

# THE LEADING EDGE

Newsletter of the Northern Illinois Rocketry Association,  
NAR Section #117, TRA #36

Volume 17, Number 4  
July/August 1994

## MRFF 1994 COVERAGE!



Clockwise from upper left: Ron Husak's Pyromania draws a crowd, Bob Wiersbe's Hi-Tech H45 on G40 power, Ken Hutchinson with the remains of his HV Arcas, Peter Alway (standing) gives his blessing to Dave Miller's (left) Saturn 1B, Roger Wilfong's Mark 4 lifts off under G75 power, the winning B paper airplane "team" of Cindy Ingram, Kevin Smith, and Kurt Gabrielse, Lawrence Bercini's oddroc "Pumpkin Man", and "Mr. Oddroc" himself, Lawrence Bercini in a "Spy vs. Spy" pose. (Photos by L. Bercini, R. Gaff, and R. Wiersbe)



# 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 Mark Bundick at 708-293-9343 if you can help with ideas or can speak yourself.

- August 5 - Regular Monthly Meeting. HPR launch details.
- September 2 - Regular Monthly Meeting. Labor Day details
- October 7 - Regular Monthly Meeting. RCHTA warm-up.

## OTHER ITEMS OF INTEREST

- August 14 - Fox Valley RC Airshow - **Cancelled!**
- August 27 - HPR Launch at Chanute Aviation Center, Rantoul, IL. Launch begins at 9am, runs till 6pm (usually). Call Greg Smith at (217) 352-9655 before leaving, launch is subject to change.
- November 5,6 - Fall Danville HPR Launch. Contact Dennis Wacker, 708-888-8587 for more information.

## STAFF

Bob Wiersbe - Editor & Pranger of Terrier-Sandhawk's  
 Mark Bundick - Legal Counsel & Pranger of RCRG's  
 Ken Hutchinson - Secretary & Pranger of HV Arcas's

## CONTRIBUTORS

Lawrence Bercini, Mark Bundick, Jim Cook, Ric Gaff,  
 Mike Guslick, Ken Hutchinson, Steve Koszuta,  
 Kevin McKiou, Kevin Smith, Bob Wiersbe

## Model of the Month

From Left to Right: Michael Alterio proudly displays his scratch built scale V2, the May winner. Ron Husak with something unusual (for him) - a regular kit! His Land Viper won the Youth division at the June meeting, and Mark Bundick won the Adult division with his XV-4. In July, Kevin "I'll poke you with my rocket" Smith won with his Cheetah in Adult, and Ron Husak returned to take Youth with yet another scratch built kit (name unknown). Congratulations! (Photos by Ric Gaff - unofficial NIRA photographer and proud sponsor of the "Elect Mark Bundick NAR President Campaign")

## 1994 CLUB LAUNCH DATES

All launches or other activities start at 2:00 PM. BYOL (bring your own launcher). Casualty insurance required or else RSO must inspect and launch your model. Location for our 1994 launches is Community Park in Lisle. Get off Route 53 at Short and head west. If you have questions prior to any launch, call either Mark Bundick at 708-293-9343, or Mike Jungclas at 708-910-1267.

August 13: **NIRA HPR Launch** at Bong, Wisconsin. For directions and maps to the site, call Steve Koszuta (414) 481-6341.

August 21: Regular Club Launch.

September 5: **31st Annual Labor Day Launch**. Demo runs from 2pm-5pm, be there at 1pm to help set up and prep. Contact Bill Thiel (708-394-8434) for more information.

September 18: Regular Club Launch.

October 16: Regular Club Launch.

Your address label contains an item of vital information, your NIRA membership expiration date! Please check your expiration date and renew your NIRA membership before it expires. You will not receive any more newsletters after your expiration date has passed!

**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 [hrobob@ixstar.ih.att.com](mailto:hrobob@ixstar.ih.att.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. Tip #001 - Always connect the flashbulb wires to the staging circuit before launching your Terrier-Sandhawk.



## **NIRA Hosts HPR Launch!!**

NIRA is planning a High Power Launch to be held at Bong State Recreation Area in Burlington, Wisconsin on Saturday, August 13 from 9am to 5pm. A waiver has been applied for that will allow rockets to be flown to 6000' MSL, approximately 5200' AGL. There will be a \$4 fee collected at the site to help cover the costs of the launch.

Since the site is on Department of Natural Resources property, you need to purchase a park sticker to get in the park.

The fees are: Wisconsin Resident: \$4 daily, \$15 annual. Everybody Else: \$6 daily, \$24 annual.

The fee is on a per vehicle basis, not per person, so car pooling is strongly suggested. Bong Recreational Area is about 9 miles west of I-94 on Wisconsin State Highway 142. There are restrooms and a picnic pavilion near the site, so bring your grill and have a cookout after (or during!) the launch.

We're going to be using the launch system used at MRFF, adding some more relay boxes and HPR pads (which we're in the process of building). We are planning to accommodate up to 1/2" rods at the 4 HPR pads, in addition to LPR and model rocket pads. If you have a rocket with "special needs" and have the equipment to support it, bring it along! Only NAR and TRIPOLI certified motors will be allowed.

Please RSVP to Steve Koszuta, via email (stevenk@solaria.mil.wi.us) or phone (414) 481-6341 if you are interested in attending this launch. Steve can supply you with a map to the launch area and with the most up to date information on the status of the launch (don't send Steve any money, you pay for the park sticker at the park entrance, and the range fee will be collected at the launch site).

## **FALL 1994 DANVILLE LAUNCH**

A large new flying field has been secured and arrangements have been finalized for Danville in the late fall. Get your rockets, dress stoutly, and come to the midwest's favorite launch:!

