

THE LEADING EDGE

SPECIAL
INFLATED
NARAM
ISSUE



Hi you all, my name
is POGO POSSUM AND
I WANT TO WELCOME
YOU TO MY NECK OF
THE SWAMP FOR
NARAM 1/24. SO
KEEP DRY, STAY AWAY
FROM GATORS AND
TRY TO HAVE FUN!

COMPLETE
SATURN V
DATA!

LONG, LONG AGO . . .

REMINISCING NARAM 17 BY BUNNY

For us long-time competitors, NARAM-24 will mark a homecoming of sorts. Dick Fox and Orlando hosted the Nats in 1975. Like any other NARAM, it generated quite a few war stories for swapping at those inevitable all-night bull sessions.

The field was the main source of inspiration. While flat and of adequate size, it had sufficient water to be classified as a reservoir. Oh, you could find the "high ground" here and there. It consisted of fire ant hills. The water and ants figured in two of the funniest war stories I remembered from NARAM 17. Guppy Youngren figured in both.

At the annual Sunday afternoon demo launch, I decided to inspect the field with Guppy and Chris Flanigan. We "struck" water almost immediately after leaving the crowd, and began to try and circle around a large puddle. That's when we found the fire ants. Guppy went beserk, kicking over the 1' high mounds whenever he found them, screaming "I hate fire ants!". Flanigan, a Florida native, offered the opinion that kicking into active fire ant colonies wasn't too smart. Three minutes later, Guppy was rolling up his pants and slapping frantically; ants had crawled up his legs and were biting away. "I told you they wouldn't like it when you kicked their houses down" admonished Chris.

Monday brought out tracking events. Since Gup and I had some experience dealing with the water, we volunteered to help set up the baseline. As we moved out farther and farther, the water got higher. First the ankles, then the knees, and finally the waist! "OK," barked the walkie-talkie, "you're at 300 meters. It's ok to stop!" Tracking in three feet of water didn't seem to be too smart, so we pressed on. Guppy kept looking for a dry spot, all the time muttering, "Gbd, I hope there aren't any leaches in this water. I hate leaches!". I was worried about coral snakes, but since local wildlife expert Flanigan wasn't around, it was hard to say which one of us was looking for the most likely threat.

Other competitors found more interesting Florida creatures when trying to recover models. One NOVAAR member had a good eggloft flight all sewed up until huge spiders and their webs made him forget all about the possibilities of a place in some stupid rocket contest. Relax. Those stories about an alligator are all false.

Tracking was a riot. It was my first try at tracking at the NARAM. I took the first shift, waded out and tracked for 3 hours. The fire ant hill directly beneath the tracker was a small one, and any curious ants that inspected my legs were promptly drowned nearby. After two rockets were launched with no prior warning (I tracked them both, by the way) I requested a replacement. An 8 year old "Orange Rocketeer" responded. When told Guppy was on the way, I decided to wait. The lad was upset that his walk was for naught, but since he'd never tracked before and couldn't see the flights. . . . When Guppy arrived, the lad demanded "Have you ever tracked before?" Gup, a long time tracking veteran replied, "Never in my life."

There were some good flights, too. I flew Gup's pulse RC ship for over 20 minutes in a thermal so strong we couldn't spiral it in. Gup's RC RG stole the show in Hawk RG while George Gassaway's flexie broke onto the scene in Sparrow. My Klingon Battle Cruiser PM established a reputation that lives on until today.

On the serious side, NARAM-17 marked a second National Section Championship for my old club, the Richmond Vikings, and a Reserve Championship for T 159, Bändick and Justis. More important than any of these was the Association meeting.

Things were not well. The Rocketeer was behind schedule, membership was down, and only four Trustees had shown up. After an evening of bitter complaints, Les Butterworth, one of the founders of the NAR, spoke. In a few simple words, he made it clear that the fate of the NAR was under our control, and that only hard work by dedicated people would change things. I made a commitment then to try and help. Whenever I get discouraged, I think back to that, most memorable moment of NARAM-17. May NARAM-24 provide you with equally significant inspiration.

MODEL OF THE MONTH WINNERS



The May Model of the Month winner is Tom Pastrick and his F-104 plastic conversion. Congratulations, Tom!



The June Model of the Month winner is Scott Schmitt and his Estes Phoenix. Congratulations, Scott!



THE LEADING EDGE

is published bimonthly by and for members of the Northern Illinois Rocketry Association (NIRA), NAR Section #117, and is dedicated to the idea that Model Rocketry is FUN! Suggestions for articles and plans are welcome. Articles, plans, other newsletters and news items of interest should be sent to the editor:

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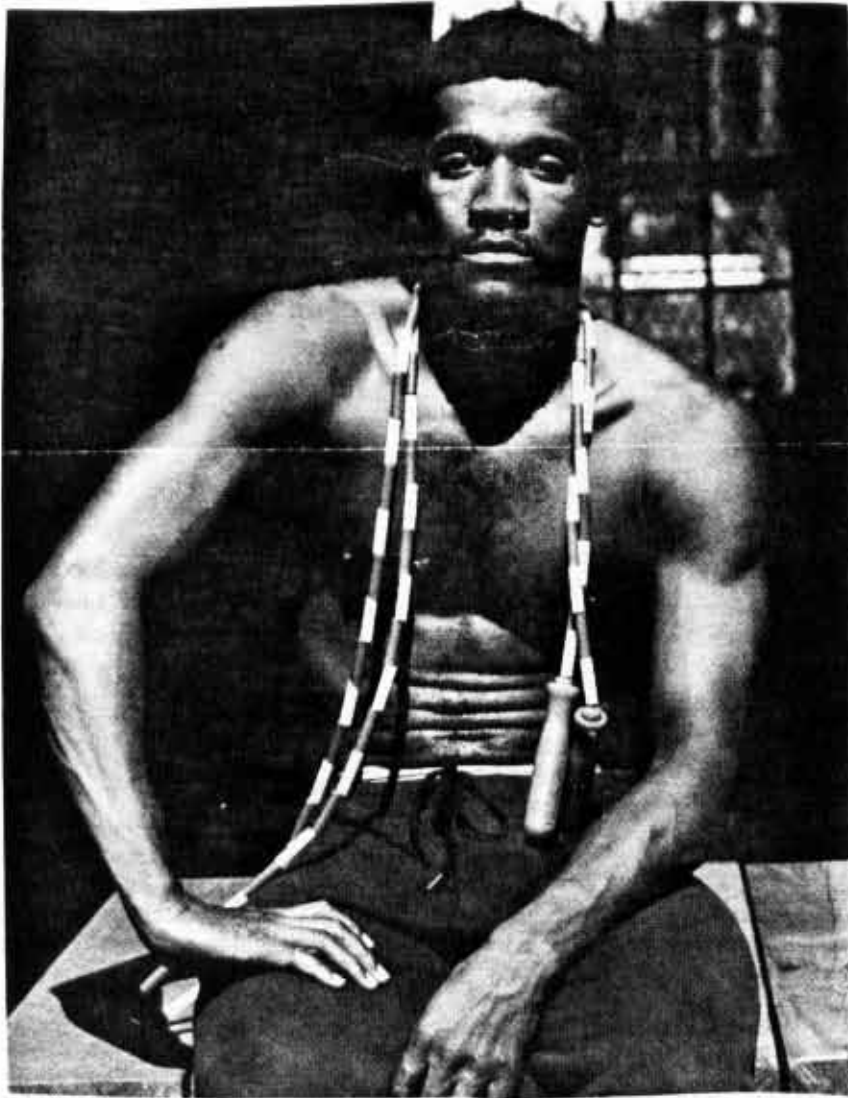
Any material in the Leading Edge may be reprinted if proper credit is given.

