THE OFFICIAL NEWSLETTER OF NARHAMS SECTION #139

ZOG-43

January 2002

Dave O'Bryan and Rob Edmonds explain the finer points of RC/RG at the November meeting. Photo by Paul Miller.

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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

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

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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

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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.

Message from the President:

The end of the 2001 flying season and the onset of cold weather bring mixed emotions to me. On one hand I am sad that I can't fly my rockets. But, on the other hand, I am happy to be able to take some time to repair my existing models and work on new ones. Two weeks ago I did a damage assessment of the fleet and was not surprised to find that only a few needed no repairs. So I set to work with body filler, balsa, glue and paint and put everything back into shape. Plus, I am taking the time to pay attention to the small details that can cause poor flights. Checking launch lug attachment, replacing old shock cords, repairing or replacing parachutes and checking motor retainers will definitely result in more safe and successful flying in the upcoming season.

I hope that everyone will find the time to join in on this year's launches, meetings and activities. It makes everything that we do even more enjoyable when there is a large group of participants. I especially encourage you to look for any opportunity to bring young people into the club. Many times I go to a launch and end up spending more time helping out young and new fliers than flying my own models. At the end of the day I always come away with a satisfied feeling that it was a day well spent. We will have club information and member sign-up materials available at the field this season so that new members can be brought on board.

Best wishes to all NARHAMS club members, as well as your families and friends for a happy new year.

King Zog--Don Brown

LAUNCH WINDOWS

BUILDING SESSION/MicroMAXX LAUNCH

Bring your PMC, MicroMaxxen, a chair, and some food to Filler house.

Jan. 12th 10am-4pm

SPORT LAUNCH

Love Your Groundhog theme (furry rockets with hearts)

Middletown Park

Feb. 9th 10am-4pm

FIELD TRIP

to Garber Facility of Air and Space Museum

Feb. 23rd 1pm

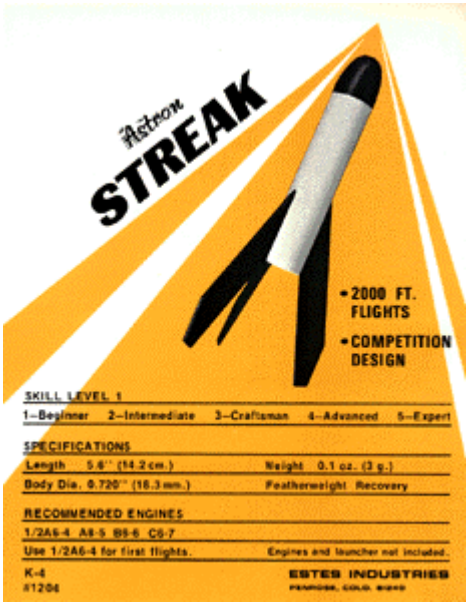
ALL SUNDAY LAUNCHES AT THE GODDARD SPACE FLIGHT CENTER VISITORS CENTER ARE CANCELLED UNTIL FURTHER NOTICE.

The Visitor Center is closed during this period of increased security at GSFC.

The Joy of "Streak"ing

By Tom Anderson, NAR 61134

In my continuing effort to recapture my youth, or at least the model rocketry part of it, I have recreated several model rockets of the sixties and seventies.



Front card of the Astron Streak package.

Roughly one week before the November Narhams sport launch, I got the sudden desire to build a clone of the classic Estes Astron Streak featherweight recovery model of the sixties and seventies. After downloading the fin pattern from Jim Z's website, it was a very simple matter to cut three fins out, along with a length of body tube. I cut, sanded, and glued the fins and a launch lug to my new Astron Streak, and then began rummaging for a balsa nose cone. Finding an ogive BT20 nose cone, I cut the tip off and sanded it to a rounded blunt shape to approximate the original look of the Astron Streak.

Instead of the Mylar BT10 used on the original Astron Streak, I used a section of BT20 from a wrecked model. Since this was painted racing orange, I left it as is, but painted all three fins silver. To emphasize the shape and look of the nose cone, I left it in its natural balsa tone. For those who build their own Astron Streak, I recommend any bright paint job that will make tracking easier.

Paint your Streak in bright colors. From Jim Z's website

As an added feature, I built a streamer recovered motor adapter that allows my Astron Streak to fly on 13mm motors while preserving the featherweight recovery of the original. Speaking of flying, the first flight of my Astron Streak was on a mighty 1/4A3-3T motor.

This motor was sufficient to give an approximately 200-foot flight, with perfect separation and recovery of the motor pod. The Astron Streak itself descended nose down almost in slow motion due to its lightweight, doing a relatively gentle bounce on contact with the Earth.

