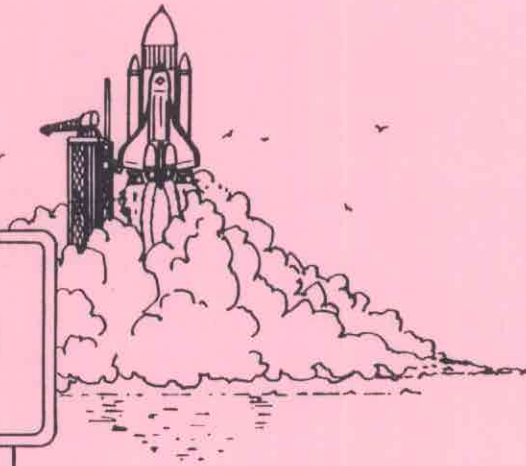


# COUNTDOWN



OFFICIAL NEWSLETTER OF  
THE SOUTHERN PENNSYLVANIA AREA ASSOCIATION OF ROCKETRY

VOLUME 5, ISSUE 2      MARCH/APRIL 1992

## IN THIS ISSUE

CONTEST CALENDAR

SPAAR SPORT LAUNCHES

$\frac{1}{4}$ A BOOST/GLIDER PLAN

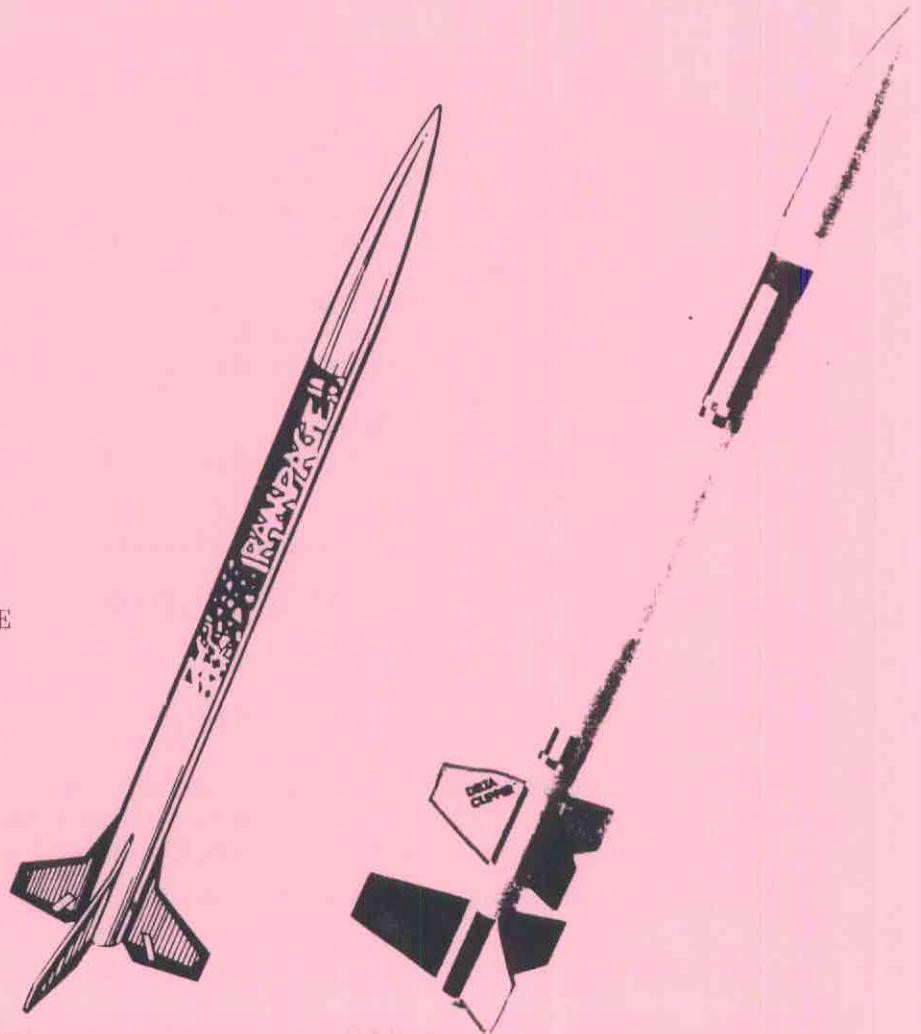
ASTROCAM TIPS FROM FRED HOKE

WHATS AHEAD IN '92

SPAARPHOTOS

PLUS

NEW PRODUCT REVIEWS



The COUNTDOWN

Volume 5, Issue 2

March/April 1992

The Countdown is the newsletter of SPAAR, the Southern Pennsylvania Area Association of Rocketry, NAR Section #503. Non-member subscription rate, \$6 per year, 6 issues. For more information, write: SPAAR, PO Box 127, Reamstown, PA., 17567, or call:

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George Beever, Section Advisor (717) 733-4170

\*\*\*\*\*

Reamstown, PA, The RRA Capitol of the United States (thanks Kevin)

\*\*\*\*\*

Cover Logo: Bob Stott Jacket Design: Bruce Canino Editor: George Beever  
Production Help: Dale Greene, John Yost (Thanks guys!)  
Contributors: Ed Miller, Rick Hackman, Renee Feveryear, Fred Hoke  
Thanks to NOVAAR and Dan Winings for use of the "Honeybee" plan

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CONTENTS

Minutes from Section Meetings	Page 3
Sport Launch and Flight Log, 3/1/92	Page 4
Contest Calendar	Page 5
Kit Reviews: The Rampage and Delta Clipper	Page 6
Section and Rocketry News	Pages 7,8
World Spacemodeling Championships	Page 9
Fred Hoke's Astrocam 110	Page 10
Whats Ahead....	Page 11
Sport Launch and Flight Log, 3/29/92	Page 12
Manufacturer Review, Grapevine	Page 12
Kit Review: The Quest Navaho AGM	Page 13
A Little Artwork	Page 14
Sport Plan: The XR-10	Page 15
Competition Plan: The Honeybee ¼A BG	Page 16
SPAARphotos	Pages 17,18

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UPCOMING EVENTS

Monday, April 20, 7-9PM: Section Meeting, Lancaster County Library, N. Duke St.

Sunday, April 26, 9AM-5PM: SPAMO-1 Open Meet, Cocalico High School, Denver.  
See page 5 for a listing of the events.

Sunday, May 10, 1PM-5PM: SPAAR Sport Launch, Cocalico High School, Denver.  
Special Event: "Cluster Day", as well as "G" motor certification flight and group photo.

Saturday, May 16, Dorbrook Park, NJ: Return Of Fly High Open Meet. See page 5 for more details.

Monday, May 18, 7-9PM: Section Meeting, Lancaster County Library, N. Duke St.

Sunday, May 24, 9AM-5PM: SPAARSEC-VI Section Meet, Cocalico High School, Denver.  
See page 5 for a listing of the events.

Sat/Sun, June 13/14, Centre Valley, PA: WUBBA-15 Regional Meet.

SECTIONMEETINGSFebruary 17, 1992

Present: Glenn & Rita Feveryear, E. Miller, Gary Feveryear, A. Babiarz, R. Dwyer, D. Greene, G. Beever.

1. Treasurer: Ed Miller reported that there were 36 members; the balance at the end of the last meeting was \$150.89. Incomes: \$47.50 in dues; \$5.00 newsletter subscription; \$50.00 from banquet deposit; and \$6.00 for patch sales. Outlay: \$40.85 for competition supplies. New balance, \$218.54.

