

THE LEADING EDGE

Newsletter of the Northern Illinois Rocketry Association,
NAR Section #117, Proud Winner of the 1996 and 1997 Rockwell Newsletter Trophy!

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July/August 1998

Important Club News!!

Under Construction - Due to construction at the Glen Ellyn Civic Center, the September 4th club meeting location has been moved to the Lombard Library (110 W. Maple Street). See the map on this page for library location. The date and time are still the same (Sept. 4th at 7:30pm). We do have to be out of the room by 9:00pm, or pay some extra money.

Please mark your calendars!!

Spinning a new web - The NIRA web page has moved and is now being taken care of by John Guzik. If you haven't taken a look at our page yet, you should. John has taken the excellent work that Mark Bundick did, and has really made some nice improvements. One thing that you can now find on our site is the last issue of The Leading Edge! What's the big deal about that? Well, the pictures are in color for one thing! You should visit the site often, since John is constantly updating the information on it. The new URL is:

<http://www.nira.chicago.il.us>

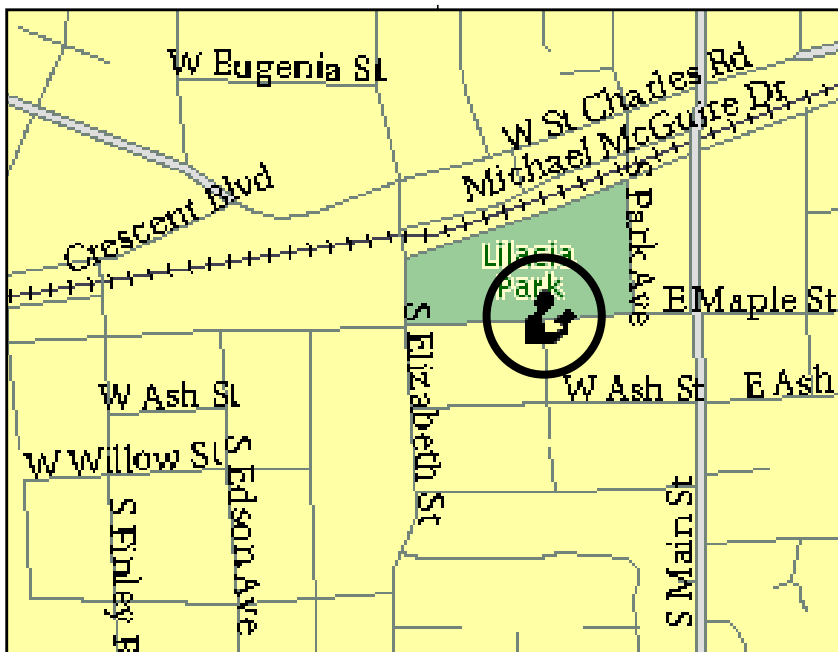
Chaos Theory - Coming in October will be CHAOS-1, a three event Section Meet. Once again Adam Elliott will be serving as your friendly Contest Director and Host.

The events scheduled are as follows:

- 1/2A Parachute Duration
- Set Duration
- A Boost Glider Duration

This is tentatively scheduled for the regular October club launch at Greene Valley. November will be the rain/wind date. Come one, come all!

Sign Me Up! - NIRA has an email list-server set up so that messages can be sent



To get to the library from the Civic Center, take Crescent Blvd. east to St. Charles, then St. Charles to Main Street Lombard. Go south on Main Street to Maple, then west (right) to the library. You can also take Roosevelt east to Main Street Lombard, then north to Maple Street. The parking lot is east of the library, and the meeting room is downstairs.

to one address and be distributed to everyone on the list. The list is to be used for general club information, such as announcements, requests for information, etc., but not for general chit-chat. Getting on the list is easy. Just send a message to:

nira-subscribe@makelist.com

You don't need a subject or any message. The system will send you a message and ask you to reply to it to verify the data. Just do a reply (again, no subject or message) and you're done! The next time you're online, take a few moments to subscribe. If you have any problems, drop Jeff Pleimling a note at jap@interaccess.com. Jeff maintains the list (thanks, Jeff!).

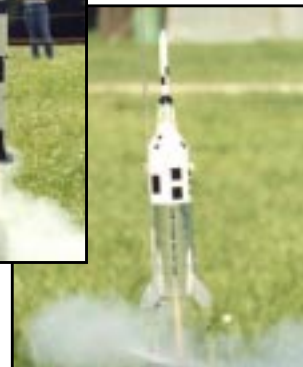
Coming Next Month!

MRFF '98 Coverage - Special Edition!!



Dueling Apollo's Locked Up - The Confessions of a Newsletter Editor

Dirty Laundry - Aerotech Talks



T MINUS 1 - NIRA'S CALENDAR OF UPCOMING EVENTS

1998 CLUB LAUNCH DATES

Launches are BYOL (bring your own launcher). The location for our 1998 launches is the Greene Valley Forest Preserve. If you have questions prior to any launch, call the NIRA Infoline at (630) 690-6353 and leave a message, I will call you back.

July 18 - Eat Cheese or Fly, Bong Recreation Area, Burlington, WI.

July 19 - Regular club launch.

August 16 - Regular club launch.

September 20 - Regular club launch.

October 18 - Regular club launch.

October 31 - Nov 1 - RCHTA Show, Rosemont Expo Center

November 8 - RCHTA Launch.

November 15 - Regular club launch

December 13 - Holiday Party at Bundick's

MONTHLY MEETINGS

All meetings start at 7:30 PM, and include 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 (630) 483-2468 if you can help with ideas or can speak yourself. The location is the Glen Ellyn Civic Center, 535 Duane Street (usually on the 3rd floor, but check the board in the lobby).

Currently scheduled meeting dates are: August 7, September 4 (Note the change of location on Page 1!!!), October 2, November 6, December 4.

THE LEADING EDGE, published bimonthly 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, photos, other newsletters, and news items of interest should be sent to Bob Wiersbe, 1835 Shetland Drive, Wheaton, IL 60187 (or electronically via Internet to wiersbe@lucent.com). Photos will be returned, other material returned if requested. Send membership applications (dues: \$3/year, including a six issue subscription to the Leading Edge) and nonmember subscriptions (\$5 per six issues) to Ken Hutchinson, 84 Jefferson Lane, Cary, IL 60013. Any item appearing in the Leading Edge may be reprinted by Sport Rocketry with proper credit given; all other uses require written permission of the Northern Illinois Rocketry Association. I was apparently mistaken in the last issue of this newsletter, and according to NIRA President Ric Gaff I'm not allowed to take a sabbatical whenever I feel like it. Therefore, I quit. Really. - The Management

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Bob "Hang 'Em High" Wiersbe - Editor
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 Leo "Scanners" Ringwald - Photo Reproduction

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Mark Bundick, Adam Elliott, Ric Gaff,
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 Bob Kaplow, Mark Kotolski, Rick Kramer,
 John McCallum, Leo Ringwald, Bob Wiersbe

My apologies for not recognizing Kevin Wickart as a contributor in the last issue.

THIS SPACE FOR SALE!!

In order to keep my outgo from exceeding my income, I've decided to sell ad space in the newsletter. Just send me your ad, and a large sum of money. Your ad will appear somewhere, sometime in a future newsletter (not necessarily this one). The more money you send me, the bigger your chance of getting your ad in the newsletter. I think it would be really neat if we could get the newsletter content to be at least 1/3 ads (if not more) like an unnamed HPR magazine we all know and love.



