



206-43



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Photo by P. Lam

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ZOG-43
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Official NARHAMS Newsletter
Editor: Don Carson

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 bi-monthly and is available to all paid up members of NARHAMS. Club membership is open to all, dues are 10 cent per week.

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ABOUT NARHAMS

The National Association of Rocketry Headquarters Astro Modeling Section, or NARHAMS, serves Baltimore, the state of Maryland, Washington, DC and the surrounding Metropolitan areas. The club is a section (#139) of the National Association of Rocketry (NAR).

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 seven time winner of the NAR "Section of the Year" award (1997, 1998, 1999, 2001, 2004, 2006, and 2007).

NARHAMS members regularly fly their model rockets at NASA's Goddard Space Flight Center in Greenbelt Md, at Old National Regional park near Mt. Airy, Md. and at the Carroll County Agriculture Center, near Westminster, Md.

NARHAMS welcomes all to our monthly meetings and launches.

For details, dates and directions to our club, meetings and launches, go to:

<http://narhams.org>

ZOG ROYAL COURT (NARHAMS OFFICERS)

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COLLECTOR OF THE ROYAL TAXES
(Treasurer) Maria Ha

KEEPER OF THE HOLY WORDS (Secretary)
Kevin Johnson

COURT JESTER (Section Advisor) Mark Wise

From the Editor **Don Carson**

Wow, do we have a packed issue! We have an exclusive look into the details of the world record, full scale V-2 launch from Tom Ha, as well as, the second part of his Thunda Down Under series.

Complimenting Part 3 of Ole Ed's History of NARHAMS, we have another eyewitness account of that era from none other than Doug Frost, NARHAMS #2! The NAR Historian, our own Jennifer Ash-Poole, provides us a history of our long running competition, ECRM, with some vintage photos.

There is coverage of six Outreach events, club launches, new range equipment, the Goddard Apollo 11 Contest, and NARHAMS support of the Team America Rocket Challenge.

We have the second of our Shop Spotlight columns featuring the fabulous shop of Dave O'Bryan. If that article doesn't inspire you to clean up your work area, nothing will!

In addition to the other regular features, we continue to highlight notable events from our monthly club meetings, for those of you who didn't attend. You may want to consider going, there are new things to learn and raffles to be won.

See you at ECRM!

Full Scale V-2 Rocket Launch

By Tom Ha

The V2 flight. Low and slow and majestic, but the rocket was a really wonderful display of skill and enthusiasm, culminating in a picture-perfect launch and recovery. I've often heard Trip Barber say "up is the easy part", but this launch made the whole thing look easy. I had the chance to talk one-on-one with members of the Rocketry Victoria team that put this on, and to a person they were just so open and eager to share their experiences with everything from financing to building to delivering it to flying it.

So here are the spec's:

V2: 1:1 scale; 46+ feet tall

Recovery: built in three pieces to separate for recovery; man-rated parachutes for each recovery piece; CO2 ejection system; car airbags as ejection "pistons";

Weight: lift-off weight planned 617lbs, actual 850lbs. Difference from webbing for chutes, buckles, 100lbs nose weight;

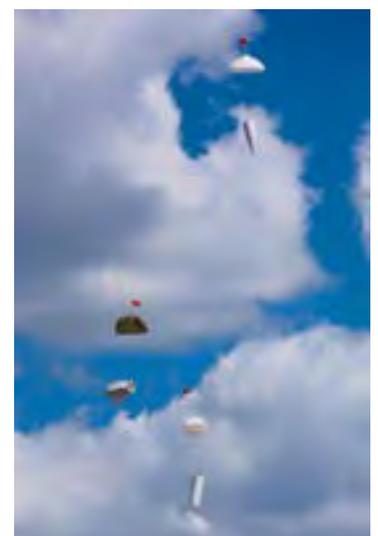
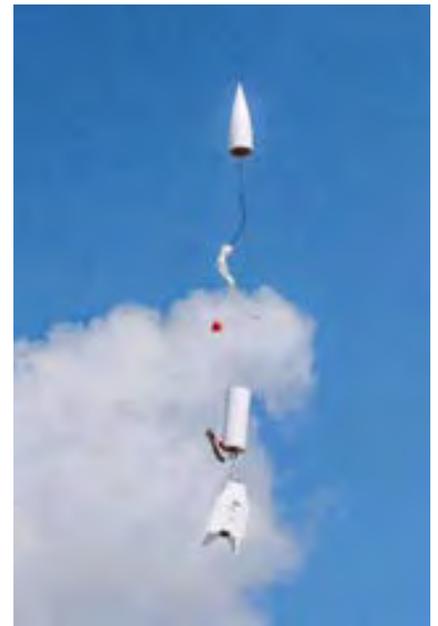
Motor: O-class, Cesaroni (CTI) O25000; 135mm (5.3") diameter

Launch equipment: Internal rail, hold-down harness, rented cherry-picker, crop conveyor attached to tractor.

