

Newsletter of the Northern Illinois Rocketry Association

Volume 13, No. 5
September/October 1990



T MINUS ONE - NIRA EVENTS

Monthly Meetings

All meetings start at 7:30 PM, and include refreshments, entertainment and a brief business meeting. Don't forget a model for "Model of the Month" voting. We need volunteer speakers to entertain the troops after the business meeting, so call Ric Gaff at 708-298-7896 if you can help with ideas or can speak yourself.

September 7, 1990 - Bunny lectures on "Model Rocket Stability: Something You Should Know" complete with audience participation!

October 5, 1990 - Join in NIRA's second "Poster Session/Idea Box" bull session. Bring your favorite ideas to discuss with other club members!

November 2, 1990 - Regular Monthly meeting. We need a speaker for entertainment.

1990 Launch Dates

All launches or other activities start at 2:00 PM. Our launch site is located at Ackerman Park, intersection of St. Charles and Swift Roads in Glen Ellyn. BYOL (bring your own launcher). NAR Insurance required or else RSO must inspect and launch your model.

IMPORTANT NOTE: Due to Glen Ellyn Park District schedule conflicts, we must **MOVE** our September and October launches to another location, probably somewhere in the DuPage County Forest Preserve system. Please contact Ric (708-298-7896), Bunny (708-293-9343) or Lawrence (312-561-8098) before you head out for these launches!

September 16, 1990 - Sports Scale: This is our second "craftsmanship" event of the season. The object is similar to other "Scale" events we've had: built a model with a sports theme. Points awarded as follows: Creativity - 500; Craftsmanship - 250; Flight - 500; Recovery/Lack of Damage - 250. Our second September event is Rendezvous. Fly Model #1 with at least an A motor. Fly Model #2 and try to last as close as possible to Model #1. The shortest distance between nose cones is the winner.

October 21, 1990 - Team Duration: This is an "all up, last down" event. Three person teams must, using one model apiece, fly from only one pad and keep at least one of their models in the air at all times. No models may be substituted once flying begins, except for catastrophic failure. All teams must have an entry in the air at a predetermined time. Teams may launch before that time, but will not be considered until the predetermined time actually starts. If at any time, a team does not have a model in the air, it is eliminated. The winning team is the last one left with a model in the air. Radio Control not permitted.

November 18, 1990 - Uglyroc

Other Interesting Items

September 3, 1990 - NIRA's 27th Annual Labor Day Demonstration Launch, Newton Park, Glen Ellyn. Bring out your flashiest models and help carry on this grand NIRA tradition! Flying starts at 2PM, so plan to arrive by 1 PM to assist in range set-up and prepping your models. Let's set a goal of 150 models to fly between 2 and 4PM. We also need models to display and help with various range activities. Please sign in at the NIRA sign in sheet when you arrive. Remember, this is an opportunity for NIRA to introduce ourselves to the Chicago community. We also plan to sell pop and kits to boost the club's treasury. If you have kits to donate, or plan to attend to help out in any way, please contact Labor Day Launch Co-ordinator Mike Jungclas (708-910-1267, home or 708-979-4571, work). See you there!

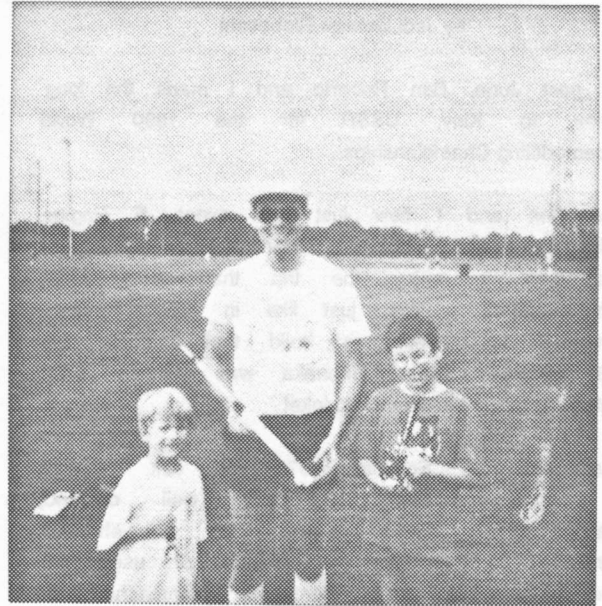
October 7, 1990 - NARAM-33 Planning Meeting. Be at Bunny's at 2PM to kick off another fun time running a week's worth of the best model rocket activities in the USA. Bunny will provide some eats, but if you can bring a side dish, beverage, or desert, that would help out. Please let Bunny know or call in advance (708-293-9343) if you will be attending or need directions.

October 18-21, 1990 - Chicago Model Hobby Show. This year, NIRA will not only man an NAR/NIRA booth, but will participate in a special demo for Estes Industries.

MODEL OF THE MONTH WINNERS



Our Model of the Month winners for July are Lawrence "Mr. Strato" Bercini with his Optima, and Mark "Radical Dude" Slusar with his Stealth. Congratulations, guys.



Kudos go to Kevin McKiou and Lionel Slouber whose Nike Apache and Yankee models took top honors as the August Model of the Month.

Gentle Reminders

The following members are responsible for refreshments at the upcoming meetings:

September - Dave Price
October - Ric Gaff
November - Currently Open

Launch RSO/Log Keeper

These people have signed up to be the RSO at club launches. Don't forget; this means being responsible for doing the safety checks, keeping the flight logs for our "Box Score" project, and then compiling the launch coverage for the "Leading Edge".

September - Harland Pell
October and November - Currently open

Welcome to the Club

We'd like to welcome these new faces to the NIRA ranks: Bruce Bodenstein, Schaumburg; Randall Farmer, Mundelein; John Girund, Princeton; Steve Koszuta, Milwaukee, WI; John Shworles, Evanston; Wes Sedluczek, Hinsdale; and Jim Snook, Villa Park.

Contributors

Tom Beach, Lawrence Bercini, Bunny Bundick, Ric Gaff, Mike Jungclas, "Bullet" Bob Kaplow, Don Linder, "Jedi" George Riebesehl

Staff

Lawrence Bercini - Editor/Photographer
Barb Bundick - Artist
Bunny Bundick - Typesetting
Ric Gaff - Assistant Photographer

THE LEADING EDGE, published bi-monthly by and for members of the Northern Illinois Rocketry Association, NIRA, NAR Section #117, is dedicated to the idea that Sport Rocketry is FUN! Articles, plans, other newsletters, and news items of interest should be sent to Lawrence Bercini, Editor, 6033 Sheridan Rd. #33J, Chicago, IL 60660. Send membership applications (dues: \$3/year, including a six issue subscription to the Leading Edge) and non-member subscriptions (\$5 per six issues) to Mark Bundick, 1350 Lilac Lane, Carol Stream, IL 60188. Any item appearing in the Leading Edge may be reprinted by American Spacemodeling with proper credit given; all other uses require written permission of the Northern Illinois Rocketry Association.

