

THE ZOG-43

The Newsletter of NARHAMS, NAR Section #139.
NAR National Champions 2001, 2004

1965-
2005



40th
Anniversary



NARHAMS LIGHTS UP ANOTHER NIGHT:

Sept. 10, 2005 Night Launch report

Reported by **John McCoy NAR-15731**

Another long day's sport and record attempts launch lead to a very relaxing evenings flying at this years second scheduled Night Launch.

We Shut down daylight operations around 5:30 pm to allow folks time to get something to eat and prepare for the evening activities, stowing as much of the daytime gear as possible to shorten final take down time. Thomas was enlisted to attach blue 4" cylume glo-sticks to the perimeter rope, and we set up the red lens rack lighting as usual. Range change over was completed before 6:30.

Seemed like forever before ol'e man sun decided to set behind the mountains. Dr. Kidwell was on camera to capture a very nice sunset and many of the evening's flights. If you haven't had a chance to look in the photos section on the Narhams group list, This night launch folder is worth a look. While we waited for darkness to fall, a couple flyers set up models to open the Dusk flying.

Yours truly has had his 4 motor cluster micro-maxx powered Micro Night Ranger prepped and

ready for flight since our spring night launch. Using Quests new Q2 igniters all would have gone much better if she hadn't hung up on the rod, but it still gave nice lift-off photo opportunity.

At 7:50 night flying was underway. Folks were still holding back waiting for it to really get darker. I took the opportunity to count heads in the gathering peanut gallery. It was just getting dark enough that I couldn't make out all the faces but I believe many of the 36 total were locals who came out to watch setting up on the pond side of the range.

By the time we closed down the range somewhere in the neighborhood of 9:15 we had managed to make 30 flights, burning 38 motors ranging for Micro-Maxx to G's by 13 participants. If everyone's flight cards are complete we had a pretty good mixture of impulse levels: 4- MM-II's, 3-A's, 7- B's, 15-C's, 5-D's, 1-F, and 3-G's. 5 listed Odd-Rocs, 4- Saucer flights, 3 Gliders, 3 Cluster motor flights and 1 Monocopter.

David Jarkey's G-powered monocopter

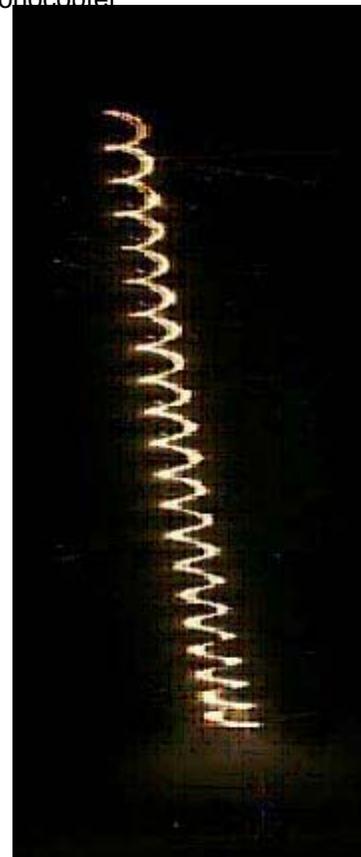


Photo by Chris Kidwell

OCTOBER 2005
VOL 27 ISSUE 10

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ZOG-43

Volume 27 Number 10
October 2005

ZOG-43 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- 43 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 -43 is published monthly and is available to anyone on a subscription basis. Current rates are \$10 for meeting pickup or email or \$15 for postal mail U.S. Funds for 12 issues a year, payable to NARHAMS Material in ZOG -43 is not copyrighted. Free and unlimited reproduction is granted with the proper credit to the author and/or ZOG-43.

For more information.....

If you have any questions about ZOG-43 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-43 is edited by Roy Lappalainen, and is an eight-time winner of the NAR/LAC "Rockwell" Trophy, recognized as the best NAR section newsletter.

Years won: 1969, 1973, 1975, 1990, 1991, 1992, 2003, 2004 & 2005

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

Photographs: by Roy Lappalainen, except where noted.

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This Edition: 35 copies

NARHAMS ON THE WEB

<http://www.narhams.org>

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



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 five time winner of the NAR "Section of the Year" award.

Years won: 1997,1998,1999, 2001, 2004

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 the first Sunday 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 Saturday of the month from 5:30 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.

ZOG ROYAL COURT

(NARHAMS OFFICERS)

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(Section Advisor)

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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.