When: November 5-6, 1994

Where: Danville IL

Accommodations: Red Roof Inn (same hotel as previous years) Lynch Road & I74 (1-800-369-1339)

Launch site: The new field is approx 5 miles from the hotel Maps will be provided at the hotel front desk Field size 1mile x 1mile of empty space - bring your big stuff! 10,000' waiver

Contact: Dennis Wacker 1-708-888-8587 7-10PM CDT

Also check the next issue of High Power Magazine for additional info.

## **NAR S&T News**

**NEW MOTOR CERTIFICATIONS - Release #14** The following motors have been certified by NAR Standards & Testing as of April 17, 1994 for general use as model rocket motors. They are all certified for contest use as of July 16, 1994.

All of the following are Aerotech reloadable motors, certified only with the indicated size casing and manufacturer supplied nozzle, end closures, and propellant slugs. All of the following are "RC" motors, with no delay or ejection charge.

Aerotech: 32mm x 107mm RC Casing: F13-RCT (63.00 N-Sec total impulse, 32.3 gm propellant mass).

F16-RCJ (80.00 N-Sec total impulse, 62.5 gm propellant mass).

F23-RCW-SK (70.00 N-Sec total impulse, 37.8 gm propellant mass).

Note: "SK" indicates "Skywriter" where the motor emits 20 seconds of tracking smoke following propellant burnout.

**NEW MOTOR CERTIFICATIONS - Release #15**

The following motor has been certified by NAR Standards & Testing as of June 12, 1994 for general use as a model rocket motor. It is certified for contest use as of September 10, 1994.

The following is an Aerotech reloadable motor, certified only with the indicated size casing and manufacturer supplied nozzle, end closures, and propellant slugs. It is an "RC" motor, with no delay or ejection charge.

Aerotech: 24mm x 70mm RC Casing: E6T-RC (40.0 N-Sec total impulse, 21.5 grams propellant mass)

**NEW MOTOR CERTIFICATIONS - Release #16**

The following motor has been certified by NAR Standards & Testing as of June 12, 1994 for general use as a high power rocket motor. It will not be certified for contest use as it is not a model rocket motor. It is not certified as a model rocket motor because it exceeds the limit of 62.5 grams of propellant set forth in NFPA 1122.

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 124mm RMS-29/40-120 Casing: G33-5, 7 (100.0 N-Sec total impulse, 72.2 grams propellant mass)

**CLARIFICATION AND UPDATE - Release #17**

Clarification: NAR S&T considers single-use (disposable) E6 and F10 motors with either the Aerotech label or the Apogee Medalist label to

be certified.

The sizes, total impulse, and designations remain the same and both are certified for general use and contest use immediately.

Update: The Apogee Medalist D3 motor will be produced in a casing with dimensions of 18mm x 77mm. This is a change from the originally announced size of 18mm x 73mm.

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

Jack Kane, Chairman

## **FLORICON-94**

November 11-13, 1994 Tampa, Florida

Featuring: A launch field next to the hotel, 2 night launches, a day launch, assorted presentations, manufacturer's forum, assorted contests, high power launch (tentative), swap meet, kit bash (tentative).

Costs: Whole weekend: \$12 if received before Sept. 1st, \$15 if received before October 1st, and \$18 after that. Saturday only: \$10 if received before October 1st, \$12 afterwards. E-mail Brent (see below) for family rates. Above rates include con activities and a Floricon-94 T-shirt.

Please include T-shirt size (S-XXXL) with con reservations.

Hotel rooms are \$65/night (plus assorted taxes), double occupancy. \$10 each for 3rd and 4th person. Make certain to mention Florida Space-modeling Association when making reservations.

FLORICON reservations may be sent to:

Bill Dauphin  
6153 Silver Springs Blvd.  
Lake Worth, FL 33463

Make checks payable to: Florida Spacemodeling Association.

Hotel reservations may be sent to:

Holiday Inn Crowne plaza  
10221 Princess Palm Avenue  
Tampa, FL 33610  
voice (813) 623-6363 fax (813) 620-4410

For more information about Floricon-94, contact Manuel Mejia, Jr. at (813) 874-7641 or Brent A. Wynn at (813) 788-2367.

## **Aw, Chute!**

Here's some info John Cato posted on CompuServe a few months back: A paratrooper falls at about 18 feet per second. For your rocket to fall at 15 FPS, figure 4.5 square feet of parachute surface area per pound of rocket weight. For a descent rate of 20 FPS, use 2.5 sq. ft. per lb. These are values for sea level. Add .1 sq. ft. per 1000 ft elevation.

## If it's June, this must be MRFF by Lawrence Bercini

When the NIRA crew came back from Las Vegas NARAM with stories of how oppressive the heat can be, we believed them. But, nobody expected such heat in Illinois over a Father's Day Weekend. It wasn't as hot as the desert, but vastly more humid. Nevertheless, turnout of out-of-state folks was fantastic! It was nice to finally be able to put a faces with the names of people who had corresponded with NIRA members over the last few years. MRFF's really gone from a local NIRA meet with a few visitors, to a legitimate Midwest Regional!! This year participants came from six states and ranged in ages from pre-schoolers to post-retirement.

### THE FLIGHTS

MRFF continues to be a real "family" oriented event. It was a common sight to see parent and child concentrating on a project. The Adams family was a perfect example. Father Bob with all kids in tow would help each child prep a mini model until four pads were filled. Each child would watch with rapt attention as their bird soared skyward, but allowed dad to do the recovery.

