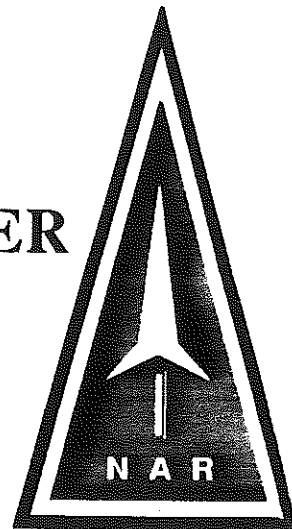


# THE UPSTATE ROCKETEER

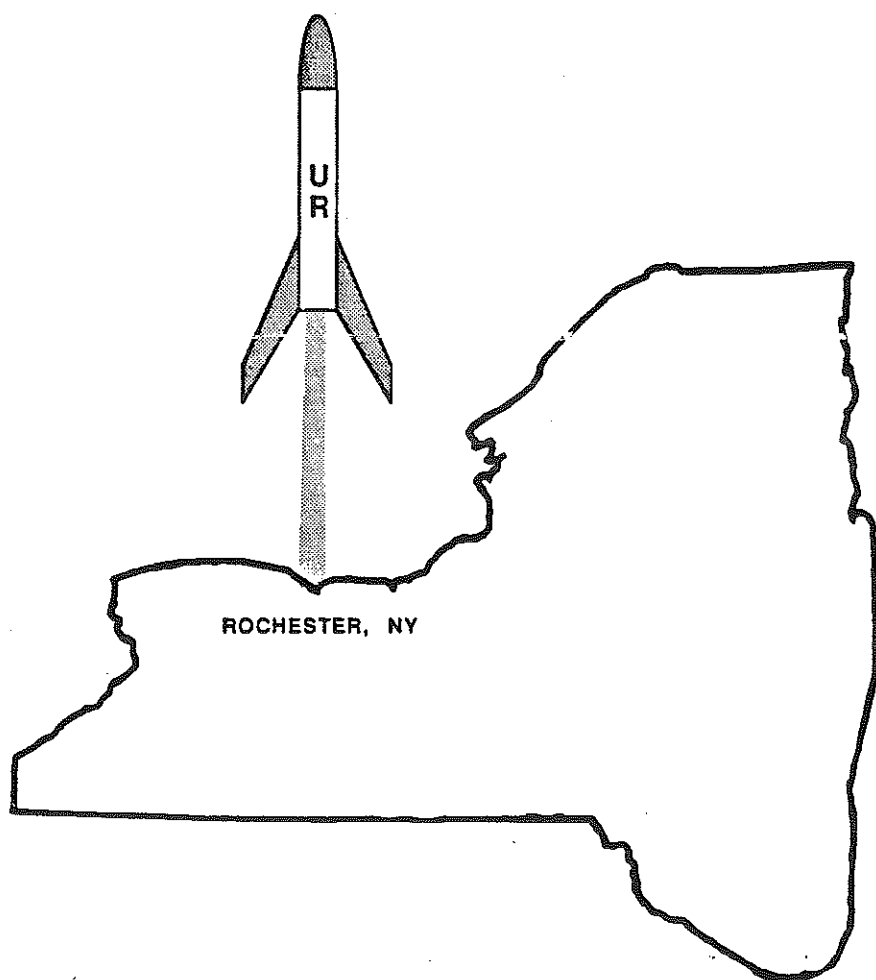
The Official Newsletter of MARS  
NAR Section #136



Volume 5, No.1

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February, 1992



## SPECIAL DOUBLE ISSUE!

GLIDER PLANS FOR  
NYSPACE-92

SPORT LAUNCH REPORT

TIPS ON FLYING  
COMPETITION BIRDS

CLUB NEWS & MORE!

## *The Upstate Rocketeer*

Volume 5, Number 1  
February, 1992

The *Upstate Rocketeer* is published six times a year by the Monroe Astronautical Rocket Society as a service to its members and NAR members in Western and Central New York. Subscriptions are \$3.00/year. The *Upstate Rocketeer* is edited by Dan Wolf. Send all comments, complaints, letters, plans, subscriptions, etc. to him at the following address:

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### Table of Contents

|   |       |
|---|-------|
| January 1st Sport Launch                      | 3     |
| NYSPACE 92 Progress Report                    | 4     |
| SALT 91 Contest Results                       | 5     |
| Rocketry Tips from Modelnet                   | 6     |
| A Potpourri of Glider Plans<br>for NYSPACE 92 | 8-16  |
| As the ModRoc World Turns...                  | 9     |
| Photo Pages                                   | 17,18 |
| NARCON-92                                     | 19    |
| The "Billboard" Sport Plan                    | 20    |
| NFPA Proposed Tentative<br>Interim Amendments | 21    |
| Events Calendar                               | 24    |

### MARS Membership - January 1992

|                                   |                  |
|-----------------------------------|------------------|
| Dan Wolf - President              |                  |
| Jeff Ryan - Vice President        |                  |
| Ferenc Roka - Secretary/Treasurer |                  |
| Roy Metz - Senior Advisor         |                  |
| Mike O'Brien                      | Mark Doty        |
| Jonathan Doyle                    | Jay King         |
| Merrell Lane                      | Bud Piscini      |
| Jessica Ryan                      | William Springer |
| C.J. Urlaub                       | Mary Wolf        |
| Sarah Wolf                        |                  |

## Blowin' In the Wind (Editorial)

Greeting fellow spacemodelers. Welcome to this special "jumbo" issue of the *Upstate Rocketeer*. Normal issues of *UR* are usually 12 pages long. The reason for this is that 6 pieces of 8 1/2" x 11" paper weigh in just under one ounce and that allows the newsletter to be sent out for 29 cents. Occasionally we run over (once or twice a year) and have to pay an extra 24 cents in postage for the additional ounce. These issues usually run around 16 pages. Note that this issue however is a full 24 pages, the most that can be sent for the first class 2 ounce rate of 53 cents (Unless you are NARHAMS who somehow in the past have managed to send 3+ ounce issues for a single 29 cent stamp). Anyway, this issue is double in size mainly because we only managed to put out 5 issues in 1991 and thus at this point we are one issue behind, thus the double issue. Since much of the talk at recent club meetings has centered around the planning and preparing for NYSPACE 92, much of this issue is devoted to that topic. I know some of you are already starting to think about what to fly in the various events so in order to assist you, several plans are featured in this issue. Since the glider events are often the most time consuming to prepare for and also because it is often difficult to come up with a competitive model on your own for them (but mostly because gliders are my favorite events) several plans are presented in this issue for the two events. Also in this issue, we have a report from the January 1st sport launch, results from last fall's Syracuse open meet and more. Also in this issue, pick up some tips for some of the NYSPACE events via a compilation of messages on Compuserve's Modelnet by Jay King. Lastly, club news including the status and progress to date of our organizational efforts concerning NYSPACE can be found in this issue. In closing, sorry about the "missing" issue. Hope this double issue makes up for it.

Until next time,

*Dan*  
Dan

## MARS Members Bring In the New Year With January 1st Sport Launch

MARS wasted no time in holding its first sport launch of 1992 as several people turned out on January 1st for a rare club winter launch. Taking advantage of the nice weather, the club tried out the Fairport Northside/Dudley School as a launch site for the first time. The weather was too good to evaluate the field because the wind was so light that everything that was flown landed relatively close to the launch pads. The wind was only a 3-5 mph breeze from the southwest, skies were sunny and the temperature was a "balmy" 40 degrees. An atypical but welcome January day to be sure.

Several club favorites were flown at the launch. Bud Piscini flew his IRIS, Maxi ALPHA and Little Joe II kits. All flew well and were recovered easily. The 1/70 scale Little Joe II on a C6-7 engine was a real crowd pleaser with a straight up boost to a fairly high altitude for this BT-70 sized bird. Bud still prefers to use separate chutes on the body and capsule. This resulted in the capsule drifting across the road into the corn field east of the school, the farthest anything drifted that day.

Jim Cost took advantage of the nice sunny day and made several aerial photography shots. Jim, a friend of Steve Viggiano's, flew an Astrocum 110 with various engine combinations. He also flew a camera rocket of his own design that consisted of a Kodak "disposable" camera mounted in a BT-80 sized rocket. Looking somewhat like a shortened version of Bud's Maxi-Alpha, Jim flew it with D12s for some nice lob type flights. Hey Jim, how about some of those aerial photographs for the newsletter?

Jay King took advantage of the nice weather to test fly some competition birds including an A B/G that had a perfectly straight boost but "Red Baroned" due to a tight fitting pod. Jay also flew an Estes Sprint to see how its performance would be in Parachute Duration. Jay also would have flown his Big Bertha if Dan "I didn't see it" Wolf hadn't stepped on it!

Steve Viggiano had a few nice flights including a pretty flight with his Calypso. Ferenc also had a number of nice flights including the old standby, his green Gooney Bird. This time Ferenc had competition however as Andy Dowd came out and flew his Gooney Bird, the "Missile Toe". Sort of a BT-60 shaped "flying foot." It was good to see Andy out at one of our launches. Andy, don't be such a stranger (and next time, bring your Dad out too!) Going back to Ferenc, Ferenc flew his Estes

Flying Saucer using some of Andy's stock pile of old engines with the result being a couple of fireball type catos as the saucer was a few feet up in the air.

Matt Pompeii was out to a MARS launch for the first time in a while. Matt flew his orange "no name" rocket for some nice flights. In fact, most of the flights at this launch were successful. Anyone looking for "Midwest Qualified" flights (prangs) at this launch would have come away disappointed (except for the flying saucer catos).

Mike O'Brien stopped by for a few minutes to say hi. Mike had house guests and couldn't stay. With Mike not able to fly, and Jeff also not present (he was working at the yellow box factory that day), that left Dan to fly the "big stuff". Dan took advantage of the weather by flying his Aerotech Arreux with a G42-8 for a nice high and crowd pleasing flight. Dan also flew his North Coast Mini-Spoil Sport with 4 C6-5s for a nice "fire and smoke" flight and his "Boilermaker Special" on an F25.

Overall it was a pretty good launch. Everyone had a good time, evidenced by the fact that the launch lasted for over 2 hours, remarkable for a winter launch. Considering the club's last winter launch was over two years ago, in 17 degree weather, with only 2 members present, this launch was spectacular. Perhaps this will start a tradition of January 1st sport launches. After all, how many bowl games can you watch? Come to think of it, maybe we should have held a launch on Super Bowl Sunday! Anyway, it was a great start to 92. (Photos of the launch can be found elsewhere in this issue.)

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### Next Club Meeting Set for February 21st

Don't forget, this Friday is the day of our monthly club meeting. We will continue our work on NYSPACE, discuss new member activities, and of course, February is the month for officer elections. Please plan on attending this important meeting. The meeting starts at 7:30 PM and will be held at Dan Wolf's house at 235 Kislingbury St.

## NYSPACE 92 PROGRESS REPORT

*Prelude: As most MARS members and regular readers of this newsletter should know, MARS is hosting this years NYSPACE. NYSPACE (New York State Spacemodeling Championship and Exhibition) is held each year to determine the championship NAR section on New York state. The contest is a standard sanctioned NAR regional meet but in addition, a special Internats style scoring system is used to crown the state champion club. Last year, the contest was hosted and won by ASTRE (Albany-Schenectady-Troy Rocket Enthusiasts). This year, as hosts, MARS hopes to do the same. In addition, MARS hopes to broaden the scope of the weekend, and encourages all NAR members in New York to participate.*

Since the last issue of UR, a lot of activity has taken place in the planning and preparation for NYSPACE 92. At the November club meeting, the tasks were broken down into 5 main categories with one person being assigned the overall responsibility for each area. In addition, Jay King has assumed overall responsibility for the project. A breakdown of the tasks can be found at the end of this article.

The tables show the status of the NYSPACE effort at the end of the January club meeting. Here is a brief listing of the developments since then. First, the contest sanction is now in hand from the contest board.

Second, the latest issue of AmSpac has NYSPACE listed in the Launch Windows column. Third, a list of NAR members from the 13xxx and 14xxx zipcodes has been obtained from NAR Headquarters. Fourth, a list of "key" Buffalo area NAR members has been compiled. Fifth, a letter to the other New York NAR sections has been drafted and has or will be sent out soon. Sixth, a list of modroc companies, hobby stores, and others has been compiled. Another letter has been drafted requesting prizes for the meet and it is also due to be sent out soon.

A key item that needs to be resolved is the launch site for the meet. Plans to hold the meet at McCracken farms in Brockport have fallen through. That means that we will have to quickly follow through with one of our backup sites. The primary candidate at this point is the Geneseo Warplane Museum. Ferenc Roka reported at the January club meeting that this wide open field has hosted AMA events in the past, one as recently as last year. Meanwhile, Dan, Jay and Matt are checking out other possible fields. As the days of the meet draw near, many other items will need to be taken care of, but at this point, the field is the key issue that we need to resolve and the sooner the better. If anyone knows of a potential field please contact Dan Wolf or Jay King.