2. Newsletter: George Beever reported that 53 copies of the Jan/Feb newsletter were distributed to members, subscribers, and exchanges. A review of the current newsletter exchanges will be undertaken, as there have been some clubs that we have not heard from for some time.

3. Education: Art Babiarz asked for ideas for next winter's workshop series.

4. Competition: Glenn Feveryear discussed the upcoming meets with GSSS. Also announced the events for WUBBA: B HD(M), ½A RG(M), E SRD, S6A (A SD M), ¼A PD(M), & ½A FW(M).

5. Section Advisor: No Report.

6. High Power: Ed Miller discussed the progress made on the Falcon kits at the Winter Workshops.

Old Business

Art Babiarz discussed the new club launch system that he is building, and asked for help from anyone wishing to give it.

New Business

Roger Dwyer brought his NCR Patriot to the meeting, and this was discussed by those present.

Meeting adjourned at 8:30PM.

March 16, 1992

Present: Glenn & Rita Feveryear, D. Greene, R. Dwyer, E. Miller, J. Yost, Gary Feveryear, Dick Rhoat, Bill Rhoat, G. Beever.

1. Treasurer: Ed Miller reported that there were 41 members (counting renewals received tonight); the balance at the end of the last meeting was \$218.54. Incomes: \$20.00 in dues; \$2.20 in interest. Outlays: \$16.45 in postage, \$11.93 for folders for the membership manuals. Current balance: \$212.36.

2. Newsletter: No new report.

3. Competition: Glenn Feveryear stated that he is still waiting for the contest supplies from NARTS.

The SPAMO-1 Open Meet, April 26, will be held at Cocalico High School, due to a rejection by the Schuylkill Valley School District. The district stated that permission was denied "due to prior commitments", however those commitments were not spelled out. The WUBBA Regional appears to have been moved to the weekend of June 13-14.

4. Education: No report.

5. High Power: Ed Miller reminded those present that the last workshop will be this Saturday, March 21.

Announced that Tripoli/Virginia will be holding a Tripoli sanctioned high power launch in Culpeper, VA., over the weekend of April 11 & 12. A 10,000ft FAA waiver has been acquired. For more information, see Ed.

6. Section Advisor: George Beever stated that he will be contacting NAR Section Activities Chairman Jack Sarhage in the near future.

New Business

Roger Dwyer brought some of his recently completed models, such as the Black Brant II, IRIS, and Titan IIIIE.

The meeting adjourned at 8:45PM.

SPAAR      LAUNCH      ACTIVITIES

Another Cold, Windy Day

The weather for the March 1 Sport Launch was typical of what SPAAR had been facing all year; cold and windy. That didn't stop the diehards from showing up and making the best out of the situation. In fact, John and Daniel Yost brought a kite or two, since they were what the weather was best suited for!

Karl Fehrenbach came up from suburban Philly, and bravely flew an Estes Pathfinder on a D12 as the first flight of the day. We were amazed that he got the model back. His THOY Robin also turned in a nice flight on a D12-3, and Karl didn't have to walk as far to retrieve that one.

Dale Greene brought out a model that he dubbed the "War Bird". Hmm... I've seen this one before, only under a different name. In any event, it proved to be a real warrior when Dale flew it first with a D12, and then (just for a little excitement) an E30. Now you see it, now you don't. Dale did recover the model, so it can reappear another day under a new name.

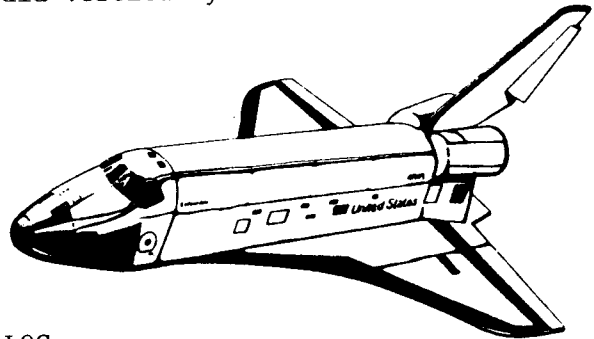
SPAAR's scratchbuilder extraordinaire, Aaron Newman, flew some of his own creations, such as the SNARK, Tomahawk, and

Delta V. The Delta had some damage when, after landing, the wind caught the parachute and dragged the model along the ground. A couple of fins were torn off. Hopefully they can be fixed.

Ed Miller provided us with our first look at the new Estes Rampage, one of the "E2X" series of kits. As colorful as this thing is, you sure can't miss it! The Rampage flew very well, as did Ed's Calypso, SDI Satellite, and US Army Patriot.

The inclement weather kept the total number of flights to only eleven, but for the first day of March, this was as good as can be expected.

There was one strange phenomena that we did notice; all of the flights made on March 1 went farther horizontally than they they did vertically!



<u>Fl#</u>	<u>Name</u>	<u>Model</u>	<u>FLIGHT</u>	<u>LOG</u>	<u>Motor(s)</u>	<u>Result</u>
1	K. Fehrenbach	Pathfinder		Estes	D12-5	Sport/GF
2	K. Fehrenbach	Robin		THOY	D12-3	Sport/GF
3	D. Greene	War Bird		SB*	D12-5	Sport/GF
4	D. Greene	War Bird		SB	E30-4	Sport/GF
5	A. Newman	SNARK		SB	½A6-2	Sport/GF
6	A. Newman	Delta V		SB	B6-4	Sport/GF
7	A. Newman	Tomahawk ALCM		SB	B6-4	Sport/GF
8	E. Miller	E2X Rampage		Estes	A8-3	Sport/GF
9	E. Miller	Calypso		Estes	A8-3	Sport/GF
10	E. Miller	Patriot		Estes	B4-2	Sport/GF
11	E. Miller	SDI Satellite		Estes	B4-2	Sport/GF

\* = Scratch Built

Number of flyers - 4  
Kits - 6  
Scratchbuilt - 4

Motor Usage:  
Estes - 10  
Aerotech - 1

Successful Flights - 11  
Motor Failures - 0

CONTESTS.....CONTESTS.....CONTESTS

This spring and summer promises to be a busy one for the competition oriented folks. Below is a list of NAR sanctioned contests that SPAAR will fly this spring:

SPAMO-1 OPEN

Sunday, April 26, 9-5

Cocalico High School, Denver, PA

1/4A Rocket Glide

1/4A Boost/Glide

1/4A Streamer Duration, Multi-round

C Helicopter Duration

B Eggloft Duration

A SuperRoc Duration

Host: SPAAR

CD: Glenn Feveryear

(717) 456-5570

(Note location change to Cocalico)

THE RETURN OF FLY HIGH OPEN

Saturday, May 16

Dorbrook Park, NJ

1/4A Rocket Glide, Multi-round

1/4A Boost/Glide, Multi-round

Open Spot Landing

E SuperRoc Altitude

Windows for altitude flights

Host: GSSS

CD: Tom Whymark

(908) 475-8833

SPAARSEC-VI SECTION MEET

Sunday, May 24, 9-5

Cocalico High School, Denver

C Helicopter Duration

1/4A Rocket Glide

Open Spot Landing

D Dual Eggloft Altitude

Contact Glenn Feveryear

(717) 456-5570

WUBBA-15 REGIONAL

Sat/Sun, June 13-14

Centre Valley, PA

B Helicopter Duration, Multi-round

1/2A Rocket Glide, Multi-round

1/4A Parachute Duration, Multi-round

1/2A FlexWing, Multi-round

E SuperRoc Duration

FAI S6A (A SDM)