1990 World Championships Report

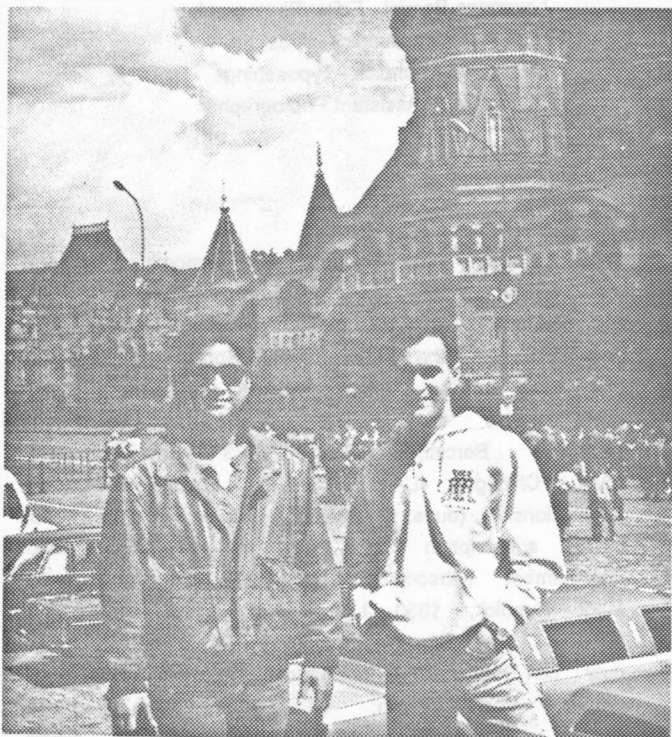
by Jedi George Riebesehl

This past June, Ben Roberto and I made the long journey to Kiev, USSR for the 1990 World Spacemodeling Championships.

Since Ben and I flew just one event, E Engine Radio Controlled Rocket Glider (S8E), we had more time to enjoy the trip than most other team members. Yes, just like in NIRA contests, most US team members build their models the night before. Ross Hironaka was actually seen building models in his sleep! No joke!

"What are the Soviets like?" you ask. Well, the average citizen is fairly well dressed, speaks some English, and is a shrewd businessman. It's like a country of used car salesmen. We were constantly approached to buy, for US dollars, of course, military watches, Red Army uniforms, T-shirts, etc. One guy wanted to buy my Reeboks. This became quite annoying. Ben and I were also hassled daily by non-team member Soviet Aeroclub members to trade for our RC gear. These guys just don't give up!

The Soviet Aeroclub, known as FAS, was very well organized. The moment we landed in Moscow until we left we were always escorted by an FAS representative. The greeting us warmly, and smoothed our passage through Soviet customs. It would have made our trip much more difficult without them.



NIRA-ites Ben "Captain Video" Roberto and "Jedi" George Riebesehl in Ruskie-land.

Experience and easily be divided into good and bad. First the good:

- The team toured Moscow in three stretch Lincoln limos! The city was fascinating and we attracted a crowd wherever we went.

- We made several friends with competitors from other countries. Hey! They are just like us for the most part. They love model rockets and are very serious. Ben was a bit hit with the Russians, especially Anatoly, a scale modeler. Just ask him about it sometime.

- We were taken to a Kiev ballet.

- Competition was intense.

- Our interpreters were amazing! Ludmilla and Sasha would always give us the straight scoop.

- Bob Biedron finished third in Scale!

Now the Bad:

- The food was very different. We had a hard time adapting, if you know what I mean.

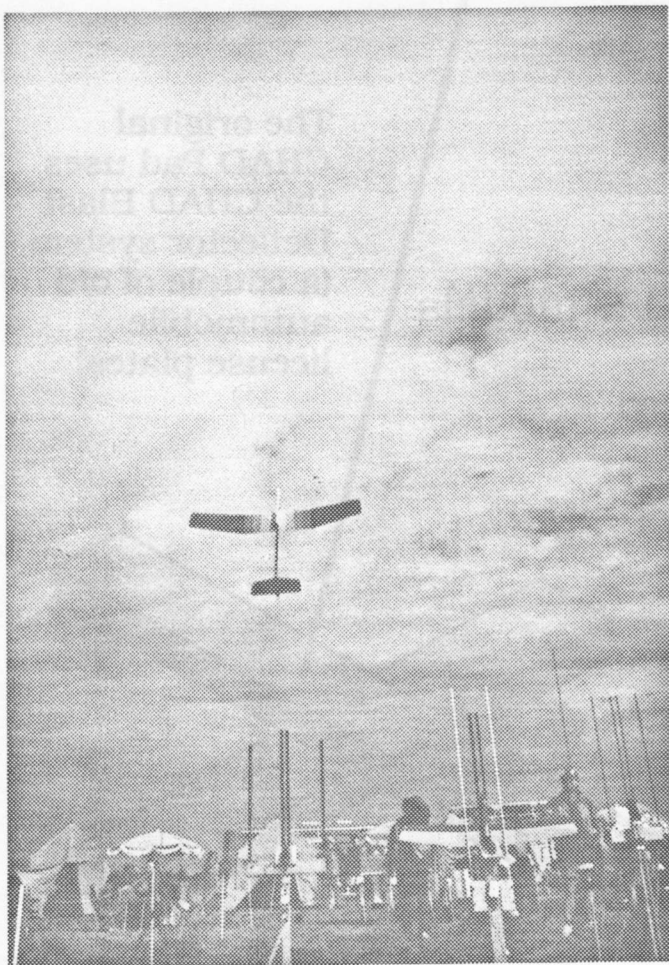


"Oooh! I think I did too many composites last night!"

- Jet lag, a rigorous schedule and an unfamiliar environment made for a very tiring vacation. At the end of the trip, I was looking forward to getting back to work!

- Competition was intense!

- The flying field was 50 kilometers from Chernybol!



A flash, a hiss and a blur of motion heralds another world class flight.

Quotable Quotes from Kiev:

(NOTE TO PARENTS: This section, inserted against my better judgement, is R rated.-Bunny)

"I don't know what the — is going on."
Sasha, Internats Interpreter

"Borscht without sour cream is like a woman without breasts."
Ludmilla, Internats Interpreter.