CONTRIBUTORS

MARK BUNDICK
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PAT PETERSON
RIC GAFF

POETRY CORNER

BY TYRONE GREEN



DARK AND LONELY ONE NARAM NIGHT
KILL MY CD. KILL MY CD.
FIRE ANTS MARCHING. DO THEY BITE?
KILL MY CD. KILL MY CD.
SLIP IN HIS MOTEL ROOM, BREAK HIS NECK.
THEN HIS MODELS I START TO WRECK.
HAVE NO REASON, WHAT THE HECK!
KILL MY CD. KILL MY CD.

C. I. L L my CD

THANK YOU

Tyrone Green



BRING NEW LIFE TO JUNKY OLD ROCKETS

I was almost ready to start the final finishing of "TOR". I quickly attached the rest of my scribed plastic sheeting, and moved on to the rear of the model. I sanded away most of the burned areas. Plastic Wood came on again to fill in the holes. After sanding this down, I coated the dried putty with sandable aliphatic resin glue. This provided a very smooth surface. I even went back over other Plastic Wood areas on the model and applied the glue.

The large shroud between the SIV-B and Service Module represents the area where a docking target was stored for the Apollo VII flight. The shroud was a clamshell separating into four pieces to allow access to the target. I simulated the separation panels with 80 lb. test monofilament. It worked just great.

I gave the model a good overall sanding with 320 grit, and prepared to apply a base coat of paint to seal everything. I experimented with a new primer; appliance epoxy paint. You can find this paint in the hardware section of K-Mart. I sprayed on a fairly heavy coat, let it set up for 20 minutes then put on another coat. The epoxy filler covered a multitude of sins on the model, and is the single biggest factor responsible for the good overall appearance of the finished model. My only regret was not putting a coat of dope on all that balsa. It would have cut down on the fuzziness a bit.



Overall shot showing brown epoxy primer.



Bunny shows off the nearly complete Estes Saturn I-B.

I gave the wooden parts of the bird one final sanding, then got ready for color coats. For color painting, I might have used my airbrush and my favorite acrylic paints. But I went with the slightly more available alternative; Krylon spray. It worked great, and went on in a fairly heavy coat without runs. I had to use two coats to cover the brown primer. I let the paint dry for several days, then started masking.

The IB has more color break lines than Carter has pills. It took the better part of three hours to get everything masked off properly. To get the correct paint pattern, I used NARTS Saturn data, the Centuri kit instructions and Estes kit plans. (I managed to buy the Estes plans at MFP.) Krylon black did the rest.

After removing the masking, I touched the few blemishes with acrylics. I did notice that the model was difficult to paint well. All those shapes, crevices and nooks meant looking over the model before I quit painting to make sure everything got covered.



Bunny applies rub-ons to replace decals no longer available.

Now came the finishing touch. Remember the decals we scraped away? How are you supposed to replace them on a kit that's out of production? I got red rub-on letters in $\frac{1}{2}$ and $\frac{3}{4}$ " sizes and spent a very pleasant couple of hours putting on "UNITED STATES" and "USA". I also drew up oversized sway motion targets, then photo-reduced them to the right size on my employer's Xerox. A bit of Ambréid's held them in place. A couple of coats of Dullcoat held everything in place.

I still have the capsule tower to finish, and there's some aluminized mylar to put on the Service Module, but it's clear the old Estes kit has been pretty well restored to its prime. All you Model of the Month winners better look out.

Now that our first TOR project has come to a close, it's time to total up the score and see where we went right, and where we went wrong.

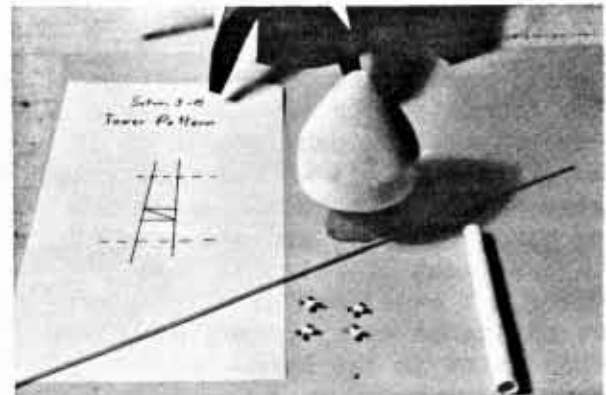
Pluses include Plastic Wood. I used this filler effectively in lots of ways. It has a place in your workshop, and is inexpensive. Paint remover worked well, too. If I had to do the job over, I'd remove every bit of paint from this model. Built-up fins, while time consuming, insure long life and good finishing. Epoxy paint sealed things quite well, and saved many hours over dope and sealer.

