques just won't cut it. Ed flew another old standby, his Flight Systems Hercules on a black powder F100-6. That model always flies nice.

There were some experimental flights, too. Dale Greene wanted to try out a new helicopter duration design that he had been working on. In this design, the fin unit drops, releasing the rotors for

deployment; the fin unit remains attached by means of a kevlar attachment line. The model worked well on a C6, but when Dale tried it with a D12, the rotors appeared to deploy just after the model left the tower, causing it to go unstable. Back to the drawing board. Rick Hackman was flying some more of his "XR" series, with mixed results. He also brought out some of his new/old Centuri models. The Twister, Excalibur 2 and Javelin all had good flights; the Scramjet separated it's recovery system [no damage, however]. Rick also flew an Estes oldie, the Goblen three times. On a D12-7, it turned what may have been the best flight of the day. The ol' editor had a good flight on a modified Cox Saturn V. The stock motor mount was changed to accept a single 18mm Aerotech E25.

8 November 1992**SPAARSPAM-IV & SPAARSEC-VII**

We usually fly our fall Section Meet around the Labor Day weekend, but scheduling problems forced a change to September 27. Two successive bad weather dates forced a combination of the meet with SPAARSPAM-IV, our section tail-gate picnic.

The SPAARSEC-VII Section Meet got underway just after 9:30, or about 30 minutes after the wind picked up [of course!]

The first event flown was B Eggloft Altitude. It was decided to have everyone prep their models and ready to fly by rounds. There were no tracks lost, but not all closed within the required limits. All flyers used Estes black powder motors. Gary Feveryear used a B6-2 in a homebrew model to take first place on his second flight with an altitude of 56 meters. John Yost also used a B6-2 for his 47 meter second-place flight. Dale Greene and Glenn Feveryear tied for third place with flights of 46 meters, while Bill Rhoat, flying in competition in C Division for the first time, took 4th with 44 meters. George Beever was awarded flight points for a flight of 34 meters.

John Yost, flying a "Yost-A-Roc", took first place in D Helicopter with two good flights totaling 127.5 seconds. Another tie occurred for second place, this time between Glenn Feveryear and George Beever, both with 113 seconds total. Glenn flew a stowed-rotor design on flight #1, and a Rotaroc on #2; George flew a Romulan Revolver and a QCR Rotaroc. Both of George's flights were upside down. Gary Feveryear also flew a Yost-A-Roc, taking 4th place with 86 seconds. The wind really caused problems with this event, prohibiting longer flight times.

All of the 1/4A Parachute models were 13mm designs, and Glenn took first place easily on the strength of a 102 second flight #1. He eventually totaled 147 seconds. Gary

Feveryear, George Beever, and Dale Greene took second through fourth places, respectively, while Bill Rhoat and John Yost qualified for flight points.

Consider poor Bruce Canino of GSSS. He came out to SPAARSPAM-IV, most likely with the goal to simply fly rockets and eat lots of food. Did he accomplish this goal? **NOT!** Bruce was "volunteered" to act as judge for the Sport Scale entries. He did a great job under less-than-perfect conditions, and we all thank him for it! Glenn took first with his Aerotech D-Region Tomahawk, the same one that Dan Weinhold rescued out of a tree top last year. George took second with an MRC Trailblazer, a last-second replacement for a 1/70 scale Saturn 1B; John Yost took third with an Estes Patriot, and Dale came in 4th with his Gemini-Titan.

"B Big Bertha Duration" was the event for this year's SPAARSPAM, and Rita Feveryear's 43 second flight took first place. The secret? A 36" eggloft chute. Congratulations, Rita! We are pleased to say that Bruce did get to fly, after all. He was able to launch his florescent yellow Initiator [ya can't miss this one!] twice, both times with F14 Blackjacks.

Once again, there was plenty of food to eat, even if there were not as many people there as in past years. The chili was rather welcome on a cold, windy day. Next year, SPAARSPAM might be held in October. We hope more people attend!

FLIGHT LOG

11 October 1992

<u>FL#</u>	<u>NAME</u>	<u>MODEL</u>	<u>MANUF.</u>	<u>MOTOR(S)</u>	<u>RESULTS</u>
1	D. Bender	Transtar Car.	E	E B6-4	Good Flight
2	D. Bender	Big Bertha	E	E C6-5	Good Flight
3	D. Greene	Gemini-Titan 3	E	Q B6-4	CATO
4	D. Greene	Helicopter Dur.	SB	E C6-3	Good Flight
5	D. Greene	Helicopter Dur.	SB	E D12-5	SHRED
6	D. Greene	Honest John	E	E B4-4	Good Flight
7	G. Beever	Scout	E	E 1/2A6-2	Good Flight
8	G. Beever	Astra	Q	Q A6-4	No Chute
9	G. Beever	Saturn V	Cox	AT E25-4T	Good Flight
10	G. Beever	OSO	FSI	E B6-4	Good Flight
11	G. Beever	Rampage	E	E B6-4	Good Flight
12	E. Miller	Hercules	FSI	FSI F100-6	Good Flight
13	E. Miller	Mustang	AT	AT E16-4RMS	Good Flight
14	E. Miller	UFO-18	SB	AT D13-4RMS	Good Flight
15	E. Miller	Eliminator	NCR	AT F50-4T	Good Flight
16	E. Miller	Sentinel	E	AT D13-7RMS	Good Flight
17	E. Miller	Rainmaker	E	E B4-4	Good Flight
18	E. Miller	Lancer	E	E C6-5	Good Flight
19	R. Hackmn	XR-21B	SB	E 1/2A3-2	Unstable
20	R. Hackmn	XR-25	SB	E 1/2A3-4	Unstable
21	R. Hackmn	XR-33	SB	E 1/2A3-4	SEP
22	R. Hackmn	Javelin	Cen.	E B4-4	Good Flight
23	R. Hackmn	XR-48	SB	E 1/2A3-2	Unstable
24	R. Hackmn	Scramjet	Cen.	E B4-4	SEP
25	R. Hackmn	Twister	Cen.	E B4-4	Good Flight
26	R. Hackmn	Goblin	E	E B4-4	Good Flight
27	R. Hackmn	Goblin	E	E C6-3	Good Flight
28	R. Hackmn	Goblin	E	E D12-7	Good Flight
29	R. Hackmn	Excalibur 2	Cen.	E B6-0/A8-5	Good Flight