While the Astron Streak I built can fly on up to A motors, I will probably stick to 1/4 and 1/2 A's so as not to lose it. After all, this rocket is a reborn classic, if only a small one.

Cloning is fun, and the Astron Streak is an easy way to begin exploring the history of model rocketry.

Too Cold to Fly?

By Kevin Johnson, NAR 77083

Ah winter.. a time for blustery days, cold temperatures and inclement weather all around. What is a rocketeer to do during these long months where Mother Nature can play havoc with scheduled launches? BUILD ROCKETS! is the resounding cry of the 'Hamsters. Here are a few examples of what our club members have on the workbench.

Don "King Zog" Brown sets a challenging pace for his cold weather building. He has a lot of rockets in progress, including: an Estes Sidewinder w/24mm motor tube and basswood fins, an NCR Patriot modified for 38mm motors, Estes' 2.6" V-2 in ragged cammo scheme, a rebuild of his 2.6" Upscale Quark for 29mm motors, an Estes Black Brant, a PMC Saturn V 3 D Cluster, the Flying Heineken Bottle 3 D Cluster (popcorn was lousy!) and a 2-stage Fat Boy, clustered C's to a D.

Richard "My model was pictured in Sport Rocketry" Hickock is busy working on an up scaled "Bender" (that lovable hard-drinking robot from Fox TV's "Futurama"). Also a scratch BT-80 Bell X-1 and two scratch "Commie rocs" as I like to call them; another AA-10 Alamo and the grid-finned AA-12 "Adder" (AKA Amraamski). Looking forward to the Maryland Funny Meet, a Barbie space transport vehicle.

Tom "Competition Head" Ha is weighing in by building several contest-geared rockets. His fleet will soon contain models for B Helicopter, C Helicopter, B Boost Glider, B Egg loft Duration, and E Egg loft Altitude. For sport flying, Tom has several Estes kits in the works, to include: Goliath/Spitfire SST, Fat Boy, Big Bertha, Viking, and Comanche-3. He has also helped Rob Edmonds secure his iron-fisted hold on the glider market by building a DeeCee, Geminee, and IV2g.

John "So many rockets, so little time" McCoy has no less than a baker's dozen of models in progress. On his bench (or scattered around the basement) are:
1/48th PMC Boeing BOMAC - Reworking Sun Melt damage. NOTE! Don't display your finished plastic models in closed clear plastic cases outside or in direct sunlight. DHA!!! I melted this Bomarc and a 1/48th F100 at The AirFair a couple years ago. just getting around to attempting a fix.
1:200 Mercury-Atlas -Micro-Maxx PMC, 1:200 Gemini-Titan 10.5/Micro-Maxx PMC, 1:200 Satrun-1b 18mm PMC, 1:200 Saturn-V 24mm PMC, 1:130 X-15 Micro-Maxx PMC, 1:72 Bell-X1 Micro-Maxx PMC, 2.976:1 downscale - 10.5mm Interceptor, 1.962:1 Upscale BT-80 4-d cluster Interceptor, 1:27.169 Scale Boeing Bomarc BT-55 size (Gliding), 1:145.25 Scale - Micro-Maxx, 13/10.5mm Lighthouse - Oddroc-Nightflight and, Narhams Launch Rack No 1b.

Jim "Farmer of the sea" Miers reports, "On top of several scratch builds (all unnamed) and a kit-bashed Python, I'm raising a triops (picked up at the raffle, I think Tom Anderson donated it). The kit hatched only one, but she's grown in a week from near invisible to over half an inch long. Her name is Godzilla. She's a compulsive eater. I haven't been able to count her eyes yet, since she won't set still long enough." According to the proud father, the kit also hatched out four fairy shrimps, a lesser denizen of the pond. Their names were (respectively) Breakfast, Lunch, Dinner and Desert.

Your faithful reporter also has his hands full this winter season. In various stages of completeness I have a Launch Pad Pershing 1A, an Estes big Honest John, a cloned small Honest John (brought this one with me to Texas for the holidays). On the RC/RG front I have an Edmonds Arcie and an Estes Strato Blaster (that needs final trimming). Also a BT-50 based Wasserfall, LOC\Precision's 4 inch V-2 (need to get new BT since I had a mishap with the microballoons), Estes Iris with scratch built booster, Titan III - MOL (back from the CA spill), Estes Little Joe II, and 2 PMC projects; an A-7 Corsair II and a Chinese F-7 (both in 1/48 scale).

With all the building going on, the spring flying season is sure to be filled with many interesting rockets. Don't forget that we are holding some building sessions in the upcoming months. Bring your works in progress and let us all see what you've got.