Model of the Month Winners! (from left to right, all photos by Ric Gaff)

June - Scale Night! Bob Wiersbe's Centuri Little Joe II won in adult, while Pierre Miller's scratch built MX-774 (I hope that's right) won in Youth.

July - Family Night! Michael Guzik's LOC Aura won in Youth, and John Guzik's Nike-Hercules won in Adult.

December 1997 (yeah, it's late) - Steve "I've got way too much free time, but that's going to change soon" Smith won in Adult with a nicely done Gemini-DC. Pierre "I've got nothing but free time" Miller won in Youth with his ALCM Cruise Missile.

NSL '98 Thoughts
Norman Heyen NAR 12755

The National Sport Launch was held in Muncie, IN at the AMA flying field on May 15, 16 and 17. Attendance was great, with 320 or so registered fliers and 1320 plus flights from 1/4A's to full M motors. The weather was clear and the 10,000' waiver was tickled several times. With the sunny weather, sunburn was the name of the game, and even SPF-15 wasn't enough to save my northern European skin...

I spent most of the days talking and meeting people. Did a shift of range duty, what a way to feel part of the event. You get to talk to the fliers and see the flights up close and personal. And watching all the flights, and applying sunscreen, obviously not often enough. The sunscreen part. There is no limit to watching rockets at a launch. And thinking about how good a cool shower would feel at the end of the day. I got to meet many folks that I have traded e-mails with for many months. Rocketeers are most excellent people.

Flights to Remember

Well, there were lots and lots of flights. Some memorable because they worked so well, or because I had either a personal stake in them or knew how hard the owner had sweated the details. Others were memorable because, well, everyone likes a crash now and then. There was a two stage flight that did almost a full loop with the booster before the upper stage lit, and headed north at about a 45 degree angle. While not really picture perfect, it was memorable. The giant rockets actually had excellent success this weekend. And Saturday morning, a 'K' motor didn't seem to ever really come up to power and stayed in the tower, just producing a huge amount of smoke. I don't recall a single big rocket crashing hard. And there were many a large rocket flown. The New York contingent of Andy Schecter and Ray Halm came prepared to fly. The full scale ARCON sounding rocket carried the Thomas Lucas Productions 8mm

digital video camera to 9000'. Twice. Their *Nike-Hercules* launched with a cluster of 4 I211's in the booster and flawlessly staged to a J275. I heard 9 'M' motors were to be flown, and I suspect there were more than 9 flown. Lots of *Bruisers*, and *Bruiser EXP's* and others in that same class were flown. And literally dozens of level 1 and 2 certification flights, both for Tripoli and NAR. The test tent was a busy place all three mornings.

Don't think that you have to fly huge rockets to get noticed, Bob Wiersbe flew his 1/24th scale *Gemini Titan* on a pair of F25's. Even though only one lit, it was a pretty flight, realistically slow and while no mission points for a land recovery, a safe recovery that NASA would have been proud of. Steve Smith flew his Boyce *Mercury Redstone* on a G80. Steve made a grab of the capsule that any wide receiver of the 1997-98 Chicago Bears would have be happy with. There were many *Saturn V's* flown, some of them looked to be vintage kits, crafted back in an era before plastic wraps. To fill out the manned space program reconstruction, the Estes *Mercury Atlas'* and *Space Shuttles* were well represented. Peter Alway was there with his collection of rockets that I can't pronounce. Scale *ASP's* were flown, *Aerobee's*, *Sandhawk's*, *Tomahawk's* and many more took to the air to relive the history of space flight. All that was missing were Bunny's *Atlas* creations.

And the war toys were there in force, *Phoenix's*, *AMRAAM's*, *Patriot's*, *V-2's* and others were seen to fly over and over again. Didn't see any *SCUD's*, maybe the *Patriot's* got them this time.

LOC demoed their new *V-2* kit. Apogee was there with the micro-sized *V-2* and *SR-72* glider. North Coast Rocketry showed off the new *Bomarc* kit and the new G70 DarkStar motor. Aerotech demoed the new 38mm J570 motor. What a kicker that is!

Fat Boys

Fat Boys in one form or another seemed to be



Bob Wiersbe's Gemini-Titan limps off the pad when only one of two motors ignites. (N. Heyen photo)

the popular choice. I wonder if Estes ever suspected that someone would fly one of these on an I65? I don't believe that Mr. Schecter got this one back, it was tracked until apogee, but was last seen heading towards Indy. There were Fat Boys flown with D12's, D21's, E25's, clusters of A10's and even Ric Gaff's flight with an B4-2! Imagine that, flown stock with the recommended motor, how unusual. Fat Boys were scaled up, over powered, clustered, staged and clustered-staged, yet on this field, most came back for more. It looks like the Mosquito has met its match.

Boom!

There was a very scary few minutes when one of the fliers had a large black powder ejection charge go off in his face while prepping a level 3 flight. I was in the parking lot and it literally sounded like a cannon going off. A tremendous explosion and a minute later the flier comes staggering into the middle of the parking area. Fortunately, there were several fliers with medical responder training that helped get him calmed down and began treatment until the EMT at the AMA field took over. An ambulance arrived within a few minutes and took him to the hospital. He was wearing 'wrap



Above - A bunch of heavyweights wait in line for a pad. Right - The rocket seen in line above lifts off from the far pad. Far right - One of many, many HPR flights made during the NSL. (All photos N. Heyen)



around' sunglasses and a hat at the time. The glasses were trashed and the bill of his hat was blown off. There is no doubt that the glasses saved his vision, and the hat help prevent burning. He was treated and released after a couple of hours, which really amazed me. If nothing else, we all need to consider wearing some sort of protective eye gear when using black powder. And what you can do to design the rockets to minimize your exposure. It appears that the flier took the normal safety precautions, didn't have power applied to the altimeter and the charges were safed, but somehow, something went very wrong.

My Level 2 Flight

I went to the NSL with one goal in mind and that was to certify level 2 with a J275 in my 'TCB In a Flash' *Thunder*. I had bought this rocket the previous fall from Ross Dunton at Magnum during SMURFF II at this same field. I guess it came home to fly. I decided to try using an altimeter. The simulations put the needed delay almost exactly between available short and medium delays. After months of playing around and head-scratching, I decided that I was happy with the electronics setup and would use apogee deployment, with the motor ejection as a backup. After testing at the field, I just didn't feel comfortable with how everything seemed to be acting, so I ripped the electronics out and relied on the motor for deployment. So much for bench-testing.

The level 2 written tests were given at 10:30 AM each morning and I took mine Friday to get



Norm Heyen (center) waits in line with his "Thunder" level 2 rocket. That's John Barrett behind him and the crane used by PBS in the back. (R. Wiersbe photo)

it our of the way. Even though I was ready, there was a lot of anticipation and that showed in the one question I missed. Just imagine an electrical engineer missing the question about how to wire a cluster... It was hot, I was nervous, Oh well. Tip of the day, read the questions and check your answers. Sheese. Anyway, the winds were more than I wanted to deal with, so the flight would have to wait. The hazy skies made it difficult to track even large rockets to

altitude.

