

20G-43



Sep/Oct 2017
Vol 39 No 5



**IN THIS ISSUE: Saturn V's 50th, Capital Cup, Night Launch,
Swing-Flopper RG/S4A, Eclipse, Cassini's Finale, and more...**

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>

From the Editor - Anniversary, Grand Finale, Total Eclipse, Artists, Rocket Glider, and More!

Don Carson, NAR #11069

In this issue we commemorate two Saturn events, the 50th anniversary of the first launch of the Big One, the Saturn V rocket and the end of the Cassini mission as it plunged into the planet Saturn for its finale. We have a look at how folks watched the big eclipse of 2017.

We get a glimpse of what an artist sees when she attends a rocket launch and we see what inspires a photographer to travel far away from a rocket launch to view it.

We have an honest to goodness rocket plan! Thanks to Kevin Johnson who drew up the plans for one of those swing-flop wing rocket gliders - give it a try.

There's lots of launch coverage, including coverage of the Capital Cup from out in the horse country of Virginia, our 23rd annual night launch, as well as our other regular launches and a few more tidbits from NARAM-59.

As always, thanks to all of you who contribute to our club newsletter. You make it happen.

Fly 'em high, bring 'em back, and be safe.

For questions, answers, opinions, files, photos, and more NARHAMS, join the [NARHAMS Yahoo group](#). It is free, painless, no ads, and may just be the cure for the common cold. Also: [Facebook](#) if you are not paranoid about that sort of thing.

Front Cover: Textile Artist Dianna Hayes' photo from the June Sport launch. Is there any doubt what these kids are doing?

Photo: D. Hayes

Back cover: The trees in North Carolina put on their own show during the recent eclipse. These are images from light filtered through the canopy onto the driveway at the Carson household.

Photo: D. Carson

ZOG ROYAL COURT
(NARHAMS OFFICERS)
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VICE ZOG (Vice-President) Alan Williams

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(Treasurer) Ed Jackson

KEEPER OF THE HOLY WORDS (Secretary)
Sarah Jackson

COURT JESTER (Section Advisor) John McCoy

50th Anniversary of the First Saturn V launch!

November 9, 1967

By Bill Boublitz, NAR#36860

With a capacity to boost a payload of 260,000 lb. into low Earth orbit, or a 100,000 lb. payload into a lunar trajectory, the Saturn V remains the most powerful launch vehicle yet to leave the Earth's atmosphere. It was capable of placing in orbit a payload more than four times heavier than the future Space Shuttle could lift, and was six times more powerful than the next largest expendable rocket of its day.

The Saturn V was designed by NASA engineers at the Marshall Space Flight Center, (MSFC), in Huntsville, AL, under the direction of Dr. Wernher von Braun. Development began in January, 1962. A total of fifteen vehicles were produced. Thirteen flew missions.

Characteristics

Overall length: 281 ft. (booster), 363 ft. (with spacecraft). Maximum diameter: 33.0 ft. Weight at liftoff: 6,423,000 lbs. Trans-lunar payload capability approximately 107,350 lbs. Earth orbit payload capability, (two stage configuration); 212,000 lbs.

First Saturn V flight specifics:

Vehicle: AS-501

Mission: Apollo 4; Prove the integrity of Saturn V and Command Module heat shield. Successful.

Launched: November 9, 1967, 12:00:01 UT, Complex 39A, Kennedy Space Center, FL

Payload: Command/Service Module CSM-017. Simulated Lunar Module designated LTA-10R.

Crew: Unmanned.

Duration: 8 hrs. 37 min. 9 sec.

Splashdown: Pacific Ocean.



Liftoff! AS-501 Apollo 4. The first Saturn V.
Photo: NASA

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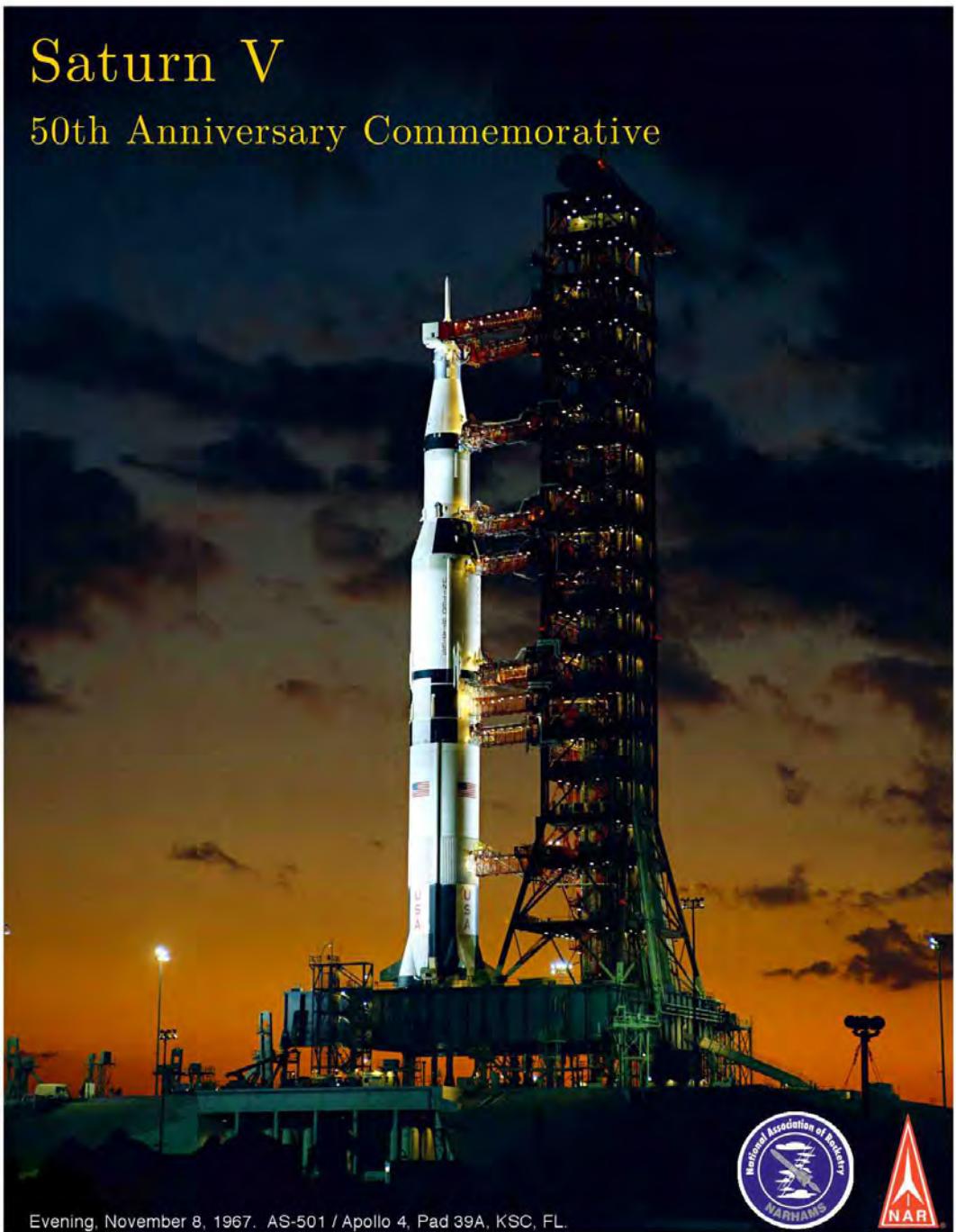
Saturn V, continued

For details on the Saturn V and every mission it flew, see Bill Boublitz's detailed commemorative booklet located in the NARHAMS online library. To get it, click on the cover image to the right.



An image of Earth taken from the first launch of the Saturn V.
That's way up there.

Photo: NASA



Evening, November 8, 1967. AS-501 / Apollo 4, Pad 39A, KSC, FL.