"Want to buy a _____ (fill in the blank)."
Any Moscow or Kiev citizen

"There goes one of the — who wouldn't let me go."
Bob Biedron

"Buried. Married. What's the difference?"
Ben Roberto

"The wind doesn't blow in Kiev; it s—."
Ben Roberto

"So when I had my prostate examined....."
Chuck Weiss

"Your receiver was turned off." Range Control

"There's something I've wanted to do since we got here."
Ben Roberto.

"We did not travel 8,000 miles for a Big Mac."
Jedi George Riebesehl

"I could really go for a Big Mac." Jedi George,
two weeks later

"Modelism" Many competitors, officials and
hangers on.



Jedi's prowess at piloting
graduates him to
state of the art vehicles.

CHAD Pad

by Tom Beach NAR #23741

- Inexpensive
- Stable - easily handles 3.3 lb. models
- Sturdy construction
- Easy to transport and set up

Parts List:

Five feet of 2 x 4

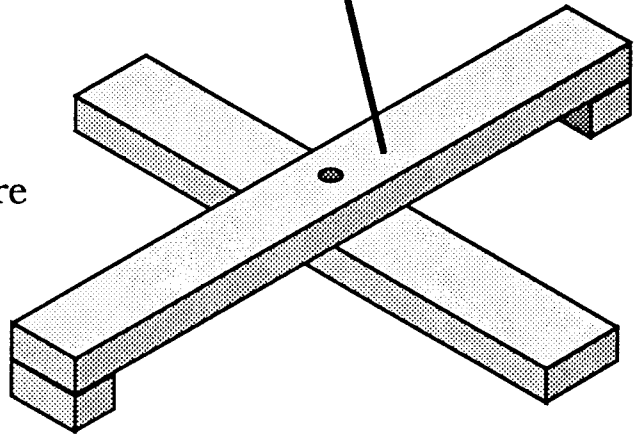
1/4" carriage bolt, 3" long

1/4" washer and nut

four 2.5" nails

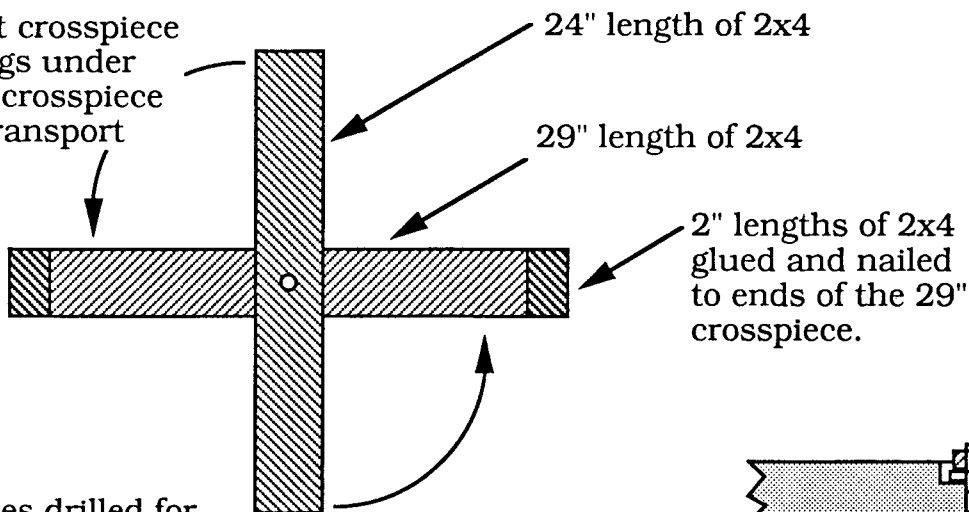
Paint the pad to enhance its moisture resistance. Allow the crosspieces to dry thoroughly before assembly. Waxing the crosspieces will prevent sticking.

The original CHAD Pad uses the CHAD Blast Deflector system (a couple of old automobile license plates)



Bottom View

short crosspiece swings under long crosspiece for transport

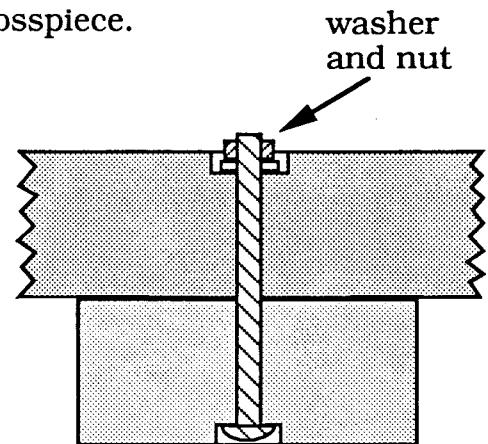


Holes drilled for various rod sizes and at various angles

Pivot Detail:



Side View

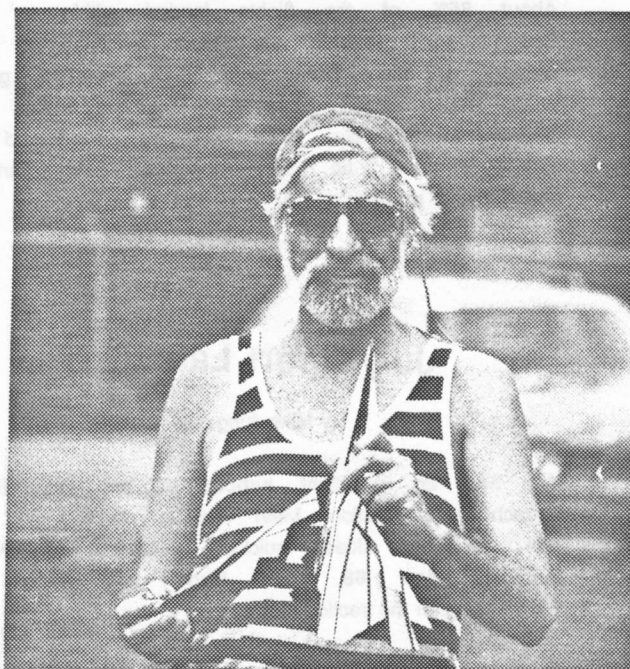


countersink head of bolt

JUNE CLUB LAUNCH PIX



Kleve checks out the oncoming storm.



Harland displays his "Wild Thing" and matching outfit.

Sam is either unsure what to do with the microclips, or is contemplating a new manicure.

Cub Scout Pack 510 Rocket Activities

by Mike Jungclas

Naperville Cub Scout Pack 510 conducted several model rocket activities during June. In two building sessions, 42 Viking rockets were built by the scouts. NIRA member Mike Jungclas lead the building session with the Scout's parents. Mike also gave a talk at each building session on the various types of rockets and some construction techniques.

