ZOG-43

Official Publication of NARHAMS

March / April 2025

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Official Newsletter of NARHAMS model rocket club
Editor: Alex Mankevich
Associate Editor: Thomas Henderson

ZOG-43 is dedicated to providing current information about NARHAMS' activities, outreaches, sport launches, competitions and club business. We aim to provide updates on model and real world rocketry, educational material, and some entertaining information. We try to appeal to model rocketeers of all ages, abilities, and interest. We like to share the talents and accomplishments of our members. The ZOG-43 is authored by real people, no AI-generated content here.

ZOG-43 is published bimonthly and is available to all paid up members of NARHAMS. Club membership is open to all, dues are 10 cents per week.

If you have any questions about ZOG-43, NARHAMS, subscriptions, or if you have any comments, correspondence, or if you'd like to submit an article or event photographs, send them to:

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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 the NASA Goddard Visitor Center in Greenbelt, MD. Monthly sport launches are held at Old National Pike District Park near Mt. Airy, MD. We provide the launch equipment and there is no launch fee. NARHAMS welcomes all persons interested in rocketry to our monthly meetings and launches.

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

http://www.narhams.org

From the Editor:

Thanks to the efforts of President Edward Jackson NARHAMS will be back to launching monthly at Old National Pike District Park through the end of this year. This issue provides instructions on getting to the new launch site and portrays the new look of this venue.

The return to Old National Pike District Park implies that this issue contains what might be the last report of a Krimgold Park sport launch - for some time at least, and yes, it's OK to shed a tear or two.

NARHAMS sent a blue ribbon team of model rocketry advocates to participate in STEAM Day at the PAX River Naval Air Museum. Alan Williams shares some thoughts on blast deflectors. Mark Wise gives us a nostalgic look back at the major celestial event of last year - the total solar eclipse. Dr. George Crombie gives us the scoop on his Big Kat launch at MDRA Red Glare.

Inside this issue are a couple of fitting tributes to Diane Pearson - the recently deceased wife of one of NARHAMS' founding members - Ole Ed Pearson.

Contributing to this issue:

Reporters:
Alex Mankevich, Thomas Henderson, Sarah Jackson, Edward Jackson, Alan Williams, James Miers, Mark Wise, Ole Ed Pearson and Dr. George Crombie.

Photographers:
Ole Ed Pearson, Eric and Thomas Henderson, Sarah Jackson, Michael Cochran, Mark Wise, Michael Wise, James Miers, Sally Cook, Brian Beard, John McCoy, Melody Crombie, George Crombie, and Alex Mankevich.

Covers Credits:

Front Cover: The goal of a display is to make it entertaining so that it holds the visitors' attention. Apparently, NARHAMS was unsuccessful with regard to the youngster seated in the stroller. Credit: Sarah Jackson

Back Cover: Excitement was on display by the 4th grade students at Westchester Elementary School who launched their Quest Astra III rockets on April 3, 2025 under the tutelage of Mr. Thomas Bagg. Credit: Alex Mankevich

ZOG ROYAL COURT
(NARHAMS OFFICERS)

ZOG (President) Edward Jackson

VICE ZOG (Vice-President) Alan Williams

COLLECTOR OF THE ROYAL TAXES
(Treasurer) Sarah Jackson

KEEPER OF THE HOLY WORDS
(Secretary) Thomas Henderson

COURT JESTER
(Section Advisor) James Miers

Goddard Launch Report
March 2025

Reported by: Alex Mankevich
ZOG-43 Editor

March came in like a lion, causing the March Goddard Launch to go into the record as a windy affair. Otherwise, it was a sunny day with the temperatures in the mid fifties. Alex Mankevich brought an anemometer so that NARHAMS could monitor the wind speeds throughout the launch. The wind speed average fluctuated between 9 to 12 mph, with occasional wind gusts going over 20 mph. It was not day to launch lengthy rockets such as the Amazon and certainly not the Mean Machine. Flying minimum diameter models on "C" motors was discouraged. Firing Officer Edward Jackson halted the countdowns when the wind was blowing excessively.

Launching on a windy day certainly qualifies as a nuisance. It becomes difficult to perform flight preparation outdoors when the components keep flying off the table tops. Flight preparation was better conducted inside the Visitor Center's auditorium. Sarah Jackson, Michael Cochran and James Miers assisted the modelers with their fight preparation.

The popular model rockets at this launch were the Alpha III, Starhopper and Starship Octavius.

Two scout packs bolstered the number of flyers. Pack #61 of Washington, D.C. and pack #56 did the bulk of the flying this day. They did not seem to mind that a number of their models were lost to the trees.

Thomas Henderson (L) checked in models at the Safety Check station. Credit: Eric & Thomas Henderson

When in doubt, one can always follow the instructions - as demonstrated by James Miers (L). Credit: Alex Mankevich

Katya Sanamyan (L) and Sarah Jackson (R) connected the micro clip leads at the launch rack. Credit: Eric & Thomas Henderson

The Commander was standing by to launch a Starship Octavius model. Credit: Alex Mankevich

A wide view of the March 2025 Goddard launch. Credit: Eric & Thomas Henderson

March Goddard Launch By the Numbers:

Total Rockets Launched:	**84**
Adults in Attendance:	**135**
Youths in Attendance:	**96**
Total Visitors at VC:	**231**
First Time Flyer Certificates:	**18**

KRIMGOLD PARK
Carroll County Department of Recreation and Parks
Project Assisted by MD Department of Natural Resources - Program Open Space

Krimgold Sport Launch
March 2025

Reported by: James Miers
Section Advisor

NARHAMS launched on a snow-covered field in January, and flew in the cold of February, so as we seem to be keeping consistent with seasonal memes, it should be no surprise to find ourselves up against the March winds at Krimgold. When high winds blow the anemometer feed off the launch table, you know you're pushing the limits.

Despite winds, we had six NARHAMS members and friends show along with a satisfying number of guests, although not everybody proved willing to risk a rocket to the elements.

Alex Mankevich acting as launch manager made the go-for-launch call the evening before, reasoning that while Saturday's weather did not look propitious, the prediction for Sunday was no better, and we should take advantage of opportunities however they present themselves.

Alex and Jim Miers were both on the field for set-up by 9:45, and at first had just the single rack set up, reasoning that the launch would not see much activity on the away pads (this proved correct, although we did eventually have one flight off the quarter-inch). Alex and Jim traded off check-in and launch control responsibilities during most of the day, assisted by NARHAMS members Bill Stec, Thomas Henderson, and Fabrice Derullieux, all of whom pitched in to help when needed, particularly as pad managers.

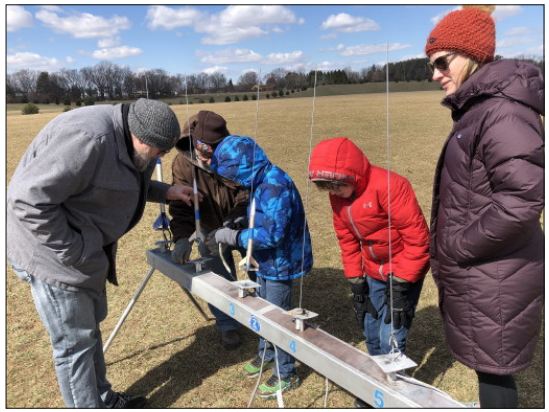
Bill and Faye Stec arrived shortly after set-up and through the day recorded seven launches between them with several models. Thomas Henderson scored a single launch on an A8-3. Ol' Ed Pearson arrived in the early afternoon and had five successful launches, four of them military themed models, consistent with our Cold War Spot Landing idea, and all flown on A8-3 motors, but also a memorial flight for Diane, a Fortieth Anniversary Alpha which soared to great height, was carried away by the winds, and gone.