2017 Capitol Cup

Great Meadow, The Plains, VA

The Capital Cup was an FAI World Cup event, which means it had international participation. It was held at the Great Meadow Outdoor Center in The Plains, Virginia September 16 & 17. Great Meadow is a beautiful site, located in the foot hills of the Appalachian Mountains, just west of Manassas. It is the most bucolic rocket range I have ever seen.

The Capital Cup hosts FAI events as opposed to the more common NAR competition events and serves as good practice for the newly selected 2018 US Team members as well as anyone who enjoys flying FAI competition. It was also a National Rocketry Competition (NRC) event. In addition, it was the NOVAAR club's monthly launch, which provided a little variety to the flying.

It was a well run event with many of the NOVAAR folks supporting range functions, in addition to the draftees from the competitors ranks. The weather Saturday was fabulous, good air everywhere. Sunday dawned foggy and the start of flying was delayed an hour or so. Once the ceiling lifted, it was another spectacular day.

Saturday night features a nice dinner, held at the Aurora Flight Sciences facility, followed by a US Team meeting. The highlight of the meeting was a few trip reports from folks who had traveled to Poland in August for the European Championships. That contest is expected to be a dry run for the World Championships next summer.



Don and Nikki Carson returning from S4A recovery ops.
Photo: D. Carson



Steve Krystal is a competition machine, once he's had his coffee.
Photo: D. Carson



Saturday we had competitors from the U.S., Canada, Spain and Bulgaria. The colors flew when we flew.

Photo: E. Pearson



Saverio Prato (Canada) shows his gyro copter while FAI judge Taras Tataryn looks on.
Photo: E. Pearson



Stoil and Dimitre heading for the first flight.

Photo: D. Carson



Jay Marsh, ready to launch.
Photo: D. Carson

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Capital Cup, continued



Chris Kidwell gets away from the laptop for a moment to visit.
Photo: D. Carson



Kevin and Esther returning from a successful recovery.
Photo: D. Carson



Steve Humphrey prepping one of those S-something models.
Photo: D. Carson



S2/P Winners circle. Top-left--silver winning flight of Chris Flanigan (California); right--gold winning flight of Taras Tataryn (Canada). Bottom-left--bronze winning flight of Dr Steve Kristal (Ohio); right--Chris, Taras, and Steve (L-R).
Photo: E. Pearson



Trip Barber explains when he will clear the fog and raise the ceiling to allow flying to begin.
Photo: D. Carson



Stoil Avramov brings his S8 RC rocket glider in for a spot landing.
Photo: D. Carson



Jay Marsh (AMA Veep from NC) practiced his scale altitude flights. Jay is representing the U.S. In the next world championships in Poland.
Photo: E. Pearson

**More and Hi Res versions
of these photos
Click here!**

September Sport and Night Launch

By Jim Filler, Launch Manager

The September Sport Launch at Old National Pike Park was held on Sat., Sept 16th. The launch had many different activities and interests for a wide variety of model rocket enthusiasts. The annual night launch was built into this event and there is additional coverage elsewhere in this edition of Zog-43.

The weather had looked uncertain earlier in the week with all the hurricane activity in the tropics. NARHAMS member Chris Kidwell dropped in to see us on Sat all the way from Florida and dodging hurricane Irma. The weather turned out to be hot and still most of the day, being calm or only a 1-2 mph breeze. I can't remember the last time I seen so many models recover in the launch area. Those flying the contest events were also having models land on the field. I am not certain we had any models land in the trees.

We had the normal sport launch during the daytime and we also hosted the first NRC launch open to any NAR member wanting to participate. The NRC launch is a new contest format that replaced the previous "Pink Book" eliminating weighting factors and having to fly contest factors for a yearly season that ended at NARAM. Under the new format there are 6 yearly specific events for the season that you fly over and over trying to score better than what you scored previously. Your scores are then uploaded to a



McCoy's
WonderWhirl
record attempt on
2.77m Piston
extension.
Photo: J. McCoy



Brad Lowekamp.
Photo: A. Mankevich



(R) Vicky and John McCoy Jr's Princess
Vicky-Outrigger ready for qualifying flight.
Photo: J. McCoy



(Above) Jef Fineran and
Dr. Kidwell chill for a
spell.
Photo: A. Mankevich



(R) Bill Boublitz sets his
Jolly Logic Chute
Release.
Photo: A. Mankevich

Sept Sport Launch, Continued

National Scoreboard showing everyone across the country what their best flight is year to date. This new format started when NARAM-59 ended and will conclude at NARAM-60 next July. Check out the National Rocket Contest Scoreboard [here](#).

We had 5 entries flying five of the six events logging 13 total flights. This was only a small portion of the day mixed in as we went. John McCoy flew 5 flights in four events attempting to surpass national records in the 1/8A class events. John logged some good flights but came up short of a new record.

The sport launch activity started off slow as it does most months. With the Capital Cup going on at Great Meadow in Va., and the Andrews Air Force Base Open House also the same day, it looked like activity might stay slow. About 2pm, things started really picking up. We logged some great night launch test flights setting the stage for the launch still to come after dark. We saw a lot of motors flown during the daytime portion of the launch. The flight cards for just sport flights show that 144 motors were flown from "1/8A up to G". Five staged models were flown and 1 cluster was flown. The motor usage looked like this:

1/8A -1: 1/4A-2: 1/2A-3: A-27: B-25: C-27: D-18:
E-16: F-11: G-11

I want to thank Ed and Sarah Jackson (also brought their truck), Mike Kelly, Matt Filler, Alex Mankevich, Mark Wise and others I am forgetting for helping pickup, setup, clean and tear down the equipment. Thanks to all that did range duty checking in, being the RSO, and timing for the NRC flights. Thanks to John McCoy for bringing the night launch gear and serving as my check in officer for the night launch verification flights in the daytime, as well as doing check-in for the night launch that evening. By far the Sept. launch is one of my favorite launches of the year. I have been the launch manager for this event for a number of years now and this year was another great one enjoyed by all. Excellent job and thanks to the club members and volunteers that made this happen.

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Dick Stafford in fine form.

Photo: A. Mankevich



Tom Jackson preps his Saturn V.

Photo: A. Mankevich



Eager rocketeers take a break before darkness falls on the range and the night launch begins.

Photo: B. Lowekamp

Sept Sport Launch, Continued

Night Launch Coverage

By John McCoy, NAR#15731

Before getting into this year's night launch I feel a need to type just a little about the almost perfect flying conditions we had on this 16th day of September 2017! In a word the day was Spectacular! Arriving at the field about 10:30 am we were greeted with a bluebird blue sky without a single cloud anywhere to be seen. First check-in temp at 79.8 deg. F 55% humidity, barometer reading 29.9" and rising. Breeze 0-5mph from the north, later switching to the NE. WOW! One could not ask for a more perfect sport flying day.

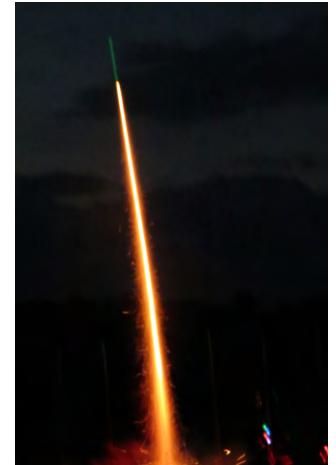
If there was any down side to this perfect weather it would be the lack of air movement also means 0% lift. This makes for very short walks for chute recovered rockets but is not very conducive to getting good duration flights for our scheduled NNRC-1 contest or 1/8A motor duration National record attempts. The author had some awesome 1/8A micro piston flights with 0 chance of record due to lack of lift. I didn't catch much of the NNRC-1 flights but did see a Swing-flop wing glider that made a nice up flight with very little duration (NO lift) at all. I'll let RSO & Launch Manager Jim Filler fill in all the details for the Day time Sport flights, NNRC-1 as he has all the flight cards and witnessed most of those flights.

