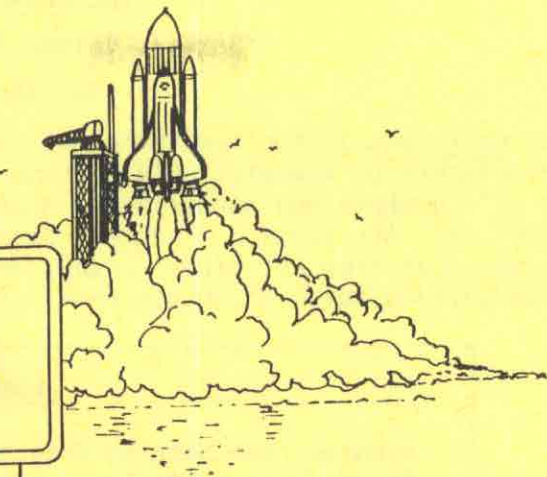


COUNTDOWN



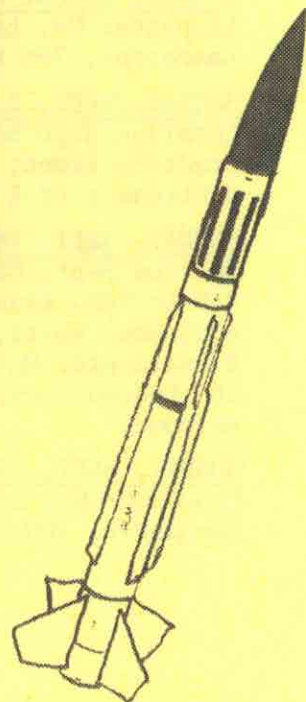
OFFICIAL NEWSLETTER OF
THE SOUTHERN PENNSYLVANIA AREA ASSOCIATION OF ROCKETRY

VOLUME 3, ISSUE 4 JULY/AUGUST 1990

WHY IS THIS MAN SMILING?



INSIDE: NICE-10 AND LMR-1 RESULTS; FLIGHT LOGS;
A LOOK AT QUALIFIED COMPETITION ROCKETS;
KIT REVIEW: THE MRC AGM-78 STANDARD ARM



The SPAAR Countdown

Volume 3, Issue 4

July/August, 1990

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. Material may be used with proper credit.

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

Thanks this time to: Bruce Canino, John Yost, and the rest of the gang.

Subscription rate: \$5.00 per year, six issues. SPAAR, PO Box 127 Reamstown PA 17567

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ON THE COVER: Why is Dale Greene smiling? He's going to NARAM-32 in Dallas, TX., that's why! See page 7.

SCHEDULE

SUNDAY, AUGUST 12: SPAAR Sport Launch, Cocalico High School, 3PM to 7PM.
Practice Event: A Boost/Glide.

MONDAY, AUGUST 20: Section Meeting, Lancaster Co. Library, N. Duke St., Lancaster, 7PM to 9PM.

SUNDAY, SEPT. 2: SPAAR Sport Launch, Cocalico High School, 3PM to 7PM.
Practice Event: F Streamer (C Div.)
D Streamer (B & A Divisions).

SUNDAY, SEPT. 16: SPAARSEC-3
Section Meet, Cocalico High School, 9AM to 5PM. Events: E Eggloft,
B Steamer Multi, 1/2A Parachute,
B Helicopter Multi, A Boost/Glide.
CD: George Beever. Sport Flying welcome.

MONDAY, SEPT. 17: Section Meeting, Lancaster Co. Library, N. Duke St., Lancaster, 7PM to 9PM.

SUNDAY, SEPT. 23: SPAAR Sport Launch, Cocalico High School, 1PM to 5PM.
PLEASE NOTE TIME CHANGE
Practice Event TBA.

SUNDAY, OCT. 14: SPAAR Sport Launch, Cocalico High School, 1PM to 5PM.
Practice Event TBA.

MONDAY, OCT. 15: Section Meeting, Lancaster Co. Library, N. Duke St., Lancaster, 7PM to 9PM.

SUNDAY, NOV. 4: SPAARSPAM-2 Tailgate Picnic, 1PM to 5PM, Cocalico High School, "events" TBA.

TO ALL MEMBERS, SUBSCRIBERS, AND FRIENDS:

We regret to announce that the SPARROW-1 Open Meet, originally scheduled for Sept. 15, 1990, in Hershey, PA., has been cancelled due to the unavailability of a suitable launch site. We are planning on holding an Open Meet in Spring, 1991. Thank You.

M E E T I N G S

Meeting of June 18, 1990

Present: J. Yost, G. Feveryear, R. Feveryear, E. Miller, G. Beever, D. Greene, B. Rhoat, D. Rhoat, A. Babiarz, Gary Feveryear.

Editor's note- Due to unexpected technical difficulties, accurate minutes of the June 18 meeting are not available. Oh, OK....if you must know, the batteries in my tape recorder crapped out at the beginning of the meeting and I didn't know it. I'll try to hit the highlights.

Section Advisor: John Yost reported ... uh...well...on whatever Section Advisors report on. I can't really remember what it was, but he did it well.

Treasurer's Report: Ed Miller reported that we still have money, and that in the last month we spent some and took some in.

Competition: Glenn Feveryear reported that the SPAARSEC-2 Section Meet went well, and read off the results. He also stated that SPAAR planned to attend LMR-1 on June 30, in Mannassas, VA.

Education: George Beever had no report. (a reflection of his education?)

Newsletter: Aha!! Here's one that I can honestly say is accurate because I still have my notes! There were 45 copies of the May/June Countdown made up, distributed as follows: 25 to members, 7 to subscribers, 11 to other sections, and 2 freebies.

New Business: It was decided to change the Practice Event for A and B Division members for Sept. 2. They will fly D Streamer instead of F Streamer. This change was made due to the relatively high cost of F class motors, in addition to the safety factor. C Division will still fly F Streamer.

The meeting adjourned at 9PM.

Meeting of July 16, 1990

Present: Glenn & Rita Feveryear, Art Babiarz, Ed Miller, George Beever, Dale Greene, Dick Rhoat, Bill Rhoat.

Treasurer's Report: Ed Miller reported that the balance at the last meeting was \$203.45.

Since that time, there has been the following incomes: \$30 in membership fees; \$5 in newsletter subscriptions; \$3 for patches; 73¢ in donations; and \$2.75 in soda sale profits. There was an expenditure of \$6.05 in postage, leaving a balance of \$240.80.

Newsletter: George Beever asked for submissions for the Countdown, and expected the July/August issue to be out by late July.

Section Advisor: George Beever, for SA John Yost, had no report.

Competition: Glenn Feveryear passed out the totals for the 1989-90 contest year, as it applied to SPAAR members.

He then passed out a paper containing two options concerning SPAAR's competition plans for the 1990-91 year. This was voted on, and the results appear elsewhere in this issue.

Education: George Beever asked the members for input on what activities they might want to see for the winter of 90-91, in particular the future of the Winter Workshop program, as well as possible club-wide participation in NARTREK.

New Business: Ed Miller proposed the purchase of a number of 1/8" and 3/16" stainless steel launch rods, to replace the ones now in use. The club voted to purchase 12 1/8"X 36" rods, as well as 4 3/16"X48" rods. The total cost to the club will be \$23.00.

General discussion followed, and the meeting adjourned at 9PM

NEW DUES FORMAT: At the June 18 meeting, those present voted to change the current club dues format. Prior to this meeting, each member paid full price, regardless of the number of members in a given family.

This is changed, as follows: the oldest member of the family will pay full price for his/her age division; each subsequent member from that family will pay half the normal rate.

For example, a father who joins will pay the \$10 C Division fee; his 12 year old son, who previously would have paid \$5, will now pay \$2.50. In this way, we hope to give a price break to family members, and at the same time encourage family participation.

