



ZOG-43

The official publication of NARHAMS

May / June 2023



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ZOG-43

Volume 45 Number 3
May/June 2023

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

ZOG-43 is dedicated to model rocketeers of all ages, abilities, and interest. We are committed to providing current information about NARHAMS' activities, updates on model and real world rocketry, and to provide educational material, as well as, entertaining information.

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ZOG-43
4023 Forest Valley Road
Parkville, MD. 21234
Email us at: zog43editor@yahoo.com

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 (7) 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. and at Krimgold Park near Woodbine, 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>

From the Editor:

This is the first issue by your newest ZOG-43 Editor. I hope you'll bear with me as I learn the ropes to provide you an informative and satisfying official publication for NARHAMS.

We welcome Thomas Henderson as our Associate Editor. Thomas was ZOG-43 editor during 2008 following the departure of Roy Lappalainen.

In this issue we cover the May and June Goddard Launches and the May sport launch at Krimgold Park. We'll get a recap of the 2023 American Rocketry Challenge from Ole Ed Pearson. Tom Bagg shares his concerning news regarding a bulk pack of A8-3 motors. Read about NARHAMS' outreach at a Vacation Bible School.

This is sort of a "back fill" issue that primarily covers the NARHAMS events which took place in the Spring. Future issues of the ZOG-43 will report on the more current events and outreaches. By year's end, we'll get to a more contemporary timing with the release of the ZOG-43 issues.



Contributing to this issue:

Reporters:
Ole Ed Pearson, Tom Bagg, Alex Mankevich

Photographers:
Eric and Thomas Henderson, Ole Ed Pearson, Alex Mankevich

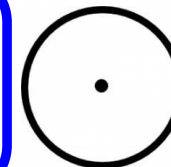


Image Credits for Covers

Front Cover: A rocket streaks upward from rail #1 at the NASA Goddard Visitor Center during the May Goddard Launch. Photo Credit: Eric and Thomas Henderson.

Back Cover: Rocket Football at ARC? A novelty photo captures a thrown football in the foreground of a high power demo launch. Photo Credit: Ole Ed Pearson.

ZOG ROYAL COURT (NARHAMS OFFICERS)

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VICE ZOG (VicePresident) Alan Williams

COLLECTOR OF THE ROYAL TAXES
(Treasurer) Sarah Jackson

KEEPER OF THE HOLY WORDS
(Secretary) Brian Beard

COURT JESTER
(Section Advisor) Jim Miers

Reported by: Alex Mankevich

Peak Season Arrived at the Goddard Launches

Peak Season arrived at the Goddard Launches at the May 2023 First Sunday launch. The unofficial sign that Peak Season is in full swing is when the line of modelers stretches from the check-in table all the way back to the Apollo capsule (or even beyond). A line that long typically happens during the Spring months after the close of cold winter launches and before the start of the summer's oppressive heat and humidity. A crowd this size also implies that the Visitor Center parking lot will be filled to overflowing so that the parking lot for the badging building also gets used.

The crowd numbers were aided along by the presence of Girl Scout Troop #1991 flying their Alpha One rockets. Cub Scout Pack 1533 of Fairfax/Mantua, Virginia flew mostly CEE-YAH and Nexus model rockets, which they had built specifically for this launch. Flyers also arrived with their Alpha III rockets from our recent build session during Rockville Science Day.

We flew this launch under a new Federal Aviation Administration (FAA) waiver authorizing us to conduct model rocket launches in the Washington DC Special Flight Rules Area (SFRA) Flight Restricted Zone (FRZ).

The Transportation Security Administration's (TSA) Airspace Authorizations Office actually is the point of contact for approval. They had contacted both the NASA Goddard Visitor Center and NARHAMS back in April 2023 regarding new procedures that they were implementing as a prerequisite for approving model rocket launches in Flight Restricted Zones.

One outcome of the new procedures was a new restriction on the gross weight of the model rockets permitted to fly. Previously we were constrained by the total amount of motor propellant.



NASA high school volunteer, and 2023 ARC contestant, Alix Allison (striped top) keeps a watchful eye on New Ed as he makes a micro-clip adjustment on the launch rack during the May 2023 Goddard Launch. Photo credit: A. Mankevich

The new standard became that the gross weight (including the motor and recovery system) was not to exceed 4.0 ounces (113 grams). Michael Cochran offered his Soehnle electronic scale so that all models that were checked in for flight were weighted prior to rail assignment. Safety Officers Sarah Jackson and Brian Beard recorded the weight of all the rockets submitted for check in. Many of the rockets that were checked in weighed three ounces or less. A disconcerting note was that four of the models that exceeded the weight limit were the Rookie, Spectra, Helios and Flying Colors models that are sold at the NASA Goddard Visitor Center.