Much more HPR and HPR-lite launches appeared at MRFF this year compared to the other three years. Bob Wiersbe and Brad Larry competed on who could lose a Mustang more effectively using a G motor. [Hey! I got \_mine\_ back! - Ed.] Bob also clustered two G80's into his 4x4. He got the bird back, but lost the can of lemonade he used for nose weight. Ron Husak's Peoples Choice model, Pyromania, was greeted with tremendous applause when he boosted it with a cluster of 5 D12's and 4 C5's. David Miller had an absolutely gorgeous 1:2.25 scale D-Region Tomahawk which flew perfectly with an H242. The biggest boost belonged to Ken Hutchinson who lofted a Magnum with an I211. In the moment of silence following the boost a youngster piped up most sincerely "That was loud!" Ed Thiel tried out his 12 foot long Neon 12 with every E and F motor type he could get his hands on. Other "big guns" worth noting are: Al de la Iglesia's G40 Jaeger, Mark Eastman's H97 Big Brute, Steven Eastman's G104 Initiator, Mark Lakomski's G104 Mirage, Terry Kosel's fascinatingly intricate Black Hole Betty boosted perfectly by an F50, and Tom Stump's pristine Phantom 4000 was perfect with a G80.

On the lighter side were a multitude of silly stuff. Leading the pack in silliness was NIRA's own Lawrence "Mr. Strato" Bercini who sent up a pyramid, a flying fish, a pencil, the Eiffel Tower, and two reincarnations of the NAR president: Mahatma Miller and Crazy Horse Miller. In a sports theme, Lawrence had a flying goal post, complete with scale football, while Bob Kaplow countered with a baseball bat and sput-

nik-like whiffle ball. Both Bob and Steve Koszuta showed off flying crayons. Bill Thiel had a lot of fun with his Whistler, equipped with three "siren" whistles in the nose, it would wail as it coasted. Dave Bassett constructed his Med-Cup Special from hospital specimen cups. It flew fine, but nobody wanted to help him recover it.

Some other achievements included approximately 8 certification flights for H and I power. Anthony Cekay celebrated the 25th flight of his Alpha while Ron Husak saw 50 flights from his Cyclone scratch-built design. Bill Piva worked on his NARTREK durations. John Barrett, a local surgeon does not often get to scheduled launches. At MRFF, he very quietly and very deliberately made up for lost time, posting more flights than anybody there: 41. In the midst of this, he experienced his first cato, ever! Bill Thiel enjoyed the fruits of Fathers Day by flying the Impulse present from son Ed.

Mark Bundick, Ric Gaff, and Ken Hutchinson flew some models with various engines and an Adept Rocketry altimeter to compare the actual results with RSIM predictions as part of an R&D project. Ken's second flight tore the bulkhead out of the payload section and let the altimeter fall into the tall weeds beyond the mowed area. Luckily the battery was taped in place and he was able to locate the altimeter by listening to it as it beeped out the flight's peak altitude!

There was definitely a trend for nostalgia at MRFF. Buzz Nau raised a lot of eyebrows with his H powered maxi version of the old Estes Bandit design from the 70's. Similarly, Roger Wilfong produced a scaled up Mark and Lawrence Bercini a scaled up Starlight. Dave Bassett reproduced the old Gyroc, painted in an excruciating combination of fluorescent green and orange. Kleve Slouber recreated the old Centuri Point, down to the intricate roll pattern. And just like its predecessor of the 70's, Kleve's bird had difficulty with the "rigid parachute" concept. There were even some nostalgic scale birds. Patrick Cannon flew the 1930's American Rocket Society Rocket no. 2 built from Aero Design Research plans. Peter Alway, promoting one of the designs from his new book, showed off his Gird 9 bird, an early Russian design. Peter had perhaps the most popular bits of nostalgia there, an old Astron Sprite, greater than 20 years old!

Clusters were very popular this year, 26 of them were flown. Roger Wilfong used 13 motors in his scratch built Mini Swarm, an F25 in the core surrounded by 12 A4 mini-motors. You could hear the pop, pop, pop, pop - pause - pop, pop, pop, pop - pause - pop, pop, pop, POP, as the 12 mini motors and the core fired their ejection charges. Steve Koszuta tried for his G certification by using 4 E15-8's in his Loc Roc 4, but wound up with a spectacular cato instead. Ron Husak put up 5 clustered flights, one of them with 9 motors!

One of the nominees for the MRFF prang award was Ken Hutchinson. He totally destroyed his HV Arcas. The motor and ejection charge worked properly, but it seems the paper ejection charge cap from the first flight had clogged up the ejection baffle. He had to work surprisingly hard to free the remains of the nose cone from the hard dry ground and it had only penetrated to a depth of six inches. Another fine entry was Bob Wiersbe's staged Terrier-Sandhawk. While he was prepping it on the pad Ric Gaff called out from the RSO table that there was a good article on staging in the latest issue of Sport Rocketry. [Ric's comment: "I wonder if the guy knows what he's talking about?" My reply: "We'll know in a minute." (it was \_my\_ article he was talking about!) - Ed.] Off it went. Nice vertical boost, no weather-cocking, time to stage.....nothing! Booster ejection charge goes off, the Sandhawk gracefully separates and becomes a lawn dart. It impacted about 200 yards out, nose cone buried in the ground, payload section split in half, body tube crumpled up to the fin unit. Sticking out of the motor was the flashbulb, complete with six inches of wire that he had forgotten to connect to the staging circuit! By virtue of "o-mission" points, Bob was given the Prang award.

On Saturday afternoon there was a picnic after the flying. Folks just sat around talking about whatever, reacquainting themselves with old friends and making new ones. Good food, too! Mark Bundick outdid himself this year. Learning from the mistake of previous years, this time he had plenty of brownies.

Good times were had by all. In spite of the heat and humidity, this happy bunch of rocket nuts send up 465 flights. Great fun!