NASA News

Compiled by Jennifer Ash-Poole, NAR 61415

NASA Bids Farewell to the Successful Deep Space 1 Mission

NASA's adventurous Deep Space 1 mission, which successfully tested 12 high-risk, advanced space technologies and captured the best images ever taken of a comet, will come to an end Dec. 18, 2001.

"American taxpayers can truly be proud of Deep Space 1," said Dr. Colleen Hartman, Director of NASA's Solar System Exploration Division, Washington, D.C. "It was originally designed to be an 11-month mission, but things were going so well that we kept it going for a few more years to continue testing its remarkable ion engine and, as a bonus, to get close-up images of a comet. By the time we turn its engines off tomorrow, Deep Space 1 will have earned an honored place in space exploration history."

Shortly after 12 noon PST Tuesday, engineers will send a final command turning off the ion engine, which has used up 90 percent of its xenon fuel. After Earth's final goodbye, the spacecraft will remain in orbit around the Sun, operating on its

own. Its radio receiver will be left turned on, in case future generations want to contact the spacecraft.

Deep Space 1 leaves the technologies it flight-tested as legacies for future missions, which would have been impossible without its trailblazing technology tests. Enabling spacecraft to travel faster and farther than ever before, Deep Space 1's ion engine was once a science fiction dream. Now this ion engine has accumulated over 670 days of operating time. Future Mars missions may use this technology to return samples from the Red Planet.

Within nine months after launch, Deep Space 1 had successfully tested all 12 new technologies. As a bonus, near the end of the primary mission, Deep Space 1 flew by asteroid Braille. In late 1999, its primary mission complete, Deep Space 1's star tracker failed to operate. So in early 2000, engineers successfully reconfigured the spacecraft from 300 million kilometers (185 million miles) away to rescue it for a daring extended mission to encounter comet Borrelly.

In September 2001, Deep Space 1 passed just 2,171 kilometers (1,349 miles) from the inner icy nucleus of comet Borrelly, snapping the highest-resolution pictures ever of a comet. The daring flyby yielded new data and movies of the comet's nucleus that will revolutionize the study of comets.

"American taxpayers can truly be proud of Deep Space 1."

Launched on October 24, 1998, Deep Space 1 was designed and built in just three years, the shortest development time for any interplanetary spacecraft NASA has flown in the modern age. It was the first mission in NASA's New Millennium program. In addition to its technical achievements, Deep Space 1 is an ambassador of Earthlings' goodwill, carrying with it a compact disc of children's drawings and engineers' thoughts.

"I'm not sad it's ending, I'm happy it accomplished so much," said Dr. Marc Rayman, Deep Space 1 project manager at JPL. "I think it inspired many people who saw the mission as NASA and JPL at our best -- bold, exciting, resourceful and productive."

Industry team to design air-breathing rocket engine
NASA-MSFC NEWS RELEASE

A new design contract, to be awarded today by NASA's Marshall Space Flight Center in Huntsville, Alabama, is expected to lead to development by 2006 of a ground test version of an air-breathing rocket engine for a next-generation hypersonic flight vehicle.

The industry team that will design the engine -- known collectively as the Rocket Based Combined Cycle Consortium, or RBC3 -- includes the Rocketdyne Propulsion and Power business of the Boeing Co., of Canoga Park, Calif.; Aerojet of Sacramento, Calif.; and Pratt & Whitney of West Palm Beach, Fla.

The radical new engine project is called the Integrated System Test of an Air-breathing Rocket, or ISTAR. The flight-like engine system will be designed to accelerate a self-powered vehicle to more than six times the speed of sound, demonstrating all modes of engine operation.

The $16.6 million contract award covers Phase One of the project, which requires completion of conceptual system design and subsystem testing by November 2002. Phase Two, ground testing of the flight-weight engine system, is scheduled to begin in 2006. The engine would be demonstrated in flight by the end of the decade.

NASA is pursuing air-breathing propulsion in an effort to make future space transportation safer, more reliable and significantly less expensive than today's missions. Spacecraft powered by air-breathing rocket engines would be completely reusable, able to take off and land at airport runways and ready to fly again within days.

The engine would get its initial power boost from specially designed rockets in a duct that captures air, an arrangement that improves performance about 15 percent above conventional rockets. Once the vehicle has accelerated to more than twice the speed of sound, the rockets are turned off and the engine relies solely on oxygen in the atmosphere to burn its hydrogen fuel. When the vehicle has accelerated to more than 10 times the speed of sound, the engine converts to a conventional rocket-powered system to propel the craft into orbit.