FLIGHT LOG

Date: June 10, 1990

Location: Cocalico High School

Flight #	Name	Model	Motor(s)	Event	Time	Misc.
1	E. Miller	Mini Scorpion	A10-0/A10-3	Sport	13.3	GF
2	D. Bender	Birdie	1/2A3-4	"	6.3	GF
3	D. Bender	Tornado	B6-4	"	27.5	GF
4	D. Weinhold	Heteor	A8-3	A PD Sport	20.5	GF
5	K. Pattison	X-Ray	B6-4	Sport	50.0	GF
6	D. Weinhold	Pathfinder	D12-3	"	45.0	GF
7	E. Miller	Negatron	D20-0/D20-7	"	40.6	GF
8	D. Bross	Der V-3	D12-3	"	26.8	GF
9	K. Pattison	Yellow 1	D12-5	"	12.12	GF
10	D. Greene	Honest John	A8-3	"	15.4	GF
11	B. Canino	Graduator	E15-4	"	39.6	GF
12	E. Miller	Gone	D12-7	"	49.0	GF
13	D. Weinhold	Big Bertha	C6-3	"	14.8	GF
14	D. Weinhold	Der V-3	C6-3	"	12.95	GF
15	A. Babiarz III	Talos	A8-3	"	16.10	GF
16	A. Babiarz III	Saturn V	D12-3	"	4.4	PRG
17	J. Babiarz	GT-3	B6-4	"	13.9	GF
18	J. Babiarz	Gyroc	A8-3	"	XXXX	GF
19	John Babiarz	Stealth	C6-3	"	20.05	GF
20	John Babiarz	B/G	1/2A3-2	1/2A BG	19.4	GF
21	Elicia Babiarz	Bandit	C6-3	Sport	17.9	GF
22	Gillian Babiarz	Leprichau	1/2A3-2	"	9.0	GF
23	A. Babiarz	Mini Mars Lander	A10-3	"	15.8	GF
24	A. Babiarz	Honest John	B6-4	"	24.7	GF
25	A. Babiarz	Crusader S/W	B4-2	"	8.0	GF
26	Kate Babiarz	Big Bertha	C6-5	"	XXXX	?
27	Kate Babiarz	Big Bertha	B6-4	Parasite Glider	XXXX	?
28	E. Miller	ASAT-21X	G40-7	Sport	10.9	PRG
29	E. Miller	Armacron-3	(3)B4-6	"	31.9	GF
30	G. Beever	Recruiter	B6-4	"	49.95	GF
31	G. Beever	Phoenix	D12-3	"	30.6	GF
32	W. Rhoat	Onyx	F50-6	"	52.0	Sep
33	F. Hoke	Big Bertha	C6-3	"	38.9	GF 4FX
34	F. Hoke	Iron Man	D12-3	"	25.8	GF
35	B. Canino	PA Crude	E60-4	"	27.2	GF
36	B. Canino	Trailblazer	C5-3	"	24.8	GF 2FX
37	B. Canino	AstroCam 110	D12-7	"	53.9	GF
38	R. Balogh	Honest John	C6-5	"	35.2	GF
39	R. Balogh	AGH-78	C6-3	"	24.7	GF
40	R. Balogh	Aerobee-Hi	G25-5	"	56.5	GF
41	R. Hackman	Blackie	A10-3	A SD	84.7	SEP
42	R. Hackman	XR-72	B4-4	Sport	XXXX	GF
43	D. Bross	Orbital Transport	B6-4	"	19.26	GF
44	D. Bross	Mars Lander	C6-3	"	18.94	GF
45	D. Bross	Mars Lander	C6-3	"	4.7	?
46	D. Bender	Hega Sizz	C5-3	"	22.5	GF
47	D. Greene	Big Brute	F44-10	"	27.5	GF
48	K. Pattison	V-2	D12-5	"	45.0	GF
49	D. Rhoat	B SD	B4-6	B SD	100.4	GF
50	D. Rhoat	B SD	B4-2	B SD	55.2	GF
51	D. Greene	B SD	B4-4	B SD	4.5	?
52	D. Greene	B SD	B4-4	B SD	19.8	GF
53	G. Beever	B SD	B4-6	B SD	43.0	GF

Practice Event Results, B Streamer Duration:
D. Rhoat, 155.6s, 1st; G. Beever, 43.0s, 2nd; D. Greene, 24.3s, 3rd.

Unfortunately, one of Art's newer models, an Estes Saturn V (new version), didn't fare so well; the model weather-cocked severely at liftoff and hit the ground prior to 'chute deployment. Art reports that the damage is repaired, however.

Our good friend from New Jersey, Bruce Canino was there. Bruce is the editor of the GSSS newsletter, "The Launch Rack", and has contributed much to this newsletter as well. In spite of that, he's still one of the world's all around nice guys! Bruce flew one of the new MRC Trailblazer models, complete with 2 of the "FX" smoke producers; a AAA Aviation Fuels "Pennsylvania Crude" with an FSI E60-4, and a modified Estes AstroCam with a D12-7. Did the picture come out, Bruce?

Now, here is an example of an expectant father who has been through all of this before: Dan Weinhold, one of our original members, came out and flew some models, including a very nice Estes Pathfinder. Did Dan look particularly nervous that day? Nah, why should he? It was only his wife's due date...hey, like I said, this is old hat! In any event, by the time this is written, Dan and his wife should have a new addition to the Weinhold family, and our warmest congratulations, too!

Well, as the saying goes, "It's always something, ya know?" It wasn't rain that hampered the June 10 Sport Launch, or even the threat of it. The problem was wind. Our unseasonably windy Spring and Summer caught up with us, and kept the number of flights made that day down to 53. This was a surprisingly high number considering that the wind was gusting at times to over 25 mph.

The good news was the number of new faces that were seen. The Babirarz clan from Berks County was there in force, flying a number of classic Estes models. These included the old Honest John kit, the Talos, and the Gyroc.

Speaking of new arrivals, Christopher Balogh brought his dad, Bob (Hmmm, our own Dr. Bob!) and watched him fly some of his rockets. Bob's AAA Aerobee-Hi turned in another great flight on an Aerotech G25-5, but the model was damaged upon landing. Bob says he has retired the Aerobee from flight, but it looks great on his shelf.

Dale Greene created a new event, "ICBM Target Spot Landing"; he flew his NCR Big Brute on an Aerotech F44-10. The 10 second delay was, uh... well, let's say it was a real breath-holder watching the Brute hurtle nose first towards the ground... and yes, the

FLIGHT LOG

Date: July 1, 1990

Location: Cocalico High School

Flight #	Name	Model	Motor(s)	Event	Time	Misc.
1	Rita Feveryear	Blue Star	½A6-2	Sport	NT	GF
2	D. Bender	Birdie	½A3-4	"	6.3	GF
3	D. Bender	Interceptor	C6-5	"	30.4	GF
4	D. Bender	Liberty	B8-5	"	22.0	GF
5	Dan Yost	Transtar Carrier	B4-4	"	33.5	GF
6	W. Rhoat	Birdie	½A3-2	"	NT	GF
7	E. Marcella	?	½A3-4	"	9.85	GF
8	E. Marcella	Mini Mean Machine	A10-3	"	22.9	GF
9	E. Marcella	X-15	A8-3	"	11.22	GF
10	E. Marcella	X-15	B6-4	"	24.3	GF
11	E. Marcella	Long John	C6-5	"	67.9	GF
12	E. Marcella	Commanche-3	B6-0/B6-4	"	17.4	GF
13	E. Marcella	Black Brant II	D12-5	"	41.3	SEP
14	B. Canino	Dentaguard I	C6-3	"	37.5	GF
15	B. Canino	Tri-Wing B/G	D12-3	"	XXXX	PRG
16	B. Canino	Graduator	E15-4	"	34.7	GF
17	R. Balogh	AGM-78	C6-3	"	XXXX	PRG
18	R. Balogh	ASLAT	D12-0/E15-4	"	57.5	GF
19	G. Beever	Firehawk	B6-4	"	XXXX	CHU
20	E. Miller	Cone	E15-4	"	XXXX	GF
21	E. Miller	Mini Katana	(6) C5-3, (1) E15-7	"	XXXX	GF
22	E. Miller	Eliminator	F25-6	"	XXXX	GF
23	E. Miller	X-4	C6-7	"	76.0	GF
24	R. Hacknan	Alpha	B8-5	"	60.5	GF
25	R. Hacknan	XR-57	A8-5	"	17.5	GF
26	R. Hacknan	Wizard	B8-5	"	21.5	Lost
27	R. Hacknan	XR-57	B6-2	"	25.7	GF
28	R. Hacknan	XR-76	D12-5	"	95.0	Lost
29	D. Rhoat	B SD	B6-2	NARTREK	33.8	GF
30	D. Rhoat	B PD	B6-4	NARTREK	23.3	GF
31	D. Rhoat	B PD	B6-2	NARTREK	12.7	CHU
32	S. Selig	Buck Rodgers Fighter	C5-3	Sport	22.0	GF
33	S. Selig	Buck Rodgers Fighter	C5-3	"	10.6	GF
34	S. Selig	Draconian Marauder	B6-2	"	6.5	GF
35	S. Selig	Draconian Marauder	C6-3	"	XXXX	CATO
36	S. Selig	Iron Man	C6-3	"	18.7	GF
37	S. Selig	Iron Man	D12-3	"	43.7	GF
38	G. Feveryear	½A HD	½A3-2	½A HD	6.3	PRG
39	G. Feveryear	D HD	D12-3	D HD	20.9	SEP
40	G. Feveryear	Grumpy Dog	D12-0/D12-3	Sport	NT	GF
41	Gary Feveryear	M5	A3-4	"	9.3	GF
42	Gary Feveryear	CMR	A8-3	"	10.1	GF
43	G. Beever	Ozone Baby	½A6-2	½A PD	26.65	GF
44	G. Beever	Ozone Baby	½A6-2	½A PD	16.50	GF
45	D. Rhoat	½A PD	½A3-2	½A PD	112.6	NR
46	D. Greene	½A PD	½A3-2	½A PD	40.8	GF

Practice Event Results, ½A PD:
G. Beever, 43.1, 1st; D. Greene, 40.8, 2nd.