### PROJECT ORGANIZATION - TEAM RESPONSIBILITIES

| Title/Date   | Responsibility |
|--|----------------|
| Range Operation  | Jeff Ryan      |
| <ul style="list-style-type: none"> <li>o Range operations assignments</li> <li>o Launcher delivery, setup and cleanup</li> <li>o Communications Support</li> <li>o Member of RAPS will volunteer</li> <li>o Make formal request at 9 April meeting (JK)</li> <li>o RSO. and RCO assignment</li> <li>o Safety Inspection</li> <li>o Launch Schedule</li> <li>o Launcher Operations</li> <li>o Tracking operation</li> </ul>               |                |
| Contest Operations   | Bud Picini     |
| <ul style="list-style-type: none"> <li>o Contest Operations Assignments</li> <li>o Event Selection</li> <li>o Done at September meeting</li> <li>o NAR Sanction</li> <li>o Done by Dan Wolf</li> <li>o Event Scheduling</li> <li>o Select Judge(s)</li> <li>o Judging</li> <li>o Flight Cards</li> <li>o Score Keeping</li> <li>o Prize selection and presentation</li> <li>o Tally Board</li> <li>o Schedule Practice Launch</li> </ul> |                |
| Arrangements   | Jay King       |
| <ul style="list-style-type: none"> <li>o Make Range Badges</li> <li>o Refreshments to field</li> <li>o Lunch to field</li> <li>o Pool Coolers</li> <li>o Dinner plans</li> <li>o Maps and directions for publicity</li> <li>o Range Cleanup</li> <li>o Help visitors with housing</li> <li>o Identify possible 3rd party Judges</li> </ul>   |                |

|   |                 |
|---|-----------------|
| Publicity   | John Viggiano   |
| <ul style="list-style-type: none"> <li>o Letter to local sections asking for attendance forecast</li> <li>o ask for help with phone inquiries</li> <li>o Drafted - finalize 4 Feb, mail by 15 Feb.</li> <li>o Take Group Photo</li> <li>o Notice in ANSPAM</li> <li>o Notice on BBS's</li> <li>o Notices to Hobby Shops</li> <li>o Letters to local NAR members</li> <li>o Notice to Newspaper, Radio, TV</li> <li>o Photos of contest</li> <li>o Write up for Upstate R.</li> <li>o Write up for AmSpac</li> <li>o Each event will be assigned to an individual for monitoring and reporting.</li> <li>o Assign events</li> <li>o Assign editor to compile final article</li> <li>o Photography</li> <li>o Black and White preferred. Jay King will make contact sheets and provide 5x7's for publications.</li> </ul> |                 |
| Prizes  | Ferenc Gy. Roka |
| <ul style="list-style-type: none"> <li>o Form letter describing event, asking for prizes</li> <li>o Drafted - finalize 4 Feb - mail by 15 Feb (FR)</li> <li>o Solicit local hobby shops</li> <li>o Solicit manufacturers</li> <li>o Solicit other shops and services for donations</li> <li>o Collect Prizes</li> <li>o Thank you letters for donations</li> <li>o Recognize donors in print.</li> <li>o Ribbons for all events</li> <li>o replaced with Certificates</li> <li>o Make Event Certificates (JK)</li> <li>o Make Participant Certificates (JK)</li> <li>o "A" division trophy</li> </ul>   |                 |
| Project Management  | Jay King        |
| <ul style="list-style-type: none"> <li>o Overall coordination of activities</li> <li>o Develop, track and report against project plan</li> <li>o End of project report and planning package for future contests.</li> </ul>   |                 |

# Syracuse Area Launch Tournament 1991

## October 19/20

SALT-92 was the last sanctioned contest in Upstate New York before the winter hiatus. The weather was typical for October in Upstate New York, cold and wet. Contest Director John DeMar had a dilemma in trying to decide on when to fly the meet. The weather forecast was shaky for both Saturday and Sunday although the forecast looked better for Sunday. With the iffy weather and difficulty in rescheduling, John "opened" up the meet to flying on both Saturday and Sunday (and the following weekend as well if needed although it turned out that last drastic step was not necessary). The result was most of the contestants making their flights on Saturday, in spite of heavy overcast, cold, drizzle, and rain. In fact, when the forecasted clearing later in the day never materialized, the Fijay-Bombay Team (Etienne LaValle and Mickey Gottung) decided to pack it in and left early. Sunday's weather was much better but about the only one left with contest flights was Mike O'Brien who decided to take a chance and do his flying the second day. Items of note include the Fijay-Bombay team's 94 second B/G flight in spite of the poor conditions, Greg Anglin's unsuccessful attempts at getting the engine ignited on his Jetex engine powered glider, Dan Wolf's 13 second flight in A R/G with the same model that took first at NARAM (hey, you never know!), and finally, a qualification rate of only 28 % in B Streamer as compared to 75 % in Rocket/Glide and 100% in Boost/Glide. In the end, MARS fared well with Dan Wolf and Mike O'Brien finishing 1st and 3rd respectively. As usual, John DeMar was too busy running the range to fly. Overall, flying was mediocre, with the weather preventing many outstanding flights. Results for the meet can be seen below.

## SALT '91 Results

### Random Duration (40 sec)

|                    |      |      |
|--------------------|------|------|
| 1) Fijay-Bombay Tm | 0:42 | 5%   |
| 2) Greg Anglin     | 0:11 | 73%  |
| 3) Dan Wolf        | 1:25 | 113% |
| Pete Deierlein     | DQ   |      |
| Mike O'Brien       | DQ   |      |

### NAR Points

|     |
|-----|
| 100 |
| 60  |
| 40  |

### B Streamer Duration (multi-round)

|                   |             |      |     |
|-------------------|-------------|------|-----|
| 1) Dan Wolf       | 0:54 + DQ = | 0:54 | 120 |
| 2) Pete Deierlein | 0:52 + DQ = | 0:52 | 72  |
| Greg Anglin       | DQ          |      |     |
| Mike O'Brien      | DQ          |      |     |
| Fijay-Bombay Tm   | DQ          |      |     |

### Open Spot Landing

|                    |         |    |
|--------------------|---------|----|
| 1) Dan Wolf        | 5.8 ft  | 40 |
| 2) Pete Deierlein  | 19.8 ft | 24 |
| 3) Fijay-Bombay Tm | 31.7 ft | 16 |
| 4) Greg Anglin     | 50.0 ft | 8  |
| 5) Mike O'Brien    | 80.0 ft | 4  |

### Sport Scale

### Craftsmanship Flight Total

|                   |            |     |   |     |   |     |     |
|-------------------|------------|-----|---|-----|---|-----|-----|
| 1) Mike O'Brien   | Viking     | 690 | + | 180 | = | 870 | 200 |
| 2) Dan Wolf       | Little Joe | 715 | + | 150 | = | 865 | 120 |
| 3) Pete Deierlein | Juno I     | 585 | + | 175 | = | 76  | 80  |
| Fijay-Bombay Tm   | DNF        |     |   |     |   |     |     |
| Greg Anglin       | DNF        |     |   |     |   |     |     |

### 1/2A SuperRoc Duration

|                   |           |           |       |     |
|-------------------|-----------|-----------|-------|-----|
| 1) Dan Wolf       | 100cm/66s | 100cm/58s | 524 p | 100 |
| 2) Pete Deierlein | 100cm/41s | 100cm/61s | 502 p | 60  |
| 3) Mike O'Brien   | 100cm/17s | 100cm/23s | 440 p | 40  |
| Greg Anglin       | DNF       |           |       |     |
| Fijay-Bombay Tm   | DNF       |           |       |     |

### OVERALL RESULTS (C Division)

### Section Points

|                      |     |       |       |
|----------------------|-----|-------|-------|
| 1) Dan Wolf          | 708 | MARS  | 1096  |
| 2) Pete Deierlein    | 480 | SRBs  | 566   |
| 3) Mike O'Brien      | 388 | ASTRE | (376) |
| 4) Fijay-Bombay Team | 376 |       |       |
| 5) Greg Anglin       | 86  |       |       |

### 1/2A Boost/Glide (multi-round)

|                    |               |      |     |
|--------------------|---------------|------|-----|
| 1) Fijay-Bombay Tm | 1:34 + DNF =  | 1:34 | 180 |
| 2) Dan Wolf        | 0:48 + 0:27 = | 1:15 | 108 |
| 3) Mike O'Brien    | 0:28 + 0:31 = | 0:59 | 72  |
| 4) Pete Deierlein  | 0:40 + 0:08 = | 0:48 | 36  |
| 5) Greg Anglin     | 0:10 + DNF =  | 0:10 | 18  |

### A Rocket Glider

|                   |               |      |     |
|-------------------|---------------|------|-----|
| 1) Dan Wolf       | 0:13 + 0:42 = | 0:55 | 180 |
| 2) Pete Deierlein | 0:37 + 0:07 = | 0:44 | 108 |
| 3) Mike O'Brien   | 0:07 + 0:06 = | 0:13 | 72  |
| Fijay-Bombay Tm   | DQ            | DQ   |     |
| Greg Anglin       | DNF           |      |     |

**Competition Tips from Compuserve's Modelnet**  
(tips for flying boost/glide, egglofting and finishing techniques)

*Editor's Note: The following items are hints and suggestions for flying gliders and egglofters provided by fellow modelers on Compuserve's Modelnet forum. These messages were in response to "threads" started by Jay King concerning strategies for flying these two events. Messages on these and other topics are summarized here by Jay.*

Paul J. Ste. Marie provided instructions for a "Three Minute Egg" using a cardstock shroud about a foot or so long, going from a BT-20 dia at the bottom to the capsule at the top. Stick about 3" of BT-20 in the bottom with an engine block and an outside centering ring to keep it centered in the shroud. Glue on three fins, and put a launch lug on one fin and the egg capsule. Use 1/4" elastic or Kevlar for a shock cord. Dry cleaner bags with shroud lines every 6" or 1/2 mil mylar chutes will both work well in 36" to 48" diameters with the shroud lines "run over the top". With the tapered shroud a cup of recovery wadding is required to protect the chute.

He advised that a C10-7 is the "killer" motor. otherwise, a C6-3 or C6-5 or C5-3 will do the trick.

George Gassaway followed with a system for insuring that the capsule would not separate prematurely by using thinned contact cement around the inner shroud lip to make a rubbery surface to grab the capsule. Rubber cement is an alternative.

Jay Marsh of Apogee Components added that the C10-4 \*is\* the motor of choice for either CEL event and noted that a stock Apogee Streamliner took 1st in A and B Division as well as 2nd in Team Division at NARAM in 1991.

Bob Parks explained that "stock" meant "mostly" right out of the bag. The preferred chute was a plastic "Estes" type and not mylar. Other changes included a lightened and polished egg capsule, no launch lugs, elliptical fins and through the motor tube "lariat loop" shock cord. The only additional part not included with the kit was a coupler which was inserted into the front of the motor tube to protect the model from the B7 ejection charge.

The Apogee egg capsule is lightened by turning it on a lathe using decreasing grades of sand paper until the mold seam is taken out, dropping about 4 grams off the original 12 gram weight. Be careful not to sand a lot around the separation area and the shoulder. It's easy to cut these areas away causing the capsule to break.

Plastic chutes won't tear due to a nick or burn hole, mylar will. So inspect mylar chutes carefully before each flight and repair any nicks or burn holes before flying. Mylar is lighter than plastic.

Regarding polishing, the generally accepted smoothness for aero work is about 400 grit sandpaper level anything else is just "for looks".

For B El Duration Jay Marsh says he uses either a 15" or 18" chute.

Kevin at NAR Headquarters added: "Actually, if you transmogrify the airflow by fimbulating the lambda region, you stand a better chance of rationing the ventilator by causing a type of koala effect, thus raising the Raymond number to approximately 14." Something we should all keep in mind for our NySpace 92 birds.

Will S. the assistant sysop for rockets told us about an afternoon phone conversation with Barry Tunick, Mary Roberts and Michael Hellmund at Estes. They spoke about all sorts of things concerning Estes and the hobby. Barry reiterated his request that all are welcome call or write him at Estes Industries. His FREE 800 number to call is 1-800-525-75

He is genuinely interested to hear from all. Don't not worry about saying critical things about Estes to him, he can and does take them in good spirit, and he won't bite. He is acutely aware that Estes was absolutely stagnant for twenty years and is determined to turn Estes around.

A discussion covering low impulse RG and BG construction began with finishing tips.

An excellent way to reinforce balsa on gliders is to cover the surfaces with Jap tissue. Paint on a couple of coats of 50% clear dope/50% dope thinner,

sanding after each coat is dry. Paint on some more of this mixture and lay a piece of Jap tissue on top, smoothing out the wrinkles. Cover one side at a time, sanding excess tissue off around the edges with 320 grit sandpaper.