Minuses include that scribed sheeting. When coupled with the balsa strips, it was totally out of scale. I should have stuck with the strips throughout the model.

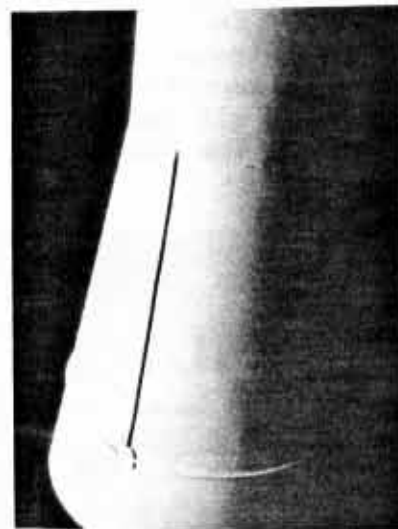
Don't mix sizes! The balsa strips were also a sore point. They did the job in improving the corrugations, but took too much time. Next time, I'll use basswood or spruce strips that are pre-cut. Finally, I never did get those nozzles done. Paper shrouds, nosecones cut down to size, and even Mattel Vacu-form

attempts failed. I couldn't get the right combination of strength and good looks necessary to justify putting them on. Lastly, the Competition Chute I bought won't do. With the details, plywood fins and epoxy paint, the model was too heavy for the 55 gram chute to fit. Sigh. It'll just have to go into my Little Joe.

Overall, "This Old Rocket" lived up to my expectations. The model, no longer available, was worth saving, and was sturdy enough to be restored. I found out about a lot of new products I'd never used before, and had a good time doing the work. I've already got a couple of ideas for the next "project". So send us your ideas and experiences. And stay tuned for the new "This Old Rocket"!



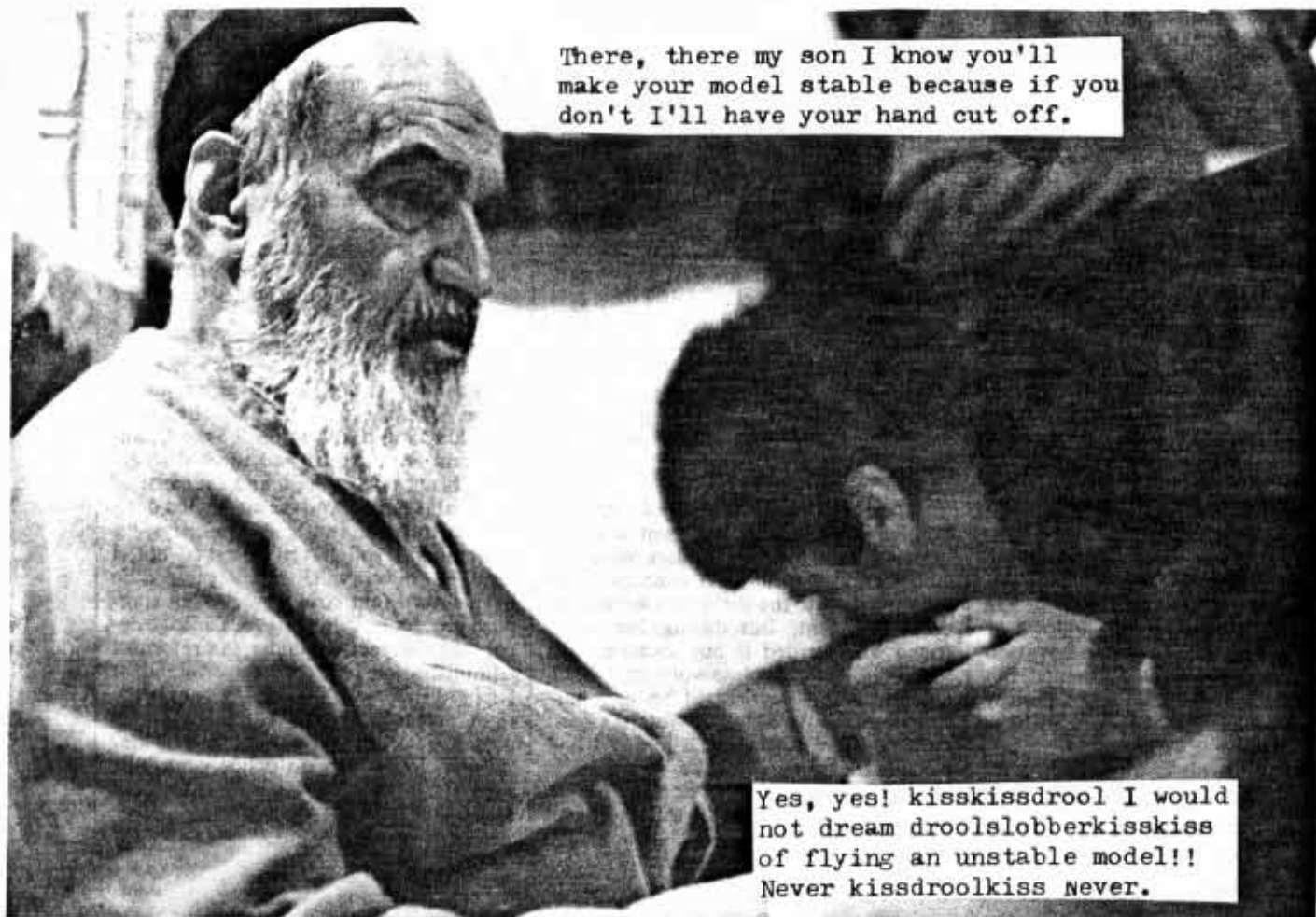
Hand made Apollo capsule parts.



Close-up of 80 lb. test monofilament detail on shroud.