It was so windy on July 1 that the day's practice event, ½A PD, was an iffy proposition. Only three people entered: Dick Rhoat, Dale Greene, and George Beever, and these were the only folks who flew B SD on June 10. (C'mon guys!) Dick took first place in B SD on June 10, and would have done the same on July 1 in ½A PD, except that he couldn't return his 112 second flight.

Our Chester County member, Eric Marcella, showed that he is coming along nicely with a number of good sport flights. Keep up the good work, Eric!

Back for an encore presentation was Bruce Canino, along with his "interested other", Sharon Selig. Sharon, in fact, flew more than Bruce did, but Bruce flew one of the more peculiar models seen at a SPAAR launch: The Dentaguard I. This is a flying version on the Dentaguard toothpaste container. The model flew well, and I for one feel that my teeth are much the better for it.

chute deployed at the last second!
Ed Miller flew some interesting models, one of which was a bit of a reversal for him; he scaled-down an Estes Scorpion to BT-20 size, and flew it with A10s. This model really takes off! Ed also brought out his North Coast ASAT-21X, which he flew on an Aerotech G40-7. A combination of things, including the gusty wind, caused the ASAT to core sample in prior to ejection. This is not anyone's idea of fun. BUT....according to Ed, "It's Big, It's Improved, It's Prettier Than Ever, And It's Coming To Your Town Soon.....The New ASAT!" We can't wait Ed.

The crazy weather continued for the next Sport Launch on July 1. Who ever heard of wind problems in this part of Pennsylvania at this time of the year? Corn yes, but wind? Gimme a break!

Ya kinda have to wonder how much influence Dr. Bob! Kruetz had in that project.

And, just when you thought that it was safe to go to a SPAAR Sport Launch, comes word of a new force in model rocketry.....the one, the only, "Fabulous Flying Feveryear Brothers"! One can only wonder where all of this will lead. Is there a Feveryear Team in the offing for next year's competition schedule? Stay tuned to find out.....

Ed Miller kept his flying rather low-key. Ahh, he only flew an NCR Eliminator (from the Workshop) on an F25 White Lightning, and the Cone on an E15; and as an afterthought, his Mini Katana on only 6 C5-3s and an air-started E15-7. Pretty mild stuff, actually (WHOOOSH!) That was followed by Bob Balogh's NCR ASLAT, an internally staged model that uses an Estes D12 for a booster and on this flight an Aerotech E15-4WL for a sustainer. Very Nice!!!

N E W S

SECTION NEWS NOTES

NEW MEMBERS: Welcome to our new members, Gary Feveryear, RD#3, Box 176B, Delta, PA; Art Babiarz, 148 Sleepy Hollow Dr., Mohnsville, PA; and our first Delaware member, Trevor Smedley, 202 Red Fox Lane, #4C, Newark, Delaware. We're glad you joined us!

SPAARSPAM-2: All members are reminded that SPAAR will hold it's second annual Section Picnic on Sunday, November 4, at Cocalico High School, from 1PM to 5PM. Again, the idea is to hold a football-style tailgate party. We need ideas for the "events" to be flown. Last year, we flew Drag Race, as per NAR Pink Book rules, and a non-standard event, MicroRoc Non-Duration, the brainchild of Bill Rhoat. What will we fly this year? It's up to you, so start thinking, and make your ideas known!

WINTER WORKSHOPS 90-91: Are you kidding? It's July for Pete's sake! What are we talking about Winter Workshops for? Simple. Prior Planning Prevents Pç%\$ Poor Performance. Why wait 'til the last minute? Have an idea for a workshop topic? Better yet, want to put one on? Have any suggestions on changing the format? The schedule for the winter months will be made up within the next few months, so start thinking!

WANTED: Articles, plans, product reviews, etc., for publication in model rocket club newsletter. Write: The Countdown, c/o I'm Begging for Help Publishing, PO Box 127, Reamstown, PA 17567.

PATCHES: You want 'em, we got 'em. Club patches are still available! Contact Dale Greene at the next Sport Launch.

LOST & FOUND DEPT: Found after the last SPAAR Sport Launch; one Celestial Enterprises launch tower, in very good condition, rumored to be the property of one Richard Rhoat. Don't worry, Dick, the ransom amount can be worked out in easy monthly payments. Contact Glenn, c/o this newsletter.

et cetera.....

THANKS GUYS!: As mentioned elsewhere in this issue, a number of SPAAR members attended the NICE-10 Open Meet and the LMR Regional this past spring, both hosted by NOVAAR. Jon Rains was Contest Director for NICE-10, and Greg McCain was CD for LMR-1. Our thanks to those two gentlemen, and all of the NOVAAR crew for a couple of enjoyable, well run meets. And if NOVAAR Section Advisor forgets to pass along our thanks to those guys, I'll stop buying his kits. (OK, OK, just kidding Ken)

THIRSTY? DRINK UP!: If you haven't noticed, the club is selling sodas at our launches this summer, for 50¢ each, a bargain at any price. The next time you are at a SPAAR Sport Launch and feel a bit dry, seek out Rita the soda lady, and she'll fix you right up. The profits go to the club, which we feel is a pretty good cause!

NEW ADDRESS: North Coast Rocketry announces that they have a "new" mailing address. As of 12/15/89 (!), address all correspondence to: North Coast Rocketry, PO Box 24468, Mayfield Heights, Ohio, 44124.

NCR also announces that a new catalog is due out during the month of July, which reportedly contains half a dozen new high power models, as well as at least that many new competition designs. One of the new high power kits is rumored to be a scale model of the French Ariane satellite launcher.

It is also reported that NCR is only now shipping the Juno-1 scale model introduced last year.

NEW STUFF FROM PENROSE?: Word from Estes Industries is that they are planning to introduce a number of advanced technology products in the near future, in response to their customer's requests. One of the items was reported to be a scale model of a well known missile (well known to whom?) but royalty problems held up the deal.

.... et cetera

SPAARSEC-3: As mentioned, our plans to hold an Open Meet this fall were put on hold until next spring. Section Prez and Competition big cheese Glenn Feveryear had already obtained the sanction for the Open Meet from Art "WUBBAman" Rose. So, why waste a perfectly good sanction? Presto change-o, our third Section Meet, SPAARSEC-3 was born.

The date will be Sunday, September 16, and the time will be 9AM to 5PM; the meet will be held at Cocalico. The events will be:

C Eggloft Duration; B Streamer Duration, multi-round; ½A Parachute Duration; B Helicopter Duration, multi-round; and A Boost/Glide.

The meet fees will be \$2 for C Division, and \$1 for A and B Divisions. As of this time, no rain date has been set. As usual, sport flying is welcome, but you must be an NAR member to compete.

If you have never participated in an NAR sanctioned contest before, a Section Meet such as SPAARSEC-3 is an ideal place to get your feet wet; you might be pleasantly surprised at how much fun you can have.

For more information, advice, or even some plans, contact your local SPAAR member.

DALE GOES TO TEXAS: SPAAR's Dale Greene plans to make it three NARAMs in a row this August, by flying down to Texas for NARAM-32. Dale had attended NARAM-30 in 1988 and NARAM-31 last year in Virginia.

All of us wish Dale to best, and hope that he has a safe trip.

Good luck, Dale!!!!

MR. BILL GOES TO COLLEGE: Speaking of people making trips, good luck to our one and only B Division member, Bill Rhoat, who will be attending Lehigh University this fall. Bill will be taking up electrical engineering.

Good luck, Bill, and keep in touch!

DICK GOES ON THE DISABLED LIST: Bill's father, Dick, will be on the disabled list, unfortunately. Dick will undergo rotator cuff surgery in early August, and will be out of action for some time.

Our best wishes for a speedy recovery, Dick!

1990-91 COMPETITION PLANS: At the July meeting, a vote was taken on SPAAR's competition schedule for the 1990-91 NAR competition year.