On June 24, the scouts flew their Vikings at the model airplane flying field at the Dragon Lake Forest Preserve they had reserved for the afternoon. In an hour and a half, the scouts launched 108 rockets. Additionally, several demo flights were completed, bringing the launch total to 115. Mike, Ric McBroom and Kevin McKiou provided range support operations and help throughout the day.

A spot landing contest was held for each Cub Scout level (Tiger, Webelos, etc.) and contributed to the excitement of the launch. About 85% of the flights landed within a 100 foot square. Estes kits were awarded to top winners at each Scout level. As a final grand prize, an Estes Vagabond Starter outfit was awarded. Finally, NIRA members volunteered an Estes kit to be awarded the best "article" written by the scouts.

July Sport Launch

by Mike Jungclas

We had an excellent turnout at the July Sport Launch and Section Meet despite starting in the rain. The skies quickly cleared and NIRA members flew 68 sport flights in addition to the 55 flown for the section meet.

Jedi George Riebesehl, back from the Kiev World Championships flew his RC glider 14 times! He even let Bunny fly his backup model. (And it flew just fine, thank you! - Bunny) Jedi's flights are always impressive and a big hit with the spectators.

This launch also saw several MRC models fly. Kleve Slouber did a fantastic job painting the tower on the MRC pad, with alternating stripes of white and orange. Kevin McKiou flew his Flare Patriot several times, and Bobby McBroom flew his Standard ARM twice.

Lawrence Bercini upheld the Estes flag by lofting several new Estes models: Army HAWK, Deep Space Transport, and the National Aerospace Plane. I'm still waiting to see the Optima fly! Jim Christensen flew an Aerotech Initiator with an E15-4 that wowed the crowd and set Lizzie Bundick crying with a noisy liftoff.

Marty Fackelman had an upgraded version of the Crusader swingwing glider. He flew this Maxi Alpha sized bird three times. The final flight with a C6-7 was greeted with cheers when it pulled out of its dive. Mike Maltz flew his Wizards and Maverick. John Shworles posted pretty flights of his Star Speeder and "au naturale" V-2.

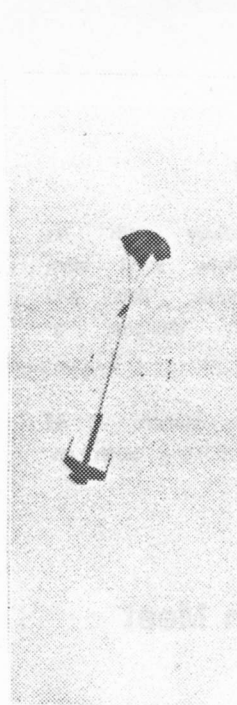
Chuck Eslep, a visitor from the Pittsburgh Space Command, on vacation in the Chicago area, joined us with Justin and Josh Puhl. This clan kept the pads busy flying a Starbird, Athena, Ninja, Liberty and a questionable Mosquito. Greetings to all those good modelers in Pittsburgh, Chuck!

Bruce Bodenstein had only two models with him. After his Centuri Excalibur refused to airstart, he concentrated on his Alpha III. After six flights, Bruce decided he was enjoying himself so much, he joined the club!

Our launch "regulars"; Bundicks, Kaplows, Linders, Prices, Ric Gaff and Harland Pell were also around, mainly helping run the section meet. Dave Price, Ric Gaff and Don Linder, Jr. did take a break for some sport flying. Dave flew his Hair Curler rocket as well as a couple of flights on his Yellow Special RG. The last flight set a club record for B RG of 67 seconds. Ric FINALLY got a perfect deployment on his Maxi-Pyramid. Don Jr. big "Noname" rocket flew just great on twin D12-5's.



"Bullet" Bob sets up for Open "Lob-landing".



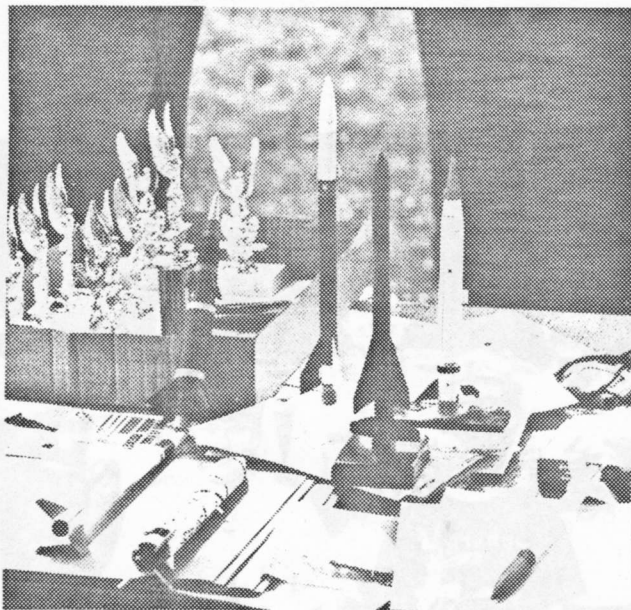
John Shworles demonstrated several perfect flights with his Star Speeder.



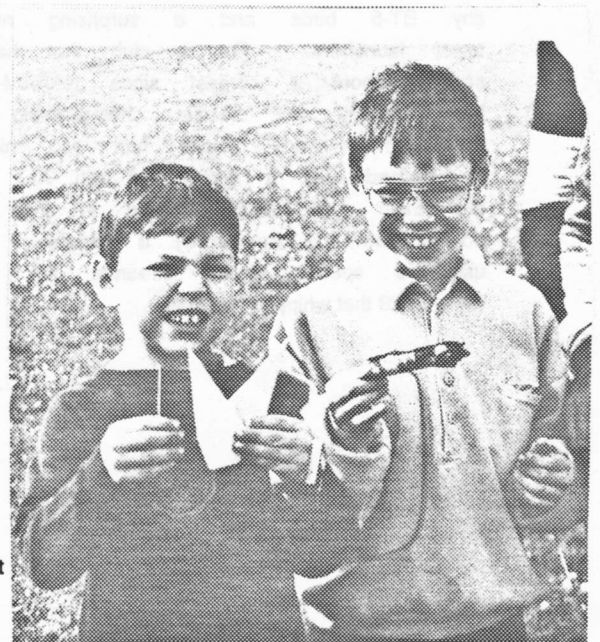
Don Linder sends up his second place flight in spotlanding.



"Let's see....
pitch down
straight up....
no wait!....
wacka,
wacka,
wacká....
no, that's
not it!....
What's up, Doc?"



There was an interesting variety of Peanut Scale Models.



"Hey, Dad! We loved it when you blew up Uranus!"

July Launch (continued)

Glen Thiel fascinated Sam Mulvey with his Chicago Watertower. Bullet Bob flew, what else, a Happy Meal, while Kleve Slouber "flew and blew" some of his home-built designs, a Helichopper and a Bullpup.