Our Night Launch-23, preparations began as usual shutting down the day range at 6:00pm. Changing over for night operations, removing one launch rack, adding red lens 10watt halogen up-lights to the remaining rack and 2 of the 4 away pads, setting up the UV LED Check-in table and Launch Control table illuminated fixtures while stowing and putting away as much of our other equipment as possible to shorten the range take down time. 25- 5" Cyalume Glo-sticks were hung



Ready to go -4 night launch rockets on the rack & 2 on the away pads.

Photo: J. McCoy



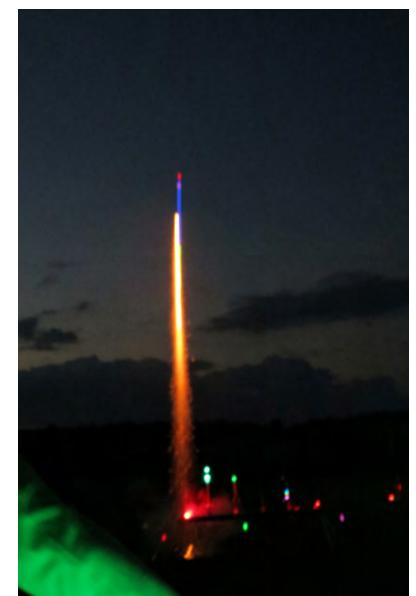
Nora's 2nd flight of her Payloader-II on an A8-3.

Photo: J. McCoy



A composite image of night launches. The long green streak is a rocketeer returning his/her model. Two blue streaks going off to the upper left are from a couple of cool, successful recoveries that floated forever off towards the tree line. The high blue dashed parabolic arc at center left is from a rocket that did not deploy any recovery. You can follow the entire flight path of the purple dashed streak at the image's center.

Photo: A. Mankevich



Thorsten Bruenje's Blue Streak Liftoff.

Photo: J. McCoy

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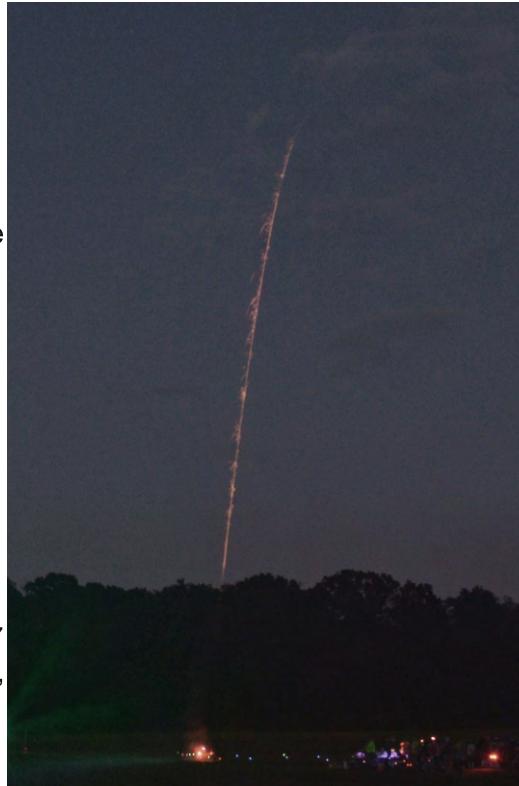
Sept Sport Launch, Continued

on our perimeter rope to help with visibility. Now we had time for a quick dinner and waited for the sun to set behind the high clouds to the west. While we waited a single large black cloud drifted over giving us a very light refreshing sprinkle before leaving the area resulting in only high broken clouds and again very little to no breeze at all. As the Sun set, Jim Filler opened the launch range for night flights at 7:10pm. Our first dusk flight was Jim's dual shuttle boosted on an E9-4 with the twin foam LED illuminated shuttles gliding down very nicely with the booster under chute.

As the evening progressed and the area got darker more folks begin coming up with their glow-in-the-dark rockets shining brightly. By the time all were done, we had flown a total of 33 flights from 16 flyers being watched by 60 folks in attendance. We flew rockets with motor impulse from A8 to F24 which I'll break down a bit later. We had 7 single-flight flyers, 5 flying 2 rockets, 1 A Div. young lady, Nora C flying 3 times, Ed Jackson & Jim Filler each flying 4 rockets and Mike Kelly takes home the "Most flights" honors with 5 very nice night flights. The Shafer Gang led by John Shafer with daughters Natalie & Rachel each flew their Red & Blue Lighting payload Rockets on D12-5 & 2 E9-6 impressive flights. Daughter-in-law Vicky McCoy and John McCoy Jr. flew their brand new night flying Odd-roc "Princess Vicky's Outrigger Canoe" LED illuminated Odd-roc with tethered bail-out hula girl on a D12-3. Hula girl had a LED up/down Light fixture added to her 12" recovery chute while the main body came down on a 16" nylon canopy.

We burned through 3A8, 1B6, 8 C6, 4 C11, 16 D12, 3 E9, 2 E18 & 3 F24 motors. Mr. Filler flew 2-clustered motor rockets along with Tom Jackson flying a single clustered night rocket, 1 Dual glider Illuminated rocket by Jim Filler, 1 2-staged UFO by Mary McCoy, and several new EL wire lighted rockets by Ed & Tom Jackson. Of all the Rockets flown we only had two mishaps: John McCoy's Phantom Nike-Apache split a clear lexan fin under thrust causing it to go unstable. Scott Branch's very nice E18-4 LED Lit "Seizure" had an ejection malfunction sending it in ballistic for the Ouch of the Night honors. We closed the range down a little before 9:00pm after running out of rockets for the first time. These day/night Launches make for a very long day but they are so worth the time and trouble.

Several new rockets were presented this year. While we've had EL Wire illuminated rockets



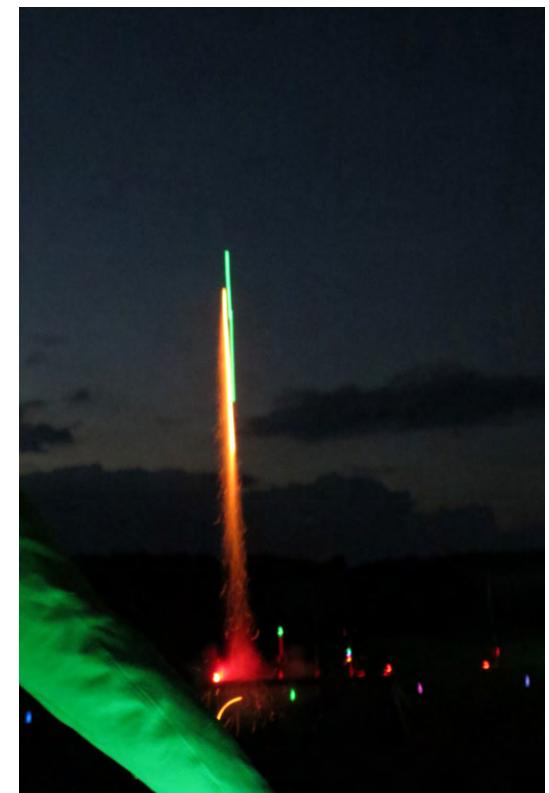
Feathered trail. Check out all the particles streaming off the main exhaust plume.

Photo: A. Mankevich



Rachel Shafer's Red Lighting on the pad.

Photo: J. McCoy



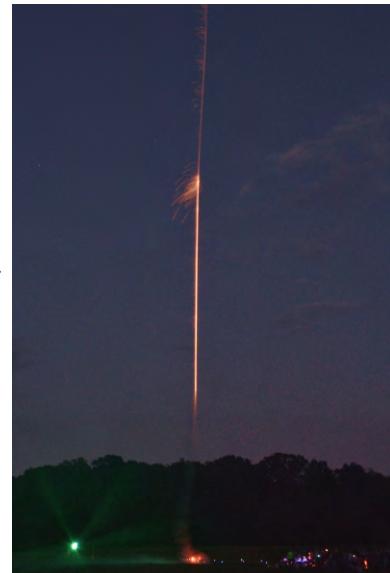
Mike Kelly's Night Flier-3 C6-5 cluster liftoff.