As they stand now, our plans are to attend WUBBA-13 (July 90), SPAARSEC-3 (Sept. 90), NICE-11 (projected Spring 91), WUBBA-14 (projected June 91), SPAARSEC-4 (projected May 91), and an additional Open Meet in 1991, which will hopefully be hosted by SPAAR.

This schedule would give us 12 Contest Factors, which is a full contest year under NAR rules.

BUT THE REALLY BIG NEWS: On June 13, 91b, 2oz 21" long Darren Lynn Weinhold came into the world at 11:20AM at Lancaster General Hospital. Darren of course, is the son of Mr. and Mrs. Dan Weinhold.

Hearty congratulations from all of us!!!!

NEXT PAGE: COMPETITION PLAN The plan on the following page is the version of the "Fly Baby" that SPAAR's Glenn Feveryear used to set a pending NAR B Boost/Glide record.

The time, 260 seconds, was set at NICE-10 on April 29 of this year in Mannassas, VA.

The original model was designed by Chas Russell, now of the Rocket City Aces, in the early eighties. Glenn made a few modifications to the design to set his record.

THE MYSTERY OF THE FLAGS: On July 22, many of us who attended the SPAART-1 Record Trial were wondering about all of those little orange flags that were laid out in grid pattern at Cocalico High School. It turns out that they are part of a geological study to help solve a sink-hole problem in the Denver area. We thought the sink holes were caused by Ed's last Mini Katana flight!

U.S. RECORD HOLDER
 B BOOST GLIDER DURATION
 AT 260 SECONDS

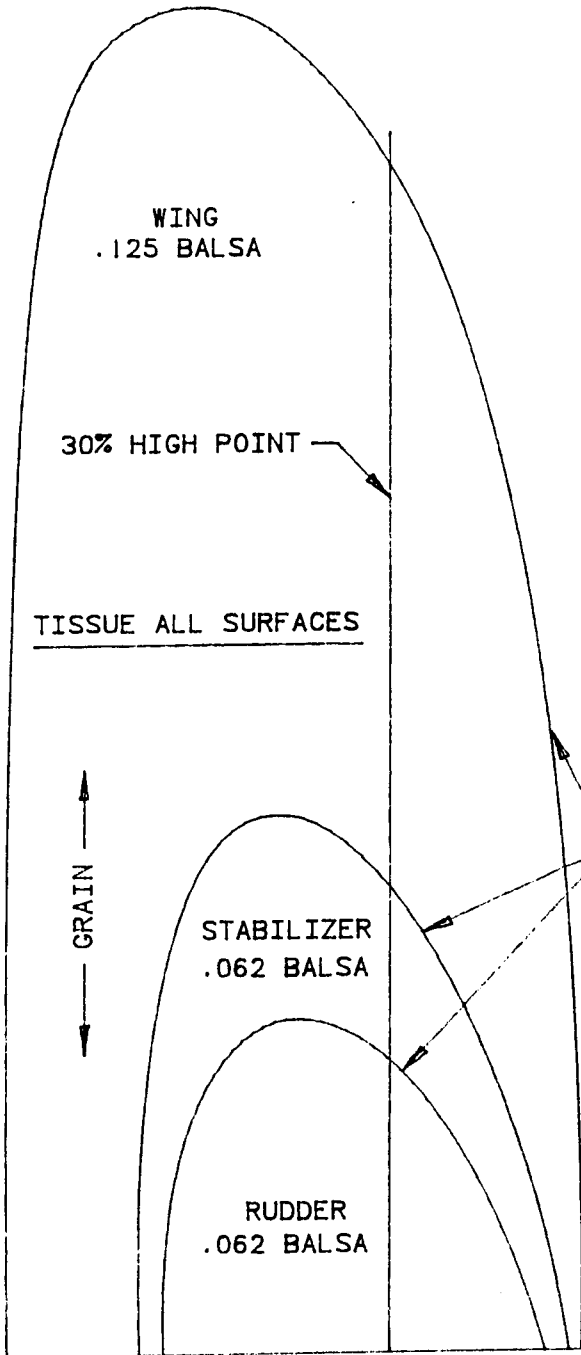
DESIGN BY: CHAS RUSSEL

DRAWN BY: GLENN FEVEYEAR

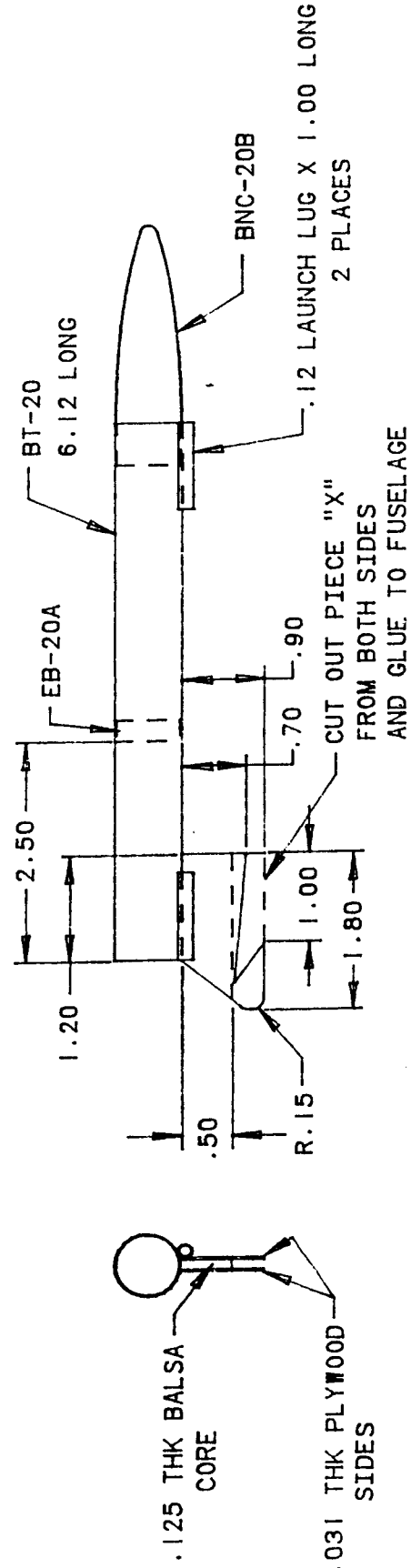
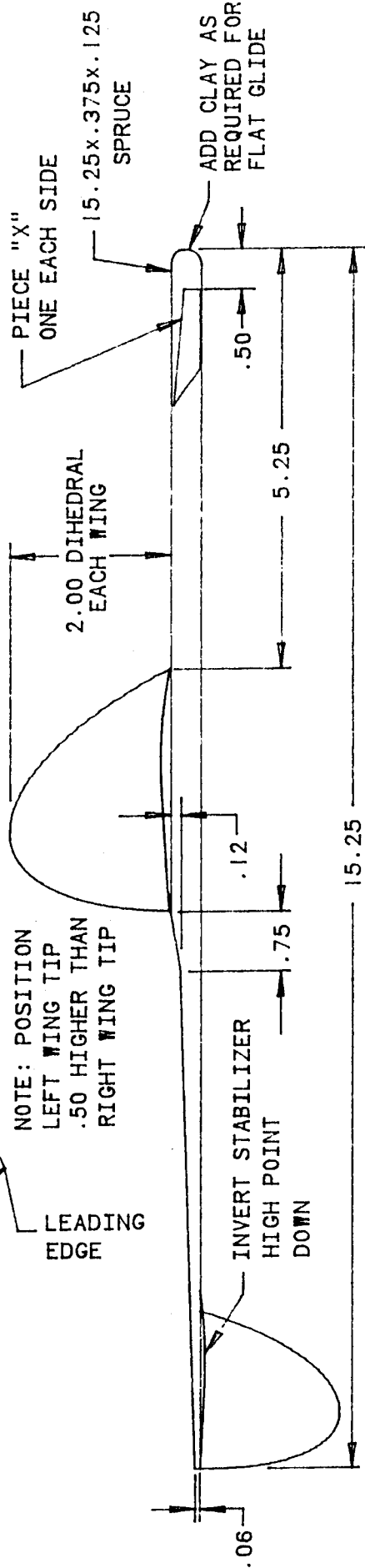
NAR 24931

SCALE: 1/2

WEIGHT AT LAUNCH: 44.60g
 WEIGHT WITHOUT ENGINE: 24.72g
 GLIDE WEIGHT: 17.56g
 RECOMMENDED ENGINE: B4-2



WING DETAILS
 SCALE: 1/1



N I C E - 1 0 A N D L M R - 1 :

S P A A R G O E S T O V I R G I N I A

On April 29 and June 30, members of SPAAR hit the road to attend two NAR sanctioned contests, the NICE-10 Open and the Last Minute Regional, both hosted by NOVAAR. By flying these two contests this spring, as well as our own SPAARSEC-2 Section Meet, SPAAR finished out it's first full year of NAR competition.