Saturday morning was much cooler and not nearly as hazy. I rounded up Dave Miller and Ken Hutchinson of NIRA for my certification team. Mark Bundick, Steve Smith and Mark Darrell assisted in tracking and recovery. After a very nervous wait in line, thinking that maybe I should just do this later, I was assigned a pad. Off we went to a far pad. Everything seemed to be in order and I began to wonder if I had a picture of this thing. What if I never saw it again? At least in one piece? Back to the range head and wait for the countdown. At T-0, the Firestar puffed a bit of smoke and popped out without starting the

motor. Rats! Now I have to do it all over again. By this time, I was committed or at least ready to be. Back to the pad with another Firestar and try it again. This time the big motor, well, big to me, roared to life and the *Thunder* began it's cruise to 2400'. Up it went, not real fast, but enough to impress me. At apogee, nothing... Then a couple of seconds past apogee, the chute comes out and inflates. Now for the hard part, where is this thing going anyway? It started to drift back towards the range, but the fickle winds started to shift and push it off to the east. A couple of times team members declared that it was going back up again. And I was worried that the chute wasn't big enough... Great, just what I was looking for, a nice fat thermal. Finally, gravity won out and the rocket was seen heading to the earth. Mark Darrell offered to drive around to the far side of the field and pick us up. The rest of us trekked cross-country. After what seemed like a long walk, the rocket was seen in plain sight, just inside the AMA field. Inspection showed a little ding caused by the longer than needed delay and the tubular nylon. Nothing that would prevent getting my card signed. The ride back in the air conditioned car was a grateful end to the flight. Ahh, the warm glow of victory. My personal thanks to the guys for giving me help and moral support.

Video Crew

The NSL was being filmed by a crew from Thomas Lucas Productions. They are producing a documentary about grass-root efforts to get into space. Since we do lots of sub-orbital flights, we were included. The film crew was great, picking up on our enthusiasm. Every once in awhile, one would exclaim 'Holy Cow', or something to that effect. Ray Halm, Andy Schecter and Ed LaCroix did an excellent job lofting the digital video camera to over 9000'. Not once, but twice on Aerotech M1419



Proud daddy-to-be Steve Smith with his immaculate Mercury Redstone. (R. Wiersbe photo)



motors. The video is stunning, you hear the motor come up to pressure, then the ground rapidly falls away. You see the smoke column giving some sense of continuity with the ground, a bit of turbulence causes a couple of quick snap rolls, right, then left and a couple of seconds of smooth coasting. Everything is in focus, the launch sight and 300 people looking heavenward are visible. The roar of the engine is over and all you hear is the rush of the wind over the airframe. Just before the altimeter fires at apogee, there is a hint of Mother Earth's grand curvature. And the long decent back home begins.

On Sunday, the crew asks for volunteers to launch their rockets and have them filmed from above. The crew has rented a 120' tall cherry picker and has a cameraman and video positioned to capture these flights as they rush up and past the platform. When the second 'M' powered *ARCON* raced by within 20' of the camera, the cameraman declares 'That was cool'. Who says you can't impress people these days. And in case the flights weren't enough, they lowered the boom (sorry, couldn't resist) and got some close-ups of rockets leaving the



Left - John Barrett preps one of probably dozens of flights for him. Right - Bob Kaplow's Crayon at liftoff. (N. Heyen photos)



History in the making - Ray Halm and company hauls his ARCON out to the far pad, liftoff on an M1419 motor, and on its way to over 9000' feet. This flight was the highlight for many at the NSL. (N. Heyen photos)



pads. When was the last time you saw a rocket coming at you from 50' below you?

General Comments

The AMA field is perhaps not rocket nirvana but close, more hospitable than the western deserts. Finding over a 1000 acres of nearly flat grass lands that will welcome us is no easy task. There were lines to be sure, but I suspect that the organizers were overwhelmed by the attendance. Some of the delays could have been better handled, but I don't think anyone went away sorry they came.

Thanks to all

Many thanks to Bob and Kathy Hart - Summit City Aerospace Modelers (SCAM) NAR section 282 and Ned Blumenschein - Tripoli Fort Wayne TRA prefect 104. I know that many others helped out and deserve our heartfelt thanks. All the work that went on behind the scenes, getting prizes for the raffles, lining up hotel rooms and meeting rooms, and the hundreds of details that go into a major launch event. And what would a launch be without the dozens of volunteers needed to staff the range? Without all those things being done, and done well, none of us would have been able to look back and fondly remember the great time we had at Muncie.

Many thanks to Advanced Rocketry Group, Ltd., Aerospace Specialty Products, Aerotech Consumer Aerospace, Apogee Components, Balsa Machining Service, Belleville Wholesale Hobby, Binder Design, Countdown Hobbies, Custom Rocket Company, Dr. Rocket, Estes Industries, LOC/Precision, Mach 1 Industries, Magnum Inc., NARTS, Nordic Rocketry Incorporated, Phil's Hobby Shop, Fort Wayne, In, Public Enemy Rockets, Public Missiles Ltd., Red Arrow Hobbies, Robby's Rockets, Rocket R&D, Saturn Press, S&S Hobbies, Marion, In, The Launch Pad, Top Flight Recovery and Transolve Corp. for donations and attending the launch. We hope that the trip was worthwhile. If you were one of the lucky raffle winners, don't forget to thank these fine sponsors.

NSL Notes from Mark "Bunny" Bundick

First off, my thanks to the NSL organizers, the SCAM section team of the Blumenschein's, Stump's, Hart's and others for an great event. While I'm sure they'll give us the final flight count, I've heard numbers like over 300 registered flyers and 1,300 flights over the three days. Outstanding work, folks; take a well deserved bow for hosting what was the largest launch in the history of the NAR!

Secondly, my thanks to the fine Indiana citizens who held back on their urges and didn't kill the NAR president for wearing Chicago Bulls jerseys on not one, but two days. I promise to reciprocate by wearing a Pacer's shirt at the fall SMURFF should Michael and Phil lose this series to Reggie and Larry.....

Third, thanks to Ray Halm, for his outstanding full scale ARCON flight on Saturday. Participating in this launch was one of the highlights of my NAR presidency to date. I can't honestly remember when I had so much fun participating in a sport rocket launch.

The preparation and workmanship on the vehicle were top notch, Ed LaCroix proved his worth as an excellent tree climber, and when we finally got around to seeing the video, it was as if we'd won an NBA title. Cheers and high fives all around. One of the crew members from Thomas Lewis Production calling over on the radio said "So I take it it worked?". The digital camera meant no dropouts during ascent, a common problem with film video units, and Ray's work at setting up the chute minimized swinging and rotation during descent with excellent results. If you get a chance to see the video from this flight, do it. "Spectacular" does not do the clip justice.

Andy Schecter's Nike Hercules was also another highlight flight. Perfect composite cluster ignition, drag sep prior to staging, beautiful arcing flight with spot on recovery, those NY

guys really know how to put on a show. Andy's stock sized Estes Fat Boy under I65 power was good for a laugh, too.

That model, BTW, also keep intact a trend present throughout the weekend. I didn't see a stock Fat Boy flight the entire launch. Thanks to "Silent" for showing up with his version which sport 2x the normal number of fins and an engine mount that resembled a Gatling Gun. Those models which had, in a fit of modeling madness, retained their 18mm engine mounts were abused by owners insisting on D13 or D21 powerplants for launch. What is it about this kit that makes experienced sport rocket flyers want to kitbash the heck out of it???