MOTOR USAGE

Estes: 22 FSI: 1 Quest: 2
Aerotech Single Use: 2 Aerotech RMS: 3

MODELS FLOWN

Kits: 20 Scratchbuilt: 6
Estes: 10 Quest: 1 North Coast: 1
Flight Systems: 2 Centuri: 4 Cox: 1
Aerotech: 1

Motor Failures: 1, Flight #3, Quest B6-4 CATO

Successful Flights: 21 = 75%

FLIGHT LOG

8 November 1992

SPAARSEC-VII Flights

<u>FL#</u>	<u>NAME</u>	<u>MODEL</u>	<u>MANUF.</u>	<u>MOTOR(S)</u>	<u>RESULTS</u>
1	Glenn F.	1/4A PD	SB	A 1/4A3-4	1:42.38s
2	Glenn F.	1/4A PD	SB	A 1/4A3-4	15.94s
3	Glenn F.	1/4A PD	SB	A 1/4A3-4	28.99s
4	Gary F.	1/4A PD	SB	A 1/4A3-2	19.28s
5	Gary F.	1/4A PD	SB	A 1/4A3-4	28.77s
6	Gary F.	1/4A PD	SB	A 1/4A3-2	45.78s
7	G. Beaver	1/4A PD	SB	A 1/4A3-4	16.15s
8	G. Beaver	1/4A PD	SB	A 1/4A3-4	32.07s
9	G. Beaver	1/4A PD	SB	A 1/4A3-4	17.09s
10	D. Greene	1/4A PD	SB	A 1/4A3-4	10.49s
11	D. Greene	1/4A PD	SB	A 1/4A3-4	19.39s
12	D. Greene	1/4A PD	SB	A 1/4A3-4	16.13s
13	B. Rhoat	1/4A PD	SB	A 1/4A3-4	24.18s
14	B. Rhoat	1/4A PD	SB	A 1/4A3-4	9.43s
15	J. Yost	1/4A PD	SB	A 1/4A3-4	7.45s
16	J. Yost	1/4A PD	SB	A 1/4A3-2	21.38s
17	J. Yost	D HD	SB	E D12-3	58.52s
18	J. Yost	D HD	SB	E D12-3	1:08.28s
19	Glenn F.	D HD	SB	E D12-3	54.56s
20	Glenn F.	D HD	SB	E D12-5	58.56s
21	G. Beaver	D HD	SB	E D12-3	53.01s
22	G. Beaver	D HD	QCR	E D12-3	59.51s
23	Gary F.	D HD	SB	E D12-3	41.06s
24	Gary F.	D HD	SB	E D12-5	44.58s
25	Gary F.	B ELA	SB	E B6-2	47.7m
26	Gary F.	B ELA	SB	E B6-2	56m
27	J. Yost	B ELA	SB	E B4-4	28m
28	J. Yost	B ELA	SB	E B6-2	47m
29	D. Greene	B ELA	SB	E B6-2	46.3m
30	D. Greene	B ELA	SB	E B6-2	34m
31	Glenn F.	B ELA	SB	E B6-4	25.4m
32	Glenn F.	B ELA	SB	E B6-2	46m
33	B. Rhoat	B ELA	SB	E B4-2	29m
34	B. Rhoat	B ELA	SB	E B6-2	44m
35	G. Beaver	B ELA	SB	E B4-2	34m
36	Glenn F.	SpSc	AT D-Region	Tomahawk	850pts
37	G. Beaver	SpSc	MRC	Trailblazer	844pts
38	J. Yost	SpSc	Estes	Patriot	812pts
39	D. Greene	SpSc	Estes	Gemini-Titan 3	726pts

SPAARSPAM-IV Sport Flights

40	Rita F.	Big Bertha	E	E B4-2	43s
41	G. Beaver	Big Bertha	E	E B6-4	24s
42	R. Hackmn	Big Bertha	E	E B6-4	16s
43	J. Yost	Big Bertha	E	E B4-4	15s

44	F. Hoke	Big Bertha	E	E B6-4	12s
45	F. Hoke	Big Bertha	E	E B6-4	7.7/CHU
46	Daniel F.	America	E	E A8-3	Good Flight
47	Daniel F.	America	E	E A8-3	Good Flight
48	K. Heller	Commanche	E	E B6-0/A8-5	Good Flight
49	B. Canino	Initiator	AT	AT F14-4J	Good Flight
50	B. Canino	Initiator	AT	AT F14-4J	Good Flight
51	R. Hackmn	2-Bitz	Cen.	E 1/2A3-4	Good Flight
52	R. Hackmn	XR-52	SB	E A3-4	Good Flight
53	R. Hackmn	A SD	SB	E A3-4	24.47s/GF
54	R. Hackmn	XR-5	SB	E 1/2A6-2	Unstable
55	R. Hackmn	XR-49	SB	E C6-5	Good Flight
56	R. Hackmn	XR-6	SB	E 1/2A3-4	Good Flight
57	R. Hackmn	XR-55	SB	E C5-3	21.49s/GF
58	R. Hackmn	XR-55	SB	E C6-5	10.43s/GF
59	G. Beever	Spr Big Bertha	E	AT D13-4RMS	26.64s/GF
60	G. Beever	Delta Clipper	E	E D12-0/D11-9	Good Flight
61	G. Beever	Strong Arm	AT	AT F25-6WL	Good Flight