Air-breathing -- or rocket-based, combined cycle -- propulsion is a concept dating to the 1960s. The Marshall Center began pursuing the technology for space-based applications in 1996, and started testing air-breathing rocket engine components in 1997. During that time, NASA's industry partners built and tested several alternative engine configurations.

The engine will be designed to power a vehicle measuring about 14 feet (4.2 meters) wide and more than 30 feet (9 meters) long. NASA's Langley Research Center in Hampton, Va., leads the vehicle definition effort.

NASA is the nation's premier agency for development of reusable launch vehicle technologies. NASA's Marshall Space Flight Center is leading this effort, which is aimed at enabling dramatic improvements in the safety, cost and reliability of future space transportation systems.

NARHAMS wishes to thank **HobbyWorks of Laurel** for donating raffle prizes during 2001! Please support the vendors that support us.

Field Trip Info

On February 23rd, NARHAMS is sponsoring a trip to the Paul E. Garber Facility of the National Air and Space Museum. The Garber Facility is where the NASM stores artifacts when not on display and also houses the restoration bays where aircraft are painstakingly brought back from disrepair.

There are more than just planes in the collection. There are several important early rockets, and examples of American spacecraft from the early days of NASA. All of the items on display are stored in warehouse-style buildings that we will be lead through. As part of our tour request, we asked that the docent point out space or rocketry related items to us.

Our tour is scheduled to start at 1:00 pm. If we all meet at the Garber Facility at 12:45, we should be able to start on time.

The facility is located in Suitland, Maryland and directions are below.

From Washington, DC:

1) Take Pennsylvania Avenue to Branch Avenue. Turn right on Branch Ave. and follow it 2.2 miles to Iverson Mall (on right); make left at stoplight; go one block; turn left again; Facility is on immediate right.

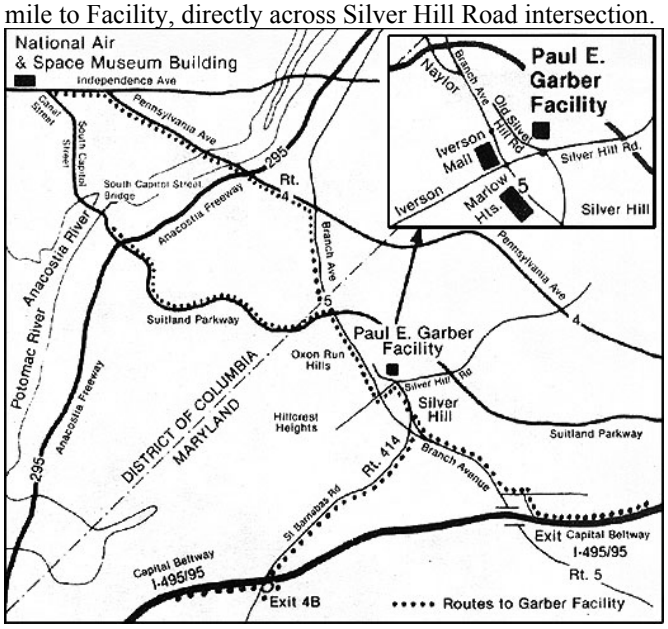
2) (Alternate shorter route) Take Suitland Parkway 1/2 mile inside Maryland state line to Branch Avenue (Rt. 5 South). Turn right on Branch Avenue; go 0.8 mile to Iverson Mall (on right); make left at stoplight; go one block; turn left again; Facility is on immediate right.

From Virginia:

Take Capital Beltway (I-495/95) over Woodrow Wilson Bridge to Exit 4B, St. Barnabas Road (Rt. 414 East); follow St. Barnabas Road for 3 miles (7 stoplights) to intersection at Silver Hill Road; continue through intersection; Facility is on immediate right.

From Maryland:

Take Capital Beltway (I-495/95) to Branch Avenue, Silver Hill Exit (Rt. 5 North); make a left, go one block to traffic light (Jct. Rt. 5) go right and follow Rt. 5 for 1 mile to St. Barnabas Road (Rt. 414); continue on St. Barnabas Road 1/2 mile to Facility, directly across Silver Hill Road intersection.



New Motor Certifications

From www.nar.org

The following motor has been certified by NAR Standards & Testing for general use as a model rocket motor effective August 19, 2001. It is certified for NAR contest use effective October 18, 2001.

Estes: 18mm x 70mm:
A8-5 (2.5 Newton-seconds total impulse, 3.3 grams propellant mass)

The following motor has been certified by NAR Standards & Testing for general use as a model rocket motor effective July 7, 2001. It is certified for NAR contest use effective September 5, 2001.