Flight: Altitude: 623ft, all systems worked nominally. Flown at the John Coggan homestead named

"Enarra", on the field listed in the Guinness Book of World Records for planting the most wheat crop (2237 acres) in 24 hours (done as a charity event for an Australian hospital).

Post-Flight: Damage to two fins, one bent significantly, one bent slightly on landing. Holing damage to vinyl and foam skin from remainders of wheat stalks in field. Plan to replace one fin and hammer back out the other one. Original plan was to send it to a museum, which is still under consideration.



Photos courtesy of Rocketry Victoria

NARHAMS History

By Ole Ed Pearson

Part 3 – Contests and Competition

Our first contests: The first contest NARHAMS participated in was in the spring (I think) of 1965. It was called the First Free State Meet and was a regional contest of three sections. It was held at the Optical Research Facility at Goddard Space Flight Center (Greenbelt, Md). Herb Honecker (an outstanding individual, now deceased) was the contest director. We flew against Star Spangled Section (SSB) led by Howard Galloway^{2,43}. Howard was a sounding rocket engineer at Goddard and we got to know him through Doug Frost (Doug had worked at Goddard the summer before). Howard lined up the facility and corralled Herb for the contest—Herb was a fellow sounding rocket engineer and the father of a young man—Steve who later was a leader in the now-defunct Wheaton Association of Rocketry (WAR). (Steve has also passed). The SSB members present, I remember, were Kathy Maxim and Cathy Pinkerton. (SSB had lots of members over the years before it dried up. I recall Geoff Chester, Theresa & Tina Leahy, John Nowakowski, Mark Petrovich (before he joined us), Clinton Winchester and at very end Tony Medina (from Seattle—the son of Jesse Medina who was contest director of NARAM 14, if I remember correctly. Tony I think joined us later too.).

NARHAMS also flew against NOVA at Free State. Their president was Frank Bittinger and I remember him there; NOVAAR's (NOVA's successor and formed by Chris Tavares and Howard Kuhn) Greg Bock and John Hockheimer may also have been at the contest...my memory isn't that good, but Greg did fly at Goddard for a launch or two back then, and although he doesn't remember John there, I remember being surprised when I thought John said he recalled the meet. A lot of current rocketeers have pretty deep roots, if you haven't guessed.

The result of the contest I do recall, clearly. NARHAMS ended up with 441 points. SSB and NOVA ended up with less than 100 combined. This

was before NAR gave out flight (participation) points, so that meant the points we accumulated were hard won 1st-3rd places. The difference between us and other early sections was that we used homemade designs and often eschewed paint to save weight. Our competitors used commercial kits, great for display and likely more stable than ours, but not as good in competition. We found out later that earning 441 points in a single contest was a big deal in NAR competition, and it was our first foray.

The characteristic of honing home designs became a hallmark of the club. Later club balladeer Bruce Blackistone brought this home in a song against cookie-cutter type models, sung to the tune of a popular song back then--Ticky-Tacky. I also saw this illustrated a few days ago, when Jennifer Ash-Poole forwarded a UPI photo being sold on eBay, that of a club launch at the Goddard antenna range in 1968. At least two rockets on that rack were clearly home designs and likely unstable. (And dag-gone, I think I was at the launch and wondered later what became of the guy's article and photos!). BTW, we still use that rack almost 50 years later--NARHAMSters will recognize it instantly. Jim Barrowman/Howard Galloway had it and three others like it built for NARAM-10—Jim being the contest director. (In a moment I want to talk about Jim's entrance into the club and his impact. Spoiler alert: glorious).

At NARAM that year (NARAM-7 was at Aberdeen Proving Grounds, Md), NARHAMS made their national contest appearance. Howard Galloway organized the contest but shortly before the contest had a heart attack, and Harry Stine took over running it. I think we might have won the contest but fell short in getting national champion (i.e., got the most points at the meet, but not the most points accumulated over the year). That was a remarkable first-showing by a section and I suspect many of the old NAR hands and old line sections took notice.

Another early memorable meet worth mentioning

Continued on page 5

NARHAMS History - continued

was held in Cumberland; this may have been after NARAM-7 in the fall before it got cold. (There were two Battle of Cumberland contests, and I remember we played football at one or both of them...that's why I suspect it was fall). We flew against LaSalle, Steel City, Annapolis Association of Rocketry (AAR) and SSB at St. Mary's picnic grounds on Industrial Boulevard. The organizer (Pat Stakem) arranged for us to pitch tents (NARHAMS did, and SSB did too for one year) cautioning us not to stray onto a nearby golf course...the night watchman was a bit cranky, we were told. This may sound like a benign meet, but you should know St. Mary's is known for being a cemetery (and as a popular evening lover's lane, we found out); the picnic grounds were the then un-dug up part of the cemetery! LaSalle provided some night-time entertainment and I am dead serious. Further elaboration will have to wait, but for the early NARHAMSters, it made lore.

