



ZOG-43



FEBRUARY 2002



The mighty V-2 lives on in Estes' 1:19 scale kit. This model, painted in the 1944 ragged paint scheme was built by our own Dr. V-2, Paul Miller. Photo by Paul Miller.

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ZOG-43

Volume 24 Number 2
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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

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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 :

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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 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.

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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.

From the Editor:

Your Message from King Zog will return next month.

A lot has been going on in the club recently.. even though our last monthly launch (back in 2001) was scrubbed and we didn't have an official launch in January, many Micro Maxx rockets were sent to dizzying heights over the Filler's roof during the building session last month. Once again, we'd like to thank Jim and Lori for opening their home to us during our traditional start of the year break. A good time was had by all and the hospitality was excellent as always!

A new program for recognizing the accomplishments of outstanding achievements or service in our hobby was created last month: the (soon-to-be)coveted FROG award. This award (outlined in the following pages) allows NARHAMS to nominate those people that show adherence to the spirit of our section in the realms of public outreach, technical merit, advancement of our hobby, or other areas where the club membership feel that nominees are deserving.

Thanks all for the great submissions for the ZOG. I can't stress enough that this is the club's newsletter and you get a say in what's included. If you see a thread on r.mr. that you think our non internet members might find interesting, send it to me. If you want to see more plans, reviews, meeting minutes, etc., let me hear it. We have a special issue coming up and I hope that everyone will try and send in an article or photo for our Year in Review issue scheduled to be printed for ECRM-29 in May. Why send in photos? To highlight who we are and what we did as a club last year. And since this is planned to be the long awaited full color printed issue, I'd like to have as much color as possible throughout the newsletter. I'm going to pull a few selected articles from last year's ZOG-43's, but would love to see some new articles from our members. Send your submissions to me via snail mail or email at zog43editor@yahoo.com.

I got a comment on a recent article from Bernard Biales regarding the protest he made at the FAI fly-offs. He wanted to point out that his official protest was successful and the oath was overruled.

Bubbles the Librarian has found a large gap in her back issues of ZOG-43. If you have any issues from the 70's or 80's acting as insulation in your basements or attics, she would love to get at them. The issues will be copied and returned (or left in the archive as originals if you'd like) for eventual inclusion in the definitive on-line electronic archive of NARHAMS history. Please contact Jennifer Ash-Poole if you have any of this lost information

Don't forget to look at your mailing labels! They show you the type of subscription you have as well as the expiration date. Almost everyone is good until the end of the year, but if you see this is your last issue, see Ed or myself at a meeting, or send in a check for your subscription. It easy to pay for your dues and subscription at once!

Kevin

LAUNCH WINDOWS**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

SPORT LAUNCH

Pot-o-Gold Spot Landing contest (with prizes!)
Middletown Park
March 9th 10am-4pm

SPORT LAUNCH/OPEN MEET

OPOSSUM-6 Don Brown, CD
Events are: B Super-Roc Duration
1/4A Rocket Glider Duration
1/2A Helicopter Duration
1/2A Parachute Duration
Middletown Park
April 13th 10am-4pm

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.

For Rocketeers Of Greatness (FROG)

As reported on www.narhams.org

Purpose: In a section of outstanding individuals, the NARHAMS award For Rocketeers Of Greatness (FROG) is intended as a formal recognition of individuals whose accomplishments are clearly singular.

Frequency: NARHAMS FROGs, if awarded, are to be awarded once annually.

Eligibility: FROG candidates must be NARHAMS members, ex-NARHAMS members, or NAR members whom the section believes embody the subjective spirit of NARHAMS.

Qualification Considerations: Eligible candidates must have performed truly sterling accomplishments that set them above the pack of other outstanding individuals. These accomplishments must qualify as milestones for the club, the Association, or the hobby.

Nominally, FROGs will be awarded for groundbreaking milestones achieved in the previous calendar year. FROGs, however, may be presented for recognition of earlier years accomplishments.

Number of Awards: Recognizing that in a year that there may have been outstanding individual accomplishments, but none that are truly groundbreaking, the section may choose not to make a FROG award.

Recognizing that in a year it is possible for two or more individuals to have made truly singular and different accomplishments but yet to avoid diluting the honor and prestige of receiving a NARHAMS FROG, the section will award no more than two FROGs per year.

