



# ZOG-43



*MAY 2002*



Brian Pratt loads his superroc during OPPOSUM-6.  
Photo By Doug Pratt

## IN THIS EDITION

- Results from OPPOSUM-6
- Memories of McGregor, Part 2
- Goddard Demonstration Launch
- And MORE!

**ZOG-43**

**Volume 24      Number 5**  
**May 2002**

**ZOG ROYAL COURT**

( NARHAMS OFFICERS )

ZOG FORTY-THREE is the official newsletter of NARHAMS the National Association of Rocketry Headquarters Astro Modeling Section # 139

NARHAMS is the oldest model rocket club in the United States !!!

ZOG- Forty-Three is dedicated to model rocketeers of all ages, abilities, and interest. We are committed to providing the most current, up-to date information on model and real world rocketry, and to provide educational material as well as entertaining information. ZOG FORTY-THREE is published monthly and is available to anyone on a subscription basis. Current rate is \$15 U.S. Funds for 12 issues a year, payable to NARHAMS

Material in ZOG Forty-Three is not copyrighted. Free and unlimited reproduction is granted with the proper credit to the author and/or ZOG Forty-Three.

For more information.....

if you have any questions about ZOG Forty-Three or NARHAMS, or if you have any comment(s), correspondence, free merchandise or if you'd like to submit an article, send them to :

ZOG Forty-Three

10340 Hickory Ridge Rd, Apt. 526

Columbia, Md. 21055

E-Mail zog43editor@yahoo.com

ZOG Forty-Three is edited by Kevin Johnson, and is a six-time winner of the NAR/LAC "Rockwell" Trophy, recognized as the best NAR section newsletter.

Years won: 1969, 1973, 1975, 1990, 1991, & 1992

Zog-43 staff typist is none other then Jennifer Ash-Poole a.k.a. Secretary to the Stars !

Photographers: Jennifer Ash-Poole, John McCoy, Paul Miller and Mark Petrovich

## **ZOG-43**

Is produced on a 233mhz Pentium processor computer using Microsoft Word. Masters are printed on a HP-712c and sent to Kinko's in Columbia Md. for duplication.

**This Edition: 45 copies**

## **NARHAMS ON THE WORLD WIDE WEB**

<http://www.narhams.org>

Send and receive E-mail with other NARHAMS members through NARHAMS Web page grouplist via yahoo-groups.

## **KING ZOG (President)**

Don Brown-----410-781-7539

## **PRINCESS BUBBLES (Vice-President)**

Jennifer Ash-Poole----- 410-674-6262

## **COLLECTOR OF THE**

## **ROYAL TAXES (Treasurer)**

Ed Pearson ----- 301-577-7775

## **KEEPER OF THE HOLY**

## **WORDS ( Secretary )**

Chris Kidwell----- 571-434-7507

## **COURT JESTER (Section Advisor)**

Khim Bittle ----- 301-293-2399

NARHAMS serves Baltimore, the state of Md., Washington DC and the surrounding Metropolitan areas. The club is a section of the National Association of Model Rocketry (NAR) and we are the oldest continuously active model rocket club in the United States, first established as a high school club in 1963, changing our name to NARHAMS when chartered as a NAR section in 1965. NARHAMS is the only four time winner of the NAR "Section of the Year" award.

Years won: 1997,1998,1999, 2001

NARHAMS members regularly fly their model rockets at NASA's Goddard Space Flight Center on Soil Conservation Rd. in Greenbelt Md. The launches are open to the public and are held every first and third Sundays of every month (weather permitting), starting at 1 PM. Sport Launches are usually held the second Saturday of every month at Middletown Recreation Park in Middletown Md. Check the web page for updates.

NARHAMS welcomes all prospective new members to our monthly meetings. They are held on the first Friday of the month from 7:30 to 9:30 PM at the College Park Airport Annex Building. Dues are 10 cents a week, with an initial 50 cents up front (good for 5 weeks) as a sign of good faith.