October's Message from The Zog

The end of the summer can be a big letdown. The long days for getting things done outside are slowly getting shorter. NARAM is over with, kids start school, NARHAMS has elections, and the rockets we planned on building and flying are put away for the winter building session.

I did not get nearly as many rockets done and flown as I thought. However, I have actually gotten a couple more things off of my New Year's Resolutions list. I tried out for the World spacemodeling team and I had fun flying rockets. OK, I am still behind on the Silver NARTREK and gold. I still have 4 more months (I actually started building a cluster model, so I am working towards it.)

But all is not lost for fall and winter! Coming up is the planning meeting in October, along with an open meet we moved from the spring. The TARC teams are starting to form,

so if you aren't on the mentor list, email Trip Barber about going onto the list.

Take a look at this past year, and figure out what you wanted to do rocket wise, and see if we can incorporate it into the NARHAMS schedule for next year. The paratrooper spot landing was a hit (and just a comment from Cumberland Ed on the email list.) So think of things you want to build, and we'll try to put them into the planning meeting.

Zog Publishes



X-15 on Return

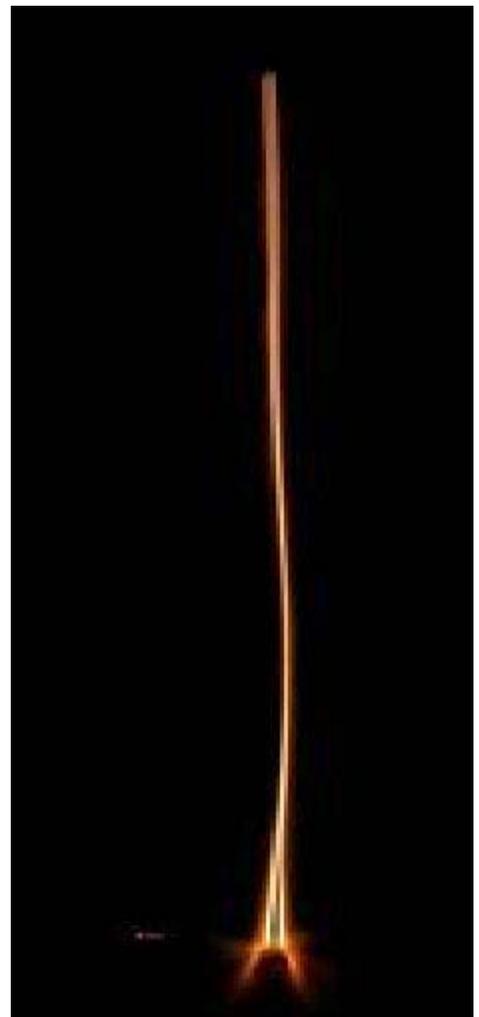


Photo by Chris Kidwell

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Show your NARHAMS membership card and receive a
20% discount off rocket kits, motors, and building supplies!!

Improbable Bulls-Eye

by Dr. Tony Phillips

Picture this: Eighty-eight million miles from Earth, a robot spacecraft plunges into a billowing cloud almost as wide as the planet Jupiter. It looks around. Somewhere in there, among jets of gas and dust, is an icy nugget invisible to telescopes on Earth—a 23,000 mph moving target.

The ship glides deeper into the cloud and jettisons its cargo, the “impactor.” Bulls-eye! A blinding flash, a perfect strike.

As incredible as it sounds, this really happened on the 4th of July, 2005. Gliding through the vast atmosphere of Comet Tempel 1, NASA’s Deep Impact spacecraft pinpointed the comet’s 3x7-mile wide nucleus and hit it with an 820-lb copper impactor. The resulting explosion gave scientists their first look beneath the crust of a comet.

That’s navigation.

Credit the JPL navigation team. By sending commands from Earth, they guided Deep Impact within sight of the comet’s core. But even greater precision would be needed to strike the comet’s spinning, oddly-shaped nucleus.

On July 3rd, a day before the strike, Deep Impact released the impactor. No dumb hunk of metal, the impactor was a spaceship in its own right, with its own camera, thrusters and computer brain. Most important of all, it had “AutoNav.”