### TEAM RENDEZVOUS by Mike Guslick

Team Rendezvous was held on Saturday at MRFF. Participants were randomly paired up with a team member in an attempt to land two rockets as closely together as possible. Minimal rules (such as requiring at least an A motor for power) existed, but the contestants seemed to care more about having fun (and that's what the event was for)!

Rockets flown varied from stock Big Berthas to Buzz Nau and Al de la Iglesia's Ren & Stimpy rocs. Each sported a truly deesgusting cartoon character for the nose. However, "magic nose goblin" noseweight is not recommended for contest use. Bob Alway and Terry Kosel narrowly edged out Anthony Cekay and Wesley Reese for last place with an astonishing distance of 339 feet and 10 inches.

"Bullet" Bob Kaplow and Nicole Eastman had obviously conspired together, as each had a bashed Estes Bandit to fly. Bob's "Bandit Bandit" (also known as the Bandit Squared) and



The Ren & Stimpy Team (Buzz Nau & Al de la Iglesia) prepare for Team Rendezvous with, of course, Ren & Stimpy! Those eediot!



Just weeks after his daughter was born, Bob Kaplow is caught hitting the bottle.



Left, Mark Bundick has a moment of silence before launching his nicely finished NCR Quantum 1. Right, Mark views the charred remains after a failure of the reloadable motor torched the rocket.

Below right, Mark Skol ponders the pad angle before launching his SA-14 Archer on his G certification flight. When it gets caught on the power lines, he wishes he'd changed it!

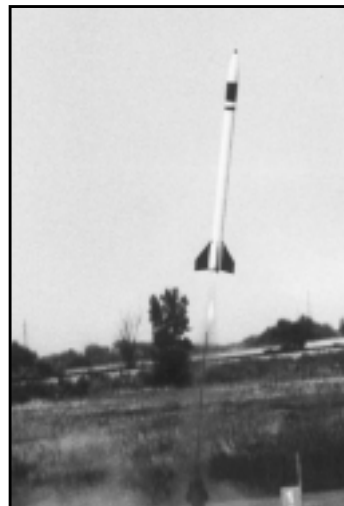
Below left, Peter "Mr. Scale" Alway. (All four photos by Ric Gaff)



Terry Kosel Proudly shows off his NCR Black Hole Betty.



I'm sold out of books, wanna buy a rocket??



With the H242 at full throttle, the D-Region is airborne.



Ric Gaff (right) helps Dave Miller (left) prep Dave's gorgeous 1:2.25 D-Region Tomhawk.



The BBQ spread, and a bunch of hungry MRFF-ites!  
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None of you can leave until you eat all that hamburger!

Nicole's "Bandit Bandaid" landed a mere 16 feet, 4 inches from each other. The winners, Carl Reese and Jeff Gahr, came in first place with a distance of only 10 feet, 8 inches!

The event was a great success, and proved to be a great way for some of the old timers to share their experience with the younger flyers.

### **"B" PAPER AIRPLANE DURATION** by Kevin J. Smith

"What's a "B" paper airplane duration?", I innocently asked when I received that last-minute plea from Mark Bundick to chair this event for the Midwest Regional Fun Fly (MRFF). "Oh, Lawrence Bercini will explain it all to you", came the reply over the Internet, along with Lawrence's home and work phone numbers. After a few rounds of phone tag, I was able to talk to Lawrence. He patiently explained the event, the rules, and some of the finer points in winning the event. He assured me that chairing the event would be easy - "none of the flights last more than ten to fifteen seconds, at best", he added. I accepted the challenge, with the assurance that Lawrence would be there also to explain the rules again.

I arrived at Pratt's Wayne Woods just before the scheduled 11 am start of the "B" paper airplane event. Lawrence, happy that I had shown up, quickly handed me the "official" paper airplane paper and paper clips for the event. "Go out and recruit some participants", he encouraged as he stepped to the P.A. to announce the start of the event. Securing my official "B" Paper Airplane Duration ID badge, I went out among the tents and tables set up in the 95+ degree weather. With volunteers helping distribute the official airplane paper ahead of me, I signed up 16 adults and 6 youth contestants for the event. I canvassed the group a few more times and then retreated to the shade of the tent by the registration table.

Given a piece of 8 1/2" x 11" piece of paper, each participant was expected to FOLD a paper airplane and boost it under B power. Entries were timed just like the NAR boost glide event. Longtime NIRA members remembered past club launches where a 15 second duration would be a winner. Not true at MRFF!

Although most used an external mode of attachment (using paper clips provided), some people experimented with carrying the glider inside the body tube - usually unsuccessfully. Several people enjoyed Ken Hutchinson's choice of launch vehicles, an Estes Cato. The glider fuselage was captured securely in one of the joints between the three fin sections. A B6-4 gave a nice boost and a clean release near apogee. The plane flew like a dead duck, straight into the ground. Ken was more fortunate than some, his glider actually detached.

Most people folded the standard dart design, which sees a lot of action in schoolrooms. Peter

Alway tried one of the designs from the International Paper Airplane book, a sort of lifting body. Lawrence Bercini used an origami approach, creating a plane reminiscent of his kinsman Da Vinci's bird-like design.

It took a while for the first flights to liftoff - everyone seemed to be waiting for someone else to go first. Finally, the event got flying, with timers in place (thank you to Harland Pell, Dave Bassett, Ric Gaff, Bill Thiel, and others who volunteered). Durations started at 10 seconds, then 25 seconds, then 32 seconds, until Patrick Cannon of Aero Research came up with a MRFF-record 43.50 second time with a unique "stovepipe" airplane design. The field seemed hushed as challengers, knowing their work was cut out for them, scurried to change booster rockets, adjust airplane designs, and rethink hook locations for their second flights. The closest challenge was a 36.99 second flight by Dave Bassett. All were ready to concede to Mr. Cannon's spectacular flight as the field grew quiet of competitors.