The LaSalle group had some great guys. In addition to Pat (pure genius) members I recall were Cal Tracey and Bob Pancake. Steel City was also to become legend with Jay's Steel City Conventions and members who included Arnie Pitler, Elaine Sadowski and many others. The Annapolis Association of Rocketry was headed by Goddard satellite engineer Bob Atwood; Bob and his son Sam attended the Cumberland meet but slept in town. AAR's winning-most contest rocketeer was Harold Youngren, nicknamed Guppy, who later joined WAR and then NARHAMS. AAR was later headed by two adults-- Richard Comstock and assisted by (now-NOVAAR's) Craig Beyers.

^{2.43}Howard was a former Girl Scouts of America troop leader who formed the first Maryland NAR section. SSB was first in Arbutis and later in Severna Park. We learned about him from Doug, but how did Howard learn about model rocketry? Now that's an interesting question. Howard died years later in India working on the ATS-6 satellite project; showing that satellites could be used for a variety of communications and other applications projects. His legacy is known by many from an NAR award named in his honor; but those who knew him remember

Howard walking around at meets in the most brutal weather, yelling "Model rocketry is fun!" trying to bolster spirits and reminding everyone why we were there. He, too, and wife Dottie were friends.

Continued Next Issue With: Part 4 - Time for Some Adult Supervision

NARHAMS Meeting Highlights



Jim Filler presents Ole Ed with the serial number 1
NARHAMS Gold Kit.

Photo J. Fineran



John McCoy, top, and Kevin Johnson, below, discuss
the finer points of Plastic Model Conversion.

Photos E. Pearson.



OUTREACH: Hillcrest Elementary School, Led By Tom Bagg

By Ed Pearson

On May 7, Diane and I went to Catonsville to watch Tom Bagg, his wife Johanna, and NARHAMSters put on a school launch of Alpha IIIs at Hillcrest Elementary. They launched approximately 125 rockets from five classes. Richard Crisco and Chris Greco said assisted. This is the 18th year Tom has put on launches for Hillcrest.



Westchester Elementary School

by Ed Pearson

Om May 22, I went to a school launch and watched Tom Bagg conduct operations for about 100 4th graders from Catonsville's Westchester Elem. He was helped by his wife, Joanna, Richard Crisco, Tom's friend Steve Parkhurst, and a parent, Dan Rickwalter.

Dan Ricwalter, left, and Steve Parkhurst did the recording and tracking, respectively, for the students.



It was an excellent activity.



All photos E. Pearson

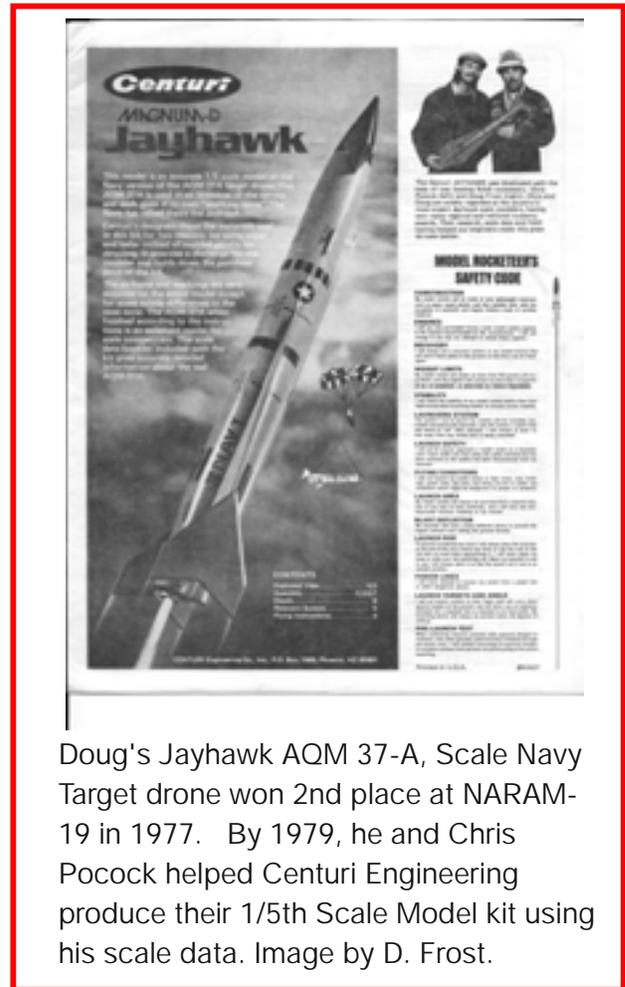
AN ALTERNATE PRE-HISTORY OF NARHAMS

By Doug Frost (alias Frog Dust)
NAR #3446, NARHAMS #2

Ole Ed Pearson was correct that he and I first met during an un-announced fire drill at Northwestern High School, Hyattsville, Maryland. Ed's story had the school year of 1963 and 1964 just starting. You see how he works? He wrote that just to draw me out so I would have to write at least a correction to the story, (sorry Ed). Well, here's how it really happened!

