

MASA PLANET

OFFICIAL NEWSLETTER OF THE
MINNESOTA AMATEUR SPACEMODELER ASSOCIATION



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March/April 2014

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NAR Section #576

Established 1998

March 2014 Meeting and Kitbash!

At the March 2014 MASA meeting MASA member and NAR President, Ted Cochran, gave a presentation on safety. MASA follows the NAR Safety Code at all of its launches, which can be credited for our safe range.

The meeting was also the kickoff for the latest Kitbash Contest! Rules for the kitbash can be found at <https://drive.google.com/file/d/0B-o7qlSszrV9Z111anJVdXYzaTVjbk5FWmlyU2diT2pmeGdB/edit?usp=sharing>

Field Report: NARCON 2014

By Jeff Taylor



NARCON is the National Association of Rocketry's annual convention. NARCON is hosted by individual NAR sections around the country, so it moves annually from region to region. NARCON 2007 and 2008 were held in Minnesota when MASA hosted them. Up until this year, those were the only two NARCON's that I had ever attended. This year's NARCON was held at the International Palms Resort and Conference Center in Cocoa Beach, Florida, with sponsors and partners that include Space Florida, Kennedy Space Center Visitor Complex, Missile, Space and Range Pioneers, and NASA's Space Place. With the long winter we have had this year, who could pass up a rocketry vacation in Florida?

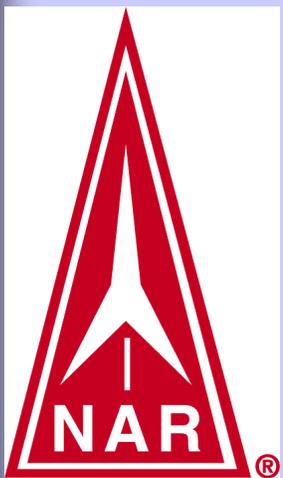
NARCON 2014 kicked off on Friday February 28 with an evening dessert reception at the Air Force Space & Missile History Center located at the south gate of Cape Canaveral Air Force Station. The History Center is packed with artifacts and displays that highlight each of the several launch complexes located throughout Cape Canaveral.



Displays include a Navaho, a Loki, and a boilerplate Mercury Capsule. The evening included an abundance of snacks, conversations, live music, and a quiz that led participants around the center searching for answers from the displays. And of course, model rocketry's first couple were there mingling with the crowd; Vern and Gleda Estes.

Saturday was a day filled with 24 technical seminars running 4 at a time in 6 time slots throughout the day. Participants were able to attend the seminars of their choice, ranging in topics from model rocket basics to Space Shuttle main engine development and everything in between. A buffet lunch included a panel of Space Coast legends, who reflected on the early days of working at the Cape ranging as far back as the days of the Mercury program.

(Continued, p. 4)



Upcoming Events:

- **Launch:** Saturday
March 29
(NOTE DATE
CHANGE!)
10-3
Elk River/Otsego
VFW Soccer Fields
- **Meeting:** Thursday
April 3
7:00—9:00PM
Hennepin County
Brookdale Library

Views from a BAR

My First Rocket

By Brian Uhlenkamp , NAR 39505 SR L1

I believe it was 1983, I was thirteen. I recall going to the hobby shop with my parents and picking out my first rocket. It was an Estes Astro Bee kit #1356. It was a skill level 1, sounding style rocket. I guess I liked the style, forward set of fins, and the color scheme, probably because I had some blue paint left from a plastic car model I built. Anyway, after successfully learning about model rockets, reading the instructions and building it, my parents then got me a Alpha Deluxe Starter kit #1407 so I was ready to launch. I launched that rocket successfully many times, and at some point it was damaged beyond repair. It was a great first rocket.