It was a very successful sport launch. All NIRA members should be proud of hosting such an enjoyable activity.

NIRAM-90 Section Meet

by Bunny

NIRA's first planned competition in almost two years brought 14 competitors out of the woodwork, making it one of the largest section meets in the country. While a bit rusty in both flying and running a contest, NIRA-ites managed to squeeze out a healthy 890 contest points and two club records.

Open Spotlanding placed a target about 125' from the pads, but there was minimal wind to baffle flyers. Sam Mulvey lead the A Division pack with a 35',8" effort, about 35' better than any other youngster could manage. Bullet Bob Kaplow, relying on years of crafty competition experience, waited for nearly everyone else to fly and mark the drift pattern before launching his birdy to an 15" victory over Dave Price.

1/2A Streamer Duration saw the pads filled with tiny BT-5 birds and a surprising number of tower launchers. For a club that hadn't been serious about a contest since NARAM-30, you'd have thought the section championship was on the line! Andy Linder had two nice flights, his second over a minute, to win A. Dad Don the Elder kept all the gold in the family by edging Lawrence Bercini by a second. The Elder used a special plastic streamer left over from NARAM-28 that whipped like mad.

With a 75 second target in Random Duration, strategies changed as often as the wind. Scores were good overall, with only Bob Kaplow losing a model, his ancient rocket from the early 70's lost to a thermal. Andy Linder kept his winning streak alive with a 9.3% error while Lawrence Bercini and Don Linder tied for first in C with identical 12% errors.

Peanut Scale could have been a bust here, what with the need to build a specialized model. Instead, turnout was excellent and the variety of models fantastic! Andy Linder's D-Region Tomahawk edged Matt Price's Exocet by 5 points when Andy suffered a bit of damage on landing. Lawrence Bercini's Sandhawk was authentic down to the fin bolts and payload antennas. He won in C by 65 points. Don Linder modeled a Redstone test round from the 1950's for second while Harland Pell's TV-0, from the Vanguard test program took third. The Pogue Mahoney team of Ric and Bobby McBroom flew an ISQY Tomahawk to fourth, while Glen Thiel's interesting Pershing test round went unstable.

All in all it was a very good contest. Many members new to competition expressed interest in another section meet next spring, so think about interesting events you'd like to see flown.



The victors display their spoils.

NARAM-32

"I can neither confirm nor deny..."

by Bob Kaplow

Why do we keep holding NARAM in Texas? Rain, heat, humidity, and fire ants, I guess. At least Dallas isn't quite as bad as Houston.

NARAM-32 started off with the first annual National Sport Launch. Most of it was rained out Saturday, with somewhat less rain on Sunday. The FAA once again tried to mess things up, not sending the waiver from Washington to Dallas, so CD Scott Hunsicker had to hand deliver a copy to the Dallas tower to get things rolling. I flew several models (and food containers) Sunday, and finally got my LOC-IV off with a G42 on Thursday afternoon between holes in the manufacturers demo.

Sunday night's contestants briefing was bumped out of the meeting room to pool side by a scheduling snafu, as it seemed that NARAM taxed the limits of the Days Inn.

Monday night was the manufacturers forum. NARAM was buzzing with interest over the ISP (parent company of AeroTech) reloadable metal motors. So far they are producing them in 180ns and up, in 29, 38, 54, and 98mm casings of various lengths. Previous model rocket technology had been moved up from fireworks.

This represents the first time aerospace technology has been brought down to sport rocketry. There are 2 advantages to the technology. First, since Las Vegas is no longer a class B shipping point for FedEx, Aerotech had to ship all of their class B product thru Phoenix! Now a 480ns motor can be shipped as a reloadable kit consisting of 4 pieces of 62.5 gram propellant grain, as class C material. Second is cost. A 180ns reload kit will retail for only \$9.95. Expect to see them discounted thru the existing AeroTech/ISP channels. The 180ns casing will retail for \$68. This means that after about 5-6 flights, the casing will pay for itself. With larger motors, the payback is even shorter. In fact some of the very large reloadable motors are cheaper than their expendable counterparts.

[Reminder: this is still a class "B" product, available only to confirmed consumers. The technology CAN and likely WILL be brought down to model rocketry, but not until the safety code is revised, and laws are changed.]

The other big news was from Apogee. After introducing their new line of kits, Ed LaCroix dropped the secret of the meet. Every year someone asks for the return of either the 1/4A and/or the mini-B. Apogee announced and sold their new mini-B at NARAM, but with a twist, a 13mm composite B7, in 4, 6, 8, and 10 second delays. Price is \$7.95 (ouch) each, available only thru Apogee. The motors are a full 4.95ns, and are NAR certified now, with contest approval in 90 days. Not to leave things there, Ed also announced a 18mm x 54mm C10 (same delays and price). These aren't available yet, but are certified as above. Ed flew the mini-B at the manufacturers demo in B SD, B SRA, B ELA, and B PAY models, all most impressive. He also flew a C10 DUAL EGGLOFTER! This MUST be added to the pink book soon.

As for the other manufactures, NCR had some new kits, including the first RCBG kit. They may import a line of mini-A motors to replace the late Estes A3-2T and A3-6T. Bill Stine of MRC showed off the all new Concept-II line, including the FX motor. These don't seem to make as much smoke as you'd expect. Estes will introduce several new products at the October RCHTA show. Mary Roberts would neither confirm nor deny any rumors as to what they would be.

Finally, Bob Alway was promoting Peter Alway's soon to be published Sport Scale reference. The book will have data on over 100 vehicles, more than detailed enough for sport scale, and in some cases maybe enough for beginning scale. Pre publication price is \$20, and well worth the price. (Second that motion. The draft copy was outstanding, and when the pictures get professionally half-toned, look out! - Bunny)

Next came the NAR Annual Meeting. Pat Miller updated the membership on the changes in the NAR, and then invited Tripoli president Chuck Rogers to address the association. Later this month Pat will speak at LDRS. The big news is that our former friends at AMA are giving us the shaft on insurance, and the NAR has told them where to shove it. The NAR has several months to resolve the problems, but will be looking elsewhere for insurance. The high power commission will report to the board at a special meeting in St Louis this October.

Tuesday night was the traditional auction, but the Cineroc and other valuable items never materialized this year. Most of the sales were grab bags of Estes merchandise.

Competition flying:

Monday saw strong winds, in the opposite of the prevailing direction. This took many of the models across the nearby interstate, making recovery interesting. My Random Duration model crossed the highway, and 3/4 of the pasture on the other side. I chose not to bother flying HD or BG, the other two events of the day, rather than risk my models or my life.