Bob Parks advised us on "rules of thumb" for glide trimming. That the tail should be a degree or two leading edge down compared to the wing, and then move the CG or wing to get a nice slow glide, guaranteeing stability.

For RG flyers, attach the rubber band as far forward on the fuselage as possible, and as far aft on the wing as possible. This will give the minimum percentage change between the boost and glide positions. Also remember that the main RG failure is forgetting to hook up the rubber band!

Rocket finishing was discussed starting with Doug Pratt and his suggestion that all plastic parts be wiped with rubbing alcohol to make sure there isn't any oil or fingerprints on them

Will S. added that there are several ways to fill the body tube seams. He's used Squadron putty and more recently ordinary spackle. Fill the seam with filler, then sand smooth. An alternative is multiple coats of thick primer. Spraying on a coat then sanding off.

Coating with epoxy is another possibility. It fills in easily and sands to a glass-smooth finish. The main disadvantage (besides for any possible epoxy allergy) is it adds a lot of weight and isn't cheap.

Gray auto spray primer is good for priming. Use several coats, sanding in between them.

Wayne T. Anthony provided more detail, advising use of a water-based filler because you can then wet your finger and apply it easily.

When painting, spray sparingly on 1/4 side, turn and spray again. The first swipe should be dry as it comes around for spraying again. Continue the process for five minutes. If, at some point, the primer does not dry, wait. Then sand the primer w/400 grit, dry.

Wayne went on to describe the various paint options:

ENAMEL-dries slowly. Noted for having excellent hiding & filling properties. Glossy when dry requiring no further finishing work.

LACQUER-dries rapidly. Requires a rubout and polishing to achieve that brilliant depth and luster for which its famous for.

EPOXY-Dries slow but very hard and glossy.

POLYURETHANE ENAMEL-Exceptional weather resistance, good filling qualities. Much like plain enamel.

For applying more than one color, wait a few days to a week for the base coat to dry & cure. Mask with masking tape spraying the edge with something like Testor's dullcoat to make sure it's well sealed.

#### Resources

Plastruct, 1020 S. Wallace, City of Industry CA 91748 (\$5.00 for catalog). Lots of structural shapes, tubes and sheet stock for scale or stock builders. Also Evergreen 12808 N.E. 125th Way, Kirkland WA 98034 (\$1.00 catalog).

To join the discussion, get on Compuserve and type "Go Modelnet". The group is very friendly and helpful, newcomers are always welcome.

---

#### Too Good To Pass Up Department

An item that appeared in a message on Modelnet a few months back.

Swoooooosh.....pop  
Swoooooosh.....pop  
Swoooooosh.....pop  
Swoooooosh.....pop  
Swoooooosh.....pop  
Swoooooosh.....pop

Now are you ready for High Power Rocketry?

OK...

SWOOOOOOOOO\$\$\$\$HH.....POP  
\$WOOOOOOOOO\$\$\$\$HH.....POP  
SWOOOOOOOOO\$\$\$\$HH.....POP  
SWOOOOOOOOO\$\$\$\$HH.....POP  
SWOOOOOOOOO\$\$\$\$HH.....POP  
SWOOOOOOOOO\$\$\$\$HH.....POP

## Building For NYSPACE A Potpourri of Glider Plans

This issue and the next we will be featuring plans for models suitable for this years NYSPACE competition. For most spacemodelers, coming up with rockets to fly in 1/2A Altitude, 1/4A Parachute Duration and Open Spot Landing should not be too difficult. That leaves Super-Roc, Eggloft, Boost/Glide and Rocket/Glide. This issue we have an assortment of plans for the glider events. The next issue will cover Super-Roc and Egglofting (Jay, how about plans for your C Super-Roc for the April issue?).

Finding the right glider to fly can mostly be summed up in one statement - Build and test fly. For those just starting out, I recommend ordering from NARTS the "MIT Competition Handbook" as well as the publication "US Record Setting Designs" from NARTS. The latter publication has 5 BG and one RG design while the former has BG and RG designs for every engine class from 1/4A through F. Then, using those plans, the plans here and others, start building and flying. After a while you will find what works good for you and what doesn't. There are for example, some of the plans in the MIT Handbook that I could never get to glide right (Bunny says some of them are difficult to trim because of a high or maybe it was a low tail volume coefficient). Anyway, I have seen those same gliders work well for other modelers. By the same token, I have always had good luck with former MARS member Phil Slaymaker's designs but I know others who haven't.

Rocket Gliders are even more of what works best for you. These days, nearly all of the lower power R/Gs are slide wings so the choices are easier. However again I recommend flying what works for you and that means test fly. Sticking to the same type and design of glider for the various power sizes (at least from 1/2A through C) helps as well. In other words, it is usually not a good idea to switch between swing wing and slide wing designs. Also, if a particular glider works well for you in one engine class, scaling it up or down for another power class sometimes works well. Again, test fly first.

At NYSPACE-92, 1/4A Boost/Glide and A Rocket/Glide will be flown. Recall that in Boost/Glide only one portion of the rocket has to use glide recovery (i.e. a glider can be attached to the side of a rocket or pod and deployed at ejection) while in Rocket/Glide, the model must ascend

vertically like a rocket but descend like a glider without separating into multiple pieces (what goes up as a rocket must come down like a glider, in one piece).

Since 1/4A engines have only been available again for a year or so after a lengthy absence, there are not a lot of plans floating around for 1/4A B/G. The MIT handbook has the Olympia 67, which is a nice small glider that is suitable for this event. However digging through several old NAR section newsletters from the mid and late 70s resulted in four glider plans for this event. Two are "true" 1/4A B/G plans, that is they were designed specifically for the smallest engine class. One is the "MICRO HUNTER" design by Billy O'Donovan. It appeared in the January 1977 issue of the Vikings Section newsletter "Apogee". This is your conventional pop pod glider design although the pod attachment system is somewhat unique. Change it to the standard piece "X" method if you prefer. Also, the plan calls out a CMR nose cone. It can be replaced any vendor's nose cone for 13mm tubing. The other true 1/4A plan is Al Nienast's Black Gnat. Anyone who ever competed against the late "Uncle Al" knows what a great B/G and R/G flyer he was. This plan, from the August 1977 issue of the "Midwest Rocketeer" features a fixed pod. This has the advantage of reducing boost weight, not to mention the chances of a "Red Baron". Of course the disadvantage is the extra weight of the pod during glide. Also, since it is now illegal to have free falling motors in NAR competition, some modifications need to be done to this design. Instead of the RB50, substitute a piece of Apogee 14mm tubing. This means a nose cone will need to be hand made from balsa. To prep for flight, tape and roll a small streamer to the engine. The larger size tubing will allow the streamer/engine combination to fit inside the pod. At ejection, the engine will spit out, the attached streamer will unfurl, allowing the engine to descend legally.

The other two B/G plans include a 1/2A (Hornet) plan designed by Randy Ringner. This glider is pretty small for 1/2A and should work well in 1/4A B/G. This plan, from the July 75 issue of PULSAR's "SUPER NOVA" newsletter, includes no details for pod attachment so you're on your own there. The last plan, from the Sept./Oct. 79 issue of NIRA's "LEADING EDGE" newsletter is for those of you who want to fly something a little different.



The BEAKERS-4 is a canard B/G, designed by John Beach.

For A Rocket/Glide, three plans are featured. One is the venerable Status-4, designed by Tom Beach. This glider plan has been featured in this newsletter two times before but it is included here since it did take 1st place in C division at NARAM-33. The Status is a standard slide wing type glider that uses a sliding rail type wing. Although the plan calls for using 1/64 plywood for the rail, some have substituted the thinner Apogee waferglass with good results.

The second plan, is the Sparrowhawk-2 by Bruce Carey. This plan, feature in the July 78 Eau Claire High Orbiters Aerospace Club newsletter, "ECHOES", is another sliding wing design. Bruce's design uses a sliding box however.

The third and final plan, is actually more suited for B R/G. The REBEL YELL, designed by Terry Lee is a slide flop wing design. The idea behind the flop wing design is that the glider will achieve a higher boost than a straight slide wing design. Try changing the engine tube to a BT-5 and maybe even scaling this one down 66%-75% of the plan shown here. Also, note that this plan features a dethermalizer. Not seen too much on gliders since the Pink Book return rule was modified in 79, it may be omitted and the stab built as a single piece.

So there they are, 7 glider plans suitable for NYSPACE 92 or any mini-engine class glider events. Build them now and be ready to fly them at the MARS sport launches in March and April. (Plans start on the next page).

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### As the ModRoc World Turns...

(news and rumors heard 'round the hobby)

**Manufacturers News...**Leading off with news from the market leader, Estes. Some of you may not be aware of the rebate program the company is currently running. The rebate on engines is the cost of one pack of engines for every three packs purchased. The rebate for kits is 33% off the retail price. When purchasing the kits at local hobby stores, make sure to pick up the rebate coupon. To get your rebate you will need to send in the coupon, sales slip and the UPC bar code from the items purchased to Estes. The program is scheduled to run until May 31st. Also, Estes apparently has reconsidered its decision to discontinue some of its engines such as the B4-2 and C6-3 as was reported in the last issue of UR. In

addition, the company plans to make available the 1/4A engines it had previously manufactured for Apogee. More information on this is said to be included in an upcoming issue of Model Rocket News. Meanwhile, rumors still persist that Estes is about to introduce a composite line of motors. One last note about Estes. Roy Metz, as MARS section advisor, received the limited edition Mars Snooper. The first in Estes collector series, the kit features the instructions from the original kit, all original parts, and an 1/8" die cut basswood display stand. About fifty of the 2500 kits made were shipped to NAR sections. The remainder have been shipped to hobby stores. Meanwhile, Estes newest competitor, QUEST, is said to be shipping its retail line of products. Last check at Dan's Crafts and Things indicated they have not received anything as of yet. Microbrick Technologies has introduced its first 4" kit. The MAXON is a 4.1" diameter, 76" long kit with a 54mm motor mount. Also, we recently received a postcard from Microbrick indicating the low prices on Aerotech engines is still on but rumor has it that a change in Aerotech's dealer/distributor policies and pricing will take place around the 1st of March so order those composites now. Contact Microbrick at PO Box 701, Schenectady, NY 12301-0701 (516) 372-0828.

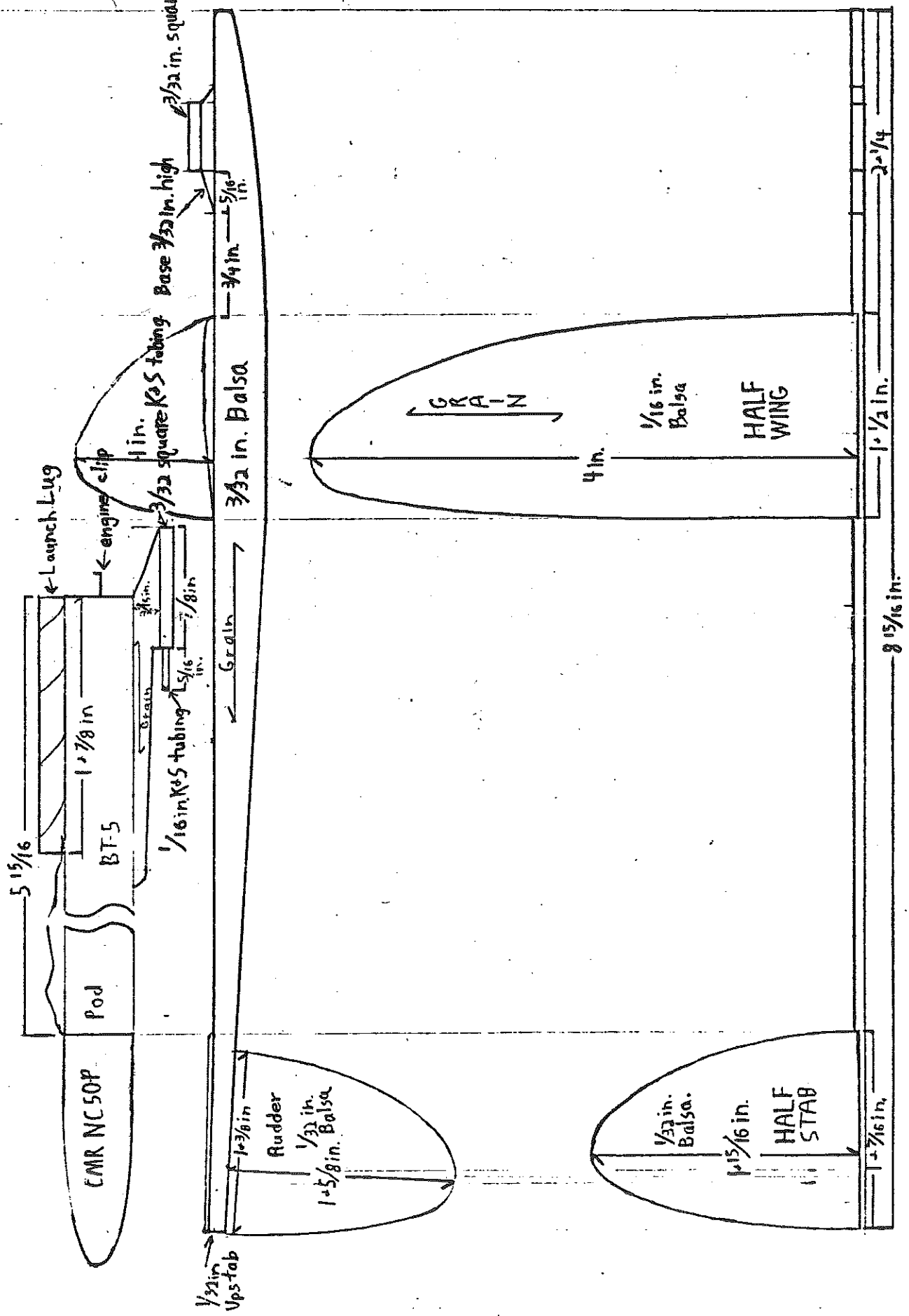
**NAR News...**The NAR has decided to switch its new insurance to that offered by Sports Flyer Association. For the most part, the insurance is similar to that offered by the original company. Coverage for individuals is \$500,000 liability and \$500,000 property damage. The deductible is now \$250 dollars except for member to member coverage which is \$1000 deductible. Two of the biggest changes are that for the section insurance, the President, Vice President and Senior Advisor must now all have insurance. Also, "walk up" one day insurance will be offered to cover guests who show up at launches and want to fly. Individuals who purchase the insurance will also be eligible to participate in a travel club that offers discount air and hotel fares, a discount long distance phone program and other benefits.