Photo: J. McCoy

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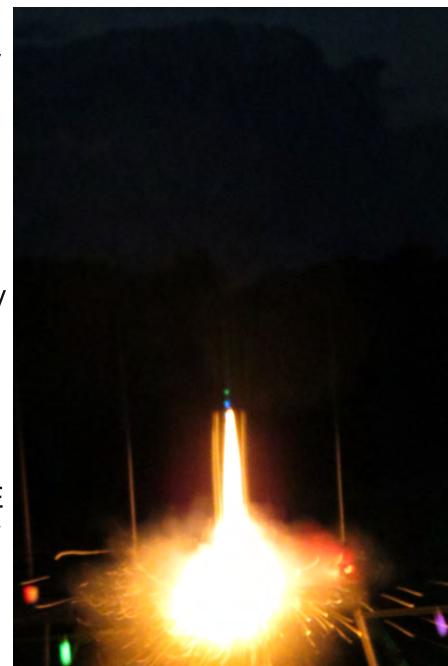
Sept Sport Launch, Continued

before, Ed & Tom Jackson have been experimenting with reduced weight controllers powered by 3.7v Lithium batteries rather than the usual 9v or 11.1v heavy systems. Tom lined the outside of his "Blue Neon" 2-D12 clustered model with several strands of blue EL Wire running on single 3.7v Lithium Cell in bottom & top sections. Sitting on the pad in the early dew waiting for launch caused the upper section to run out of power just before launch. Still a very nice flight recovered using the lower lighting for spotting. Ed Jackson rewired his EL Wired Spaceship from last year but had last minute moisture connection problems so the rocket did not fly. New this year, an F24-4 powered "Quinta Super Star" Spinning UFO structured EL Wire & LED lighted model was very impressive at night. Another new comer to the night launch this year Bradley Lowekamp, created a dynamic LED payload for an Estes Astron Sprint rocket. This Nose mounted LED package & controller was motion activated making a very nice night display flown twice on C11-3 motors. As always most of the 11.1v Lithium powered multi-strip LED payload rockets made their presents known out on the away pad clustered D12 or APCP E & F motor flights. These really easy to assemble BT-80 x 12" payload bays make for some awesome lighting and the extra room can handle the large 11.1 Lithium battery packs and LED controllers with ease.



Exciting exhaust plume. Note the "burp" in the center, then "feathering" following the "burp".

Photo: A. Mankevich



Ed Jackson's Super Black Hawk D12-3 Liftoff.

Photo: J. McCoy

NNRC-1 Standings

A Payload

Place	Contestant	Number	Section	Flight 1	Flight 2	Total	Points
T Division							
1	Them Filler Boys	T043	139	136		136	25

1/2A Parachute Duration

Place	Contestant	Number	Section	Flight 1	Flight 2	Total	Points
C Division							
2	Bruce Canino	39989	IND	49	44	93	20
--	Sarah Jackson	101372	139	EJ	SEP	0	0
T Division							
1	Them Filler Boys	T043	139	30	197	227	25

A Streamer Duration

Place	Contestant	Number	Section	Flight 1	Flight 2	Total	Points
A Division							
--	Mark Wise	34702	139	SEP		0	0

A Helicopter Duration

Place	Contestant	Number	Section	Flight 1	Flight 2	Total	Points
T Division							
1	Them Filler Boys	T043	139	54	79	133	25

1/2A Boost Glider Duration

Place	Contestant	Number	Section	Flight 1	Flight 2	Total	Points
C Division							
2	Ed Jackson	99776	139	25		25	20
T Division							
1	Them Filler Boys	T043	139	28	27	55	25



Eyewitness to Cassini's Grand Finale

by Jennifer Ash NAR# 61415

Working at Goddard, I get to be on a lot of different projects, covering the planets Mars, Jupiter, and Saturn (to name a few) and asteroids and the Moon. Goddard is the home to the Composite infraRed Spectrometer (CIRS) on Cassini and to the Gas Chromatograph Mass Spectrometer (GCMS) instrument on the Huygens Probe. I have been lucky to be the backup system admin on CIRS, and the web admin for the GCMS probe web pages.

In the months leading up to "the Grand Finale", Goddard was planning a few employee activites and a public outreach. The team would be in two places, some at Caltech to celebrate there, and the rest of us in the SOPC (Science OPerations Center) during the final "plunge". In the SOPC, we had some liquid refreshments, and a few screens up to watch the live incoming data stream coming from the spacecraft. We all knew that what we were seeing was an hour and 20 minutes old, so even though we celebrated at 7:56am, Cassini had actually stopped transmitting at 6:36am (EDT). This group laughed, made jokes, and were sad that this mission had come to an end. It was a fitting way to see the end of 14 years of great science data.

Goddard even did a video (I didn't have a chance to be in it) about the CIRS team, and recorded the employee celebration in Building 8. Go to <https://science.gsfc.nasa.gov/690/multimedia.html> and see all three videos.

As a system administrator, my (and the lead's) job is to keep the machines going for another year to process data, and to make sure ALL data is accessible for scientists to continue to analyze for years to come.

Goodbye Cassini. Don't worry Saturn, we will be back to study you some more.



One of the Cassini spacecraft's last images of Saturn and its fabulous rings.

Photo: NASA

Links to Cassini's Top 10 Science Highlights

1. Titan's Seas are Methane Rich
2. Cassini Detects Interstellar Dust
3. Opaque Areas of Saturn's Rings are Less Massive Than Expected
4. Hexagon's Interior Changes Colors
5. Enceladus Jets Let Loose When Farthest From Saturn
6. Summer Clouds Form on Titan
7. Cassini Finds 'Impossible' Cloud of Exotic Material on Titan
8. Titan Has Steep, Flooded Canyons
9. Saturn's Interior Hints That Moons Could Be Younger Than Thought
10. Dramatic seasonal changes observed on Titan



August 2017 Mt Airy Sport Launch Report

By Alex Mankevich – NARHAMS

The August 2017 sport launch at Old National Pike Park was one for NARHAMSters to enjoy for themselves. No large scout or other groups had been scheduled to attend, so the queues for pad assignments were shorter than usual. The weather was sunny and pleasant although the wind was a little brisk at times. There was no official theme for this launch however flyers were encouraged to try out any of their planned night launch rockets. New brown and white signs erected by the Parks Department awaited the flyers.

Sarah and Ed Jackson and Mike Kelley helped Alex with the range set up. We assembled one rack of six rails and set up four away pads. John McCoy brought along the new micro rail assemblies, so they are now part of the range equipment.

NARHAMS member Ed Giugliano made a welcomed appearance for this launch. Ed flew models including the NCR Mini-Katana and Estes Ex-200. The Jacksons (Sarah, Ed and Tom) flew an impressive array of rockets, as usual. Tom notably flew his Saturn V on an E20 motor. Mike Kelley kept the away pads warm. Natalie and Rachel Shafer kept primarily to a 3/16 inch launch rod that they set up at the away pads. One of their more interesting rockets was a steampunk-themed model they call the "Retro Rocket". John McCoy busied himself with some timed test flights of his 1/8A streamer duration model using a micro piston extension launcher.

This launch featured the late summer launch hours of 10:00 am to 7:00 pm. Alas, we didn't quite make it to the evening. Two



Trooper 1 circling over the range head before landing.
Photo: A. Mankevich



Bruce Mitchell preps his Estes Scion.
Photo: E. Pearson



Ed Giugliano and his North Coast Rocketry's Mini Katana (Cluster of a D and two Cs).
Photo: E. Pearson



Joy Thomas (left) prepping her Flying Colors model and Grace Thomas (right) prepping her Dig Daddy model.
Photo: A. Mankevich

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Aug Sport Launch, Continued

firemen approached the range head around 3:45 pm and asked that we clear the airspace for an in-bound medevac flight. An airlift was needed for an ATV enthusiast who was injured off the park's property. The Maryland State Police Trooper 1 helicopter arrived at 4:10 pm and began its customary circling the landing zone before finally touching down on the lower of the two adjacent soccer fields. Trooper 1 finally departed towards the direction of Baltimore around 4:25 pm.