We also had a number of guest flyers. Twenty-seven Cub Scouts from Pack 628 joined us, mercifully arriving between 11:00 and 2:00 in three separate groups so as not to overwhelm the range crew. They were all flying Wizards, all with A8-3's, and all appeared to have a great time, unfazed by wind and weather.

And other guests participated as well, mostly teens, some of them working as a group, others flying solo. One young man launched our highest impulse motor of the day, a Super Big Bertha on an E12-4 (probably). The flight was marked safe by the RSO, despite having weather-cocked fearfully. Subsequent request to fly the same model on a composite F was declined by the RSO, and flyer, being a mature and responsible young man, politely agreed.

By 2:30 the scouts were all departed and winds becoming even more aggressive than earlier (if such a thing were possible), we closed the range, packed up, and headed home.

Ole Ed Pearson with the 40th anniversary Alpha flown as a memorial tribute to his late wife Diane. Credit: Alex Mankevich



Gloves, hats and winter coats were necessary at the windy March Krimgold sport launch. Credit: Eric & Thomas Henderson

The man in the green Army jacket attempted to check in his model. NARHAMSters Alex Mankevich (L), Fabrice Derullieux (C) and James Miers (R) oversaw the check in. Credit: Sally Cook

Cover Girl Sally Cook modeled fashionable cold weather outer wear which protected her against the day's persistent winds. Credit: Alex Mankevich

We did the math:

Total Rockets:	**62**
Smallest Motor:	**1/2A3-2**
Largest Motor:	**E12-4**
Most Used Motor:	**A8-3 (43 flights)**
Propellant Burned:	**310 grams**

Lest We Forget - Diane Pearson

Reported by: Alan Williams
NARHAMS Vice-President

Diane (L) often accessorized with a sun-shielding umbrella and a pair of sunglasses at NARHAMS' outdoor events. Pictured here is Diane with Alex Mankevich (R) at the March 2017 Mt. Airy sport launch. Credit: Ole Ed Pearson

Diane was a solid member of "Team Ole Ed". She provided transportation, companionship, encouragement and assistance as needed. Credit: Alan Williams

The attention of our membership is regretfully directed to the passing of our friend Diane Pearson. She was the wife of our club's co-founder, Mr. Glenn Edward Pearson. Initially, she was admitted to Doctors Hospital in Lanham, Maryland, after what appeared to be a simple fall. This was quickly recognized as stemming from heart failure. Despite all measures, her condition deteriorated and she succumbed on March 4, 2025.

Diane Darcy was a child of Anaconda, in Montana's Copper Country. In 1968 she came to the Washington area and began working for the FBI's stenographic pool, swiftly becoming a secretary in various important enforcement divisions in the Bureau of Alcohol, Tobacco, and Firearms.

In 1970 she met a nice young guy who was a student at the University of Maryland - College Park, a mortar man in the Maryland National Guard, and a nascent technician controlling some of the first "Explorer"- class research satellites at NASA's developing Goddard Flight Center in Greenbelt.

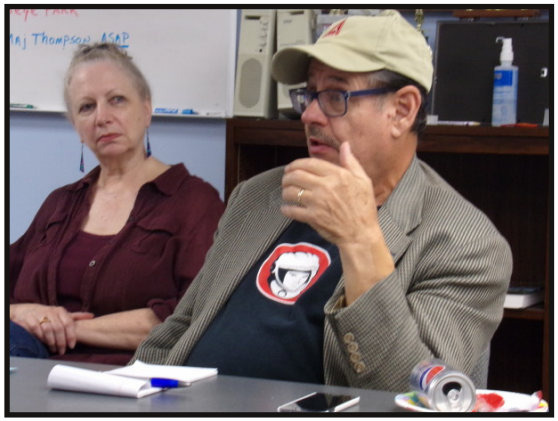
She began working for the Smithsonian Institution in 1977, joining the National Air and Space Museum as an executive secretary to a series of directors as they developed the world's most popular museum experience. Who among you hasn't visited the place at least once? She transferred into the exhibits developments division in exhibit design. From carpeting to space rock presentations, much of what you see there is likely to have a little piece of Diane inside it. In the midst of this, Diane and Ed married and produced two excellent children. Cyrus, in 1975, and Kelly in 1979. They, in turn, have blessed Diane and Ed with five grandchildren.

As I remember it, Diane did not do much rocket flying herself, but was always a strong and vital helper as Ed moved into the local and national contest flying community. Diane and Ed were part of the American contingent at the first World Spacemodeling Championships in 1972 at Vrsacs, Yugoslavia (now Serbia). International friendships began then that have lasted a lifetime.

Diane retired from the museum in January of 2010 and shared life with Ed, dogs, bunnies, and the occasional chinchilla, throughout the coming years. She often accompanied him to club meetings and flight events. Her sudden passing is a shock to us all. I speak for all our members and the extended spacemodeling community as we send out heartfelt thoughts to all the Pearson family. We will all miss her very much.

"She was always present at our meetings and events, usually working on a crossword puzzle, as she patiently waited while Ed did his rocketry things." - Sarah Jackson

"So sorry to hear about Diane's passing. Diane was a lovely person and will be missed by all who knew her." - Brian Beard



Diane (R) would occasionally put down her crossword puzzle to monitor what Ole Ed Pearson (R) had to say, as pictured at the October 2017 business meeting. Credit: Alex Mankevich

Diane (L) unfailingly brightened up our Holiday Parties by wearing holiday-themed colors and accessories. Pictured is Diane at the 2024 Holiday Party with Alan Williams (R). Credit: Ole Ed Pearson

PAX River Naval Air Museum
STEAM DAY 2025 Report

Reported by: Edward Jackson
NARHAMS President

NARHAMS once again was invited by PAX River Naval Air Museum in Lexington Park, Maryland to participate in their annual STEAM Day on March 8th, 2025, running from 10:00 AM to 3:00 PM. This is the fifth time that NARHAMS has participated in the STEAM Day and like the year prior, the museum asked us to provide an interactive lesson for the children (and adults) to ensure the visitors left our table with a bit more knowledge than before. Due to the club holding a launch on the same day, we had fewer members than last year but Sarah Jackson, Brian Beard, Alan Williams, Mike Cochran, and I provided enough to cover the table the entire time.

NARHAMS was strategically located in front of the space and missile display in the central part of the museum in front of the F-35 fighter jet. For the second year we had the 3D printer advocate for the Navy to our left and Boeing was swapped with the Model Airplane club to our right. Throughout the day we were "treated" to various TV and Video Game tunes played by the Tesla coil on the other side of the museum.