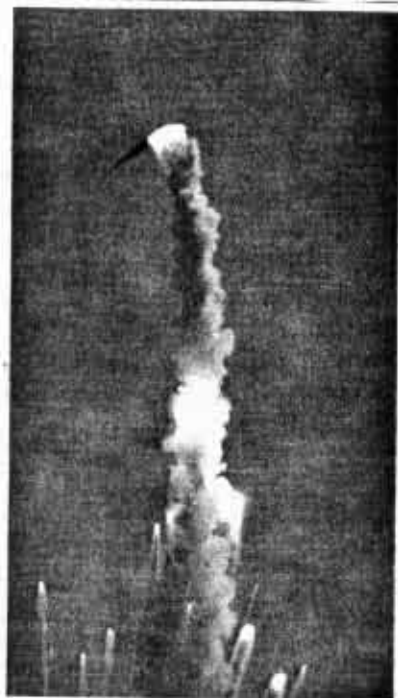
PORTRAIT OF AN RSO



There, there my son I know you'll make your model stable because if you don't I'll have your hand cut off.

Yes, yes! kisskissdrool I would not dream droolslobberkisskiss of flying an unstable model!! Never kissdroolkiss never.

Cole Meany is the consummate RSO; hard, ruthless, unbending, the iron fist in the iron glove, a real schmuck.



Boy, you keep flying those models of the Great Satan and I'll see to it that you remain a boy, permanently!

You can bet heads will roll, literally!!

MID WEST

REGIONAL

CHAMPIONSHIPS



82

JEDI
GEORGE

DA WINNERS! Left to right:
Dual Egglofters (Bullet Bob and
Missouri Jones), C Division,
Pat Peterson (2nd in B), Dave
Enos (A).

"Gentlemen, ignite your engines!"

Question: What famous event is held each year in the Midwest at the end of May? If you answered "the Indy 500", it's time to trade in your Porta-Pad for a crash helmet. If you answered "the Midwest Regional Championships", you win a set of Tourister luggage and a fully paid trip to Chad, Africa.

MWRC-82 got off to a slow start when fog and wind greeted ~~the~~ contestants Saturday morning. The fog quickly lifted, and the ~~the~~ contest started. High winds and muddy fields combined to make Parachute Spot Landing an interesting event. Some people, mainly those unfortunate enough to be part of the measuring team slogging around the mud, complained about CD Bunny's decision to measure every flight, no matter where they landed. Tom Pastrick paced the crowd in the event, but was DQ'ed when his chute didn't fully deploy. The Dual Eggloft team of Alan "Missouri" Jones and "Bullet" Bob Kaplow accelerated into first in C Division landing 152 feet from the ~~starting~~ ~~the~~ spot. Steve Sangerman posted the best ~~lap~~ ~~the~~ flight landing a mere 32 feet away. Steve was smart. He used the same pad as Tom, and got equally good results.

Strategy-wise, most people seemed to be ~~the~~ flying whatever old rocket they had. Only Tom had any sort of strategy. (Practice, practice, practice!) Most flights were either over powered or used too large a chute. Look at the results. The event is really worth and flown too little to encourage any effort on the part of contestants.



Surprized that Garfield likes a good prang? It was Bob's!

1/4 A International SD was a bit below average. Most times were in the 30-50 second range with few maxes. Even Sykos Streamers were not performing well in Saturday's wet ~~the~~ skies. Howard Olsen showed what consistent ~~the~~ flying will get you. He took A Division with three qualified flights averaging about 36 seconds. Chris King took B Division in the same manner. And Jim Zingler, the C winner, was the only guy with three qualified flights! C Helicopter Duration was dominated by Don Quixotes' but also saw quite a few DQ's.

8

A's consistent swing-wing RG
 g also took all three divisions
 of RG. Mark Schmitt had a very nice
 ang here.

NIRA took its revenge in B International
 EG. Larry London took B with 100 seconds,
 and the EG Team blew everyone away
 with 374 seconds. (Lost both models, you
 turkeys! - RG) NIRA gave them Schmitt
 in A with 99 seconds.

Sunday was perfect with blue skies
 for tracking. D Altitude models went
 really ~~fast~~ high. The Dual Egglofters
 were the best with 598 meters.

Jim Zingler had a super 224 meter
 C Eggloft flight and won by a very
 comfortable 63 meters. Ric Gaff had
 210 until his egg came back cracked.

Space Systems was flown last.
 Things were very close and flight
 points made all the difference in C.
 Hunny didn't make things easy as he
 laid out a minimum sized landing area.
 Pat Peterson's good static points from

an Aerobee 350 earned him a first over
 Chris King's Raytheon Hawk. The Dual
 Egglofters used an E20 powered Centuri
 Saturn I-B to edge out the EG Team and
 and Tom Pastrick. Ric Gaff had a very
 nice flight on an PSI Black Brant, but
 came up short on static points.
 After everyone's systems were spaced,
 the checkered flag was waved and the
~~race~~ contest was over.

David Enos dominated A Division
 winning 579 big points. Chris King
 eaked our a 9 ~~seconds~~ point win over
 Pat Peterson, 672 to 663. The Dual
 Egglofters refused to crack under
 pressure and beat the EG Team with
 516 points.

A special thanks to everyone who
 timed, tracked, judged and helped out
 running the range. ~~Special thanks to~~
~~the pit crew.~~ The improvements at Bong
 are all for the better, and MWRC 83
 (that rhymes!) should be an even better
~~race~~ contest.