The delay in launch activity caused a loss of rocketry momentum. Several flyers decided to call it a day, so that around 5:15 pm very few rocketeers remained on the field. We decided to wrap up the launch activity shortly thereafter, having recorded a total of 66 flights.



Tom Jackson's Saturn V launching on a E20 motor.
Photo: A. Mankevich



Old National Pike Park put up new rocket signs.
Photo: E. Pearson



Natalie Shafer's "Retro Rocket" on the away pad.
Photo: A. Mankevich



Natalie with another of her rockets.
Photo: E. Pearson



Super Neon XL launch.
Photo: E. Pearson



NARAM-59 Revisited

Editor's note: In the rush to get the last issue out, I left out a couple of notable items and there was one item that needs correction.

First, I misspelled Charis Houston's name, my apologies for that. At the Team Flyoffs, Charis made the Junior 2018 US Team. Congratulations!

Secondly, I had meant to include a great areial view of the range from Sabrina Sager that also shows the "Big Icky" next door.

Lastly, but not leastly, our own Doug Frost took Third Place in Scale with his 1/5 Scale Jayhawk. His models have scored well in the last two NARAMs.

Doug tells us that Frost Rocketry will produce two Jayhawk kits coming out sometime around November, 1/5th (30.5 in.) & 1/8th Scale (19 in.). Look for info on how to obtain one of these kits in a future issue.



Jayhawk under power.
Photo: NARAMLive.com



Doug Frost and his Jayhawk.
Photo: Ms. Frost



1700 ft above NARAM59 on Sabrina Sager's Aerotech Mirage.
Photo: S. Sager



Rocketry Through The Eyes Of An Artist

Yarns and Clothing Inspired By A Visit To A Launch!

By: Don Carson
Photos: D. Hayes

Recently we were honored to be visited at a club launch by a delightful Baltimore-area textile fiber artist, Dianna Hayes of the Knitting Boutique. Ms. Hayes also runs an active online resource for that community. The site hosts a weekly podcast, interviews, supports clubs and retreats, and offers a variety of yarns for sale.

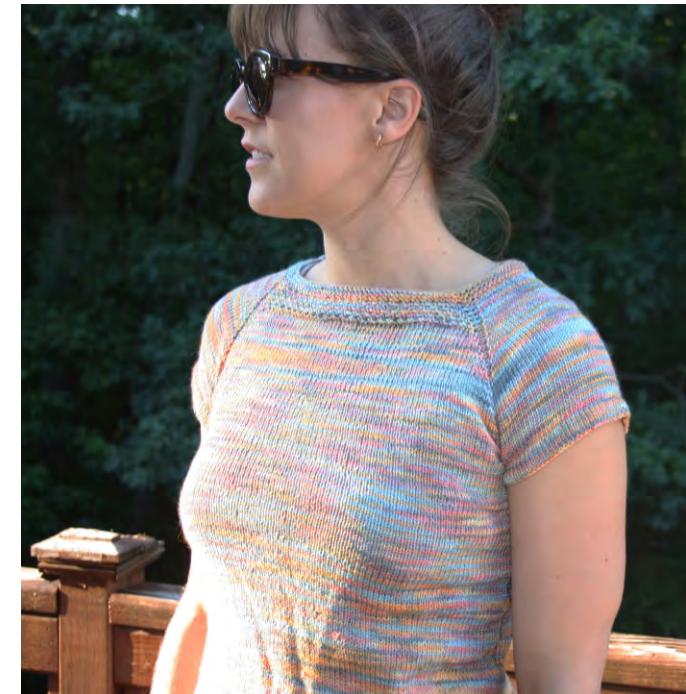


As part of the knitting podcast, she travels throughout the state and highlights the wonders of Maryland in the show's "Maryland Showcase." In addition to the education about Maryland, the store dyes yarn and knits a project to match the featured product. Recent Maryland Showcase projects include yarn inspired by Maryland Wineries, the Maryland Flag, book festivals, the Naval Academy and even Billie Holiday (a long time Maryland resident) among other inspirations.



In a recent podcast, the Knitting Boutique chose to highlight our organization and our rocketeers. Since she chose to come out for the June (ECRM) launch, she was treated to a wide variety of rocketry – both competition and sport rocketry – and a broad spectrum of modelers, as we had many folks who traveled in for the contest. She had no experience with rocketry, so she brought her camera and recorded the event.

After coming out to the launch, she was inspired to create the Stardust Tee which you can see pictured here as well and the yarn used to create



***See more of Ms Hayes's great photos of the June launch.
Click here!***

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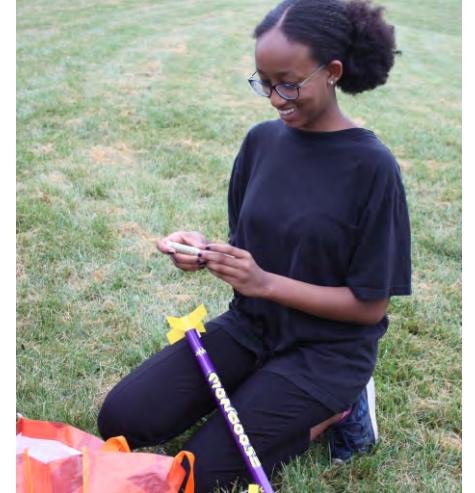
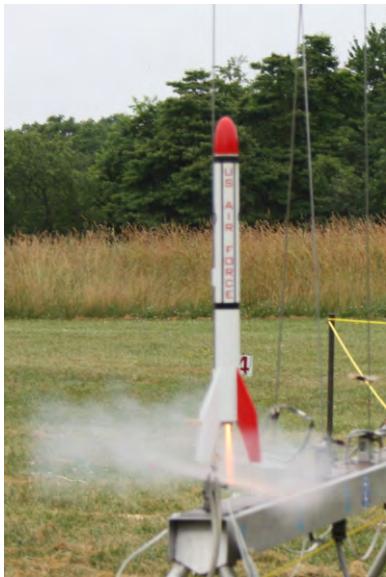
Artist, Continued

this beautiful knitted piece of artwork.

Ms. Hayes was kind enough to share her photography with us. Here, we have a small sampling, for more, click the link button, there are many great shots to check out.

She also created a podcast talking with several of the rocketeers, including young Maddie Stoker. The rocketry part starts at about 2:23 into it but the whole podcast is interesting. Check it out, I think it turned out pretty good.

Click to listen to the Podcast.

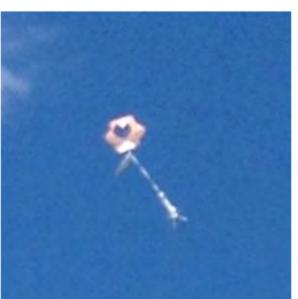


October 2017 Goddard Launch Report



Photos and Commentary by Ed Pearson

I didn't think we would have much participation, because it was the first of the month and a rocket Sunday, but I was wrong. A lot of folks showed. Some old regulars, families and BSA troop 1382 from Haymarket, VA--more than 35 of them.



The count was 119 flights in 1 hour and 45 minutes. So faster then a launch a minute..

Photo: E. Pearson



Pretty good line awaiting safety check and rail assignments. Bill Boublitz (red shirt) did honors with Alex Mankevich assisting.

Photo: E. Pearson

Continued next page

Goddard Launch, Continued



John Bonk has been coming to the Goddard launches for two years now. He also brings (and loses) a Mosquito. This month's model featured a bat for Halloween.

Photo: E. Pearson



Everyone helped the rocketeers at the rack...including Ed Jackson, Dimitri Avramov, Alex Mankevich, Stoil Avramov and Michael Cochran.

Photo: E. Pearson

Shirley Ramos (L) and Julie Saba of the Visitor Center issued more than 40 new flyer certificates.

Photo: E. Pearson



Ed Jackson also launched and narrated.