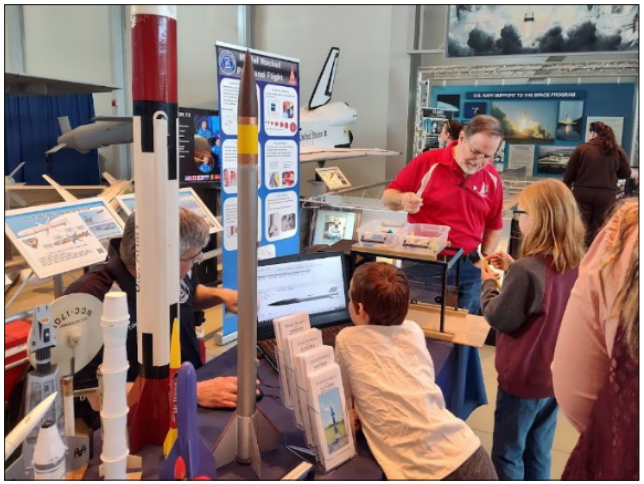
As before we brought out an entire set of PR gear and set up our table with a display of rockets on one half, and the wind tunnel and OpenRocket demo on the other. Alan and Mike took turns greeting the visitors and explaining the club and hobby to all who approached. Brian and Sarah helped the curious in assembling and testing their rocket design in the wind tunnel. I staffed the computer and quizzed the participants on how the performance would change by changing parameters of a rocket design using OpenRocket.

The museum is an attractive facility with plenty of sunshine entering the building to illumine the displays. Credit: Michael Cochran

The NARHAMS display team included (L to R) Alan Williams, Sarah Jackson, Brian Beard and Michael Cochran. Not pictured is Edward Jackson. Credit: Edward Jackson

NARHAMS was strategically located in front of the space and missile display in the central part of the museum in front of the F-35 fighter jet. Pictured are Alan Williams (L) and Brian Beard (R). Credit: Sarah Jackson

Alan Williams (L) confers with a visitor to the NARHAMS display. In front of Alan is a scale model of a Nomad missile. Credit: Brian Beard



Michael Cochran (red shirt) assisted visitors to assemble a model rocket that would perform stable in the wind tunnel. Credit: Sarah Jackson

Brian Beard (L), Alan Williams (C) and Edward Jackson (R) interacted with several NARHAMS display visitors during the 2025 STEAM Day. Credit: Sarah Jackson

A U.S. Navy Flight Demonstration Squadron Blue Angel jet is included in the artifacts on display in the museum. Credit: Michael Cochran

Brian Beard (L) tried his hand at the wind tunnel. Credit: Sarah Jackson

Edward Jackson (R) used the OpenRocket software program to explain how changing the parameters of the rocket design will change its flight performance. Credit: Michael Cochran

Goddard Launch Report
April 2025

Reported by: Alex Mankevich
ZOG-43 Editor

The range crew looked skyward. Credit: Ole Ed Pearson

Jack and Jill leader Tay Adams (L) and Sarah Jackson (R) in the building/prep room at the Visitor Center. Credit: Ole Ed Pearson

DJ Emmanuel (R) helped the Jack and Jill modelers get their rockets ready. Credit: Ole Ed Pearson

Thomas Henderson (R) checked in a "Big Red Rocket". Credit: Ole Ed Pearson

Michael Cochran (R) connected the Jack and Jill Tykes Hi Jinks models. Credit: Eric & Thomas Henderson

The "Big Red Rocket's" flight aligned with the Rocket Garden's Black Brant. Credit: Eric & Thomas Henderson

The Jack and Jill Tykes showed off their Hi Jinks models. Credit: Alex Mankevich

The April Goddard launch got off to an uncertain start. The forecast suggested a chance of rain. Fortunately the rain stayed away, and the participants enjoyed a warm, cloudy day with light winds. The light but erratic winds resulted in about ten rockets ending up in the surrounding trees. Michael Cochran did the honors of recovering all but one of the rockets out of the trees.

This was the first truly warm weather launch of the year. It was a pleasure to wear light clothing after the previous months' cold and windy conditions. Among the popular model rockets launched were the Generic, Gnome, Viking, Starhopper, Ghost Chaser and Starship Octavius.

Five youth groups participated in this Launch. They were the Sligo Challenger Pathfinder Club of the Sligo Seventh-day Adventist Church, the Jack and Jill Tykes - Greater Suburban Maryland Chapter, Scout Pack #33 of Takoma Park, Scout Pack #472 of Rockville and Scout Pack #44079 of Capitol Hill. Consequently, the Visitor Center awarded an impressive count of fifty-two First Time Flyer certificates to the modelers.

NARHAMSter Rick Ruth assisted Scout Pack #472 in their model rocket build and flight preparation. Rick later shared - *"Many thanks to ALL the NARHAMS team that turned out for today's launch. My group of cub scouts from Rockville had a great time. I was there at a card table with my grandson putting in recovery wadding and freshly packing parachutes and inserting igniters and mostly A8-3 engines. A church group leader was at a table beside me. I saw Sarah inside helping LOTS of people. My backyard neighbor was there with her 3rd grader too. Several scouts launched multiple times. These kids will not forget this for a long time. What an AWESOME service the club is providing!!!!".*

April Goddard Launch By the Numbers:

Total Rockets Launched:	**124**
Adults in Attendance:	**114**
Youths in Attendance:	**90**
Total Visitors at VC:	**204**
First Time Flyer Certificates:	**52**

Some Thoughts on Blast Deflectors

Reported by: Alan Williams
NARHAMS Vice-President

Clay pots have been used for several years in conjunction with metal blast deflectors to protect the Goddard launch rack. Credit: Alex Mankevich

Square metal blast deflectors will turn sooty with motor exhaust after several rounds of launches. Credit: Alex Mankevich

Some years back, I swore that I was finished with my "Range Safety Terror" articles for Sport Rocketry Magazine. However, the area's recent near-drought conditions got me thinking about the humble blast deflector and its contribution to safe flight operations.

The NAR and NFPA safety codes and specifications are pretty specific on motor emissions. So, remember what your rocket's motor is really doing as it zooms towards endless space. Or the trees. Our night launch photos in the ZOG-43 show that deflectors are more important than you may think.

Any black powder motor can release a certain degree of partially consumed particles as it burns, creating a small chance of trouble with dry grass or brush. The same is true for certain composite units. Igniters, initiators, and/or flamey/electric matches can sometimes have similar risks. The whole point of having a deflector is to make sure to change hot stuff's direction away from combustibles and allow it to cool. There are a number of different methods of making that happen.

The classic deflector will be a sturdy circular steel plate of around five-inch diameter. This is fine for most low power model applications. The flame jet will primarily bounce off of the plane of the deflector body, cooling as it goes. An alternative is the common roughly five- or six-inch flat clay flowerpot saucer with a launch rod hole carefully drilled in the center. Remember that they are typically unfired, therefore they are a bit fragile. We have used them for many years for the launch racks at the Goddard launches. Turning them lip-up lets the saucer trap the exhaust flow away from the ground, helping prevent grass fires and such. A real advantage here is that these pot saucers are pretty cheap and come in a wide variety of sizes to support many motor ranges. They also have the advantage of being non-conducting. I often placed a normal metal deflector underneath them for added support. A large-sized ceramic wall tile will also do very well.