The same group attended both meets. They were Glenn and Rita Feveryear, John Yost, Dale Greene, Mark Snyder, and George Beever. Going into both meets, Glenn was rated in the Top 10 for C Division points, and SPAAR was flirting with the Top 10 list for total points per section. We all hoped that we could improve our chances of having Glenn finish the year in the top 10, as well as having the club in general finish there also. We believe that when the totals for the year are in, both goals will have been achieved.

At NICE-10, Contest Director Jon Rains got the first two or three flights off, right on schedule at about 9AM; however, the skies opened up, and soon came the rain. And more rain. And more rain. Things didn't look too promising, but at about 11:30 the rains did stop, and the contestants were given the option of continuing with the Meet, or flying the following week. The vote wasn't even close. We flew the meet, of course!

The events flown were C Alt, B Payload, 1/2A Helicopter, B B/G, B R/G, and B SRA. When it was all said and done, we didn't do too bad, all things considered! The trackers did have some problems with the grey, overcast sky, but tracking isn't easy even on a nice day.

The highlight for SPAAR was Glenn's second B Boost/Glide flight, timed at 4:20. This is now a pending US record, and added to his first flight time of 2.06, gave him an easy first place in that event. Glenn also took a first in C Altitude, having his entry tracked to 551 meters!

Glenn then took third place in B Rocket/Glide, and second in 1/2A Helicopter. He eventually ended up with a C Division high score of 514 points.

Other SPAAR members who placed were Mark Snyder, with a third in B Payload, a fourth in B Boost/Glide, and a fourth in B SuperRoc Altitude, good for 142 points; and George Beever, who scored a fourth in 1/2A HD and C Altitude, as well as a second in B SRA, for 194 total points. John Yost brought home 36 points, and Dale Greene, 14. In total, the Section scored 900 points.

The weather for LMR on June 30 was much drier and warmer, but a nice breeze (or wind, depending on your point of view) kept things from becoming too uncomfortable. Oh, OK, it was downright hot, but you can't have everything! Anyway, SPAAR came in second overall with 1329 points, an improvement to our third place NICE-10 finish.

The Jankov/Pavlov+1 Team took home 963 points, taking first place in D B/G, C Eggloft, B Streamer, and B Flexwing, Multi. On an individual basis, our man Glenn came through again, with 492 total points. He took a first place in B R/G, a second in C Eggloft, and fourth in C Helicopter. Mark Snyder came back with a solid 252 points, with a second place finish in B Streamer, and another second in B R/G, with a best single flight time of 107 seconds. George Beever scored a 4th in B R/G, 4th in C ELD, 3rd in D B/G, and 2nd in C HD, for 480 points. John Yost and Dale Greene both flew well, but had some bad luck; John made an 89 second C HD flight, which was the longest single flight in the event, but couldn't return the model, which was eaten by a Mannassas rocket-eating tree. It was the same with Dale and Mark Snyder in C ELD. The two longest flights of the day in that event were Dale's 229s and Mark's 225s. Again, the models were last seen drifting towards Washington, DC. Look for Mark's egglofter design in an upcoming issue!

NICE-10 April 29, 1990

"C" Division only

CD: Jon Rains

Name	B Payload	B R/G	B B/G	1/2A HD	B SRA	C Alt	T
T. Barber	187/DQ (1)	2:41/2:04(1)	2:13/1:43(3)	DQ/21	729	401/NC	436
*G. Beever	TL	DQ/:58	:58/:15	:37/:39(4)	860(2)	430/T1(4)	194
G. Bock	NF	:37/:55(2)	:43/:53	CATO/NR	NF	NF	138
K. Brown	150/45	1:09/:10(4)	1:15/:17	:21/:20	DQ	NF	76
M. Burzynski	NF	:38/:22	:18	NF	NF	NF	38
R. Edmunds	NF	DQ	DQ/DQ	NF	NF	NF	0
8-Ball Racing	85	NF	NF	:34/:44(3)	822	TL/214	110
J. Feedback	NF	DQ/:22	DQ	NF	NF	TL	46
*G. Feveryear	NF	:13/1:09(3)	2:06/4:20(1)	:57/:47(2)	812	551/NC(1)	514
*D. Greene	DQ/NR	NF	DQ/DQ	NF	736	DQ	14
J/P+1 Team	164/137(2)	DQ/:51	1:43/DQ	1:07/:52(1)	850(3)	486/415(3)	394
C. Phillips	105	NF	1:54/2:19(2)	NF	NF	TL/TL	132
*M. Snyder	159/TL(3)	NF	:58/:56(4)	:23/:28	824(4)	TL	142
R. Whitman	NC/152(4)	NF	NF	DQ/:07	868(1)	534/NC(2)	254
*J. Yost	NR	DQ/DQ	:45/:48	:35/:28	NF	DQ	36

*=SPAAR Member

Section Totals: NARHAMS 1328

NOVAAR 1214

SPAAR 900

LMR-1 June 30, 1990

CD: Greg McCain

Name	D B/G	C ELD	C HD	B R/G	B SD	B FW	T
8-Ball Racing	NF	NF	DQ	:49/DQ	NF	NF	30
T. Barber	168	NF	:74/:76	DQ/:56	145/DQ	118	378
*G. Beever	71/DQ (3)	:91(4)	86/45(2)	DQ/55(4)	DQ/49	102	480
G. Bock	85/85(2)	NF	DQ	84	130/DQ	NF	237
K. Brown	DQ/DQ	17/21	45/68(3)	77/24(3)	94/66	314	417
M. Burzynski	NF	62/43	NF	DQ	NF	NF	21
B. Canino	45(4)	DQ	62	34	NF	NF	102
R. Edmunds	DQ	NF	DQ/DQ	28	NF	NF	0
J. Feedback	14	NF	NF	28/DQ	NF	NF	30
*G. Feveryear	188	35/106(2)	65/36(4)	61/55(1)	DQ/DQ	NF	492
*D. Greene	NF	88/229	49/DQ	NF	155/DQ	NF	54
J/P+1 Team	86/121(1)	118/54(1)	DQ/35	DQ	88/111(1)	386	963
D. Klouser	NF	33/104(3)	NF	NF	64/106	NF	84
P. Miller	NF	DQ/30	NF	NF	DQ/69	NF	33
A. Nowatarski	DQ	NF	NF	CATO	80/DQ	NF	12
C. Phillips	NF	44/17	NF	DQ/DQ	58	NF	21
J. Phillips	NF	54	NF	13	60/72(4)	NF	35
*M. Snyder	NF	225	47	107(2)	83/99(2)	NF	252
W. Whitman	NF	13/DQ	CATO	37/DQ	119/46(3)	NF	99
*J. Yost	NF	69	89	28	NF	NF	51

*=SPAAR Member

Section Totals: NOVAAR 3585

SPAAR 1329

NARHAMS 698

T H E N U M B E R S : N I C E - 1 0 A N D L M R - 1

Manufacturer Review:

Q u a l i f i e d C o m p e t i t i o n R o c k e t s

by George Beever

One of the model rocketry companies that many people have been reading or hearing about this year is Qualified Competition Rockets, or QCR. QCR is really the brain-child of Kenneth Brown of Springfield, VA. Ken is the Section Advisor for NOVAAR, and was featured on the cover of the November, 1988 issue of American Spacemodeling.

In reality, Ken has been producing kits for a number of years, but more on that later.

I think that it can safely be said that QCR had it's origins in another Virginia based company, CMR, or Competition Model Rockets. CMR was founded by Col. Howard Kuhn, one of the founding fathers of the hobby, in 1970. CMR produced kits and parts for the modeler active in NAR competition. The CMR egg capsule, for example, was for many years the standard to which all others were compared. Many of today's leading competitors "cut their teeth", so to speak, on CMR products, including SPAAR's Glenn Feveryear and John Yost.

In 1987, however, CMR went out of existence, for a number of reasons. One was not the lack of demand for competition oriented model rocketry products; CMR's demise did leave a void in this market.

During the 1988-89 period, a number of companies began operations aimed at the marketplace formerly served by CMR. These include Apogee Components, Model Aerospace Research Systems (MARS), and even North Coast Rocketry. These firms took the high-tech approach to the competition marketplace, introducing carbon impregnated phenolic body tubes, fiberglass like fin materiel, and lightweight plastic nose cones.