If the milestone accomplishment is shared, e.g., in the case of a competition team presenting a truly revolutionary R&D report or other sterling collective accomplishment, a FROG can be awarded as shared.

In other words, there can be no FROGs awarded or up to two FROGs awarded annually, and a FROG can be awarded to two or more people if the cited accomplishment is shared.

Nature of Award: Unless the section decides on a different appropriate commemorative article, FROGs will be awarded in the form of a plaque given to the individual that cites the successful winner(s), the achieved milestone accomplishment, the year of the award, the section's name and the name of the award.

For the remainder of the calendar year, FROG winners' names will be published in ZOG-43 and otherwise preserved with the cited accomplishments in NARHAMS permanent archives.

Cost of Awards: Until the section decides otherwise via vote, the cost of a single FROG will not exceed \$65 including tax.

Award Determination: FROG candidate nominations will be made during the February business meeting or in case of no February meeting, the club's next-held general business meeting.

Nominations must be made by people physically present at the meeting, although voting may be done in corpus or real-time virtually if such a vehicle is available. Virtual votes will be permitted if the club member is an NAR member and current in NARHAMS dues.

Individuals nominating candidates must state the milestone accomplishment or rationale for nominating candidates.

Proxy voting will not be accepted and all FROG balloting will be public.

Candidates will be considered who receive at least one-half of the eligible votes. If there are no considered candidates, the FROG will go un-awarded.

If there is no more than one considered candidate, then that considered candidate will be the NARHAMS FROG recipient. If there are two considered candidates, each candidate will receive a FROG.

If there are more than two FROG considered candidates, there will be a run-off vote on the candidates for FROG selection. As many as two FROGs can be awarded to different candidates based on subsequent voting of the highest number of eligible votes cast. However, as with the nomination consideration process, for a runoff candidate to be successful, the considered candidate must receive at least one-half of the eligible votes. In case of tie votes for a FROG, there will be subsequent runoffs until winners are chosen.

Because votes may determine up to two successful candidates, voters can vote for more than one candidate during the candidate consideration and runoff voting.

The club president may vote for a FROG candidate; no prejudice will be shown to any nominated candidate who decides to defer voting, votes for him/herself, or votes for other candidates.

Tiny Polish Rockets

By Tom Anderson, NAR 61134

Andy Jackson of Aerospace Specialties has made a line of Micro Maxx sport scale rocket kits, and the first one I built is the Polish RP-3 sounding rocket of the 1960's. When I first received the kit in the mail, my reaction was aaahhhhh!![as in "isn't it so cute!" – Ed.] Inside the packaging, I saw tubes, a nice basswood nose cone, a pretty wraparound decal, nose weight, and sheet styrene that had to be cut. I thought to myself, "I'll never be able to cut those fins out and line them up anywhere near straight". Fortunately, Aerospace Specialties makes it easy for you.



Tom's RP-3 stands out on the flight line with other Micro Maxx birds.
Photo by John McCoy

Included with the kit are patterns for both the bottom and mid-body fins that can be taped to the sheet styrene with two sided tape—each pattern has the cut outs for all fins made from each sheet. If you like, you can also use two sided tape to fasten the styrene to your cutting board. This technique made

it very easy to make good looking fins. Despite my skepticism about how firmly the fins would attach to the body, ordinary CA glue works great-so far, I have not broken a fin off of any ASP Micro Maxx kits. If you like, you can add small fillets if strength is a concern.

The moral of the story is-don't be scared by first impressions (at least not with these kits). The rest of the kit went together very easily-just follow the directions, especially with the nose weight that doubles to hold the shock cord in the forward body. The only modification I might recommend to experienced builders is a less conspicuous launch lug; the one included in the kit works great, but may reduce points if you enter your RP-3 in sport scale events.

As it came time to fly the RP-3, the hopes of the citizens of the Polish Republic stirred as the mighty engine roared to life shattering windows for a twenty mile radius. Thundering from the pad, the dreams of the entire world rose with the...oops, wait, must be thinking of another historic launch.