MOTOR USAGE

Estes: 38 Apogee: 16
 Aerotech Single Use: 3 Aerotech RMS: 1

MODELS FLOWN

Kits: 20 Scratchbuilt: 24
 Estes: 9 Aerotech: 2 QCR: 1
 Centuri: 1 MRC: 1

Competition Flights: 39 Sport Flights: 22

Motor Failures: 0 Successful Flights: 59 = 96.7%

CONTEST NEWS

On October 24, NOVAAR held the **VACUUM-18 Open Meet** in Mannassas, VA. Glenn & Rita Feveryear + kids went down, and the Flirtin' With Disaster Team made it's debut. (John Yost & George Beever)....Glenn took First in B B/G with 188s, Second in D HD at 184s, missing First by only one second; First in 1/2A RG at 157s, and Third in C ELA with 157m. Flirtin' With Disaster took Second in D SRA with 1354 points; Fourth in B B/G with 118s, and Third in C ELA with 149 meters. In total, Glenn brought home 584 points, FWD 216.....Two weeks earlier, on October 11, Glenn took the crew on the road again to GSSS' (New Jersey) **CHOP'EM OPEN-AGAIN**, an all-helicopter meet. There, Glenn took Second in both 1/4A HD and 1/2A HD, and First in A HD and D HD, giving him a total of 752 Contest Points, the best of any single C Division competitor.

SOUTHERN PENNSYLVANIA AREA ASSOCIATION OF ROCKETRY
SECTION 503
SPAARSEC-7 RESULTS

<i>SPORT SCALE</i> (pts)	STATIC	FLHT	TOTAL	PLACE	POINTS
Glenn Feveryear	675	175	850	1	100
George Beever	674	170	844	2	60
John Yost	642	170	812	3	40
Dale Greene	561	165	726	4	20

<i>1/4A PD Multi</i> (sec)	FLHT1	FLHT2	FLHT3	FINAL	PLACE	POINTS
Glenn Feveryear	102.38	15.94	28.99	105	1	50
Gary Feveryear	19.28	28.77	45.78	94	2	30
George Beever	16.15	32.07	17.09	65	3	20
Dale Greene	10.42	19.39	16.13	46	4	10
Bill Rhoat	24.18	9.43	-	34	5	5
John Yost	7.45 (SEP)	21.38	-	21	6	5

<i>B ELA</i> (meters)	FLHT1	FLHT2	BEST	PLACE	POINTS
Gary Feveryear	47.77 (EGG)	56.00	56	1	90
John Yost	28.48 (EGG)	47.30	47	2	54
Dale Greene	46.30	34.00	46	3	36
Glenn Feveryear	25.40 (NC)	46.00	46	3	36
Bill Rhoat	29.33	44.20	44	4	18
George Beever	34.22	-	34	5	9

<i>D HD</i> (sec)	FLHT1	FLHT2	TOTAL	PLACE	POINTS
John Yost	58.52	68.28	127	1	120
George Beever	53.01	59.57	113	2	72
Glenn Feveryear	54.56	58.56	113	2	72
Gary Feveryear	41.06	44.58	86	3	48

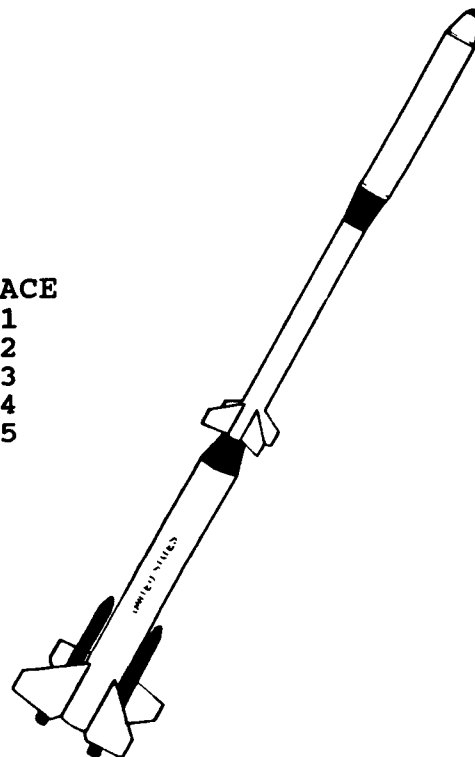
FINAL POINTS

Glenn Feveryear	258
John Yost	219
Gary Feveryear	168
George Beever	161
Dale Greene	66
Bill Rhoat	23

Total: 895

SPAARSPAM Special Event:

<i>B BIG BERTHA DURATION</i> (sec)	FLHT1	PLACE
Rita Feveryear	42.84	1
George Beever	23.84	2
Rick Hackman	16.61	3
John Yost	14.98	4
Fred Hoke	12.28	5



SECTION NEWS NOTES

THANKS RITA!!!: A special thanks goes out to Rita Feveryear for all of the work that she performed during the SPAARSEC-VII/SPAARSPAM-IV marathon on November 8. During the Section Meet, Rita performed the LCO/RSO duties, did safety check-in, corralled people to do timing, communicated by radio with the tracking stations, and reduced the data on the spot. Talk about being as busy as a one-armed paper hanger! Then, during the afternoon sport launch, she again did most of the LCO job at the rangehead. On top of all that, she kept track of the Feveryear kids and their needs. Is there any wonder why she was pooped at the end of the day?