Launch day itself was a glorious affair. It was a very pleasant day that was warm with bearable humidity. The winds were basically calm. The threat of expected rain held off until later in the day, so there was no mad scramble to get all the equipment stored before the start of the rain. For a while, we weren't getting sufficient battery power for both the public address system and for the launch control panel. Luckily a visitor lent us his battery charger as a power source, so the launches were able to continue.

Brian Beard, Mike Cochran, Ed Jackson, Ed Pearson and Alex Mankevich all assisted the modelers to prepare (and build) their rockets inside the Visitor Center.

May 2023 Goddard Launch - Continued



Cub Scout pack 1533 of Fairfax/Mantua, Virginia load their models. Photo credit: Ole Ed Pearson.

As mentioned above, Sarah and Brian handled the safety checks and rail assignments. Alex went where he was needed and saw action setting up the launch range, helping visitors assemble their rockets, and assisting at the launch rack for a spell. Michael Cochran handled the igniter wire misfires as well as performing a turn with the rocket retrieval pole. Ed Light helped with crowd control. Ed Jackson did the firing officer and color commentary duties. Ed Pearson did some photography duties as well as interacting with several of the attendees. NASA volunteer Alix Allison, who is also an American Rocketry Contest contestant this year, helped visitors load the launch rack and to hook up the micro clips.

We totaled 94 flights with 8 igniter wire failures. A few rockets were recovered by Michael, including an Alpha III that hung up on a guy wire for the white Delta rocket. The Visitor Center logged in 238 visitors for the day.



Girl Scout Troop 1991 from Central Maryland came out with nicely painted Alpha 1s. Photo credit: Ole Ed Pearson.



Jess Gogal (L) is one of our newest club and NAR members. She's a high school student aspiring towards an aerospace career. She and dad, Mark, came with a Saturn V model and a High Flyer. We couldn't fly the Saturn (too heavy for our FAA waiver) but was okay for the red/black model. Photo credit: Ole Ed Pearson.



A new twist to the safety check-in process was the newly imposed gross weight limit of 113 grams or four ounces. Here we see Brian and Sarah weighing a rocket on an electronic scale. Brian made a list of the weights of all the rockets that were brought to the check-in station. Photo credit: A. Mankevich

May Goddard Launch By the Numbers:

Total Rockets Launched:	94
Adults in Attendance:	122
Youths in Attendance:	116
Total Visitors at VC:	238
First Time Flyer Certificates:	7

Krimgold Sport Launch Report May 2023

Reported by: Alex Mankevich



This is a wide view of the Krimgold Park Field #4. Fabrice Derullieux (at left) looks on as Thomas Henderson (at right) records the flight. Photo credit: Eric and Thomas Henderson.



A smoky spinner takes to the sky. Photo credit: Eric and Thomas Henderson.



Thomas Henderson's MiG-71 smokes up the blast deflector. Photo credit: Eric and Thomas Henderson.



An imposing Mean Machine gets airborne off the away pad. Photo credit: Eric and Thomas Henderson.

This launch took place on Saturday May 20, 2023.

The launch window had shifted to later in the day, so the launch was conducted from 2PM to 7PM. This was the time frame that the Carroll County Recreation and Parks assigned to us so to assure that we would not be interfering with, or perhaps even intimidate, the other athletic activity elsewhere in the Park.

We were assigned to Field #4, which is up the hill from the parking lot. This particular field is uphill from the parking lot, meaning that it is more exposed to wind.

Krimgold Park lies at an elevation of 235 meters or 771 feet. Our old launch site at Old National Pike Park is at 180 meters in elevation or 590 feet. So, if you're wondering why you seem to be out of breath at Krimgold, it's not due to all the beer and pizza you consume, its the altitude.

American Rocketry Challenge 2023 Finals Recap

Reported by: Ed Pearson, recipient G. Harry Stine Lifetime Achievement Award

There were 660 invited contestants from the 5,000 or so students that entered this year's ARC. These represented the 100 best teams (3-10 people each) from the 798 total teams enrolled. High schoolers represented 70% of this year's participants; 30% were from middle school aged. There were nine all-girl teams and 25 teams where there were more girls than boys. There were 32 teams appearing here for the first time and 37 that were making their 4th or more trip (9 making their 10th or more trip). Nineteen teams were from title 1 schools (scholarship winners). It was a diverse population—50% identified as being White; 18 teams consisted of all non-White students. Altogether about 90,000 people have been in the program; this being the contest's 21st year.

