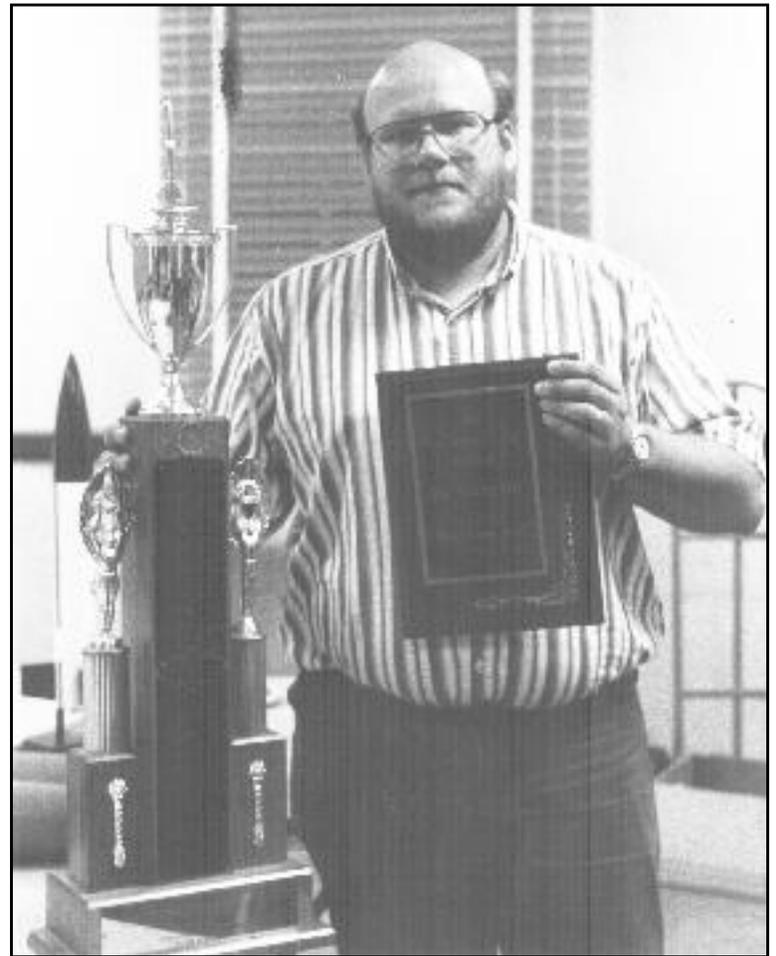




Newsletter of the Northern Illinois Rocketry Association,
NAR Section #117, Proud Winner of the 1996 Rockwell Newsletter Trophy!

Volume 19, Number 6
November/December 1996

The Leading Edge Takes the Cake!!!



For those of you who missed the September meeting, this is what you didn't get to see. Left, the really good cake with lettering that was correct to the smallest detail. That's me above holding the plaque commemorating the event and Rockwell Trophy. I'll bring the Annex (that's the box with all the memorabilia in it) to the Holiday Party at the Bundick's so you can see what's inside. (Photos by N.Heyen and J. Charbonneau)

T MINUS 1 - NIRA'S CALENDAR OF UPCOMING EVENTS

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.

November 17 - Club launch at Community Park in Lisle. **1pm to 5pm. Last scheduled launch of 1996! Note the earlier starting time!**

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 party begins at 2pm and will run until 7 or so.

January 19 - Building Session at Bob Kaplow's.

February 16 - Building Session at Bill Thiel's.

March 16 - Building Session at Bob Kaplow's.

More details in the next issue of The Leading Edge.

STAFF

Bob Wiersbe and Ric Gaff, unquestionably the Best Newsletter Duo in the NAR, at least until next year.

CONTRIBUTORS

Mark Bundick, Cheri Chaney,
Jonathan Charbonneau, Ric Gaff, Norm Heyen, Bob Kaplow,
Rick Kramer, Dave Miller, Bob Wiersbe, Dan Wolf

Other Items of Interest

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

Model of the Month Winners

The August Youth winner was C.R. Herrig with his nicely done Little Joe II. The September winners were Pierre Miller in Youth (left) with his scratch built "Sport" scale Saturn 1B, and Steve Smith in Adult (right) with his helicopter model that uses "ball bearings from my R/C car." Congratulations!!! (Rick Gaff photos)



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.

December 6: Regular Monthly Meeting, 1997 Planning.

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

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). 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. Notice: Due to the rising cost of paper and toner, this usually humorous, yet sometimes serious section of the newsletter will be deleted. We are sorry for any inconvenience this may cause.

Directions to the Bundick's from downtown Glen Ellyn.

Get on North Ave. (Rt. 64) and head west to County Farm Road. There is a Mobil station on the northwest corner. Turn right (northbound). At the second light, Lies Road, turn left; there's a church on the southwest corner, and a community rec center on the northeast corner.

On Lies Road: Go about 3/4 mile west, there'll be a group of grey townhouses on the right at the top of a small hill. Turn left into Rose Ave. Go about 200 feet and turn right onto Lilac Lane. After going through an intersection, the Bundick's are located in the sixth house on the left, a blue colonial with white shutters with the number over the garage. The bushes in the yard will be decorated with plain white lights.

LONG DISTANCE DIRECTIONS TO BUNDICK'S

From Milwaukee, get on I-94 south. When the Tri-State Tollway, I294, splits off, take it to loop around Chicago proper. Continue south on I-294 past O'Hare Airport. Look for the exit to I-290, towards Rockford, IL. It'll be the same exit as for Route 64, North Avenue, into the west suburbs. Get on I-290 and head west.

Traveling on I-290, you'll need to look for the exit for "I-355", the North-South Tollway. Take that exit, but **DO NOT GET ON 355**. You'll head right towards it but **NOT** get on it. You'll get off at the last exit before the tollbooth, Army Trail Road. Turn right onto Army Trail (there's a stoplight for this turn), and head west. You'll go about 6 miles or so west on Army Trail. You're searching for the intersection of Army Trail and County Farm Road.

Immediately prior to this intersection, there will be homes on your right, and a large shopping center with a Jewel supermarket on the left. At the intersection, there's a Clark gas station on the southeast corner, a Mobil station on the southwest (your left), and a Midas Muffler on the northwest corner (your right). Turn left at this intersection (southbound)

At the second light after this turn, you'll hit the intersection of County Farm and Lies Road. Turn right (westbound); then follow the directions above for when you are on Lies Road. If you get lost, call us at 708-293-9343.

ECOF III
by Steve Koszuta

Eat Cheese Or Fly - 96 (ECOF-96) was NIRA's third annual waivered high-power rocket launch. It was held at Richard I. Bong State Recreation Area near Burlington, Wisconsin on Saturday July 20th, 1996. We obtained a waiver to 8000' MSL (equal to 7200' above ground level).

The day started out cooler and breezier than normal for a July day in Wisconsin. The temperature gradually warmed up, but the winds remained to curtail some of the higher flights. There were more than a few sunburned rocketeers when they neglected the sunscreen due to the cooler temperatures.

Before I get into some of the flight descriptions, here are a few statistics of ECOF-96: Total number of participants - 30, number of states represented - 3 (WI, IL, IN), Total number of flights - 176, most flights by one person - 26 by Steve Smith, total Newton-seconds expended - 13,585.35 (mid "M" motor), average N-sec per flight - 77.1895 (upper "F" range), number of clustered flights - 13, number of staged flights - 5, smallest motor used - 1/2A3, largest single motor - K550 by Adam Holterhoff, and most powerful combination of motors - J800 with two I211 airstarts by Bill Larry.