QCR, however, has approached the matter in a bit of a differant way.

Ken began supplying kits for NOVAAR's young A and B Division members, as a simple, inexpensive way to learn about competition rocketry, while at the same time producing a model that was still competitive with the more elaborate designs.

My first experience with Ken's kits was in June, 1989, while at WUBBA-13. Ken showed up, moved into his dorm room at Allentown College, and set up shop. Having just become involved in competition, I was looking for a way to make up some lost time on the guys who had been at this for awhile longer. The kits that I bought were nothing flashy; they were bagged in plastic bread bags, or the type of bags you find in the produce section of the local grocery store. The instructions were simply a drawing or diagram of the model, with a few notes on the side. The components of the kits were somewhat crude; hand-carved nose cones, body tubes that weren't evenly cut, homemade engine hooks, and soda-straw launch lugs. But once built, they worked. Boy, did they work!

Since then, Ken has gone "legit", and formed QCR. He issued his first catalog/price sheet in January of this year, which lists over 40 kits. Ken covers just about every NAR competition event listed in the Pink Book, even including Plastic Model Conversion! The packaging has changed a bit, with clear plastic bags featuring colored labels. The parts have lost a little bit of the "home-spun" quality, but they remain simple. And they still work.

I have built and flown a large number of QCR kits, and the positives far outweigh the negatives. The finished products usually aren't much to look at, but Mr. Brown never claimed that they would be, and besides, most contest models aren't. They are supposed to be functional, and that's probably the best

way to describe QCR kits. But don't let the word "functional" or "Qualified" fool you. These kits can be winners, either right out of the bag, or with a few minor modifications.

I do not mean to toot my own horn, but I have used QCR kits with the following results:

High Rotor I (for A, B or C Helicopter):
First Place, C HD, SPAARSEC-2;
Second Place, C HD, LMR-1;
Third Place, B HD, VACUUM-15.

Never Loop I (for 1/2A & A B/G):
Second Place, A B/G, JOISEE-V.

Never Loop IV (for D B/G):
Third Place, D B/G, LMR-1.

High Rotor II (for 1/2A & A Helicopter):
Fourth Place, 1/2A HD, NICE-10.

Easy Slide II (for A & B R/G):
Fourth Place, B R/G, LMR-1;
Third Place(T), B R/G, SPAARSEC-2.

NO Crimp I (for A SRD):
First Place, A SRD, SPAARSEC-2,
pending US record.

Again, there is no intent to brag here. I simply mean to point out the soundness of the kits and their design.

There is another aspect of QCR kits that is worth mentioning.

As I looked over the events in the contests that SPAAR had decided to fly this year, I saw that there were two meets in which B FlexWing B/G was to be flown. I know next to nothing about FlexWing Boost/Gliders. Heck, I have trouble just pronouncing it. No problem! Just order up a couple of QCR "Auto Sight II" Flexies, and I was able to compete in both events.

All of this might not seem fair to those competitors who have spent a lot of time designing their own models for competition events. If the goal, however, is to get more people involved in contest rocketry, then QCR may have hit upon the right idea.

I still enjoy building models for meets from many of the plans that I have collected; I even design and build a few of my own. But I do keep a number of Ken's kits on hand, just in case.

About the only problems that I have had with QCR kits were lack of parachute stowage space in the "No Break II" egglofter, and a rolling problem that I had when the "Easy Slide II" B R/G was under boost. In the case of the egglofter, I'm working on a simple modification to correct the 'chute problem, and the rolling under boost displayed by the glider was found to have been caused by an error that I made while constructing the wing.

If you ever get to a meet put on by NOVAAR, look Ken up. He's always willing to listen to input from rocketeers, since he's still flying himself. And if you're thinking about starting out in competition, no matter what your age may be, I recommend that you give some QCR kits a try. I believe that you will be pleased with the results.

For more information, send a stamped, self-addressed envelope to:

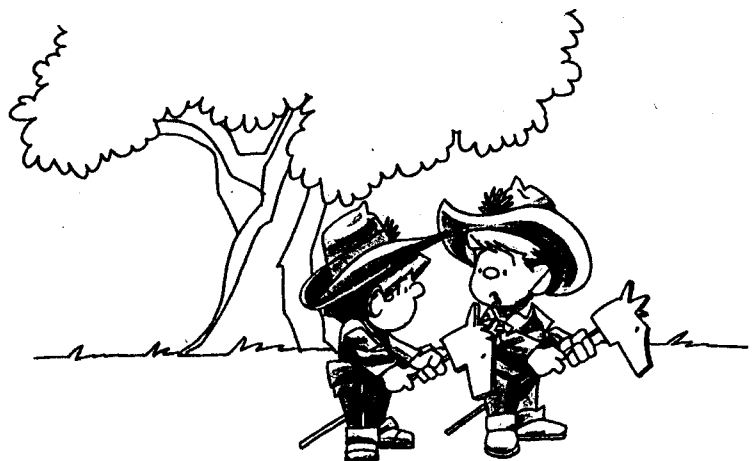
QUALIFIED COMPETITION ROCKETS

c/o Kenneth Brown

7021 Forest View Drive

Springfield, VA 22150

(703) 451-2808



"I think you're supposed to say, 'Giddy-up,' not, 'We have liftoff.'"



StandardARM

by George Beaver

In 1989, MRC, the Model Rectifier Corp. of Edison, New Jersey, moved to substantially upgrade it's line of model rocketry products. Introduced in 1987, MRC's first efforts in the field were subpar to industry standards. MRC kits typically featured flimsy body tubes, soft balsa, and plastic nose cones full of casting marks. To help improve this situation, MRC hired the services of Bill Stine, who is the son of NAR founder and past president G. Harry Stine. Bill had been employed by the ill-fated Enertek company, which showed much promise, but went out of business before a single kit was sold.

The product of this move is called "Concept II", and basically features an entire make-over of the MRC line. Much has already been written about "Concept II"; however, it seems safe to say that the line is aimed to be somewhere between the basic Estes-type kits, and the more sophisticated high-power models. Elements of both are present in the new line.

I first heard of the "Concept II" products sometime prior to Christmas, 1989, and kept my eyes open for them whenever I visited a hobby shop. Where I found them, however, was at Boscov's. Boscov's is a chain of department stores, and the MRC kits were in the Toy Department. I personally don't like to see model rocketry products in such a setting: it seems to help perpetuate the notion that rocketry products are "toys". In May of this year, I purchased the AGM-78 Standard Arm kit, which is advertised as "a highly detailed Sport Scale model" of a Navy Anti-Aircraft missile.

I was impressed with the packaging of the kit. The contents were enclosed in a heavy plastic see-through blister pack. In the pack was a large card illustrating the rocket and some of the kit's features. On the side of the card were printed more of the kit's features, which included drawings, as well as a "Technical Profile", which listed the Skill Level (2), the length (25"), the diameter (1.75"), the weight (3.5oz), and the recommended engines, which in this case are the C6-3 and D12-7. More on

that later.