Returning closer to Earth, the Micro Maxx RP-3 puts in a very solid performance, flying very straight to about 100 feet. Even in a slight wind, the mid-body fins have no affect on the RP-3's trajectory-it is reliable and safe. Although you get a streamer for recovery, I haven't used it; the model is light enough that simple nose blow recovery brings it down undamaged every time.

For about five bucks, you can't go wrong with the ASP Micro Maxx RP-3. Not only is it cute, but it is a solid flyer that shows that rocketry excitement comes in all sizes.

Vergel Tungswaffe-2 Aggregat-4

By Paul Miller, NAR 51615

It's back! The Maxi Brute 1:19 scale V-2 is back! This is Ed Pearson's Centuri V-2! This is the same Estes 1267 V-2 from the seventies. Of course, it was \$19.95 in the 70s catalogs. Now it can be yours for ONLY \$34 more. I got a 20% discount at Scott Branche's favorite hobby shop (HobbyWorks in Laurel).

In the box, you will find a longer engine hook for the Estes E9 motors, and an orange adapter to fly those mighty Ds. The decals are the same stickers found in the Estes 1904 BT-780 sized V-2, so they are too small for this model. The rest of the parts list remains the same. The photo on the box is that of the smaller V-2. This representation on the box fails to match any known paint scheme for the V-2.

The nose cone and boat tail are really close to the real rocket. My nose cone was slightly deformed on one side so it was necessary to add body filler to correct it the fins are a good match as well, but they are misshaped and flimsy. They remind me of the yucky fins on the large Estes Honest John. It was impossible to form reasonably true fins.

Construction of the engine mount and associated parts was facilitated with 15-minute epoxy. A wooden dowel is used to make four tapered antenna pieces. Everything fits nicely into the 10.5" BT-101 body tube. Then there are the fins. Oh yes, those four feeble, frustrating fins. To conquer the fins you will need Testor's Model Master liquid cement, several sharp Exacto #7 blades, tape, sandpaper, 3 Band-Aids and lots of patience. By the way, this kit requires 5 types of glue or epoxy and a whole tube of Squadron white putty. Have fun getting them.



The Estes 1:19 scale V-2 under construction. Photo by Paul Miller

Each of the four fins comes on a sheet with the two halves pressed into the plastic. Your task is to carefully cut out each side and finish them to fit well together. One must glue the halves of each fin with tube-type plastic cement. Then the excess plastic around each jet vane must be trimmed away. This procedure was a tedious and dangerous chore. I nicked my fingers 3 times with the Exacto knife. You continue by sanding away the remaining flange material along the leading edge of each fin. The edges are sealed flat to fit snugly against the boat tail.

Fortunately, the other facets of this model's construction are not as challenging. I used the Squadron plastic modeling putty to apply fillets along the fin joints. The putty shrinks so three coats were needed to achieve acceptable results.

Light coats of Krylon's gray primer initiate the finishing process. This highlights flaws in the construction which can be easily repaired. For the V-2 paint wrap I chose the A4 B version of the Gezack (Ragged) scheme. This was first used by the German army in 1944. Three colors were employed: RALL 9003 Signal White, RAL 7028 Earth Gray, and RAL 6003 Olive Green. This was much easier to mask and apply than the A version of the Test Scheme 3 employed on a previous V-2. All four 90° views of this simpler paint scheme are available in numerous V-2 references. Testor's Model Master Custom Spray Enamel is compatible with Krylon

Primer. Therefore, I carefully chose 1963 Desert Sand for RAL 9003, 2910 Sand Beige for RAL 7028, and 1913 Medium Green for RAL 6003. RAL (Reichsausschuss für Lieferbedingungen) colors are occasionally available in jars of paint, but I am not comfortable with my airbrush. If you can acquire these spray enamels make sure you start with full cans. Two cans of the same color don't seem to exist. To further complicate matters, the same color in a Testor's jar is usually much darker.



The V-2 is primed and ready for the Ragged paint scheme of 1944.
Photo by Paul Miller

I use a quality masking tape to avoid bleeding. I drew an outline in pencil over the primer using p. 330 of Dieter Hölsken's V-Missiles of the Third Reich as a guide. I masked to paint the lightest color first and the darkest last. I sprayed to cover evenly but sparingly. I used each spray for touch ups by collecting paint in a folded note card, utilizing a #0 brush. After two light coats of Krylon 1301 Crystal Clear, I placed only the numbered decals on the body tube. The remainder are much too small for this larger scale model, and this should be considered to be another example of the Estes "save a buck" policy. Krylon Satin culminated the painting procedure.