Indiana's Mark Williams did a nice scaleup of the Estes Sprite. A K and two airstarted I's gave a good ride in a dead calm period and wowed the Thomas Lewis crew. I spent a considerable amount of time with that crew on Sunday, arranging to, of all things, find models to shoot at their \$100,000 film camera mounted on a Snorkleliff. The director wanted a shot where the rocket roared right into the camera lens. When I asked how close they wanted us to get, the director of photography said "If you miss by an inch, that would be perfect."

I reminded them these rockets were unguided, and with some VERY mixed emotions, torn between getting the hobby some good PR and safety, went off to find the volunteers. Five or six folks stepped up to the challenge right away. The clear winner was Rick Taylor from OH whose Infinite Loop model made from paper towel tubing flew low, slow and only about a foot from the camera. Thanks to Mario Perdue, Don Qualls, John Buscaglia and Tom Pastrick who also gave us some good heart stopping moments as rockets wizzed by the technical marvel whirring away.

The PBS program they're working on should air sometime in the spring of 1999. Details will

be posted here as I get them. I wonder if my interview will survive the editing process????

Flying wise, I actually had some new stuff to try out. My BT-60 sized THOR fun scale model flew fine on B6-4 power. I used the data from Pete Alway's "Happy Page of Mass Destruction". I also proved that you can't fly a SPEV when it tries to haul around the blast deflector. The wind made the model bind on the rod, which wasn't completely screwed down on the pad (my fault for not checking). The bird made one nice loop until the D13 ran out of steam, then settled into the grass for a non-standard, but no damage landing. I reflued for a nice "wake 'em up" flight. Love that snorty little reload. I also nearly thermaled away my BT-60 Juno II scale model. Helpful demo hint: an MRC Ironman on B6-4's will show the entire typical model rocket flight and stay on any field sized larger than the average American front yard...

Both Estes and Aerotech demoed new motors. The Estes G's are a nice follow on to the Darkstar F's already on the market. Those who flew the F's reported perfect flights all weekend on. The new 38MM J motor from AT will be remembered as described by TMT Chairperson Sue McMurray, "This is one rude little motor". Nice burn, good trail, and LOUD. If you're looking for a Level 2 cert motor with a little more in it than the J350, this is the one for you.

On the accident which has been widely reported here already, Jeff Singleton appears to be on his way to a full recovery. We're obviously interested in finding out what went wrong and sorting out ways to keep it from happening again. Bruce Kelly and I have already spoken about publishing whatever the results of the post flight analysis are, and I'll be certain share them here as well.

I also did my share of slimy NAR politic things, wandering around ambushing folks asking about NAR services and programs. I appreciate the many kind words of thanks I got from NAR members. Remember, that without the entire cadre of volunteers, Trustees, committee chairs and members, section officers and advisors, newsletter editors and, yes, volunteers to run ranges like those at NSL, the NAR simply doesn't work. My office makes my work more visible than these folks sometimes, and I think that leaves NAR members with an inaccurate impression that it's Bunny doing all that stuff. Nothing could be farther from the truth, and very little would be accomplished without that unsung work being done by those NAR volunteers.

If you missed NSL, consider heading back to Muncie either for NARAM, beginning August 8. NARAM manager Glen Feveryer held a 2 hour meeting on Friday night to review progress, and he's better organized and farther along at this point than I ever was for the two



Andy Schecter's clustered/staged Nike-Hercules at the moment of liftoff on 4 I211's in the booster and flawlessly staged to a J275. (N. Heyen photos)

NARAM's I managed. It's going to be a great event. If you can't make NARAM, try returning on the Sept 12-13 weekend for the fall SMURFF regional sport launch. It promises to be an equally good time with many of the same folks who attended NSL.

All in all, an outstanding rocketry event and weekend. Fun with a capital "F", folks.

Rockets for Schools Program & Launch Report by John McCallum

The first annual Michigan Rockets for Schools program competition launch took place just off Muskegon Lake on May 8th and 9th of this year. In its third year in Sheboygan, Wisconsin, the Michigan Technological University's Rockets for Schools program is designed to teach middle and high school students math and science by way of high power rocketry.

Our organization was represented by The NIRA Young Rocketeers, a team of five kids (John, Ken, and Dan McCallum, Michael Guzik, and Nora Manca) and two adult team leaders and coaches (John and Kimber Guzik).

Most of the judging took place at Walker Arena on the 8th. Here pairs of judges looked at the display booths, examined the construction and finish of the rockets, and listened to brief oral presentations given by two members of the team. There were a number of really nicely done rockets, among them a seamless, perfectly smooth deep blue model dubbed the Viking One by its makers at Dundee Middle School and a rocket bearing an airbrushed Excalibur. It was a lot of fun, wandering around and looking at rockets and payloads, talking to people and getting ideas for next year.

In addition, there were presentations by Jim Fitzgerald, a NASA education specialist; the various members of the coast guard who would

be helping out with recovery and range safety; and Adam Holterhoff, prefect of the Michiana Tripoli association, who talked about his two stage PML Triton.

Red Arrow Hobbies was there, selling igniters to replace the copperheads that came with the motor reloads. There were two kits being flown, one of which was a generic PML three-fins-and-a-nose-cone on an I284W, the other a Loki Dart on a J350W. There was no public announcement system, so the first flight came as a bit of a shock to those of us watching from far enough back to miss the spoken countdown. In any case, the first round of flights took place around 9:40, pretty much on schedule. Straight up, perfect boost, and almost lost in the haze. Ejection and chute deployment went fine, but the wind was picking up, and the rocket landed at the far end of the lake. A few more feet and it would have ended up in the line of rocket eating trees on the shoreline.

We had a lot of help with the launch, including trackers who recorded apogee for each flight and relayed bearings to the recovery teams. The recovery teams themselves were great. These guys went out on the lake in small coast guard boats and fished the rockets out for us. It was a real pleasure to launch high power and not have to walk more than a couple yards to recover!

By the time our team's time slot came up there had been a number of delays due to boats and planes straying into the recovery area. We had a payload that recorded data onto a two hour microcassette tape. As the delays stretched on and on we began to worry that we would run out of tape before we launched. Finally, we got to the final preflight safety inspection and loaded the rocket onto the rod. By this point the rods were angled nearly 15 degrees into the wind. We went up at that angle, and drifted right into the middle of the recovery area. When the recovery teams returned the rocket the tape was just running out. Talk about luck!

Around 3:30 we returned to Walker Arena for the final judging and awards ceremony. Most of the teams were still out, but a number of the rockets were back on their displays, so we wandered around, seeing how people had done. There was a fair amount of carnage; the Excalibur had shredded two fins, the payload section of the Viking One had been cut on a fin at ejection, and there had been a number of separations. Birney Junior High had launched an uncooked egg, named Eggbert by the team, packed in the payload section of an Estes Omloid. Sadly, Eggbert did not survive the stresses of high power flight.

For the most part, however, flights had been successful. David Dunlap, the MTU project director, reported a 90% success rate. Not bad at all, if your first rocket flight is made on a J350!

Unfortunately, while everyone had a chance to fly, the delays forced the judges to cancel the awards ceremony so that people with long drives could get home on schedule. They promised to get results up on the MTU web page (address: <http://www.Physics@phy.mtu.edu>) and everyone left talking about what they had learned for next year. This looks to be an annual event, and despite the bugs it was a lot of fun and shows a lot of promise.

COSMOS-1 A SUCCESS!
by Adam Elliott

At the April regular club launch, twelve NIRA members, long starved for competition, showed their skill at the first annual COSMOS meet. The weather was very appreciable with light winds and sunny skies.