Tuesday saw less winds, poor sky, and of course 3 altitude events. B SRA was not too bad, with most models being 200cm of blackshaft. The black was most visible from the tracking station. The only notable exception was Ken Mizoi who built his out of the much lighter fiberglass construction used in the FAI models. The light weight paid off with a first for Ken.

D Dual Eggloft was moderately trackable. Aerotech D21s were the weapon of choice, although several contestants, including myself flew with D8s. (In all seriousness, it was the better choice from my vantage point at Tracking East. - Bunny) My first flight was perfectly straight, but failed to close with an 11% error. My second flight tipped off, ejected with much horizontal velocity, and shredded the chute. One egg broke, but the track closed! Such is life. Trip Barber won C division with a 369m flight. Even more amazing was Jay Marsh's performance in A Division with a 411m flight!

C Altitude was impossible to track! (Again, complete agreement. All contestants who flew without tracking powder should have been made to cross the highway! - Bunny) My model vanished at staging, but at least it was stable this time. Many others fell victim to stability, tip-off, or tracking problems.

Wednesday and Thursday saw A ISD and 1/2A PD flying. Winds were towards the long end of the field, away from the interstate. Still good flights left the field for the housing development and beyond. I flew away one PD model, and reefed chutes on the other 2 for a poor performance. I only made 2 streamer flights, neither maxing. If I had known how poorly others were doing, I might have taken a place with a third flight.

Also on Thursday was Sport Scale. George Gassaway had an impressive Little Joe II that was a runaway winner. My 5' tall D Region from NARAM-30 placed much higher than I expected, taking 4th place points (but no trophy) in team division with a flawless flight on an AeroTech E15-4.

Friday concluded with B RG. Again I turned in 2 decent flights, but not enough to place. Trip Barber had a flight that while only timed for 3 minutes he timed for 21 minutes! He chased it for 2 miles and caught it when it landed! (What's wrong, Trip - 21 minutes to run only 2 miles!) Unfortunately, it seems that he unknowingly broke the pylon, because his second flight shredded, leaving him out of a place too.

Finally, off the field were the R&D presentations. Most of the reports were not noteworthy. Encouraging were the large number of A and B division entries. The only interesting report was by Trip Barber, on BG boost performance. He analyzed the effects of 9 different parameters on boost performance. Many are known to increase glide performance, but at an unknown cost in boost altitude. He attempted to analyze these tradeoffs for the upcoming internats. (NIRA's Bobby McBroom took a third here. Way to go Bobby!)

The awards banquet consisted of more food than you would want to eat (due to quality, not quantity), and more awards than you could take home on the plane (for the big winners - losers like me had no trouble packing). The party afterwards ran well into the morning. I was planning on leaving at 6AM Saturday, but when I left the festivities still roaring at 3:30am it was pretty clear that that wouldn't happen. I hit the road for 16 hours of driving over 2 days around noon Saturday after saying good bye until next year. Sounds like NARAM-33 will be back here in Illinois.

I can neither confirm nor deny any rumors of tacky plastic pink flamingos left on J Pat Miller's lawn Friday morning while Doug Frost was his house guest.

NARAM-32 Flyoff Report

by Bunny

Twelve competitors flew off for five remaining spots on the 1991 US Spacemodeling Team scheduled to compete against the Russian National Team next September in Moscow. NARAM-32 Contest Director Scott Hunsicker graciously accommodated the hectic schedule within NARAM's standard activities. A special note of thanks is due the many volunteer timers, particularly members of the Garden State Spacemodeling Section (GSSS), who assisted Team Manager Bob Kreutz and International Affairs Committee Chairmen Art Rose in running the contest.

Under FAI rules, models must meet specific dimensions or weight qualifications. Flying takes place during specified intervals, or "rounds". Since the rules emphasize consistency and good flying skills, minor mistakes which may not matter much in NAR competition can quickly ruin a contestant's chances of winning in FAI events.

In A Streamer Duration, my paper Sad Sack model got killed by Ken Mizoi who flew custom made fiberglass models with 5x50 mylar streamers. I missed a qualifying score here by 3 seconds. Ouch! I did better in PD, finishing third and posting two maxes. That performance gave me a qualifying score. All I had to do to make the team was win B Boost Glide.

As luck had it, my best event was B Boost Glide. In four flights, I had three 5 minutes maxes and won the event. Look for my "Prairie Bird" design in an upcoming American Spacemodeling. In RC RG, Bob Parks joins Jedi and Phil Barnes. Parkie flew a new ship with lots of composite materials.

NAR members should take great pride in these modelers' flying skills and sportsmanship as they represent the NAR and the USA against the strong Soviet National Team.

Saturn V Modifications

Adapted from a Modelnet Thread

by Bunny

A recent discussion on Compuserve's Modelnet Forum highlighted modifications to the Estes Saturn V for use with Aerotech's E15-4 motor. Thanks to Allen Swayze, Will Saford, John DeMar, Robert Sanford, and Michael Robel for their ideas! Here's a summary of some of the tips these guys have tried.

To avoid possible damage in the 24mm engine mount tube, replace it with the same length of heftier tubing from North Coast Rocketry. The Estes wall thickness may crimp under the extra force. More importantly, the composite motors have stronger ejection charges. After several launches, there can be problems with blow-throughs or not enough umph to get the chutes out as the mount burns and deteriorates.

You should add a couple doublers to the centering rings fore and aft. You can use cardboard, but model aircraft plywood makes excellent replacement centering rings, too. Also, you might wish to consider load transferring spars inside. Good epoxy for gluing up the mount is a must as well.

With these modifications, you might worry about adding weight to the tail and disturbing the stability of the Saturn V. The model cannot be "swing tested" very well just due to the mass in the tail end of it (this applies to stock built Saturn V's also). It will fly fine with the E15-4 if you just put the same amount of weight in the nose that was added to the rear (including motor). Your takeoff center of gravity should be within 27-29" from the tip of the nose after all modifications are done. Add noseweight to bring the CG to the correct location.

The stability is borderline on the Saturn V as it is, especially with only a 3' launch rod. It takes longer to get up to speed than smaller models and the limited fin area requires more air speed to become stable. Use a 5 or 6' rod of 1/4" diameter to be safe. These are also available from NCR or your local steel supplier. Naturally, you will have to use 1/4" lugs instead of the Estes-supplied 3/16" ones.

One last hint: replace the standard shock cord with sewing elastic from a sewing shop, and replace the plastic parachutes with cloth ones.