For this year's Finals, contestants were challenged to safely return an egg flown first to a goal of 875 feet in 44-47 seconds. The top 42 teams got a second flight—this time to an objective of 825 feet in a 41-44 second flight duration. First and second flight scores were combined to determine overall placements. Altimeters within the models determined the altitudes and stop watches measured the flight durations.

The NAR staff numbered 115 to run the contest. Several of the volunteers there were from NARHAMS. Three 'HAMSters have attended all national finals there.

The winning team was from a Knoxville, TN high school. Two Alabama teams made the top five. Maryland's Explorer Post 1010 finished third after the first flight; alas the duration on the second flight got away from them and the post earned 19th place overall. Twenty-seven states were represented in the finals (teams from 45 registered initially).

Planning is underway for next year. A finalist team has to be within the top 100 teams to reach closest to 820 feet altitude and have a flight duration between 43-46 seconds. However, at the 2024 finals the goal will be the best of 800 feet and 850 feet altitude. The flight duration will remain between 43-46 seconds.

The American Rocketry Challenge is the world's largest rocket contest with nearly 5,000 students nationwide competing each year.



Egg selection station. Photo credit: Ole Ed Pearson.



NAR staff numbered 115 to run the contest; several were there from NARHAMS. Three HAMSters have attended all the national finals. Photo credit: Ole Ed Pearson.

American Rocketry Challenge - Continued



Matt Steele (center) from Utah checks in a model. Photo credit: Ole Ed Pearson.



Spectators and family members set up a tent city to observe the Finals. Photo Credit: Ole Ed Pearson.



A contest rocket lifts off the Stine Range. Photo credit: Ole Ed Pearson.



A contest rocket lifts off the Goddard Range. Photo credit: Ole Ed Pearson.

Westchester Elementary School launch - May 23, 2023

Reported by: Thomas Bagg



Tom Bagg is seen here at the June 2023 Goddard First Sunday Launch. Tom is holding his trusty yellow recovery pole. Photo credit: A. Mankevich.

Tom was the Risk Manager for the OSIRIS-REx mission which landed its sample returned from asteroid Bennu on Sept. 24, 2023.



Malfunctioning Engine Statistical Survey

<https://www.motorcato.org/report>

Tom Bagg launched rockets for 108 students and 7 teachers at the Westchester Elementary School in Catonsville, Maryland for a total of 115 rockets. They left 2 rockets in the trees, too high for the yellow pole. All other rockets were recovered.

They had about 15 misfires, sometimes several for the same rocket. Tom replaced the igniters each time.

Eighteen Estes A8-3 engines failed their ejection charge! No tracking smoke, no indication of ejection at all, just 18 lawn darts. They also had 3 weak ejections where the nose cone came out, but the parachute remained inside the Quest Astra III rocket body tube. All the engines came from a set of 6 bulk packs of A8-3s purchased from Belleville in February.

Tom filed a Malfunctioning Engine Statistical Survey (MESS) report stating that there was no ejection charge on 18 of the 108 Estes A8-3 engines flying in Quest Astra III rockets. All 18 failures resulted in lawn darts that pushed the nose cone into and crushed the top of the body tube. Weak ejection charges were noted on three additional Estes A8-3 engines, meaning that the nose cone came out, but the parachute remained inside rocket body tube. These rockets landed safely.



Tom in action at the Westchester Elementary School launch in May 2018. Photo credit: A. Mankevich.

MODEL ROCKET LAUNCH

This Sunday 1-3 pm
at the Visitor Center

Goddard Launch Report June 2023

Reported by: Alex Mankevich

In the range crew we had DJ Emmanuel, Thomas Henderson, Brian Beard, Thomas Bagg, Ed Jackson, James Miers, Michael Cochran, Johanna Bagg, Sarah Jackson, Alex Mankevich and Ed Pearson.

Brian Beard and Sarah Jackson weighed all models at the Safety Check-in Station due to the new gross weight restrictions imposed by the Federal Aviation Administration (FAA) for the waiver process that allows us to operate model rockets within the Washington DC Special Flight Rules Area (SFRA) Flight Restricted Zone (FRZ). None of the 86 checked-in models exceeded the 145 g (5.1 oz) new weight limit of our amended FAA flight waiver.

Ed Pearson, Alex Mankevich and Mike Cochran helped the modelers build and prepare their models inside the auditorium. Tom and Johanna Bagg came out to enjoy their NARHAMS friends and the sunshine. Tom took a turn using the recovery pole to retrieve a few rockets out of the trees.

A Civil Air Patrol (CAP) squadron was in attendance. Eighty-six models were flown. Shirley Ramos awarded 37 First Time Flyer certificates.