IT'S TIME TO VOTE: Wait a minute...I thought the election was over! No, not that one, the SPAAR election! Please take the time and 29 cents to fill out and send in the ballot on the last page. Please return them by Monday, Dec. 21. Thanks.

LET'S KEEP IT CLEAN, PLEASE:

Let's remember to keep the launch field at Cocalico clean. Pick up used wadding, ignitors, and other bits of "rocket trash" during and after our launches. Remember, we're there with the permission of the School District.

DOESN'T IT JUST FIGURE DEPT.:

In the last issue of the Countdown, we ran two articles

on the Estes Little Joe II kit: one kit review, and one on how to upgrade your kit to fly with 18mm motors. So, after all of that, the day that the newsletters were mailed.....we found out that Estes has discontinued the little stinker. Figures.

AUCTION NEWS: At the last scheduled Winter Workshop in March 1993, we are planning to hold The First SPAAR Auction. The idea is three-fold: get rid of some unwanted or unused rocket/hobby stuff, pick up some of the same rocket/hobby stuff, and help the club treasury. A percentage of the proceeds of the sales will go to the club's General Fund. The details are being worked out; look for them in the mail. In the mean time, start making a list of those items that you saved for some reason, but you just can't remember what it was.....

RAFFLE: On the same note, we plan to hold a raffle in 1993, again to help the club treasury. The club hopes to obtain a number of kits for the raffle. Check with Rita Feveryear, 717-456-5570, for more details.

FAMILY DINNER: Dick Rhoat is putting together the Family Dinner for 1993. Look for details in the mail soon. Call Dick Rhoat, 733-3335.

..... MORE NEWS NOTES

CONTEST PLANS FOR '93: Our contest plans for the early part of 1993 have been finalized.

On May 30, Memorial Day Weekend, we will fly the **SPAARSEC-VIII** Section Meet, from 9AM to 5PM at Cocalico. The events will be: **A Helicopter, Multi; B Eggloft Altitude, 1/2A SuperRoc Altitude, and 1/2A Rocket/Glide, Multi.**

Then, over the weekend of June 12/13, 1993, SPAAR will host the **REMTEC-1** Regional Meet at Allentown College in Center Valley, PA. It is hoped that this Regional will help fill the void left by the demise of the WUBBA Regional series. The events will be: **B Helicopter, Multi; 1/2A Streamer, Multi; D Dual Eggloft Duration; B Rocket/Glide; 1/2A Parachute, Multi; and A Boost/Glide.** All of these events, except for A BG, are events scheduled to be flown at **NARAM-35** in August....speaking of which, **NARHAMS** Section will host **NARAM-35** during the week of August 1-7 in Middletown, MD. Events: **1/2A PD(M); 1/2A SD(M); B HD; B RG; A Payload; C SRA; Sport Scale; R & D; 1/2A Cluster Altitude; & D Dual Eggloft Duration.** Contest Director is Tom Lyons, PO Box 1746, Prince Frederick, MD 20678. This will be the closest NARAM since NARAM-32 was held in Virginia in 1989, so make plans to attend!

WINTER WORKSHOPS: The first two Winter Workshops will deal with the construction of Ed Miller's 24mm "UFO" models. Kits are available from Ed for \$4 each. Please bring the following supplies to the workshops:

1. Pencil or pen
2. Large compass
3. 360 degree protractor
4. Scissors
5. 1" wide masking tape
6. Hobby knife with #11 blades
7. 5 minute epoxy
8. Cyano (super glue) thin type
9. Wood glue
10. E15 or E30 casing
11. 12" ruler
12. Tooth picks
13. Flat work surface. (Must be perfectly flat).

For more info, or to reserve a kit, call Ed at (717) 865-6829.

See 1993 Schedule for dates and times. The Workshops will be held at the Delta Fire Co. For directions, call Glenn Feveryear at (717) 456-5570.

MEETINGS: Don't forget, after December, we will no longer have use of the Lancaster Library for meetings. Consult your schedule for the time and place for upcoming meetings. The first three meetings for 1993 will be held in conjunction with the Winter Workshops (there; wasn't that easy?)

SPORT LAUNCH: We have a Sport Launch 12/27 at Cocalico, 1-?

SPORT PLAN:

The WARP DRIVE 29 - Phase III

by Ed Miller

The Warp Drive series of models are my attempt at producing an ultra-high performance, minimum diameter model rocket. I have built Warp Drive models in 18mm, 24mm, and 29mm diameters. This plan is for the 29mm version. This is the 3rd generation of Warp Drive models in 29mm; hence, the Phase III designation. This model is easily capable of breaking the sound barrier and attaining an altitude of one mile.

To construct this model, you will need the following parts:

Body Tube: NCR BT-11, 21" long .

Nose Cone: FSI HNC-101

Fin Material: Apogee GBS-37

Shock Cord: Apogee KSL-300, 4'

Streamer: Apogee DSS-880

In addition, you'll need a screw eye, 5-minute epoxy, and thin cyano.

Begin by cutting the body tube to length. Build up nose cone with putty until it's diameter is the same as the body tube's. Cut the fins from the GBS-37 sheet. [A band saw works best for cutting fiberglass] Sand the leading and trailing edges of the fins razor sharp. Sand all areas of the fins until they are dull so the epoxy fillets will adhere well. Draw the four fin placement lines 90-degrees apart on the body tube. Tack the fins in place with thin cyano. [Note: the trailing edge of the fins should be located 1/2" from the end of the body tube. Also, be

sure that your fins are in **exact** alignment. I had one model self-destruct because of a very slight fin alignment problem.