**NEW: Monthly meetings available on-line via chat-room , simply go to the NARHAMS homepage and click on the link.**

## **Directions to College Park Airport:**

Follow I-495 to Kenilworth Ave. South. Make a right onto Paint Branch Parkway, then make a right on Cpl. Frank S. Scott Dr. At the airport entrance go straight to the Operations building, the annex building is adjacent to the "Ops" building.

## April President's Message

A co-worker and I were talking the other day about flying rockets. He wanted to know what I like about it. So I said that are many reasons why rocketry is fun. I enjoy the kit building aspect of it very much. Assembling nicely finished flying model is very satisfying. Scratch building and up-scaling existing models are even more attractive to me. There you get to use your own design, building and finishing skills to end up with a rocket that other folks notice and is fun to fly.

Then there is competition flying. Here your design and building talents are challenged as you compete against other club members and NAR members across the country. It is very rewarding to do well in competition with your peers. And, as we found out last year, the ultimate high point is to win a national championship. The recognition from that achievement is great for the club and its members.

Another great part of rocketry is meeting many people and sharing experiences with them. Everyone shares a common interest and helps each other out whenever possible. We share in our victories in competition, support each other in rocketry and personal challenges, help young people to get started in the sport and always find time to have fun with other.

But the other day at Battle Park 2002, I had an experience that is the best of all. It was a beautiful day for flying and the rockets were performing well. It was almost the end of the day when I put up my THOY Phoenix on a very large motor. The only real wind of the day came up and carried it well off the field. I tried to follow it but I'm not a very good runner. But, as I trotted/walked down the road I saw a young boy far ahead of me who was following my rocket, too. Of course he was a lot faster. I saw the rocket go down and got a fix on it. I had to cross a road into some people's yards. When I got there I could not see my rocket or the boy. Some very nice people came out of their house and allowed me to look around. It didn't look good. I was going to spend a long time finding this one! Suddenly we heard the boy calling from the woods nearby. There was my rocket about 25 feet up in a very small tree. The limbs were too thin to support me, but that boy climbed right up it. He reached the chute and pulled the whole thing down, undamaged! As it turned out, he was at the field that day with a 4H group. His name is Cody Haun and I am pleased to have met him. I found out that Paul Miller had flown some of his rockets with Cody earlier in the day.

However, the best was yet to come. We locked our keys in the truck and were having no luck in getting a locksmith there. That's when a gentleman came over and, using the coat hanger that I had no luck with, opened a vent window and got us into the truck. His name is Harry Haun, Cody's father! The Hauns saved us twice in one day. Neither of them are rocketeers, just fine, unselfish folks that make the world a better place. Thank you Cody and Harry, you are typical of the great people who come to our launches and end up becoming a part of the rocketry family.

This issue of our newsletter is dedicated to Cody and Harry of Rixeyville, Virginia. Thank you!

*King Zog*

## LAUNCH WINDOWS

### REGIONAL MEET

ECRM-29 Jim Filler, CD

Events are: C Dual Eggloft Altitude  
(no Estes or Quest C6 motors allowed)

Plastic Model Conversion

(must fly first, surviving entries will be judged)

1/4A Rocket Glider Duration

Open Spot Landing

Middletown Park

May 18<sup>th</sup> and 19<sup>th</sup> 10am-4pm

### SPORT LAUNCH

V-2 theme starting at 10 am

German theme picnic starting 5 pm

Middletown Park

June 8<sup>th</sup>

### REGIONAL MEET

RAMTEC-10 hosted by SPAAR

Glenn Feveryear 717-456-5570

Events are: 1/2A Parachute Duration

A Rocket Glider Duration

B Helicopter Duration - Multiround

Set Altitude (175 Meters)