Host: PULSAR

CD: Art Rose

For info, call:

Glenn Feveryear

(717) 456-5570

For more information concerning  
NARAM-34 and NSL-3, call:

Bob Sanford

(702) 452-1796, after 10:30PM EST

N A R A M	<p><b>NARAM 34 AND NATIONAL SPORT LAUNCH WILL BE HELD IN NEARBY LAS VEGAS.</b></p> <p><b>SPORT LAUNCH:</b> AUGUST 1 &amp; 2, 1992</p> <p><b>NARAM:</b> AUGUST 2 - 7, 1992</p> <p><b>NARAM HQ:</b> Gold Coast Hotel/Casino \$35.00 per room, per night Sunday thru Thursday; \$50.00 per room, per night Friday &amp; Saturday. No Saturday check-in/out</p> <p><b>RESERVATIONS:</b> Matlock Travel (800) 336-0666</p> <p><b>EVENTS: (A-C Divisions)</b> 1/4A RG; 1/2A BG; A PD; B SD; C EGGLOFT ALT.; D FLEX BG; E SUPERROC ALT.; (C Division Only): F HD; G RG (R/C Okay); R&amp;D; PMC; SUPER- SCALE. (A &amp; B Division only): C RG; D HD; SCALE</p>
	3
	4

NEW PRODUCT REVIEWS:



E2X Series "Rampage"

Estes Industries  
\$9.99

Finally the long wait is over. Estes' new E2X Series is out. The E2X Series models are packaged in very attractive boxes. When I opened the box I was surprised. This model is unlike anything Estes has ever produced. Heavy duty, pre-colored and pre-slotted body tube. The body tube is a new tube size for Estes. The nose cone is molded in color. A 1/16" diameter elastic shock cord. Through-the-wall plastic launch lugs. A new type of shock cord mount which makes it possible to replace the shock cord. Plastic centering rings. Metal motor hook. Self adhesive decals. Same old Estes parachute. A new type of instruction sheet in which the glue areas are printed in red.

The package is marked Skill Level 1; Skill Level 1/2 is more like it. It took me only seven minutes to assemble this kit. Twelve minutes to apply the decals and ten minutes to assemble the parachute. As a matter of fact, it took me longer to drive home with my purchase than it took me to assemble it.

The E2X Series are great models for beginners. They are rugged, colorful, and easy to assemble. Experienced modelers who like a little challenge will not be pleased.

The best thing about this series of kits, other than the quality parts, is that plastic model cement is used for construction.

The only thing that I could find wrong with this kit is the shock cord. It is way too short. It should be twice as long as the one supplied with the kit.

## DELTA CLIPPER™

by Ed Miller

One area of interest with this kit is the flight prep instructions. The ignitor installation instructions show what are called "Ignitor Plugs". They look like miniature ear plugs that are pressed into the motor nozzle to hold the ignitors in place. Sounds like a good idea to me.

THE DELTA CLIPPER

Estes Industries  
\$12.99

The Delta Clipper is another new kit from Estes. It is a 2-stage kit with D motors in both the stages.

The Delta Clipper comes packaged in an attractive full color box. The kit is composed of a heavy duty pre-slotted body tube. This tube is a new size for Estes. Molded plastic nose cone. Die-cut, through-the-wall balsa fins. An 1/8" wide elastic shock cord with a standard Estes paper mount. Paper centering rings with BT-50 motor tubes. An 1/8" launch lug. Heavy duty 60" plastic streamer, self adhesive decals, standard Estes instructions.

Assembly of this kit is easy. Total assembly time was about an hour. The directions tell you to use yellow carpenter's glue. I elected to use cyano and epoxy. Finish and painting time will vary, depending on the buyer's preference. All parts fit very well.

Only two things are wrong with this kit. First, the shock cord is too short. It's length should be doubled. Second, this kit is a "Born Loser". What I mean is that this kit is made to be lost. The box claims a 2,600' altitude. This is just as high as a Comanche flight, and the Delta Clipper is only half as large. It might be worthwhile to convert this model to 18mm motors. It should nearly go out of sight on two C motors. If you're going to lose this kit, do it right! Use a D12-0 for the booster and an E15-7WL for the 2nd stage. This combination should give you a 4,000' flight!

NEWS.....NEWS.....NEWS.....

A SAMPLING OF NEWS ITEMS IN AND AROUND THE WORLD OF ROCKETRY

MRC will reportedly fill out it's "Concept II" line with additional new products later in '92 (DART/Warp-9)

\*\*\*\*\*

AEROTECH's Phoenix R/C RG is being shipped. Look for it in hobby shops soon. No word on the Astrobee-D, which may have been delayed due to the work being done on the Phoenix.

\*\*\*\*\*

ISP has added two new J RMS reloads for use with their 54mm hardware: the J90 is a long burning (@9 seconds) reload for use with the ISP 54/852. The J125 is designed for use with the ISP 54/1280. Both are White Lightning reloads. 98mm hardware is in production (demonstrated at Winterfest) and should be available by summer. (DART/Warp-9)

\*\*\*\*\*

CMR LIVES! Dennis Kryway has resurrected CMR, the Howard Kuhn founded firm that specialized in competition rocketry supplies. Dennis' product offerings include those famous egg capsules and nose cones, "world class, lightweight metallic mylar parachutes", and FAI type fiberglass model bodies. Coming later this spring are competition engines, the ¼A version weighing less at launch than the Apogee version after burnout! Write: 1440 Milliken Bend Rd., Herndon, VA, 22070 for more info. (The Leading Edge/NIRA)

\*\*\*\*\*

NCR North Coast Rocketry now has a toll free number for questions and phone orders: 1-800-877-6032. Or, write them at: 13011 Branscomb Rd., Huntsville, AL 35803. (MODELNET, via The KOSMONaut)

\*\*\*\*\*

AAA Model Aviation Fuels is reportedly ready to introduce a 58" long, 2.6" diameter TOMAHAWK. It's unknown if this refers to the ALCM Tomahawk or the sounding rocket. A new 1992 catalog is available for \$2.25 from: AAA Model Aviation Fuels, 122 Sumner Ave., Clarks Summit, PA 18411.

\*\*\*\*\*

INNOVATIONS is a new company catering to the High Power market. Eight kits are their initial offering, including a 29", 29mm mount Little Joe II. The catalog is free. Write: Innovations, 1465 Magellan Circle, Orlando, FL 32818

\*\*\*\*\*

QUEST has made it into the hobby shop. Well, at least at Hobby World R/C in Shillington. "Joe the Owner" has on hand a supply of kits, motors, wadding, ignitors, and starter outfits. Look for a review of the Navajo kit elsewhere in this issue.

ESTES: More news out of Penrose: It appears that Estes is going out of their way to let people know that they are interested in what we think. In fact, they have provided a toll-free number for Barry Tunick, the new president. So, call 1-800-525-7561, and talk to Barry!

Estes is adding a "D11P" (plugged) engine for their Astro-Blaster RC/RG; this glider uses FUTABA micro-servos.

The new ignitor plug referred to elsewhere is a small thumb-tack like item with serrated edges to hold the ignitor in place. Mike Hellmund of Estes claims a fully loaded 4 D cluster Patriot can be inverted and held by the ignitor when these plugs are used. The Patriot, by the way, does feature a boat-tail.

They are also re-issuing the USS Enterprise and the Klingon Battlecruiser kits, as part of their "Classic Series". The first installment of these limited edition collector's items is the Mars Snooper, which dates from 1965. The Star Trek kits will commemorate Star Trek's 25th anniversary.