Now, using a hobby knife, make a slot 1/8" X 1/2", 3" ahead of one fin. The 1/2" dimension of the slot should run parallel with the axis of the tube. Now feed your shock cord into the slot until it exists the top of the body tube. The other end of the shock cord must lay against the root of the fin directly behind the slot. Pull the front of the shock cord while holding the other end against the fin root. Pull until all the slack is gone. Now fillet the fins in place with 5 minute epoxy. Make sure that the shock cord is covered with epoxy. Make the fillets as smooth as possible. When the fillets are done, cover the shock cord with epoxy on the outside of the tube. Also fill the slot with epoxy. Install screw eye; attach shock cord. Use cyano to secure the knot. Build the Apogee streamer and attach. This model is designed to be tower launched. If using a rod, install two 1/4" launch lugs, about 1" long. One should be between the fins, and the other should be about 8" in front of the fins.

Paint your model fluorescent orange so that it will be easy to spot on the ground.

FLIGHT PREP

Select a motor and wrap 1/2"

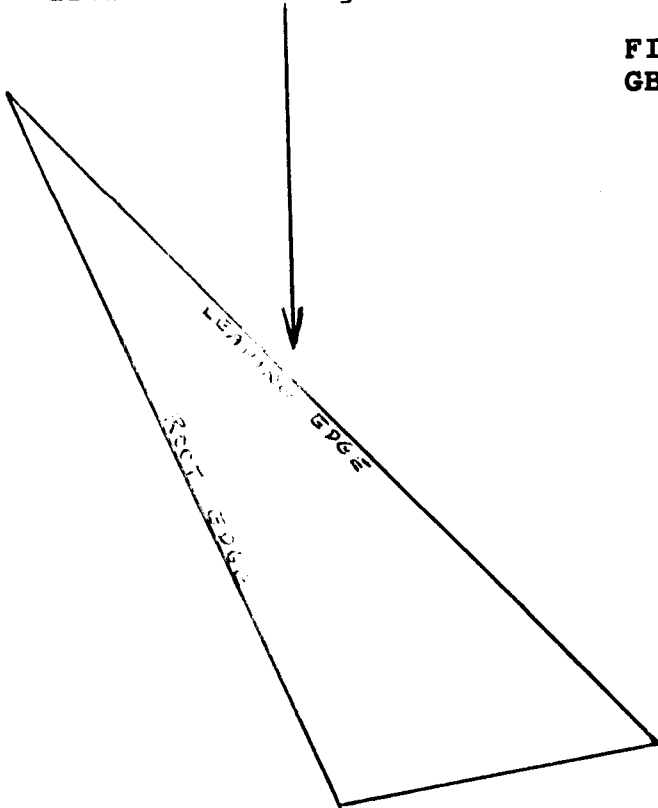
masking tape around the nozzle end, until it is the same diameter as the outside of the body tube. Install the ignitor as per manufacturer's instructions; slip the engine in place, and secure it with 3 tight wraps of 1" masking tape on the outside of the body tube to the tape ring on the motor. Insert a liberal amount of wadding. Push the shock cord in followed by a neatly folded streamer.

Launch on clear and very calm days. Punch a hole in the sky!

Recommended Engines

FSI: F100-10
Aerotech: F25-9W, F50-12T, G25-10W, G40-10W, G80-13T, G125-15.

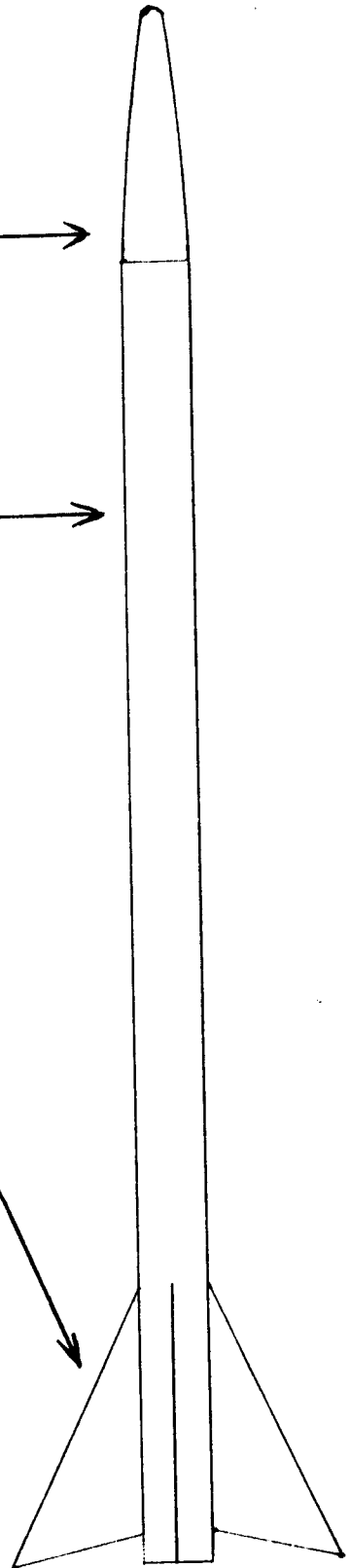
Full size fin; make 4 from .037 fiberglass



FSI HNC-101 →

NCR BT-11 →
21"

FINS APOGEE
GBS-37



KIT REVIEW:

The AeroTech STRONG ARM

by George Beever

The STRONG ARM is one of AeroTech's "Second Generation" of kits. Released this past spring and summer, they are a follow-up to the kit line introduced in 1989.