COSMOS-1 consisted of three events. The first event of the day, and the only one that all participants flew, was Open Spot Landing. The idea of which is to land any rocket with any motor as close to the mark as possible. The mark was selected by throwing my tape measure out into the field and marking where it landed. Since there were only two competitors total in A and B divisions they had to be combined. Mike Guzik won the A+B division with a distance of 34.1 meters. The bigger kids in C division were lead by father John Guzik and Steve Smith with 6.7 and 8.9 meters respectively. Good show, lads.

Next up was 1/2A Streamer Duration. The goal of which is to have the longest flight time with a 1/2A motor and streamer recovery. Your two allowed flights are totaled to figure your score. The A+B division was lead by Mark Soppet with 12 and 13 second flights. Steve Smith again made a good show with a total hang time of 76 seconds. However, Bob Kaplow must have said his prayers to the Rocket Gods the previous night and had a miraculous flight of

229 seconds. That's 3:49! His flight kept on going, and going, and going over some trees even. And, yes, he did manage to get it back! His time was so good, it managed to surpass a US record by almost a minute! Way to go Bob!

A SuperRoc Duration was one of the most interesting. The idea is to again have the longest flight but this time with a really long model. In this case it must be a minimum of 75cm. The length of the model is multiplied by it's duration. Your two allowed flights are again totaled. Mark Soppet was the only qualifier in A+B division with a model 75.5cm long and a duration of 7.78 seconds on his only flight.

All qualifiers in C division had at least one flight of at least 20 seconds. Bill Thiel managed 23 and 26 second flights, but his model was a mere 89cm. Joe Nowak put up a maximum length (150cm) model for 32 seconds on his only qualified flight. Tom Pastrick sure seems to know his SuperRocs. He used a short, 88.5cm rocket but achieved times of 37 and 46 seconds and was the winner by a significant margin. Well done.

No meet would be complete without a meet champion. Your friendly contest director, who, by the way, finished in last place, has deemed that John Guzik and Joe Nowak can really strut their stuff. They received 4th and 3rd respectively. Bob Kaplow and Tom Pastrick battled their combined 2000 years experience to place 2nd and 1st. I would like to congratulate them on their fine performances.

Another round of back slapping goes to Pierre Miller and Steve Smith for helping out with timing and measuring. Couldn't have done it without you guys. And a really big thanks to all who participated in my very first competition. Especially those way down at the other end of the line who had to wait patiently for some attention.

I hope all who participated enjoyed their time and "caught the bug" of competition. I enjoyed the competition so much that there will be another one in the fall. Look for CHAOS-1 in October, with November as a rain/wind date. Hopefully this will be even more inspirational and that NIRA will be back in full force some day soon. See you then!

1/2A Streamer Duration

A+B Division		Points
Result		
1. Mark Soppet	25s	80
2. Michael Guzik	10	48
C Division		
1. Bob Kaplow	257s	80
2. Steve Smith	76	48
3. Tom Pastrick	59	32
4. John Guzik	49	16
5. Joe Nowak	29	8
6. Tim Johnson	21	8
7. Bill Thiel	14	8
DNP - Adam Elliott	DQ SEP	0
DNP - Kimber Guzik	DQ KIK	0

A SuperRoc Duration

A+B Division		Points
Result		
1. Mark Soppet	587	130
DNP - Michael Guzik	DQ SEP	0

C Division

1. Tom Pastrick	7288	130
2. Joe Nowak	4739	78
3. Bill Thiel	4424	52
4. John Guzik	3134	26
5. Bob Kaplow	2998	13
DNP - Adam Elliott	DQ SEP	0
DNP - Kimber Guzik	DQ PRG	0

Open Spot Landing

A+B Division

Result		Points
1. Michael Guzik	31.4m	40
2. Mark Soppet	DQ KIK	0

C Division

1. John Guzik	6.7m	40
2. Steve Smith	8.9	24
3. Martin Schrader	13.1	16
4. Bob Kaplow	15.4	8
5. Tom Pastrick	25.5	4
6. Joe Nowak	26.5	4
DNP - Adam Elliott	FAR	4
DNP - Kimber Guzik	FAR	4
DNP - Tim Johnson	FAR	4
DNP - Bill Thiel	FAR	4

COSMOS-1 Final Standings

A+B Division

1. Mark Soppet	211
2. Michael Guzik	88

C Division

1. Tom Pastrick	166
2. Bob Kaplow	101
3. Joe Nowak	90
4. John Guzik	82
5. Steve Smith	72
6. Bill Thiel	64
7. Martin Schrader	16
8. Tim Johnson	12
9. Adam Elliott	4
9. Kimber Guzik	4

Great Annual Rocket Launch Of 1998
by Rick Kramer

The Central Illinois Aerospace hosted their annual G.A.R.L.O. event in Dodds Park, Champaign, IL on July 5th. I was surprised to see a familiar face in the crowd of rocket people and spectators. Dr. John Kallend and his friend Dave (who is one of my neighbors here in Normal, IL) flew simultaneous radio controlled Aerotech Phoenix models and wowed the crowd with their aerobatic skills. John took 3rd place in "Best of Show".

The launch area contained 5 pads with one high power pad out in the distance. They loaded the five pads and launched them as a single rack. Sort of like the NIRA RCHTA Launch.

They had some cool contests also. They tied streamers to alien action figures and timed the duration from launch to touchdown. You had to recover the alien to qualify. I put my alien up on

an F25-6 in my LOC Graduator but lost the critter in the tall grass. John Kallend upheld the honor of the club by taking 1st place in the event.

My Estes Phoenix took second place in spot landing 39 feet from the flag. John Kallend took 1st place in the event [probably used an RCRG if I know John - Editor]. My three inch Ultimate Loop copped two awards; First place for Pretty Rocket and a Second place for Best Flight.

My Blue Plate Special took second in the UFO ODDROC competition which included points for design, decoration, and stable flight. Eat your heart out all of you happy meal, paper plate, and dice flyers. John Kallend followed by taking 3rd in the event.

All in all I have four ribbons to add to my trophy case. I also joined the C.I.A. so I have dual citizenship now. The launch was followed by a pot-luck bring a dish to pass picnic. My wife's chocolate and caramel brownies received the top award after the eating was done.

North Coast Bomarc Building Tips by John Kallend

I thought I was fortunate to be given a Bomarc kit by the owner of my local hobby store, on condition that I build it in time for a rocket launch that he is sponsoring in the village of Park Forest (south suburbs) at the end of July. I now realize that the gift could equally well be considered a curse.

The Bomarc is a really cool looking missile, dating back to the 50's. It has a delta wing, a conventional (aircraft type) tail, rocket booster, and two huge ramjets standing off from the body/fuselage. If you're really interested, you can see a real one at Rantoul Aviation Center (go to a CIA launch down there, and take a side trip to the aviation museum).

The North Coast kit passes up the opportunity that seems obvious to me, of making a radio-controlled model. Instead it has conventional parachute recovery. I have only just finished the construction, so this article will focus on the issues that need to be addressed in building it. I *hope* that it will fly OK.

1) Body: This is quite conventional for a large model rocket. I would caution the potential builder to think very hard about what motors are likely to be used. The motor mount appears to be designed in such a way as to make the use of Aerotech motors difficult or impossible, unless you make modifications BEFORE installing the mount. Also note that the ramjet standoffs are designed to be glued into slots in the body tube. If cut according to the supplied template, these slots are NOT the same size as the standoffs!