**Miscellaneous News...**Local hobby store Panco Hobbies now offers discounts to MARS members. The store carries mostly the Estes line but will order items from other companies including MRC, Aerotech, etc. Mention you are a member of MARS and you will receive a 15% discount off retail. The hobby store is located at 1865 Penfield Road.

MICRO HUNTER - GNAT BC SCALE 1:1  
 BILLY O'DONOVAN GLIDE - 4 grams  
 LIFT - OFF 19 grams  
 DIHEDRAL - 1 in. Em. Wg.

Solar film on underside of wings

6

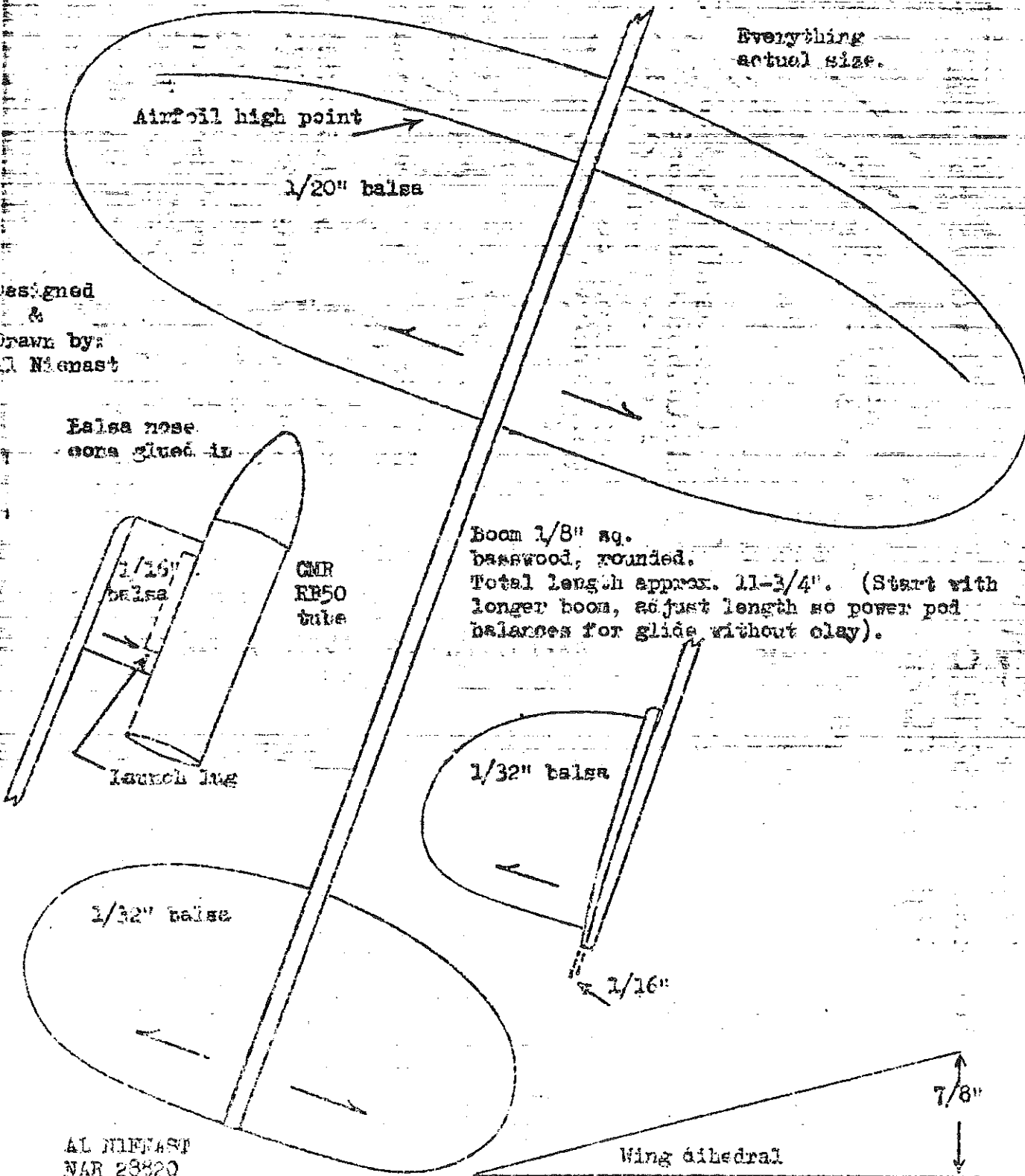


# AL'S BLACK GNAT

8.

Gnat B/G built for Shooting Star III - WNAE Sanctioned Open Meet  
8/26/78. (Test flight statistics are secret until then).

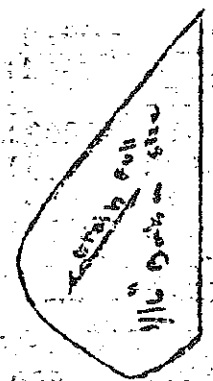
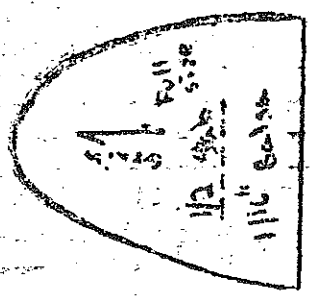
1/4A3-2T Engine with 1-1/2" x 11" tissue or mylar streamer wrapped  
around it. (End taped directly on engine). Engine ejects.



The first two years of the  
 program (1961-1962) were  
 devoted to the study of the  
 water resources of the  
 state and the development of  
 a water control plan.  
 The plan was designed by  
 the Army Engineer  
 Corps and the State  
 Engineer. The plan was  
 approved by the State  
 Board of Water Control  
 and the Army Engineer  
 Corps. The plan was  
 implemented in 1963.  
 The plan was successful  
 in that it provided for  
 the development of a  
 water control plan for  
 the state. The plan was  
 approved by the State  
 Board of Water Control  
 and the Army Engineer  
 Corps. The plan was  
 implemented in 1963.

Notes

Use reg. pod.  
 Fly with mini  
 engines  
 Sand boom  
 to teardrop  
 shape.



# BEAKERS-4

I'M BEAKERS  
come fly me

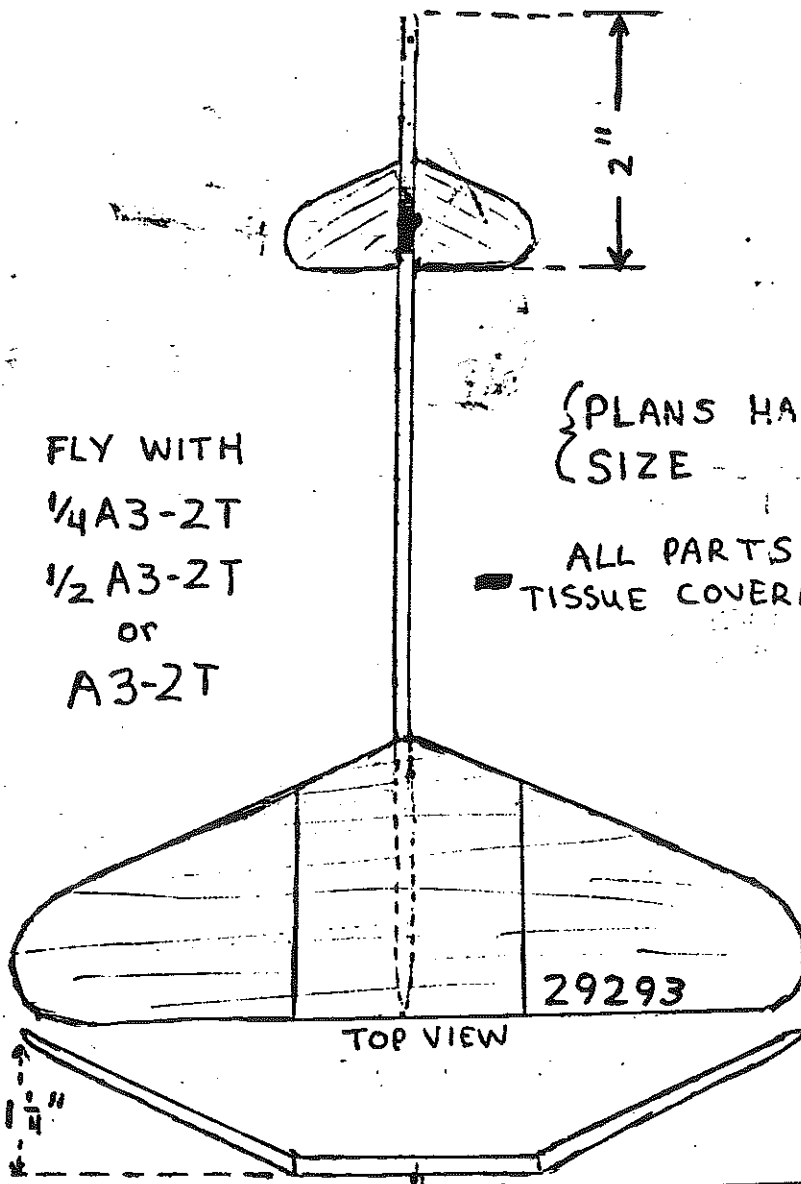


CANARD BOOST GLIDER  
by John Beach NAR #29293  
ZENITH SECTION

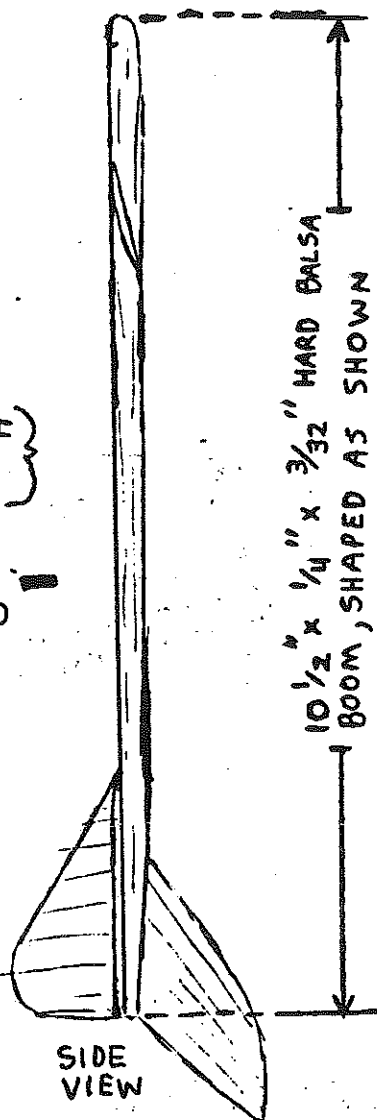
FLY WITH  
1/4 A3-2T  
1/2 A3-2T  
or  
A3-2T