Sport Scale

Central Valley, PA

June 15<sup>th</sup> and 16<sup>th</sup>

## McGregor, Texas: Rattlesnakes, Fire Ants, and the Lost Sidewinder Part 2

By Ed Giugliano NAR 46086

The second trip I made out to McGregor was more comical. I was sent down solo this time to witness HARM motor disassembly. They were salvaging the igniters and nozzles from defective but loaded HARM rocket motors. The salvage program couldn't be completed before McGregor was to shut it's doors forever, so the program had to be transferred to ABL. I was the unlucky moron who was sitting in his office when my boss was looking for someone to unload this project on. Due to the impending consolidation the reception at McGregor wasn't cold, but it wasn't warm, either. To witness the HARM motor disassembly, we went to the HARM manufacturing line, a large, low building with concrete walls and many rooms called manufacturing cells. Taking the igniter off was easy - it was just held on with a snap ring. For the nozzle removal, the rocket motor was rolled into a small cell. An operator went inside, and I was "invited" in. We put on flameproof suits and face shields. I caught a glimpse of my hosts with you-know-what eatin' grins on their faces as they slide the heavy metal door of the cell in place. It was now just me, the operator, and a big, fat, defective, LOADED rocket motor in the cell.

I'll bet there has never been a nozzle which has fallen off a HARM motor. The nozzles are held on with a 1/4" lock wire and a series of o-rings to prevent gas leakage. I'd like to

throttle the guy who designed this nozzle, because he did not think about the poor idiot (me!) who has to take it off. Here's how we did it: first, we took a screwdriver and spun the lockwire in its groove until an end was visible. Then, we reached down and grabbed the end with specially designed pliers. Using the case for leverage, we pried the wire out a few inches, and the operator doubled over the lockwire. So far so good, I thought as the operator picked up an air impact hammer.

Air impact hammers are just about the last thing you want to see anyone use on a loaded rocket motor. It's like finding one in your dentist's office - you can only hope it's there for a good reason. The operator put the hammer onto the doubled end of the lockwire, pulled the trigger, and proceeded to slowly pound the lockwire out of the case. "Can I make it to the escape door if this baby lights off?" was about the only thing I could think of. That, and, "Did the Lost Sidewinder guy design this process, too?" Even with the flame proof suits I knew we were 'taters if the motor ignited. However, as the minutes went by uneventfully I began to get more comfortable with this process. After 5 or 10 minutes of hammering away, the operator handed me the "gun" and I had a go at it. It wasn't easy but it was good, noisy fun. The lockwire eventually was freed from the nozzle. The nozzle then was removed by yanking it rearward with all our might.

We rolled the cell door open and my hosts were a little disappointed to see I wasn't ash white or hadn't tested out the escape door. We had a good chuckle over this process and they educated me on fire ants and rattlesnakes, both of which are in abundance at McGregor. Under no circumstances do you disturb a fire ant mound. The mounds look like a pile of coffee grounds, but are really piled up Texas dirt containing thousands of the meanest insects you ever saw. If the fire ants aren't bad enough, the guard shacks at McGregor had picture frames filled with rattlesnake rattles, some of which were several inches long. The guards said most of the snakes were on the road in the evening, trying to keep warm when they met their doom.

Just remember as you fly your rockets in Texas that you are in a place that has a long history of solid propellant motor development and production. And watch out for fire ants, rattlesnakes, and Lost Sidewinders.

## OPOSSUM-6 Results!

By Kevin Johnson, NAR 77083

A damp day dawned over the Middle Park on April 13<sup>th</sup>. As the contestants gathered around rookie Contest Dictator, King Zog, many a voice was raised in question regarding the weather. The king solicited advice and drew on the council of his court then made a decree:

"We fly!" he declared, "but only one qualified flight each for helicopters and gliders."

So began this year's OPOSSUM meet, where tough competition went hand in hand with variable precipitation. Events flown were 1/4A RG, 1/2A HD, 1/2A PD, and B SrD. Competitors filled out most of the brackets, with C and A divisions having the best turnout with 8 and 7 entries, respectively. There were 4 teams battling it out and no B division entries.