Ole Ed Pearson warmed to the launch by helping with model rocket builds. Photo credit: A. Mankevich.



Jim Miers makes an on-site repair. Photo credit: Ole Ed Pearson.



Michael Cochran helps a modeler build their rocket. Photo credit: Ole Ed Pearson.



Tom (left) and Johanna (right) Bagg joined the day's events. Photo credit: Ole Ed Pearson.



The range crew cleaning up following the June 2023 Goddard Launch. Foreground: DJ Emmanuel at the rack. Background from left: Thomas Henderson, Brian Beard, Thomas Bagg, Ed Jackson, James Miers, and Michael Cochran. Not shown: Johanna Bagg, Sarah Jackson, Alex Mankevich and Ed Pearson. Photo credit: Ole Ed Pearson.



NARHAMS Attends Vacation Bible School Libertytown, Maryland

Reported by: Alex Mankevich

Stacy Wright, the Director of Religious Education at St. Peter the Apostle near Libertytown, Maryland, contacted NARHAMS in May 2023 to ask us to demonstrate rockets as part of their space-themed Vacation Bible School (VBS) week. The church is located on Maryland Route 75, which is the same exit that we would normally take off I-70 to get to Old National Pike Park.

Mike Kelley took the reins and organized an agenda of presentations and demo launches. Mike did a site visit at which he determined that the field on church property was large enough to accommodate "A" motor flights. Mike had put together an outstanding program about the history of rocketry, the parts of a rocket and motor, and how they work together to get the rockets to fly.

The VBS arranged for a whole week of space themed activities that included arts and crafts. Their volunteers had spent hours decorating the hallways and classrooms in glow-in-the-dark space motifs. It had a definite "outer space" feel. They had organized their students into four groups from Preschool to Grade 8. The program schedule was run much like the American Rocketry Challenge in that the scheduled events were to happen at their scheduled times. The groups rotated through the classrooms from 6:00 pm to around 7:45 pm. NARHAMS was given about 25 minutes to present for each group of about 25 kids per group.



The hallways were decorated in glow-in-the-dark space themed posters and motifs.



The entire group of students, volunteers and staff watched an abbreviated demo launch of three rockets.

NARHAMS was scheduled for the evening of June 23rd. Sadly, Mike got sick just hours before the big event. Alex Mankevich had originally intended to assist Mike on the launch range. However, Mike let Alex know that he couldn't attend the event, so Alex scrambled to substitute for him using Mike's prepared program.

The whole week leading up to launch day was wet, rainy, foggy, muggy and a complete soak. The weather people tried to sound optimistic that there might be a little break in the rain during the evening of June 23rd. A small miracle happened as the rain stopped briefly at 6:00 pm, but stayed damp, wet, muggy and buggy. So, we were able to squeeze in a launch using the Mt. Airy equipment. We opted to do only one launch, since the weather remained doubtful. We launched only 3 rockets - Razor on A8-3, Cherokee-D on B4-4 and Astra on A8-3. The field was just big enough to allow all three rockets to be recovered, mainly thanks to no wind being present.

Mike Kelley informed us that the VBS is on a 5-year cycle, so that there is a different theme each summer. St. Peter the Apostle may not repeat the outer space theme for several years.

Keep us posted:

Let us know about your rocketry projects, builds, flights, outreaches and certifications.

Email the ZOG-43 editor: zog43editor@yahoo.com



2023 National Events

**National Sport
Launch—West**
Alamosa, CO
May 27-29, 2023

**Spacemodeling
Championships**
Austin, TX
July 1-8, 2023

**NARAM
64**
Lordsburg, NM
July 29-Aug. 1, 2023

**National Sport
Launch—East**
Pence, IN
Nov. 10-12, 2023

narhams@groups.io



NARHAMS uses Groups.io to update its members regarding its activities, meeting and launches. Notifications of launch cancellations or postponements will be announced in this group.

If you are already a member of narhams@groups.io, Log In to access the group. To start your membership in this group, go to <https://groups.io/g/narhams/join> and provide your email address. Then follow the instructions on the webpage.

NARHAMS Club Merchandise

<https://www.cafepress.com/narhams>



NARHAMS has an online store for club merchandise. No more waiting for a group buy to get neat stuff for yourself. Show your pride in your club membership.

There is a huge variety of items. Shirts, hoodies, hats and more!

End your loved ones' gift shopping dilemma. Point them towards the CafePress link whenever you have an upcoming birthday, anniversary or holiday.



Rocketry Challenge

National Association
of Rocketry

www.rocketcontest.org