AutoNav, short for *Autonomous Navigation*, is a computer program full of artificial intelligence. It uses a camera to see and thrusters to steer—no humans required. Keeping its “eye” on the target, AutoNav guided the impactor directly into the nucleus

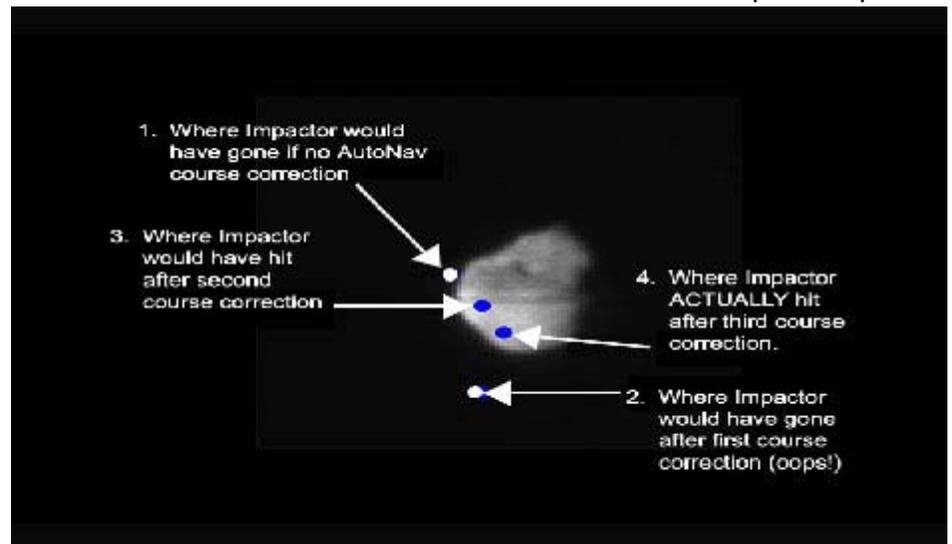
The system was developed and tested on another “Deep” spacecraft: Deep Space 1, which flew to asteroid Braille in 1999 and

Comet Borrelly in 2001. The mission of Deep Space 1 was to try out a dozen new technologies, among them an ion propulsion drive, advanced solar panels and AutoNav. AutoNav worked so well it was eventually installed on Deep Impact.

“Without AutoNav, the impactor would have completely missed the nucleus,” says JPL’s Ed Riedel, who led the development of AutoNav on Deep Space 1 and helped colleague Dan Kubitschek implement it on Deep Impact.

En route to the nucleus, AutoNav “executed three maneuvers to keep the impactor

Continued on Page 9...



Comet Tempel 1, as seen by the Deep Impact impactor’s camera. Three last-minute AutoNav-controlled impact correction maneuvers enabled the impactor to hit the bulls-eye.

Forty Years Ago — Part Two

by Ed Pearson, Senior NAR 5694

The week of NARAM-47, NARHAMS entered as reigning NAR Section Champion, Section of the Year, and Section Newsletter Award winner. A record number five members tried out for the U.S. Spacemodeling Team, including a junior member aspirant, Katherine Humphrey—and who earned herself a team slot.

Forty years ago, there wasn't a Best Section Award¹, a section newsletter award², or even a world championship³, let alone a U.S. team. Forty years ago, there was a NARAM however, and the newly chartered NARHAMS flew in it. These articles continue telling of the origins of NARHAMS, our first regional contest and what happened at NARAM-7. In this breathtaking installment, information is provided on our club's formation.

We pick up where Part I (ZOG-43, August 2004) left off: Rusty, Paul, Doug and I returned from NARAM-6 (Wallops Island, VA 1964) dog tired but burning with enthusiasm. We had met peers and competitors from around the country and Canada who shared our interests in model rocketry. Many were much more experienced flyers with boost gliders we hadn't even dreamed of (the Guill's Goose canard) and ambitious scale models (e.g. two stage 2.5 foot long Aerobeas).

I arrived home after the week-long NARAM to find my first NAR membership card awaiting me.

As school started in September of 1964, the NMRC (Northwestern Model Rocket Club) started its second year. A confluence of events occurred: NARAM was addictive, Casey (Jim Kukowski, NAR's Executive Director, who lived in Rockville) was still bugging us to form a section, and we came upon the realization that school clubs have members for a finite time (while they are in school!). Something with our interest had to last longer.

Speaking of outside the school, Howard Galloway (a NASA GSFC aerospace sounding rocket engineer) tired of waiting for someone else (us!) to form a club and chartered the the Star Spangled Banner (SSB) Section of Arbutus, Maryland. Later it would become NAR section 156

of Severna Park, if memory serves, but we didn't have section numbers in those days and thus (did you read the footnotes?) SSB became the first Maryland NAR section. SSB's members were almost entirely female as Howard was a Girl Scout Troop Leader (Silver Musk Ox with two broken arrows?) and got his troop's young ladies to join.