Some companies in the '60s and '70s were partial to flat metal deflectors coming down from the launch rod at about a 45 degree angle These sort of imitated real flame deflectors found at Canaveral and White Sands. They were stylish but tended to be less effective for spark travel control. Using them also ignored the expanses of concrete and desert that typically surround the real installations.

Perhaps the least smart idea was one MRC/AVI made for their standard mid-1970's model launcher design. It was actually shaped like an acute cone that flared increasingly flat towards the bottom. The problem was that even moderately wide models would position the jet stream down an ever-more ineffectual steep face. It was the first deflector I ever saw that didn't actually (as such), deflect. It was almost useless with cluster models as well.

* Continued *

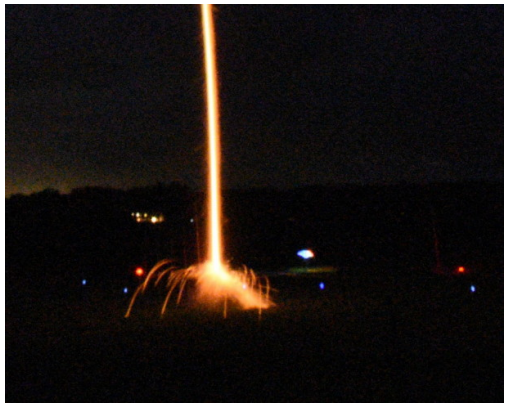
Some Thoughts on Blast Deflectors - Continued

A Fire Blanket (100% woven glass fabric) protected the grass under the pad as James Miers (L) and Brian Beard (R) placed the blast deflector down the 1/4 inch launch rod. Credit: Alex Mankevich

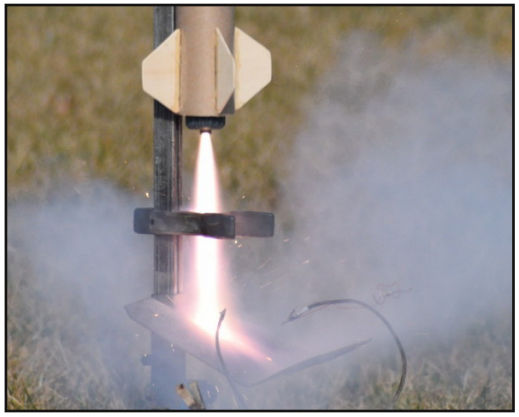
The leading edge of this blast deflector was not angled upwards - causing the grass to become scorched. Credit: John McCoy

Fiery mayhem directed against the away pad's blast deflector by a composite motor during the 2019 TARC Finals. Credit: Alex Mankevich

Flames danced around a blast deflector used at the 2019 TARC Finals' Goddard Range. Credit: Alex Mankevich



This image from the 2018 John McCoy Night Launch illustrates the cascade of glowing, partially burnt material that bounces off the metal blast deflectors. Credit: Alex Mankevich



The upwardly angled leading edge of the blast deflector kept the flames and soot produced by the composite motor from scorching the grass. Credit: Alex Mankevich

One fun idea that sometimes appears is the common metal right angle duct vent join found in hardware stores. They get the job done OK and give a nifty looking oblique smoke cloud near the launcher. Just don't let anyone near the outflow end of the pipe!

Competition tower launcher users sometimes dispense with the REQUIRED exhaust protection systems under the rails. This is a lazy and fairly dumb thing to do. All you need is a sheet of plywood or metal under the launcher to give the protection you need. To make any deflector plate face more durable, coat it with a thin layer of tile grout or patching plaster. I also think raising an angled lip around the plate's edge to kick stuff back upwards is smart.

Mid-power modelers should use a similar larger arrangement to control the "splash" effect from your more powerful motors. Perhaps a wide pan of water could also serve. Of course, if you are flying off sand or dirt, this isn't really needed. However, I suggest thinking about it. As to why I'm exercised about this: I've received a few little surprise "stings" from starter shreds and such while shooting photos over the years; distances always looked safe, but bonus bits of pyrogen could still travel some.

Club members are reminded that we also have a number of anti-flame blankets in the launch equipment boxes.

NARHAMS' Glorious Return to Old National Pike District Park

Reported by: Edward Jackson
NARHAMS President

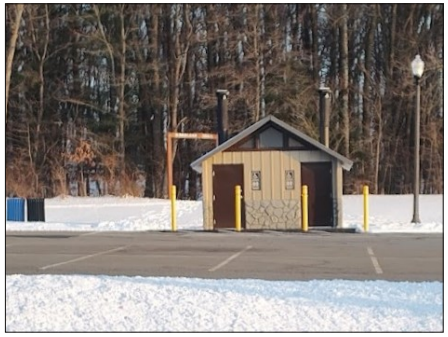
Editor's Note: The following is excerpted from an email sent on March 13, 2025 to NARHAMS members by President Edward Jackson.

For 2025 NARHAMS celebrates its 60th birthday and I am happy to say that we have secured permits for our monthly club launches until the end of the year, but with some changes. Starting with April's launch we will be back at Old National Pike District Park in Mt. Airy in a new location. The park looks very different now and we will now be launching on the Plateau area of the park across from the new parking lot in the very back of the park. For those familiar with our old launch site, this is the field that was on the other side of the tree line that caught many of our rockets. Unfortunately, vehicles are not allowed at the new site, but we will have a parking lot closer. An investment in a collapsible wagon would be suggested but tents are still allowed.

We have permits for the 3rd Saturday AND Sunday of each month. The new Sunday can serve as our rain date or an optional flex date when we need it. The use of the Sunday is to be decided at the club meeting prior to the launch. We have also received permission to hold our popular night launch in September which I know many members have missed.

A club like ours only survives through the active participation of its members. Thank you again to everyone who takes some of their valuable time to lend a hand and keep this club and non-profit organization going.

The red star denotes the approximate location of the new launch site. The brown hexagon denotes the approximate location of the old launch site. The paved road from Shelter 2 to Field 7 is a new construction. Credit: Old National Pike District Park



An "improved" rest room replaced the old Port-A-Potties near Shelter #2. Book your seats early! Credit: Sarah Jackson

The new paved road and parking lot (where we'll be parking) across from Fields #6 and #7. The "Plateau" is at the right side of the image. Credit: Sarah Jackson

A distant view of the "Plateau" - the new NARHAMS launch site as viewed from the old launch site. Note the absence of the line of rocket-eating trees which was formerly in the foreground. Credit: Sarah Jackson

Old National Pike District Park Launch
April 2025 - *"Back Home Again"*

Reported by: Sarah Jackson
NARHAMS Treasurer

Finally! We are back at our home site of Old National Pike Park. We have permits for every month in 2025, including the John McCoy Night Launch in September. However, our old field is no more, and we are launching from the new Plateau area. For those of you who remember the old site, we are now located on the hills behind the old tree line. The good news is that there's a parking lot close by (not as close as at Krimgold, but way closer than before at Old National). The bad news is we cannot drive on the field. Therefore, it might be a good idea to invest in a wagon or hand cart to transport your materials across the grass in the future.