Photo: E. Pearson



The Great Eclipse of 2017

At Goddard with Alex Mankevich

About 500 sun gazers took to the NASA Goddard Visitor Center on August 21, 2017 to witness the solar eclipse. Large monitors were placed throughout the facility to display the live feed by NASA TV from multiple sites across America which were experiencing eclipse totality. The Goddard Public Affairs staff was in full force at the Visitor Center to mark this special event.

I arrived at the Visitor Center around 11:30 am to find the parking lot already about 40 percent filled. Buses were 'vomiting' visitors as the sun gazers dispersed across the grounds. Most people brought along lawn chairs, blankets, baby strollers and picnic lunches. TV crews from ABC-7 and WJZ (Baltimore) arrived interview the eclipse viewers.

I teamed up with NARHAMSters DJ Emmanuel and Sally Cook, as well as Shirley Ramos of the Goddard Sunday Launches Visitor Center staff. We soaked up the atmosphere and were glad to be counted as having marked this occasion. We set up our lawn chairs under the shade of an old oak tree. When the sun showed through the clouds, we popped up off our chairs, put on our NASA-supplied eclipse glasses and looked up at the unfolding spectacle.

The Visitor Center was due for about 80 percent totality. The sun played cat and mouse with the clouds through most of the early afternoon. As you would know it, a solitary small cloud had to obscure the sun exactly at the peak moment.

I had seen a partial eclipse in New England during the late 1970's. The 2017 experience was comparable to that earlier eclipse. Even though I knew that I was far from the path of totality, I was kind of hoping for some noticeable darkness or cooling of the air temperature. To be honest, I have to say that I couldn't factually perceive any increased darkness or cooling, although I'd expect that the proper instruments would show that some changes were actually measurable.



At the peak of the eclipse...
Photo: A. Mankevich



Monitors we set up with feeds from other sites.
Photo: A. Mankevich



In NC, Kevin Johnson set up his telescope with a Solar Funnel for easy observation
Photo: D. Carson



A real crowd pleaser, you could even see 3 Sun Spots in the image before the moon gobbled them up.
Photo: D. Carson



Mary McCoy recorded these images of the sun filtering through the leaves overhead - a natural pin hole camera.
Photo: M. McCoy



A local granddaughter was delighted to learn you could make a pin hole camera with your hand!
Photo: D. Carson



While others...
Photo: D. O'Bryan



From the Zog, Alex Mankevich: John McCoy – Our New Section Adviser

NARHAMS has voted in long-time member John McCoy as the new Section Adviser at the September 2017 elections meeting.

John is also our current ROMC. Our launch equipment is reliable thanks to the numerous repairs and upgrades John has performed over the decades. John has contributed numerous articles to the ZOG-43 over the decades - particularly as the "Micromeister". He has done his share of competition flying. John is nearly-always guiding the check-in during our September night launches.

John and his better half, Mary, are regulars at our monthly meetings, and they set up their tent/workstation at our Mt. Airy launches near the check-in station. A visit to the McCoy's tent will reward you with a weather station, catalogs of rockets that John has built over the years and a chance to meet other members of the McCoy clan. If you show up with an impressive rocket, John will most likely show you his micro-sized version of that same rocket. A large NARHAMS logo can been seen towards the back door of John's NARHAMS blue colored van.

We all look forward to the refreshments that the McCoys bring to both our monthly meetings and to the holiday party. John's imagination can run wild when he constructs his holiday-themed rockets. He has been active in scouting through the years and occasionally claims to be a fisherman.



John and his micro on the micro pad in May 2013

Photo: A. Mankevich

The McCoy tent
at the April 2013
launch
*Photo: A.
Mankevich*



John's 2013
Halloween Odd
roc
*Photo: A.
Mankevich*



The Loneliness of the Long Distance Photographer

By: Alan Williams, Vice Zog

There are some obscure and interesting aspects to space research. One of the most interesting operations is rocket injection of plasma tracers into the high regions of Earth's atmosphere. What's that about, you ask?

Imagine you are costumed hero Joe Sixpack, patrolling the streets of Noname City in the dark pre-dawn. (Somebody's gotta keep the criminal scum at bay, after all.) Suddenly, you notice a small bright flame lancing up from the southeastern horizon for just a few seconds, then nothing. Four minutes or so pass as you wonder what it was; sorry kid, you're strong but kinda dumb... Then, high up in space, a bubble of intense color blossoms larger than the full moon. Yellow-green, swiftly expanding, then followed by twisting red trails, blue, and bright pink blobs spreading ever taller. Look back at the first cloud and notice it fading to a subtle purple hue. Time to summon the League of Citizen Avenging Justice Persons for action!?!

Not really. What Joe sees is a simple but elegant study of how the Sun's charged particle ejections interact with Earth's magnetic field. Since the mid-'50's, sounding rocket releases of barium, sodium, lithium, and similar plasmas have been a key tool in understanding how our planet shields us from Father Sol's destructive particle storms. NASA's Wallops Flight Facility is the primary technical support center for these flights.

The rockets deliver small packets of fine powdered metals, carefully mixed with pyrogenic explosives, high above the atmosphere. When burned, the materials vent overboard, producing very hot glowing plasma clouds. Their color intensity, brightness, and motion mimic properties of solar particles trapped in Earth's magnetic field. This provides important clues about the powerful



ATREX Flight.
Photo: A. Williams



Unearthly early morning hours.
Photo: A. Williams

Continued next page

forces constantly skirmishing over our heads. (Through potent electrical currents they induce, solar mass ejection events can put our power and communications technologies at great risk.)

These programs have fascinated my brother Craig and me since high school, leading to many a dark vigil on neighborhood lawns and deserted school yards. Our location in Bowie gave a good distance and angle to document results. With years of practice we both shot photos that project scientists tell us yielded good science data. Like witnessing an eclipse or a tornado, these flights leave a powerful memory. It's an exciting, beautiful event, every time!

...is what I would say, except that it's also often like waiting for paint to dry. Requirements for exacting light conditions, solar radiation levels, and clear weather for good photographic coverage at widely scattered sites are often frustrating. The sky can be clear above you and socked in on the coast or worse, the reverse might be true, giving no view of a successful test from your location. Often, you set up night after night as some problem wastes what looks like a perfect flight opportunity. An especially discouraging issue is that while NASA can close the airspace above the Wallops range, they have no say about ocean traffic in the impact zones offshore. Everything from small sailboats to New York garbage barges have brought launches to a halt. I have often followed campaigns for weeks before flights actually occur. In sum, disappointment is a big part of this game. Get used to it.

Regionally, these flights are sometimes vaguely known as "those NASA weather rockets". Of course, that's sort of true, though the solar "weather" they study is invisible. Hmmmmn, unseen forces at work, huh? This brings up a disturbing myth about these flights.

Loneliness, Cont.

Among the many dim-bulbed Web-conspiracy truthers is a community called “chem-trailers”. Like the paranoid folks who see blinking street lamps with bad ballasts as mind control devices, these self-fertilizing geniuses “know” that the releases are “Black U.N. programs” aimed at suppressing their fertility. They fervently believe that jet contrails and secret radio systems are also part of a plot to heat the ionosphere and create, uh, something dark and governminty... It doesn’t matter that a single July 4th fireworks show personally exposes you to billions of times more of the same chemicals than any space experiments ever will. Dum-dums. Luddite morons. Know-nothing putzes. (Pick one.)

If you want to try photographing tracer flights, check the NSROC Program page at the Wallops web site for schedule info. Choose a viewing site away from most lights, with a low horizon and firm ground.

You may already have a camera that will serve. In the days of horse-drawn cameras and film we got good images with ASA/ISO speeds around 400-800 and exposures of about five seconds. Today's digital systems can yield many similar setting options. For the late-June Terrier-Malamute engineering test flight King Zog went with very long exposures and stopped down lens. Multiple layers of high overcast blocked my shots from Bowie.

For my normal approach, use a relatively fast lens (f3.5 or wider) set not longer than about (the 35 mm equivalent of) 65 mm. These are usually large scale events, so you want to cover big chunks of sky. Set for manual focus at infinity if possible. Disable the “image review” feature. (It will mess up your shot rhythm.) Give about a five second gap between frames to reveal cloud motions.