LDRS-9 Report

From a ModelNet Message
by Tom Beach

Joyce and I are back from our expedition to LDRS. We were a bit disappointed with most of the actual flying. From what I've heard over the years, and from pictures I've seen, I expected a lot of HUGE models powered by clusters of honkin' big motors. What we saw were a lot of "small" to "moderate" sized models ("moderate" = 4" dia, up to 6 foot tall) flown on H and I engines. The relatively few models flown with larger motors (J to L) generally just went out of sight fast -- and I've never been very thrilled with sending a model out of sight (except for altitude attempts, which some of these were).

Part of our disappointment came from showing up on Thursday night to watch Friday's flying -- but Friday is apparently a slow day. Everyone kept saying they were going to launch their big stuff "tomorrow" so we stuck around for most of the flying on Saturday -- at which time several people still told us they were going to fly their big stuff "tomorrow".

Random comments as they come to mind:

The field: Fantastic. Big, flat, open. 65 miles from hotel. The weather: Great, especially on Friday morning.

Range: Well run (except for starting late, but that seems to be a common problem with ranges). Some flyers were complaining about delays in getting on the pad, but there were times when few people were flying. They could use a much louder PA system. They had good food available on the field (important when you're miles away from civilization).

The models: The vast majority were pretty dull. I saw a few with excellent finish jobs. A few scaled up Estes designs; a large Deep Space Transport that I never got to see fly; a 6 foot tall J-powered Trident (poor finish) that made it through boost but tore itself apart at ejection. In fact, most of the models powered by the largest motors (L) seemed to rip themselves up pretty good at ejection. No nice scale models. One boost glider that flew well on an E, F, or G (basic Estes Skydart design).

Payloads: I saw four guys flying camera payloads. One model had a radio control parachute ejection system (unfortunately you'll read about this model under PRANGS below). If there were other payloads I didn't see 'em.

Parachute failures: You see a lot of this in model rockets (nose cones that don't come off, parachutes that get stuck in the tube, wad recovery) -- but there was surprisingly little of this (on Friday anyway; failure rate picked up on Saturday). As a potential target, this made me happy.

Misfires: I was really surprised at the large number of ignition failures. I thought these guys were supposed to be good at cluster ignition (the first requirement of which is reliable single engine ignition). They were not.

PRANGS: Relatively few, but some very violent ones. The most violent had a central J motor with an H motors on either side. One H ignited first, lifting the model to an altitude 20 feet and an attitude of about 10 degrees below horizontal -- at which time the J motor kicked in, plowing the model into the ground about 200 feet away, dispersing parts, motors, and RC equipment in the most impressive display of rocket self-destruction I've seen short of NASA films. Luckily it went to the right or it would have targeted the prep area. This occurred shortly after another cluster power prang (also luckily moving to the right, or it would have hit near the aptly named "line of death") and shortly before another cluster failure that turned in an impressive skywriting display. At this point Joyce decided to watch the rest of the festivities from farther back.

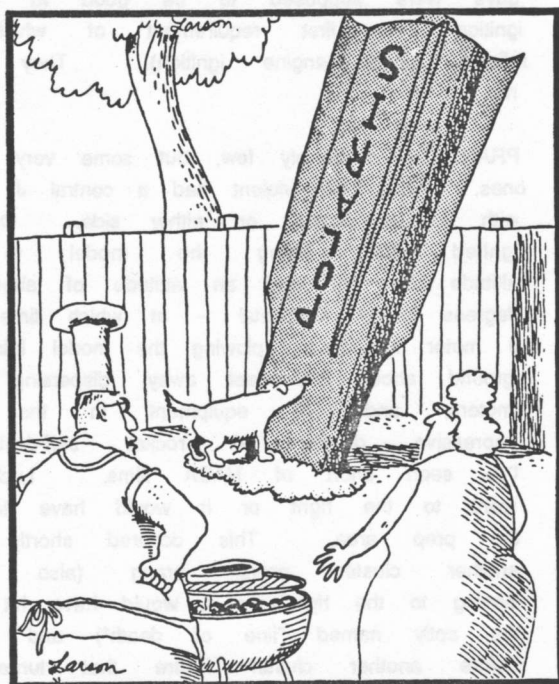
Jerry Irvine: This joker was static testing motors in the ground at the pads. Of the four tests I saw, two resulted in catos that blew the casings high into the air -- and these babies are a lot heavier than mini-brutes! As a potential target, this activity did not amuse me in the least.

Reloadable motors: The three Aerotech motors I saw worked well. I also saw two reloadables

made from some other company (I don't remember the name) that both failed (one ejection failure, one blow through).

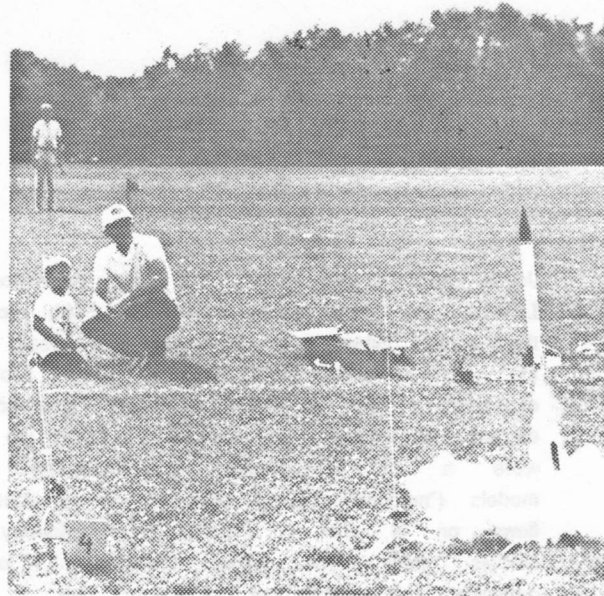
Tripoli confirmation: I saw one guy successfully confirm even though part of the model separated and free fell. I saw another guy successfully confirm using a model he borrowed from a friend. And now these guys are qualified to fly N motors.

N motor: No, we didn't see anything larger than an L fly, but I did get to hold a 4" diameter, meter long, 33 pound cylinder that claimed to be an N motor. Wow. We figured it could boost Joyce at 3 Gs for 6 seconds. Wow.



"Let's not overreact, Agnes. ...For one thing, it was only a dud."

ON THE COVER - A picture-perfect lift-off of Jim Christensen's Sentinel.



Kevin and Kyle McKiou audition for a catalog cover while testing their MRC Flare Patriot.

Box Score Update

We made great progress towards our goal of 500 flights this flying season. With help from the Cub Scout Pack and our recent launches, we stand at 363 flights! Let's all continue being involved in this club project by posting an extra flight or two at each club launch function. Perhaps we can push on towards 1,000 flights!