As it neared the end of the event time, Harland Pell leaned over to me from a nearby chair and volunteered to takeover the event duties, if I wanted to fly the event. I said, "No, I don't really have anything light enough to fly in this event" and thanked him for his offer. But Harland persisted that I at least give it a shot - so I turned over the official event clipboard and badge and retrieved my rockets from my car.

When I arrived back at the tent, I discovered two friends, Cindy Ingrum and Kurt Gabrielse, had arrived to watch the launch. I enlisted Cindy's Quest Falcon to be my booster vehicle and commissioned Kurt to "fold me a paper airplane". As I prepped the Falcon, I queried Bob Kaplow, prepping a baby bottle nearby, as to airplane hook location on the booster. "I'd place it as far back on the body tube as it will go", advised Bob. So I selected a spot well back on the tube that placed the airplane wings in line with the rocket fins.

Attaching Kurt's completed plane design, I checked the rocket in and prepped it on the pad. Whoosh! and 31.69 seconds later the airplane came down - good enough for fourth place! Wow, I thought, only 72 hundredths of a second from third place (and a prize!), let's try that again. I handed the airplane back to Kurt for adjustments and repped the Falcon for another flight. The second flight was a beauty: perfect separation, a good thermal, and a gentle breeze lifted the plane to a 48.88 second flight. Wow - "I" had set a new MRFF record and won the event. But then I thought, people are going to say it was "rigged" since I was also running this event [Nah, we wouldn't say that. Might think it, but wouldn't say it! :) - Ed.]. But, after I saw the smiles on Cindy's and Kurt's faces, I knew that it wasn't just me who won the event - it was a team effort - with none of us really knowing

what we were doing - except having fun ... which is the best way to win!

The final standings:

Youth

1. Ron Husak 19.59
2. Ed Thiel 9.17
3. Anthony Cekay 8.25

Adult

1. Kevin Smith 48.88 S
2. Patrick Cannon 43.50
3. Dave Bassett 36.99

A great "thank you" to all the contest participants and prize sponsors for this event. Better "luck" next year guys!

### **PEOPLE'S CHOICE** by Bob Wiersbe

The Peoples Choice Awards are one of the highlights of MRFF Saturday Night. Everyone brings in their best model to show off, and the top 3 vote getters are awarded prizes. This year the quality of models that were brought in were really impressive. Scratch built scale models, several upscale models of Estes kits, massive Baby Bottle Rockets, and finely done fantasy models. It was a collection of rockets that represented many different facets of rocketry, and showed the skill of those who built them.

There were 5 entries in the Youth Division and 18 Adult entries. After a bit of confusion over the number of age divisions (caused by advertising three but only having enough prizes for two), we got down to some serious voting. Deciding which models to vote for wasn't easy, as all of the entries were excellent.

After Mike Jungclas totaled up the votes it was very clear which models were "The Peoples Choice". Ron Husak won 1st Place in Youth with his "Pyromania", a large rocket with flashing LEDs and lots of motor tubes. Lawrence Bercini took 1st Place in Adult with his "FLASH!", a clustered model reminiscent of the rocket ships from the Flash Gordon movies. Ron received an Aerotech Cheetah and Lawrence an Aerotech ISQY Tomahawk for their prizes.

The 2nd Place winners were Anthony Cekay in Youth with his "Greyhawk", and Carl Reese in Adult with his really cool "Romulan Warbird". Anthony won an Estes Cato, and Carl took home a Public Missiles Phobos.

The 3rd Place winners were Ed Thiel in Youth with his "Neon 12" - a 12 foot long monster, and David Miller in Adult with his nicely done "Saturn IB/Apollo Soyuz". Ed received a \$10 gift certificate, and David a \$15 gift certificate, both from Countdown Hobbies.

Congratulations to all the winners, and thanks to all who entered a model!





Al de la Iglesia, Kleve & Rosela Slouber, assisted by "the thing", decorate the Heap Strange Totem Pole.



Patrick Cannon's Pegasus, just moments before it attacked a photographer.



Wesley Reese is very serious about his Paper Airplane Duration attempt.



John Barrett appears to be amused by Kevin Smith's progress with the Roc-a-dile. Jim and Andrew Christensen are amazed.



Mr. Strato loads his Maxi-Strato on the pad. No cato this year, but it did burn a little. (Ric Gaff photo)



Buck's Draconian Dream Destroyers (L-R: Mark Eastman, Ron Husak, Bill Thiel, Buzz Nau, Tom Stump) appear to be in deep concentration (or trouble).



Jonathan Charbonneau, David Miller, Peter Alway, and Roger Wilfong are The Directors: "Does anybody know what we're doing??" "Cut!"

**Team Rendezvous Winners**



Back Row: Bob Kaplow, Steve Koszuta. Front Row: Nichole Eastman, Carl Reese, David Bassett. Not pictured: Jeff Gahrns.

**Peoples Choice Winners**



Back Row: Carl Reese, Anthony Cekay, Lawrence Bercini, Ed "Buzz" Thiel. Front Row: David Miller, Ron Husak. (Ric Gaff Photo)

**Paper Airplane Duration Winners**



Back Row: Ed Thiel, Kevin "Camera Shy" Smith. Front Row: Anthony Cekay, Ron Husak, David Bassett. Not shown: Patrick Cannon



Ken Hutchinson's Saturn V on an F14-4J. (Bob Wiersbe photo)

**TEAM KITBASH**  
by Lawrence Bercini

A tradition at every MRFF has been the Team Kitbash event. On the Saturday night following the first day of flying, everybody gathers in the meeting room in the hotel. In order to make it more interesting four teams were randomly chosen from the group. Each team is given only one hour to build a completely new and unique design from the kit provided to them. No additional parts could be added other than nose weight and recovery system. All parts, including the packaging material were "fair game".