MWRC-82

A DIVISION	PSL	D ALT	C EL A	1/2 AISD	C HD	F RC	B IEG	SPACE SYS	POINTS
1. David Enos	641-2	UNS/405-2	SP/SAF-*	22/24/26-2	85/82 -1	38/ 28-1	NG/ 42/ 32-2	***	579
2. Howard Olson	CHU-*	489/499-1	BRK/SAF-*	38/32/42-1	78/SEP-2	NG/ -*	***	***	270
3. Mark Schmitt	CHU-*	SAF/T -*	SAF/TL -*	44/NDP/NDP-4	UNS -*	PRG/ -*	34/ 65/UNS-1	***	204
4. Steve Sangerman	32-1	MIS/NC -*	***	28/12/23-3	***	***	ENG -*	***	78
B DIVISION									
1. Chris King	***	NC/TL -*	207/BRK-1	33/44/39-1	ROT/NR -*	52/ -1	NG/ 95/ -2	685/190/186.2-2	672
2. Pat Peterson	428-1	TL/316-2	195/BRK-2	60/SEP/54-2	50/ND-1	NG/ -*	SP/ 45/ 75-3	750/200/NC -1	663
3. Larry London	SEP	388/ - -1	161/ -3	37/NDP/32-3	***	***	53/ 47/ RB-10	***	330
C DIVISION									
1. Dual Egglofters	152-1	598/ TL-1	157/SAF-3	SEP/NDP/43-6	47/UNS-4	104/NG -3	NG/67/*** -4	825/190/227.4-1	516
2. EG Team	163-2	***	112/***-7	UNS/59/51-2	97/ 92-2	NR/NVE -*	128/75/171 -1	680/180/ NC -2	504
3. Al Nienast	758-3	TL/477-3	152/SAF-4	LST/SEP -*	148/143-1	83/57 -1	NG/58/***- 6	740/180/ NC -4	444
4. Jim Zingler	CHU-*	512/***-2	224/ NC-1	45/36/36-1	NR/NR -*	55/51 -2	NG/ NG/ NG-*	690/175/ TL -*	378
5. Tom Pastrick	CHU-*	UNS/UNS-*	128/121-6	60/49/SEP-3	***	81/*** -5	NG/ 52/156-2	755/190/ 41.6-3	252
6. Ric Gaff	***	UNS/313-5	***	SEP/37/31-4	***	16/70 -4	58/ 64/69 -3	595/200/ NC -6	135
7. Zeemacoz Team	1062-5	298/ NC-6	161/120-2	32/SEP/SEP-*	ROT/***-*	47/39-4	65/***/***-5	***	102
8. Chuck Hoffman	***	NC/***-*	SAF/***-*	21/**/**-8	33/ 56-3	29/***-6	***	***	60
9. Tim Vaccaro	167-3	380/314-4	142/NC -5	SEP/20/25-5	SEP/***-*	NG/ NG-*	18/ NG/ 14-7	***	24

Other Data: Misfires - 13; Catos - 1; Tracking flights - 59; Track Lost - 6; No Close - 10

KEY: BRK - Broken egg
 CHU - No chute
 HNG - Hung on pad
 LST - Lost by timers
 MIS - Three misfires
 NC - No close
 NDP - No deployment
 NG - No glide
 NR - No return
 NVE - Non-vertical boost
 PRG - Power prang
 ROT - No rotation
 SEP - Separation
 SP - Spit engine
 TL - Track lost
 UNS - Unstable
 SAF - Unsafe Flight

SECTIONS: NIRA - 2,469
 WWAH - 2,403

NOTE: Space Systems results are:
 Static points/flight points/adjusted altitude



The Dual Egglofters ("Missouri" Jones and "Bullet" Bob) With their first place Space Systems Centuri Saturn I-B.



"It's wayyyyyy the heck up there!" Jim and Al keep an eye on a D Altitude model's flight.

M
W
R
C



John McDaniel (Zeemacz Team) prepares to snatch a 2nd in eggloft.



Judy Kaplow helped keep the range operating smoothly. Sorry, Judy. The line's busy right now.



Mark Schmitt with his semi-scale Redstone egglofter; Tom stands by.



Bunny takes a break to pose with the E Team's Centuri Mercury-Redstone.

Al Neinast's Astrobee D Takes off. Model grapped a fourth place.

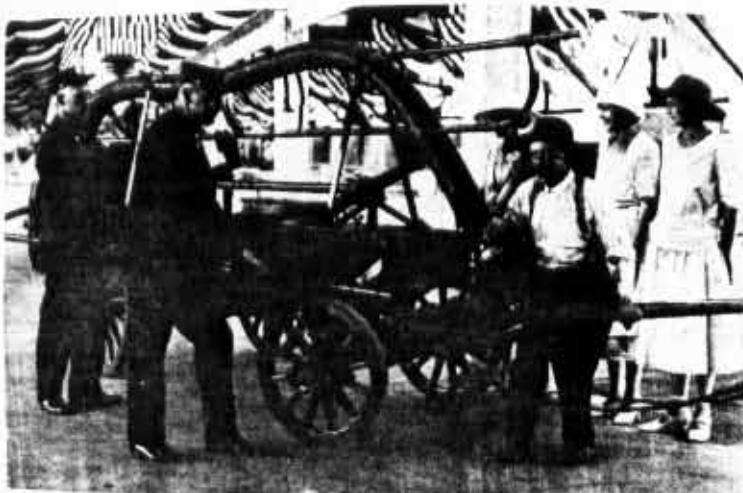
ROCKET NEWS

ALL THE NEWS, PRINTED TO FIT



PENROSE, CO Estes Inds. recently announced their development of Rocket Powered People. An Estes spokesman stated "we feel this is a very natural kind of high, living in Colorado we know all about being high!". NAR President J. Pat Miller, shown here at premire demo launch, stated "you see 20 rocket powered flying people you've seen them all".

TIMEUKTU, NOWHERE The National Rocketry Association, a newly formed organization, recently held a fund-raising beauty pageant. Bertha Parks, formerly Bert Parks before a recent trip to Denmark, is shown tatooing the NRA emblem onto the backs of the losers. Miss Parks when asked for a comment said "this is really the most asinine thing I've ever done, how low can a person get?"



SOPHIA, BULGARIA The greatest advance in model rocket technology was unveiled recently at the Rocketplatzs in Sophia. Described as being "the worlds greatest, most fantastic launch control system ever!" The Rube Goldberg device is to be used at the 1983 Internats (if there is one) and is capable of checking and misfiring upto 15 models per hour.

A NARAM REMINDER

It's a real good idea not to sit in one spot to long or to play with ant.

....and remember to use a sunscreen!!



NEW TRACKING SYSTEM FOR NARAM

Mutcher—The Times-Picayune



M A revolutionary new tracking system
P based on the "calibrated eyeball"
method will be used for the first
time at NARAM-24. The new method us-
D ing precision made "binocoptispecs"
or make accurate tracking easy. Dick and
B Joy Fox, shown here testing the new
N system, were extremely happy with the new
method. Joy remarked "why Dick every-
thing looks so real! looks solid
enough to touch!" While the system
still has a few bugs in it, the
headaches, nausea and diarrhea caused
by prolonged use are considered minor
problems.

The contest and records committee
at a recent test of the "Binocopti-
specs".