Twenty new kits are on the drawing boards, and work continues on the 1/45 scale Saturn 1B, mentioned in the last issue of the Countdown. This kit will reportedly be of museum quality, and be powered by a G motor.

(Thanks to Tom Whymark, editor of The Launch Rack from GSSS, for the bulk of the info above)

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SECTION    NEWS    NOTES

OOPS, SOMEBODY GOOFED DEPT: Despite what is printed in the current issue of American Spacemodeling, the eggloft event scheduled for the SPAMO-1 Open is B Eggloft Duration, NOT Altitude.

\*\*\*\*\*

THE WORK GOES ON: Art Babiarz is in the process of constructing a new state-of-the-art launch system for the club. This takes a lot of work, so if anyone can help, contact Art at (215) 926-7089. Thanks!

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JUST A REMINDER: We still have club patches to sell. Vice-President Dale Greene is still The All-Highest Exalted Keeper Of The Patches, and he's got 'em if ya want 'em. Members, \$3.00, normal people \$5.00.

-AND-

President Glenn still has some club membership manuals to hand out. If you are a member, and haven't gotten yours yet, see Glenn or Rita Feveryear at the next club

function.

\*\*\*\*\*

HEY, HE MOVED AGAIN!: Our Canadian friend and member, Trevor Smedley, advises that he has another new address:

"I've moved again! But this time we're staying (we bought it). The new address is:

Trevor Smedley  
2726 Northwood Terrace  
Halifax, Nova Scotia  
CANADA B3K 3S8

Come visit sometime!!! Really!"

[Good to hear from you, Trev. Hope all is well in hockey puck land. Any news on Canadian rocketry activities? George.]

\*\*\*\*\*

HE'S BACK IN TOWN: If you happened to hear J. Pat and the NAR folks squirm in their seats recently, maybe it's because Kevin Funk has returned as editor of Warp-9 from DART. Kev likes to have fun (in his own way) with this hobby. Welcome back, bro!



January 29, 1992

NAR Section Advisors:

It is my pleasure to announce that the Ninth World Spacemodeling Championships (Ninth WSMC) will be held on 15-19 September 1992, in Melbourne, Florida, and to extend an invitation to your NAR Section members to attend this event.

We expect between 10 and 15 nations to participate in this year's World Championships.

The cost per person is \$ 425.00 which includes:

- Meals and lodging for 7 days (September 13-20)
- Observers fee:
  - Transportation between hotel and launch site
  - Launch site pass
  - Kennedy Space Center/Walt Disney World Tours
  - Observer Packet
  - World Championships program

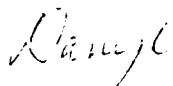
Please send me the names and addresses of any section members who may be interested in more details.

I am also asking for those interested in volunteering their services for timing, tracking, data management, range operations, range store, etc. I need a dedicated team of people to make this a successful World Championships. With the volunteers' names and addresses, please indicate the general (or specific) area of interest.

I will provide details to all those interested in volunteering or just attending. My address and phone numbers are attached. If you need additional information or have any questions please contact me.

For a unique and rewarding experience, I encourage all who can to attend.

Sincerely,



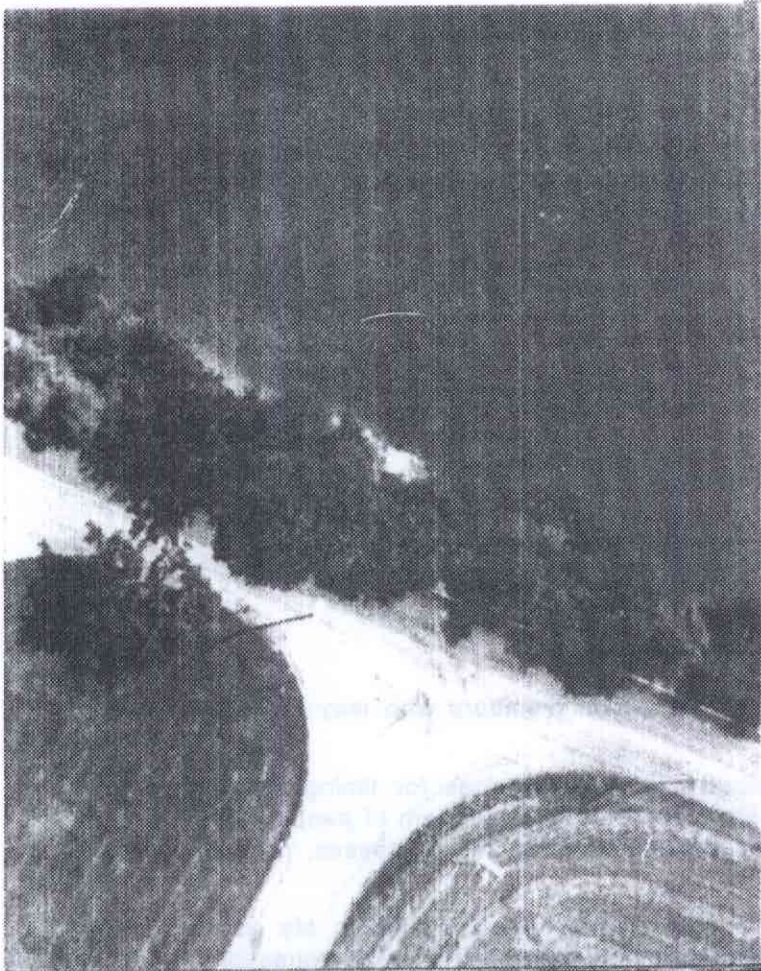
Darryl H. Bachman  
Contest Director  
Ninth WSMC

Ninth World Spacemodeling Championships  
15-19 September 1992  
Melbourne, Florida, USA

Darryl H. Bachman - Contest Director  
251 Eyland Avenue  
Succasunna, New Jersey USA 07876

Telephone (Home) 201-584-1179  
(Work) 201-740-4951  
FAX 201-740-6871

FRED HOKE AND HIS ASTROCAM-110



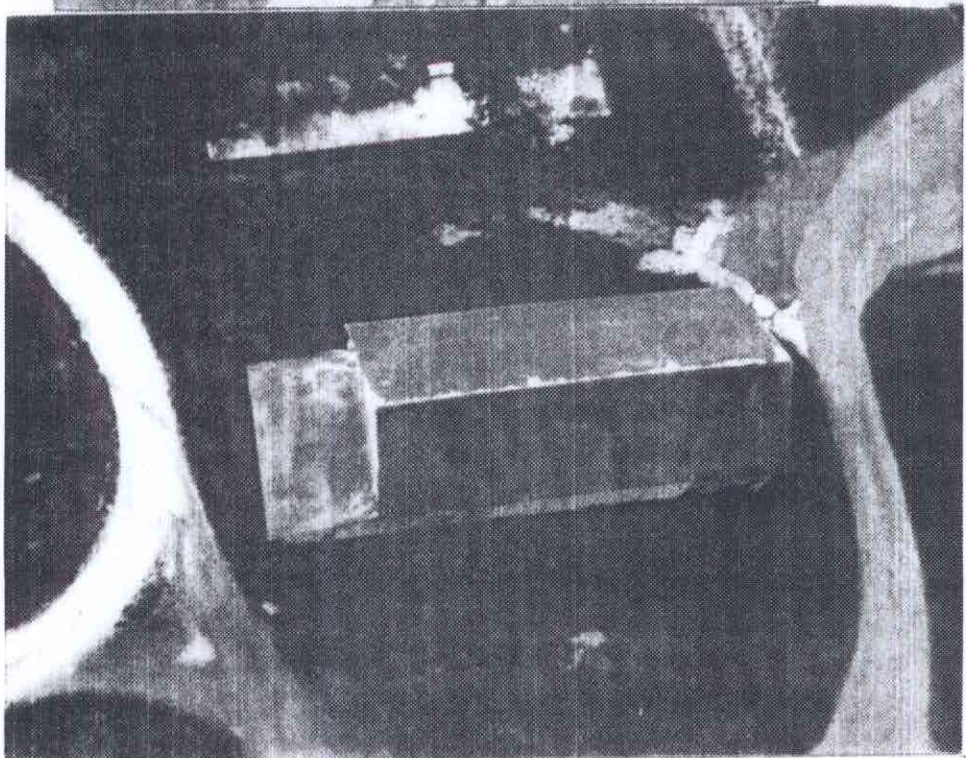
SPAAR's Fred Hoke has done quite a bit of work over the last few years with his Estes Astrocam-110. Fred's main goal was to obtain a shot from directly overhead. Fred used a number of different motors, such as B8-5s, and C6-7's. He also made a few modifications to the Delta II launch vehicle and it's recovery system.