This year there was a different "spin" on the event. Event director, Lawrence Bercini, composed approximately 30 different "themes" from which each team randomly chose one. After choosing their theme, each team was given a few minutes to figure out how to build a model to match the theme. The themes chosen were: Movies, Fantasy, Art, and Animals.

Each team was given one Blue Star and one Solar Warrior kit and within moments balsa dust was flying and CA fumes filled the air.

An hour later, the four teams produced some truly amazing designs based on their chosen themes. Six Braves and a Squaw (Ed Thiel, Al de la Iglesia, Steve Slouber, Lionel Slouber, Rosela Slouber, Kleve Slouber), were really stymied on what to do with their "Art" theme. Young Steve and Lionel suggested they build a totem pole. Their model, Heap Strange Totem Pole, was a highly decorated creation, sporting various wings, symbols, mandalas and centered around an ominous beaked bird face with large centering ring eyes.

The Directors team (Kerry Stump, Dave Bassett, Greg Roman, Jonathan Charbonneau, David Miller, Peter Alway, Roger Wilfong) really took advantage of packaging materials to create their Cineroc O design. This model of a flying movie camera perched atop a tripod featured lenses, viewfinder and microphone. Stabilization was

provided by a "kinescope" ring, complete with slits and featured an animated action scene from the Rocketman movie. They even took the time to draw frames onto their streamer which duplicated the "countdown" frames at the start of a movie!

A textbook example of a fantasy spaceship came from Buck's Draconian Dream Destroyers (Tom Stump, Bob Alway, Steven Eastman, Mark Eastman, Mike Guslick, Bill Thiel, Ron Husak, Buzz Nau). Their Star Warrior ship was an excellent recreation of the twin-nosed fighter craft from the Buck Rogers TV show.

How would you create a rocket with an "Animal" theme? The Bash-Fools (Anthony Cekay, John Barrett, Kevin Smith, Jim Christensen, Andrew Christensen, Nichole Eastman, Tom Cekay) used the longer tubes from their kits to form the tail of their Roc-a-dile. (Andrew came up with the name) Fins formed the square head while the nose cone bases installed on each side formed the beast's eyes. They even took the time to paint scales on their creation.

Judges Harland Pell and Lawrence Bercini spent the better part of two hours judging the models on Originality and Creativity. Criteria included: use of parts, subassemblies, adherence to the theme, complexity of design, and decoration.

Sunday morning came around and each team had to produce a safe, stable flight from their creation. The leader from the static judging, the Cineroc O, was favored for the best prang. Second place holder, Heap Strange Totem Pole, and fourth place Roc-a-dile were expected to fly better because of being more rocket-like. Instead, the clustered Roc-a-dile was only marginally stable and the Heap Strange Totem Pole wobbled in flight. The best flight belonged to the Star Warrior, straight and high with a perfect recovery. Even with that flight, it could not catch up to the Cineroc O which boosted under mini-motor to a stable low "lob", losing a few points for breaking off the microphone. Congratulations

went to the Directors, but overall, everybody did very well!

The best part of this event was not the models, but the amazing cooperation and teamwork everybody showed. It was great example of people sharing their hobby with each other.

**MRFF 1994 SPONSORS**

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**MRFF QUOTABLE QUOTES**

"The captain has turned on the seat belt sign." - Buzz Nau commenting on the glide pattern of Roger Wilfong's Concorde glider.

"Please remember to replace your divots!" -Ric Gaff chides Carl Reese when his paper airplane booster "lands" abruptly

"Yes, that's a confirmed misfire." -LCO Bob Wiersbe comments when somebody's H confirmation flight merely "chuffs"

"Excuse me, I have to go change my pants!" - Lawrence Bercini reacts to having the Aero Design Research Pegasus part his hair

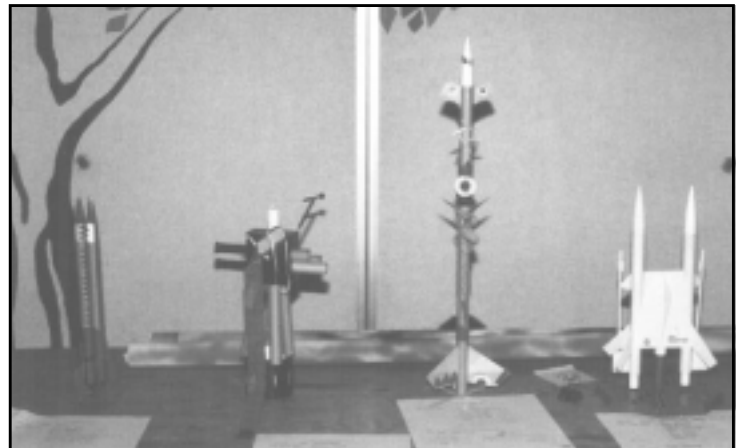
"The ears ARE for stability. They keep him from falling over!" -David Miller's observation concerning some well known NAR official

"That's a big Roger, there!" -Ric Gaff, hands cupped around his mouth, watching the Mark 4 fly. "Roger, Wilfong." -Lawrence Bercini, also with hands cupped, adding the punch line

"Wacka!" -spoken by choruses of people who watched Mark Bundick's RCRG



Peoples Choice - What a tremendous variety! (Lawrence Bercini photo)



Kitbash 1994: Roc-a-dile (animals), Cineroc O (movies), Heap Strange Totem Pole (art), and Star Warrior (fantasy). (Lawrence Bercini photo)



### Heard on the Street

with apologies to the Wall Street Journal

**Parting Problems** - A technical snag has jeopardized the STS-71 mission to Mir. Problems have arisen with pyrotechnics designed to separate Mir and Atlantis in the event of a docking latch failure. NASA managers are also expressing some concerns about overall Russian management capabilities. This mission is scheduled to be flown by Jay Apt's STS-47 commander, Robert "Hoot" Gibson.