{PLANS HALF  
SIZE}

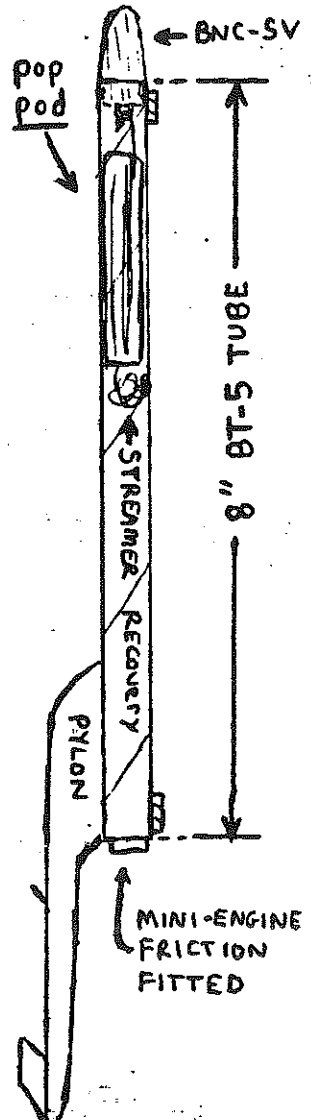
ALL PARTS  
TISSUE COVERED



TOP VIEW



SIDE VIEW

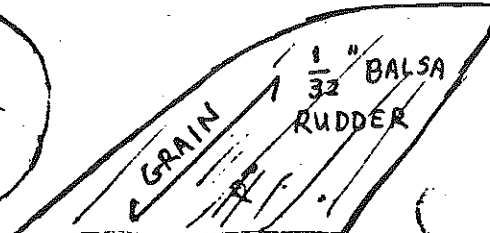
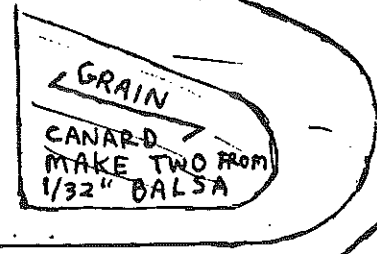
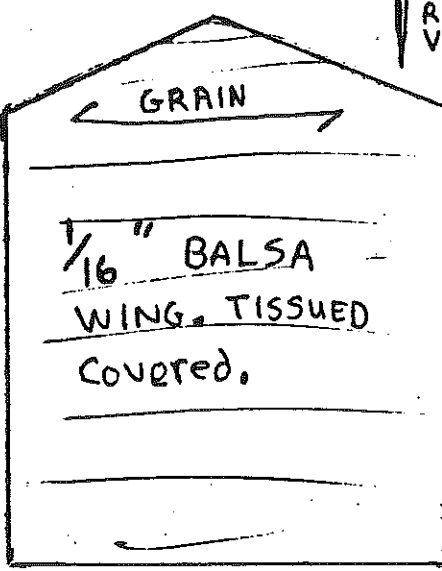
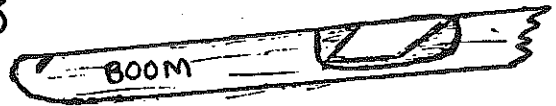


3/32" BALSA HOOK  
CUT FROM BODY

REAR VIEW



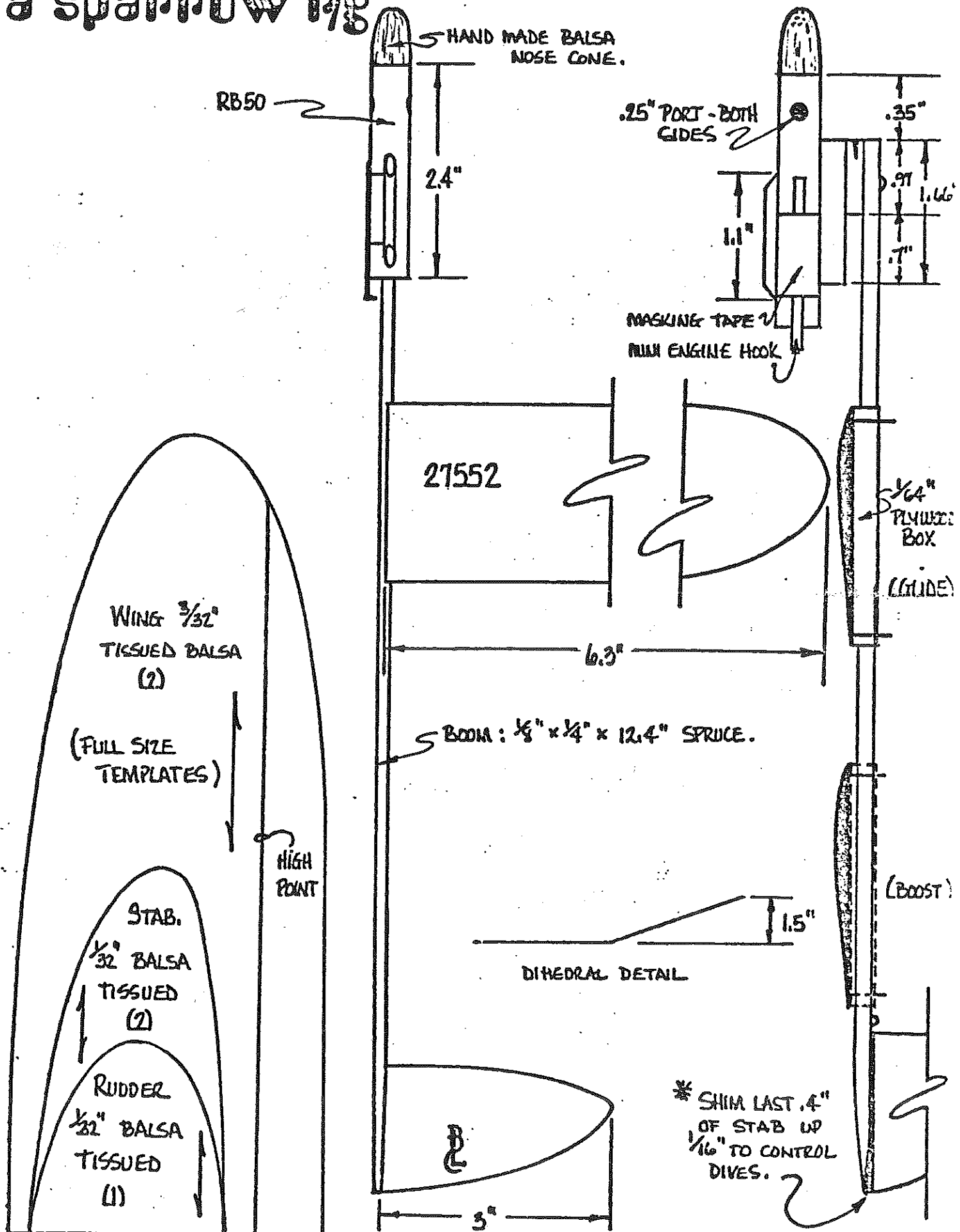
{FULL SIZE  
PATTERNS}



# SPARROWHAWK · 2

BY: BRUCE CAREY

## a sparrow r/s



BNC-20B

# REBEL YELL

6 7/8

BT-20

HALF SIZE PLAN  
SLIDE-FLOP WING R/G

2" launch lug

hinges of aluminised  
mylar

hooks  
for  
rubber  
bands

PHLON  
3/16 balsa

1/16  
plywood  
box to  
slide  
along  
boom

WING - 3/16 balsa

BOOM -  
3/16 x 1/2  
spruce

1 1/8

DINFEDRAL DETAIL

1/32" dia. music wire  
hold-down arms for  
flop wings

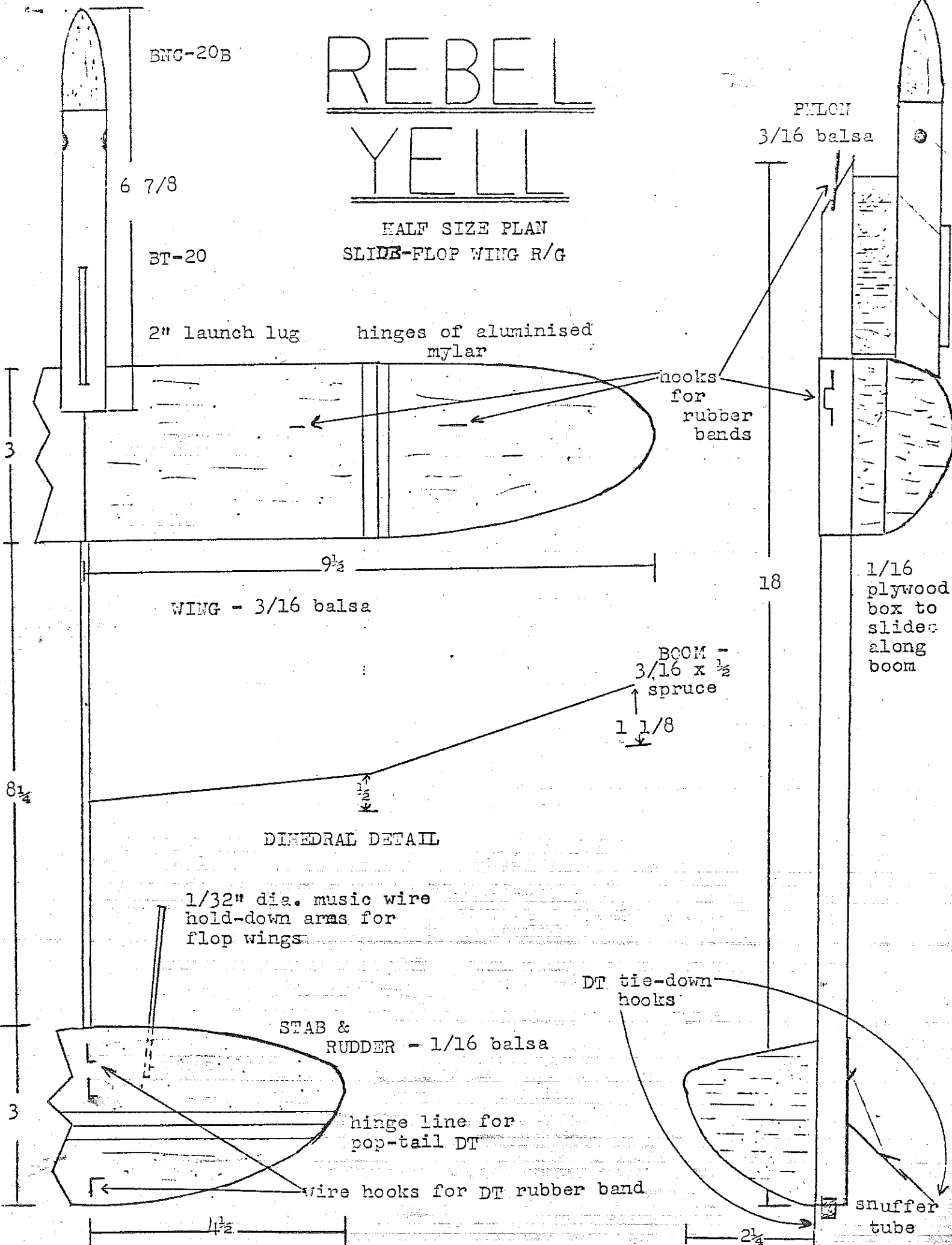
DT tie-down  
hooks

STAB &  
RUDDER - 1/16 balsa

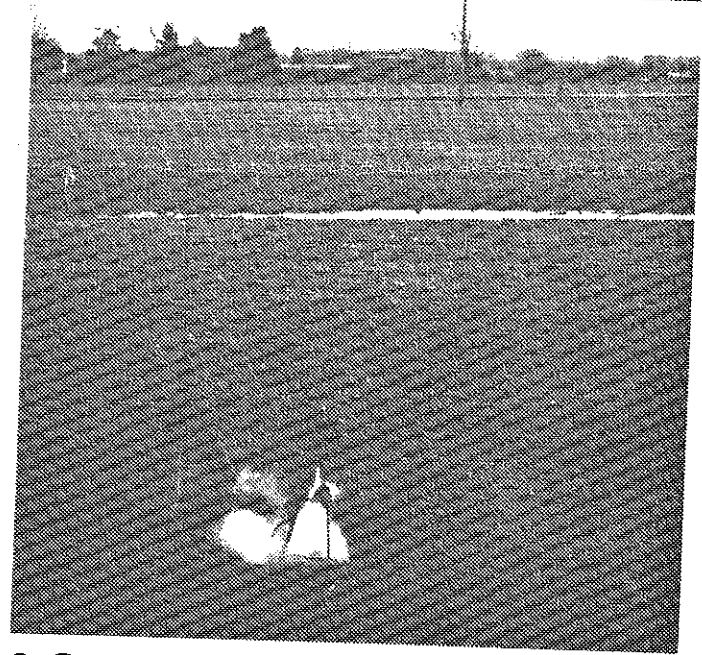
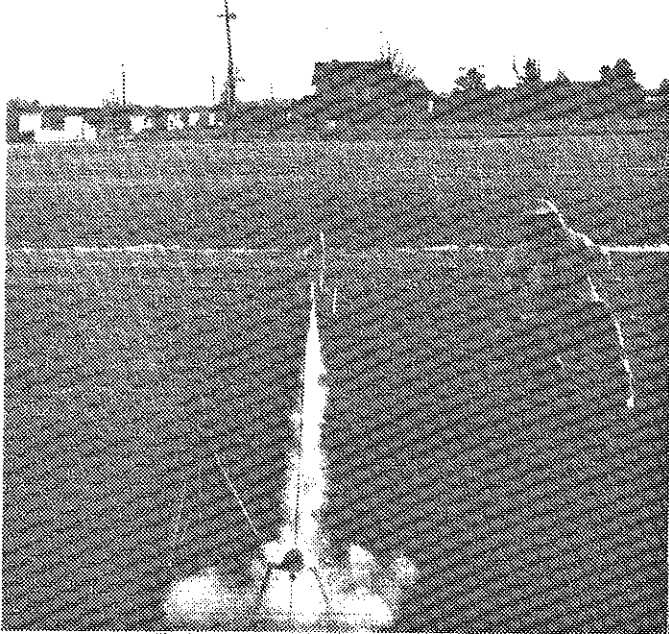
hinge line for  
pop-tail DT

wire hooks for DT rubber band

snuffer  
tube







## January 1st, 1992 Sport Launch

### Photos This Page

#### Left Column Top to Bottom

1. Andy Dowd preps his "Missile Toe" Gooney Bird for flight.
2. The Missile Toe at the top of the rod. Jay King in the background tries for an in flight photo of the rare Gooney Bird.