IROGO



THIS IS A MOST ROUGHNEST WAY TO FLY ROCKET!

YEAH, THE FELD'S A LITTLE WET.

YOU'RE STILL LOOKING FOR THE CHECKS IN TABLE



ANYBODY SEE ANYTHING OF THE CHECKS IN TABLE?

WE BETTER LOOK BELOW!

NOTHING ABAFT THE FOREGAMMON BOWSPIT TWO POINTS OFF THE STARBOARD GAIN!



WHAT WE'LL DO IS PRACTICE A LITTLE FORWARD PASS WORK.

FORWARD IT IS!



TEAR OUT IN A DAUNTLESS FASHION.



DAUNTLESS IT IS FOR GOOD OLD DAUNTLESS U.



NOW, POETRY CLASS, WE SHALL OBSERVE THE IMPACT OF THE REAL UPON THE ERGO OF TINTINABULATION.

HOT STUFF!

HERE IT COMES IN HIGH LOFTING MAJESTY... A LITERAL BULLET... AND NOTHING STOPS US, NEITHER HEAT, NOR GLOOM NOR PARSE OF FRY...



QUICK! I SHOT A ARROW INTO THE AIR! IT FELL TO...

WHAT FOR? DOES THIS ACT REE. PRESENT?



BOOM!

GOORK?



WHAT DO I HIT? A BALLOON? A BAMP? A ZEPPELIN? A SPUNNIK?

HEY, MISTER! THAT'S OUR DUCK!

A BIRD! A NUDE BIRD!

MAN, THAT GUY REALLY THROWS A BOMB!

WELL, THAT'S THE END OF THE FOOTBALL SEASON.

CENTER VALLEY GIRL ... goes to NARAM



Like, I'm into the clean stuff... you know, like model rocketry.



Bitchin' flight, eh!

Yea, I live in Center Valley... but like I fly for Pulsar, so its OK.



Duration to the max!

But Charlie Sykos like, makes me fly open meets... and clean the blast deflectors! I'm sure! Thats like gross!



...Totally!

... It's like somebody else's engine exhaust, you know. Grody! grody to the max!



Engine ejected? No biggie. It's still awesome

Charlie Sykos goes, like are you into SD? Like I'm sure! Can you picture me with like a leather streamer?



For Sure!

I showed my B/G to Geoff Landis and he said "Oh my God! Like that balsa wing is so grody. I don't know if I can handle this. Like bag that glider." I was so embarrassed!



What the...?

Like at the awards banquet... Howard Kuhn called me a beastie! He was so blitzed. He goes, "like bag your face." I'm sure!



What? I'm frenking out! Like Art Rose is national champ again? Barf out! Gag me with Utica beer!



Burf!

by: George Riebesch / Pat Peterson

Coming soon...
The **Beach Boys**
and John in concert!
Singing: Good Durations
Beakers USA

Bob, Bob Kaplow
Minnesota Girls
Beak City
...and much more!
with special
guest, Yod Schwein



APRIL NIRA LAUNCH

NIRA's second club launch of the season looked as if it would never materialize. Construction crews had torn up all of St. Charles Road near Ackerman Park. Walt Schalk renamed it "the Burma Road". Having passed through the puddles and bumps, we found the park jammed with Little Leaguers and soccer games. A launch site was finally found in the far west corner.

NIRA'ites appeared to fly conservatively, as most models were repeats from previous launches. Tom Pastrick had his usual assortment of models, from his always reliable Space Plane to a Nike Smoke. Tom also had an old RG design with a new covering, Micafilm. (No, not microfilm!) He claims Micafilm is several times stronger than Monokote, but lighter.

Tony Lentini bucked the conservative trend with a new and unproved oddspec, a flying toilet paper roll. It suffered the fate of many untested designs, an arched flight and a dust-scattering prang. Jedi George had a new RC Flagship, described by Hunny as "Sexy". Its two flights were good, but I'm waiting for more spectacular stuff. Break out those P's, George!

Wayne Schalk's persistence finally paid off. After yet another unstable flight on his "Rubik's Cube", he finally put on the top Ric Gaff had suggested from the start. An impressive successful flight resulted. Larry London's RG got poor times on a $\frac{1}{2}$ A, but looked good on an A. His piston launched A Payloader flew high, despite being launched at an angle.

Other flights of the day included Scott Schmitt's Little John, Tom Eckles' Sprint, George Sr.'s B Beakers and Hunny's SPEV (Spare Parts Elimination Vehicle). The launch ended in the traditional fashion, with a bunch of NIRA members chasing down a Tom Pastrick model. See you at the next launch!

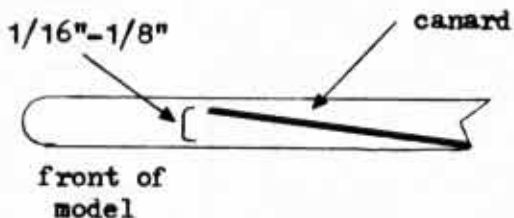
PAT. PETERSON


OOPS! WE GOOFED!!!

In the May/June issue, the March Model of the Month winner was incorrectly listed as Doug Hall. Ian Hall was the correct winner. Sorry about that! Congratulations, Ian!

B BEAKERS NOTE: CANARD ANGLE

The canard angle was omitted from the B Beakers plans last issue. The leading edge of the canard should be $1/16$ - $1/8$ " higher than the trailing edge. (Darth said to "experiment".) See diagram for details.



THANKS TO ESTES!

The latest Estes "Model Rocket News" carried the correction shown below. It was sure nice to see the folks in Penrose go out of their way to set the record straight. A hearty NIRA thank you to Mary, Jeff and Dane!

-CORRECTION-

VOL 21 NO. 3 "The 23rd Annual Space Modeling Championships". The Reserve Section Championship was awarded to the Northern Illinois Rocketry Association (NIRA) not the Wheaton Assn. of Rocketry. Our apologies.