The moisture-laden air played havoc with delicately balanced and trimmed rocket gliders. Many contestants were hard pressed to make their qualifying flight. In A division, Kris

Bittle edged out Matt Filler by only 4 seconds to take the win, while Kate and Kindra Bittle fell victim to NG. In the senior division, Glenn Feveryear seemed to have it all together with a 20 second flight through the heavy air. Jim Filler garnered 2<sup>nd</sup> place with Princess Bubbles, Cumberland Ed, and Dr. Kidwell splitting 3<sup>rd</sup>. In teams, That's 2 Marks Against Ya posted the longest glider flight of the day of 22 seconds to take a commanding 1<sup>st</sup> place. Grumpy Old men edged out Murphy's Lawyers by 1 second for 2<sup>nd</sup> place, and Newton's Grandparents made a successful flight for 4<sup>th</sup>.



*The day was damp, the rockets were, too. Photo by Doug Pratt*

The damp also had an effect on our heli models, twisting rotor blades into odd pretzel shapes that made for some interesting flights in the close competition. Kindra took home Bittle Bragging Rights in A division by out-flying big brother Kris, with Matt and Kate filling out the ranks. Glenn Feveryear again had the right stuff as he posted a flight 13 seconds longer than the closest C divisioner. The top 3 were filled out by Jim Filler and Chris Kidwell. Those 2 Marks posted another 1<sup>st</sup> place finish, eeking out a 1 second margin of Grumpy Old Men and their inverted autorotating model. Newton's Grandparents took 3<sup>rd</sup>, leaving Murphy's Lawyers to bask in 4<sup>th</sup>.

The heavy air didn't seem to bother the parachute models much, with some models seeming to float on a cushion of water vapor. A division was hotly contested with Kris Bittle taking 1<sup>st</sup>, Sam Whitman 2<sup>nd</sup>, and Kindra Bittle 3<sup>rd</sup> place. Cumberland Ed posted 2 long flights for a combined 216 seconds to garner himself a blue ribbon in C division. Khim Bittle showed where his kids get that ribbon winning skill from by picking up 2<sup>nd</sup> with a combined 2 flight total of 146 seconds. Glenn Feveryear finished in the money again with a 129 seconds for his 2 flights. Teams were lead by the dominating 2 Marks Against Ya, with Grumpy Old Men and Murphy's Lawyers left to learn that getting a parachute to open is half the battle in parachute duration.

Ah StupidRo.. uh I mean SuperRoc, where the men are separated from the boys, and many a long rocket was separated from its parachute. Sam Whitman lead the A division pack closely followed by Matt Filler. Kris Bittle felt the sting of the sep on one of his flights, keeping him in 3<sup>rd</sup>. Khom really showed his kids how it's done by taking 1<sup>st</sup> place in the C bracket, with Cumberland Ed taken 2<sup>nd</sup> and Glenn Feveryear 3<sup>rd</sup>, both with seps. That's 2 Marks Against Ya scored their sweep of the team ranks with a 1<sup>st</sup> place finish. The Grumpy's took 2<sup>nd</sup> and Murphy's Lawyers took up their familiar 3<sup>rd</sup> place spot.

When all the exhaust had cleared, the meet standings ended up as follows:

A Division Champ—Kris Bittle

C Division Champ—Glenn Feveryear

T Division Champs—That's 2 Marks Against Ya!

## NAR Opens Website Competition Corner

From Mark Bundick, NAR President

NAR members can now find information about NAR contests located in one spot at the NAR website. Just point your web browser to:

<http://www.nar.org/competition/index.html> for complete information on events, contests, records, contest forms, standings, selected plans and other competition resources. This addition to our website means that new members and beginning competitors will have the resources they need to make a successful entry into the fun and exciting world of NAR sanctioned competition.