Pat Stakem of Cumberland was next and formed LaSalle Association of Rocketry, named after La Salle High School (since torn down, I understand).

We heard of other area school rocket clubs and invited them to join our fledging (organizing but still unchartered) section. The memory fails somewhat, but I think three other clubs joined us with one-four members from each of them (Bob Wallace of Woodson High, Mark Mercer heading a crew from Walt Whitman, and Karl Kratzer of Pyle Junior High with some members (all three schools

Continued on Page 8...

Calendar of Events for 2005

Oct 1- 5 - 10 pm Monthly meeting, leftover parts scratch building (Jim Miers)

Oct 2- 1 - 2 pm Goddard Public Launch and AIAA Picnic

Oct 8- 10 am - 4 pm Sport launch, Oktoberfest theme, microbrew launch

Oct 8-9 SCST-5 Jonesboro, PA

Oct 22 Planning Meeting

Nov 5- 5 - 10 pm Monthly meeting, glider building session (Robert Edmonds)

Nov 6- 1 - 2 pm Goddard Public Launch

Nov 12- 10 am - 4 pm OPOSSUM-10

Dec 3- 5 - 10 pm Monthly meeting, holiday party

Dec 4- 1 - 2 pm Goddard Public Launch

Dec 10- 10 am - 4 pm Sport launch

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 Questions? Call Club President Jennifer Ash-Poole at 410-674-6262 or visit NARHAMS online at <http://www.narhams.org>

Picture Page



Photo by Chris Kidwell



Photo by



Photo by Maria Ha





Photo by Sharon Lappalainen



Photo by Maria Ha

RHAMS

are in Montgomery County; the last two in Bethesda).

We held an election meeting to name our club and select officers in early 1965. At the time I was NMRC president and proposed the club be named DART for District Area Rocket Team; Doug Frost proposed NARHAMS.

Our club had helped Casey open the Arthur Godfrey Airport (now known as Manassas Regional Airport) in 1964 with a model rocket demo and it seemed like we would be doing other gigs for the NAR in the upcoming months. DART seemed like a cute acronym to me.

But the club had also been regularly helping Casey send out the Model Rocketeers and helped at least twice move NAR HQ offices (first at 1239 Vermont Avenue in North West Washington, then to Park Street and later to Grandin Circle in Rockville—"Rocketville" we called it). Doug felt the NAR Headquarters Astro-Modeling Section was more appropriate and he promoted the idea of us hamming it up. We decided NARHAMS as the club name.

Doug and I both ran for president, and at the time Doug was president of the school's science club—a much bigger organization with broader interests than the NMRC. We both gave campaign speeches (shared our visions...and for many years this was an annual NARHAMS election night



Photo by Chris Kidwell

ritual—even if running unopposed). Neither of us had thrown our hats in for any other slots. I must have been on the mark that night and was elected as the first club president.

Mike Domanski of Bethesda ran for both president and vice president and was elected vice president. I never saw him again.

Alex Vella was an adult who worked at one of the high-tech industries dotting the largely rural and unpopulated 70W leading from Rockville to Fredrick (later renamed I-270). He was selected as the senior advisor, and came to a couple launches and meetings before other interests took him away.

I am thinking Bill Holmes was probably elected the secretary. Bill was tall and lanky who made some nice rockets, could play the piano like no tomorrow, was the fastest typist in Miss Cleary's predominantly-male typing class (Miss Cleary was a new teacher and had recently won the Miss Maryland beauty pageant), and was legally blind (Bill not Miss

Cleary—see what happens when you say beauty contest). But he took good notes and so was our secretary. If it wasn't Bill, it was Karen Summerfelt who later became Bill's girlfriend.

Someone will dig up the archives to help, but I imagine John Newquest was treasurer. John had one of the few drivers' licenses in the club, permission to use the family car, and had his house within the closest walking distance of the school of any of the members. (The author remembers about five of us piling into his dad's Corvair one evening—Unsafe at Any Speed came out that year I think—and driving to Walt Whitman on River Road via the beltway. The speed limit on the beltway, which opened around 1962-3, was then 70 mph. John went faster and we arrived in 20 minutes after takeoff. I vowed to myself never to drive with John again. Since then John, as an adult, won the Brickyard 500 four times in NASCAR—now I am only kidding about this).