The honor of first flight goes to NIRA member Rick Gaff who flew his IFO (identified flying object) on a C6-0. This is a "Happy Meal" type rocket constructed out of paper plates. Rick had a perfect flight.

The first LMR flight was Bob Wiersbe's Aerotech Mustang on a G80-7T. A lot of folks didn't think he'd get it back due to the wind - but Bob's flown this rocket many times before with this motor. His cross-form chute brought it down about 600' from the pad.

Tony Ruggeri caught the rocketry bug from fellow Milwaukeean Dan Wolf and had a nice flight with his LOC IV on a G80-4T. This rocket raised a few NIRA eyebrows, due to it's Green Bay Packers' color scheme. Tony flew this rocket a second time on another G80-4T, but included a 3" diameter payload section. He then received his NAR level one certification by flying it with a H180 White Lightning motor. Congratulations, Tony!

Steve Smith's first rocket of the 26 he flew at ECOF-96 was the "Pharaoh". He built it according to plans Rick Gaff designed (May/June Sport Rocketry). Steve flew this model on a D12-3, but had a problem with his parachute tangling. Steve

Ken Hutchinson had a beautiful flight of his LOC Magnum. An I284 lifted it off the pad and the G-switch designed by Ken ignited two G80's. Ken had a nice recovery, only a few hundred feet from the pads. Ken also flew a Big Brute on a F40 and a NCR Viking II on a G64-7W. A Vaughn Brothers "Lil' Wild Thing" proved to be a little too wild! With a C6-7 core motor and 7 A10 airstarts - it was mega unstable. Always check those CP's, even on kits.

Bill Larry was a rocketeer who flew nothing but high power at ECOF-96. He first flew a Terrier-Sandhawk 2 stage rocket

flew the Pharaoh 4 more times along with a Skywinder, Space Shuttle, SuperShot, Spirit of America, Yellow Jacket, Gnome, and Twister. Way to burn up that black powder Steve!

Adam Holterhoff started the day with a Phobos on a G104 to test the wind. He found out what most of us already knew, it was very windy. His next flight was a maiden flight of his PML Quantum Leap with an I357 booster and a H180 sustainer. Adam carried a lot of electronics aloft - sustainer ignition, altitude measurement and backup ejection. Adam learned the hard way that all the electronics in the world won't help if you forget to remove the rubber band around your booster chute. Adam's last flight of the day was the Triton on a K550. ECOF-96 was the first time he flew it on this motor. It reached apogee at 2650', and his main chute ejected early, giving Adam a long but successful walk in the tall grass.

Dan Wolf and daughters Sarah and Mary had many nice flights between them. Dad started out by flying his "Xtra Special" on a H238 Blue Thunder which broke a fin upon landing. This was Dan's first launch at Bong in 16 years. Dan also flew an "Upscale Laser X" and his "Boiler-maker Special" on Aerotech F's.

Jack Wiker flew a nice scale-up of the "Astron Nighthawk" on a C6-3 and a D12-3. It had a squirrely boost but a nice glide. Jack also flew "Fido" on a G80-10 and an "Alpha 4" on a H123 recovered by dual chutes.

ECOF-96 really was a family event. It was good to see so many children flying along side their dads. Bob Wiersbe's sons Chris and Kyle each flew two times. Chris with a CATO and Kyle with an Omloid. Mark Smeiska's daughter Kori flew her Trans Wing Glider on a B6-2. Dan Wolf's daughter Sarah flew 6 different rockets while Mary flew a Gnome on a 1/2A3-4T. Norman Heyen's son Nathan flew many rockets including a 125% scaleup of the Astron Goblin on a D12-5. Erik Rawling, son of Kirk flew his Athena twice on a B6-4.

Mike VandeBunt flew all Aerotech motors - a E30-4 in a Maniac which lawn darted due to a possible faulty ejection charge, an E11-2J RMS in a large "Northwoods Mosquito" and a D21-4 in his "Firestreak".

Ken Hutchinson had a beautiful flight of his LOC Magnum. An I284 lifted it off the pad and the G-switch designed by Ken ignited two G80's. Ken had a nice recovery, only a few hundred feet from the pads. Ken also flew a Big Brute on a F40 and a NCR Viking II on a G64-7W. A Vaughn Brothers "Lil' Wild Thing" proved to be a little too wild! With a C6-7 core motor and 7 A10 airstarts - it was mega unstable. Always check those CP's, even on kits.

Bill Larry was a rocketeer who flew nothing but high power at ECOF-96. He first flew a Terrier-Sandhawk 2 stage rocket



Adam Holterhoff's Quantum Leap at the moment of staging. The booster is hidden in the smoke. (D. Miller photo)

with a I357 in the Terrier and a H73 in the Sandhawk. His second flight was a Rocket R&D "Mighty Falcon" modified with 3 additional 29mm outboard motor mounts so it could be flown on a J275 core surrounded by 6 G80's. Bill used an Adept H.O. staging timer for airstarting. His final flight of the day was the most powerful flight at ECOF-96: a "Strongarm" with a J800 and two I211 airstarts. Beautiful flights, Bill!

Bob Wiersbe flew a few complex rockets - both staged or clustered. Bob built a sustainer for his old reliable Nike booster the night before ECOF-96 using some spare Quest parts. He wanted to fly a FSI F7 "steam machine", however it wouldn't fit in the interstage adapter. It did fly nicely on a F50-4 staged to a D12-7. Bob also flew an old Estes Gemini-Titan converted to fly as a 2 stager. This was the first successful flight of this model after Bob repaired it. It flew on a C6-3 staged to a A3-6T. Another Gemini-Titan Bob flew was his 1:24 scale version with the Revell plastic capsule. It flew on 2 F25-4's. It was a very realistic flight - one of the astronauts panicked and ejected at splashdown!

Keith Gilman had a nice flight of the new PML kit "Sudden Rush" on a I211. Keith also flew a few Aerotech F's and a D13 RMS motor.



Tony Ruggeri (and son) with his Green Bay Packers LOC IV. It made three perfect flights! (R. Gaff photo)



Dan Wolf checks in his upscaled Laser-X while ECOF organizer Steve Koszuta looks on. (D. Miller photo)

Bob Kaplow proved you can build a model using only yellow glue and fly it using F's when he flew his THOY Hornet on a F40-7 and recovered it in fine shape. Bob is going to continue this testing by flying it on a G next.

Dave Miller really enjoyed ECOF-96 because he got a chance to socialize and meet participants while he was RSO. Dave was still able to fly two rockets though - his D-Region Tomahawk on a H242 and a Mean Machine on a D12-5. Dave also did his good deed for the day when he saw Bill Larry's "Mighty Falcon" land out where he was recovering the Mean Machine. He went over to it and cleared the chutes from the road, preventing a passing car from snagging them. Dave Miller also designed and printed the logos for the past two ECOF's. Thanks a lot, Dave!

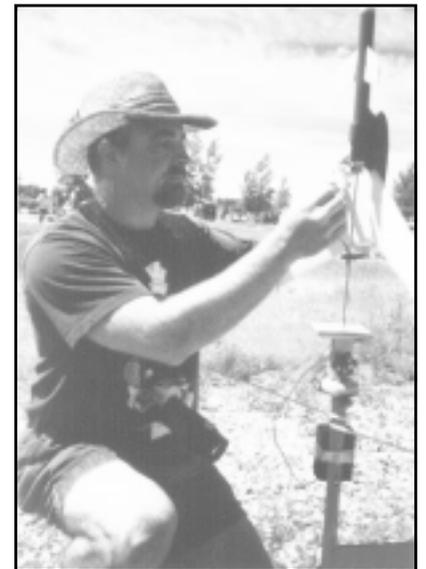
ECOF-96 was held on the 27th anniversary of the Apollo 11 moon landing. So it was fitting to have at least one model of the Saturn V fly. Dave DeRemer stepped in and launched his 25 year old Estes Saturn V. He used a D12-5 but should have used a 3 sec. delay, so unfortunately it crashed before parachute ejection. Dave is going to rebuild this model.