It took 9 days of spare time to complete this model despite a demanding paint schedule. This was definitely assisted by beautiful, warm and low humidity weather. In retrospect, this V-2 was a Level 4 effort for me, especially since I wanted to do it right. I think the model looks great, even better when seen from a great distance. Ultimately this V-2 is a good **sport** scale model claiming a 1:19 scale ratio. Numerous details are missing. The decals are a major disappointment.

The body outline is close, but not perfect. It is super light. It should fly marginally on the D12-3 and well with the E9-4 motor.

The EST 1952 V-2 instructions state that the Estes Porta-Pad E Launch Pad (EST 2238) and E Launch Controller (EST 2230) should be used to fly this model. Frankly, my life experience has failed to encounter these items. (*For those less sheltered than our reviewer, both items have been spotted at HobbyWorks in Laurel and Rockville. – Ed*) It is suggested that masking tape be attached to the 3/16" launch rod 8" above the deflector plate when taking this rocket to lunch, oops... launch.

Thus a Maxi Brute V-2 becomes the 20th model to join my Vengeance Weapon fleet. Will I build another? Probably not because of what you get for the \$53.99 retail price, personal injury to 3 digital body parts and 18 hours of rocket fever. Yet I love all 360 grams and 851 millimeters of it. After all, the V-2 will always be my favorite ground-to-ground missile.

NASA News

Compiled by Jennifer Ash-Poole, NAR 61415

EUVE Spacecraft Re-Enters Earth's Atmosphere

NASA's Extreme Ultraviolet Explorer (EUVE) re-entered the Earth's atmosphere at approximately 11:15 p.m. EST Wednesday. According to calculations made by the United States Space Command Space Control Center, EUVE re-entered the atmosphere over central Egypt. Using U.S. Space Command data, engineers calculated EUVE's orbit track and predicted where it could re-enter the atmosphere.



EUVE de-orbited this past Wednesday.

EUVE did not have an on-board propulsion system to allow engineers to control the spacecraft's re-entry. EUVE was in a 28.5-degree orbit and could re-enter in any location within this orbit range. This range included areas as far north as Orlando, Fla., and as far south as Brisbane, Australia. The object was not designed to survive re-entry intact and was expected to break apart and mostly burn up in the atmosphere. U.S. Space Command cannot confirm if any pieces survived re-entry.

Mars Odyssey Probe Settles into Science Orbit

By SPACE.com staff

NASA's Mars Odyssey spacecraft settled into its final orbit Wednesday and is now prepared to begin its science mission.

The craft reached Mars Oct. 23 and engineers have been gradually refining its orbit from an elongated one that took the craft far from the Red Planet to a nearly circular one that is 249 miles (400-kilometers) above the planet.

"We are now in our final mapping orbit and we don't expect to perform any additional maneuvers to change the orbit," said Bob Mase, Odyssey's lead navigator at NASA's Jet Propulsion Laboratory.

At 3:14 p.m. ET Wednesday, Odyssey fired its thrusters for 25 seconds and decreased the velocity of the spacecraft by less than 2 meters per second (less than 4 miles-per-hour). On Monday, a similar 15-second firing had increased the probe's speed by a little more than 1 meter-per-second (about 2.5 miles per hour).



*The Mars Odyssey orbiter took up position over Mars.
Image from www.space.com*

"These small orbit trim maneuvers complement the larger maneuvers we executed two weeks ago and tweak the orbit to get just the right altitude and ground track coverage that we desire," Mase said. "The net effect is that we move the periapsis point, the point nearest the planet, directly over the south pole and keep it there."

The mission's major goal is to map the amount and distribution of chemical elements and minerals that make up the Martian surface.

Engineers continue to check out the spacecraft systems and science instruments in preparation for the science mapping mission that will begin in February. Two of the science instruments, both neutron spectrometers that are part of the gamma ray spectrometer suite, are currently operating and collecting science data about the composition of the Mars surface.

One important task is to follow up on preliminary observations in December that indicated vast reservoirs of hydrogen near the surface, which could indicate the presence of water ice.