Quest: 6mm x 26mm:
MicroMaxx II-1 (0.31 Newton-seconds total impulse, 0.5 grams propellant mass)

NAR Point Standings for 2001-2002

Reported by Tom Lyon, NAR #

A Division:

Name		NAR #	Section	Points
Melissa	Miner	78326		1644
Michael	McIntosh	79040		1476
Joe	Eng	75956	365	1266
Michael	Humphrey	75192		1050
Christopher	Stenvall	76999	365	822
Matt	Conley	79901	473	558
Christopher	Ha	79497	139	490
Kris	Bittle	74626	139	284
Kindra	Bittle	76125	139	228
Spencer	Poulin	79394	581	216
Kate	Bittle	79934	139	208
Alex	Calvert	77390		120
Matthew	Filler	71947	139	115
Victoria	Blessing	79364		78

B Division:

Name		NAR #	Section	Points
Jonathan	Stenvall	70976	365	1968
Alex	Immerman	75318	581	360
David	Tietz	65139	113	112

C Division (Top 30):

Name		NAR #	Section	Points
Ernest	Strother	77992	365	2466
Andy	Eng	23404	365	1794
John	Poulin	76006	581	1592
Jack	Sprague	45689	308	1497
Jay	Calvert	71767	581	1448
Steve	Murphy	65673		1272
Larry	Rice	33323	113	1168
Suzy	Sprague	45690	308	1162
Les	Kurz	74240	581	1004
David	Schultz	63255	308	984
Wolfram	von Kiparski	28643	606	978
Steve	Humphrey	17888		927
Steve	Foster	72814	473	918
Ed	Guigliano	46086		832
Rod	Schafer	36564	473	795
Sam	Saenz	17514		720
Glenn	Feveryear	24931	503	654
Scott David	Orr	76322	113	650
Greg	Bock	44161	205	650
Trip	Barber	4322	205	638
Robert	Edmonds	37700	205	618
James	Duffy	73627		609
Rick	Polzello	77912	581	588
Tom	Secrist	12463	113	574

Name		NAR #	Section	Points
Jim	Pommert	16908	578	476
Robert	Geer	77966	568	464
Ed	Romani	79677	593	453
Andrew	Hocheimer	74538	205	434
Tom	Ha	76754	139	401
Abigail	Chang	70954	568	392

Team Division:

Team Name	NAR #	Section	Points
Calvin & Hobbs	T-721	205	2670
Older But Wiser	T-032	308	1666
Metastable	T-009		1506
Murphy's Lawyers	T-999	139	1440
Grumpy Old Men	T-255	139	1338
Throttle Up	T-365	365	1248
Scooby & Shaggy	T-124	365	1230
The BLT	T-369	308	1218
Ho-Ho	T-207	205	864
Sod Miners	T-432		783
Jeckyll & Hyde	T-001		510
That's Two Marks Against You	T-134	139	300
Impulsive Behavior	T-357	308	108
Newton's Grandparents	T-953	139	78

Sections:

Name	Section #	Points
NASA/Houston (TX)	365	9858
NARHAMS (MD)	139	6186
DARS (TX)	308	6117
NOVAAR (VA)	205	5874
CATO (CT)	581	5280
CSAR (OH)	113	2810
PSC (PA)	473	2607
MTMA (OH)	606	978
ASTRE (NY)	471	880
QUARK (OH)	624	826
Wash Aero (WA)	578	776
SPAAR (PA)	503	654
SEANAR (WA)	568	572
SOJARS (NJ)	593	453
NWARS (Ark)	634	192

Congratulations on your standings so far and good luck on the rest of the year!

Calendar of Contest and Special Events for 2001-2002

Jan 12 - Sport Launch cancelled. Bring your PMC, MicroMaxxen, a chair, and some food to Filler house.
Feb 1 - Business Meeting, bring in your current project
Feb 9 – Sport Launch, Love Your Groundhog theme (furry rockets with hearts)
Feb 23 - Field trip to Garber facility of Air and Space Museum
Mar 1 - Business Meeting, 1/4A RG led by Kevin Johnson
Mar 9 - Sport Launch, Pot-O-Gold spot landing with prizes!
Apr 5 – Business Meeting, B SRD led by Jennifer Ash-Poole
Apr 13 – Sport launch, OPOSSUM-6 contest, Don Brown CD
Apr 28 - Rockville Consortium of Sciences
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.
Jun 7 – Business Meeting, Oddroc discussion by John McCoy
Jun 8 - Sport Launch, V-2 theme starting at noon, 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, start at noon
Jul 21 - Goddard contest
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 am
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