Thanks to everyone who helped out with this years ECOF launch. This includes but is not limited to: Rick Gaff, Norman Heyen, Adam Holterhoff, Ken Hutchinson, Bob Kaplow, Rick Kramer, Bill Larry, Dave and Robin Miller and Bob Wiersbe. Here's to next years launch - may it be even bigger and better than the last three.

[And major thanks goes to Steve Koszuta for organizing this year's ECOF. You did an outstanding job, Steve!]



Ken Hutchinson checks the angle before his Lil' Wild Thing is launched, not all the motors ignited and it went on a wild ride. (N. Heyen photo)



Jack Wiker readies his upscaled Astron Nighthawk for one of its two flights. (R. Gaff photo)



Steve Smith's Shuttle takes off on one of its many flights at ECOF. (N. Heyen photo)



Rick Kramer proudly displays one of his many scratch built rockets. This one was just a little wobbly. (R. Gaff photo)



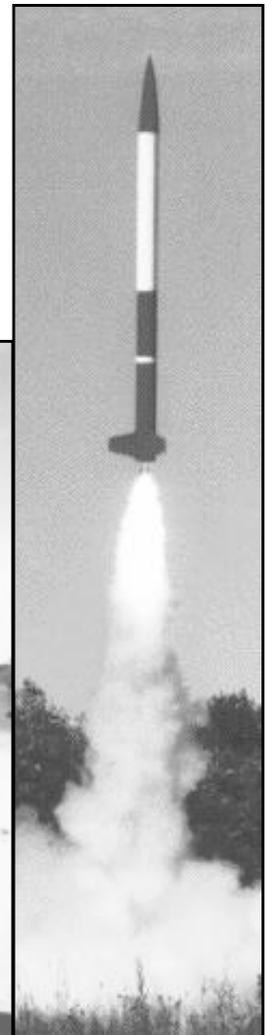
Kathy Larson (another of the Great Women of Rocketry) shows off two of her medium power rockets. (R. Gaff photo)



An Unknown Rocketeer loads up a Phoenix for a HPR flight. (R.Gaff photo)



Adam Holterhoff poses with his Triton, and the beast takes off under K550 power. (R. Kramer and N. Heyen photos)



The Presidents Podium from Cheri Chaney

Hello once again to all NIRA members.

All 1200 Rocket Kits Built!

Well, the National Model & Hobby Show has come and gone once more. NIRA members (and some NIRA friends) helped show visitors build a grand total of 1200 model rockets this year. We actually ran out of rocket kits about a half hour before the end of the show on Sunday!

Mike Jungclas did a superb job running this event for us! In addition to all of his organization before the event, and besides working all of the shifts on both days, Mike also invented the people moving system that makes our Make It/Take It Booth the fastest line at the show. Thanks Mike for doing this important job for us again this year.

Thanks are also due to: Mark Bundick, Ray and Brian Chesi, Adam Elliott, Rick Gaff, Ken Hutchinson, Bob Kaplow, Rick Kramer, Pierre Miller, Brian Noon, Joe Nowak, Pete Olivola, Tom Pastrick, Jeff Pleimling, Dave Price, Leo Ringwald, Greg Roman, Steve Smith, Bill Thiel and Bob Wiersbe. Each of these people worked at least one shift at the hobby show.

Special thanks go to Dennison Love, who stopped by just as the line started getting long and volunteered to take an unstaffed table and work with eight people. Special thanks also to "Ducky" Klouser who stopped by Saturday morning with offers of help, and who came back and worked all of Saturday afternoon when we would otherwise have been very short-handed.

A set of very special thanks go to Bob and Kathy Hart, and to Kori, Kurt and Mark Smeiska. Not only did these people provide much needed assistance on Sunday morning, but they drove in from out of state just to work with us. The Smeiska's came down from Wisconsin and the Harts drove up from Fort Wayne, Indiana. Their help, and their company, was much appreciated.

Custom Rocket Purchase

NIRA bought a whole pile of rockets at a 50% discount from Custom Rockets at the Model Hobby show. They are currently at the home of Rick Gaff who was kind enough to transport them from the show. These models will be available for sale at future NIRA meetings, but it will be done on a lottery basis. Each person at the meeting will have a chance to purchase 1 kit, until all attendees have had a chance. Leftover kits will be returned to the NIRA range store.

Hobby Show Launch

The October launch at Community Park was the one to which we invited our hobby show guests. We were fortunate enough to have nice weather, and had 77 families sign up at registration. We gave away about 125 A8-3 motors, and helped 99 people fly their hobby show rockets. We also had many flight by Brian Noon and his Trailblazers.

Many thanks to all the NIRA members who showed up to help out with the hobby show flights. I saw John Barrett, Brian and Ray Chesi, Mark Bundick, Jonathan Charbonneau, Adam

Elliott, Ken Hutchinson, Bob Kaplow, Rick Kramer, Joe Nowak, Tom Pastrick, Dave Price, Jeff Pleimling, Leo Ringwald, Steve Smith, Mike Ugorek, and Bob Wiersbe all working with our visitors. Special thanks go to Mike Jungclas who ran the registration table, and to Rick Gaff who somehow managed to organize all the flights from a VERY long flight line. Thanks also to Mark Bundick for bringing a bunch of Sport Rocketry magazines to give away.

I saw many thrilled faces as kids watched their first model rocket fly into the air. There was much cheering and excitement around the NIRA racks as parents and friends joined in the fun. And it was especially nice to read the thank you notes that were written on the flight cards near the end of the day.

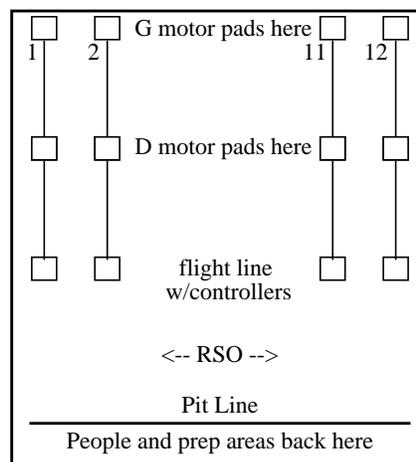
November Meeting Notes from Bob Kaplow

Range Safety

The RCHTA launch got out of hand, as it usually does. The following additional range rules will be implemented effective the November NIRA launch:

1) ABSOLUTELY NO PADS set up outside the 1-12 range that we have signs for. If all 12 lanes are in use, you can share a lane with someone else. This is a good way to make a new friend, or share knowledge. If possible, share with someone who has a controller with a different length than yours (15', 30', 50'). If you set up outside the 1-12 range, we will not launch your rocket!

2) We will establish a 15' buffer lane between the controllers and the "pit area". This line will be marked by a yellow rope on the ground. No one is to be past the pit line except for the RSO, those currently putting a rocket on the pad, or ready to fly. This will leave an aisle for fliers and RSOs to move across the flight line without tripping on wires. No one should walk across the pad wires. As before, all controllers are to be at the "flight line" designated by the RSO. Pads go out 15', 30', or 50' as appropriate for the rockets being flown. Here is a simple drawing:



3) PLEASE do not bring your flight card to the RSO until your model is on the pad and ready to fly. In the event of a misfire, please get your card

back from the RSO before attending to your rocket. The RSO should only have to hold onto cards that are ready to fly.