It was a number of months before that, seven, but who's counting? I was the new kid who just moved from North Carolina, and I was wary of them Yankees I was warned about. I was forced to move at mid-school year, so I would be best at remembering that. Besides, this was school number eleven in ten years. My family was moved by the Government, again, as my Dad, a Naval Intel. Agent, was assigned to the Washington, D.C. Office of The Navy. Ground Hog Day was that same week, so it was about Feb. 2, 1963 when the above mentioned fire drill (a Yankee plot) interrupted my whole day.

There I was, realizing that I had to make some new friends (new kid again, 11th time). So I looked around, and there was this "four eyes" guy looking up at the SKY! That was a good sign, at least he was looking in the right direction! Other than that, he looked reasonably intelligent, so I said, "Do you think it's a real fire?" Ed said something like "I hope not." Okay, he's a man of few words. Then, since we were talking about "fire," I thought it was the proper place to ask a "fire related" question. "Would you know of a hobby store that has model rocket engines?" Ed looked totally surprised and he said, "I fly model rockets!" Then, I was surprised that someone would be SO honest as to admit such a thing as that!! Ed told me about the closest hobby store and that he had been flying Model Missiles products for a few years. I said something about Estes models and we decided to meet at the



Doug's Jayhawk AQM 37-A, Scale Navy Target drone won 2nd place at NARAM-19 in 1977. By 1979, he and Chris Pocock helped Centuri Engineering produce their 1/5th Scale Model kit using his scale data. Image by D. Frost.

hobby store real soon. We exchanged numbers and the rest, as they say, is history.

I recently read Ed's account of this first meeting. I had to laugh out loud (LOL) when he wrote that "I was working the crowd", and I was "gregarious", a good word (I think?). It was also true that a few days later we met again at the Sunday School. Ed might forgive me telling that it was the Christian Science Church in Hyattsville, Md. Well, that is when I knew that meeting Ed was more than a co-incidence. Now, I will ask you to stretch your mind for one minute. I believe, that seemingly chance meeting, was divinely arranged. God wanted more rocketeers and more NAR Sections!!! That is how a wonderful friendship and many epic adventures for both Ed and I began. I rest my case. To Be Continued---

P.S. I am moving East to N.C. in 2015,
Be seeing you at NARHAMS events

GSFC Visitors Center May 2015 Launch Ed Pearson

The Sunday, May 3, 2015 launch was a busy one. The parking lot was full and people parked all the way to Greenbelt Road from the Visitor Center. Alex Mankevich and Richard Crisco ran the monthly event.

On the Saturday before, children built rockets to fly the next day as part of the Jr. National Society of Black Engineers model rocket program. NARHAMS' Kevin Johnson helped with the build session.



Brad, a ten year old Greenbelt 4th grader, is shown here with his dad getting ready to fly.



A rocket goes over the displayed Delta. Another has been snagged by the Delta's support cables.



Left: Several scout groups showed including about 10 from Cub Pack 275 of Silver Spring. They brought Alphas.

Right: Ryan (left), age 12 and Tyler age 10 of Dayton, MD brought a couple of Falcon models to fly.



Photos by Ed Pearson

Thunda Down Under, Part Two

By Tom Ha

Photos by Tom and Maria Ha

Yep, it's me again! Another long story punctuated by moments of sheer brilliance. Did you miss them in the last episode? Granted, they probably whizzed right by!

So our flight plans ranged from the extreme (fly to New Zealand, stay there two days, fly to Sydney, drive two days to the Australian Rocketry's Thunda Down Under (ARTDU), drive to Brisbane, take 24 hour train trip to Cairns, fly back from Cairns to Brisbane and fly home via 6 hour layover in Honolulu) to the much more mundane ones we have now. We just fly from Dulles to LAX, then to Brisbane, and do the reverse on the way home. The flights and Customs and TSA and rockets in bags were all total non-issues. We never heard about our checked bags, even after we mentioned what we were bringing along. The ticket agent was more concerned about weight than anything like rockets! And the flights were long, and somewhat boring, but they happened and we got over it. We did have to complete multiple forms while on the international flights, including forms for

Australia that they checked prior to letting us deplane. Oh, and Brisbane is pronounced "Briz-ben"



but the locals all call it "Brizzie".

ARTDU was from Thursday through Sunday. We arrived Tuesday before the event, after our departure on Sunday night, so we got off the plane at 7AM local time (5PM the previous day to our bodies) and got the rental car and drove the M1 to the Australia Zoo. The rental car company (europcar) thought they were doing us a favor by giving us a high-end import, but that car was terrible. And I've confirmed with a VW Jetta lover here in the US that the design here is the same (did I mention terrible?). Doing the zoo part and not crashing for the day was probably one of the smartest things we did. While it was exhausting in the 100 degree heat, it also meant we'd sleep a full local night and adjust quickly.

The zoo was a great introduction to much that is unique about Australia and the area, including the Tazmanian Devil, saltwater crocodiles, kangaroos, wombats and koala's. It really is a



Sky Rail!



Continued on page 10

Thiunda, Part 2 continued

showcase for Australia, and was clean, well-maintained and well-staffed. We spent most of the day there, and stopped short of hitting the Africa exhibit area since we were so tired. While



you may have heard a “Crikey!” from Steve Irwin on TV, the only mention of the term there was a trivia question during a performance in the stadium with a large saltwater crocodile.