Thanks to Wolfram Von Karpinki for creating this excellent resource.

## TYDTWD at NASA Goddard

By Jennifer Ash-Poole NAR 61415

April 25th started out as a rainy day, typical when I am doing the Take Your Daughter To Work Day (TYDTWD) demonstration launches. I had two demos to do at the visitor center. I had prepped all the power series the night before, and had a Flying UFO, an Egg Loft, a helicopter, a glider and a scale model to launch as well.

Dave Fair, DJ and I decided to only set up one rod for the demo. They weren't expecting that many people. I had the balsa kits in a bag so they wouldn't get wet. I decided not to fly the balsa, but do the rest because they could handle the wet grass (plastic fine with water, balsa not so fine with water).

Alan Williams, who said he wouldn't be here for the demo, showed up and did some maintenance duty to the rod between flights. Dave loaded up the rack as I gave my song and dance. Once I saw the B Alphas touch the clouds, I decided not to do the C power. I then showed off a model with tubes instead of fins, a Nike Smoke Scale model while pointing out the real thing near by. Robert showed up as I was doing my finale of the UFO. Rob had done a Space Day demo for Raytheon that morning, and still had balsa left to fly. He showed off the Tinee, then a competition boost glider, and last his radio glider. The radio glider did not survive.

The second demo was just Rob and I. We did the power series, all the other models I had brought, and Rob still had some balsa in the car left to fly. He made NARHAMS proud by finishing the demo with "We are members of the NARHAMS model rocket club! Thanks for coming!"

This will be the last TYDTW Day, it will now be known as Take your Sons and Daughters to Work Day.

## Got Grunt? The New Estes C11 Motor

By Tom Anderson NAR 61134

In recent months, Estes Industries has taken the very welcome step of re-introducing motors that were cut from their line several years ago. We have welcomed back the 1/2A6-2, the A8-5, and the B6-0, all very useful and enjoyable motors for recreational and occasional contest use. Going beyond this, Estes has brought out a brand new motor, the C11. Based on a D motor (24mm) casing, the C11 is a fast burning motor that is more versatile than most other C engines on the market.

Because the C11 burns its fuel in 0.8 seconds as compared to the 1.8 seconds of C6 series motors, it has a higher thrust peak

than the C6. This allows a greater maximum liftoff weight, meaning that the C11 is good for weightlifting events like C dual egglofting, and can also be used on lighter D series rockets that you don't want to lose. For the multistage enthusiast, the C11 is an excellent booster for those mid-sized two and three stages.

So far, I have used the C11 motor three times with extremely satisfactory results. The first flight was a C11-3 in an Orion Crayon Rocket, which is similar to a Fat Boy in size, but about twice as heavy. On ignition, the Crayon rocket took off fast and straight, with chute deployment at apogee. I then used a C11-3 in a Big Daddy, which also took off fast and climbed to about 150 feet, popping its chute just after apogee. Most recently, I flew the new Estes Blue Ninja on a C11-5-this took off very fast and climbed to about 400 feet, popping its chute about one second past apogee.

A characteristic that makes the C11 entertaining is the sound it makes. Because of its very short burn time, you hear a momentary loud whoosh followed by a totally silent coast. This was especially apparent on the Big Daddy flight, which sounded like burnout occurred about 20 feet up followed by a climb in near silence.

Although the C11 is more expensive than the C6 motor, the increased versatility and entertainment value makes it worthwhile. Especially for those of us old enough to remember the long gone B14 engine, it's good to see a fast burning motor in action that can lift a decent sized rocket while still keeping it within flying field room. Try the C11 in one of your own rockets or in one of Estes' new kits geared to these motors-it's fast burning fun!

## Space News

### Space Forces Chief: Russia To Move All Military Satellite Launches From Baikonur

MOSCOW (AP) Russia plans to relocate all its military satellite launches from the Baikonur cosmodrome in the ex-Soviet republic of Kazakhstan to its own launch pad, the commander of the nation's space forces said Tuesday.