#### Right Column Top to Bottom

1. Ferenc Roka poses with his Gooney Bird.
2. Ferenc's Gooney at liftoff.

### Photos Next Page

#### Left Column, top to bottom

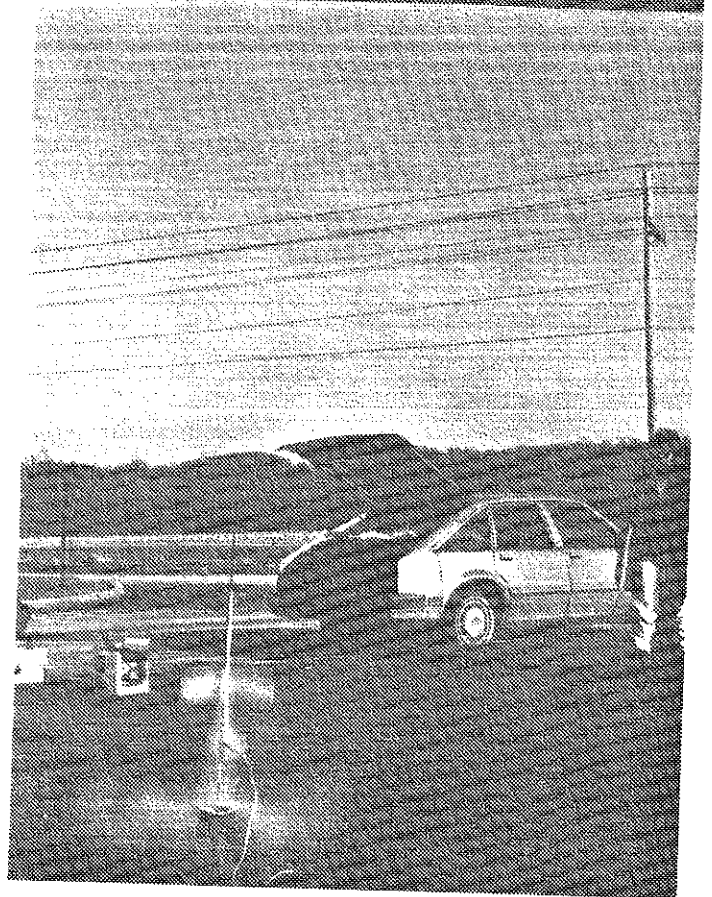
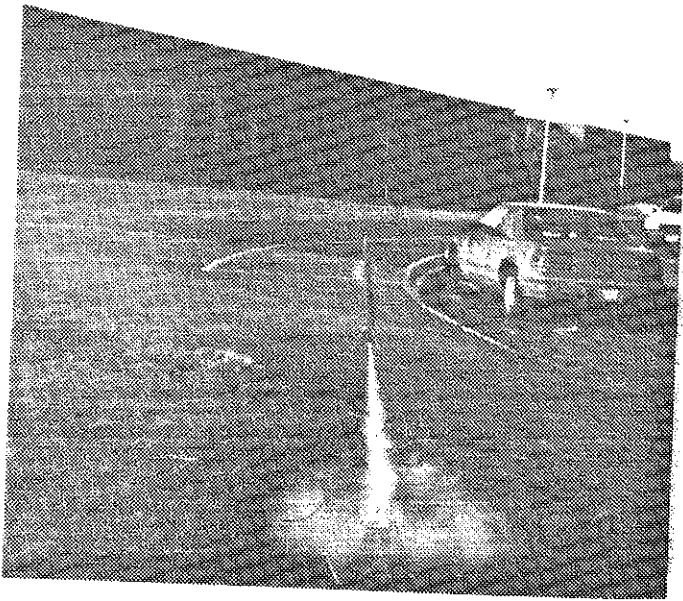
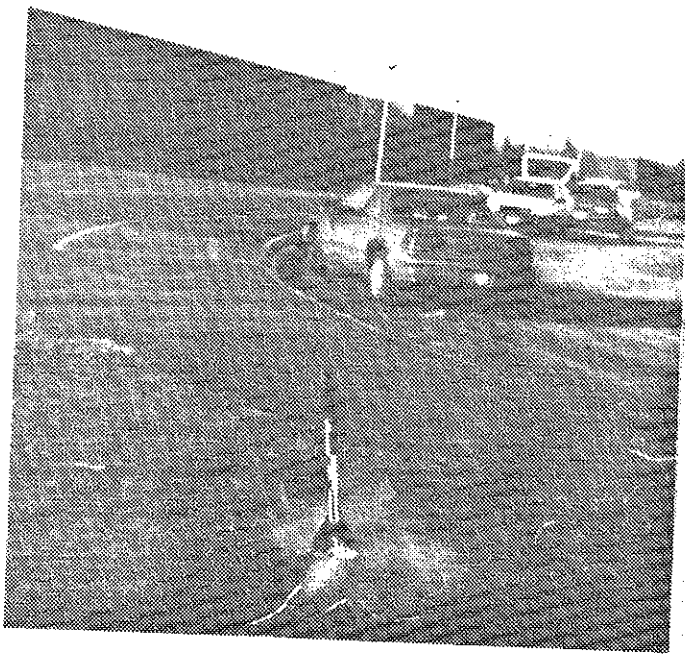
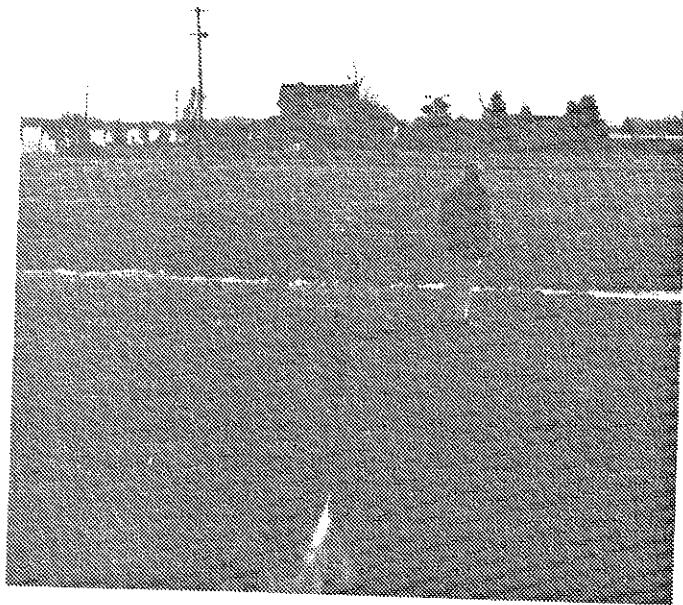
1. Jim Cost's Kodak35mm "Disposable" Camera Rocket lifts off under D12 power on its way to a picture of the school playground.
2. Bud Piscini's Estes Black Brant at ignition.

3. Matt Pompeii's "No Name Yet" orange rocket heads skyward.

#### Right Column, top to bottom

1. Jay King preps his mini engine B/G for its maiden flight.
2. Jay's glider on its way to a perfect boost but subsequent "Red Baron".





6 January 1992



## NARCON-92

6485 Ashton Park Place  
Colorado Springs, CO 80919  
(719) 599-9148



Dear NAR Senior Advisor or Section Leader:

The second annual National Association of Rocketry Convention (NARCON-92) will be held in Colorado Springs, Colorado. Due to budget constraints, this is the **only** letter sent to your NAR Section. Your address was obtained from the current section listing published by NAR. Please distribute this letter to any interested individuals in your section, including any others interested in rocketry. In particular, we also want to reach Tripoli and high power rocketeers as this NARCON will have a high power theme.

NARCON-92 will be held on 15-17 May 1992 at the Holiday Inn-Central in Colorado Springs. A preliminary agenda is available, as well as invited speakers and seminar guests. The convention will include a sports launch on 16 May for low and high power rocketry in either South Park (near Hartsel, Colorado) or at a National Guard test range. A FAA waiver to 18,000 feet ASL (about 9,500 feet AGL) is expected to be granted. This sports launch will also be an ISY sponsored high powered payload event for those active in the ISY calendar for 1992. An Estes/Centuri historical kit scale-up contest will be held during the convention (rules will be sent with the information packet). A tour of Estes will be conducted on 15 May in the afternoon accompanied by a sports launch at the Estes facility up to "G" impulses.

Please publish a notice in your next newsletter and announce our plans at your next club meeting. Interested individuals should contact David Nauer (corresponding secretary) at the above address for an information pamphlet. The time period selected should provide wonderful Colorado spring weather and an opportunity to tour the nearby attractions. Reservations to the Holiday Inn-Central should be made and confirmed before 15 April 1992 at (719) 473-5530 using the three letter code "NAR" for proper rates. The "800" national Holiday Inn reservation line should not be used. Guaranteed reservations can be cancelled up to 6:00 PM on 15 May 1992.

If you or anyone in your club is interested in presenting a seminar on a particular activity related to model rocketry or high power rocketry please let us know. We will consider all applications for seminars, but space and time will limit the number of seminars allowed. If you have any questions, please contact me as soon as possible. My home phone number is (719) 599-9148. Thank you for your time.