After an overnight at a very nice Bed and Breakfast, we went just 20 minutes East to the coast and Maria swam in the Coral Sea while I chatted up a local couple. Two (or so) stops later for an Esky and canopy, table and chairs and we were off on our 5+ hour drive



Shopping at its finest!

inland to Thiunda. The scenery was reminiscent of some parts of the US, with rolling hills, farms and small towns. Much of it was green with grass or crops since it was the end of summer there.

Our stay for the launch was in Meandarra with a population of 200, and the highlight from Internet searches is the regional elementary school there,

plus the ANZAC Museum which I had a chance to visit.

So in reading back over my first article, written before we ever got to Oz, it strikes me that there were some changes as you might expect. I didn't take along my Lil Diter rocket, because I couldn't get the US weather to cooperate to allow me to paint it before I went. I never had to order food using the words “entrée” or “main course” so that was a non-issue. We drove lots of early evenings and early mornings to the launch and back, and rarely saw any wildlife. And I took along my NAR section banner and had everyone there sign that instead of a rocket (I never would have had enough space!)



Happy rocketeer at the launch site at last.

OUTREACH: NARHAMS Leads a Build and Fly Session at the 2015 Rockville Science Day.

By Alex Mankevich
NARHAMS President

Photos by E. Pearson

NARHAMS continued its impressive 26 year record as an exhibitor at this year's Rockville Science Day held at Montgomery College on Sunday April 26, 2015. As to underscore our continuing commitment to this event, during the opening ceremonies Rockville Consortium for Science President Bob Ekman represented a plaque to Ole Ed Pearson which recognized NARHAMS' 50 year. This is the same plaque that Bob had presented to Alex Mankevich during our 50th anniversary gala at the College Park Airport Museum.

NARHAMS members in attendance were Alex Mankevich, Raul Pena, Richard Crisco, Stoil Avramov and Ole Ed. Alex brought the build session supplies and the launch equipment. Richard assisted in setting up the build session room and brought the essential repair, replacement and extra parts. Raul served as Master of Ceremonies to lead the narration during the build sessions. Ole Ed masterfully assembled the recovery system, wadding, engine and



Alex Mankevich



Richard Crisco



Raul Pena

igniter wires into the completed models. Stoil was the lead pad assistant during the fly session.



NARHAMS was again assisted by members of Explorer Post 1010 who included Samantha Steckel, Vivck Uppoor, Joseph Camobreco, Michael Liu and Julia Roh.

We had some models left over from last year, so we were able to conduct two build sessions of 20 rockets each. We again conducted a raffle draw to determine which young modelers would be able to participate. Even with the added model rockets we still had to leave some disappointed people who weren't lucky enough to have their numbers picked.

We again built the Estes Alpha III kit. This year we attached the screw eye to the plastic nose cone in addition to pre-cutting the engine hook slit in the motor retention tube. We pre-assembled the engine hook, motor retention tube and the sleeve which secures the engine hook. This pre-assembly saved some time during the build sessions, and made it less likely for the young modelers to misplace these parts during assembly.

Paul Croarkin, a club officer and ZOG editor in the 1970s, attended the launch with two of his children, Roary and Shannon. Raul's daughter Fiorella was lucky enough to be a build and fly participant. Other NARHAMsters at this event were helping in other projects including Brendan O'Bryan, Kevin Johnson, and Scott Branche.

The afternoon launch portion was conducted on what was the most pleasant spring day in memory.



Continued on page 12

ECRM and some history

By Jennifer Ash-Poole, NAR 61415

Don asked me, the NARHAMS librarian (and NAR Historian) to write up a little blurb about ECRM. Most of the information I had gleaned for the ECRM-40 booklet was from the old Model Rocketeer and the Zog-43. I remember Jim McGraw, after leafing through the booklet, telling me he didn't remember winning B Division at ECRM 7. It's fun to remind people they were there!



ECRM stands for East Coast Regional Meet. In the early days, you would get people from MIT, Pittsburgh, Virginia, Maryland and even some people from the south. I am not sure what the weather was then, but I know they had wind and rain. Judy Barrowman talks about the early meets and the wind. Hence, ECRM can also stand for East Coast Rainy Meet, East Coast Windy Meet, and we have even had East Coast Snowy Meet. I have never had anyone rename it East Coast Sunny Meet. We should change that.



Flop wing RGs



Man, it's cold!

There are a few ECRMs where I don't have any information (or I haven't had the time to dig deep enough), but I can tell you they were run by NARHAMS and

Rockville Science Day cont.