Current Launches

Feb. 5: Orbital Sciences Pegasus with NASA's HESSI staged from the Canaveral Spaceport. 3:21 to 5:21 p.m. EST

Feb. 8: Boeing Delta 2 with Iridium from Vandenberg Air Force Base. 12:59 p.m. EST

Feb. 13: Air Force Titan 2 with a Defense Meteorological Satellite Program spacecraft from Vandenberg Air Force Base. 11:17 a.m. EST

Feb. 20: Arianespace Ariane 44L with Intelsat from Guiana Space Center.

Feb. 21: International Launch Services' Atlas 3 rocket with Echostar communications satellite from Cape Canaveral. 7:13 a.m. EST (1213 GMT).

Feb 28: STS-109 Columbia to service Hubble Space Telescope from Kennedy Space Center.

Feb. 28: Russian Soyuz with Progress 7 freighter for the International Space Station from Baikonur Cosmodrome.

Feb. 28: Arianespace Ariane 5 (return to flight) with Envisat from Guiana Space Center. 8:07 p.m. EST.

March 5: Eurokot's Rockot with a pair of Gravity Recovery And Climate Experiment (GRACE) satellites from Plesetsk Cosmodrome.

March 6: Air Force Delta 2 with GPS 2R-8 from Cape Canaveral Air Force Station. 6 p.m. EST (2300 GMT).

March 8: International Launch Services Atlas 2 with NASA's Tracking and Data Relay System-I satellite from Cape Canaveral Air Force Station. 5:39 to 6:19 p.m. EST (2239 to 2319 GMT).

April 4: STS-110 Atlantis to the International Space Station from Kennedy Space Center.

April 10: Arianespace Ariane 4 with SPOT-5 from Guiana Space Center.

April 18: Boeing Delta 2 with NASA's AQUA-EOS PM from Vandenberg Air Force Base. 4:54:50 to 5:04:50 p.m. EST.

April 25: Russian Soyuz with taxi ferry crew (includes "tourist" Mark Shuttleworth) to the International Space Station from Baikonur Cosmodrome.

April 28: Air Force Titan 4 with a National Reconnaissance Office payload from Cape Canaveral Air Force Station.

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.

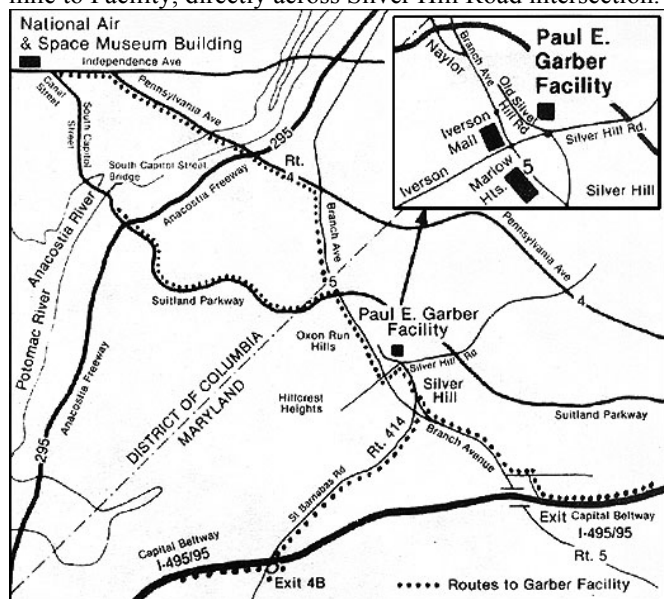
2) (Alternate shorter route) Take Suitland Parkway 1/2 mile inside Maryland state line to Branch Avenue (Rt. 5 South). Turn right on Branch Avenue; go 0.8 mile to Iverson Mall (on right); make left at stoplight; go one block; turn left again; Facility is on immediate right.

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.



Calendar of Contest and Special Events for 2001-2002

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>

Hey, You! Wanna build a 1/4A RG?

If you'd like to build a new kit designed for low impulse RG at the March building session, please contact Kevin Johnson. He needs to know how many kits to get from Edmonds Aerospace. Send Kevin an email at kevinj@softmed.com or call him at 240-461-9307.

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