Club Records

Youth Division: 1/2A SD - Andy Linder, 69 seconds. Adult Division: 1/2A HD - Lawrence Bercini; 1/2A SD - Don Linder, 77 seconds; B RG - Dave Price, 67 seconds.

If you want to see your name in this space, see Ric Gaff or Lawrence Bercini at the next launch and get your flight "officially" timed.

Launch Site Blues

With our temporary "displacement" from Ackerman Park, and our challenge to run the 33rd National Model Rocket Sport Launch and Championships, we really need members to scout out possible launch sites for NIRA's use. If you have any suggestions or contacts with large landowners, please contact Ric (708-298-7896), Bunny (708-293-9343) or Lawrence (312-561-8098) and let them know about ANY possible site. Bunny in particular would be happy to fill you in on the insurance coverage we have and what is required for NARAM-33.

Heard on the Street

Rumors and such

(with apologies to the Wall Street Journal)

Estes Confirms Deja Vu - Word from Tom Beach and Joyce Guzik is that Estes is introducing 1/100 scale versions of the Saturn 1B and Little Joe II. Joyce and Tom saw the package artwork when they visited Penrose. Both kits will apparently be packaged in boxes a la Aerotech and MRC kits. Later word from ModelNet says Estes is taking orders now for both kits but will not ship until September 15. Look for kit reviews soon here in the Leading Edge. The relevant order numbers and prices are: Little Joe II, #0892, \$15.49, and Saturn 1B, #2048, \$63.59. Call Estes at 1-800-525-7561 to place your Visa or MasterCard order!

Child's Play - Early in the Hubble Telescope deployment, technicians found a cable on the high-gain antenna looping around the antenna and preventing its full movement. Engineers duplicated the problem on earth using a model made out of Tinkertoys and an extension cord. Later efforts may incorporate Lincoln Logs and Legos.

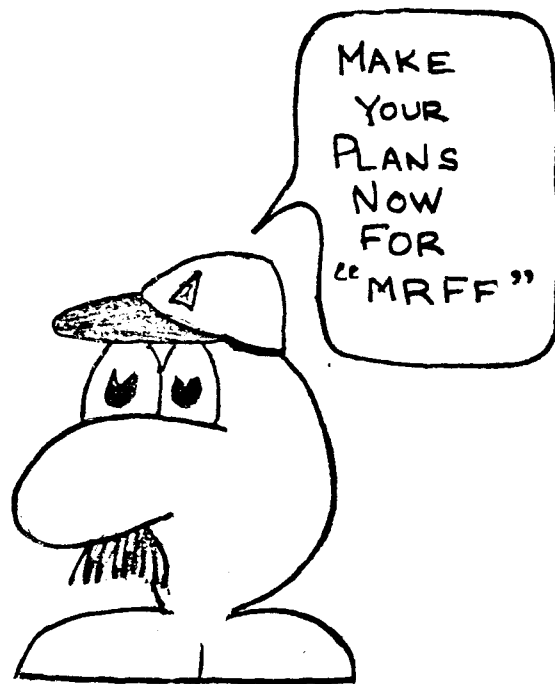
Don't Deploy Early - NASA's Ames-Dryden Flight Research Facility will begin testing a drag chute for Shuttle orbiters later this month. Drag chutes on the orbiters will permit them to land safely in a shorter distance and also help reduce tire and brake wear. The tests will be conducted using Dryden's B-52 "mothership" for the X-15 and more recently, for the Pegasus rocket booster. Piloting the B-52 during the tests will be C. Gordon Fullerton, a former astronaut who flew on two Space Shuttle missions.

New Hope for Prangers - April's Space News reported a prang on a grand scale. It seem a mailbox in Sidney, Australia was destroyed by part of a falling satellite. This is the first property damage recorded due to a decaying satellite.

Third Time's a Charm - The NAR's Board of Trustees will meet, for the third time this year in St. Louis in October. The bulk of the meeting will be devoted to reviewing the Barrowman HPR Commission's final report with the Board deciding the question of whether or not the NAR will offer services to HPR modelers. Stay tuned for the latest!

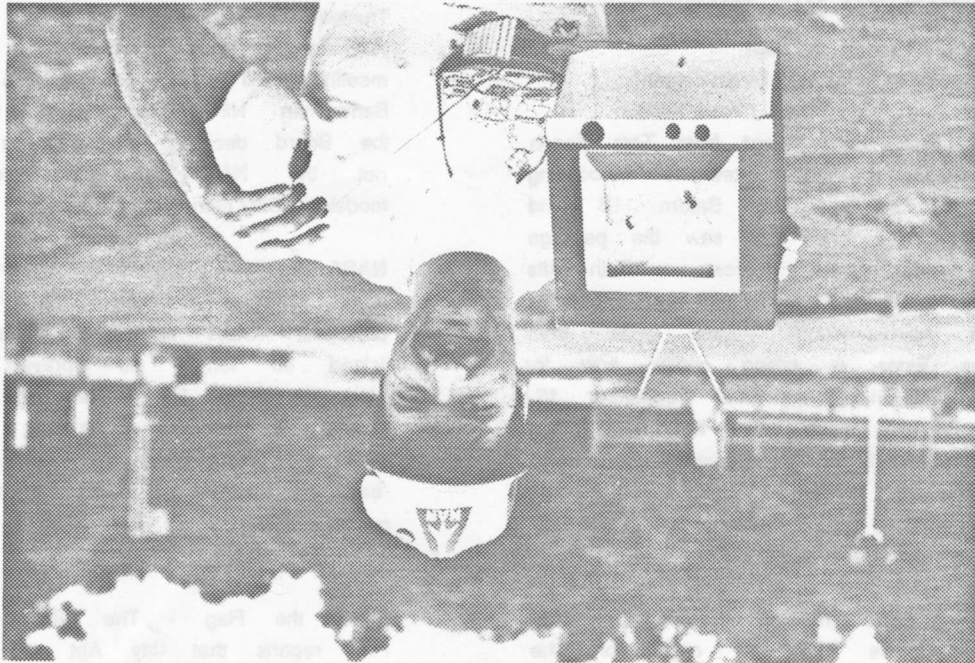
NASA Facilities Bugged - In an effort to avoid oily residues falling on delicate Shuttle payloads, NASA managers requested that Merritt Island no longer be sprayed with pesticides. Workers now find themselves busy chasing insects instead of installing equipment and performing tests. As many as nine months have been retrieved from Discovery's "sterile" spacecraft hanger. Even NASA can have "bugs" in their system.

Flying the Flag - The latest edition of AOPA Pilot reports that Jay Apt will carry an AOPA flag aboard Atlantis on his upcoming mission. Jay, a long-time member of the general aviation organization, flies his own V35 Beechcraft Bonanza, and has time in over 100 varieties of aircraft.



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