4) Reminder: we need to watch kids running around. We've had a couple models stepped on this year, and many near misses. Parents need to be responsible for their kids.

NIRA Range Store

At RCHTA, NIRA purchased a bunch of CUS-TOM kits at a significant discount. We also have a stock of QUEST kits from last year, Totally Tubular tubes, and lots of old stuff, all at bargain prices. This will all be at the December meeting to clear out Bob and Ric's basements. In order to fairly distribute the bargains, we will lottery off numbers to pick A SINGLE ITEM to be purchased per person, continuing until there is no further interest, or no stuff left.

After December, if you want something from the range store, contact whoever has it (currently Bob Kaplow) to make arrangements for delivery. I'll try to bring some of it to club launches, probably just motors, wadding, and ignitors.

Building Sessions

We discussed the winter building sessions at the meeting. There seems interest in having one every month thru the winter. Tentatively, I've offered to host the January and March sessions, and the Thiel's will repeat in February. Does any one else want to host a couple dozen rocketeers?

New to "Bob's Hobby Shop" is an 8" drill press with a circle cutter, perfect for cutting centering rings up to about 6" diameter. Also available will be a FireStar ignitor kit, so anyone who wants to build ignitors let me know so we can get enough wire kits for you. [The wire kits are \$1.00 to \$1.50 per ignitor. The pyrogen is a small fraction of that. The how-to video will be available for viewing.]

Other useful power tools available are a small lathe (Unimat), jig saw, belt sander, and assorted drills, saws, soldering irons, etc. Bring your latest problem, and see if the NIRA wizards can help you out.

Last year we tried a couple projects, but they didn't catch on. Folks are still asking about building gliders, launch systems, and pads. Any other project suggestions? Ric Gaff will be adding a "Ground Support Equipment" to the NIRA reprint series to assist those needing launch equipment.

1997 Officer Elections

We need volunteers for club officers for 1997. Our current officers are President: Cheri Chaney, Vice President: Mike Ugorek, Secretary/Treasurer: Ken Hutchinson, Safety Officer: Bob Kaplow. If you are interested in running for one of these offices, let Cheri Chaney know (630 462-0260). The election will take place at the January 3rd NIRA meeting.

Does any level 2 certified member want to be Tripoli Prefect, or do we want to permanently sever our affiliation with this group?

**The 1996 National Model and Hobby Show
and Hobby Show
by Mark Bundick and Bob Kaplow**

The 1996 National Model and Hobby Show, the nation's largest hobby trade show, brings forth four days of new hobby products, consumer demonstrations and fantastic display models. While Chicago area NAR members have an advantage, many modelers make trips specifically to see the new product introductions and chat with manufacturers. Show hours for public viewing were shortened this year, but that didn't put a damper on either attendance or enthusiasm. The local NIRA section, ably organized by Mike Jungclas and Cheri Chaney, and assisted by two dozen NIRA members and friends, manned the rocket "Make It - Take It" booth and build 1,200 Estes Generic kits, and promoted both the hobby and the NAR to thousands of show attendees. Almost 100 of those rockets showed up and were flown successfully at NIRA's launch a week later.



An alphabetic review of new product introductions follows below. With several hundred booths scattered thru an exhibit hall more than two football fields big, it's hard to cover all the modeling innovations. We hope you'll enjoy and learn from what Sport Rocketry's staff was able to report.

Aerotech

Gary Rosenfield and Ed LaCroix returned to the show for the first time in about three years. New

this fall are "Econojet" motors designed to reduce single use motor costs. Blister packed for easy retail sale, the F20-4 White Lightning (65 ns 2/\$17.95), and G35-7 WL (105 ns 2/\$19.95) kick off the new line. The company also retooled its Copperhead igniter production to improve reliability. Copperhead packaging is also new, designed to prevent shipping damage.

More easy access reloads will be coming in the future, along with a 38mm hybrid that increases the total impulse of an I161 reload from 360 ns to about 900 ns. Offsetting this is the discontinuing of all 18mm reloads except the D13 and D24, and the dropping of the F14 as well (the F14 will be replaced by the BlackMax Econojet). Some of the older product line have had price increases. Aerotech will be considering new kits next year, and investigating marketing products jointly with Public Missiles.

AMT

AMT has reissued more of the Star Wars line, and has some new plastic models in that series, along with more Star Trek models.

Apogee

Tim van Milligan was showing five new kits, all for 10mm motors. The line includes the Centrix, altitude model, the Hydra egglofter, Heliroc, Blue Streak (18mm PD/SD) and Mass Driver payload. Also displayed were the Edmonds Deltie and Ecee, available from Apogee.

Apogee's designer kit has been expanded to include three pages of display stands. The book "69 Simple Science Fair Projects with Model Rockets" is available for \$11.95. Also new is a Sound Recorder that fits in 18mm tube and weighs 20 grams. The latest catalog is available for \$1.00.

Balsa Machining Service

While introducing no new products, Bill Saindon continues to get more and more hobby shops to carry his line of replacement nose cones, and the Medalist tower.

BMS will also soon have new tooling to do more "customized" shapes, and will speed pro-



Tim Van Milligan was back at the show this year displaying the Apogee line of kits and the new 10mm motors. (R. Wiersbe photo)

duction for standard cones. That speedier production means BMS will continue to be able to ship orders quickly.

Custom Rockets

New kits are promised in 1997. For now Custom continues to make steady progress at increasing their distribution. Over 300 hobby shops across the country now carry the Custom line.

Estes/NCR

Estes released a bunch of new kits, many tied in with other space oriented promotions. The Star Booster was designed to represent the single stage to orbit vehicle from Buzz Aldrin's book "Encounter with Tiber". Additional models were devoted to Star Wars and Star Trek product tie ins. These would not be available until next spring, the expected re-release date for the Star Wars movie trilogy. Look for the return of the Estes X-wing and an NCR Maxi X-wing, a Darth Vader Tie Fighter, and an "exploding" Death Star.

Kits unrelated to promotions included a 2.6" x 25" Silver Comet, a 1930's looking sort of sci-fi bird based on the V-2 parts; a new mini-engine kit, the "Nike Arrow" that NAR folks will certainly kitbash into all sort of Nike sounding rocket variants; Gemini DC: a BT-50 based bird sporting two side pods, each pod containing a chute; Fat Boy: 12" of BT-80 fun perfect for small fields and demo launches.

NCR models were the same as last year. This

The new kits from Estes, (from top, clockwise): X-Ray (not the old one, but a new, smaller one), Nike Arrow, Mk-109 Stingray, the 2 stage Longshot (I think the name implies that it's a longshot you'll get the upper stage back), military styled Python, futuristic Silver Comet, the Star Booster from Buzz Aldrin's book (this rocket features rear ejection!), and finally (from left to right) the Firebird, Fat Boy, Sizzler, and Gemini-DC. (R. Wiersbe photos)





Left, Bill Stine and the new Quest line of ready-to-fly rockets. Right, the new Quest kits, including the cool looking Tomahawk cruise missile, an egg-lofter, and Big Betty (boy, will my mom be mad!). All in all a very impressive show by Quest this year. (R. Wiersbe photos)



time they had prototype Dark Star motors that have a cute molded nozzle. NCR plans to introduce F52-4 and 6 (80 ns) and G70-5 (100 ns) motors. Flashpoint ignitors are 6" zip cord with an enhanced Solar head. Shipping would commence immediately after DOT approval is received.