We sent our money in and later in March 1965 held our first section meeting. It occurred at the house of George and Doug McMullen who lived in Lewisdale (also known as West Hyattsville and a stone's throw (using a trebuchet) from Adelphi and Ledos.

During that year, the NARHAMS took up competition and vied with

RECORD TRIAL LAUNCH REPORT

Reported by Dr. Chris Kidwell

NARHAMS held its first Record Trial in recent memory on September 10. A record trial is an NAR sanctioned competition that allows contestants to make as many attempts as they would like to set new US model rocket records. In general, any event that does not require judging and does not have a "perfect" score, is eligible for records. The current list of records is available at <http://nar.org/NARrecords.shtml>. Participation was rather light with only 3 contestants: John McCoy, Roy Lappalainen, and myself (competing as Mostly Harmful team).

We had two baselines setup in the morning to support a wide range of altitudes: our standard 300-meter baseline, and another 107-meter baseline for lower altitude flights. As it turns out, every flight that was made for the contest was for 1/8A events, so the longer baseline wasn't even used. Many thanks to Jennifer Ash-Poole and Paul Conner who were called into service as trackers. Unfortunately, the very small models made their jobs incredibly difficult. There is a very fine line between packing enough powder for the trackers to see the cloud, and packing so much the MicroMaxx ejection charge can't push it out. Of the 6 flights attempted, only 1 resulted in a closed track, with Mostly Harmful setting a new record in 1/8A Super-Roc Altitude with 1525 points (61 meters).



Photo by Chris Kidwell

In the afternoon, we opened the competition up to duration events, but the success rate wasn't much higher. John had 2 great 1/8A flexie flights that were still going up when the timers lost them after 5 minutes. John also made numerous attempts at 1/8A boost glider but was plagued by red barons and was never able to beat Jeff Vincent's record of 29 seconds. He was successful in beating his own 1/8A helicopter record with an impressive 64 second flight. Roy made one attempt at 1/8A streamer, but did not get the streamer to deploy. Mostly Harmful set a new record in 1/8A boost glider, with a time of 49 seconds, and broke the old record of 4 seconds in 1/8A rocket glider with a time of 33 seconds.



Bulls-Eye, Continued

14 light-minutes away (round trip) on Earth, too far and too slow to make those critical last-minute changes.

Having proved itself with comets, AutoNav is ready for new challenges: moons, planets, asteroids ... wherever NASA needs an improbable bulls-eye.

Dr. Marc Rayman, project manager for Deep Space 1, describes the validation performance of AutoNav in his mission log at <http://nmp.nasa.gov/ds1/arch/mrlog13.html> (also check [mrlog24.html](http://nmp.nasa.gov/ds1/arch/mrlog24.html) and the two following). Also, for junior astronomers, the Deep Impact mission is described at <http://spaceplace.nasa.gov/en/kids/deepimpact/deepimpact.shtml>

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

We saw many more LED illuminated models than Cylume illuminated, with a strobe or two in the mix as well.

Robert Edmonds Gliders were as usual a very neat visual effect. While Jim Fillers "Triple Delight 3

David Jarkey flew two very interesting G powered flights. First his Red Light Bird House on a G motor that produced the coolest red flame. And my personal favorite; His VASTLY improved "Lamp Shade". On the Pad the Lamp shade illuminated an area with what must be a 15 to 25watt lamp of some kind making the launcher look like a floor lamp sitting out there waiting for someone to sit down beside it and begin reading. Most impressive, great job David.

Lots of other note worthy flights to many to list and I'm sure I'd miss someone.

I saw many interesting applications for LED illuminated jewelry, trinkets and do-dads. All in all a great time was had. We were off the field and out of the park by 9:50 pm.

Many thanks to all those who helped make this night event successful. Special thanks to all those who stayed to help with the final cleanup.



Photo by Chris Kidwell



Pratt Hobbies is proud to announce that we are now a QUEST dealer! Contact us for all your Quest and MicroMaxx
 p • r • o • d • u • c • t • s • . • .
 New T-Shirt! Check it out at www.prathobbies.com
 Mention your NARHAMS membership on the online order form for a Special Ludicrous Discount!