The skies were clear and there was no threat of either rain or high winds. Thirty-eight of the 40 build session people turned up to fly their rockets. After the launch Richard was kind enough to help return the launch equipment to the New Market storage facility,



NOVAAR, with the Vikings taking on a year. All seemed to take place in Manassas, VA (2 confirmed



Paul Conner and Matt Dickstein clear the ice.

times); Camp AP Hill, VA (8 times); Middletown, MD (18 times). This will be the 9th time ECRM is held in Mt Airy. In the early days,

there were patches, and a limit on how many people could enter a meet (mostly due to hotel space.) Now, we are lucky if we can find 2 A and B divisioners, and sometimes, 2 teams.

Why should you come to ECRM? For one, it's 2 days of flying, even if you don't compete. Sunday is the slower day (people wise),



FROM THE ZOG:

Where Was NARHAMS During Mankind's First Encounter with Pluto?

By Alex Mankevich
NARHAMS President

Momentous events, whether cultural, political or technical in nature, usually prompt the portentous question – where were you when it happened?

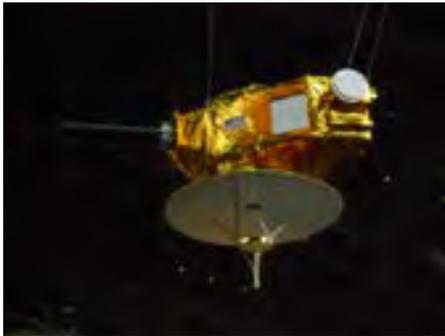


Photo by A. Mankevich

We each can probably recall for some of the famous space exploration events such as: Where were you when astronauts first landed on the moon? Where were you during the Challenger explosion? Where were you during the Columbia disaster? To this list we could add an upcoming event - Where was NARHAMS during mankind's first encounter with Pluto?

The New Horizons fly-by (some could classify the encounter instead as a zoom-by) of Pluto is on track for mid-July 2015. This encounter will be the last encounter of a major body in our solar system since we've been sending space craft out to the distant planets. It is our first encounter of a Kuiper belt object. It's our first encounter in which the principle science is to begin 9 years after launch.

I'm pleased to report that during mankind's first encounter with Pluto NARHAMS will be in a good spot, thank you. The Pluto encounter year has coincided with the 50th year of NARHAMS. We've fittingly celebrated our golden anniversary this past March. Members have kept to a busy schedule of outreach programs. Once again, our members have performed some of the essential jobs at the TARC finals. By time the New Horizons space craft has made its closest approach to Pluto NARHAMS

ECRM History cont.

and you get a picnic out of it in the end. The best part is seeing your rocketry friends from Pennsylvania and Virginia come over and flex some muscles before NARAM. If



That's a Groundhog Swing Wing RG

you do compete, you are doing it in a regional contest that was started in 1968, and still is being run today.



Except for NARAM, I don't know of that many regionals that have been around for that long.



would have hosted its 42nd ECRM during Father's Day weekend. The Pluto closest approach date of July 14th is less than a week earlier than when our members will be conducting our annual Apollo Contest on July 19th at the Goddard Visitor Center. It's a comfort to me to know that NARHAMS will be an appreciated and functioning element of the larger "space-related community" during mankind's first encounter with Pluto.

Team America Rocketry Challenge (TARC) 2015



5, 4, 3, 2, 1, Liftoff!
 Photo E. Pearson



Photo J. Filler



Keepin' it light.
 Photo J. Filler

NARHAMS Past and Current Came Out To Support TARC How many can you name?



Photo J. Filler



Photo J. Filler



Photo J. Filler



Photo J. Filler



Photo Collage E. Pearson



Photo Collage E. Pearson



ZOG-43'S SHOP SPOTLIGHT

Featuring The Shop Of Dave O'Bryan

By Don Carson

Photos by D. Carson, except as noted



In this installment of Shop Spotlight, we visit the shop of Dave O'Bryan. Dave started building and flying rockets in the '60's (the 1960's, young'un) and like many, he drifted from the hobby when he was about 16 years old.

Flash forward to 1988, when Ole Ed recruited Dave and his wife Donna to support the US/USSR Cultural Exchange



Dave is the tall guy in the middle
Photo courtesy of NAR

Competition held at NASA's Wallops Flight Facility. At that point, Dave was hooked on FAI-style competition. From 1990 through 2002, Dave represented the US on nine straight International teams, plus he was also on the 2012 team!



Brendan, front row on left, sporting his S8 Team Silver medal.
Photo Courtesy of NAR

Following in Dave's footprints, his son, Brendan, was on the 2012 and 2014

International teams.

Dave's shop is a workspace dedicated to building FAI competition models. Upon first entering the shop, one is struck by the abundant natural light flooding the room. The next thing you notice is that it is very clean and well organized.



S8 Glider Storage



Bins to organize everything!

Where is the clutter on the bench tops? How could this possibly be a working shop? Dave's system keeps his materials stored away on shelves in the back and in a multitude of plastic tubs under the benches. All the benches are all topped with drafting table covering material, the same stuff we pay an arm and a leg for called self healing cutting mats. The material was recovered and



Retired S8 Rocket Gliders hang on the wall.

Continued on page 16

Shop Spotlight...Cont.

reused as mechanical drafting tables were phased out in favor of CAD systems. Dave was in the right place at the right time.