The Astrocam-110 system has reportedly been discontinued by Estes, to make way for an improved rocket-borne camera, possibly a 35mm. However, Astrocam-110s can still be found in quantity in hobby shops and department stores.

LEFT and BELOW: A reservoir and an old barn, taken by Fred's Astrocam in Lebanon County.

Some of Fred's modifications included:

- A Flight Systems Inc. shock cord, 3½' long;
- An FSI shock cord anchor
- A 16" Aerotech fabric parachute
- ½oz of clay in the nose
- 3/16" launch lugs, and used a 4' rod
- With the shutter pulled all the way back, blacken the shutter cord to about 1/16" of the optics hood, so if the cord moves prior to launch, the white portion will be visable.



"When I cemented the lower body and upper body halves together, I taped the film door in place. When the cement is dry, remove the film door & finish cementing the body halves together. Make sure that the safety lock pressure fingers fit in to place in the shutter mount. If not, lengthen the slot in the shutter mount. Before cementing the optics hood halves together, make sure the mirror goes about 1/32" below flush so it fits the radius of the nose cone. With about ½oz of clay added to the nose cone, the camera should be pointed down, using B8-5 or C6-7 engines."

WHAT YOU MAY HAVE MISSED  
and  
WHATS UP AHEAD

If you haven't been able to make it to any club functions during the past few months, the bad news is, you have missed a lot. The good news is, we have a lot in store for the remainder of this year!

With the movement towards higher power during the past few years, the time was ripe for an organized movement by SPAAR into this area. Last spring, Ed Miller proposed a comprehensive program wherein members would progress step-by-step into this area. Members would purchase the same large, high power rocket kit, construct it through a series of workshops, with the program culminating in the flight of the model with a "G" motor. This would earn the member their NAR certification to purchase "H" motors. The members would then, if they chose, attempt a successful flight with an "H". This would earn them another NAR certificate (to purchase "I" motors), and in the case of Tripoli members, their "confirmations". Ed would keep a record of participating members progress, as well as their certifications.

The first segment of this program is now complete. During a series of 3 workshops held at the Delta Fire Co., the five participating members built their THOY Falcon kits under Ed's direction. It was very obvious from the start that this was a well thought-out plan. Ed incorporated a number of modifications and improvements to the Falcon for these workshops, drawn from his previous experience with high power rocketry. The modifications dealt mainly with airframe strengthening and with the motor locking mechanism. As with all previous workshops that Ed has conducted, he put a lot of work into developing this course.

The next step, of course, will be to fly the Falcons. The date selected for the "G" motor flights is May 10. That day

is scheduled as "Cluster Day", and the club's altitude tracking equipment will be set up. For these flights, Ed recommends the Aerotech G80-4 or the G64-4 RMS. A group photo will be taken prior to launch.

Those who are interested in more information on high power rocketry should contact:  
Tripoli Rocketry Assoc., Inc.,  
PO Box 40475,  
St. Petersburg, FL 33743-0475

The NAR is continuing to develop high power rocketry standards, in conjunction with Tripoli. If you are already an NAR member, you can keep up with developments in American Space-modeling. If you are not a member, an application is on the last page of this newsletter.

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Building and flying big honkin' rockets is not the only thing of interest going in the near future.

On April 26, we will host the SPAMO-1 Open Meet, and the SPAARSEC-VI Section Meet will be held on Sunday, May 24. As has been said before, if you've ever had the urge to try contest flying, this is the way to start. The idea is to have fun, so don't let the word "competition" scare you; you don't have to be a "rocket scientist" to have a good time at a rocketry contest.

Our first "theme launch" will be on Sunday, May 10, with "Cluster Day". Bring out all of those multi-engine rockets and flashbulb ignitors! In June, we will have "Patriot & Scud Day" on the 14th, with "Manned Space Vehicle Day" on July 19. "Multi-stage Day" will be on August 16, "Scale Day" on Sept. 13, and "Plastic Model Day" on Oct. 11. Altitude tracking will be available on May 10, July 19, and Sept. 13. In addition, our seventh Section Meet, SPAARSEC-VII, is scheduled for Sunday, August 30.

There are plenty of things for everybody, as you can see. Don't miss the fun!



Kit Review:



## Navaho AGM™

One of the biggest stories to emerge from this winter's round of trade shows was the debut of Quest Educational Aerospace, located in Phoenix, AZ. Quest's approach to marketing their product is somewhat unique: two separate lines of kits, one for educational purposes and made available to organizations only from the factory, and a second line of kits offered for retail sale only thru hobby shops. Introduction was delayed somewhat, but the retail line has started to appear in local hobby stores. I recently visited Hobby World R/C in Shillington, where owner Joe Woytko had just accepted shipment of the Quest line. I purchased a pack of A6-4 motors, and a Navaho AGM kit.

I built the Navaho during the course of the two evenings after I purchased it. This in itself was somewhat strange, considering that most of the time newly bought kits sit around for a few months to "age", or until I find time to build them.

The Navaho is a two-stage rocket, intended to resemble a Navy Air-to-Ground Missile. The model stands 20.25" tall, weighs 1.49oz and is .984" in diameter (25mm). The parts consist of the upper and lower stage airframe tubes, the engine mount tubes and associated adaptor rings, two engine hooks, a tube coupler, a length each of kevlar and of elastic cord, a two-piece nose cone, a launch lug (1/8"), and a 12" parachute. Decals for finishing are also included. The two sets of fins and the body tube rakes are of good quality 1/8" balsa, die-cut.

I was impressed, for the most part, with the quality of the parts. The airframe tubing was thicker than standard Estes types, and features a white glassine finish. The diameter, 25mm, is a throw-back to the old MPC tubing of the early seventies. Quests' tubing are graduated "by fives"; 15, 20, 25, 30 & 35mm.

The nose cone parts were molded in black plastic, and in both color and shape are reminiscent of Apogee nose cones. The motor mount tubes and engine blocks are color coded, in non-coated paper. They are very similar to MRC mounts, with the exception of the interchangeability feature. The shock cord is a two piece affair, with a length of kevlar mounted to the second stage engine block, then tied to a length of FSI-like elastic. The stage coupler was somewhat longer than it's Estes counterpart, and the engine hooks in both stages are dead ringers for what MPC offered 20 years ago.