Greeting From Your Editor

First, I would like to thank Kevin Johnson for the outstanding job he has done for the club as editor of the ZOG 43. As most of you know Kevin officially stepped down as editor in September. The transition has not gone as smooth as I am sure either of us had hoped, but that's life and we will deal with it the best we can. Anyway, I am happy to report that I have just about come-up to speed on using the tools necessary for creating the newsletter, so I will soon be back on track with the production of regularly scheduled newsletters.

Election Results

After several months of campaigning, stump speeches and kissing babies, the election is finally over. In other words since the list of nominees were running unopposed all nominees were accepted. Jim Filler is now the new Section Advisor and yours truly is the new Vice President being pressed into service. I should have paid closer attention during the pirate presentation.

Fourty Years Ago, Continued
each other using experimental designs. Our club was one of a kind, with no adult leadership and largely well behaved. We did get into mischief and there was occasional horseplay but nothing bad I knew about. We eschewed kit models although no one in the club knew what eschewed meant. The other sections, and in fact the NAR, eyed us warily. Most were adult-led rather than participant-led and this made adult section leaders suspicious of us, in those pre-hippy and pre-expressive movement days with big changes in our society, just over the horizon.

In the next installment (and this year too) we'll pick up and talk about the First Free State Meet and NARAM-7.



¹The NAR Section of the Year Award was first awarded in 1996, 31 years after NARHAMS formation. In the following nine years, the NAR awarded NARHAMS this accolade five times.

² The LAC Newsletter Award was first awarded at NARAM-11, Colorado Springs, CO in 1969, and four years after NARHAMS was chartered. The NARHAMS was the first recipient of the award and has won it a record eight times (thus far, because how many times have you seen the word "thus" actually used?).

³ The first world championship was held in September 1972 in Vrsac, Yugoslavia, seven years after NARHAMS was chartered. Five NARHAMS family members including the author attended the meet.



McCoy's Micro Wonder Works

Micro 3X & 10X Thumbtack "Spool Odd-Rocs"

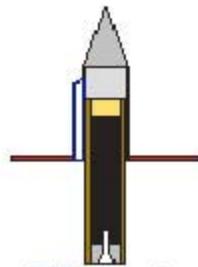
Original Design by: Bret Simpkins Richland, WA. Drawings & Down Scale by John McCoy
 Drawing Complete: 08-13-05 - Model 313 Complete: 08-14-05 - First 3X flight: 08-14-05 - Est: 1.8g

1 inch square

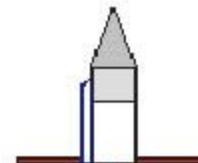


Disk Rockets in this configuration will have CP locations at 1.333 times the disc diameter BEHIND the disc.

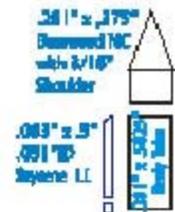
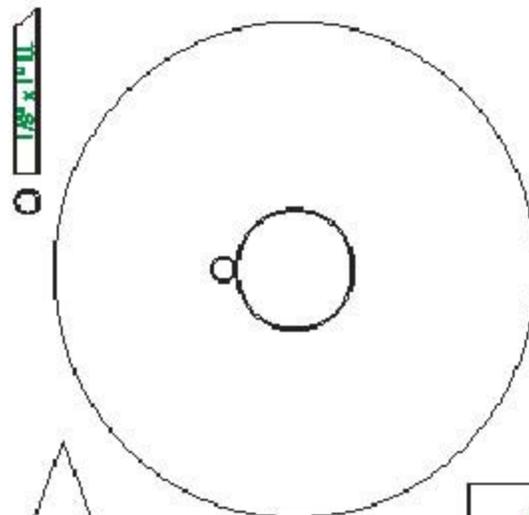
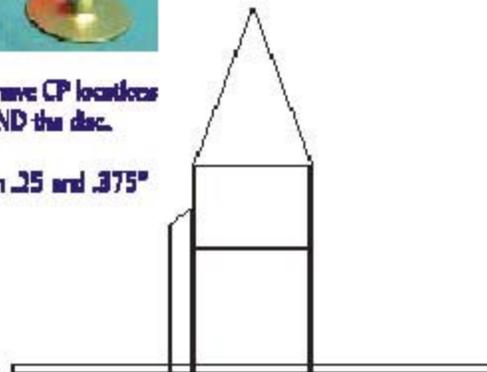
CG for the 3X micro should be between .25 and .375" Below the discs with a MM-II Motor.