Our day started at the storage unit in New Market (remember we have a storage unit? It's $55 a month). (Ed Jackson and I are happy to be able to remove all the launch equipment from our garage and return it to the storage unit where it should be.) A slight hiccup occurred when our old gate code didn't work. Of course there was no one at the office to help and no one answered the emergency number posted on the office window. We then got the idea to change the code from ending in the * (star) to the # (pound) symbol and YAY the gate opened for us! Thanks for not telling us the code changed, storage unit people. Thankfully from there on out, the storage unit trip was easy. We loaded the truck up with launch goodies, helped by Mike Kelley, and set off for the park.

The park was fairly empty, so we set up on the Plateau area, as far away from the trees as we could manage. There is a playground nearby, so we made sure to direct flights elsewhere (we aimed for the area where we used to launch). The launch area has some hills, and is weirdly graded in spots, but it seems to be a big enough recovery field for us to use the full range of low/mid power rockets (up to G). There is a line of trees that bisects the field. Luckily we only lost one rocket to that line of trees (one of Mike Kelley's, but I believe he was able to get it back with the use of the pole).

Fay Stec's Dragonite was the first launch of the day, which flew shortly after 10 AM. We continued launching fairly steadily all day until about 3:30 PM when there were no more people prepping rockets. We had a total of 107 flights. Some notable flights were: John Richter's Icarus, a 3D printed model on a cluster of E12s. This model was lost to the winds, but the modeler just said he could print a new one. Silas launched a Kerbal Space rocket three times, on a C6. (Hopefully Jebediah the Kerbal took his Dramamine beforehand). Several of us brought and flew our paper plate/yogurt cup saucers that we built at the April club meeting. The popular engine of the day was the C11. Many rocketeers chose this over a D12 while we are still learning the field. And it WAS a bit windy. Normally, we'll only see a small handful of C11s, but we had 15 fly on this launch. Of course, the B6 was the most popular engine, with 41 launches. James Miers, Shaun Murphy, Mike Kelley, and Tom Flint tested fate with F and G motors, most with a Jolly Logic riding along, and all rockets were recovered. Bill Stec and Tom Flint tied with most rockets flown at 13 each. However, Tom had the most variety of rockets to fly. Shaun Murphy and Mike Kelley had 9 flights and Brett Jurd had 8. Some old members returned to spend part of the day with us. We saw Jim Filler and the Shafers. Erik Hill returned and flew a few rockets. And of course, our regulars were there including Ole Ed Pearson, Alan Williams, Thomas Henderson, and Fabrice Derullieux.

Sarah Jackson returned with her Estes Baby Bertha model. Credit: Ole Ed Pearson

Alan Williams' fluorescent orange and yellow Quest Eagle and Faye Stec's sun-flowered Big Daddy rockets on the rack. Great job, rocketeers! Credit: Ole Ed Pearson

Faye Stec's Dragonite was the first rocket launched at our new Old National site. Credit: Sarah Jackson

(L-R) Miles, Bryan and Elle Irby at the April sport launch. Credit: Ole Ed Pearson

Old National Pike District Park Launch
April 2025 - *"Back Home Again"*

Sarah Jackson's paper plate saucer flew well on a B6-2 motor. Credit: Sarah Jackson

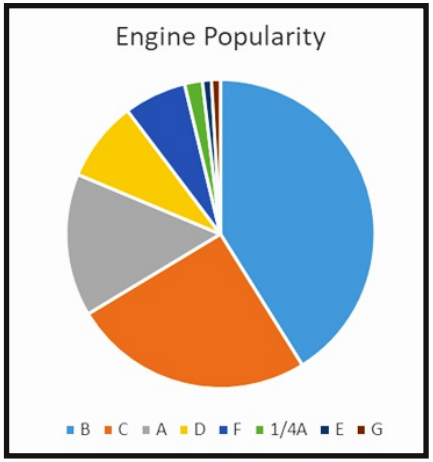
Ed Jackson (L) launched Mike Kelley's Eradicator while Tom Flint looked on. Credit: Ole Ed Pearson

Three generations of model rocketeers. (L-R) Ole Ed Pearson, Curtis Lacy and Josie Lacy. Curtis used to launch at the Goddard public launches 30-plus years back. Credit: Michael Cochran

A closer view of Mike Kelley's Eradicator ascent on a G64W motor. Credit: Eric & Thomas Henderson

Faye Stec presented her Big Daddy model artistically painted with sun flowers and lady bugs. Credit: Sarah Jackson

"Mike, look up! Over your right shoulder. That's Brett Jurd's V2 flight." Credit: Ole Ed Pearson



The most popular motor was the B6 for 41 launches and the next most popular motor was the C11 with 15 launches. Pie chart credit: Sarah Jackson

Ole Ed Pearson's Omloid on pad #1 and Thomas Henderson's Ed Wood's Revenge saucer on pad #2. Credit: Eric & Thomas Henderson

Old National Pike District Park Launch
April 2025 - *"Back Home Again"*

"And I learned something new, thanks to Jim Miers. He patiently showed me how to assemble a reloadable motor. Thanks, Jim! It was a nice day and I was happy to spend it with fellow rocketeers. See you next month!" **- Sarah Jackson**

Mike Kelley (pictured) generated beaucoup dissussion about the precise variant of his semi-scale Terrier Orion sounding rocket. Credit: Ole Ed Pearson

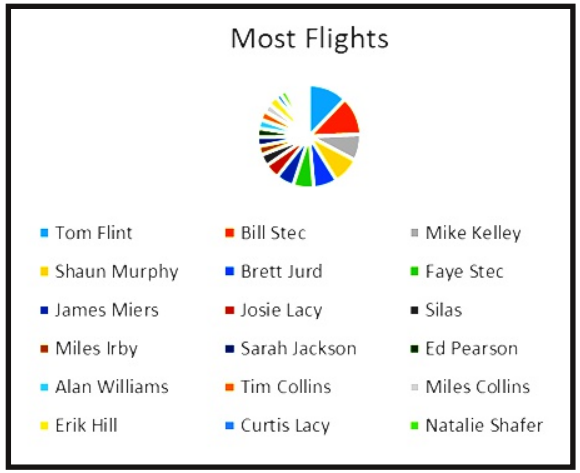
A close-up of the eggs-holder capsule for Chris Greco's egg lofter rocket. Sadly, this model did not fly due to stability issues. Credit: Sarah Jackson

A red Goblin lifted off from rail #2 as other models await their turn on rack #1. Credit: Eric & Thomas Henderson

James Miers prepared his LOC Viper rocket for launch. Credit: Ole Ed Pearson

Chris Greco's Shooting Star in flight. Credit: Eric & Thomas Henderson

The view of the range head at the new launch location at Old National Pike District Park. Credit: Eric & Thomas Henderson



Bill Stec and Tom Flint tied with most rockets flown at 13 each. Shaun Murphy and Mike Kelley had 9 flights each and Brett Jurd had 8 flights. Pie chart credit: Sarah Jackson

Real World Rocketry - February to April 2025

Reported by: Thomas Henderson
ZOG-43 Associate Editor

This article covers events from February 24th to April 27th, 2025.