Glencoe

Glencoe adds to their historical space models with the addition of the Mars Liner from an old Disney movie (1/144), the UFO (the first Sci-Fi kit ever), and the Bell X-1 (1/48). Coming in 1997 are a Transport Rocket, Solar Powered Space Station, and Lunar Reconnaissance Vehicle. They also continue to show their Disney Retriever Rocket, the Lunar Lander and the Von Braun three stage Ferry Rocket. Many NAR members used the Glencoe Jupiter C in the Plastic Model event; look for these new models to be converted as well.

IMEX Mercury

Mercury will be releasing some vacuformed visible models with metal interior detailing. The first is a V-2 in 1/16 scale, about the size of the old Estes Maxi-Brute. A possible flight conversion will be expensive, as the kit lists for \$65 price, because of all the internal details provided. A UFO is coming next that is based on details from folks abducted by aliens. The Launch Pad was displayed by their distributor, Dare products.

Quest

Their acquisition by Toy Biz completed, Quest made a big effort in the mass market side of the hobby. They introduced their "Ready to Fly" line. Packaged in vacuformed blister packs, and sporting some excellent graphics, retailers are sure to go for these. NAR sections would be well advised to keep an eye out for Quest in their area, as beginners are sure to be attracted by the ready to fly aspect, and will be excellent candidates to recruit.

Quest didn't abandon the hobby side either. Their "flagship" is a 22" long Tomahawk Cruise missile. Also introduced were the "Spin Fin" with spin tabs; "Totally Tubular", a rebirth of the Centuri "Groove Tube", Courier egglofter

and "Big Betty". Quest also created a new launch pad with curved legs.

Revell/Monogram:

Plastic model kit collectors were probably disappointed to see this company release all their old Battlestar Galactia stuff: Viper, Cylon Raider, and Battlestar. The Viper is another popular plastic model conversion, so look for them in your local shops soon. The Voyager line has had some additions as well.

Stellar Dimensions

SDI added 3 more square rockets to their line, the Avenger D/E power model (\$24.95), the Vector (\$14.95) with box-like fins, and the spArrow (\$8.95) designed for educator use. They introduced a line of 6 catapult gliders, based on WWII fighters: P-51, Fiat G-50, FW-190, Zero, Spitfire, and Russian Polikarpov. NAR members may wish to look at these to convert to parasite gliders for sport or contest use.

Finally, two educators displayed at the show. Mobile Aviation Historical Exhibits (Dennison Love) and Model Building 101 (J.J. Levine) are both incorporated as non profit educational organizations, using models to teach science and math to students.

The September Launch by Cheri Chaney

September marked our return to Lisle's Community Park for the rest of this flying season. And what a beautiful day it was, perfect for rocket flying - warm with almost no wind and a beautiful blue sky for background! Even though we returned to our afternoon-only launch hours, we still had about two hundred flights with only three CATOs.

With our return to the park came the return of kids to the launch, both NIRA members and visitors. Some of our younger flyers were: Jenny and Sarah Chaney, Adam and Brian Chesi, C. R. Herrig, Erin Juengst, Aaron Lyle, Pierre Miller, Kristen and Ryan Noon, and our youngest flyer Rachel Kaplow. It is truly a shame to lose such a kid friendly launch site.

This launch also marked the return of John Barrett who was away for MRFF and hadn't been seen for awhile.

There was also a great deal of variety in the rockets flown. John Barrett flew a Hellfire (a Launch Pad kit) and inaugurated his Sidewinder. Superman (Jonathan Charbonneau) flew his Supermania model, complete with Superman figure. Brian Chesi flew his Enterprise on a B6-2, then CHAD-staged his Mean Machine on a D12-0/D12-5 and followed that up by launching his Phoenix with a 4 engine cluster (2 D12-7's and 2 D11-P's). Adam Elliott made the maiden flight of his Vector. Rick Gaff flew his Die Rocket and Giant Pyramid, as well as a 2 stage Flying Saucer. He also made a very nice glider flight with his Flying Jenny using an A6-3! C. R. Herrig made several flights of his Leprechaun powered by a 1/4A3-4T.

At the other end of engine size for the day, Ken Hutchinson launched his Big Brute using an F22-5 and Byron Wilkins made the first launch of his LOC H-45 using an F-50. Pete Juengst flew the first three flights of his Veridien Solar Probe (from the movie Generations). Bob Kaplow amused us with his Ayatollah Potato Head, Happy Meal, Oberweis and one of his smaller crayon rockets, the Skywriter 10 flown with a 1/4A2-4. Rachel Kaplow showed off her styrofoam Invader and Raider (the new "just put in a engine and fly it" kits from ESTES).

Rick Kramer brought out a new tube rocket, Awesome Loop, for its first two flights and his Modified Skywinder with helicopter recovery. Rick also brought and FLEW several items from his kitchen! Rick's kitchen rockets included: his Blue Plate Special made from blue plastic plates and bowls, flown on a D12-0 with tumble recovery, his Dee Funnel, also flown on a D12-0 but with "core sample recovery", and his Fantastic Funnel (also "core sample recovery"), which was first launched with an A10-0T, and then CHAD-staged with a B6-0/A10-0T combination. Rick also noted that several of his rockets included parts from Yankee Rocket.

Aaron Lyle made two flights of his Homemade

Eagle which was actually home made. Pierre Miller flew his IQSY Tomahawk several times and launched his Saturn 5 twice. He also won the CATO award by managing to CATO both an Antari and his Saturn 1B! (For those of you who were paying attention up at the top, the third CATO was Jenny Chaney's Manta, built with her Brownie troop). Ryan Noon used bubble gum for the payload in his Gamma Ray. Ryan also got us ready for the Hobby Show by flying his Windy City Classic, built at last year's show. Jeff Pleimling flew his Galileo (from Custom Rockets), his Nike Smoke (from Quest) and his Loadlifter 1A (ESTES plan #19). Leo Ringwald had just one flight, his Helicopter using a B6-4.

Steve Smith launched an Aerotech Arrow with an E18-4W reload, warned us to keep our HEADS UP for his Bearing Roc, and reminded us of the season with his Great Pumpkin, painted orange and covered with jack-o-lantern decals. Steve also wins the strangest looking nose-cone award for his Eye in the Sky, an ordinary looking body topped by a freely rotating large icky looking eyeball!

Jonathan Charbonneau earned a special thank-you for "adopting" a group of young spectators. These new rocket fans were happily seen taking turns helping Jonathan prep, launch and chase his rockets. At the end of the launch these lucky kids had been treated to a wonderful hands-on learning experience. Way to go SUPERMAN!!!

When we finally packed up to go, many happy spectators and participants took home memories of a truly wonderful September launch. Now here's hoping for repeat weather for our October launch and all our hobby show visitors - see you all there!

NARAM 38 **by Mark Bundick and Dan Wolf**

First, let me offer one big THANK YOU to NARAM-38 CD Chad Ring and his able, hard working staff of Launch Crue folks for putting on a really great NARAM. Everything was well organized, any problems that came up were quickly resolved and as best I could tell, everyone left thinking "Wow! Great NARAM!". Given Launch Crue was also a club fighting for a national title, their effort was even more impressive.

The field was 15,000 acres of reclaimed strip mine land. If you made it over the first hills and valley across the road, the terrain wasn't that bad. I suggested to a couple of people that a mountain bike rented for the week would have been a good investment, but no one took me up on it.