2) Wings and tail assembly. I really dislike this

part of the design. The wing and tail are made from vacuum formed plastic skins glued onto a built-up balsa frame. The vacuum formed parts took me a whole evening to cut out, and they have the usual dimensional imprecision to be expected in vac-formed parts. The instructions are unclear about exactly where the cutting lines are, so be conservative until you have built the frames and can visualize the end result. Getting a nice clean seam between the skins is very difficult, too. On the whole, it would have been easier, quicker, stronger and lighter (but probably more expensive) to have just used 1/4 inch balsa sheet for the wing, and 3/16 sheet for the tail feathers.

The wing and tail are just epoxied to the body tube - a method that seems crude to this model airplane builder.

3) Ramjets. This is the REALLY horrid part. Each ramjet consists of two vacuum formed skins that are glued, one on each side, to a 1/4 inch balsa crutch. The crutch also includes the standoff that is used to mount the engine to the body tube.

The engines stand off just over an inch from the body tube. As shown in the plan and instructions, the standoff is (a) cut so that the grain is parallel to the body tube. As any experienced builder will know, this will break off at the slightest provocation, and (b) is just glued into a slot cut in the body tube, with no reinforcement.

Suggested modification: With the wood supplied, if you cut carefully you can use two pieces to make standoffs with the grain perpendicular to the body tube, which will be much stronger. You can also extend the rear of the standoff to pass through the body tube so that it can be glued to the front of the motor mount, making the whole structure stiffer and stronger.

It's really quite hard to get a good, circular cross section to the ramjets. You will spend a lot of time fiddling around, getting the skins properly adjusted where they glue onto the balsa form. After the skins are in place, you have a hollow tube of thin plastic with a balsa crutch down the middle. To stiffen the tube a fake "diffuser" is glued in the front, and a circular bulkhead in the rear. These are also vacuum formed plastic. The written instructions are misleading about how these attach, and there are no good pictures either. Just study the parts carefully and it is reasonably obvious what to do. If you rush on, blindly following the instructions, you stand a 50% chance of messing the whole thing up. On my kit, the diffusers in particular didn't fit (too big), which required another round of trimming. It took me another complete evening just to get the ramjets together.

In summary - this is a nice looking model. Unfortunately, the devil is in the details, as St. Thomas Aquinas taught. The instructions are

misleading, the illustrations are unclear, the construction is tedious and the outcome is heavy.

No Cheese, No Flies by Bob Kaplow and Norm Heyen

If you missed the No Cheese - No Flies (NCNF) launch, you missed a good day. Weather started out a bit breezy, but winds died down towards the end of the afternoon. Ken Hutchinson, Ric Gaff, Cheri and Jenny Chaney, Leo Ringwald, Dan Wolf, the Guzik's, Adam Elliott and Peter Olivola were there, as were many faces that I can't attach names to. Gordon McGrew was flying some of the home built stuff he flies up at Bong. All in all, maybe 15-20 cars were there, so probably 25 people. A nice sized turn out.

NCNF went well, except for forgetting a few things. No one brought any NIRA flight cards, so we used all sorts of scraps of paper. Still, we managed about 180 flights (and that's without Rick Kramer or John Barrett, NIRA's top two fliers). We seem to have more battery problems; Steve Piette lent us his backup boat accessory battery to run the range.

I [Bob Kaplow] forgot both my HPR reload casings, and the bolt on plastic fins for the big crayons. Thanks to Ken Hutchinson loaning me a 38mm reload set, I was able to fly my Micro-Brick Electric City on an H242T and THOY Phoenix on an H73J, plus the LOC IV in Red, White, and Blue on a G64. Along with that were flights of the Happy Meal, Woodstock (Quest C6 cat!), a Custom Land Viper on 3 C6-7s (multiple motor elimination vehicle), and Rachel's Bertha Baffle on a B6-4.

Peter Olivola made several HPR flights, including one with a motor that had been loaded for 2 years, and another that cut a nice core sample.

Two RMR readers joined us for the first time: Gordon McGrew and Ben Romashko. Both had some interesting models including some LMR/HPR stuff. Welcome! We also has the Gallant's



Gordon McGrew waits patiently for his rocket to lift off. (N. Heyen photo)

come to fly from Woodstock; they accidentally discovered us at the sod farm last year, as well as some locals who heard about the NOTAM at DACY airport, and wandered out to see what was up.

I [Norm Heyen] flew nine times, from an A8-3 in my Estes IRIS to an I211 in the EZI. The EZI is starting to get a pretty big kink in the tube and may finally need to be retired after about 16 38mm flights, and almost as many crashes. But I will have to look at it, I hate to lose such a faithful companion. I flew my rebuilt Warp II three times with great success (it was rebuilt after the Quest C6-0 CATO last fall at SMURFF). The first time on a C6-0/A8-5 combo, just to test it out. Then twice on C6-0/C6-7 staging. The last flight was great, the booster landed within 15' of the pad and the upper less than 15' beyond that. Staged spot landing anyone? And the little Marvin the Martian passenger is building his frequent flier miles, now a veteran of five flights. But he makes for "slow, realistic" take-offs, as Dan Wolf said. My other flights were the Broadsword on an AT E15, an F40 in the Initiator, a couple of C6's in the Big Bertha and a Serval flight or two.

Tom Pastrick and Bill Thiel spent the afternoon trying to out do each other with gliders. Almost like watching a mini-competition. Bill's Transwing did OK most of the time, but Tom's airfoiling seemed to be the difference. But they certainly were having a good time and logging many flights. I suspect that the trimming procedure was being honed for future, like August, reference.

The highlight was John Guzik's Level 1 certification flight. He built his EZI following the articles I wrote, which personally was pretty cool. The H123W-S was about as good as it gets. Nice flight, good boost, ejection just about at apogee, recovery on the field without any damage. What more could you ask for? And I got to sign a certification form. John brought out the rocket built by the 'Young NIRA Rocketeers' for the "Rockets for Schools" program earlier this year, and an I184 motor for it. The



The NIRA Young Rocketeers rocket before warping off the pad. (N. Heyen photo)

rocket was prepped, the recovery team sent way deep in the field, and the countdown begins. If you haven't seen an I284 in a rocket that small, you can't imagine the sound and fury these motors produce. The thing leapt off the pad and almost disappeared into the sky. But sharper eyes followed it. The rocket was recovered just beyond the first irrigation ditch with only slight water damage to the recovery team's shoes.

**If it's raining, this must be Mooseheart
by Bob Wiersbe**

On Saturday June 6th there was an R/C Air and Land show sponsored by the Hobbyworks of Batavia on the grounds at Mooseheart. For the 5th year in a row, NIRA was there to open the show with a spectacular 45 minute demonstration of model rocketry.

Manning the NIRA range were Ric Gaff, Leo Ringwald, John Kallend, Steve Piette, Tom Pastrick, myself and my two sons, Chris and Kyle. Chris and Kyle did all the recovery for us, and did an excellent job. We only lost 3 rockets, 1 in a tree, and 2 that drifted to the east side of Mooseheart and behind some tall trees.

We like to open the launch with a rack of five rockets that show how high the same rocket can go on the different classes of motors, from A to E. Kids always get a kick out of any size motor, but you could tell the adults were impressed with an Estes Generic (commonly known as a Windy City Special) on an Apogee D10. The Generic on an E25 is a scream, it just warps off the pad. Amazingly, we got all five back for the second demo.