Russia will continue using Baikonur, which it leases from Kazakhstan, for launching manned missions and commercial satellites, but will work to transfer all military launches to the Plesetsk cosmodrome in northern Russia, Space Forces chief Col-Gen. Anatoly Perminov said on an inspection trip to Baikonur.

"This is our task for the next eight to 10 years," Perminov said, according to the Interfax-Military News Agency and ITAR-Tass. He didn't explain the reasons behind the move.

Some 75 percent of all Russian spacecraft, and more than half of military satellites are currently launched from Baikonur, Perminov said.

Thanks to its location closer to the equator, Baikonur provides far more favorable launch conditions compared to Plesetsk. The Earth's rotation is faster at the equator, which helps propel rockets to high, geostationary orbits with less fuel and heavier payloads.

Russian officials have often clashed with Kazakhstan over Baikonur, with Kazakh officials complaining about spills of toxic rocket fuel and sometimes cutting power to the launch pads over alleged energy debts.

Alexander Medvedev, the chief of Russia's major rocket manufacturer, the Khrunichev company, recently recalled that the Kazakh authorities once cut power to a launch pad minutes



before a scheduled commercial liftoff. The incident prompted Khrunichev to finance the building of a backup power system on Baikonur.

Russia planned to launch 32 satellites last year, but put only half of them in orbit as other launches were delayed for various reasons. It plans to launch 32 satellites this year, the ITAR-Tass quoted a Space Forces spokesman as saying.

\*\*\*\*\*

### Japanese Noodle Company Plans To Conquer A New Frontier: Outer Space

By Joji Sakurai

TOKYO (AP) \_ The maker of Cup of Noodles wants to create a treat that's **literally** out of this world.

Nissin Food Products announced Monday it will collaborate with Japan's Space Agency, NASDA, to make instant noodles that can be eaten on space missions.

``Space Ram" (that's short for ramen, the name for Japan's favorite slurpable snack) will be made especially for astronauts flying on the Kibo research module, Japan's contribution to the International Space Station, Nissin said in a press release.

The company said the noodles are meant to prevent Japanese astronauts from getting homesick.

``There's a need for nutritional, tasty Japanese food that the astronauts are accustomed to eating," said the company.

There have been growing calls among our astronauts for something like this."

Nissin said its top researchers will be devoting their noodles to making a product that tastes good and doesn't fall apart in zero gravity.

The goal? ``To create the ultimate light snack."

``This is also in response to a strong wish by our chairman Momofuku Ando, who invented the instant noodle, to create food for outer space," the company said.

NASDA's Kibo research module will be launched by the U.S. space shuttle to the space station in three separate shots beginning in 2004. Nissin plans to have its extraterrestrial noodles ready by then.

Ando, affectionately known in Japan as the ``noodle king," is credited with revolutionizing the eating habits of his nation and turning instant ramen into a multi-billion dollar business here.

Noodle fanatics can visit a faithful recreation of the wooden shack where Ando created instant ramen 44 years ago at the Instant Noodle Museum in western Japan.

Japan is the world's leading consumer of instant noodles on a per capita basis, wolfing down a total of 5.32 billion packs or an average of 42 packs for every man woman and child.

Nissin's instant noodles are also well known in the United States under the brand name Cup Noodle.

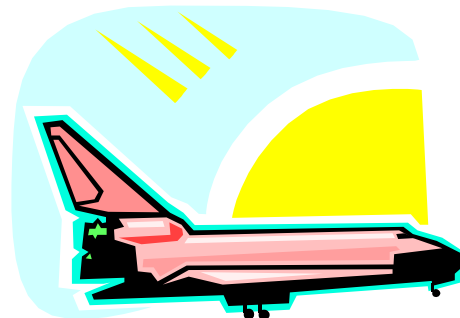
In Japan, instant ramen ingenuity is not just limited to dreams of outer space. At convenience stores around the nation, entire shelves are devoted to noodles that come in tastes that range from Korean ``kimchi" cabbage to spicy cod roe spaghetti.