Sincerely,

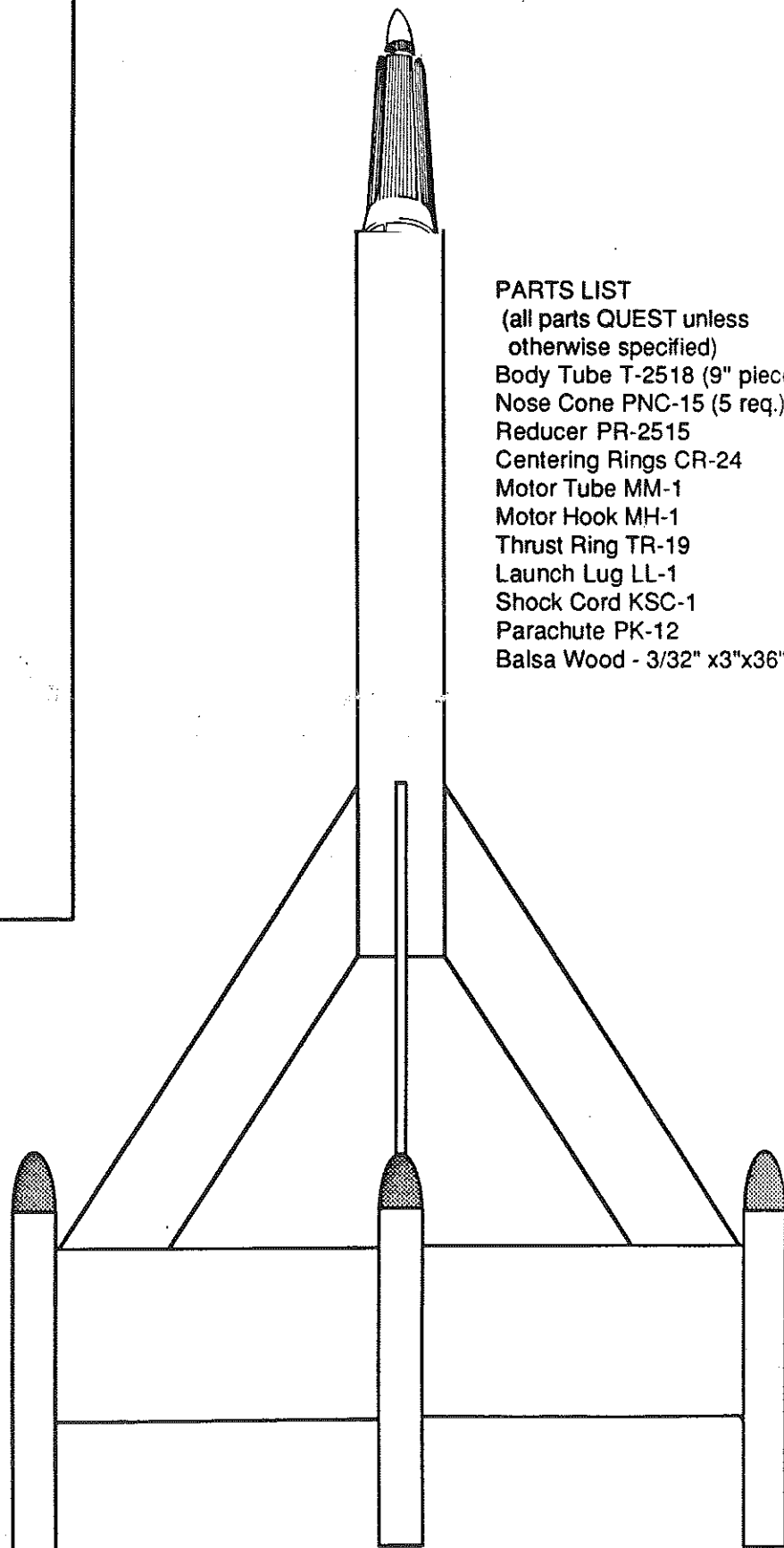
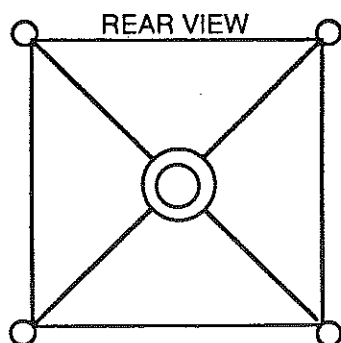
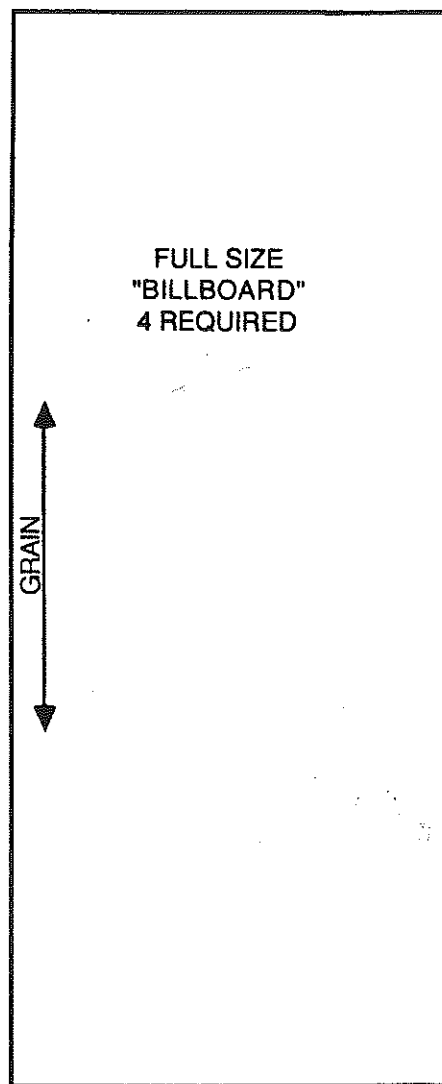
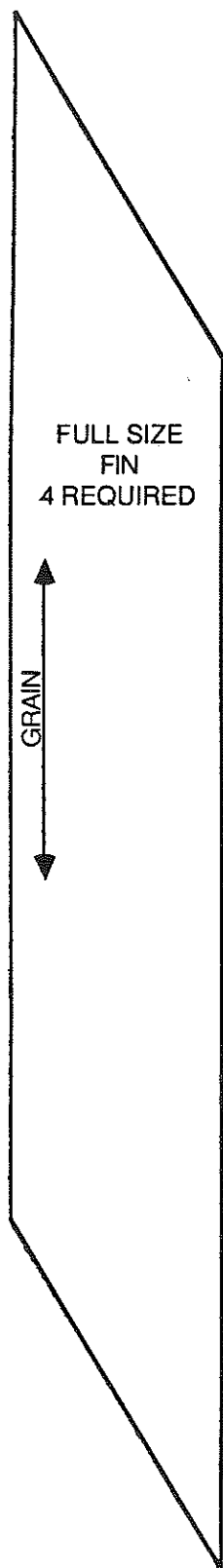
David J. Nauer  
NARCON-92 Corresponding Secretary

## **Billboard Sport Plan**

**Designed by Dan Wolf**

The Billboard was designed in the waning days of AVI back in the late 70s. AVI had acquired the former MPC line of kits, engines and parts and at the time was selling many of these items in "Bulk Parts Kits". The prices were quite low on the parts and engines when purchased this way. Yes rocketry was cheap in those days, unless you were one of the unfortunate few who had placed an order with AVI right before they went under ( they still owe me \$30). Anyway, AVI also was selling a variety of small stickers (about 1" x 3") suitable for sticking on range boxes. These stickers had all sorts of rocketry related slogans, artwork, etc. One day while thinking about what to do with these stickers and all of these bulk parts and engines I had ordered from AVI, the idea of building a rocket to display the stickers came to mind. The Billboard was born. In order to use up as many of the body tubes and nose cones as possible, at the end of each fin was a body tube with nose cone. Then to use up the stickers, the Billboard pieces were added that spanned the space between fins. The result, a unique looking rocket that flew great on the gross of B3-3 engines I also purchased in bulk at the time. It took second place at WISCON II in the original design contest. It still flies great and is always a crowd pleaser at demo launches (although some have renamed it the rocket powered box kite because of its appearance as it flies through the air). Now that QUEST Aerospace is here, you can build one from parts just like the original since the parts in there catalog match the old MPC/AVI parts. I got the dimensions by measuring the kit so you may have to make some minor adjustments to get everything to fit. Otherwise, assembly is straightforward. Of course Estes parts can be substituted as well but you won't be able to match the original's funky MPC nose cones. Now if QUEST brings back those range box stickers, the entire Billboard can be recreated.

# THE "BILLBOARD"



## PARTS LIST

(all parts QUEST unless  
otherwise specified)

Body Tube T-2518 (9" piece)

Nose Cone PNC-15 (5 req.)

Reducer PR-2515

Centering Rings CR-24

Motor Tube MM-1

Motor Hook MH-1

Thrust Ring TR-19

Launch Lug LL-1

Shock Cord KSC-1

Parachute PK-12

Balsa Wood - 3/32" x3"x36"

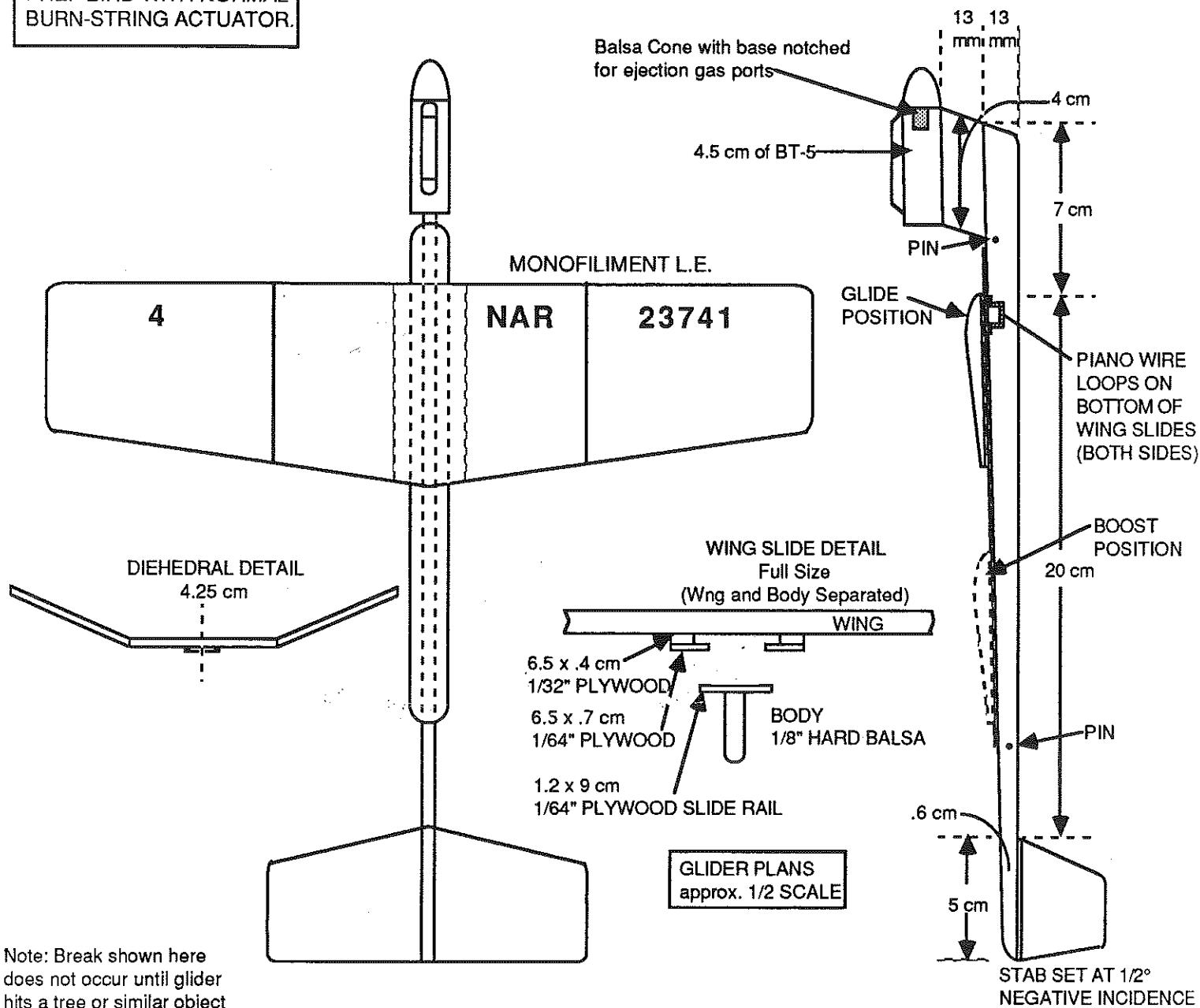
TEST FLIGHT OF 114 SEC.  
WAS MADE IN COLD (30°)  
WEATHER WITH 1/2A3-2T

PREP BIRD WITH NORMAL  
BURN-STRING ACTUATOR.

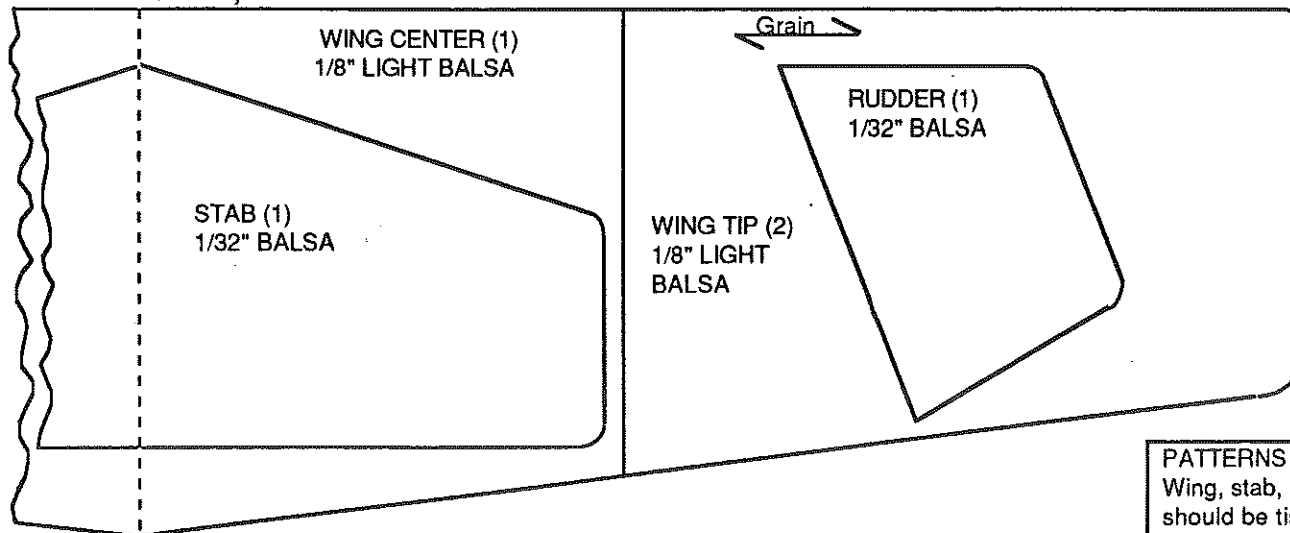
# STATUS - 4

1/2A - A R/G by TOM BEACH

Note: This plan first appeared in  
the March '79 issue of  
"View From ZENITH"; the former  
ZENITH Section (#137) Newsletter.