The STRONG ARM was designed by Bob Sanford, who also designed the INITIATOR, both while he was with Enertek. In fact, the STRONG ARM was to have been included in Enertek's initial release of kits, but the company folded before that could occur.

The STRONG ARM is designed to resemble a Navy Anti-Radiation Missile (hence, "A-R-M") This type of weapon acquires enemy radar transmissions, and follows them to their source, destroying their point of origin.

The STRONG ARM is typical of AeroTech's kits: heavy walled tubing, polyvinyl nose cone, plastic fins, "Interlok" fin/motor mount system, and ejection cooling baffle. The kit is comprised of 35 parts all told, shipped in a new style box that converts into a building/display stand. This feature is quite handy.

This is the fourth AeroTech kit that I've built, and on the STRONG ARM and on one other I've had problems with the fin/motor mount system. I have a feeling that this is just me,

but if anyone else has experienced similar problems, I'd like to hear from you. It would ease my suspicions that I'm really losing it somewhere.

The decal sheet is the now standard self-adhesive type. I know it's a personal quirk, but I hate them. I must say, however, that by following the directions (imagine that!) the decals go on the model with little or no problem.

All AeroTech kits recommend using medium viscosity cyano throughout for construction. I have always succumbed to using at least a little bit of epoxy somewhere, but this time I used cyano only. It worked fine!

I have flown my STRONG ARM on both an F24-4 RMS and an F25-6 single use; both flights were perfect.

MY 2-CENTS WORTH:

LIKES: Design, size, ejection baffle, flight characteristics, ease of construction.

DISLIKES: Self-adhesive decals, price. The list price on the kit is \$49.95, which to a tight-wad like me is expensive. However, there are a number of AeroTech dealers who offer substantial discounts. I highly recommend going that route.

NEWS FROM AROUND THE HOBBY

The big news in the hobby this past month was the **1992 Chicago RCTHA Trade Show**. A number of manufacturers took advantage of this opportunity to display their latest products.

AeroTech had on display an actual production example of the long-awaited **Astrobee-D** kit. Aerotech also was able to announce that they had received a "stay of enforcement" from the **Consumer Product Safety Commission** concerning the sale of **G motors**. This "stay" allows them to sell G's to individuals 18 years of age and older.

AeroTech also announced that the 32mm reloadable casing, developed for the **Phoenix R/C RG**, will be offered as a separate item for \$59.95. The Phoenix glider itself will be offered for \$129.95. In addition, a special **F14-PJ** (plug) motor is being made available until reload kits can be shipped again.

One of the biggest questions asked of the Aerotech staff was the status of **reloadable motors**. The differences between the Department of Transportation and AeroTech are expected to be resolved in the near future.

Estes displayed a number of new items, including a 1/5-scale model of the **US Navy AQM-37A** target drone. Another new model is the **1/10th scale Terrier/Sandhawk** sounding

rocket. Reportedly, the upper stage Sandhawk is the same BT-55 based Sandhawk of the 70's, and can be flown separately from the Terrier booster. The Jayhawk will sell for \$34.99, and the Terrier/Sandhawk for \$29.99. Both will be part of the **Pro Series** of kits.

Estes is also introducing a new eggloft model, as well as two boost/gliders. One of the gliders has the appearance of the F-14 Tomcat, with wings that fold back for boost and swing forward for glide. Price is \$14.99.

The plans for the long-rumored **Estes composite motors** appear to have been put on the back burner. A **black-powder E** motor may be in the offing instead.

North Coast Rocketry announced plans to introduce a line of composite rocket motors named **Impulse**. Initially, an **F30 & a G50** are planned for **Spring '93** release.

Custom Rockets has released a new, full color catalog, featuring 18 new kits. [Editor's note: my copy is certainly impressive, but does not contain prices.]

Quest also had some new kits, 5 in all, to display. One of the new kits is of the Tomahawk sounding rocket.