We try our best to show all the different aspects of rocketry, scale models, sport models, gliders, egglofters, competition models, different recovery systems, and bigger motors. Stars Wars rockets were very popular



Left - John Guzik with his Level 1 Certification flight - an EZI-65 on an H123. Right - Liftoff of John's EZI-65. (N. Heyen photos)

with the crowd too. Ric and I flew Aerotech kits on F25 motors, mostly to get the attention of the adults.

John Kallend put on several great displays with his Phoenix and Ladyhawk RCRG (Radio Controlled Rocket Gliders), and even brought out a helicopter to fly during the RC plane demo.

For our first demo the weather cooperated, with high clouds and very little wind. While we were prepping our rockets for the second demo it started to rain, and after pulling a tarp over the rockets we headed for shelter. Then it started to hail! On one side of the field the sky was gray, on the other it was clear blue. This was the Mooseheart we have come to know and dread. The rain let up just in time for us to do our second demo, then started again as we packed up.

My thanks to the guys who came out to help, you really made it a good show. Major thanks go to Rick Gaff, who sacrificed his voice to announce all the flights when the PA died.

**4H Summer Rocket Launch
by Tom Hulina**

Monday July 6th saw the Kane County Fairgrounds turn into launch central as a number of 4H members blasted their spring rocketry projects into the Western Suburb's sky.

Approximately 80 young 4H members participated in the yearly event. Two groups, one beginner and one advanced had a great time showing off their rockets and seeing how well they would perform.

Both groups had their rockets judged for craftsmanship and flight worthiness by Bob Kaplow and Tom Pastrick. A fantastic variety of different Estes rockets were represented, from small to "D" engine size crafts. Star Wars X-Wing Fighters, SR-71 Blackbirds, F-14 Tomcats and even a silver Titan are examples of some of the great rockets flown over the 2 hour launch window. The weather looked as if it was going to rain but the rain clouds passed overhead and the overcast kept everyone from overheating and allowed better tracking.

The launches were supervised by Tom Hulina and Dave Auer, and participants were encouraged to follow all safety rules. As a result, everyone had a wonderful time in seeing their rocket projects blast off into the Illinois sky. Though a few rockets needed a second try to get off the ground, all the rockets brought to the launch were eventually launched, with some spectacular flights. All rockets were recovered and only a few had some minor damage from delayed chute ejections.

All in all, a great time was had by everyone and many were making plans for what they would build for next year's event.

RUNT

#010895

Designed by: Mark Kotolski
NAR #35707, TRA #3609

Parts List

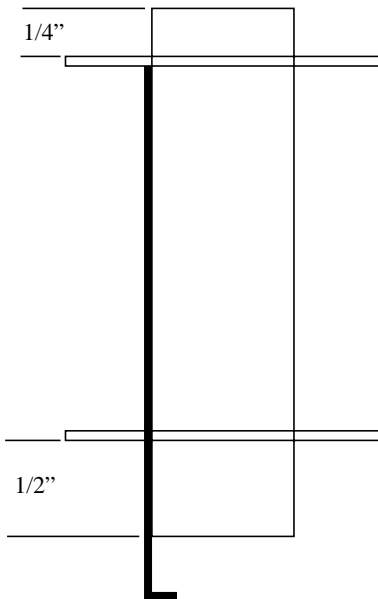
PNC-60AH
7" of BT-60 Tubing
1/16" Basswood Finstock
EH-2060 (motor mount)
Motor hook
1/8" x 24" Shock Cord
12" Parachute or Optional Streamer
1/8" x 1.25" Launch Lug

Recommended Motors:

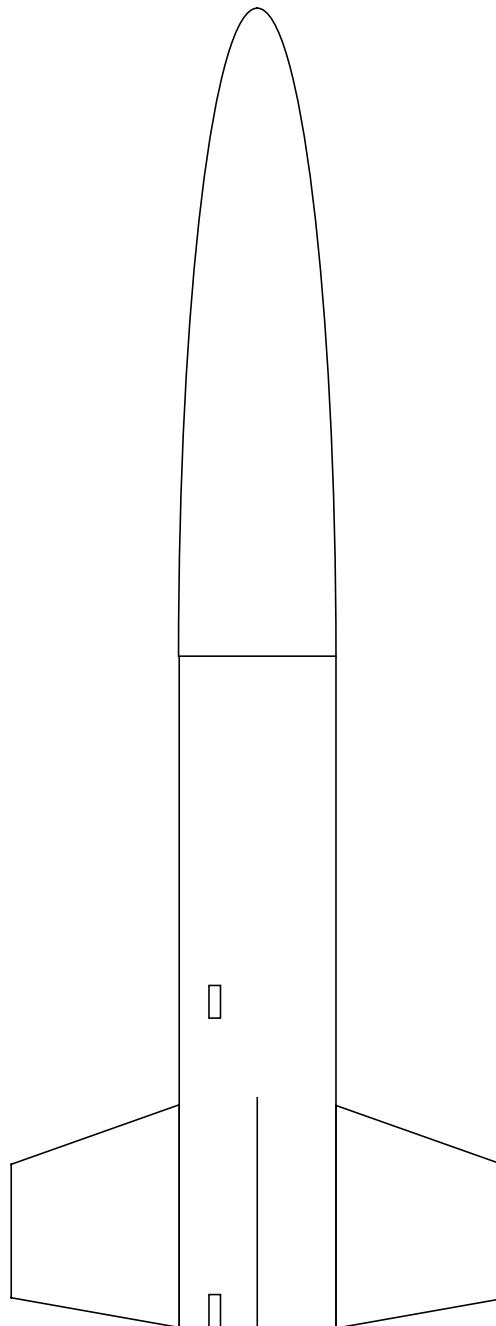
A8-3, B4-4, B6-4, C6-5

If you build it strong (i.e. use epoxy), the following motors can also be used:

C12-7T, D13-10W, D21-7T,
D24-10T, E25-7T



Motor Mount Assembly



1/2 Scale

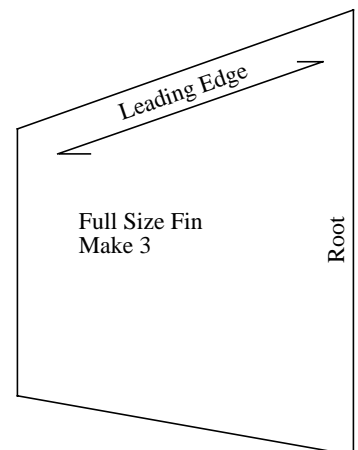
* Streamer recovery is recommended for flights powered by 'C' or larger motors.

* Use a motor hook and thrust ring combination in the motor mount for a stronger, more durable rocket.

* Motor mount is glued in place so that the motor tube is flush with body tube end.

* Cut launch lug in half, glue in place 3" apart.

* Be sure to swing test the model for stability when using motors larger than a 'C'. Add weight to nose cone if needed to aid in stability.



Heard on the Street
(with apologies to the Wall Street Journal)

Welcome to the Club! - C.J. Gallant, Jay Gallant, Jeffery Goc, Scott D. Hansen, Ron Kaminiski, Gary Leonard, William Martschinke, Michael Moran, Mark Sitasz, Ray Vegter, Pete Vitone, Michael Kasanda, Ben Romashko, Dan Romashko, Tom Schultz, Alex Sexson, Warren Sexson, Mike Vaughn, and Holden Wallace have joined NIRA recently. Welcome!