The snack, voted in a recent Japanese poll as ``the food of the century," is such big business that instant noodle makers from around the world converge on Tokyo every other year for the summit of the Instant Ramen Manufacturers' Association. Ando is chairman

\*\*\*\*\*

### Atlantis Makes Perfect Landing

From a clear Florida sky, Commander Mike Bloomfield and Pilot Steve Frick brought Atlantis safely to Earth today, landing at 12:26 p.m. EDT at the Kennedy Space Center. While docked to the International Space Station, Bloomfield, Frick, and Mission Specialists Ellen Ochoa, Rex Walheim, Lee Morin, Jerry Ross and Steve Smith installed the S-Zero truss to the station, setting the stage for future station expansion and research. Four space walks were required for the installation. Atlantis traveled over 4 million miles during this mission, STS-110, which lasted almost 11 days. The members of the Expedition Four crew aboard the station, Commander Yury Onufrienko and Flight Engineers Carl Walz and Dan Bursch, are now focused on the arrival of its next set of visitors -- the Soyuz 4 Taxi Flight Crew -- on April 27.



\*\*\*\*\*

### New IMAX Film Takes Moviegoers to Space Station in 3D

A new 3D IMAX film will take moviegoers on a space voyage as close to the real thing as anyone can get while still here on Earth. It details the challenges of building the International Space Station. Between December 1998 and August 2000, more than 13 miles of film flew into space for use in two IMAX 3D cameras operated by 25 astronauts and cosmonauts who were trained to use the high-tech equipment as directors, cinematographers, and lighting and sound experts. "The 3D imagery captured by the IMAX cameras allows those of us on the ground to experience life in the weightlessness of space," said NASA Administrator Sean O'Keefe. The movie, "SPACE STATION 3D," is narrated by Academy Award nominee Tom Cruise. It opens tonight (April 17, 2002) at the National Air and Space Museum in Washington, DC. In the coming months, the movie will be shown in many locations in the United States and around the world.

\*\*\*\*\*

### Extended Launch Forecast

May 2: Boeing Delta 2 with NASA's AQUA-EOS PM from Vandenberg Air Force Base. 5:54:58 to 6:04:58 a.m. EDT

May 3: Arianespace Ariane 4 with SPOT-5 from Guiana Space Center. 9:32 p.m. EDT

May 6: International Launch Services Proton with DIRECTV 5 from the Baikonur Cosmodrome.

May 28: Sea Launch Zenit 3SL with Galaxy 3C staged from the Odyssey Launch Platform.

May 30: STS-111 Endeavour to International Space Station from Kennedy Space Center.

June: Ukrainian-Russian Dnepr with an American payload destined for a near lunar orbit from the Plesetsk Cosmodrome.

June 1: Arianespace Ariane from French Guiana.

June 3: Air Force Titan 4 (B-36) with a National Reconnaissance Office payload from Cape Canaveral Air Force Station.

June 15: Air Force Delta 2 with GPS 2R-8 from Cape Canaveral Air Force Station.

June 24: Air Force Titan 2 with NOAA-M from Vandenberg Air Force Base. 2:22 p.m. EDT.

July 1: Boeing Delta 2 (7425) with NASA's CONTOUR from Cape Canaveral Air Force Station. 2:56:14 to 2:56:26 a.m. EDT.

July 8: International Launch Services Atlas 5 (Inaugural EELV Launch) with Eutelsat Hot Bird 6 from Cape Canaveral Air Force Station.

July 14: Russian Soyuz with Progress 8 freighter for the International Space Station from Baikonur Cosmodrome.

July 15: Boeing Delta 4 (Inaugural EELV Launch) with Eutelsat W5 from Cape Canaveral Air Force Station.