**Winged Horse Breaks Leg** - A June 27 Pegasus XL launch resulted in destruction of the vehicle by the RSO about three minutes into the flight. Telemetry was lost at T+32 seconds, just about the time of maximum dynamic pressure of about 1,500 lbs/in<sup>2</sup>. Video from a chase plane showed something leaving the vehicle, but the bird traveled on normally for a bit before it started to lose altitude and velocity. Second stage ignition at T+71 did not occur. The Pegasus XL has about 30% more propellant in its first two stages and is 5.4 feet longer than the original version. The launch failure also delayed the last scheduled B52 Pegasus launch on July 7 while managers tried to find the causes of the XL failure.

**Weight Woes** - Shuttle program managers are falling behind in effort to develop and use the new lightweight external tanks. The Reynolds Metals, McCook, IL subcontractor is having difficulties producing the new alloys used in the tank. A lighter tank is required for the Space Station's new 51.6 degree orbit required by Russian launch site constraints. The higher inclination results in a 12,000 pound payload capacity loss which the lighter tank would make up. If difficulties persist, the space station will face further redesign in an effort to reduce weights further.

**Meanwhile, in French Guiana** - A successful June 17 deployment of a communications satellite and two British defense satellites marked Ariane's return to flight status after a third stage failure on an earlier launch. Program manager redesigned third stage pumps, then performed tests equivalent to 17 launches before resuming an aggressive flight program that would see three launches in 44 days. Arianespace also ran a successful test of the Ariane 5 solid rocket motors, improving chances of making that vehicle's launch schedule.

**Bigger Bulls** - Orbital Sciences Corporation announced development of a Taurus 2 vehicle derived from the original Taurus. The new vehicle uses Castor 120 motors in the first two stages derived from MX missile technology. The third stage uses a bipropellant motor developed in Germany. The bird is designed for 5,000 to 8,000 pound payloads and low earth orbits. A demo flight is expected in 1996 or 1997.

**"And then there was a big kaboom"** - The DC-X single stage to orbit test vehicle has been temporarily grounded due to a June 27 explosion. Excess hydrogen vented as part of the pre-launch procedure collected at the base of the rocket and exploded 4 seconds after liftoff. The vehicle was then commanded to execute an automatic abort procedure and successfully landed off the launch pad 77 second after liftoff. If NASA can find the funds to repair the graphite aero-shroud surrounding the bird, more flights are expected.

### Now available from Saturn Press

The Art of Scale Model Rocketry by Peter Alway. Publication date: July, 1994

- o Where to find scale data
- o How to design a model to scale
- o Construction techniques
- o Finishing techniques
- o Flying tips
- o Contest tips
- o A dozen model plans (Astrobee 500, Mini Asp, V-2, D-Region Tomahawk, Black Brant V, Black Brant VI, Juno II, Mercury-Atlas, Sparrow-Arcas, Aerobee 150A, Saturn I, Vostok)
- o Information on flying scale model kits and manufacturers
- o Bibliography of scale data sources

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Saturn Press is now selling Color Photo and Data Sets. These were created to provide inexpensive color prints for readers of "Rockets of the World". For those who don't have a copy, These sets come with scale drawings and historical summaries.

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### RetroRocket - NIRA in the Past

July/August 1984

Bunny continued his "Getting Started in Boost Glide" series while Bullet Bob Kaplow added his coverage of the 17th annual MIT Convention in Boston. Our plan was Craig Beyer's "Transition" PD/SD competition model.

May/August 1989

Our newsletter production was a bit erratic during this period. But Bunny reported on Jay Apt's assignment on his first Shuttle mission, STS-37. Bob Kaplow introduced the club to HPR flying with a report on the first Danville launch. Robbie McBroom's original plan, the "Invader" graced our pages.

### It's A Girl!

Congratulations to Bob and Judy Kaplow on the birth of their first child - Rachel Alexandra Kaplow: born 5/26/94 17:30 CDT 2795g 52cm. Mom, Dad, and baby are doing fine, but no word on how Belker is taking it.



Rachel Kaplow, 8 days old!  
(Ric Gaff photo)

## KnightStar VI RCRG Plans by Kevin McKiou

The enclosed plans should be sufficient for an experience modeler to build KnightStar VI (KS6). It is not intended for a novice mainly because I do not have the time to devote to creating the required instruction manual. If you are a novice, I advise you to get help building and flying KS6.

Note that the wing is removable. It is attached with a spruce dowel at the leading edge (inserted into a bulkhead in the pod) and a 6-32 nylon screw at the trailing edge. There is also a towhook designed into the model which attaches below the wing mount. This addition allows you to get stick time with a highstart before flying with a rocket motor.

The wing construction is typical balsa over foam. The key to a light weight airplane is the choice of light balsa for the wing skins. Use absolutely the lightest 1/16" balsa or very light to medium 1/32" balsa for the wing skins. Two dihedral options are also shown. I have tried both and really can't say which is better. Supposedly the 6 panel parabolic dihedral is better non-steady state turning and the V dihedral is better for constant speed turning. Unless you really want a cool 6 panel wing, save yourself time and weight; build the V dihedral. The wing is joined in the center with a 4" strip of 1.5 ounce fiberglass cloth. Cover the wing with dope and tissue or a low temperature film covering such as Econokote. Foam cutting equipment, vacuum bagging equipment, fiberglass and laminating epoxy is available from Aerospace Composite Products, 14210 Doolittle Dr., San Leandro, CA 94577. If you don't have access to foam cutting and bagging equipment and don't want to buy your own, I am willing to provide you a set of foam wing cores for \$25 plus \$5 shipping or a set of cores sheeted with contest grade 1/32" balsa for \$100 plus \$5 shipping. You can also sheet the cores by using 3M77 spray adhesive and stacking weight on the wing cores while the foam "beds". But use the 3M77 spray sparingly. It is heavy.

