



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

Volume 19, Number 5  
September/October 1996

### **The President's Podium from Cheri Chaney**

Hi to all NIRA members! As your club president I've noticed that the membership list keeps growing, and I hope this is a good way to communicate with all of you. Several exciting things are happening in our club that you might like to know about. We have decisions to make and things to do and you are all invited to participate.

#### **NIRA Wins Rockwell Trophy!**

I know that many of you have already heard the exciting news that our club has won the Rockwell Trophy. This trophy is awarded each year to the club with the best newsletter. A large round of applause and all of our thanks go to our newsletter editor Bob Wiersbe. Thanks are also due to Ric Gaff for all his help with printing, and for our great looking "staples in the middle" format.

I've been told that two of the reasons we won this trophy were: all of the plans included in the newsletter, and the number of people who contributed articles, plans and/or photos. Bob Wiersbe tells me that

Lawrence Bercini, Mark Bundick, Jonathan Charbonneau, Adam Elliott, Ric Gaff, Norm Heyen, Tom Hulina, Ken Hutchinson, Bob Kaplow, Mark Kotolski, Steve Koszuta, Rick Kramer, Bill Larry, Kevin McKiou, Dave & Robin Miller, Pierre Miller, Jerome Mrozak, Mike Oswald, Tom Pastrick, Jeff Pleimling, Greg Roman, and Bill Thiel have all made contributions to the newsletter this year. Each of these helped to win this trophy and our thanks go to them all!

For those of you who missed the trophy presentation at the September club meeting, the Rockwell Trophy is quite an impressive thing. It's large and has the name of each club that wins it and the year engraved in little plaques on the base. It's a travelling trophy and must be returned for next year's presentation. A mysteri-

ous box comes with the trophy and each winning club gets to add something (final say goes to the editor). Hopefully, all interested members will have an opportunity to look inside. The box will be opened at the NIRA holiday party, so that gives you one more excuse to come.

#### **Launch Site Change**

Now that summer is over, our launch site is changing once again. For the months of September, October, and November we will be launching at Community Park in Lisle (see page 2 for dates and times). These will be our last launches at Community Park and we need to decide now where we would like to hold our launches next year. Both Waterfall Glen and Pratts Wayne are possibilities, but neither is really ideal. We still need to find ourselves a good home. Any ideas or suggestions would be welcome.

#### **National Model & Hobby Show**

Once again, it is time for our club to take part in the National Model & Hobby Show. For those of you who know the show as RCHTA, that is actually the Radio Control Hobby Trade Association, which is the name of the organization that runs the show. Last year, our club helped 850 attendees build model rockets. This year, Estes is shipping us 1200 model rockets (and hopefully, enough of the right kinds of glue), so we will be needing a lot of help from all of you!

Actually, the show is a great deal of fun. Those of you who work a shift at our Make It/Take It booth also get into the show for free. The show dates are Saturday and Sunday, October 19 & 20. The show times will be from 12 to 6pm on Saturday, and 10am to 5pm on Sunday. Please contact me at (630) 462-0260 or Mike Jungclas (630) 979-4571 if you can work a shift. You need to call us in advance so we can reserve a badge for you, without a badge you have to pay to get in.

#### **How To Reach You?**

Some of you keep in touch by attending our

club meetings (first Friday of the month, Glen Ellyn Civic Center), some of you have email, and some of you can be found at club launches. However, I've noticed that there are many of you that I don't see. I have also discovered that not all the addresses and phone numbers on my membership list are correct. In addition, I'm not at all sure which of you are keeping in touch by email. It would be a big help to me if all of you would take the time to please update your information in the club database (check your members handbook or contact me (630) 462-0260, email d.h.chaney@lucent.com). If you'd like to keep in contact via email just send me a message. Finally, if you'd like to be contacted by phone with club news, please make sure we have your correct phone number, with area code please.

#### **What Would You Like This Club To Do?**

This is your rocket club. We have all sorts of resources that are available to you: rocket plans, members with expertise in all areas of rocketry (contest, building, high power, gliders, scale, etc), reprint booklets, access to all kinds of data, and more. If you have any ideas or suggestions about other things that we can do to make rocketry more fun for you, please let me know. This club does what its members want to do, so express your interests. Also, anyone who would like to get more involved in our current (or future) activities is more than welcome. We can always use another hand to help get things done.

[**WOW!** I am completely overwhelmed by the generosity and support that was shown to me at the September club meeting. I was expecting a simple presentation of the Rockwell Trophy, and was not prepared for the really cool plaque, the roses (which were for Karen for her support and tolerance while I was out doing rocket stuff), the cake, and the kit that Ric gave me from the sacred vault in his basement. Karen said it best, "NIRA is a class act." Thank all of you for an evening I will not forget! - Bob Wiersbe, Editor]

# T MINUS 1 - NIRA'S CALENDAR OF UPCOMING 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 Bob Wiersbe at (630) 690-5442 if you can help with ideas or can speak yourself.

October 4: Regular Monthly Meeting. RCHTA Planning.

November 1: Regular Monthly Meeting. Nominate Officers.

December 6: Regular Monthly Meeting. 1997 Planning.

January 3, 1997: First meeting of 1997, Elections.

### STAFF

Bob Wiersbe - 1 Gemini-Titan Richer

Ric Gaff - 1 Gemini-Titan Poorer

### CONTRIBUTORS

Lawrence Bercini, Mark Bundick, Cheri Chaney,  
Jonathan Charbonneau, Ric Gaff, Norm Heyen, Bob Kaplow,  
Rick Kramer, Dave Miller, Steve Smith, Bob Wiersbe

### Model of the Month Winners

The August Adult winner was Bill Thiel with his "Lawn Dart".  
(photo by J. Charbonneau)

The August Youth winner was C.R. Herrig with his nicely done  
Little Joe II (photo next issue). Congratulations!!!!



## 1996 CLUB LAUNCH DATES

Launches are BYOL (bring your own launcher). The location for the rest of our 1996 launches is Community Park in Lisle. If you have questions prior to any launch, call the NIRA hotline at (630) 690-6353 and leave a message, I will call you back.

**October 27** - Club Launch at Community Park in Lisle. 2pm to 5pm. Special event - launching rockets built at RCHTA show.

**November 17** - Club launch at Community Park in Lisle. 2pm to 5pm. Last scheduled launch of 1996!

**December 8** - Holiday party at the Bundick's! Don't miss this annual event, call Mark (630 293 9343) to let him know you're coming and find out what food you can bring to share.

**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 [r.e.wiersbe@lucent.com](mailto:r.e.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 (got that, Tom? :) ; all other uses require written permission of the Northern Illinois Rocketry Association. Hey! Whadaya know? We won the Newsletter Award this year!! Those bribes finally paid off.....

## Other Items of Interest

**October 19, 20** - National Model Hobby Show, Rosemont Expo Center, 12-6pm Saturday, 10-5pm Sunday. NIRA will be staffing the rocket Make It/Take It booth both days. Contact Mike Jungclas (630-979-4571) or Cheri Chaney (630-462-0260) if you'd like to help for a couple of hours either day (you get into the show for free if you help!).

**September 28, October 26, November 23** - High Power Rocket Launch, Rantoul Aviation Center, 10am-6pm. Contact Greg Smith (217) 352-9655 for more information.

**November 9, 10** - High Power Rocket Launch, Three Oaks, Michigan. Range opens at 9am, range fee of \$5. For directions call Bob Wiersbe (630) 690-5442.

### DESTRUCTIVE NEW CROP OF VIRUSES EMERGES!

**AT&T VIRUS:** Every three minutes it tells you what great service you are getting.

**MCI VIRUS:** Every three minutes it reminds you that you are paying too much for the AT&T virus.

**CONGRESSIONAL VIRUS:** The computer locks up, the screen splits erratically with a message appearing on each half blaming the other side for the problem.