I asked Dave what feature he like best about his shop and he said it was the abundant workbench space - all tailored to his height!

My favorite feature was a narrow custom-made cabinet that is about 38" deep, 8" wide and 36" tall. It has ten drawers of various heights with removable dividers that run lengthwise . Built by old time NARHAMster Phil Barnes, it is perfect storage for sheet balsa, body tubes and other long narrow parts that we accumulate when scratch building rockets. I think I'll have to make one of those for myself.



Storage deluxe!

RANGE UPDATE: P.A. Amplifier Replaced for use at the Mt. Airy Launches

By Alex Mankevich
NARHAMS – President

Photos by A. Mankevich

We have a replacement for the PA system amplifier that refused to work during the December 2014 launch at Old National Pike Park. Jef Fineran worked his contacts and was able to replace the 'fried' old amplifier at no cost to the section. Jef also provided us with a new hard plastic carrying case for the storage and transport of this PA system.



The Realistic MPA-30 AC/Mobile PA Amplifier gives us 20 watts of power. It operates on either 120 volts AC or 12 volts DC power so that we can use it outdoors on the launch range. Its two microphone input jacks allow connections between two microphones, meaning that we could operate the system using either a corded microphone or by using a wireless microphone.

The owner's manual for both the PA amplifier and the wireless microphone system are now included in a clear accordion folder which had been affixed to the inside cover of the

carrying case. The carrying case also included extra AA batteries, a metal case for a replacement 2A fuse and a flat head screwdriver.

I combined the instructions for both the amplifier and the wireless system into a single 'crib notes' sheet that guides the operator through the whole system assembly and start-up procedure. These guidelines include the correct order to connect the 12 volt battery, the correct order for the activation of the wireless and amplifier systems, the speakers' wire connections and the volume and tone settings. Both the corded microphone and the wireless microphone have been tested and both work with good sound quality. Hopefully, this arrangement will allow us to hear the dulcet and melodious voices of the launch managers for many months to come.



OUTREACH: NARHAMS Launches for Jeffers Hill and Swansfield Elementary Schools

**By Alex Mankevich
NARHAMS President**

NASA usually announces its upcoming launches beginning with the No Earlier Than (NET) launch date. It's widespread knowledge that this initial launch date is usually subject to postponement. It is only after this date had been set back a couple of times that a reliable launch date can be surmised.

The NET launch date was pretty much in effect for the launches at both the Jeffers Hill and Swansfield elementary schools, both located in Columbia, Maryland. The initial dates were set for the fall of 2014, but for a couple of reasons had to be re-scheduled for April 2015. After yet another date change, the launch dates became April 22 for Jeffers Hill and April 23 for Swansfield.

Alex Mankevich performed these launches on behalf of NARHAMS. Alex met with Laine Malcotti, the GT Resource Teacher for both schools. Laine remembers the NARHAMS members who had assisted her in the past which include Jennifer Ash-Poole, Alec Waterhouse and Ole Ed Pearson. Laine ordered all the rocket kits, engines, recovery

wadding and igniter wires. She conducted the build sessions and she also spent hours stuffing the body tubes with recovery wadding and prepping the motors.

Alex was assisted at the Jeffers Hill launch by Ray LeVesque who is a contractor at GSFC and had launched model rockets in his earlier days. Ray has two sons attending Jeffers Hill elementary school.

We flew the Starhawk model rocket by Quest at both schools. This model is very accommodating for instances when the engine mount protrudes slightly behind the body tube or when the plastic fins are glued a little ways up from the base of the body tube. The model also comes with a streamer rather than a parachute which is welcomed on windy days.

We flew over 100 models at Jeffers Hill and about 75 models at Swansfield. We had to hold the countdown a number of times at both schools due to low flying aircraft (including helicopters). We had to hustle at the Jeffers Hill launch to complete the launch before the oncoming rains arrived. The weather was cool but accommodating for the Swansfield launch. I found the students to be highly motivated and enthused about the launches.

New Zog-43 Subscription Policy

At the January meeting the club voted to make the following changes the Zog-43 subscription policy:

- Effective immediately, all NARHAMS members with dues paid up will receive the digital version of the newsletter.
- Hard copy subscriptions (both mailed and meeting pick up) will no longer be offered. Current paper subscribers will continue to receive their newsletter until their subscription runs out.
- Non-member digital subscriptions will not be offered, but anyone can join NARHAMS to receive the newsletter. Dues are 10 cents per week (and have been for 50 years). To save you the math, that's \$5.20 per year.

Note also:

- NARHAMS will continue to mail hard copies to the LAC newsletter award judges.
- This change does not affect club-to-club newsletter exchanges.
- Past issues of the Zog-43 are available on the NARHAMS website: <http://www.narhams.org/zog43.html>

May 2015 Mt. Airy Sport Launch Report

By Don Carson
 May 2015 Launch Manager

The theme for the May Sport Launch was Military Rockets. We had a great level of participation in that category with approximately 22 military models, including some sounding rockets that used military hardware. We expected several scout groups in the afternoon so we set up the range an hour early to give the club members a little more time to fly. The weather had threatened to cancel the launch earlier in the week, but the thunderstorms held off until we had the range equipment packed up and back in storage.