The tail should be made from very light 1/8" C-grain balsa. Note the grain direction on the plans. The elevator and leading edge and tip of the fin should be made from hard C-grain. The tips of the stabilizer should be made from medium C-grain. Note that the fin is mounted on the side of the boom. This is for added strength and easier linkage hookup. I typically make strip hinges by sandwiching a piece of fiberglass/kevlar/mica film/Monokote between two strips of 1/16" hard balsa and then gluing the sandwich to the stab/fin to make a strong tight hinge. A typical Monokote hinge is also ok, but is not as strong. Control horns are made from a piece of fiberglass printed circuit board (available at Radio Shack). Push rods are either 1/32" music wire in a Golden Rods sleeve or you can use the Sullivan Golden Rod very flexible cables #507 (available at most hobby shops). I coat my cables with solder and then sand them smooth to make them a bit more rigid.

The boom can be made from a fiberglass pushrod or from a carbon fiber arrow shaft. The arrow shafts are lighter and stronger. If you cannot obtain them locally, they are available very economically from Taylor Falcon Archery, Rt 4 Box 75C, Jonesboro, AR 72401 (501) 935-3559.

Build the pod sides from light 1/16" balsa backed with 1/64" aircraft plywood. The top and bottom are made from medium C-grain 1/8" balsa. Study the internal structure carefully. There are two servo rails, a 1/16" plywood bulkhead (for the wing hold-down), and collar that slips around the end of the boom. The top of the pod is designed to be held in place by two screws which are caught/captured by two slotted pieces of 1/32" plywood attached to the pod top hatch. The top hatch then is attached and released by sliding it forward and backward. There is also a small hatch in the bottom of the pod which is used for adjusting the linkages. Once the linkages are adjusted, it can be taped shut since is only necessary to open again if adjustment is needed. The nose block is shaped from medium balsa.

The radio gear is readily available from Tower Hobbies, P.O. Box 9078 Champaign, IL 61826-9078 (800)637-4989 or through your local hobby shop. The servos are Futaba S133s. The receiver is the Futaba R112JE. The battery should be between 80 and 110 mah. A 110 mah battery will typically give about 1 hour of flying time. The 80 mah battery will be good for about 45 minutes. This assumes that they are fully charged and the outside temperature is above 70 degrees. The flight time is significantly reduced as the temperature drops. So be sure to check the batteries often. If your radio gear is a little bigger than that which is shown, you can adjust the size of the pod accordingly. The motor tube is a piece of BT-50 model rocket body tube. It may be available from your local hobby shop. If not, you can obtain it from Estes Industries, 1295 H. Street, Penrose, CO 81240 (800) 525-7563. The tube is positioned to give the motor 3 degrees of downthrust. There is almost no loss in altitude (about 0.2%) and it keeps the tail out of the high speed rocket exhaust.

Take care in assembly to balance the model between the limits identified for the CG. It will be quite sensitive at the rear limit and significantly easier to fly balanced at the front limit. The pod can be moved forward/rearward a bit to make adjustments and the motor tube can be lengthened/shortened as well. Just be sure to leave plenty of boom sticking out in front so you can do the final trimming after you have located the CG.

I would suggest you trim the model by doing some hand tosses over high grass. Once you have it flying flat and fast, you are ready to launch it. The first time, leave the trims alone and launch it about 70 degrees above the horizon with an Estes D12-3 (with the ejection charge removed). It should either fly straight up and away from you or arc up a bit when the motor quits. Make adjustments in small increments after each flight until you have it boosting the way you want. For a real kick (and contest flying) I use Aerotech E6-P motors. They are low thrust and long burn motors (about 8 seconds). If you have built the model light (about 225g glide weight), you should get nearly 1000 feet of altitude on an E6 motor and nearly 10 minutes of dead air duration. By the way, you should get between 300 and 400 feet on a D12 and about 3 minutes in dead air duration. E6-P motors are available from Apogee Components, 19828 N. 43rd Dr., Glendale, AZ 85308. There is also a reloadable motor made for this class of glider. It is available from AeroTech, 1955 South Palm St., Suite 15, Las Vegas, NV 89104. (702) 641-2301.

Good luck and have fun flying KS5. If you have questions, call me. I don't mind answering questions (as long as it's your nickel <grin>).

One final note; you are free to copy the plans and give them to a friend or use them in your club

### NARAM 36 Translation Table for Politically Correct Phrases

Vertically Challenged -- Loses D Altitude Event.  
 Horizontally Challenged -- Loses D Altitude Event by land sharking flight.  
 Chronologically Gifted -- Manages to recover models in multi-round events.  
 Economically Disadvantaged -- Can't afford composites for HPR sport or D3's for altitude.  
 Nitpicklike -- Pink Book lawyer.  
 Codependent -- Blames teammate for failures.  
 Mechanically Challenged -- Can't work launch system and launches wrong rocket.  
 Environmentally Conscious -- Uses lettuce for wadding.  
 Gravitationally Challenged -- Model too heavy to perform well.  
 Motivationally Challenged -- Decides Houston is too hot and muggy to fly; stays by pool.  
 Cyclically Challenged -- Skipped by RSO when asking to be flown; always gets bad air.  
 Verbally Challenged -- Botches countdowns.  
 Factually Unencumbered -- NAR Board of Trustees.



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