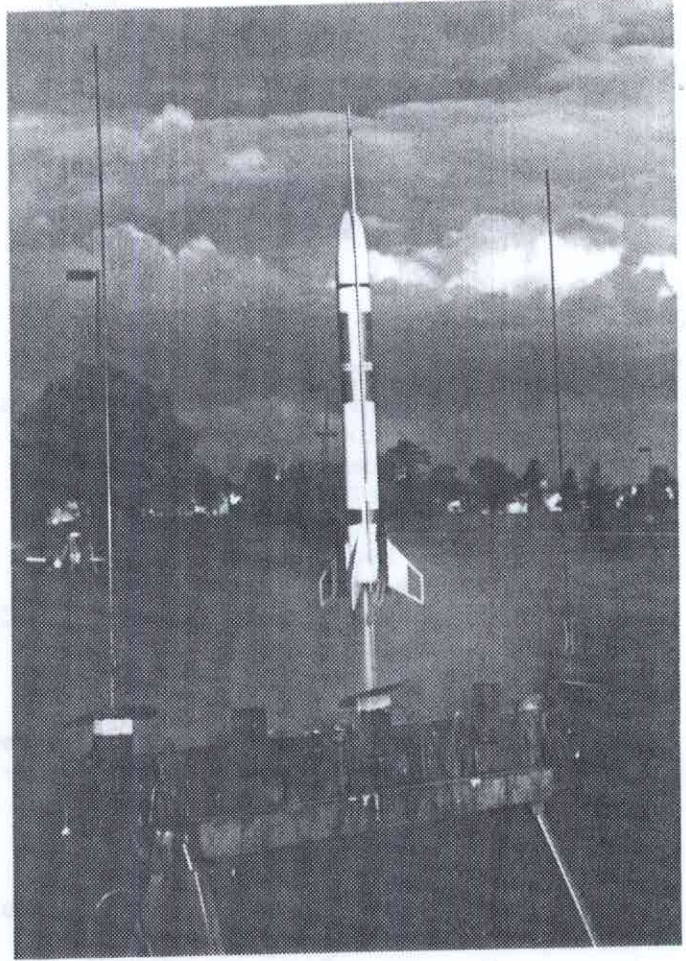
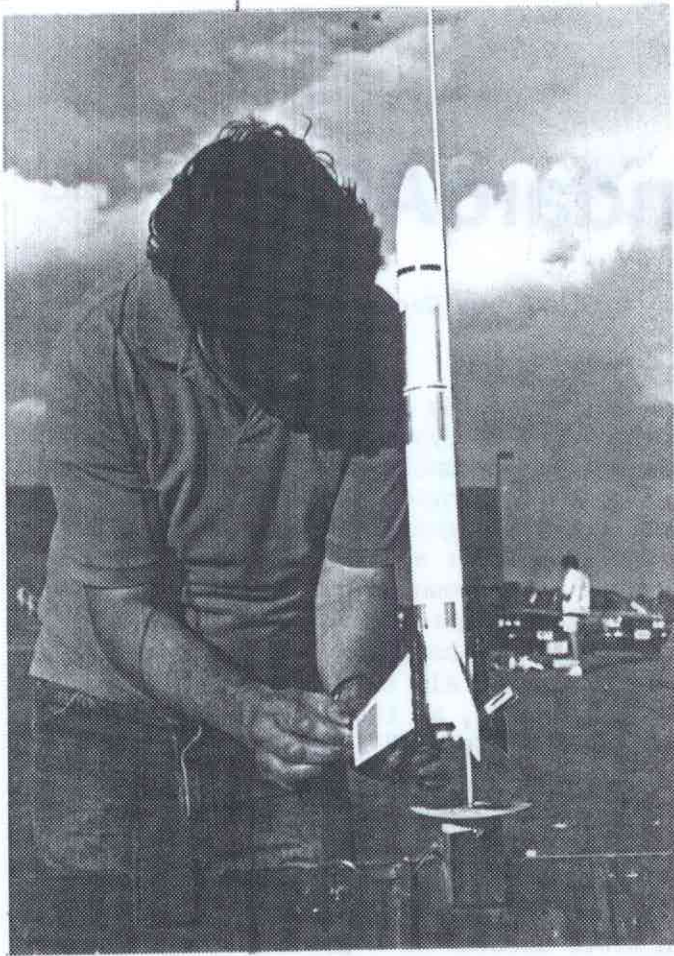
One feature of the new MRC line was also explained: the FX System, as it is called. The FX motors are smoke producers only, and are supposed to provide a more "realistic" effect; they are ignited just prior to lift-off. The AGM-78 kit advertised three interchangeable motor mounts: one for the 18mm C6-3, one 24mm mount for the D12-7, and a third mount which uses one 18mm motor and two FX "engines". All three mounts are included in the kit, as they are in just about all of the "Concept II" line.

There are a number of innovative features in the new kits, including the AGM-78. The motor mount system is one; the fins are aligned by means of a "tab-in-slot" system, whereby the tabs on the plastic molded fins are inserted in slots located in a plastic ring, which is in turn part of the motor mount set-up. The kits also uses a baffle ejection system, which was first used by some Centuri kits in the 60's and 70's. It is supposed to eliminate the need for wadding, while at the same time making the parachute ejection more efficient.

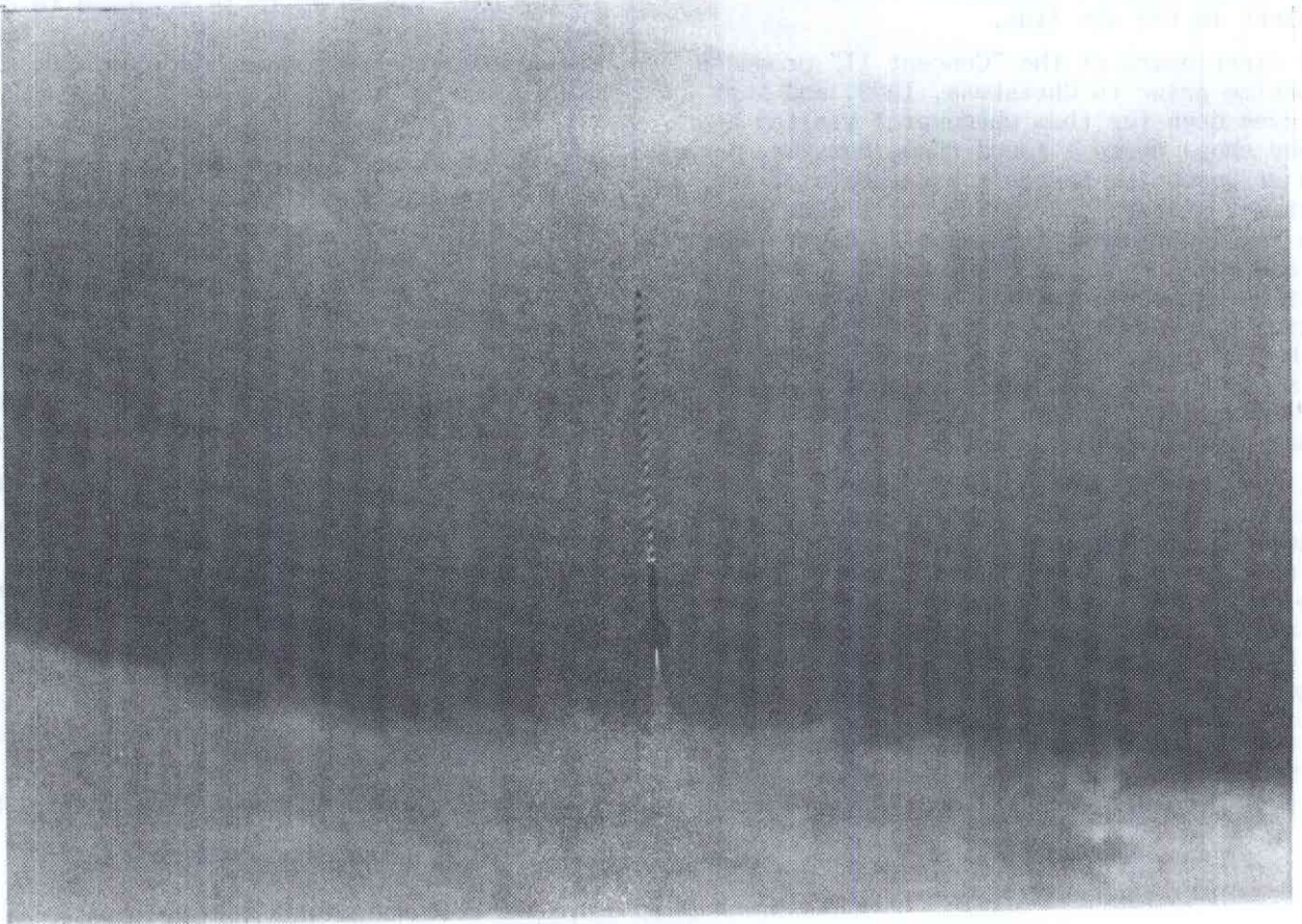
The AGM-78 kit consisted of 25 parts, about half of which are associated with the engine mount systems. The main airframe of the model consists of four separate peices, one of which is the previously mentioned plastic fin mount ring. The body tubes themselves were a nice surprise, considering MRC's past kits. They were a thick-walled kraft paper type, with a smooth white finish. Thumbs up here. The nose cone, plastic, was well done, as were the plastic fins. The only balsa parts are the fin strakes. The fabric parachute was packaged seperately, in it's own plastic bag.