Some Sport Flying Highlights:

I'm quite disappointed that no one here reported "The Great Trustee Showdown Drag Race"

Mark Johnson and I staged on Saturday. MJ flew a Brutus; I stuck with my 7 year old Phantom 4000 HD, and we both took off with I161 reloads. I managed to sneak off the pad first, even with the Copperhead igniter, MJ was lower, but I stayed up a LOT longer. My chute deployed right under a large cloud, and it was thermal city. I didn't time it, but I was probably in the air 15+ minutes on a 3 lb. plus bird.

I also terrorized the range with my D13-7 RMS powered SPEV, and my Juno II from Peter Alway's "Art of Scale Model Rocketry". Pete showed off a draft of his next book, "Retro Rockets". It has tons of stuff from the 20's, 30's and 40's and is only \$18 for almost 100 pages. More neat stuff to build.

I missed the M powered flights due to scale model building, but again, Launch Crue went out of their way to make sure these guys got their flights off. Ross Dunton did some good business (even Pat Miller bought stuff there; Ross wisely asked for an NAR card as he was pulling down packs of Estes B and C motors.) Thanks too to Dave McVeigh at Red Arrow for coming down.

The RCRG crowd did their thing all week long. Their ranks are growing, and if you have any interest in the activity, NARAM looks like the place to be. Between George Gassaway, Ed LaCroix and Kevin Cremer, you won't lack for teachers. Kevin even brought down an electric model and buddy box to give people stick time. Is this a great hobby, or what?? BTW, Ryan Woenberg LOST his Stingray III sometime during the week. I missed that on the range, but at least he got a "Best Midwestern Qualified Flight" nomination out of it.

There were a lot of user qualification flights, too. Steve Lubliner won his Level II cert with a J powered original design bird, complete with recording altimeter. Arrow straight, and recovered within a couple hundred yards of the pad, despite a chute deployment at peak (no drogue for those Arizona guys...) Didn't see any hybrid action, however. Strange that Ed LaCroix from Aerotech didn't bring any down...

Paul Weir of Weir Rockets kept flying his Xmas tree kit over and over to the delight of the crowd. Bob Kaplow gave everyone a chuckle with his converted plastic Whiffle ball and bat. The LCO wasn't fast enough to let Bullet hit the first launched ball with the bat, however.... Bullet then proceed to prang his 5' dia. Baby Bottle, but assured me it could be fixed.

Thanks to Gary and Fran Miller for their Wisconsin Mosquito flight. The model featured a loooong nose probe and paint scheme to make the bird look like a real mosquito. Good fun.

In addition to keeping us entertained with his free flight gliders, Tom Blakeney won the RCRG fun event by landing very close to his announced time and equally close to the target.

While he seemed surprised at the announcement at the Awards Banquet, given his RC experience, I can't say I was totally shocked. I suspect lots of folks had longer flights than his, but it was the combination that counted.

Mac McGregor's lifting bodies attracted a lot of attention. I'm told he pulled a flight similar to the "Six Million Dollar Man" version save for the fact that Mac pulled off a perfect landing. Sorry I missed that one. You Texas folks should get Mac out of Houston more often and let the rest of us steal his plans (hint, hint, Tom Beach....)

Politics

I'd like to take the time to thank our single departing NAR Board member Ed LaCroix. Ed brought us some good, thought provoking ideas, was an active participant in all our discussions, and added his own brand of humor to our occasionally dull meetings. His service to our Association is much appreciated, and I encourage those of you who want the inside scoop about how the NAR really works to have a chat with Ed. I'm certain you'll get some good feedback about what life as an NAR Trustee is really like.

Thanks to all who took time to vote, either in Evansville or by mail. I think it's very important to do that, even though with annual elections, our turnout seems to be decreasing. I'll have my standard Board meeting summary for posting in a couple of weeks. We got some excellent work done and broke in rookie Trustee George Rachor from Portland. Possible sites for the winter meeting in January 1997 include Washington, DC; Denver and Indianapolis.

Competition Flying:

There was a LOT of it. With over 160 contestants, competition was bound to be stiff and it took good performances in all divisions to win. Highlights?

D Streamer Duration models were hard to see, as predicted. No clear trends here, but the winning ideas are the same since the inception of the event; get a streamer that whips like mad, shoot the bird up high and keep the boost straight. D3s were popular in this event, and if you were fortunate to have the timers see your flight you were in good shape. Most models were varying lengths of BT-20 sized tube. Those the timers did see had some incredible times with 4 minutes or more not being uncommon with a couple over 5 minutes and one over 7 minutes.

B Parachute Duration saw a variety of strategies. There were airframes of all sorts of diameters and various motors as well. Most competitors used standard 18mm motors but a few Apogee B3s were flown. However they weren't needed to be competitive. As expected, how and when you flew was more important

than what you flew. Mark DQ'ed his team's first flight with his Juno II. Mark's 9 year old daughter flew a Big Bertha, got nervous about putting a big chute in it, and managed two qualified flights before she called it quits. Dan's daughter, Mary, put in one of the top performances by qualifying every flight and flying at the right times, all on B6-6 motors.

Altitude tracking was plagued with hazy skies. Finding anything other than the superrocros in that crap was not easy. The typical flight profile on these LOOKED like this: "psssssssst... (7 seconds of silence)...pop." I know it frustrated the contestants, but from the tracker's viewpoint, there wasn't anything we could do about it. The guys tracking at a NARAM are very experienced and hate losing things. The flying strategy seemed to be to use the A2-7 in a model with as much tracking powder that you could fit, and hope the trackers saw it. Adding to the frustration of the flyers was the difficulty in getting the motors to ignite. Some who "stayed" with it were eventually rewarded with closed tracks. When they were tracked, some great altitudes were reported. On a clear day, the results would have been different.

C Payload differed only in that the engines used varied more. This was one event where composite C motors were needed to win. I suspect that all of the top flights in all divisions used them. C10-7 motors seemed to work the best although many used C4-5 motors. These proved to be a challenge to track. Even so, many outstanding flights were made with the winning C Division flight over 600 meters. But an A Divisioner, Mike Filler, actually had the highest closed track, an incredible 700+ meter flight but he was unable to return it. The winds in the afternoon made recovery of even C Payload models a challenge. More than one modeler left a "placed" entry in the field.

One final comment. It would have helped if check-ins people had told contestants (particularly A divisioners) not to remove their payloads after the flight except at the returns table. We heard of one A Divisioner who was literally reduced to tears when he happily came up to the returns table after managing to get his flight off, qualified and returned, with his payload in one hand and his rocket in the other. His smile disappeared when the returns person DQ'ed him. We need to do more to make the first NARAM experience an enjoyable one.

C Boost Glider:

This seemed to be the "year of the Deltie" as Edmonds gliders could be seen all over the place. When they worked, they seemed to glide well, but many separated from their pods early, and/or shredded under boost. Some that did work proved hard for the timers to follow with the open wing design. Mike Filler took first in A Division with a Flat Cat, but he beefed up the

wing to 3/16" balsa. Shaun Smith took first in B with a QCR kit. Dan Wolf took 1st in C Division with his own design, the "Golden Girl" (plan in the next issue of Sport Rocketry), and of course Southern Neutron took first in teams with an R/C model. One of the best flights was made by Trip Barber whose 171 second, second flight was pretty to watch as it seemed to hover forever at one point, nose pointed directly into the wind. Again, Apogee motors weren't needed here and most competitors stuck with C6-3s.