Blue Origin flew New Shepard missions NS-30 and NS-31, each carrying six passengers to suborbital space. SpaceX launched a Falcon 9 with mission Crew-10 to the International Space Station with a crew of four, while Crew-9 returned to Earth with its own crew of two as well as the two-person crew of Boeing Starliner mission Boe-CFT. SpaceX also launched private scientific mission Fram2 to polar Earth orbit with a crew of four. Roscosmos launched Soyuz MS-27 on a Soyuz-2.1a rocket to the ISS with a crew of three, while previous mission MS-26 returned to Earth. CASC sent mission Shenzhou-20 to space station Tiangong on a Long March 2 rocket with three astronauts.

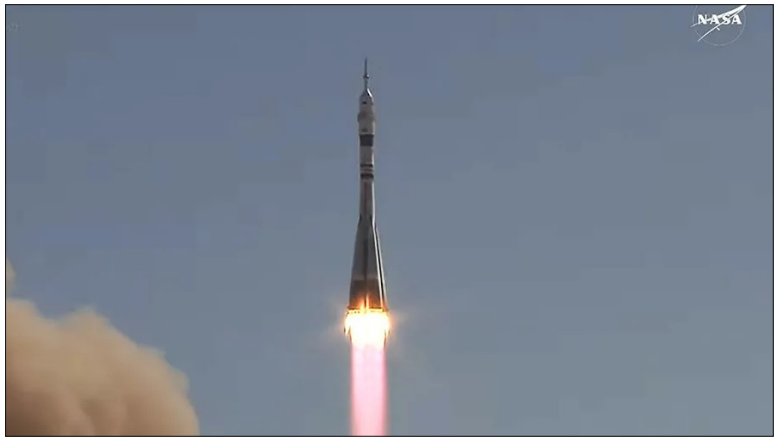
SpaceX flew 22 uncrewed Falcon 9 missions, including scientific and commercial payloads, an ISS resupply ship, and 16 loads of Starlink and Starshield satellites. SpaceX also made the eighth test flight of their Starship-Superheavy reusable rocket. The booster was launched and recovered successfully, while the orbiter broke up during the second-stage burn. Rocket Lab flew three Electron missions from New Zealand. Northrop Grumman launched a Minotaur IV rocket with a military satellite.

CASC flew 10 missions of Long March 2, 3, 6, 7, and 8 rockets with various commercial and government payloads in addition to Shenzhou-20. Galactic Energy flew two missions with their Ceres-1 rocket.

In addition to Soyuz MS-27, Roscosmos launched one Angara and two Soyuz rockets with various payloads including a Progress resupply ship to the ISS.

Arianespace orbited a reconnaissance satellite on an Ariane 62 rocket, the second launch of the Ariane 6 series.

Isar Aerospace made the first launch attempt of their Spectrum rocket. The vehicle went out of control shortly after its liftoff from Norway.



Soyuz MS-27 launches to the ISS with a crew of three. Credit: NASA

Upcoming in May and June 2025:

• May 29: SpaceX launches private mission Axiom Ax-4 to the ISS.

• NET May: CASC launches asteroid sampler Tianwen-2 on a Long March 3B/E rocket.

• June 26: NASA flies a Terrier-Improved Orion sounding rocket from Wallops.

• NET 2nd quarter: Second mission of Blue Origin New Glenn with ESCAPADE Mars probe.

• NET 2nd quarter: Ninth test flight of SpaceX Starship-Superheavy reusable rocket.

• Soon: Rocket Lab plans several HASTE missions from Wallops for 2025; these happen with short notice, so it is possible one or more may fly within the next few months.

Eclipse Excursion 2024 – A Look Back

Reported by: Mark Wise
NAR Secretary

Note: This article is as much a travelogue as it is a story about viewing the eclipse. Feel free to skip ahead.

My first eclipse was February 26, 1979. I was in ninth grade in Minnesota, where the eclipse reached 92% totality. The science teachers had a video feed into the classroom, but it wasn't the same thing as standing outside to watch. I did get to look through the windows between classes, which was better than nothing. Man, I should have skipped class.

My next eclipse was May 31, 2003. I was unaware of it in advance, being near the end of the long trip from the U.S. to the Horn of Africa. We were standing on the ramp at Al Udeid Airbase, Qatar, waiting to board the C-130 that would take us to Djibouti. This eclipse was a bit less than 30% total, but hey, an eclipse is an eclipse!

August 21, 2017. I drove from Maryland to North Carolina to see the eclipse with my significant other at the time. We found a meadow outside Cullowhee, set a blanket on the ground, put on our goggles, and took it in. An eclipse is different in the country. The temperature cools off quickly as the sun disappears, the nocturnal bugs and birds come to life for a few minutes, and the cows get a bit edgy. The only downside to this eclipse was the traffic the next day. It took me a record twelve hours to drive the 500 miles home, with numerous (partially successful) bailouts along the way to try to avoid traffic.

Fast forward to 2024. I had three good reasons for making a big deal of the April eclipse. First, I obviously wanted to view the total eclipse for its own sake. Second, it would be an opportunity to get together with my son Michael, whom I didn't see nearly often enough. Third, I would be celebrating my 60th birthday the day before the eclipse, and I wanted to make a bigger deal of it than my 50th, which had been a complete bust, a story not worth recounting here. Why not go to Ohio? The eclipse would be total through much of the state, and totality would be just about the longest in Wapakoneta, Neil Armstrong's home town and site of the Neil Armstrong Air and Space Museum. I'd never been there, which would make the trip to "Wapak," as local folks call it, worth the drive for two reasons. I figured we could stay in Dayton near the National Museum of the U.S. Air Force, where there would be plenty of hotels to choose from.

Michael liked the idea. He'd driven from Minnesota to Missouri with a friend for the 2017 eclipse, but clouds put a damper on the occasion. Also, travelling to Dayton would give him (and me) the opportunity to spend a day at the Air Force Museum, which he hadn't seen since NARCON in 2016. That way the trip would be worthwhile even if the eclipse was a bust. He didn't mind helping his old man celebrate a birthday either, especially if the old man was paying for everything.

We made plans well in advance. By the middle of January, I had made hotel reservations at the Hilton Garden Inn in Beavercreek, a ten-minute drive from the Air Force Museum and a room rate that I could live with. Michael booked a flight from Minneapolis-St. Paul to Columbus. That flight would be hundreds of dollars cheaper than flying to Dayton, and picking him up in Columbus would only add about a dozen miles to my drive.

Friday, April 5, 2024. I put in about a half day at the office, leaving DC around 1 pm. The weather was decent enough in the DC Metroplex, and I got out of town before Friday afternoon rush hour could really kick in. That was fortunate, because I hit a few patches of snowy weather in western Maryland and through Pennsylvania – not exactly what I expected for April. I arrived in the cell phone lot at John Glenn International Airport in plenty of time to pick up Michael, and we finally arrived at the hotel around midnight. By common consent, we agreed to sleep as late as possible. Between the half day at the office and the nine-hour drive, it had been a long day.

Still, old habits die hard, and I woke up relatively early Saturday morning. I grabbed breakfast in the hotel restaurant while Michael continued to sleep, then I went back to our room to check the weather. I generally prefer aviationweather.gov to weather.com, but I checked both. The prognostic charts and forecast discussion for Monday in southern and western Ohio didn't look too promising, with a likelihood of overcast and occasional rain on the big day. Disappointing, but we couldn't do anything about it. Once Michael was awake and reasonably caffeinated, I updated him on the forecast.