Note: Break shown here  
does not occur until glider  
hits a tree or similar object



PATTERNS FULL SIZE  
Wing, stab, rudder and Body all  
should be tissue covered

*Editors Note: I received the following item from David Pringle. It is the proposed interim changes to NFPA 1122 as related to model rocketry. Dave of course is a member of the NFPA and passed this along for our readers enjoyment.*

## Comments Sought:

### Four Proposed Tentative Interim Amendments

The following Tentative Interim Amendments (TIAs) have been proposed to the NFPA. They are being published for public review and comment. Comments should be filed with Arthur E. Cote, Secretary, Standards Council by the dates indicated below.

These proposed TIAs have also been forwarded to the responsible Technical Committees for processing. Comments received by the dates listed below will be considered by the Technical Committees before they take final action on the proposed TIAs. (Please identify the number of the TIA to which the comment is addressed.)

The Standards Council will then review the Technical Committee ballot results, the public comments, and any other information that has been submitted to determine whether or not to issue the Tentative Interim Amendment at one of its upcoming meetings.

A Tentative Interim Amendment is tentative because it has not been processed through the entire standards making procedures. It is interim because it is effective only between editions of the standard. A TIA automatically becomes a Proposal of the proponent for the next edition of the standard; as such, it then is subject to all of the procedures of the standards-making process.

#### NFPA 1122-1987

#### Code for Unmanned Rockets

TIA Log No. 369

Reference: 1-3, 3-1.1, 3-1.2, 3-1.3, 3-1.7, 3-1.11, 5-1.10

Comment Closing Date: November 25, 1991

#### 1. Revise the following definitions:

**Model Rocket.** A rocket that is propelled by a model rocket motor, that contains a device for returning it to the ground in a condition to fly again, whose structural parts are made of paper, wood, or breakable plastic and contain no substantial metal parts except nonexpendable, reloadable rocket motors as specified herein, and whose primary use is for the purposes of education, recreation, and sporting competition.

**Model Rocket Motor.** A solid propellant or pressurized liquid rocket motor that conforms to the standards for rocket motors as set forth in this code.

#### 2. Revise 3-1.1 to read:

A solid propellant rocket motor shall be a device produced by a commercial manufacturer and shall have all the propellant either preloaded into the motor casing if the solid propellant rocket motor is designed to be expendable, or available in premanufactured module(s) if the propellant is designed to be used in a reloadable, nonexpendable solid propellant rocket motor. The solid propellant rocket motor shall be designed in such a manner that the propellant (a) cannot be removed from the motor casing without destroying the rocket motor if it is an integral part of a solid propellant rocket motor that is designed to be completely expendable, or (b) is a premanufactured module intended to be easily inserted into a reloadable, nonexpendable solid propellant rocket motor. Delay trains and ejection charges may be included as an integral part of the motor or may be preloaded and packaged separately if (a) the auxiliary packages are pre-assembled units containing all the remaining combustible material, and (b) the auxiliary packages are so designed that an individual would have no difficulty handling and using them safely.

#### 3. Revise 3-1.2 to read:

A solid propellant rocket motor shall be designed so that the temperature of the external surface of the motor casing shall not exceed 200 °C (392 °F) during or after operation.

#### 4. Revise 3-1.3 to read:

A solid propellant rocket motor shall be so designed and constructed that, if it should rupture, it will not project any casing fragments beyond a radial distance of 10 feet for motors of less than 30 newton-seconds total impulse, or 20 feet for motors with total impulses equal to or greater than 30 newton-seconds. A solid propellant rocket motor shall be so designed and constructed that its primary failure mode shall be along the longitudinal axis of the motor — that is, the rocket nozzle shall blow out, for example.

#### 5. Revise 3-1.7 to read:

A solid propellant rocket motor type whose performance deviates from the sample test criteria and performance limits detailed above (a) within 1 year from the date of manufacture for expendable, non-reloadable rocket motors, and (b) within 1 year of the manufacture of the propellant module(s) used in nonexpendable, reloadable rocket motors shall be withdrawn from commercial sale and redesigned to provide reliable operation when ignited within a period of 1 year from the date of motor manufacture or propellant module manufacture. An expendable, non-reloadable rocket motor shall have imprinted upon its exterior surface the date of manufacture or equivalent coding, and the reloading kit for a nonexpendable reloadable rocket motor shall have imprinted on its package the date of manufacture or equivalent coding.

#### 6. Add a new 3-1.11 to read:

The package containing the reloading kit for use in a nonexpendable reloadable rocket motor shall have visible identification that will identify the motor casing type in which it must be installed. The package containing the reloading kit shall display instructions that the kit shall not be opened until the user is ready to install the reload kit parts, including the propellant module(s), in the nonexpendable reloadable motor casing.

#### 7. Revise 5-1.10 to read:

Reloading any expendable, disposable solid propellant rocket motor with any material once said motor has been operated, and reloading any reloadable, nonexpendable solid propellant rocket motor with any material or by any means not specifically provided or recommended by the manufacturer.

8. Replace Paragraph A-2 of the Appendix with the following new version of the Model Rocket Safety Code of the National Association of Rocketry and the Model Rocket Manufacturers' Association adopted in February 1991:

#### "NAR/MRMA MODEL ROCKET SAFETY CODE

1. **Materials.** My model rocket will be made of lightweight materials such as paper, wood, rubber, and plastic suitable for the power used and the performance of my model rocket. I will not use any metal for the nose cone, body, or fins of a model rocket.

2. **Motors.** I will use only commercially-made NAR certified model rocket motors in the manner recommended by the manufacturer. I will not alter the model rocket motor (engine), its parts, or its ingredients in any way.

3. **Recovery.** I will always use a recovery system in my model rocket that will return it safely to the ground so it may be flown again. I will use only flame resistant recovery wadding if wadding is required by the design of my model rocket.

4. **Weight and Power Limits.** My model rocket will weigh no more than 1,500 grams (53 ounces) at liftoff and its rocket motor(s) will produce no more than 320 Newton-seconds (4.45 Newtons equals 1.0 pound) of total impulse. My model rocket will weigh no more than the motor manufacturer's recommended maximum liftoff weight for the motors used, or I will use motors recommended by the manufacturer for my model rocket.

5. **Stability.** I will check the stability of my model rocket before its first flight, except when launching a model rocket of already proven stability.

6. **Payloads.** Except insects, my model rocket will never carry live animals or a payload that is intended to be flammable, explosive, or harmful.

7. **Launch Site.** I will launch my model rocket outdoors in a cleared area, free of tall trees, power lines, buildings, and dry brush and grass. My launch site will be at least as large as that recommended in the following table.

LAUNCH SITE DIMENSIONS

| Installed Total Impulse<br>(Newton-seconds) | Equivalent<br>Motor Type | Minimum Site<br>Dimensions (feet) |
|---|--------------------------|-----------------------------------|
| 0 — 1.25                                    | 1/4 & 1/2A               | 50                                |
| 1.26 — 2.50                                 | A                        | 100                               |
| 2.51 — 5.00                                 | B                        | 200                               |
| 5.01 — 10.00                                | C                        | 400                               |
| 10.01 — 20.00                               | D                        | 500                               |
| 20.01 — 40.00                               | E                        | 1000                              |
| 40.01 — 80.00                               | F                        | 1000                              |
| 80.01 — 160.00                              | G                        | 1000                              |
| 160.01 — 320.00                             | 2Gs                      | 1500                              |

8. **Launcher.** I will launch my model rocket from a stable device that provides rigid guidance until the model rocket has reached a speed adequate to ensure a safe flight path. To prevent accidental eye injury, I will always place the launcher so the end of the rod is above eye level or I will cap the end of the rod when approaching it. I will cap or disassemble my launch rod when not in use and I will never store it in an upright position. My launcher will have a jet deflector device to prevent the motor exhaust from hitting the ground directly. I will always clear the area around my launch device of brown grass, dry weeds, or other easy-to-burn materials.

9. **Ignition System.** The system I use to launch my model rocket will be remotely controlled and electrically operated. It will contain a launching switch that will return to "off" when released. The system will contain a removable safety interlock in series with the launch switch. All persons will remain at least 15 feet from the model rocket when I am igniting model rocket motors totalling 30 Newton-seconds or less of total impulse and at least 30 feet from the model rocket when I am igniting model rocket motors totalling more than 30 Newton-seconds of total impulse. I will use only electrical igniters recommended by the motor manufacturer that will ignite model rocket motor(s) within one second of actuation of the launching switch.

10. **Launch Safety.** I will ensure that people in the launch area are aware of the pending model rocket launch and can see the model rocket's liftoff before I begin my audible five-second count down. I will not launch a model rocket so its flight path will carry it against a target. If my model rocket suffers a misfire, I will not allow anyone approach it or the launcher until I have made certain that the safety interlock has been removed or that the battery has been disconnected from the ignition system. I will wait one minute after a misfire before allowing anyone to approach the launcher.

11. **Flying Conditions.** I will launch my model rocket only when the wind is no more than 20 miles per hour. I will not launch my model rocket so it flies into clouds, near aircraft in flight, or in a manner that is hazardous to people or property.

12. **Pre-Launch Test.** When conducting research activities with unproven model rocket designs or methods I will, when possible, determine the reliability of my model rocket by pre-launch tests. I will conduct the launching of an unproven design in complete isolation from persons not participating in the actual launching.

13. **Launch Angle.** My launch device will be pointed within 30 degrees of vertical. I will never use model rocket motors to propel any device horizontally.

14. **Recovery Hazards.** If a model rocket becomes entangled in power line or other dangerous place, I will not attempt to retrieve it.

9. Delete Section A-3.

10. Add Section A-4 to the Appendix as follows:

A-4 **User Age Recommendation.** Reloadable solid propellant rocket motors should be used by persons 16 years of age and older.

A copy of the results of the test on reloadable rocket motors conducted near Las Vegas, Nevada on June 6, 1991 is available at NFPA, Standards Administration.

**Submitter's Reason:** The reason for this TIA is the development of a new type of model rocket motor. Rapid progress in solid propellant rocket motor technology during the past 5 years has made reloadable solid propellant rocket motors possible. This was not foreseen as recently as the last revision of NFPA 1122, which took place in 1985. Members of the Technical Committee on Pyrotechnics attended and conducted tests relating to the safety of reloadable solid propellant rocket motors near Las Vegas, Nevada on June 6, 1991. The reloadable feature was common in solid propellant rocket motors used to propel model aircraft when the original NFPA 44L, Code for Model Rockets, was developed in 1966-1968. However, because these low-thrust model aviation units were unsuitable for model rockets, they were not addressed in NFPA 44L, which was renumbered to NFPA 1122 in 1976. It is critical that timely temporary amendments be made to NFPA 1122-1987 to regulate and standardize the products of this new technology under NFPA 1122 rather than have them existing in limbo with no nationally recognized standard pending the complete revision and update of NFPA 1122 planned to commence in late 1991 and finalized by the NFPA in 1993.



## Events Calendar

Model Rocketry related events in the Upstate New York or of interest to rocketeers of this area are listed below. If you have an upcoming model rocket event planned, send info to the editor.

February 21st, MARS Club Meeting.

Regularly scheduled club meeting. Agenda: NYSPACE-92 planning and officer elections are among the items on the agenda.

Location: Dan Wolf's house.

Contact: Dan Wolf 458-3848.

**March 13, MARS Club Meeting.**

Regularly scheduled club meeting. Note move from the 3rd Friday of the month to the 2nd Friday.

**June 6-7 NYSPACE-92 (New York Spacemodeling Annual Championship & Exhibition) Regional.**

Events: 1/2A Altitude, C Super-Roc Altitude, 1/4 A PD (MR), 1/4A B/G, A R/G, B Eggloft Duration, Sport Scale, Open Spot Landing. Special NYS Section Champion Award.

Contact: Dan Wolf 458-3848.

**June 13-14 WUBBA 15 Regional.**

Events: B HD MR, 1/2A R/G MR, E SR Dur, 1/4A PD MR, 1/2-A FW MR, FAI S6A (A SD).

Contact: Art Rose, 8 Sandusky Rd. New City, NY  
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