F Dual Eggloft Duration

Those who arrived on the range early were rewarded with good skies for flying this event. Winds were almost nonexistent at times but



Ric Gaff's Plastic Model Conversion moments before going unstable and re-kitting itself.

thermal activity was high. Many egglofters seemed to hang over the range. Jon Rains flew early and won C Division with a 4 minute plus flight. Jon's model appeared to have a CMR style dual eggloft capsule on top of an 18" length of BT-55 sized tubing. Another early flyer was Jim Filler. Jim's model hung over the range area for the longest time before finally heading towards tracking east. As Jim passed by our tracking station, the model was still high in the air on a 22" chute. Jim finally gave up on it and radioed his wife to pick him up almost 5 miles away from the range head! Apparently many contestants had their bottom egg break under the high thrust acceleration of the F motors when the top egg pressed down on the bottom one. Seems that many have not heard of separating the eggs into two separate compartments. I think an article on how to fly Dual Egglofting would be appropriate for an upcoming issue of Sport Rocketry. F25s were the popular motor here.

Plastic Model

The success rate was respectable for this event. F-104 Star Fighters seemed to be a popular choice for conversion and most worked. Other jet conversions included F16s and F14s. On the rocket side, there was a couple of nice DML V-2 conversions, a couple of Glencoe Juno 1s, an

Apollo Command Module and a few Lunar Landers. Tom Cambell jumped from 3rd to 1st when his Lunar Lander "hovered" and he received mission points. Trip Barber, the leader in static points in C Division had tough luck when his composite motor had a too long of delay and the model "rekitted" itself. Other notable prangs included Ken Browns 1/32 F16 complete with battle damage that also augured in when the D21 delay was seemingly longer than 4 seconds.

Sport Scale

There were some interesting flights in Sport Scale as more modelers elected to go for mission points. A Nike-Ajax flew on 2 D12s in the Nike stage to 1 in the Ajax for a perfect flight. There were many other good scale flights as well including Bruce Markelewski's scale Lunar Lander on a D21 that worked perfectly.

In summary, Friday's flying was a relief and relaxing for most competitors. The temperature was only in the mid 80s and everyone seemed to enjoy themselves, knowing they had survived one of the most grueling NARAMs flown in recent memory. Cheers to all the contestants who worked hard at flying and at range duty. It was a hard card of events for the RSOs to deal with under hot and humid weather. Timers and trackers also "earned their pay" this year. And through it all, most everyone kept their cool and had a good time, welcoming the challenge.

Final thoughts:

A good but grueling NARAM. The events were said to be chosen to "level the playing field". But the same people won who always do, so I dunno. It was fun to fly these events during the contest year 'cause each meet only had a couple of them. Flying them all together was harder than I expected, especially in the heat and humidity.

1995-1996 NAR CONTEST YEAR POINTS FOR NIRA MEMBERS

NAME	NAR#	POINTS
A Division		
11. Mary Wolf	46379	2124
29. Jenny Bundick	Pend	275
31. Pierre Miller	64378	262
38. Bryan Chesi	63849	158
B Division		
20. Ed Thiel	53213	162
C Division		
74. Kevin Wickart	59720	746
85. Tom Pastrick	02276	612
143. Bob Wiersbe	44588	118
151. Steve Koszuta	30211	98
159. Robert Kaplow	0018L	63
165. Dave Price	45578	40
171. Adam Elliot	62456	27
176. Bill Thiel	54941	19
Teams		
7. All The President's Men	T-117	5409
Sections		
12. NIRA	117	10,650

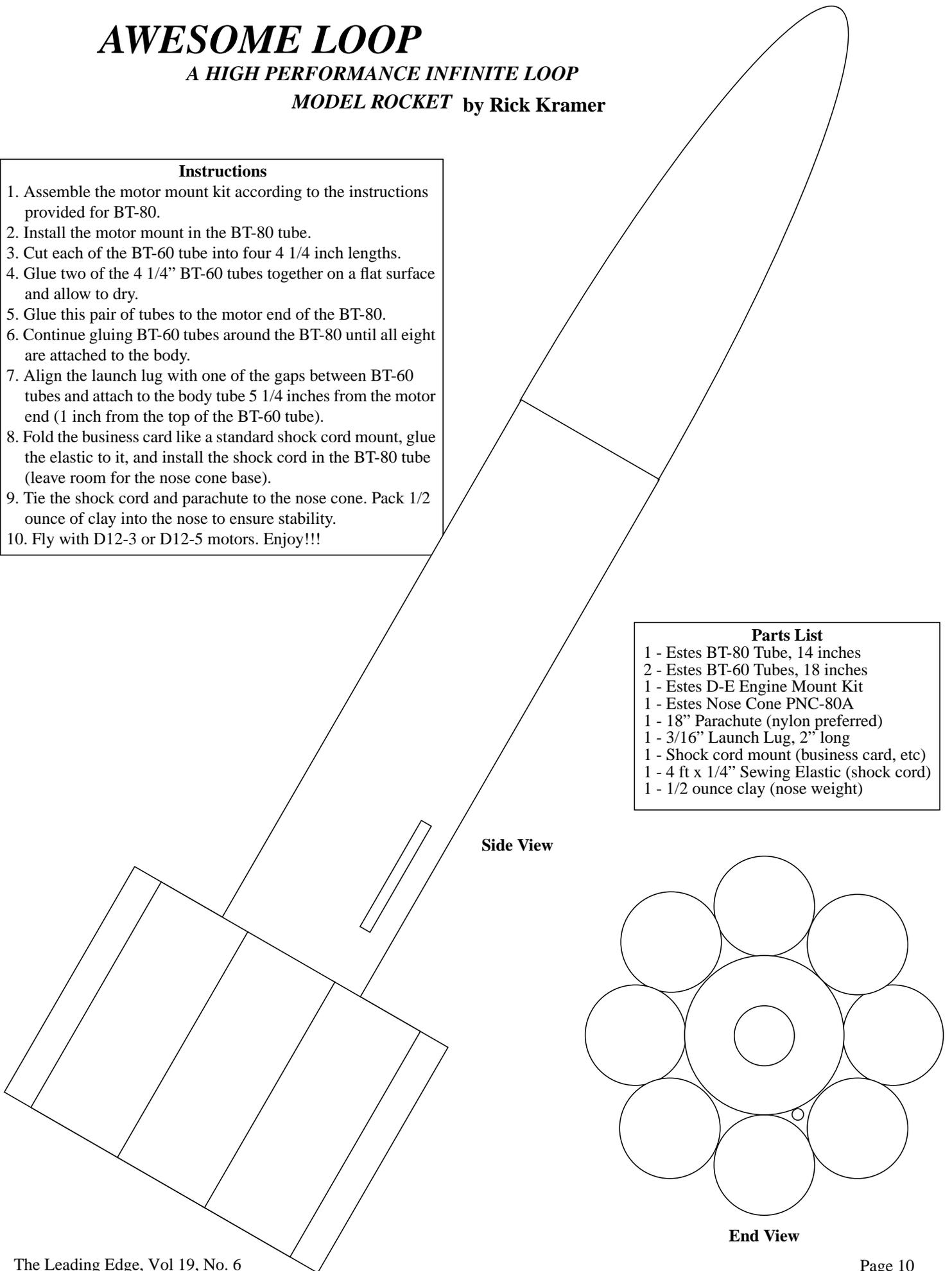
AWESOME LOOP

A HIGH PERFORMANCE INFINITE LOOP

MODEL ROCKET by Rick Kramer

Instructions

1. Assemble the motor mount kit according to the instructions provided for BT-80.
2. Install the motor mount in the BT-80 tube.
3. Cut each of the BT-60 tube into four 4 1/4 inch lengths.
4. Glue two of the 4 1/4" BT-60 tubes together on a flat surface and allow to dry.
5. Glue this pair of tubes to the motor end of the BT-80.
6. Continue gluing BT-60 tubes around the BT-80 until all eight are attached to the body.
7. Align the launch lug with one of the gaps between BT-60 tubes and attach to the body tube 5 1/4 inches from the motor end (1 inch from the top of the BT-60 tube).
8. Fold the business card like a standard shock cord mount, glue the elastic to it, and install the shock cord in the BT-80 tube (leave room for the nose cone base).
9. Tie the shock cord and parachute to the nose cone. Pack 1/2 ounce of clay into the nose to ensure stability.
10. Fly with D12-3 or D12-5 motors. Enjoy!!!