July 19: STS-107 Columbia on Freestar science research mission from Kennedy Space Center.

July 30: Orbital Sciences Pegasus with NASA's GALEX staged from the Canaveral Spaceport.

## King Zog's Flea Market

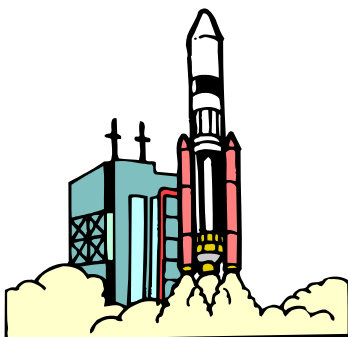
Contact Kevin Johnson to place items for sale or trade.

### Don Brown

4 used Estes launch pads – each with a 1/8 rod and blast deflector \$10.00 each

3 used Estes “Electron Beam” launch controllers \$10.00 each

1 new Estes “Mongoose” rocket kit, unopened \$8.00  
replacement fin(s) needed for Aerotech Warthog



## Calendar of Contest and Special Events for 2001-2002

**May 3** – Business Meeting, C DED led by Chris Kidwell

**May 11** - Sport Launch cancelled. Go hug your mom instead

**May 18** - ECRM-29 contest, Jim Filler CD, we will reserve a pavilion for Sunday and get a permit for overnight camping. No Quest or Estes C6 motors for CDEL event.

**Jun 7** – Business Meeting, Oddroc discussion by John McCoy

**Jun 8** - Sport Launch, V-2 theme starting at 10 am, and German theme picnic starting 5 pm

**Jun 15-16** - RAMTEC-10 contest hosted by SPAAR

**Jul 12 - (note moved from Jul 5)** Business Meeting, B unRG led by John McCoy. Tom Anderson to demo patriotic rockets

**Jul 13** – Sport Launch, patriotic theme

**Aug 2** - Business Meeting, Discussion of elections and tethered spot landing. Open building session

**Aug 10** – Sport Launch, tethered spot landing (rocket must be tied to the ground somewhere. you get to choose where)

**Sep 6** – Business Meeting, Elections and night launch discussion led by John McCoy and Khim Bittle

**Sep 7** - Night launch building session, location TBD, start noon

**Sep 14** - Sport Launch starts at noon, night launch pending approval

**Sep 21** - College Park Air Fair

**Sep 29** - AIAA launch, Johns Hopkins APL

**Oct 4** – Business Meeting, Movie night and slides by Jim Barrowman. Cake and Internats review

**Oct 12** - Maryland Funny Meet, John McCoy CD

**Oct 19-20** - SCST-2 contest hosted by PSC

**Oct 26** - Planning meeting, College Park Airport, starts at 9:00

**Nov 1** – Business Meeting, Planning meeting review

**Nov 9** – Sport Launch, Thanksgiving theme

**Nov 16** - Building session at College Park Airport Museum

**Dec 6** - Holiday party potluck, Raffle

**Dec 14** – Sport Launch, Non-Denominational Winter Solstice theme

Sport launches are held at Middletown Park from 10am-4pm, waiver up to 3.3 lbs and “G” motors not exceeding 62.5 grams of propellant. All flights “E” power and above are restricted to 5 degrees from vertical and between the hours of noon and four PM. Call ahead to confirm launch and waiver availability.

Business meetings are held at the College Park Airport Annex Building. Meetings begin at 7:15pm with building sessions or presentations and last until 9:00pm or so. Regular Business meetings follow until 10:00pm. If no presentation or building session is scheduled, please bring whatever project you are working on currently.

Questions? Call Club President Don Brown at 410-781-7539.

Visit NARHAMS online at <http://www.narhams.org>

ZOG - FORTY THREE  
10340 MICKORY RIDGE RD. #526  
COLUMBIA, MARYLAND 21044