Construction begins with the motor mounts. The parts are color coded, which is nice, but that still did not prevent me from screwing things up the first time around. I strongly suggest building each mount one at a time, not on an assembly line process as I did. The mounts are a bit differant from one another, so pay attention! (When all else fails, read the directions)

After that, the fin mount ring is used to



ABOVE: Fred Hoke preps his MRC Ironman (left), and then "liftoff!".
BELOW: SPAAR's semi-official mascot, Glenn Feveryear's "Grumpy Dog". (Rick Hackman photo, 4/89)



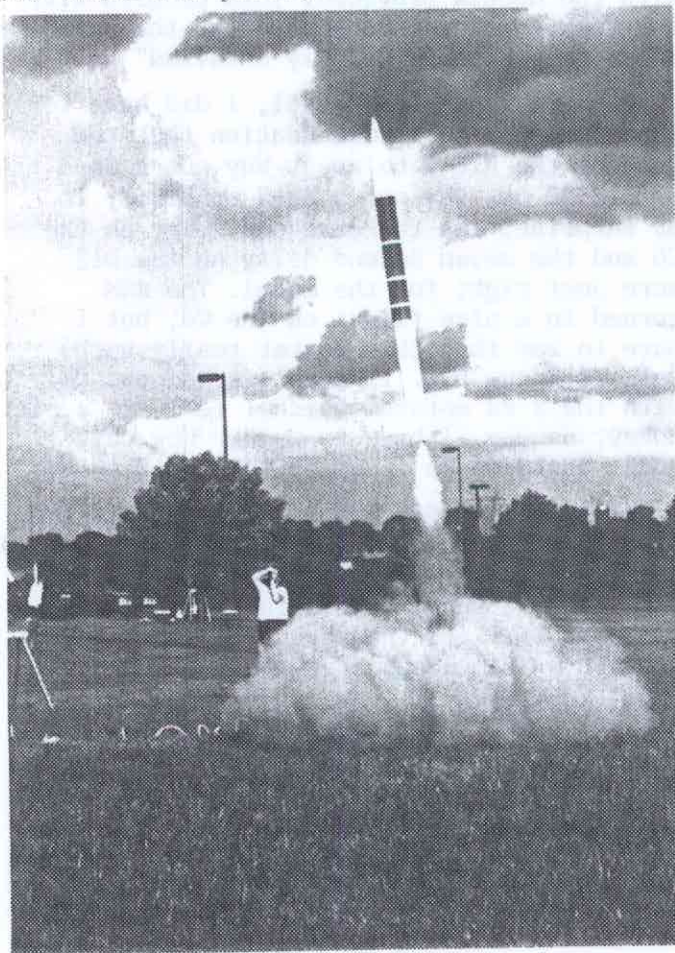


LEFT: Bruce Canino, on the right, indicates to LCO John Yost which way he expects his model to go.

John isn't buying it. (6/10/90)

BELOW:

Ed Miller's North Coast ASAT-21X lifts off under G40 power, June 10.



BELOW:

Christopher Balogh shows off his "rocket socks". (6/10/90)



mark the body tube for the launch lugs and fin strakes. This brings us to yet another MRC "innovation", the launch lugs. The lugs supplied with these kits are made for use with the new MRC launcher, which features a "T" rail sounding rocket-like rod. Prior to installing these lugs (which are heavy plastic) I checked to see if they would fit either a standard 1/8" rod or a 3/16" rod. They fit the 1/8" one, so I installed them.

The strakes and ejection baffle are then added. The baffle is also the mount for the shock cord, which brings us to what I found to be a bit of a problem. The shock cord is a length of 100lb test Kevlar, of the type marketed by Apogee Components. Another attempt by MRC at going "high tech", obviously. The problem is, the cord is way too short! Mine was less than 12". While it is true that the Kevlar won't break, that won't do any good of the mount or the nose cone eyelet give way! So here is where I made my first modification. I simply added a length of Flight Systems shock cord that I had on hand. Problem solved.

The fin mounting comes next. The ring is cyano'd into the upper body tube, and a smaller length of tube is attached below the ring. The fins are then attached to the fin alignment/motor mount ring using liquid plastic cement. Or so the instructions tell you. Here is where I had my biggest problem with this kit. The tabs on the fins did not fit into the slots in the ring. A little short in the design or quality control departments here, folks. However, I suppose if you didn't have to at least use some modeling skill this kit wouldn't be any fun, right? So, after a bit of sanding, grinding and carving, the fins went into their respective slots. I decided to forego the liquid cement, and used medium viscosity cyano to attach the fins, and added thin epoxy fillets later. Those fins are not coming off.

The 18" fabric 'chute that comes with the kit is bright red in color, and must be assembled by tying the shroud lines through small holes in the canopy. Another small problem here. The shroud lines ~~were more~~ like

lengths of knitting yarn. I dispensed with them all together, and substituted the same carpet thread that I used for competition parachutes. Another problem solved.

The AGM-78 features a two color paint scheme, white for the body and tan for the nose cone. MRC recommends use of the Pactra "Astro Color" rocket paints. I used Krylon white and Testor's Flat Military Tan for the nose. This now brings us to what I thought was the oddest aspect of this kit: the decals. The kit instructions tell you to "refer to the photograph" on the instruction sheet for proper decal placement, but the photos are of poor quality and of little use; which naturally takes you back to the card in the front of the blister pack, which has a very nice illustration of the finished model. The only problem is, both that photo and the one in the instructions show a model covered with decals that are not the ones that come with the kit. Figure that one out. However, with a little imagination and thought, a handsome model can be finished with the decals provided. This problem with the decals makes me wonder about the claim about this being a "highly detailed" kit.

Prior to flying the model, I did have to wonder about the recommendation that the C6-3 or the D12-7 be used. Why not a C6-3 or D12-5? Or, why not a C6-5 or D12-7? To my surprise, the three second delay on the C6 and the seven second delay on the D12 were just right for the model. The AGM turned in a nice flight on the C6, but I have to say that this rocket really works well with the D12. I haven't tried the C6 with the 2 FX motors, which I feel are a bit hokey, anyway. I have to wonder how this model would do on a composite 18mm D or E.

All in all, I did enjoy building this kit, and it is fun to fly. I don't know if I could say the same if I had not made the modifications. I suggest building at least one "Concept II" kit; they are a bit challenging, are are a tremendous step ahead for MRC.

I paid \$14.99 for the AGM-78; MRC has recently offered the "Concept II" kits by mail order. For more information, write:

Model Rectifier Corp., 200 Carter Dr., Edison, NJ 08817

SOUTHERN PENNSYLVANIA AREA ASSOCIATION OF ROCKETRY
COMPETITION POINTS

FIRST NAME	LAST NAME	NAR NUMBER	POINTS TO SECTION	POINTS TO INDIVIDUAL	CONTEST FACTOR TO SECTION	CONTEST FACTOR TO INDIVIDUAL
GEORGE	BEEVER	44391	1481	1481	12	12
GLENN	FEVERYEAR	24931	2593	2593	12	12
DALE	GREENE	12464	595	595	12	12*
RICK	HACKMAN	47559	11	11	1	1
ED	MILLER	45776	175	175	2	2
BILL	RHOAT	43355	56	56	2	2
DICK	RHOAT	48684	130	130	2	2
MARK	SNYDER	46209	683	683	7	7
JOHN	YOST	31472	155	155	6	6

*** Total ***

5879 5879

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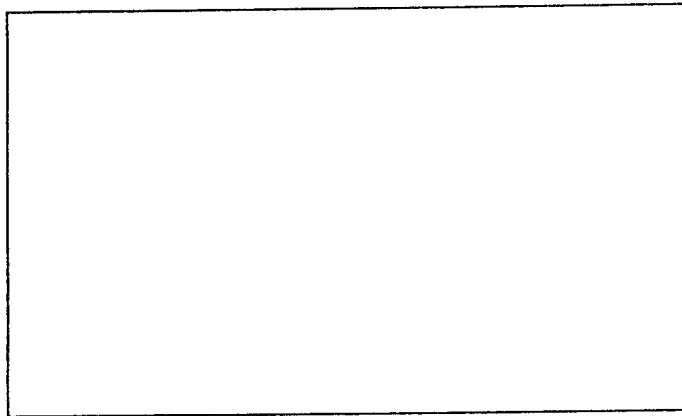
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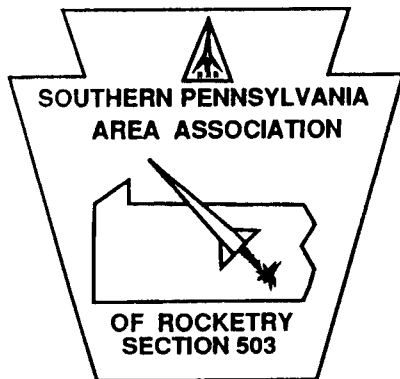
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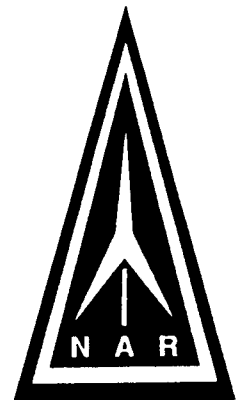
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COUNTDOWN

Volume 3 No. 4
JULY/AUGUST 1990