Parts List

- 1 - Estes BT-80 Tube, 14 inches
- 2 - Estes BT-60 Tubes, 18 inches
- 1 - Estes D-E Engine Mount Kit
- 1 - Estes Nose Cone PNC-80A
- 1 - 18" Parachute (nylon preferred)
- 1 - 3/16" Launch Lug, 2" long
- 1 - Shock cord mount (business card, etc)
- 1 - 4 ft x 1/4" Sewing Elastic (shock cord)
- 1 - 1/2 ounce clay (nose weight)

Side View

End View

Heard On The Street
(With apologies to the Wall Street Journal)

Think You're Too Busy? - Story Musgrave will become the second person after John Young to make six space flights when he lifts off aboard STS-80 on November 8. At age 61, he will surpass a record for the oldest space traveler ever set by 59-year-old Vance Brand in 1990. Dr. Musgrave has been a NASA astronaut since 1967. On STS-6, Musgrave carried out the first Shuttle spacewalk. On Mission 51-F, he carried out experiments on the Spacelab 2 mission, which included an 'abort to orbit' during launch when an engine shut down. On Missions STS-33 and STS-44 Musgrave helped deploy military satellites, and on Mission STS-61 he made more spacewalks to repair the Hubble Space Telescope. He has a B.S. in mathematics, a B.A. in chemistry, an MBA in operations analysis and computer programming, an M.Sc. in physiology, an M.A. in literature, and an M.D.. He is also a private pilot with 17,000 hours of flight time, and until 1989 combined his job as a NASA astronaut in Houston with moonlighting as a surgeon at Denver General Hospital and a professor of physiology at the University of Kentucky. Can you spell 'over-achiever', kids?

International Rocket Eating Trees - A US Army team investigating the crash of a Predator unmanned recon vehicle in Bosnia has determined that the plane was downed by a flying into a tree. Predators are flown remotely by a pilot using TV camera mounted in the nose. According to Army sources, the plane was making a low pass over a field, searching for weapons, when it hit the only tree within hundreds of yards. We could have told them that would happen, right folks?

One Bounce, Nothing But Net - A meteoroid travelling in solar orbit bounced off the Earth's atmosphere on the evening of October 4. It apparently entered a marginal Earth orbit and reentered over the Pacific and impacted in California almost one orbit later. NORAD numbers and international designations only get given to *artificial* satellites, and even then usually only to ones which make a complete orbit, so this natural object won't get in the satellite catalogs.

New booklets in the NIRA Reprint Series.
by Richard Gaff

Eight new booklets have been added to the reprint series this issue bringing the count to 34 available booklets.

- 6.3) The MIR Space Station: A small overview.
- 6.4) Mars Global Surveyor Mission - Return to the red planet.
- 11.7) The Lawrence Bercini collection of rocket plans Vol. 7. Maxi-X15, Wayward II, Magnum,

Wizard, Warrior and the Zubenelgenubi.

11.8) The Lawrence Bercini collection of rocket plans Vol. 8. Skeeter Eeter, Terrordactyl, 14th Spirit of Novaar and 5 other interesting plans.

17) Sport Scale plans from Sport Rocketry. Peanut scale Saturn-V, Vanguard, Aerobee Hi with booster and 6 other great sport scale plans.

18) High Power Rocketry - An Introduction. Nine articles from Sport Rocketry on High Power Rocketry. Includes plan for HPR model

19.1) Hand Launched glider plans and articles from Free-Flight Magazine, Vol.1

19.2) Hand Launched glider articles from Free-Flight Magazine, Vol. 2

Frequently asked questions Mini Reprints

FAQ #1) What, exactly, is a 'model rocket' versus a 'high power' rocket? Where do liquid fueled and homemade rocket motors fit in? What about amateur rockets? 2 pages.

FAQ #2) I have a son/daughter that is less than 9 years old. Is this too young for model rocketry? If not, are there any tips for helping to keep their interest in the hobby? 2 pages

FAQ #3) I keep losing my rockets! What can I do? 1 page.

FAQ #4) Five questions about rocket motors.

1. I've had a large number of motors CATO recently. The engines are only about 2 years old. I've had them stored in my (attic/garage/basement).

2. Is it safe to use my old rocket engines from <NN> years ago?

3. How can I tell the age of my Estes motors?

4. Why don't I just make my own model rocket motors? Shouldn't I be able to custom-make better, more powerful motors at a cheaper price?

5. I've seen mention of all kinds of rocket motor types and sizes. Could you give a brief history and summary of the main marketing names for model rocket motors? 4 pages

These FAQ mini reprints are excerpted from the Internet newsgroup Rec.Models.Rockets

NEW SERVICE!!!

NIRA's Scale Data reprint service.

Scale data published in Model Rocketry Magazine and Sport Rocketry magazine is now available from the NIRA reprint service. Data for over 30 rockets is available including the incredible Beach-Gassaway Little Joe II data. Just ask for a scale data reprint request form.

The Reprint editor recommends

2) Science Fiction Rocket Plans from Sport Rocketry. Artoo-Detoo, X-Wing Fighter, mini Mars Lander and four other plans with a futuristic flavor.

9) Glider Plans from the Leading Edge. Mark "Bunny" Bundick's 4 part series on Boost/Glid-ers for beginners. Five glider plans by NIRA's best glider builders including an "F" powered glider. 20 pages

15.1) Ancient Estes plans from the '60s. Vol. 1 Buchanan Buster, Moonnik-1 the Flying Why, Flying Jenny and 11 other great old plans.

The reprint series is an effort to get interesting useful information out of the collections of "old timers" and into the hands of people who don't have access to the original material.

Sources for the reprint series include back issues of Model Rocketeer, American Sport-modeling, Sport Rocketry, Model Rocketry Mag., main stream magazines, rocket manufacturers and the Internet's Usenet rocket group Rec.Models.Rockets (R.M.R) just to name a few.

Reprint booklets are FREE to members at club functions. If you want them by mail simply send 32 cents in stamps or cash for EACH booklet you order. Or a large 9x12 self addressed stamped envelope (the SASE can be used for several at once, be sure to include the proper postage) to;

Richard Gaff
3175 Norwood Ct.
Streamwood, IL 60107
(630) 483-2468
Email: rickga@ix.netcom.com
or G12091@email.mot.com

A complete up to date list is also available in person, by mail or email.

NIRA Members Handbook Available!

The NIRA Members Handbook is 46 pages of useful information about NIRA, where to find rocket supplies, who to talk to in the club about a given topic, maps, and other cool stuff.

If you are a NIRA member, and would like a copy of the Handbook, you can either pick one up at a meeting or launch, or you can send four 32 cent stamps (\$1.28 in postage) to:

NIRA Handbook
c/o Bob Wiersbe
1835 Shetland Drive
Wheaton, IL 60187

and I'll mail one to you. The Handbook will probably be updated once a year, and updates will be announced in the newsletter. Updates will be available for free at launches and meetings, or by mail if you send in the postage (hey, that \$3 yearly membership fee only goes so far).



NARAM 38 Contestants Fed Up - Roast Contest Director! Story on Page 13.