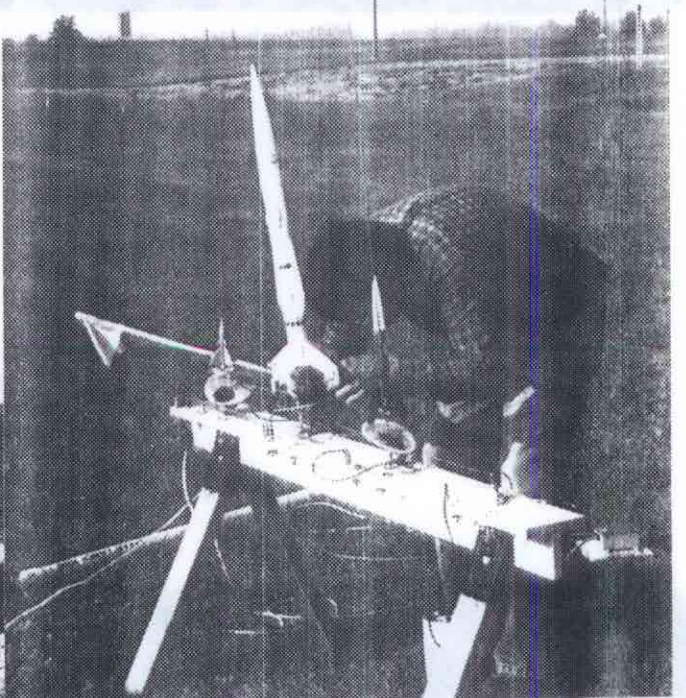
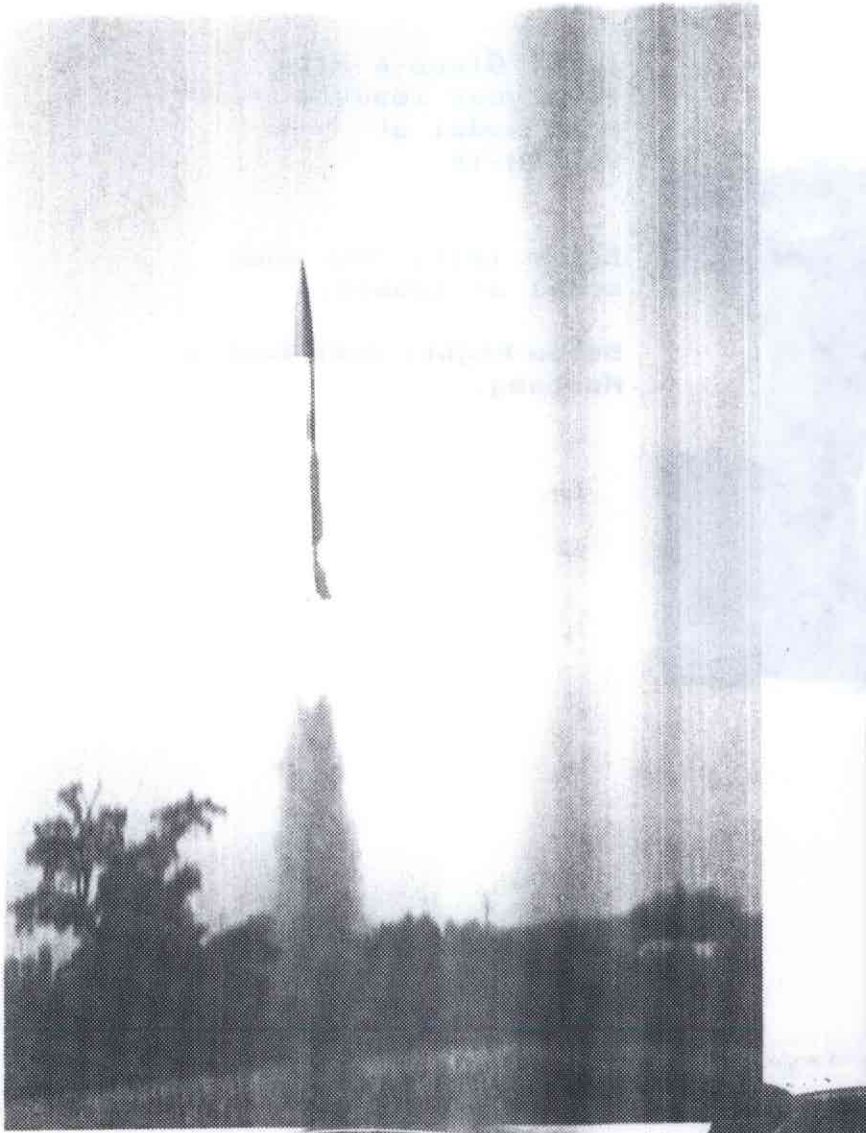
Looks like the rocket modeler will have a lot to chose from!

SPAARphotos

Left: An AeroTech
STRONG ARM
under F24-4RMS
power.
[Ed Miller photo]

Below Left: The chili was
the only thing warm
at SPAARSPAM-IV.

Below Right: Ed Miller
readies an Estes
Sentinel with a D13.

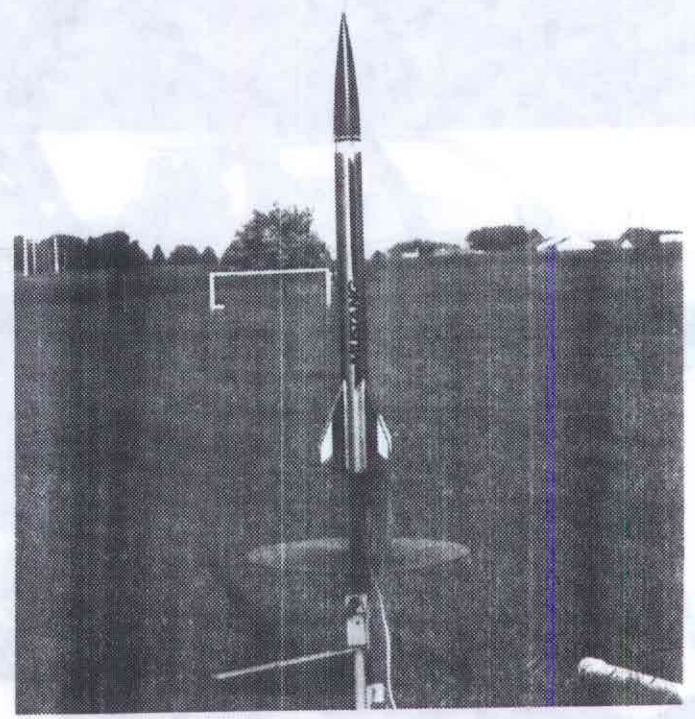
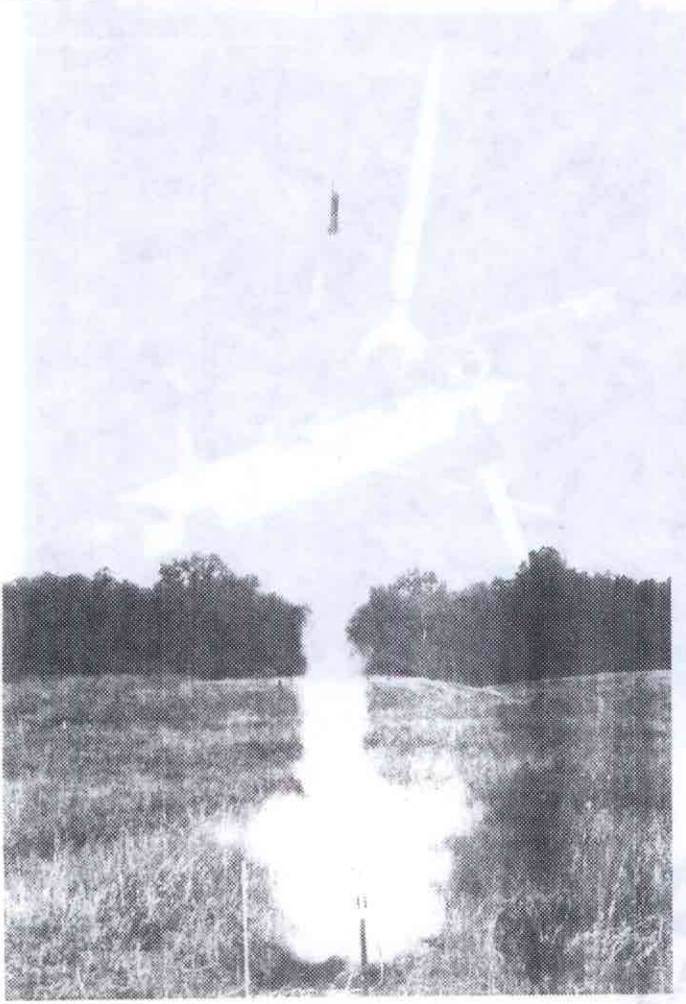