Use a sturdy tripod with a “pan” head that can tilt to extreme vertical angles. It should be tall enough to not keep you hunched over as you shoot. If it's too lightweight, try hanging a gallon water bottle from the center column to anchor it down.

So, my advice is to ignore the dopes. Join me in losing sleep till the rocket godz deem you worthy. You may just see beauty and science appear before your eyes.

Keep watching the skies!!



Black Brant.
Photo: A. Williams



Wallops Malemute Vapors peak.
Photo: A. Mankevich



Right: Wallops
Malemute Vapors
Dissipated.
Photo: A. Mankevich



Lonely photog at the Antares OA-5 launch.
Photo: A. Williams

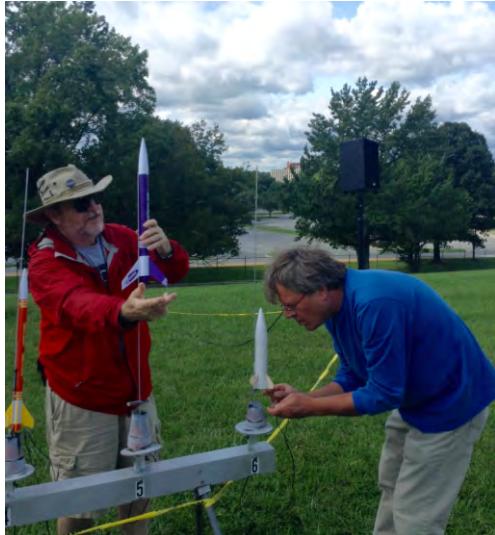


September 2017 Goddard Launch



Photos and Commentary by Ed Pearson

Mike Cochran (L) and Bill Boublitz helping at the rack.
Photo: E. Pearson



Ed Jackson retrieving his Estes Quintistar.
Photo: E. Pearson



The Zog started off the day recovering tree-caught rockets with the pole.
Photo: E. Pearson



Alex Mankevich (L) oversaw launches after Ed Jackson went inside to tell visitors about night-lit rockets.
Photo: E. Pearson

Left: Ed Jackson started off as RSO, LCO, and announcer.
Photo: E. Pearson



DJ Emmanuel of the visitor center and the club brings back a model that landed on the building's roof.
Photo: E. Pearson

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Goddard Launch, Continued



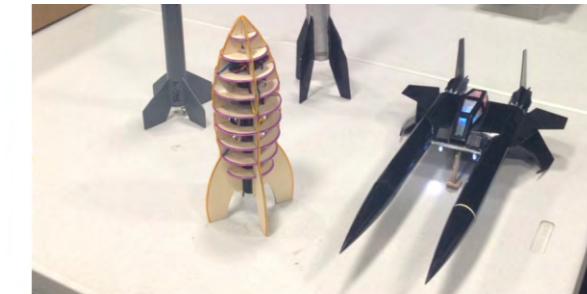
Visitors from Aberdeen, Md prepare their model in the visitor center.

Photo: E. Pearson



Fifty-two rockets flew today.

Photo: E. Pearson



Ed Jackson took time from launch duty to show visitors night rockets. The model in the foreground left is a Retro Rebel by Rocketarium and powered by EL wires soldered along the model's outline. Right foreground is an upscale (D-powered) Black Hawk illuminated by LEDs running off an Arduino processor.

Photo: E. Pearson



A young visitor with her dad.

Photo: E. Pearson



A rare sighting: Bob and Peggy Sclater of WVA. Bob was manager of both Goddard and Wallops Island visitor centers and the two members of NARHAMS in the 1980s.

Photo: E. Pearson



Bill Boublitz and Sarah Jackson did safety checks/rail assignments.

Photo: E. Pearson



Bits and Pieces

Upcoming Meeting Presentation Topics:

- | | |
|------------|------------------------------|
| October 7 | Classic German Rockets |
| November 4 | Planning for the coming year |
| December 2 | Holiday Pot Luck Dinner |

Upcoming Launch Themes:

- | | |
|-------------|---------------------------|
| October 21 | Octoberfest |
| November 18 | Seed Pods and Helicopters |
| December 16 | Open Theme |

Welcome New/Renewing Members

New Members

Renewals

Bradley Grant, John Stalnaker

Announcements

September Meeting Election Results

ZOG (President) Alex Mankevich

VICE ZOG (Vice-President) Alan Williams

COLLECTOR OF THE ROYAL TAXES
(Treasurer) Ed Jackson

KEEPER OF THE HOLY WORDS
(Secretary)
Sarah Jackson

COURT JESTER (Section Advisor)
John McCoy

Thanks to John McCoy for stepping up as Senior Advisor.

Thanks also to Mark Wise for your years as Senior Advisor. Mark has retired from two of his jobs this year! He still has several more to keep him busy, though.

Finally, thanks to Alex, Alan, Ed and Sarah for re-upping as club officers.



Competition Corner: NRC and 3 Contest Announcements

National Rocket Competition (NRC) Sporting Code Rule 5.5, Something Interesting.

By John E McCoy Sr. NAR#15731

Our Pink Book has changed radically starting immediately after NARAM – 59. Given all the changes I decided to download the latest version and spend the next couple weeks reading over all the changes to our new competition flying.

While going through the rules one jumped out at me that I do not recall seeing in our Old Rule books going back to the late 1960's. Rule 5.5 is very short: No model rocket shall be launched with the Aft end of the model more than 3m (118.11") above the ground.

This got me thinking about some fun and funny things I'd seen over the years. I won't waste time & typing here just to say HUMM! This could be a fun thing to do, particularly if used at sanctioned competition events and perhaps National Record Trials.

There are questions to be asked? Is a launcher extension a way to possibly increase overall flight time durations and perhaps achieved altitudes? Is this an ethical (although perfectly legal per the new pink book) launch system scenario? My answer is YES and Oh Yes.

Since I am no longer physically able to run after models for long distances I've hung up my competition model making. But I do still enjoy attempting to meet or surpass existing National performance records. I plan on doing so at NARHAMS first NRC meet NNRC-1, September, 16th 2017 during our day sport launch.

Since the powers that be, have limited the number of NRC events that count to 1/4A-C motors annually, they have sort of cut out all the most popular events and craftsmanship events for all but NARAM's. So my intent to piggy-back on our next sanctioned NNRC-1, seems like the perfect opportunity to TEST a Micro Piston Launcher Extension giving

Continued next page

SEP/OCT 2017 PAGE 27

RAMTEC-20 Report

From CD Glenn Feveryear:

This was the 20th year for RAMTEC. It was certainly a unique contest. We had 9 entries. Soaking rains with interspersed opportunities to fly. We had a nice dinner get together on Saturday night. As we were packing up on Sunday the sun came out. Unfortunately, there were no pictures taken. Since it rained so much we were all just trying to keep warm and the rockets dry. It was a good opportunity for NRC flights with a couple of records set.

Carl McLawhorn Memorial Flyoff V

NRC Sanctioned Launch, PSC Competition and Sport Launch
October 21-22, 2017

Hosted by: PSC #473 Pittsburgh Space Command
Location: Weber Farm - 595 Tie Line Road, Grove City, PA

Events:

SEMROC Predicted Duration*
B SuperRoc Duration
B Egg Loft Duration
C Cluster Altitude (Altimeter)
E Streamer Duration

* All competitors are asked to fly a SEMROC kit for the Predicted Duration event in memory of the late Carl McLawhorn.

**Download your copy of the
new Sporting Code
Click here!**

Competition Corner, Continued

me 2.7725m (109.11") to the aft end of several of my 1/8A rockets. I'm looking at 5 duration events: 1/8A-SD, 1/8A-HD, 1/8A-RG, 1/8A-BG and 1/8A-Flex Wing for these attempts.