**KEVORKIAN VIRUS:** Helps your computer shut down as an act of mercy.

**GOVERNMENT ECONOMIST VIRUS:** Nothing works, but all your diagnostic software says everything is fine.

**JIMMY HOFFA VIRUS:** Your programs can never be found again.

**TED TURNER VIRUS:** Colorizes your monochrome monitor.

**FREUDIAN VIRUS:** Your computer becomes obsessed with marrying its own motherboard.

**OLIVER NORTH VIRUS:** Causes your printer to become a paper shredder.

**ELVIS VIRUS:** Your computer gets fat, slow and lazy, then it self-destructs; only to re-surface at shopping malls and service stations across rural america.

**BILL CLINTON VIRUS:** It starts by boldly stating, "No new files!" on the screen. It proceeds to fill up all the free space on your hard drive with new files, then blames it on the congressional virus.

## Eat Cheese or Fly, '96 by Norm Heyen

This was my second ECOF, and had just as much fun this year as last. Maybe even more. This year held a couple of firsts for us. I volunteered for a shift as pad manager and Nancy had her first flight on her very first rocket.

Although I was a bit hesitant to volunteer, it turned out to be as much fun as flying. This is a great way to meet people. You get an excuse to look at everyone's rockets. I got to put a face to many names I've seen on the Internet, read in the newsletters and heard about from others. There were some really nice looking models. Some are really excellent models, as well as some interesting versions of models I'd seen before. There are a lot of variations on the 'three fins and a nose cone' theme.

Last summer I discovered Nancy had never built anything like a rocket before. A quick call got an Aerotech Cheetah on it's way. Nancy built and painted it without help from me. While it was hard not to 'help', she did a great job. Painting it fluorescent pink, and with the white decals, it is an eye catcher. After many attempts to get her to fly her 'baby', she must have ran out of excuses, so the Cheetah makes the trip to Wisconsin. We choose a single use F14-6 black jack motor. There was some concern a bout flying it with a copperhead and in the wind. But it was decided that a near vertical launch would be best and a heads' up was called. Nancy's name was announced and the countdown begins. At zero, the black jack lights right up, with fire, noise and smoke. Even this low thrusting motor pushes the light Cheetah up quickly. Our eyes follow the 800 foot trail of dark smoke before the lime green chute appears against the blue sky. The chute fills near apogee and starts it's drift to earth. Even with the wind, there is little weathercocking and the drift is minimal. In spite of the trees that seemingly surround the launch area, it lands safely in the grass. While I can't convince her to fly it again today, Nancy is happy and excited. On Tuesday, she brings in pictures of her 'baby' to work and shows them off. Maybe we have a second rocket nut in the house? Or is that the third?



Nancy Heyen with her "baby" before its first flight (and hers too!). (N. Heyen photo)

While I was doing pad manager duties, Nancy and Nathan are busy prepping and flying. After several attempts to ignite a spent engine, things go better for them. (Why do you keep all this

'junk'? my family asks.) They flew the Serval twice, the Big Bertha twice, my scratch built Sprite twice and a Fire Hawk once, for seven flights. Even though the Sprite was lost in the swamp across from the launch area, there was no other damage. It was getting to be quite an assembly line in prepping and flying. I couldn't help but to be proud of Nathan as he sets up the rockets by him self. And he gets a real kick out of doing it and hearing his name announced. It's nice that kids are accepted on the same terms as adults.

After a quick lunch, we prep my BT-60 based 'Goblin and a quarter' on a D12-5. All day Nancy and Nathan haven't had any recovery problems. I decide to use a 6"x60" nylon streamer. I pack it too tightly and we get 'blow nose' recovery. Fortunately, the tall grass breaks it's fall, and after a bit of searching, the recovery is a success.

I had planned on flying my new Vaughn Brothers VB Extreme 38 on a G80. But the wind makes the decision to wait for another day seem prudent. So under pressure, I prep an H123 white lightning for my 'Stretched EZI'. Again the copperhead does it's job and the heavy rocket quickly reaches about 1000 feet. Last time I flew this beast, the ejection charge fired on the way down, way far down on the way down. About 30 feet off the ground far down. It looks like deja vu. Again it is well past apogee and picking up a lot of speed before the ejection charge fires. I am becoming a firm believer in Rocketman parachutes. Even though the EZI is streamlining down fast, the chute didn't strip and there was only a hint of a 'zipper' in the tube.. You gotta love it.

My friend Jeff helped my track it down in the tall grass. From a pretty good distance, Jeff spots my rocket on the ground and points towards it. Seeing nothing, but following his lead, we talk and walk for a couple of hundred yards before I start to question if he knows what he is doing. Jeff begins to think that I am as blind as a bat. He couldn't believe that I couldn't see it on the ground. After all, it has a 4 foot bright yellow chute. Suddenly, within 15 feet of me, is my rocket. That's right, I had to be within 15 feet of it to see it. It is right behind a tall clump of weeds. I call Jeff over and as he stands where I am, he can't see it either. And you wonder why we lose rockets. Remember, this is a 6 foot tall, 4 inch diameter rocket!

Speaking of Jeff, he came to our Christmas party last year and saw the LDRS tapes playing. And the rocket bug bites hard. Within a couple of months he comes over and shows me his very well finished Estes SR-71. And wants to know more about high power rocketry. After reading some HPR magazines, and looking through my catalogs, he calls Magnum and orders a Thoy Phoenix and some G80's. While he is an R/C airplane builder, this is new to him. But he is excited to fly. We make a halfhearted attempt to attend a WI TRA launch at Bong in March, but the weather gets worse the closer we get and finally decide this is crazy and go home. In May we have better luck. He flies the Phoenix three times and begins to dream of bigger 'military'



Norm's "Goblin and a Quarter takes off under D12 power. If you ever want a liftoff shot of one of your flights, see Norm. He's the best. (N. Heyen photo)

rockets. It looks like a PML Amraam 4 is next. I keep telling him that he has to paint the Phoenix first. Anyway, Jeff can't drive up with us, but talks a friend of his and his son into driving up to Bong with him and his son Tyler. He flies his Phoenix twice at ECOF and his SR-71 a couple of times. (If any one found a nice black SR-71 in the grass down wind of the launch area, please let me know.) See how fun rubs off on others? He'll be back on a regular basis.

Bong Recreational Area is getting to be a nice place to spend a Saturday inhaling the fragrance of burned AP. Did you notice that flying model rockets is one of the 'nontraditional' activities they mention in the flier handed out at the front gate? I have to get a season pass next spring.

So what did I have the most fun doing? Besides trying to figure out how come every one builds better looking rockets than me? Talking to friends I get to see only once in awhile. Swapping stories, sharing tips and showing off and handing out my launch pictures. Brian C. and I trade email often, but only see each other about once a month at the Bong launches. I get to see Bob Wiersbe, Bob Kaplow, and Steve Koszuta only at rocket launches. And I met Jack Wiker, a name I recognize from the Internet.

There are getting to be more faces that I know, which is the great part of flying rockets. And the pad manager duties aren't difficult, even fun in fact. I got to see lots more launches and talk to people that I wouldn't have otherwise. And there is a good feeling in knowing that you can help others. Maybe I can LCO some time and get to 'push the button'. Highly recommended.

## TWO 1996 MARS SPACECRAFT ARRIVE AT LAUNCH SITE

The Mars Global Surveyor and the Mars Pathfinder, a pair of NASA spacecraft scheduled to be launched toward the red planet on McDonnell Douglas Delta II rockets late this year, have arrived at the Kennedy Space Center (KSC), FL, to begin their preparations for launch.

The Mars Global Surveyor will be placed into orbit around the planet. It carries a set of six science instruments designed to study the planet's surface, atmosphere, and gravitational and magnetic fields. The Mars Pathfinder will be deployed through the Martian atmosphere to land on the planet's surface, where it will deploy a small instrumented rover to investigate the terrain surrounding the spacecraft. Together, the Mars Pathfinder and rover will investigate the geology and elemental composition of the Martian rocks and soil, as well as the Martian atmosphere and surface weather.