SPAARphotos

Left: Glenn & Rita
Feveryear ready a
D HD model at
VACUUM-18.

Below Left: The same
model at launch.

Below Right: John Yost's
Mustang.



THE SOUTHERN PENNSYLVANIA AREA ASSOCIATION OF ROCKETRY

Membership Application

Name _____ Address _____

Phone _____ Age _____ Date of Birth _____

NAR # _____ Tripoli # _____

I have been flying rockets for _____ years. I have not yet flown a model rocket _____.

DUES: 18 years of age or older: \$10 per year.

15,16,17 years of age: \$7 per year.

16 and under: \$5 per year

Family Plan: Oldest member joins at full price, all other family members 1/2 price; one issue of the Countdown per family.

Return this form to: SPAAR, PO Box 127, Reamstown, PA 17567.

Join the National Association of Rocketry!

Find out about launches all over the country; get a full year of American Spacemodeling magazine; join clubs; fly in competition; set US records!

- JUNIOR (ages 15 and under) \$15.00
LEADER (ages 16-20) \$15.00
SENIOR (ages 21 and older) \$25.00
OPTIONAL \$1-MILLION LIABILITY INSURANCE for rocketry activities \$15.00
TOTAL ENCLOSED \$

Name _____

Address _____

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Phone (____) _____ MONTH DAY YEAR

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Rights, privileges, and responsibilities of membership begin upon acceptance of this application by the NAR. Prices and services subject to change without notice.

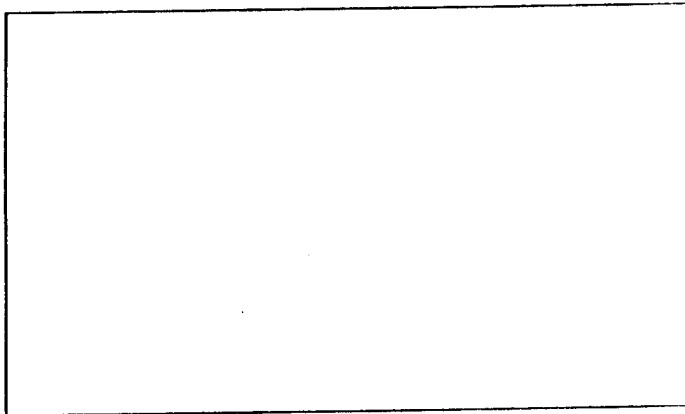
NAR PO Box 177 Altona WI 54720

The NAR is the official non-profit national organization for non-professional consumer rocketry. The NAR establishes safety rules, certifies US and world records, publishes technical literature, sponsors launches and competitions, and promotes the hobby.

I pledge to conduct all my sport rocketry activities in compliance with the NAR Safety Codes.

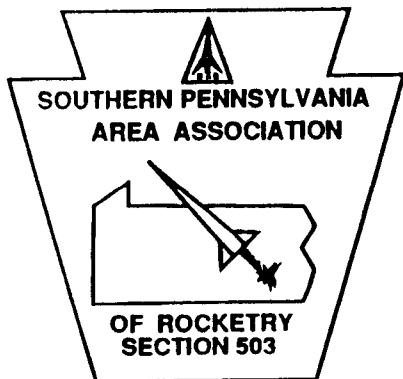
Signature (required)





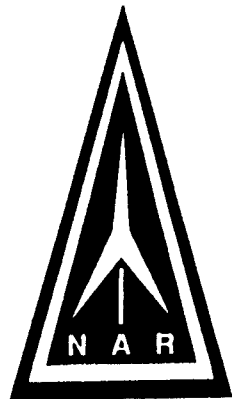
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SPAAR
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Reamstown, PA. 17567



**SOUTHERN PENNSYLVANIA
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AND NORTHERN MARYLAND



*The Southern Pennsylvania Area
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COUNTDOWN

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