Sunday. Museum day. Dad's birthday. Extravagant dinner day. The weather forecast for Monday was improving, to our relief, but we'd keep an eye on things. *Continued*

Michael setting up his gear in the hotel parking lot. Credit: Mark Wise

A few clouds in front of the crescent sun made for a spooky effect. Credit: Michael Wise

Eclipse Excursion 2024 – A Look Back (Continued)

I'd been to the Air Force Museum a few times since NARCON 2016, but this was Michael's first visit since then. It was obvious that the museum staff were expecting a huge crowd the next day, with extra signage and uncountable porta-potties set up in advance of the event. For all that, the museum wasn't too crowded that day. The museum had added a few exhibits since 2016, and the weather was more conducive to viewing the outdoor exhibits. Between the subdued lighting and the crowds, it's a challenging environment for photography, but Michael got some decent pictures.

On to birthday dinner. Dayton isn't exactly known as a destination spot for foodies, but there are a few nice restaurants. A colleague of mine recommended Cooper's Hawk as a great place for a birthday dinner, so we gave it a shot. The food was fabulous, and the wine was excellent. It wasn't what I'd call cheap, but it was a milestone birthday, and a little extravagance seemed appropriate.

Back at the hotel, I checked the weather again while Michael looked at the Armstrong Museum's website. He found that 30,000 people were expected to travel to Wapakoneta (population about 10,000) for the eclipse, and traffic was expected to be apocalyptic. We'd have to leave our hotel around 5:30 AM to have any hope of parking near the museum, and we were beginning to wonder if it would be worth it. After some discussion, we decided to sleep in and catch the eclipse from the hotel parking lot. Totality would be a full minute shorter in Dayton than in Wapak, but we decided that was a reasonable price to pay to avoid the drive and the crowd.

Monday. The big day. The main reason for the trip. Once we were both ready to face the world, we grabbed a super-quick brunch at a nearby Burger King so that we wouldn't lose our spot in the hotel parking lot, but we needn't have worried. A few dozen people drove in to take advantage of the space, but it never got crowded.

The weather was glorious. Warm enough not to require jackets, a light breeze, and just a few wispy clouds while we set up. I hadn't thought to pack a camping table, so Michael used the back of my car as a table to stage his photography gear. He was familiar with the operation of his digital SLR camera, and he'd taken some time at the museum the day before to become more comfortable with the new lens that he'd bought. I'd consulted an old friend who was a professional photographer, as well as professional photographer/NAR board member/NARHAMSter Jim Wilkerson. Both of them said that if Michael wanted to upgrade his equipment he'd do well to buy some new lenses, or as Jim said, "Spend the money on glass." He also picked up the necessary filters, while I made sure that we both had eclipse goggles.

We confirmed that the hospital across the street wouldn't obstruct our view from the hotel parking lot, and Michael proceeded to set up.

Just a little sliver left. Credit: Michael Wise

The diamond ring. Credit: Michael Wise

He found that the sun was getting in his eyes, so I dug an old ball cap out of the car for him. This was actually noteworthy because he never wears hats, not even in the dead of a Minnesota winter. We watched the sun progress across the sky, while keeping an eye on some clouds to the west. Michael took a few photos of the full sun to make sure that his camera was working and his settings were correct. He'd had some formal training in photography, so I was confident that he'd have everything just so with time to spare.

The eclipse began at 1:53 PM in Dayton. It wasn't noticeable to the goggles-protected human eye for the first fifteen minutes or so, but a definite bite out of the sun was noticeable in Michael's first few photographs. One lovely thing about an eclipse is that it's a relatively slow-moving event until near totality, so we could grab a soda, run to the rest room as necessary, and chat easily, like a father and son who get along well. When it arrived, totality came quickly. The sliver of sun grew ever smaller until at 3:10 PM, the eclipse was total. Michael was really snapping away now, using a remote trigger so that he wouldn't jostle the camera during longer exposures.

The photo of the corona came about halfway through totality, which lasted 2 minutes and 43 seconds at our location. We really didn't feel the minute we lost by not driving to Wapakoneta. Just as totality ended, we saw the "diamond ring" at the sun's lower left. It makes for a great photo, but it's even more striking in real time.

By 4:25, it was all over. Michael packed up his camera gear and we headed out for an early dinner at Five Guys. Somehow that wasn't enough, so we drove back to Cooper's Hawk for a celebratory dessert. Sixty-two dollars for cake and wine, but it was absolutely worth it. (No, I'm not that well off, but this was a special occasion.)

Up early on Tuesday morning to drive Michael to Columbus for his flight back to Minnesota, followed by a leisurely drive home. Michael would edit his photos over the next few days and send me the best of them. A good time and good memories. Looking forward to driving to New Town, North Dakota for the August 2044 eclipse!

NARHAMS News

March Business Meeting

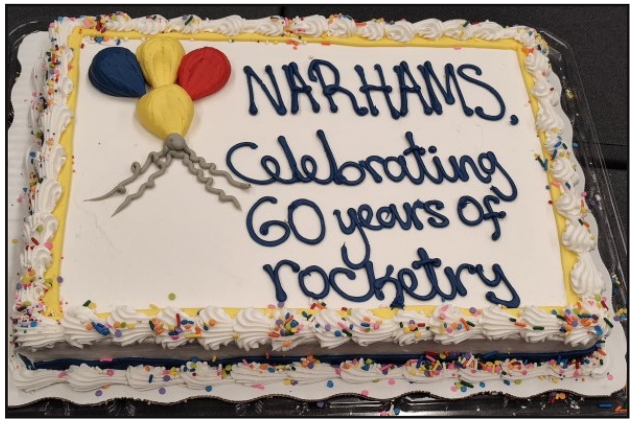
Fabrice Derullieux provided the refreshments and beverages for the March business meeting. Launch Manager Training was the topic of discussion before the official start of the meeting.

President Edward Jackson presented his progress in getting our monthly sport launches back to Old National Pike District Park (ONPDP). Edward used the computer monitor to depict the new physical layout of ONPDP. NARHAMS' new launch site will be situated at the far North end of the park. A special blue ribbon panel was assembled to visit the park to evaluate the optimum placement of the launch range.

We discussed the need for repairs to the launch racks to assure reliable ignition of the rockets' motors. We will dive more deeply into this issue during April. We approved the purchase of a digital scale to be used at the Goddard launches.

We all applauded Brian Beard at the conclusion of his reading of the minutes of the previous business meeting. It was to be Brian's last official duty as the outgoing Secretary of the club. Thomas Henderson is now the Secretary.

The highlight of the meeting as the sharing of the cake that Mandy Solomon arranged for us to celebrate NARHAMS' 60th anniversary.