"The arrival of the two Mars spacecraft at the launch site is a wonderful milestone of which the whole Mars missions team can be very proud," said Dr. Jurgen Rahe, director of Solar System Exploration at NASA Headquarters, Washington, DC. "It reminds us just how close we are to returning important new scientific knowledge about the red planet back to Earth."

Mars Global Surveyor, weighing 2,315 pounds and built by Lockheed Martin, arrived at Cape Canaveral, FL, from Denver, CO. aboard an Air Force C-17 cargo plane on August 14th at 3:25 a.m. EDT. It was off-loaded and taken to the Payload Hazardous Servicing Facility (PHSF) located in the KSC Industrial Area to begin launch preparations.

The Mars Pathfinder, built for NASA by the Jet Propulsion Laboratory, Pasadena, CA, arrived at the Spacecraft Assembly and Encapsulation Facility (SAEF-2) at KSC on August 13th at 3 p.m. EDT having traveled across the United States in a special van. Presently three of four separate components have arrived at KSC: the cruise stage, the aeroshell and the lander. The fourth element, the small rover known as Sojourner, is scheduled to arrive on Aug. 23 and will be shipped from California by air.

During the time Mars Global Surveyor will be at the PHSF, it will undergo final instrument functional tests and electrical system testing, its batteries and thermal insulation will be installed, the spacecraft will be fueled with its control propellants, and it will be mated to its solid propellant upper stage, which is the Delta third stage booster.

Mars Global Surveyor is scheduled to be transported from the PHSF to Launch Complex 17 on Oct. 23 to be hoisted atop a Delta. After integrated testing is complete, a nine-and-a-half foot diameter nose fairing will be placed around the spacecraft.

Launch of Mars Global Surveyor is scheduled for Nov. 6 at 12:11 p.m. EST at the beginning of a 20-day launch period which ends on Nov. 25. The spacecraft will arrive at the planet in September 1997 to begin a mission which is planned to last at least one Martian year, or 687 Earth days.

The integration of the four Mars Pathfinder elements will begin with installation of the rover on one of the four petals of the lander. After the petals are closed, the aeroshell which surrounds and protects the lander will be installed and the parachutes will be attached. The assembled entry vehicle will then be mated to the cruise stage that will carry the spacecraft on its interplanetary trajectory. Finally, before going to the launch pad, the completed Mars Pathfinder will be mated to the upper stage booster. The entire integration process will take approximately three months.

The Mars Pathfinder/Delta third stage combination will then be transported to Pad 17-B for erection atop the Delta on Nov. 21 After integrated testing, a fairing will be placed around the spacecraft. Launch is scheduled to occur on Dec. 2 at 2:09 a.m. EST at the beginning of a 24-day launch period that ends on Dec. 25. Landing on Mars is planned to occur on July 4, 1997. Once on the planet's surface, the mission is planned to last approximately one month.

## Micro-Scale Kits From Boyce Aerospace Hobbies



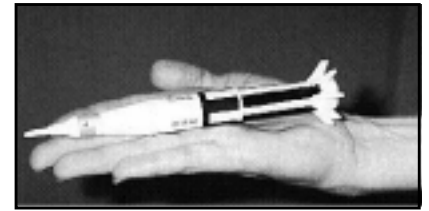
Saturn V Micro-Scale Kit

Boyce Aerospace Hobbies is proud to introduce our line of 13mm "MICRO-SCALE KITS"! These kits feature plastic nose cones, fins, and clear plastic launch lugs. Each kit comes with a complete set of color adhesive decals and can be built in only 1 to 2 hours (except paint and decals).

Our "MICRO-SCALE KIT" line will initially

feature the following 8 rockets:

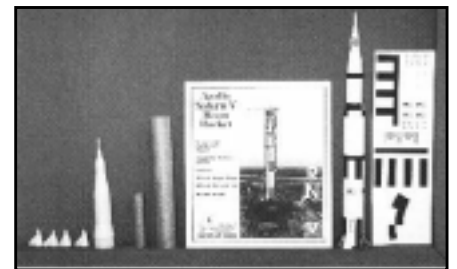
- Saturn V
- Saturn 1B
- Gemini Titan
- Mercury Atlas
- Mercury Redstone
- Pershing 1A



Nike Smoke  
Honest John

Saturn 1B Micro-Scale Kit

Where possible we have avoided the use of clear plastic fins on our scale models as we feel



this detracts from the model's realism. Both of our Saturn models fly without the aid of clear plastic fins!

A few of the parts from our Saturn V kit.

**KIT AVAILABILITY, PRICING, AND RELEASE SCHEDULE:**

- \* Saturn V... NOW SHIPPING...\$12.00
- \* Saturn 1B...NOW SHIPPING...\$12.00
- \* Gemini Titan...August 15th 1996...\$12.00
- \* Nike Smoke...August 15th 1996...\$12.00
- \* Pershing 1A...August 30th 1996...\$12.00
- \* Mercury Redstone...Aug. 30th 1996...\$12.00
- \* Mercury Atlas...Sept. 15th 1996...\$12.00
- \* Honest John...September 15th 1996...\$12.00

We ship our "Micro-Scale Kits" via US Priority Mail. Shipping and handling is \$3.00 for your first kit and \$.50 for each additional kit.

To entice you to order both the Saturn V and the Saturn 1B kit we are bundling both kits together and selling them for only \$20.00 (+ \$3.00 S/H)! That's a savings of \$4.00 on the models (\$2.00 per kit) and \$.50 on shipping and handling. Your total saving on the Saturn kit bundle is \$4.50! Both Saturns are 1/396 scale!

Boyce Aerospace Hobbies  
3430 Old Meadow Road  
San Diego, CA 92111  
(619) 277-6385

**Vaughn Brothers "BLOBBO"  
A Product Review  
by Rick Kramer**

The first thing you notice about this stubby little rocket is its big price tag. \$19.95 for a rocket that uses 18mm engines. Hmhmhm ???

Then you open the bag and dump the parts out on the workbench and you notice that this little rocket has high quality parts just like the great big rockets. It has centering rings made of plywood instead of paper. It has precision cut fiberglass fins with tabs that go through the body tube wall. (and don't need to be sealed before painting either.) It has a plastic coated wire shock cord mount that gets epoxied around the motor mount tube and is anchored by a centering ring. It has a 4 foot shock cord made of the high density elastic not found in Estes or Quest kits. It also comes with an 18 inch ripstop nylon parachute with 8 shroud lines instead of the usual 6 lines found on thin plastic parachutes.

This, my friends, is a rocket built to withstand the so-called "speed of balsa." Mainly, because there isn't any balsa to be found.

The instructions were a little sparse, but adequate for an experienced rocket kit builder. The only item I found lacking was that the enclosed drawing needs to be updated to show the wire shock cord mount attachment. They recommend assembling the model with epoxy or tacking the parts in place with CA and then following up with epoxy fillets. Just like a quality kit from LOC Precision or Aerotech would have you do.

I have flown it on C5-3 and C6-3 engines with excellent results. The C5-3 flew higher, more stable, and was the far better choice. At the time of this writing I was not able to locate an Aerotech D21-7 composite engine which is what this rocket was obviously designed for. I highly recommend this excellent kit for the experienced modeler who has built at least one high or medium powered rocket and is familiar with the construction techniques involved. This surprising little gem is worth every penny of that \$19.95!!!



**How to Monokote a Rocket  
by Bob Kaplow**

Since several folks have asked, here's how I Monokote a rocket. First, a technical "nit". "Monokote" is a brand name. The same company makes another product called Econokote, which seems to work better over solid surfaces, but doesn't have the strength of Monokote. Monokote is designed for built-up wings of RC aircraft, and the shrinking produces the strength. We don't need that feature for our models. Econokote goes on at a lower temperature and will take sharper compound curves (both important for nose cones).