Now, all of these somewhat familiar part descriptions should come as a complete surprise. After all, what would you expect from a company whose founders all have backgrounds with MRC, MPC, and Apogee? Throw in a little Centuri and AVI, and there you have it! Not that any of this is bad. Far from it, in fact.

The model itself went together fairly easily. I don't care for MRC-type colored tubes for the motor mounts, but that's a personal thing. The instructions could stand some improvement. On at least two occasions, what was described in text was not what was shown either in a drawing or in the photo of the completed model on the front of the kit package. I recall a similar problem with the first MRC kit that I built, the Standard ARM.

I haven't had the chance to fly the Navaho yet (I haven't had the chance to paint it, for that matter), but it should fly well with a B6-0/A6-4 combination.

Oh yes, the best point about the kit: the price. \$6.59. Yup. \$6.59. Might pay close to \$10 for a similar kit from another manufacturer.

### MY 2¢ WORTH

Likes: Design, quality of parts, PRICE.

Dislikes: Engine mount tubes, instructions.



# ROCKETS



LEFT: Some artwork by our youngest member, Renee Feveryear. It's too bad this could not be reproduced in color!

PAGES 15 & 16: Our Sport Plan this is another from Ricky Hackman.

The Competition Plan is a little boost/glider, the "Honeybee", by NOVAAR's Dan Winings. This model did well in  $\frac{1}{2}$ A BG, and is small and light enough for use in some of the  $\frac{1}{4}$ A BG events coming up this spring.



ANNOUNCING

## NARCON '92

The 1992 National Association of Rocketry Convention !  
May 15th through 17th in Colorado Springs, Colorado

All Tripoli and NAR members are invited to attend.  
Guest Speakers, Presentations, Manufacturers Displays,  
A High Power Launch, and a Kit Scale -Up Contest !!

Convention Fees are \$25.00 per person or \$40.00 per family if received by April 15, 1992 (\$30.00 per person or \$45.00 per family if received after this date). Hotel rates are \$40.00 single and \$45.00 double/triple/quad (by 4/15). Contact Mike Hellmund, 19786 Strasburg Ct. , Parker, CO 80134 — (303) 841-4094 or David Nauer, 6485 Ashton Park Pl., Colorado Springs, CO 80919 — (719) 380-1060 for Convention and Registration details.

SPORT      PLAN

XR-10

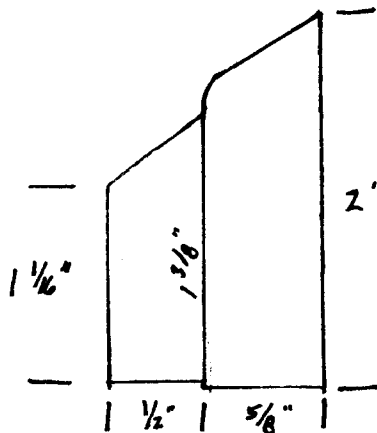
by Rick Hackman

Parts List:

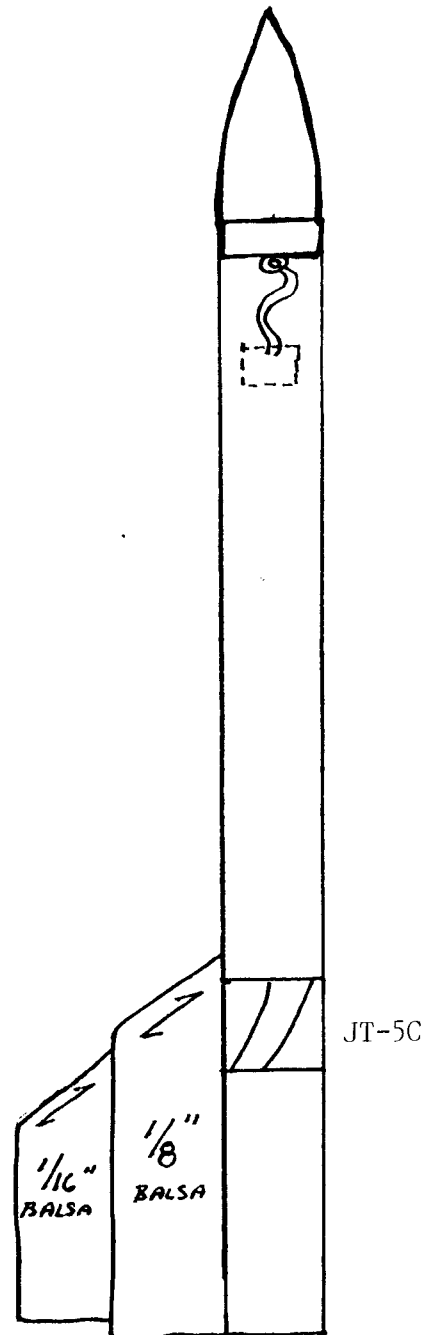
- 1 BNC-5E nose cone
- 1 5 7/8" length of BT-5
- 2 1/2" lengths of 1/8" launch lug
- 1 extra small screw eye
- 1 6" length of shock cord
- 1 shock cord mount
- 1 JT-5C

All parts are available from Estes

Here is a Skill Level 1 sport model that is simple and economical to build. The fins are interesting, and provide a bit of a challenge. The model is so small that a parachute or streamer is not needed, although a small streamer can be added if you like. Fly with 1/2A motors, or A motors if you have good eyesight!