Flight Ready Full Size



Full Size



10X Thumb-Tack 3" mini CD "Spool Roc" Full Size

.87-20
 .736" x 1.25"

DECEMBER ISSUE'S SUBMISSION
DEADLINE IS NOVEMBER 15!

October 8-9th
Jonesboro, PA
SCST-5 CONTEST LAUNCH

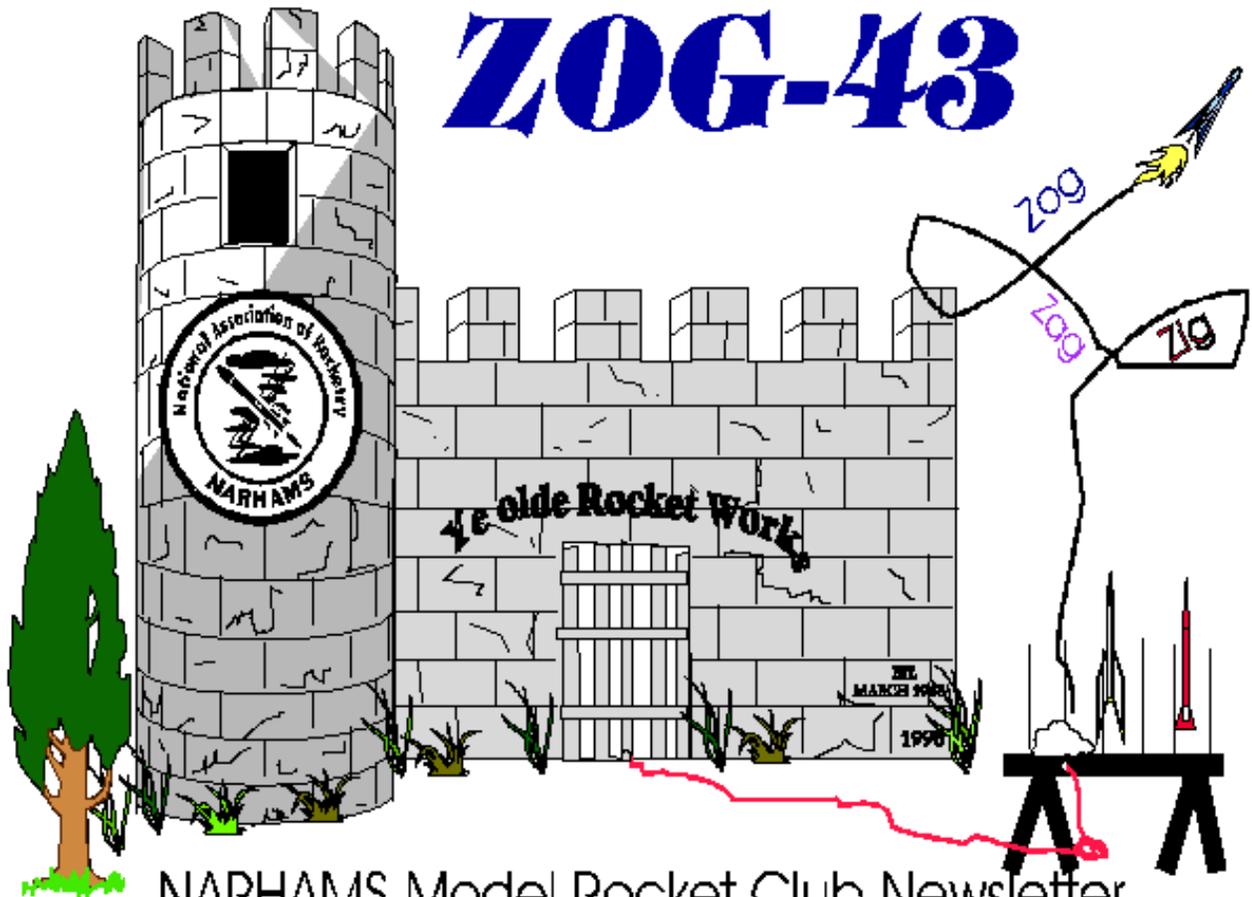
October 8th
9:00AM- 4:00PM
Middletown Park
SPORT LAUNCH

October 2nd
11:00AM
Goddard Visitor Center
AIAA PICNIC LAUNCH

Launch Schedule

206 - FORTY THREE
700 CLIVEDEN ROAD WEST
BALTIMORE, MD 21208

ZOG-43



NARHAMS Model Rocket Club Newsletter