LAUNCHER TIPS

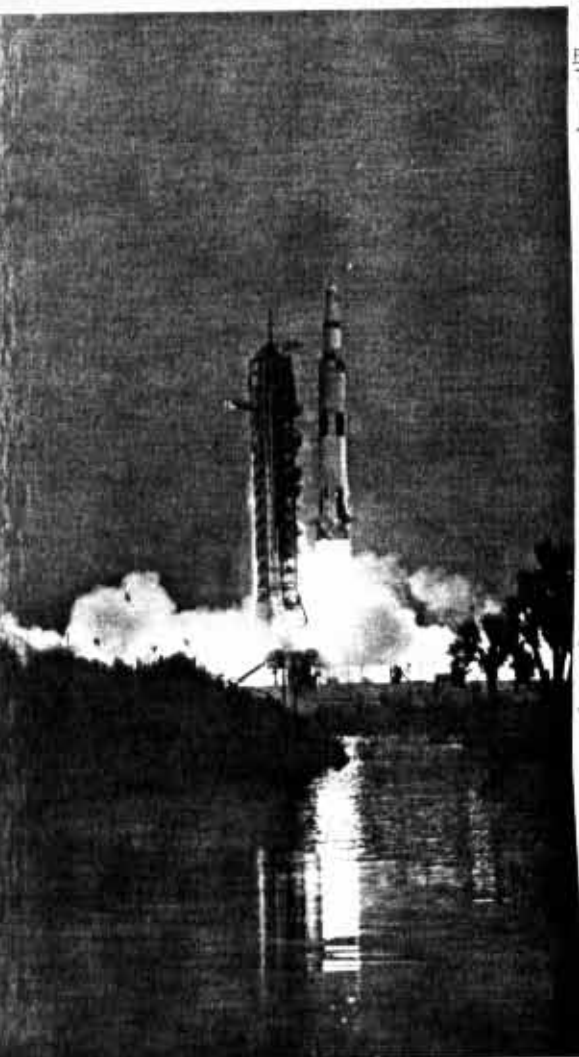
After a long period of storage in a basement, garage or car trunk, launch rods get really rusty and drudy. Sandpaper is usually used to clean dirty rods, but steel wool is better. A few strokes with a wad of steel wool will clean up rods almost as good as new. If you can find stainless steel wool, it will last nearly forever. Check Ace Hardware stores for this useful range box item.



BOEING SATURN

SATURN V DATA

DATA COURTESY OF NARTS



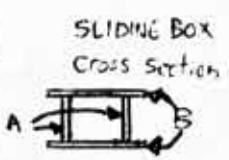
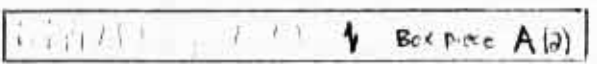
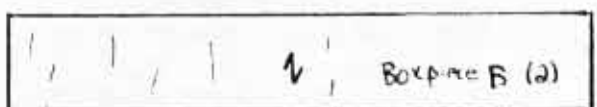
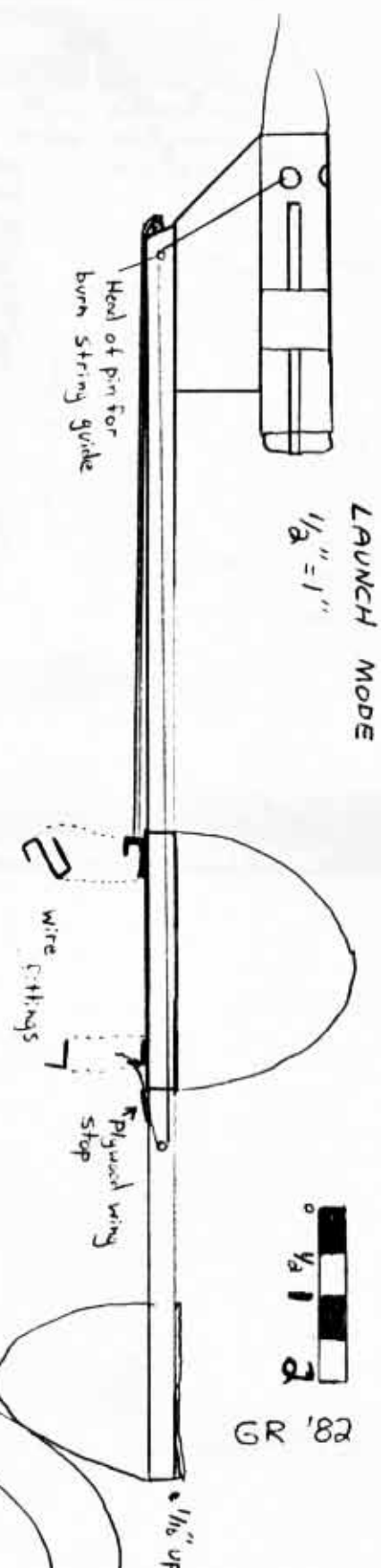
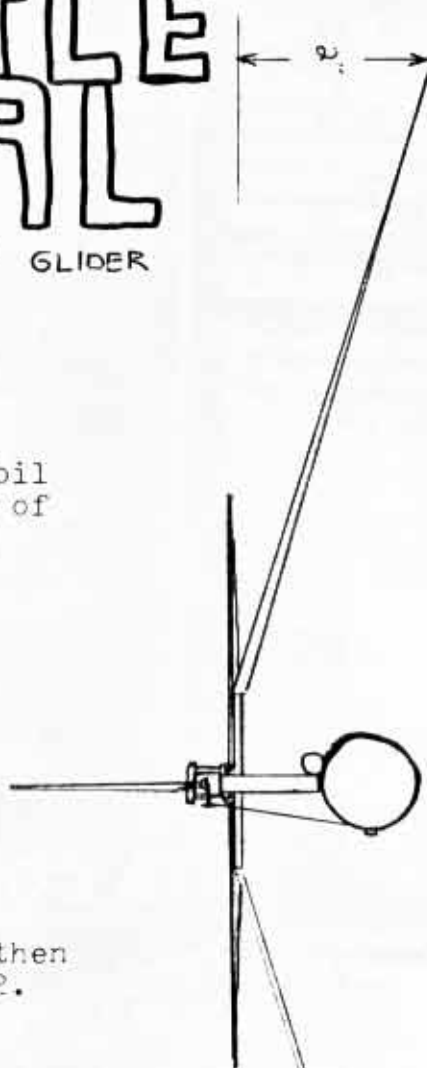
SHIRLEY U. JEST