Fond Farewell - Our best wishes go to NIRA member Rick Kramer on his retirement from the FAA after 33 years of service. Rick has moved downstate, but may still be seen frequenting CIA launches. Good luck, Rick! Your tube fin rockets will be missed.

In For Life - NIRA, as an organization, has few ways to show her appreciation to members who serve the club above and beyond the call. One way is with a free lifetime membership. Only 4 people in NIRA history have been voted such a membership - Mark Bundick, Robert Kaplow, "Jedi" George Riebesehl Jr. and Richard Gaff. That total was increased to 5 at the July NIRA meeting when the members present unanimously voted to give Robert Wiersbe a lifetime NIRA membership. Congratulations Bob! And thanks from NIRA for your excellent work in producing an award winning newsletter.

Richard Gaff
NIRA president

To the Members of NIRA:

I want to sincerely thank you for bestowing the honor of a Lifetime NIRA membership upon me. I was very surprised, and humbled when Rick told me what had happened at the meeting (I was unable to attend that night). I want to especially thank Bob Kaplow for nominating me for this honor.

As someone once said, NIRA is a class act.

Thank you again. Of course, now I have to change a few things in the newsletter. Like complaining about doing it, etc. :) :))

Bob Wiersbe, Editor

Manufacturer News

AEROTECH INFORMATION RELEASE

July 6, 1998

AeroTech, Inc.
1955 S. Palm St., Suite 15
Las Vegas, NV 89104
(702) 641-2301 (Voice)

EASY ACCESS RMS 29/240 RELOADABLE HARDWARE AND H220T RELOADING KIT RECEIVE A 29MM FORWARD SEAL DISC UPDATE

Effective 7/1/98, AeroTech began updating the Easy Access RMS 29/240 reloadable rocket

motor and the H220T (Blue Thunder) reload kit to require the use of a new RMS 29mm forward seal disc (P/N #29FSD) in the reloading process of the H220T.

These changes have been made in order to minimize the chance of "blistering" or bulging the exterior surface of the 29/240 motor casing just below the forward closure threads (due to excess hot gas flow between the 29mm phenolic liner and the inner surface of the aluminum casing) during operation of the H220T reload kit. By making the forward seal disc a required part of H220T reload kit assembly, AeroTech will drastically reduce future occurrences of this form of motor casing damage, thus insuring the long-term safety and reliability of this particular RMS motor.

Therefore, the 29mm forward seal disc will be incorporated into the entire line of RMS 29/240 hardware and result in the following:

- The retail price of the RMS 29/180-240 system set, the 29/240 motor and the 29/240 casing will increase \$10.00 to \$83.95, \$69.95, and \$32.95 respectively.

- The H220T reload kit will be changed by the removal of the one (1) fiber insulator washer and the addition of a 7/8" O.D. x 1/16" inch thick forward seal disc O-ring. The cost of the H220T reload kit will be \$21.95.

- However, the H97J and H180W reload kits will NOT require the 29mm forward seal disc and will remain unchanged as they both utilize incompatible paper propellant grain liners.

- *None* of the 29/180 reload kits will require the 29mm forward seal disc as they all utilize incompatible paper propellant grain liners.

IMPORTANT NOTICE: For those current owners of RMS 29/180-240 systems, 29/240 motors or 29/240 cases who will need a forward seal disc in order to use the updated H220T reload kit, AeroTech is extending the following special offer:

For a period of approximately one year, beginning July 6, 1998, owners of AeroTech Easy Access high power products may directly order from AeroTech by either phone, fax, or mail, up to six (6) 29/240 Update Kits (Part No. 29FSDUG) for \$5.00 ea. including postage. (The "29/240 Update Kit" includes a 29mm forward seal disc, six seal disc o-rings, and a copy of a new RMS H220T reload kit assembly instruction sheet). This special offer ends July 1, 1999 and is available ONLY through AeroTech.

Ring Rocketry Opens for Business!

Just wanted to let everyone know that I am now in business for myself. I am carrying Estes, NCR, Public Missiles, Bob Smith adhesives, Custom, Saturn Press, and some items of my own. Most items are significantly discounted off retail prices.

Some of my own items include: Heavy Duty BT-20, a lightweight 10.5mm competition body tube (and its pre-colored orange), Polyester Tapes for build chutes (same stuff Ed-Apogee used to sell), and Orange Kevlar in 100#, 200#, and 300# sizes.

For more info:
Ring Rocketry
206 East Mary Street
Holland, IN 47541
(812) 536-5000
e-mail: 102702.2532@compuserve.com

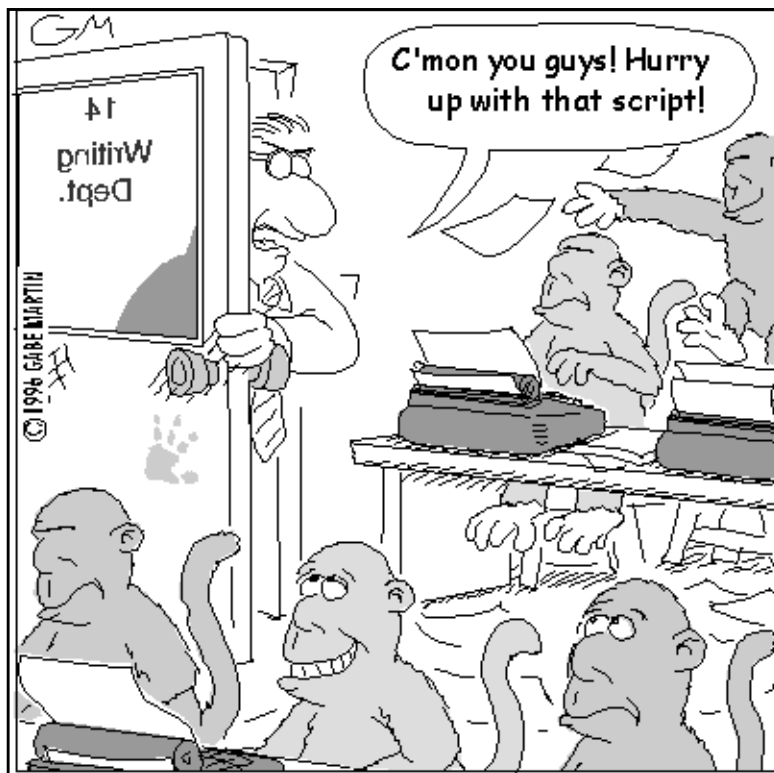
NAR News

NATIONAL SPORT LAUNCH 1999

The National Association of Rocketry has approved the bid of the Southern Area Rocketry (SoAR) section (section #571) to host the 1999 NAR National Sport Launch. This launch will be conducted on a 400-acre sod farm in Perry, GA (approximately 25 miles from Macon) on Memorial Day weekend, from Saturday May 29 through Monday May 31, 1999. The field has a 10,000 foot waiver and supports flights through K power. Event director is Greg Burke, NAR #65584, the section President. He is supported by an enthusiastic and talented crew from his section plus Tripoli Atlanta Prefecture. Greg and this section have previously hosted the Mick Wilkins Memorial Scale Meet and a number of sport and contest launches. For further information contact:

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Canton, GA 30114
(770)720-8070
SoAR571@aol.com





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