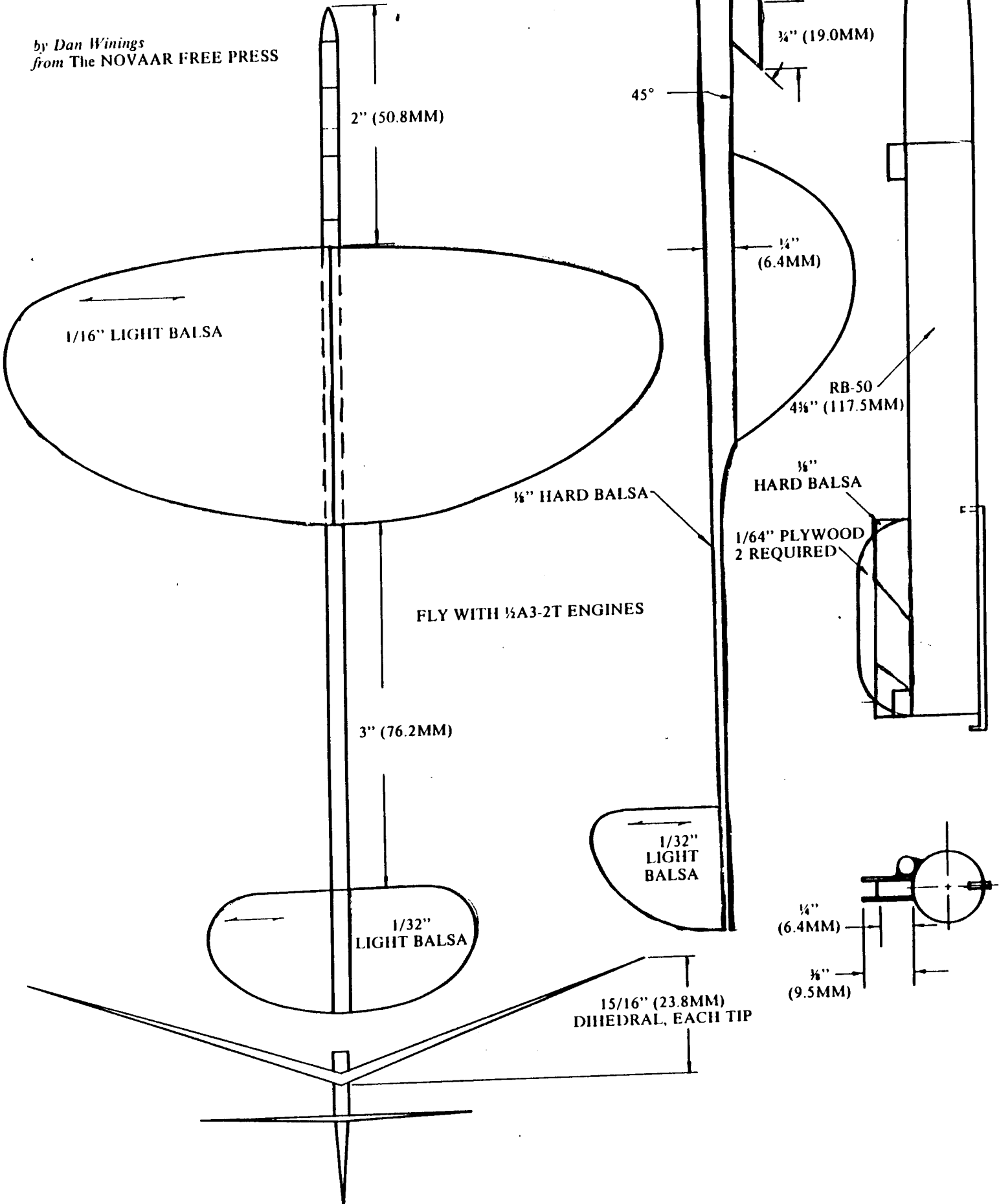
MAKE 3



# THE HONEYBEE

by Dan Winings  
from The NOVAAR FREE PRESS

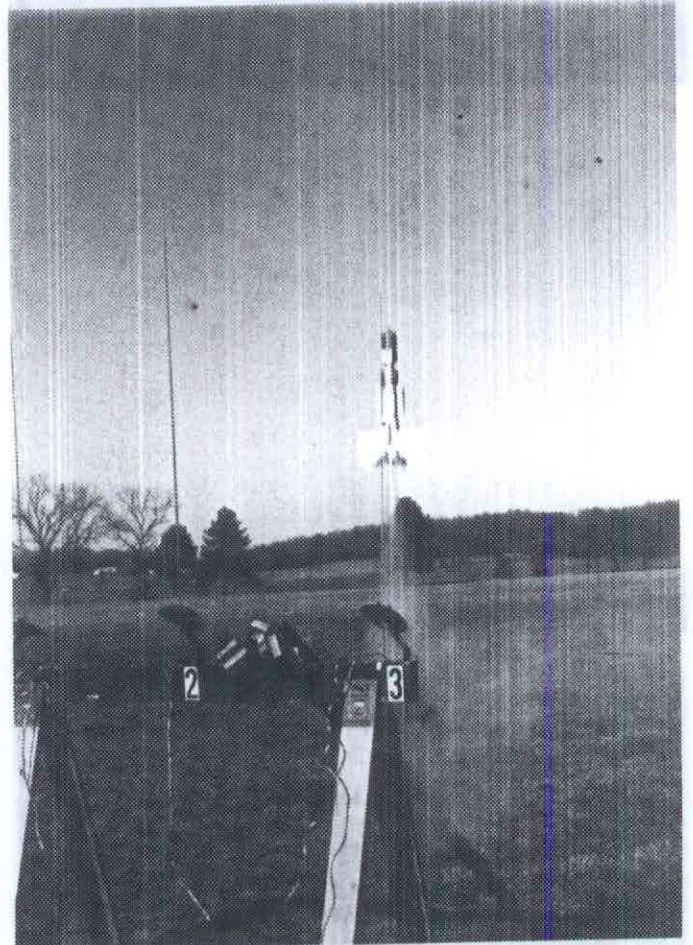
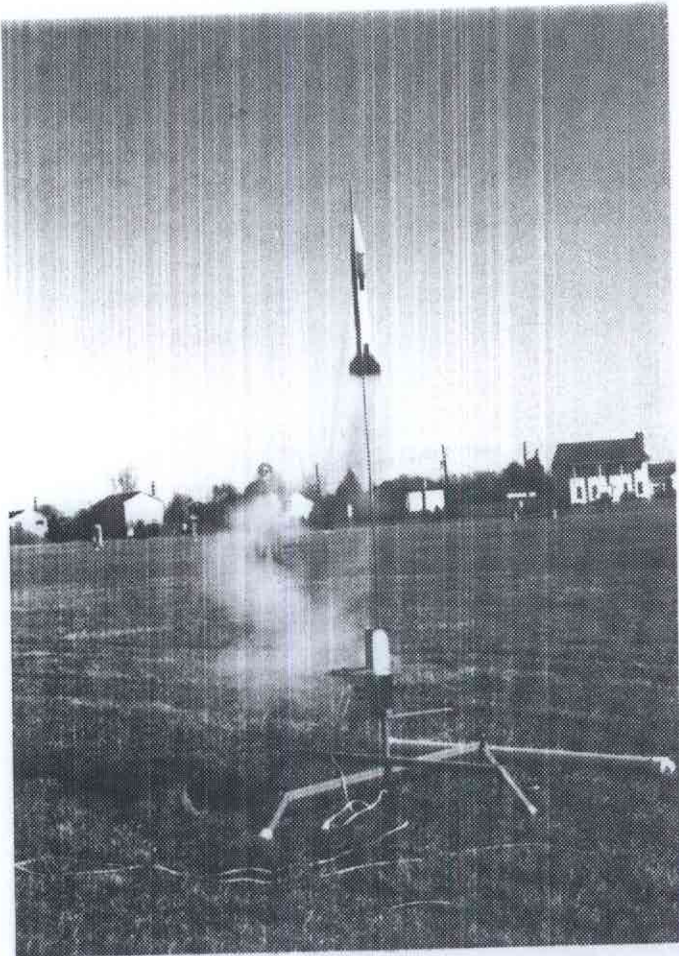
16

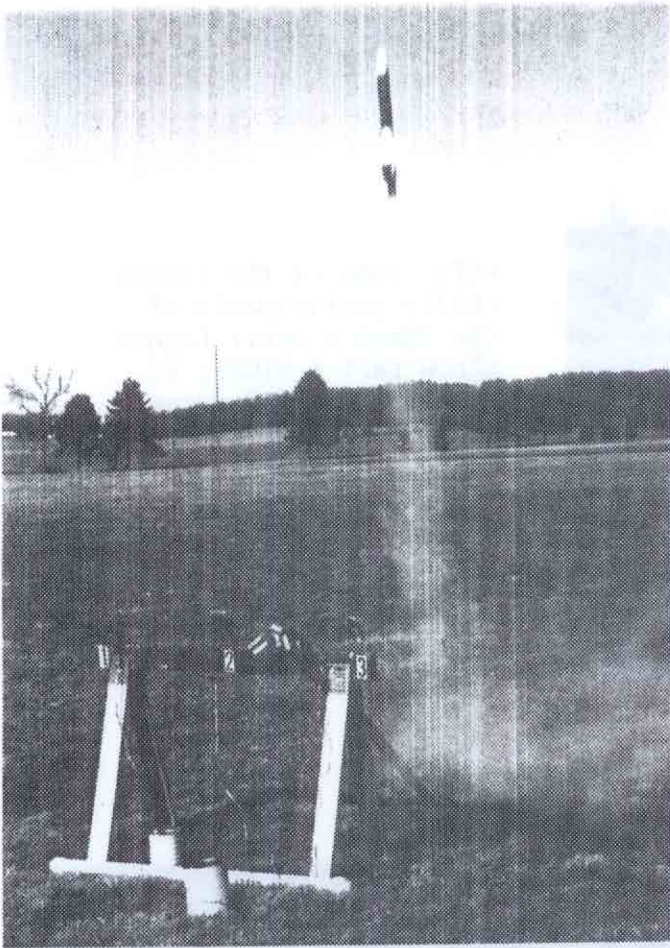






LEFT: Some of the rather chilly participants of the March 1 Sport Launch. BELOW LEFT & RIGHT: Ed Miller's Estes Patriot; Ed's SDI Satellite leaves Pad 3.