I've had much better results since I started doing the tube and fins separately, before final assembly. I put a piece of 1/2" masking tape over the tube where fins, launch lugs, etc will get glued later. Then I cover the whole tube. Draw a straight line the length of the model, and tack the seam down. Then slowly work around, a couple inches at a time, from the center to the tube ends, until it's all down. Now I cut thru the covering at the tape edges, and peel back where the fins and lugs go.

For the fins I cut a piece to cover the whole thing, except the tab and about 1/4" of the root edge of the fin (for glue area). Cover one side and cut off around the perimeter. Cover the other side, and leave about 1/8" to wrap around the edge and stick down.

Now attach the fins and fillet normally.

For the nose cone, you need to cut multiple pieces. I typically use 4-6 gores to do the nose. I tack the center of the piece down, using the molding seam as a guideline, then work from the center out. At the tip, stretch it around and over.

It takes lots of practice, and you get better with time. If you botch one up, you can always peel it off (it takes more heat to do this), and try again.

Do \*NOT\* prime under iron on coatings. I covered one nose that I had previously primed. The coating stuck to the primer, and eventually separated from the plastic. Now I have to strip the whole thing and redo it :-)

One more tip: if you have an unsightly seam or blemish, cover it with some "detail", a stripe, checkerboard, or roll pattern made from either more iron-on or self-stick covering.

**Kit Review: Deltie Thunder  
from an RMR posting by Jim Kerns**

What do you get when you cross a Deltie and a 24mm motor?

A **BIG** Deltie. A **REAL BIG** Deltie. A Deltie Thunder.

In my opinion, Rob Edmonds has a real winner with this one - the 30 inch wing span Deltie Thunder. Reasonably easy to build, no trimming required, looks impressive, and flies great. And, considering the size, \$20.00 (plus \$4.00 shipping) seems to be a reasonable price.

Unlike the original Deltie, the Deltie Thunder doesn't have die cut parts with interlocking tabs; you have to cut the fins, nose pieces and fuse-

lage ends yourself using the templates printed in the instructions. The wings and tail were already cut to size. Like the original, it is built with slab wings - no "airfoil". The kit includes a 24mm body tube, an orange plastic nose cone, 3/16 inch launch lug, and glitzy mylar wrapping material for the parachute. No decals. You add glue, clay (for balancing) and (if you wish) paint.

The instructions are well illustrated and more than adequate. And, for the most part, the construction went well. But there were a couple of "bugs". The balsa stock used for the nose doublers was not the same width as the fuselage - It works OK, but would have looked a little better if it was the same size. Also, the angles cut on the ends of the wings were slightly inconsistent. Depending on which ends you joined at the center, the wing span could vary about 1/2 inch. I juggled the parts until the wing span matched the width of the horizontal stabilizer. It took me about an hour and a half to build the Deltie Thunder using yellow glue (not including some breaks waiting for glue to dry). I flew it in a natural balsa color, but given the size and shape of this thing, there is the potential for some really wild paint schemes.

The clay required to get the glider to balance at the specified location overflowed the space provided in the nose and it would look better if there were more room. I would suggest using a couple scraps of balsa to space the nose doublers away from the fuselage to double the size of the pocket. The instructions claim that if you balance it at the specified point, it shouldn't require any additional trimming to fly. I took it out into the back yard anyhow. After a couple dozen tosses, I concluded that the instructions were right.

The kit doesn't include an engine hook or block - the instructions tell you to friction fit the motor using masking tape. This works fine for the Estes "D" motor, but I have half a mind to add a hook before I try to fly it on a reloadable motor since the pylon is glued flush with the after end of the body tube and it is hard to get a good wrap of tape to prevent the motor from kicking out.

Rob suggests making a launcher with a long dowel for a boost pod stand off and a couple short dowels to restrain the glider before launch. My regular launcher worked for the first flight, but was awkward. I think I'll take 20 minutes to make a launcher as per the instructions for the next flight.

Once it was loaded on the pad, the Deltie Thunder flew very well on an Estes D12-3. The boost was reasonably straight and it transitioned into a glide with only one or two oscillations. The glide was slow, stable, and straight with at total duration of 22 seconds. The only thing that needs to be changed to improve the flight is to add some asymmetry that will make it circle so that it will recover closer to the pad.

All in all, I'm pleased with the kit and I expect the Deltie Thunder will be one of my "frequent flyers". Can't wait to try it on an "E".

To order one, contact:

Edmonds Aerospace 13326 Preuit Pl  
Herndon, VA 22070-4341 703-471-9313

## Midwest Regional Fun Fly 1996

By: Lawrence Bercini

(with help from Bob Wiersbe, Bob Kaplow, Adam Holterhoff, Mark Bundick and Bill Thiel)

### Introduction

99 flyers with nearly as many friends and family in tow converged from 6 Midwestern states to turn the small town of Wayne Illinois into a haven for all kinds of rocketry enthusiasts. The event, of course, was the 1996 Midwest Regional Fun Fly (MRFF).

The host club, the Northern Illinois Rocketry Association (NIRA), sponsors MRFF every Father's Day weekend, as an event welcome to any and all rocketry folks. Over the last six years, MRFF has grown into the midwest's premier "rocket party".

This year had the most perfect rocket weather imaginable: perfect temperature, zero wind, low humidity and just enough white puffy clouds to make the setting idyllic. Somebody joked that MRFF had been through a time warp (it's just a jump to the left), and that they were no longer in Illinois but some alternate universe. Jokes aside, it was a great setting for rocketry.

### Fun Stuff

What makes MRFF stand out from so many rocketry events is the way people have this tendency to just start talking to each other. It's the way it is so easy to make new friends that people come back to MRFF each year. Said Adam Holterhoff, "[I had the] best time talking to several people who were just names before MRFF. It's always nice to get acquainted; I hope to know them better before or at MRFF '97."

Bob Kaplow made friends with Mark Kotolski when he saw Mark's fleet spread out on a blanket. He had lots of old Estes kits scaled up, that go back to the mid 60's when Bob started. They discovered they both had done Streaks (often mistaken for Mosquitoes) that were practically identical. Mark had used the square tips, while Bob had used the rounded "competition" tips. Other than that, they matched perfectly. They drag raced the two models Saturday. Paul Hemminger was another participant bitten by the "scaled-up kit" bug, showing off not only a

200% Ramjet, but a 25% Initiator. Fun stuff, Paul!

The NIRA folks really enjoyed chatting with Chad Ring from Indiana, because it was interesting to hear what he had to say about how we ran MRFF and what their plans were for NARAM this year. Other interesting visitors included Mike Vaughan of Vaughan Bro. rocketry, and the Olson's of Nordic Rocketry.

Dave Bassett, Dorothy Scherbinski and Lawrence Bercini staged an impromptu "Gulf War Drag Race". Lawrence sent up a SCUD and Dave and Dorothy chased it down with Patriot missiles. There was also at least one flying crayon drag race, also impromptu...

Of course, Mark "Bunny" Bundick performed his almost obligatory SPEV (Spare Parts Elimination Vehicle) flight. Rick Gaff countered Bunny with his own Fizzy Elimination Vehicle. It's sole purpose was to burn up as many FSI motors as possible.

With the perfect weather conditions, there were some really superior glider flights (not counting the F14 and HL-20 flights). The better gliders were Bunny's Apteryx (a wingless bird with furry feathers), Dave Miller's Groundhog, and Ron Husak's slide-wing Rebel. The best glider by far, and also the most surprising would have to be Rick Gaff's really outstanding Flying Jenny. Too bad nobody was timing it, it outperformed many serious competition birds.

Jerome Mrozak showed of this really neat retro design, appropriately named Ming the Merciless. This colorful bird reminiscent of the old Flash Gordon movies recovered by blowing a hatch in its side. Lawrence Bercini had built a similar model, winning People's Choice in 1994. His all-silver version, Flash!, was just stunning when boosted by an F50 Silver Streak.