SEATTLE SPECIAL

B-ENGINE SLIDE WING ROCKET GLIDER

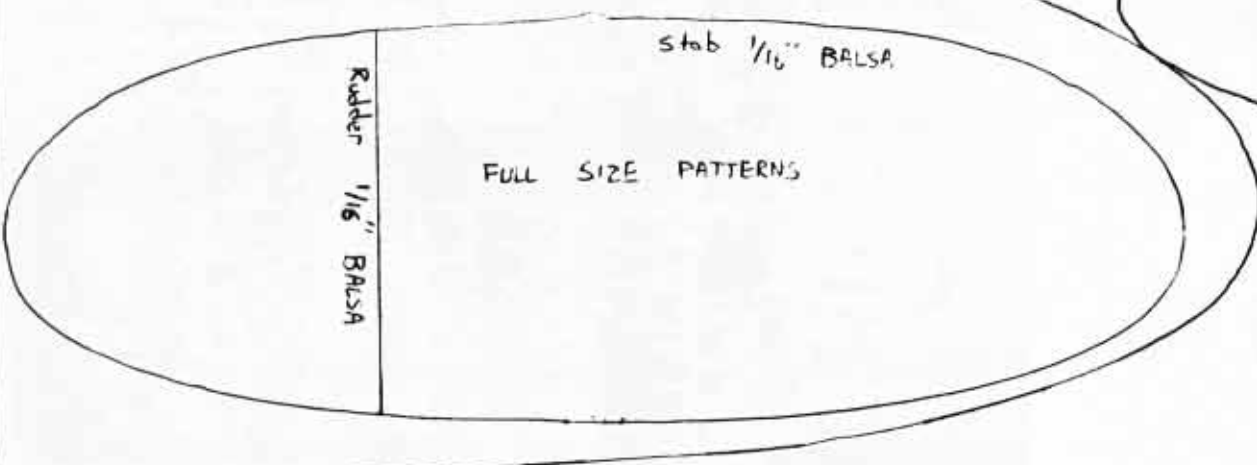
boom $\frac{1}{4} \times \frac{1}{4}$ spruce
 pylon $\frac{1}{4}$ balsa
 box $1/32$ plywood

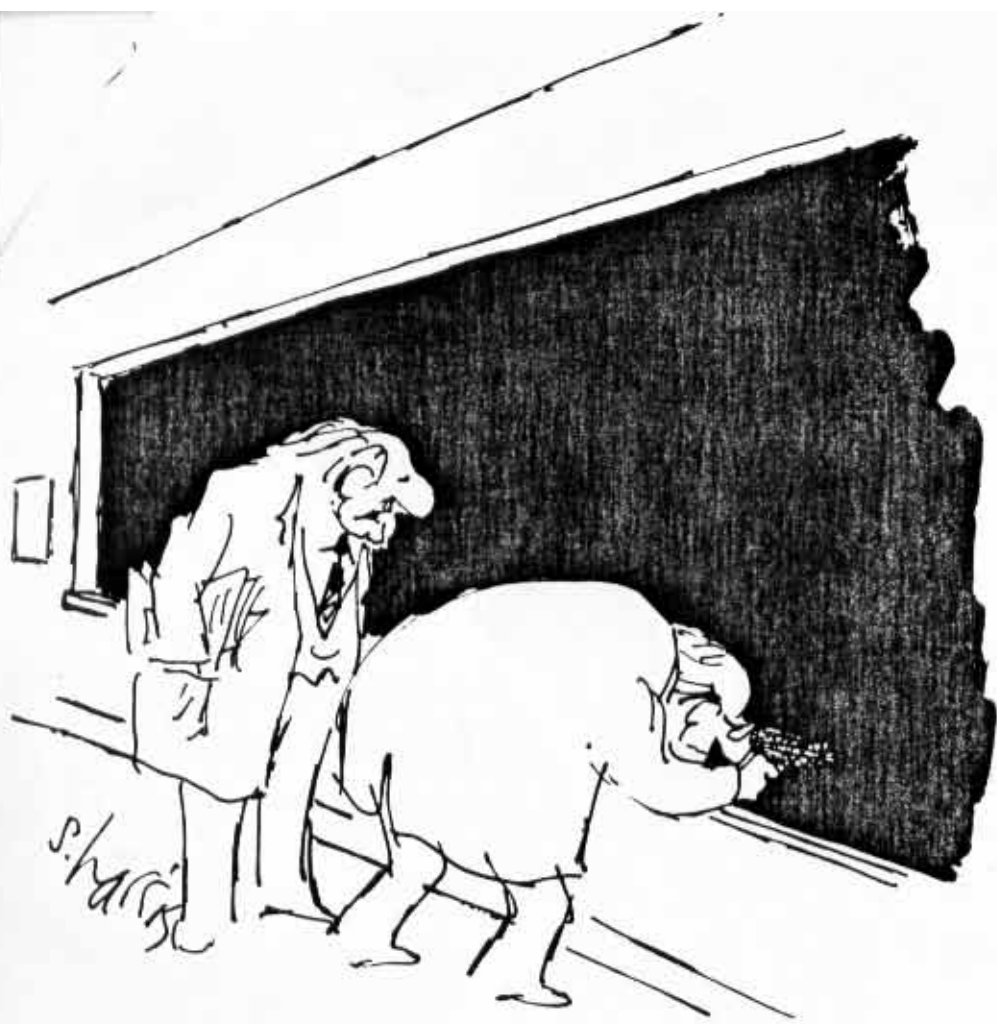
Carefully build and airfoil surfaces. Sliding box is made of 4 pieces of plywood assembled with hot stuff. All surfaces tissue covered. Rubber band connected to front of boom and box with music wire fittings. Wing is held back in launch mode by light thread that is burned by ejection gas of the engine. Use heads of pins to channel thread from box to holes in engine pod. Trim by sliding engine in pod and then add engine hook. Fly with B4-2.



Wing center panel $2 \times 3 \times \frac{1}{8}$ Balsa (1) not shown

Wing outer panel (2) $\frac{1}{8}$ Balsa





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