The cake that was shared to celebrate NARHAMS' sixtieth anniversary. Thanks to Mandy Solomon for the arrangements. Credit: Sarah Jackson

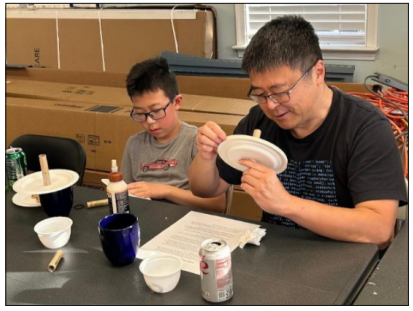
April Business Meeting

The pre-meeting topic was "Saucer Build Session" guided by Thomas Henderson using two paper plates and a yogurt cup. Thomas provided the instructions, body tubes, engine hooks, launch lugs, and centering rings. They were easy to build and will make excellent small-field and windy-day fliers. Also, the refreshments were provided by Eric and Thomas Henderson.

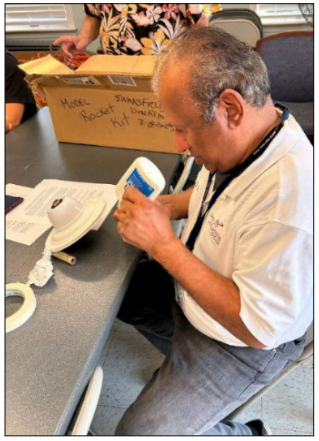
During the business meeting we had a discussion about launching at the newly-renovated Old National Pike District Park. We are content to adopt a "learn the field" approach. NARHAMS will not be hosting an East Coast Regional Meet (ECRM) this year at the "new" launch range.

We discussed two upcoming events - the Rockville Science Day on April 27th at Montgomery College and an exhibit on June 22nd at the Nike Missile Base BA-79 in Granite, Maryland.

We discussed selecting builders for the Section's Goddard "Nell" scale model rocket to be used for display during next year's 100th anniversary of Dr. Goddard performing the world's first liquid-fueled rocket launch.



Isaac (L) and John Kim (R) assembled Thomas Henderson's saucer kit at the club meeting. Credit: Ole Ed Pearson



DJ Emmanuel partook of the paper saucer build session. Credit: Ole Ed Pearson

Chris Greco and his saucer model - outfitted with fins for stability. Reminds one of Star Trek's Enterprise a bit, doesn't it? Credit: Ole Ed Pearson

Diane Pearson on the Job at NASM

Editor's Note: Ole Ed Pearson shares his reflection of a photo taken of Diane at the National Air and Space Museum (NASM).

In this undated photo, the setting is the third floor of the Air and Space Museum. To me the background painting is a bit like a graffitist tag, i.e., one sees the tag's art first before seeing/ferreting-out the message. I saw first an almost Picasso-like rendition; then I realized the artist was depicting the Wright brothers.

The third floor (admin offices) of the Air and Space's Museum abounds with aeronautical and space themed art in offices and hallways. The public never sees what truly could be an art exhibition if the curators ever made a selection and generated a hall's display.

'Twasn't the art that drew me to this photo though. That's my wife with short hair. Diane will always be famous in our household; that's for sure. The fellow with her is Paul Garver. And Paul was pretty famous too. He had retired from the museum but they reserved for him a really small office he could use any time. You can look him up/Google him if you want. The short version I remember is that Paul was instrumental in getting the Spirit of Saint Louis donated to the Smithsonian for display, and that Paul initiated the annual kite festival on the national mall - which NARHAMS supported for a few years by judging entries. Diane liked Paul and he liked her.

Doesn't she look good with short hair?

Big Kat Flies at MDRA Red Glare

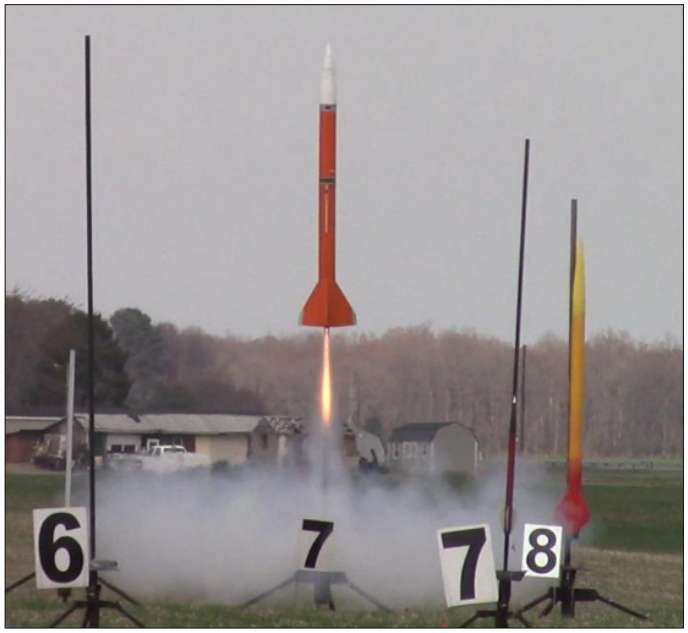
Reported by: Dr. George Crombie

Melody and I attended the MDRA Red Glare this year for part of Saturday (March 29, 2025), so that I could fly my Big Kat. The launch was at the Higgs Ranch. The Big Kat is 8 feet tall and fully loaded this time was18 pounds. It flew on a K445 motor.

I listened to my RRC3 and counted the beeps, and it sounded like it made it just over 2800 feet. That is just a bit higher than I thought it would be, but not by much. Fortunately, it was below the cloud level and the winds were not high enough to carry it too far. I used my watch, and it was about 1100 steps away.

The lower portion was standing upright which helped me find the rocket. It is big but the fields are pretty large, and I did not get a good enough bearing on the landing site, so I had to cross some field to find the rocket.

(Next flight will include a noise-maker which should aid in recovery.)



The eight feet tall Big Kat "slipped the surly bonds of Earth" on a K445 motor. Credit: George Crombie

Dr. Crombie poses with the Big Kat at MDRA Red Glare. Credit: Melody Crombie

National Association of Rocketry (NAR) News

NARAM-66 Muncie, Indiana
June 23-29, 2025

The next meet will be held at AMA Site 4 in Muncie, Indiana.

NARAM-66 will now have a sport range running separate from the contest range. The NARAM hotel has been chosen and a full schedule is online at

https://www.nar.org/content.aspx?page_id=22&club_id=114127&module_id=717832 .

The 2024-2025 National Rocketry Competition (NRC) contest events are as follows:

- FAI 1/2A Streamer Duration*
- 1/2A Altitude*
- A Payload Altitude*
- B Rocket Glider Duration*
- B Helicopter Duration*
- D Dual Egg Lofting Altitude*
- 1/4A Flex-Wing Duration
- FAI 1/2A Parachute Duration
- Classic Model

*(Note: * denotes an NRC event)*

NAR Database and Website Conversion

Please visit the NAR website and log in to your new NAR member profile. The url for our website is the same: nar.org. Reminder to all members, you will need to set up your login credentials so that you can access the members only sections of our website for features like the digital magazine and your digital membership card. Also, most of our members use credit cards to pay for dues and you will need to update this information in the new system.

National Sport Launch West-2025
Alamosa, Colorado
May 23-26, 2025

The National Sport Launch West will be held in Alamosa, Colorado and is being hosted by the San Luis Valley Rocketeers. The event will be over the Memorial Day holiday.

- Low power rockets
- Mid power rockets
- High power rockets (up to "O" impulse)
- 52, 000 feet AGL waiver
- Nearby hotels 30 minutes away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