In addition to the theme flights, we had 7 competition test flights and the launch of 2 Aerospace Specialty Product prototypes, a Sonda, and a Kappa 9. Jim Filler built and launched them to get some launch photos for ASP.

There were a total of 98 flights, 50 of which were scouts. The breakout of engines flown was:

1/8A	8
A	33
B	34
C	16
D	6
F	<u>2</u>
Total	99

Thanks to: Jimmy, Alex, and Richard Crisco for set up and breakdown support; Bradley Grant for offering to spell me as LCO; special thanks to Richard for interfacing with the scouts, they were well prepared at check-in; and extra special thanks to Jim for running me all over the Mt Airy area in search of jumper cables while the post-launch thunderstorm doused my vehicle with the power windows stuck in the down position.



Three models, Sonda, Kappa 9, and Jim.



Scouts and Scouts



Bradley Grant testing his competition egglofter.

All photos this page by D. Carson

More May 2015 Mt. Airy Sport Launch

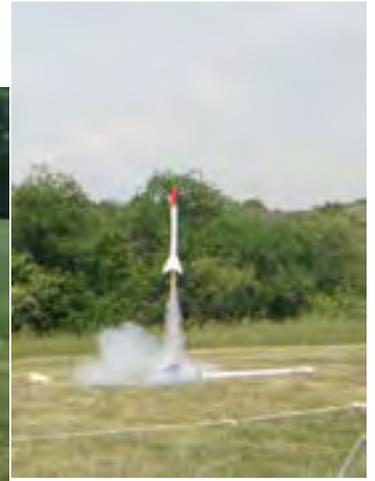
All photo this page by E. Pearson except as noted



John McCoy and his Exocet micro max



Kevin Smith with his WKU and its launch.



Swing Wing RC Glider



Bradley's C Rocket Glider
Photo D. Carson



Alex's Classic Nike Smoke
Photo D. Carson



Bradley's Egglofter Test Flight
Photo D. Carson



Jerry Godwin's Partizon



More Scouts



Competition Corner: Upcoming Contests

NASA Goddard Visitor Center Model Rocket Contest

Open to all area Model Rocketeers

Event: "Lunar" Spot Landing

Date: July 19, 2015

Time: Registration opens at 12:30 pm
Contest runs from 1:00 to 3:15 pm

Cost: **FREE, FREE, FREE!**

Event flown in 2 age divisions; 15 and under, and 16 and older. Trophies awarded for first through third places in each division.

This event is to commemorate the 46th Anniversary of the Apollo 11 Moon Landing and promote interest in Space Sciences among area students.

For more information, call the Visitor Center at (301) 286-8981.

RAMTEC-18 Events:

Events: Total Weighting Factors = 80
A FAI Streamer Duration Multi-round
1/4A Helicopter Duration Multi-round
B Rocket Glider Duration
1/2A Parachute Duration Multi-round
1/4A x2 Cluster Altitude (Optical Tracking to ejection)

Date: Sept. 5 & 6, 2015 (Labor Day Weekend)

Location: Fort Indiantown Gap, PA

ECRM-42 Events:

1/2A Parachute Duration
FAI A Streamer Duration Multiround
B Helicopter Duration
C Rocket Glide
Predicted Altitude
Random Duration

Date: June 20-21, 2015
Location: Mt. Airy, MD

CAPITOL CUP 2015

An FAI-Sanctioned World Cup Spacemodeling Competition

September 19-20, 2015

Great Meadow, The Plains, Manassas, VA

Sponsored by: NOVAAR

World Cup events: S4A, S6A, S8E/P, S9A

Open Int'l Events: S3A, S2/P

Capitol Cup is also sanctioned as an NAR regional meet for the S3A, S4A, S6A, and S9A events, flown as FAI-style multiround NAR events.

Contact: Trip Barber, ahbarber@alum.mit.edu,
9306 Brian Run Lane,
Springfield, VA 22153
(703) 866-4710/cell (703) 474-7128

Entry Fee: \$20, payable at registration.



NARHAMS Gold

National Association of Rocketry Headquarters Astro-Modeling Society
(NARHAMS), NAR Section 139 presents:

Limited Edition **50th Anniversary** **Model Rocket Kit**

Only 139 numbered kits available!



Unique Ducted Booster
2-stage styling
Quality Kit Production
Decal sheet included

Length: 20"
Diameter: 1.34"

Suggested Motors:
B6-4 (first flight)
C6-3
C6-5

Per kit price: \$30; \$7.50 shipping up
to two kits, or free delivery at
NARAM.

Kits available NOW!

Send checks (payable to NARHAMS)
to Maria Ha, NARHAMS Treasurer,
512 Chestnut Street, Mount Holly
Springs, PA 17065

or
PayPal to rocketha@gmail.com

*Please use the send money to friends
or family option when using PayPal!*