Jonathan Charbonneau had lots of cool D13 flights, especially with his Sidewinder scale model. That is, until he lost his RMS casing and spent the greater part of the second day searching for it. Sorry about that Jonathan.

There were an number of H and I certification flights going on. It was gratifying seeing the experienced folks helping new-found friends with their certification flights. The "old-timers" were sweating right with them!

Continuing a trend started last year, the most flown rocket was the Astrocam. Considering the perfect conditions, who could blame guys like Adam Elliott and Mark Smeiska for popping up flight after flight, asking all of us to say "cheese" to the sky.



Dave Miller's plastic model Saturn V takes off under D12 power. No MRFF would be complete without a Saturn V flight! (D. Miller photo)

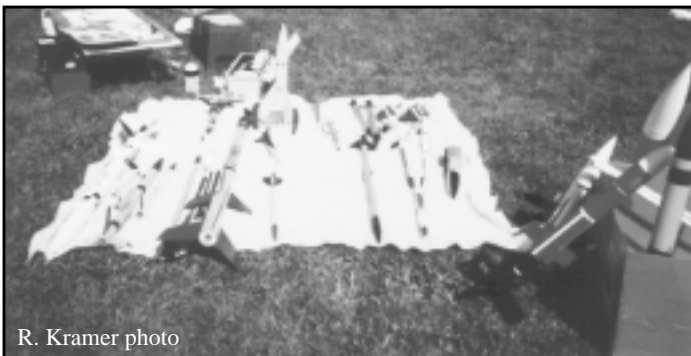
There were lot of interesting cluster flights throughout the weekend. Of course, leading the charge was Ron Husak, boosting models whose names spoke for themselves: Clusterphobia and Pyromaniac. One of the more interesting configurations was Adam Elliott's D80. Adam clustered eight A10 motors and figured the total impulse to be a D80, thus giving the model its name. She worked great too. Another memorable cluster flight would be Steve Koszuta's Loc Roc 4, this year working perfectly with four D12's.

### Silly Stuff

Of course there were plenty of silly rockets to make people gawk. Back this year were: flying carrot, dice, Pringles cans, coke bottles, an Eiffel Tower, crayons, pencils, sputniks, a war bonnet, a head, and badminton birdies. Among the best of the latter would be Mark Bundick's Birdie on an RMS D13 because it made lots of fire and smoke.

Bob Kaplow showed up with the "Bulls Space Probe". It's an Alien Space Probe. 3 years ago, his wife found a Bulls decal, and suggested he make a "Bull Chute" for a rocket. Since it was red, this was the candidate. She also wanted to gave him a Bulls t-shirt. He first wore it that Sunday at MRFF 3 years ago, flew the rocket, and that night the Bulls wrapped up their threepeat. He wore the same shirt the Sunday of MRFF 1996, flew the same rocket, and they did it again! So Bob is taking all the credit for the 4th championship.

Rick Kramer is the kind of guy to likes to have fun with his models and make statements at the same time. In addition to keeping us entertained with flight-converted NERF rockets and tube-finned designs, he produced the "un-CATO." Essentially, it was the Estes CATO, but rigged to work like a normal model. Also in Rick's



R. Kramer photo

The Kotolski Collection - some very impressive scaled up stuff!

fleet was his "Happy Meal Eating" Blue Plate Special; a surprisingly simple UFO-type bird made from two disposable plastic plates and a plastic bowl [see plans in this issue!].

Among the two most interesting oddrocs present at MRFF would be Justin Downs and his flying Tee Pee. It was an elegantly simple design, well executed, and it flew just great on D12s. Continuing with the variations to the flying cone theme, Kevin Wickart, presented his tongue-in-cheek Belle X-1, also known as "Beauty and the Boost". It was a conversion of a Belle figurine, stabilized by her long flowing skirt.

The very first flight of MRFF 1996 was Adam Elliot's monolith. It was, as its name suggests, a flying version of 2001's enigmatic black monolith. To everybody's surprise, it was actually stable. So, later on, just to make everybody more comfortable, the second flight looped and flopped to the ground.

### Big Stuff

Bob Wiersbe showed up with a 1/25 scale Gemini-Titan (Revell plastic model capsule and scratch built booster). It was his only flight at MRFF, and what a flight, it was like it was on rails! It worked perfectly! Two F25-4 motors lit simultaneously, perfectly straight flight, ejecting at apogee. He caught the booster near the launching pad, someone else caught the capsule near the parking lot. Just Too Cool!

One of the visitors from the SMASH club out of Kalamazoo, Doug Hume, held the distinction of finding all the bugs in the launch system relays. After doing his stint of trouble shooting, Doug finally managed some fine HPR flights. Perhaps his best was his Jennifer I bird (dedicated to his wife). It used an H242 to boost a 35mm camera.

The most memorable HPR had to be Adam Holterhoff's huge PML Triton model with the K1100. The flight was flawless, it was the biggest motor flown at MRFF, and it landed right next to pad 1 where it took off. Altimeter indicated an altitude of around 1975 feet. Most Excellent! Adam commented, "It was gratifying to have something that complex WEAP. (Went Exactly As Planned)."

Lawrence Bercini's flies his Maxi StratoCruiser at every MRFF, each year experiencing just a little less failure than the year before. This year he CHAD-staged four D12-0's taped to four more D12-5's. When the second set of motors ignited, it laid over and took off horizontally like one of the delta-wing jets it was modeled after. It really cruised!! Lawrence searched a long time before spotting the tail fin jutting out over the top of the tall grass like some king of land shark.

Keith Downs had this "souped up" Super Vega which started a promising flight on an E30. Unfortunately, Keith had one of the few CATOS



Bill Larry's Mighty Falcon takes to the sky on an I284, and seconds later airstarts two H180's for a perfect flight. (S. Smith photo)

of the weekend, subsequently "re-kitting" his bird.

Other memorable "big guns" would be Bob Kaplow's Das Blue Max on a G33, returning both the model and the casing to successful flight status after almost nailing Bunny 18 months earlier, and Mark Winthurst's eponymous Sudden Rush, sitting atop an I161.

Bill Larry has a reputation for perfectly executed HPR flights. His 2-staged Terrier-Sandhawk with the I161-G80 combo boasted a very impressive flight, with everything working perfectly. Then as a follow up, Bill sent off his massive Mighty Falcon, boosted by a single I284 with two airstarted H180's. The spectators really "sucked air" when they saw it!

After some extensive reworking, The USS Atlantis returned. Dave Miller had taken last year's Atlantis design into "the next generation". This highly-detailed, futuristic bird always brings a lot of attention from spectators and rocketeers alike. This year, Dave showed off how fine a flight can be managed using hybrid fuel. Most people had never seen a hybrid rocket before. The J261 did not disappoint.

### Ugly Stuff

During the Team Scavenger Hunt contest



Senor Bercini went South of the Border to get his "Maxi-Melt" during Team Scavenger Hunt. (L. Bercini photo)

Lawrence Bercini's V2 met an untimely end. It flew great on an Aerotech D21, but pranged! People thought we had a fire in the field. Turns out the plastic fins did a meltdown. He was so busy flying rockets, he never noticed his rocket was burning out in the weeds. Indian pumps to the rescue. It was the only time the whole weekend the extinguishers were needed. Later on, Bercini's Alien Space Probe, chad staged with D12 and a C6 performed a touch-and-go adventure, splintering the spider legs all over the range head.

Prang award winner, Ty Thompson, won this distinction for 2 big plow-ins. The first one was his Maxi Bat. Later on, he repeated the same performance with his maxi Hawkeye, in spite of the fact the altimeter tested perfectly just prior to flight. That bird didn't just turn lawn dart, it efficiently turned itself into a concertina. Ouch!

Adam Holterhoff learned not to use cans of Coke for ballast, even if you think they're padded securely for the flight. It was a horrible mess to clean up.