The Floating head pistons are standard 12" long using 8" slide tubes. To the pistons I've constructed a 2-piece 3/8" to 1/2" aluminum tube extension with a 3/8" x 12" ground spike, 4" x 4" x 1/2" Brass Base with two leveling wedges and a 64feet away pad lead to allow placing this extension launcher in the most advantageous position on the flying field behind the flight line for the given Weather & breeze conditions. Testing was done at our August sport launch using 2- identical T4 (.448") diameter x 7" long SD rockets each having a empty mass with wadding & foam plug of 2.9g. To each rocket a 2" x 20" yellow tracing paper streamer was attached each with a mass of 1.0g. Rockets were powered by standard MMX-II (1/8A.5-1) motor each weighing 1.1g giving the test rockets an average overall mass of 5.0g. Rocket 217c with green magic marker fins launched from my standard 40" Tripod with a 12" Piston giving an overall launch height to the aft end of the model of 52". Rocket 217d with Red magic marker fins launched from atop the Extension with piston having an overall height to the aft end of the rocket of 109.11". Both were set within a foot of each other on the field. Both were flown with an air temp of 84.6 degrees F, with surface breeze from the ENE 2 0-5mph on 08-19-17. Visibility was 10 miles plus.

Both rockets were flown within 5 minutes of each other. Timed by a team of two, each model was averaged and YES the extension did indeed add duration to the flight. As these were the only rockets flown it is not a very large sample to say for sure but the difference was enough to convince me to use this extension to fly my National Record Attempts next month. We will have to see if this apparatus is actually a help or not but as with all things new it was an interesting build and flying from it seems to be pretty solid performance wise.

Keep em fly'in Micronized
John

Rule 5.5 Micro Piston Launcher Extension 2.7725m (109.11"). with 52" std. Tripod & micro piston.
2- 5.0g 1/8A SD models ready for Test.
Narhams Sport Launch, Mt. Airy, MD.
08-19-2017



NARAM-60 Competition and Rocketry Festival

Events:

- 1/2A Parachute Duration*
- 1/2A Boost Glide Duration*
- A Streamer Duration*
- A Helicopter Duration*
- A Payload Altitude*
- C Eggloft Altitude*
- B Cluster Altitude
- C SuperRoc Altitude
- Classic Model
- Sport Scale
- Research & Development

August 4-10, 2018
Hudson Ranch
Pueblo, CO

Old Rocketeer Reunion on August 4
Keep tabs, new activities to be announced

For current info, go to
www.nar.org

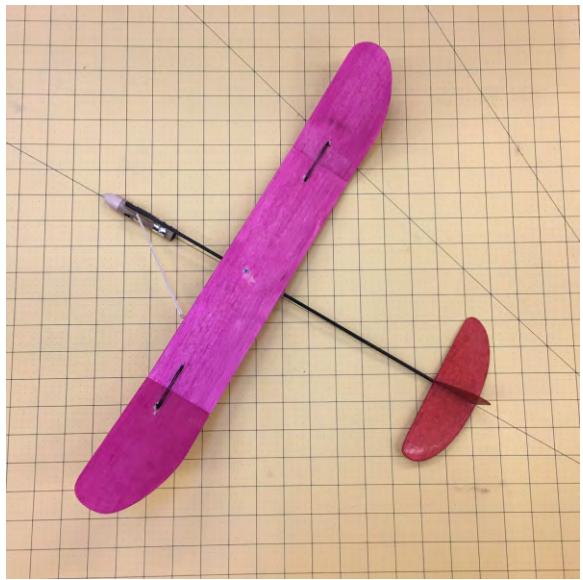
Follow up on John's MaxiMicro piston launcher

As noted in his report of the Sept. Sport Launch, NNRC-1 featured very calm air and no good lift to be found. John's 1/8A events record attempts were not record setting this time around. Expect to see him and his 2.7725m tall piston launcher back again, though, going for the records.



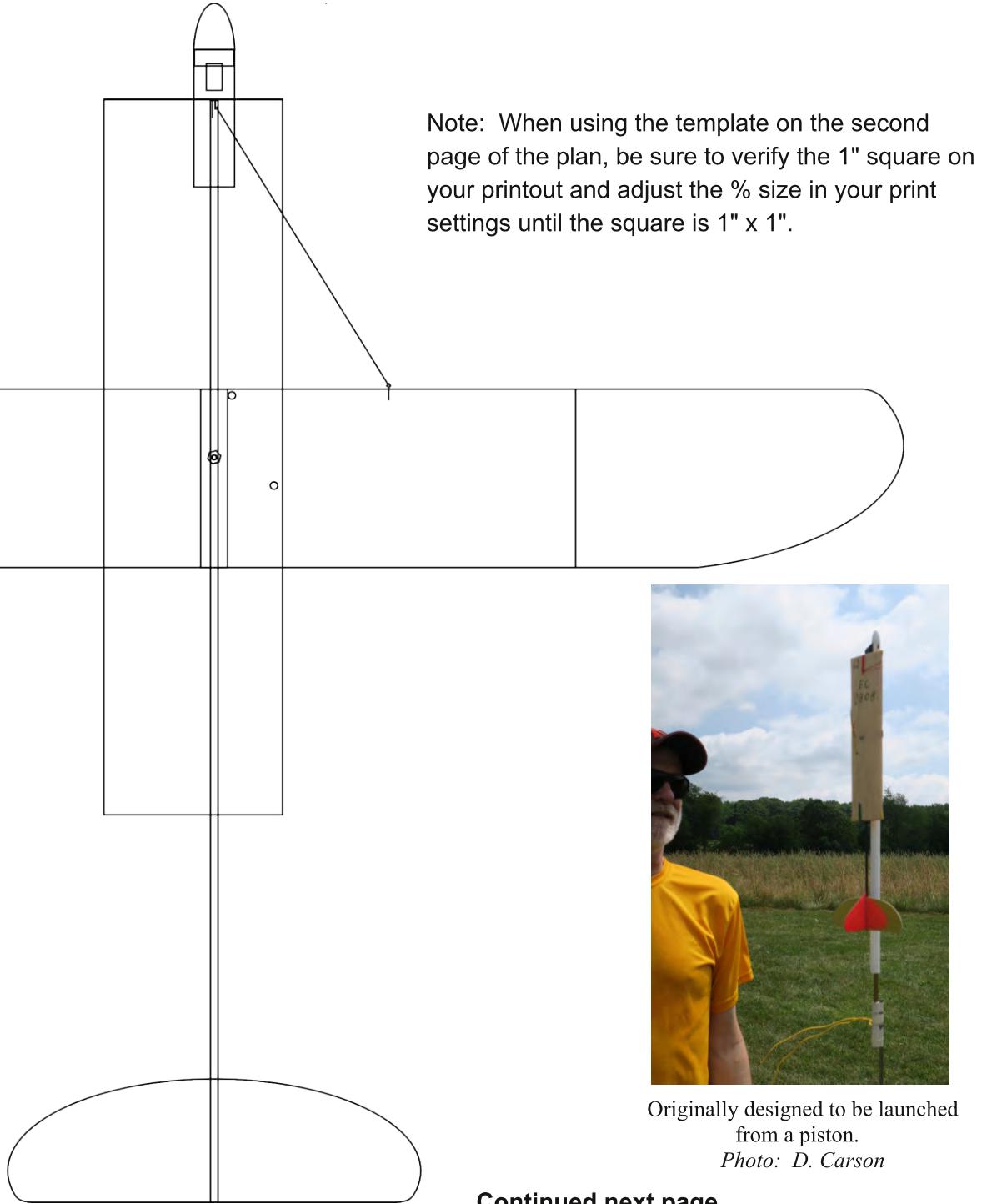
Swing-Flopper A RG/S4A

Designed by: Jordi Roura
Drawn by: Kevin Johnson



Glide configuration. Even with the horizontal stabilizer glued on backwards, it still flew great!

Photo: D. Carson



Note: When using the template on the second page of the plan, be sure to verify the 1" square on your printout and adjust the % size in your print settings until the square is 1" x 1".



Originally designed to be launched from a piston.
Photo: D. Carson

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