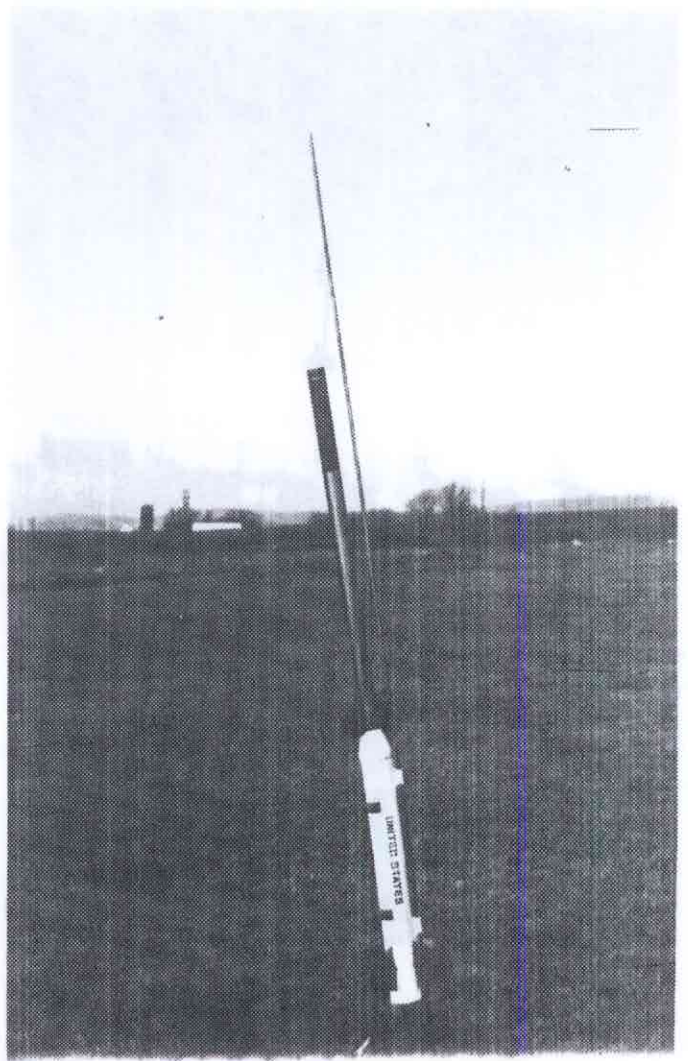
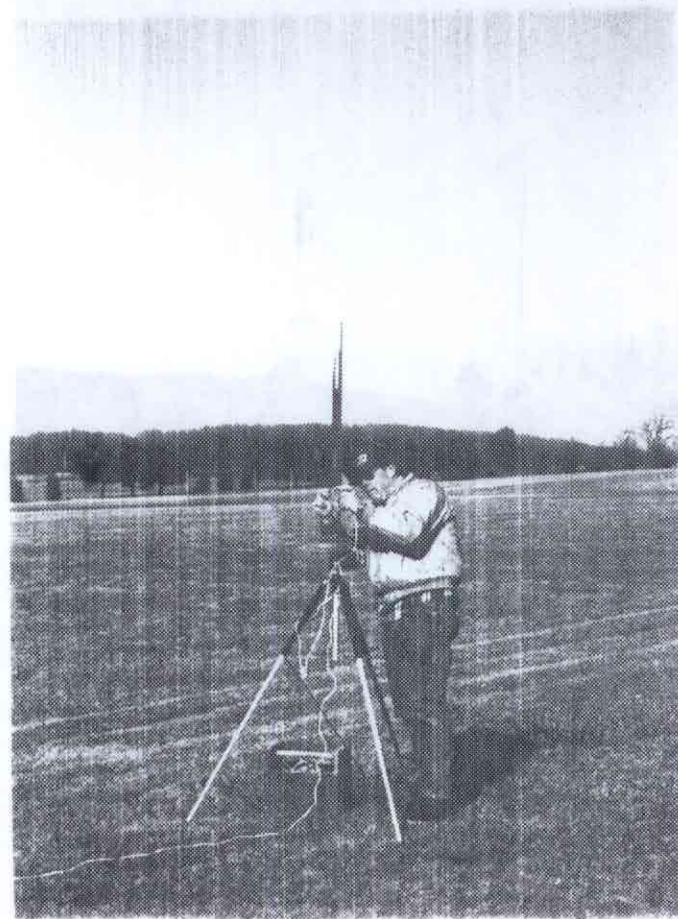




LEFT: Aaron Newman's Tomahawk Cruise Missile at liftoff;

BELOW LEFT: Karl Fehrenbach readies his THOY Robin;

BELOW RIGHT: Ed Miller's FSI Nike-Tomahawk photographed last November, just prior to lift-off with an Aerotech E15.



**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

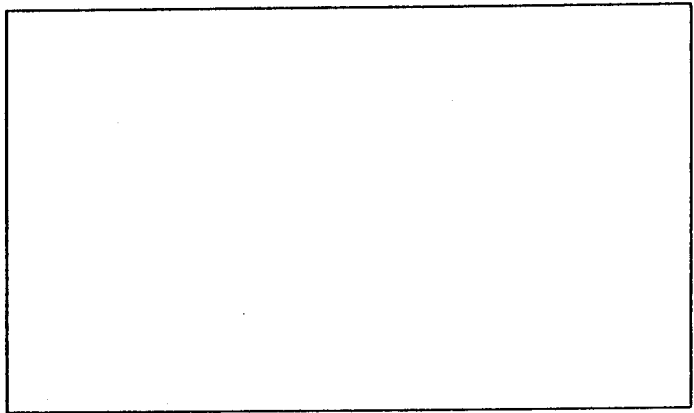
**DISCOUNTS (Select only one)**

- 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.

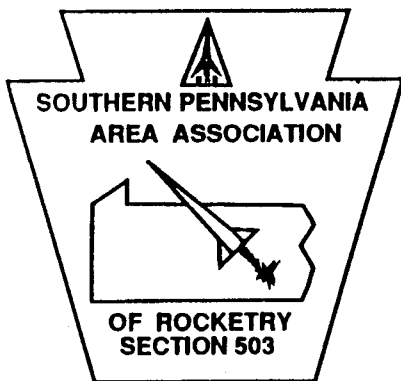
NAR Membership dues include \$8.88 for a subscription to American Spacemodeling.

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 American Spacemodeling.



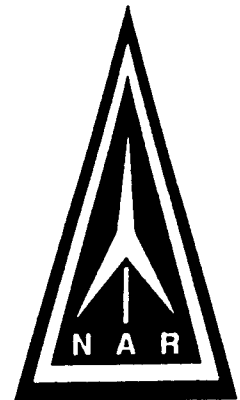
**TO:**

SPAAR  
P.O. Box 127  
Reamstown, PA. 17567



**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 5 No. 2**

MARCH/APRIL 1992