Bill Thiel was just asking for it when he flew his Pretzel With Rock Salt with Estes E15 motors. Finally, his pretzelroc spilled its guts out all over the launch pad. It took 2 times to get the job done.

Bryan Chesi flew his Starship Enterprise 5 times "CHAD" (cheap and dirty) staging C motors before finally succeeding in plowing into the Illinois prairie land. Without missing a beat, Bryan then flight converted one of the remaining warp engines and managed a couple more flights. This guy has no shame!



If at first you don't fail, try, try again! Bryan Chesi displays the remains of his chad-staged Enterprise. (L Bercini photo)

### Closing Comments

Folks learned something new at MRFF. Bunny really can tell what the weather is going to do. We don't know if it's experience, or those Bunny senses doing their job. Bunny "twitched

his nose” and advised an early shut down of the range. 5 more minutes and the equipment would have been caught in a serious downpour.

The eager, but wet gang retired to a nearby ice cream emporium to swap stories and say good-byes to old and new friends.

It was the most successful MRFF ever! 948+ flights in a single weekend!

### The Sponsors

We would like to thank the following sponsors for providing the outstanding prizes that were handed out at MRFF this year:

Mark Kotolski, Countdown Hobbies, Belleville Wholesale Hobbies, Flight Systems Inc, Custom Rocket Company, The Launch Pad, Qualified Competition Rockets, Stellar Dimensions, Mike Jungclas, Vaughn Brothers Rocketry, Thrust Aerospace, Futaba Corp of America, Tower Hobbies, Rocketeer Collector’s Journal, Aerospace Composite Products, Al’s Hobby Shop, Top Flight Recovery, Binder Design, Aerospace Specialty Products, Seattle Rocket Works, Estes, Public Missiles Ltd, NARTS, Balsa Machining Service, Commonwealth Displays, Inc, Bob Wiersbe, Lawrence Bercini, Ric Gaff.

If you received a prize, please take some time to write a thank you note to the manufacturer. MRFF would not be the same without their support!

### (Un)Quotable Quotes

“It just goes to show you should use Pringle Light’!” - M. Ugorek to B. Thiel after the prang of the Pringle Roc.

“Man! That thing just evacuated!” - M. Ugorek in response to some HPR flight. “So did I!” - L. Bercini, same reason.

“How about the Mighty Midgets?” - D. Bassett trying to find a name for his kitbash team. “How about Psychotic Nightmare!” - some worldly-wise youngster on the same team.

“Nothing a couple ounces of Hot Stuff won’t fix” - R. Gaff, surveying the remains of his F-14.

“Where do you want me?” - L. Bercini inquiring where R. Miller is taking photos. You’ll have to ask Robin what she said...

“What was that??” - unknown. “I don’t know, but I want one!” - Ken Hutchinson, after something roared off a HPR pad.

“Bruce Kelly, before Kelly Bruces you!” - Ric Gaff

### Team Scavenger Hunt by Bob Wiersbe

Every year at MRFF we try to run a “fun” contest on Saturday afternoon. This year we tried out something new, Team Scavenger Hunt. The

idea was supposed to be simple, get a bunch of people who don’t know each other together, give them a list of rockets to find, give them time to find them, then make them fly them all as fast as possible.

The implementation of the plan wasn’t so simple. It didn’t take the three teams long to find their rockets, a little over 4 minutes. But the flying part was another story. To put it mildly, it was chaos. Total chaos. Launch controllers didn’t work, pads couldn’t support the rockets, and misfires were rampant. The first two were administrative failures on my part (did I forget to mention I was running this event?), so I apologize for my lack of planning. The misfires I won’t take responsibility for :)

Twenty one people signed up for the contest, which was good since I’d only planned for three teams. That’s less than 1/4 of the people who were at MRFF, so next year we’ll try to get more participation (and do a simpler contest). It was fun to watch the different strategies the teams took. The White team found all 13 rockets on their list (each team only needed to find seven), and did it in the fastest time - 3:36. The Red team found all the required rockets, plus four extras, in 4:15. The Blue team also found their required rockets plus three extras, in 4:05. Here’s an idea of what they had to find:

A Patriot Missile (any size), any Centuri kit, a rocket with a “3” on it, a Boost Glider, an Estes Mosquito, a tube fin rocket, an Egglofter...

You get the idea. All the teams had to find a scale model of a US manned launch vehicle, mainly because I like them (remember, I was running this contest).

One of the things I forgot to bring to the field was the scoring sheet for the event. I’d printed it out, but left it at home (near the forgotten flight cards). It took me quite a while to try to figure the formula out again, but in the end I came up with something that looked reasonable (at the time, anyway). Here’s how the scoring stood the end of the Scavenging portion:

RED 6345, WHITE 6584, BLUE 6255

The flying portion of the event is what separated



The White team: Ken Kolodzik, Bill Thiel, Lawrence Bercini, Paul Downs, Matthew Duckworth, Bryan Chesi, and Sabrina Ugorek. (L. Bercini photo)



The Red team: Ron Licht, Mark Smeiska, Kori Smeiska, Kurt Smeiska, Randy Sherrill, Adam Elliott, and Kent Justus. (L. Bercini photo)



The Blue team: Ron Husak, Steve Scherbinski, Dave Bassett, Mark Soppet, Steve Koszuta, Brian Sanato, and Jim Justus. (L. Bercini photo)

the quick from the dead. What the White team gained in finding all those rockets they lost with having more rockets to launch. It took them 8:44 to launch all the rockets, between misfires, an insufficient launch pad, and a flaky control-



ler. To add insult to injury, Lawrence Bercini's V2 pranged on an Aerotech D21 and caught on fire.

The Red team had several problems too, they were using two controllers and kept getting them confused. They managed to get their flights off in 7:31. The Blue team got all 10 rockets off in just 2:48, without any misfires or prangs!

Watching the teams launch their rockets was reminiscent of last years' "First Strike Spot Landing", total confusion around the launch pad. Since this was a timed event some "short cuts" were used, like being a little too close to the pad at ignition. It was interesting, to say the least.

The Scores for the Flying portion were:

RED 9367, WHITE 9445, BLUE 10632

Which led to the final scores of:

RED 15712, WHITE 16029, BLUE 16887

So, even though I didn't do the calculations on the field quite right, the Blue team was still the winner (whew!!). The winners each received a kit donated by one of our generous sponsors. Thanks to all who participated, and congratulations to the Blue team!

### NARAM-38 Impressions by Bob Kaplow

#### The sport launch:

The sport range was run the entire week by Bob and Kathy Hart with able assistance from Tom and Linda Stump of the Ft. Wayne SCAM section. They were set up with 12 pads for model rockets up to 1/2" rods, and 6 HPR pads with relays. About 800 sport rockets of assorted sizes were launched during the week. The largest were 2 Magnum Inc. flights of a D-Region Tomahawk and an upscale Magnum, both on 4" M1939 reloads. The last launch of the week was a large Phoenix missile with a Mitchell "L" motor that started the last of many grass fires. It was a "firestarter" type motor. In between lots of neat rockets were flown.

I made several Happy Meal flights, including envelope defining 1/2A6-2 (for closest to pad) and E11J reload (for spectacular flight), and my Oberweis cup on an A10-0T. I also flew my Super Ranger on a 4 D12 cluster, and most of my crayon fleet. Not flown were my 2 newest and smallest crayons, one sized for the new Apogee 10mm motors, and one for the Czech indoor motors. Both feature wrappers from "Prang" brand crayons.

With a bit of help from daddy, Rachel made her first rocket flights: Estes RediRoc Raider and Invader, both hand decorated with crayons and stickers. She was somewhat upset when she saw the remains of "Go Baby Go!" after I pranged it

due to a clogged ejection baffle. We'll have to rebuild it this winter.

I made the next level of stress test on my THOY Hornet, flying it with a G80 to verify that yellow glue does hold up to HPR. Next for this model, an H328!

My two oddrocs of the meet were the debut of Ayatollah Potato Head (with a Bruce Kelly face pasted on Mr.PotatoHead), and my Tripoli of Borg (dissent is futile, you will be excommunicated) which took first in the Star Trek event.

Ken and I each got to fly 38/600 demo reloads. Mine was an I195MJ in my big purple crayon. I failed to communicate with Ed, and he prepped it with a medium delay, while I assumed it had a short delay. This resulted in a very long dive from apogee, and a snapped shock cord. The body fluttered down and was undamaged. The nose cone and 48" chute were last seen thermaling towards Kentucky. Ken got an I435 for his Magnum, which flew perfectly. This motor features a most impressive purplish blue flame, often hard to see in smaller Blue Thunder motors.

I ended the week with a total of 24 sport flights and 6 contest flights.

Among the rest of the NIRA contingent, Cheri Chaney, Jonathan Charbonneau, Adam Elliott, and Leo Ringwald flew many models from the sport range. Jonathan came close to level 2 certifying, but suffered a recovery failure with his Maxon.

Other neat flights: Mac "Lifting Body" Garrigue flew several of his creations, and won most spectacular flight for one. Another less successful flight did a good imitation of the opening of the "Six Million Dollar Man". Tom Blakeney of DARS, formerly of Hobbylabs, flew many neat RC rockets. Ed Lacroix topped the unlimited duration with a 35+ minute RCRG flight, while Steve Lubliner bested the unlimited altitude flight with a flight well over a mile during one of the 25K waiver windows. This flight also was his level 2 certification flight.

#### NARAM:

With the Apogee motors everywhere, many events were pretty hot. However there were few maxes and no max-outs in either B PDmr or C HDmr. I chickened out of C BG due to the high winds that day. I redeemed myself Tuesday by taking a first in C HD for the "All the Presidents Men" team with a total of 343 seconds in 3 flights, beating out second place by ONE second. The model was an old Rotacrock 24 left over from NARAM-29. I also took a third with a very ballistic flight in spot-landing that bounced off a corner of the wrong tent. I had DLBF flights of 17 meters each in both A Altitude flying Bandit Bandit and in B Stupidroc flying Maniac Maniac! Who says you have to take competition seriously.



Pierre Miller loads his Saturn V onto the pad during the Sport Scale competition. This was Pierre's first NARAM! (R. Gaff photo)

For the rest of our team, Ken Hutchinson placed 4th in Payload, and Bunny took a hard fought 3rd in Scale, with a strong showing in flight points. Ric's F14 PMC was first in static judging, but was quite unstable with twin E15 power and pinwheeled thru the launch area for a Midwest Qualified nomination. Ric also had an amazing F DELD flight with an F25 that thermalized away under a 9 FOOT chute! The event was won by George Gassaway, who packed 2 eggs into a large RCRG and thermalized for 17+ minutes before a gentle landing near the range head. Gary Miller had to go swimming in one of the few water hazards around to recover his teams Dual Egglofter, which also placed.

Among the rest of the NIRA contingent, both Tom Pastrick and Pierre Miller placed in Spot Landing.

Another unusual flight was Ryan Woeckenberg's C Payload flight, which earned both a DLBF AND a US Record. He strapped the payload to an RC model for a 17 meter flight. Since RC records are kept separately, it's unlikely he will ever be challenged!

My range duty all week was LCO. Barry Saterthwaite was RSO, Ric was my chief timer, and Ken timed many a rocket. At least I had a job that I could do sitting down. Things moved pretty well all week, although it was a bit more chaotic Wednesday and Thursday with both altitude and non-altitude events mixed. The NAR launch system performed perfectly all week. My compliments to its construction crew!

#### Manufacturers news:

All of the manufacturers had rooms down the main isle of the hotel, making it the place to hang out during the week.

ASP has added several scale kits, including a

LOKI-DART (a good copy of the Sheboygan launch perhaps) and 14mm kit D-Region, Astrobee-D and of course an ASP to their existing line.

Aerotech will discontinue all B/C 18mm reloads including the never certified B6 and C4, and finally certify the remaining uncertified 24/29mm reloads. Demand for the whole 18mm line is low, but for now the D and low E reloads will remain.

New are the 38/720 casing with a new aft closure for the J350 reload, and BJ and BT reloads to fill out holes in the 29mm and 38mm line (29/240 H220T, 38/480 I330T, 38/600 I195J and I435T). A 38mm Turbo hybrid is in the works, based on the 38/360 hardware, a new forward closure, and the existing 54mm N2O tank. It is expected to deliver around 1000 NS (mid-J).

Aerotech is also replacing all of the 29/38mm nozzles on BlackJack motors. These have had a tendency to blow the nozzle extension shortly after ignition, resulting in a nasty motor failure. I've had this happen, both on BlackJack and other motors including 2 of the last 3 F40s I've flown. There were 2 more of these at the last NIRA launch. Contact AeroTech for replacement procedures.

Apogee 10.5mm micro motors are available, along with tubes, nose cones, a bunch of technical reports, and a designers pack. A better ignitor is URGENTLY needed.

Balsa Machining Service is expanding its CNC hardware to allow even larger parts to be made. He's also working on a piston adapter for the Medalist tower. I've provided him with data on almost every nose cone ever in an Estes catalog. Hopefully those will become easily orderable soon.

Eclipse has taken over the old Apogee parts,



A crayon rocket (not one of Kaplow's) goes unstable on the sport range. NIRA President Cheri Chaney is sitting at the far right.

and will be introducing some new kits soon.

Edmonds Aerospace has gliders that work with instructions that remind me of Heathkit. Rob is looking for a partner to be a business manager.

Landus showed a 3g FAI DT that is being redesigned to eliminate combustible materials. They are also designing custom flight computers around the basic stamp that can do all sorts of neat things and look like they could replace most current altimeter functions.

Launch Pad introduced some new kits, capped by a 2.6" Nike Ajax using a cluster of 3 D12s. Chuck modified one to stage, and flew it successfully in Sport Scale. [I think he placed]

QCR has their line of competition kits that work well. They sold lots of old CMR tubes, and also carry the Pratt (old CMR) plastic nose cones and egg capsules.

Saturn Press had all their old books, several new scale packs, the second edition of "Rockets of the World" plus a draft of the new book on early rocketry. This looks like another winner. Sadly, Peter has temporarily shelved production on the sport model book that was to include classics like the Infinite Loop and oddities like the Fractal Explorer. Cause of death: Estes no longer sells the individual parts needed to build many of the models.

Totally Tubular is selling tubes and couplers at bargain prices. Tubes are 6mm, 11mm, 14mm, 19mm, and 25mm, with matching rings and couplers. All are white, in 34" lengths, and compatible with everyone else's parts. They can be ordered individually, or in sets of 25 to 500 tubes. Coming soon: 29mm motor tubing, and perhaps 2.6" HPR tube.

NARTS now has the latest S&T motor data available, along with a lifetime supply of NARAM-30 belt buckles.

FSI was not at NARAM, but someone brought the latest 1996 catalog. It looks like they are back in business again.

For the first time, several of the HPR dealers visited NARAM, including Magnum, Red Arrow, and Performance Hobbies. They all did plenty of business during the week. So did the nearby hobby shop.

#### Other tidbits:

The hotel worked great. The pool was a welcome relief on warm afternoons, unless you had the last range shift. They had no food, so at least we weren't subjected to poor hotel food all week.

The banquet facility was great as NARAM banquets go. Nothing spectacular, but plenty of good food and no rubber chicken. The banquet stretched out WAY too long. Many complained about the size of the trophies: they were soo big that they were hard to take home, especially for the national champions.



Bob Kaplow puts the finishing touch on a grass fire at NARAM. (R. Gaff photo)

At the banquet I overheard Trip Barber telling Chad Ring that he'd run a great NARAM and sport launch, had a good hotel, great field, good banquet, etc. The only way he could avoid being asked to do it all again was to really FUBAR the points. Well, Chad did. Afterwards it turns out that Trip lost his 4th place in C division to someone else, dropping him to 5th. Rumor is that Trip was thrilled that he didn't have to lug a monster trophy home!

I got to meet all my old rocket friends, and to make some new ones. I even got to meet some of the RMR folks. Special thanks to Iskandar Taib, whom I finally got to meet after several years. He drove up for a single afternoon/evening just to mingle.

New glossary entry for the week: Ring Dance - Chad Ring and others stomping out the many large and small grass fires during the week. We couldn't call it the CHAD Dance, because CHAD has already been used.

Ask Chad about starting his car on fire before NARAM, or about what he found on Saturday morning after NARAM. It seems that the rest of the Launch Crue plastic wrapped his car over night!

### The Blue Plate Special By Rick Kramer

The Blue Plate Special is a flying saucer type rocket with flying characteristics similar to the Estes plastic and Centuri cardboard varieties. The Blue Plate Special gets its name from the construction materials used. Namely, two blue plastic Solo brand 10 inch luncheon plates and a Solo blue plastic bowl added to the top for aerodynamic purposes. However, you are not limited to the color blue. The Solo plates and bowls are also manufactured in red and white plastic. If you buy enough plates and bowls for a family picnic you could build a tricolored flying saucer and never have to paint it.

The only other materials needed for construction are an Estes D-E motor mount kit and a length of

launch lug tubing equal to the length of the motor mount. You will need yellow wood glue (Titebond) and tube type plastic cement (Testors) to assemble the model.



To begin construction, take the bowl and the two plastic plates and using a ruler, find the exact center of the bowl and each plate and mark them with a pinhole. Use dividers or a compass set to the radius of the motor mount (13 mm) to scratch a circle on each piece. Very carefully cut out the three circles with a sharp hobby knife. Check the fit of the motor mount tube in each of the holes. You may need to do a little sanding or filing to get the fit just right. The bottom plate will need a slightly larger hole than the others because it has to slip over the motor hook and some tape.

The Estes Motor mount kit comes with a variety of centering rings and adapters. I chose the BT-50/60 ring for the bottom of the model and one of the BT-55 thick green rings for the top. Now is the time to cut out (or drill) the three small 1/8 inch holes for the launch lug to pass through. Use the green BT-55 ring as a distance guide for all three of the holes since the launch lug will be outside this ring on the top of the model. Before using any glue, test fit the entire assembly, launch lug and motor tube, both plates, the bowl, and the green ring. When the green ring is flush with the top of the motor mount tube, mark the motor tube with a pencil where the bottom centering ring fits.

At this point you know how the one armed paperhanger feels. Don't worry, it gets easier to manage once you start using glue. We start the final assembly from the bottom up. Using the instructions from the motor mount kit, mark and cut a 1/8 inch slit in the motor tube for the E motor hook. (We are planning ahead here assuming that Estes will once again market an E-15 engine.) Wrap the motor hook with Scotch Magic Tape, twice around the motor tube and approximately centered should be fine. Test fit one of the black engine hook retainer tubes from the kit over the engine hook to be sure you haven't used too much tape. Remove the black tube and set it aside for now.

Slide the BT-50/60 centering ring with the notch in it up the motor tube to the mark you previously made and use yellow wood glue on only the bottom side of the ring. Use Testors tube type plastic cement on the top of the ring and slide the luncheon plate with the enlarged center hole down the tube into the glue. Insert the launch lug about 1/4 inch into the hole you made earlier and secure with plastic cement fillets on both sides.

Temporarily slip the green ring on top the motor mount tube and tape the loose end of the launch lug to it. Let this assembly dry thoroughly.

After the glue has hardened, remove the tape and the green ring from the tube. Slip the black tube from the Estes mount kit down the motor mount tube and over the engine hook and secure with yellow glue. Place a thick line of plastic cement all the way around the mating surface of the bottom plate and slip the second plate down the mount tube and launch lug into the glue.

Place fillets of plastic cement around the joints of the top plate and motor tube and launch lug. After these have dried, place a thick line of plastic cement on the top edge of the bowl and slide it down the tubes onto the top plate. Place a fillet of plastic cement around the protruding launch lug. Using yellow glue install the green ring on the motor tube and make a plastic cement fillet where it contacts the bowl.

When all cement has dried, use a sharp hobby knife to cut off the excess launch lug tubing from top and bottom. Decorate with your favorite colored stickers. I found some with an outer space theme at the local Walmart.

Prior to flying, insert the orange D-adapter from the kit into the motor mount tube. The Blue Plate Special flies really great on D12-0 booster stage engines. Do not use regular engines which have a delay charge, as your model will be back on the ground before the ejection charge fires and could damage the model or start a grass fire. Enjoy!!!

### Heard on the Street

(with apologies to the Wall Street Journal)

**Headed South** - Best of luck to former NIRA member and National Reserve Champion Andy Linder, who becomes a freshman at the University of Illinois - Champaign/Urbana in the fall. He follows in the footsteps of noted NIRA alumni Larry Mika (engineering) and Mark Schmitt (architecture).

**Asia Bats .500** - Japan's NASDA space agency successfully launched the ADEOS Advanced Earth Observing Satellite on Aug 17 using a large H-II rocket, the fourth time such a vehicle has been flown. The H-II is a Delta derivative. The third Japanese amateur satellite, JAS-2, was also orbited on this flight. China launched a Chang Zheng 3 vehicle on Aug 18 from Xichang, but the second stage engine shut down prematurely during its geostationary transfer orbit burn, leaving the payload in a low orbit. The payload is Zhongxing 7, a Hughes HS-376 class comsat for the China Telecommunication and Broadcasting.

**Reverse Two and a Half, Tuck Position** - Boeing engineers working on the Extended Expendable Launch Vehicle (EELV) program have successfully dunked and then fired a Space Shuttle Main Engine. In an effort to reduce the cost of getting payloads to orbit, Boeing pro-

poses a novel system to encapsulate the components of rocket engines to waterproof them, then recover them after splash down. At the Stennis Center test site in Mississippi, they dunked a test Shuttle engine, did minor refurbishment, and fired the motor for 360 seconds at full thrust. Testing is scheduled to continue, but Boeing was encouraged by the first successful test.

**Happy 7th Anniversary!** - Congratulations to all our Russian friends & partners: Saturday 7th September marked the 7th anniversary of continuous human presence in space! Budem to the creaking, aging Mir!

**Welcome to the Club!** - The following people have joined NIRA recently: Anthony DeMario, Adam Holterhoff, Jim Justus, Kent Justus, Robert Justus, Adam Nowotarski, Glen Osborn, Mike Sedlmayer, Paul Silverson, Mark Smeiska, Steven Smith, Craig Tanouye, Jack Wiker, Jeff Brycent, Mike Wade, Katie Wade, Tommy Wade, John Zoellick, Thomas Bittman, and Thomas Gibas. Welcome!

### NAR S&T NEWS

Release 36: NEW MOTOR CERTIFICATION

The following motor has been certified by NAR Standards & Testing as of July 7, 1996 for general use as a high power rocket motor. It will not be certified for NAR contest use as it is not a model rocket motor.

The following is an Aerotech reloadable motor, certified only with the indicated size casing and manufacturer supplied nozzle, end closures, delays, and propellant slugs:

Aerotech: 29mm x 238mm Casing: H220-6, 10, 14 (220.0 N-Sec total impulse, 106.4 grams propellant mass)

Jim Cook, Secretary for NAR Standards & Testing <JimCook@AOL.COM>

Jack Kane, Chairman



One of the great women of rocketry, Robin Miller. Husband Dave says: "What can I say, It's really nice to have a wife that likes rockets, and can go and bring your hat and another rocket out to the field...gotta love her..." (D. Miller photo)



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...if it had been "That's one small step for man,  
one giant trip for mankind".