When I came back as a BAR several years ago, I ran across the blue hand painted nose cone in my assortment of left over parts. I then remembered the Astro Bee again and decided to re-build it. There was no kit available so I obtained the old instructions from JimZ plans and gathered up the supplies and built it. I then decided I wanted a bigger version. In RockSim I made a 2.6x upscale, which conveniently ended up at 2.6" inch LOC airframe with a 29mm motor mount. It is 40" tall and weighs 21.375 oz. It has 2.6" LOC Nosecone, LOC centering rings, and hand cut 1/8" plywood fins. The lower fins were thru the wall style and the upper surface mount. I obtained the fin patterns thru the RockSim print outs, which made the process very easy. It is fitted with a kevlar/elastic shock cord, 30" chute, and a nomex chute protector. I used a Estes 29mm motor retainer and installed both 1/4" lugs and rail buttons for options on the launch field.

Both rockets look great and remind me of my beginnings in rocketry and now with a mid-power version. I was able to launch both last year, my Astro Bee on a A8-3 once and the Astro Bee 2.6x has flown once on a F20-4W. I look forward to launching both more in 2014, with some more powerful motors.



MASA Outreach

By Todd Carpenter

MASA exhibited at the 3rd Annual Minneapolis Public Schools (MPS) STEM Expo held on February 12th, 2014. The Expo provided hands-on, interactive Science, Technology, Engineering, and Math (STEM) activities for middle school students to increase their awareness and interest in STEM-related career opportunities across Minnesota. All MPS sixth graders and some seventh graders attended, roughly 2400 students. MASA members Carol Marple, Ted Cochran, Jeff Taylor, and Todd Carpenter provided a wide assortment of model, mid, and high power rockets. Carol and Todd staffed the booth throughout the day. NAR donated NAR Guidebooks for handouts, and many teachers and students were excited to take copies home. Students were impressed to see in person several of the cover rockets for that Guidebook, including Carol's Level 2 RocketGirl and Jeff's upscale Fat Boy. Jeff's steampunked Acme Spitfire drew many comments from the crowd, especially with the question, "Does that fly?" Ted's red Level 3 nose-cone and the nozzle from his M motor made many eyes grow wide when the students realized how big the rest of the rocket was. In addition to having some fun, our goal was to impress on these students that exciting research jobs are available to people who completed, and excelled at, a STEM based college degree. MASA exhibited in booth space sponsored by Adventium Labs and its division Andamio Games. Adventium demonstrated a two-wheeled Lego NXT robot that was used in Navy research to help develop advanced control software. Andamio showed off its iOS-based neuroscience teaching application, and had students compete for building tall towers out of cards. The MASA rocket display was featured on the Minneapolis Public Schools Facebook page at https://www.facebook.com/minneapolis.schools/photos_stream.

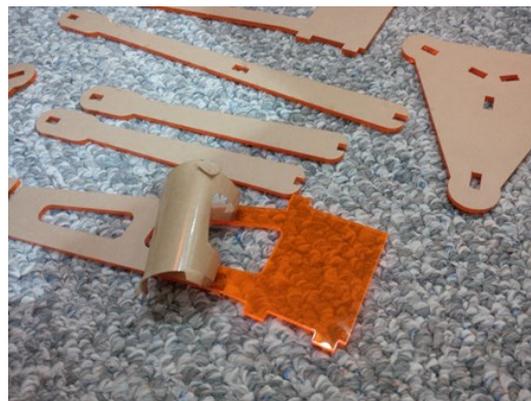
Product Review: North Coast Rocketry Apex Expo Display Stand

By Brian Uhlenkamp
NAR 39505 SR L1

I had seen the Apex Expo Display Stands by North Coast Rocketry when they first released them in mid 2013. I thought it looked like a great stand to display that special model. I put it on my wish list. Recently, they lowered the price and I was ordering some other items from Apogee Components (www.apogeerockets.com) so I added it to my order.



They are based of the 1970s Centuri "Rocket Rack" but are made from acrylic. They have a 12" and an 18" style, plus available in either orange or gray. The 18" comes with both 13mm and 18mm motor mounts posts, and the 18" comes with both a 24mm and a 29mm motor mount posts. The posts allow for vertical or angular installation depending on your preference. I purchased the 18" orange stand, PN 35553.



The assembly is fairly simple. You first peel and remove the protective film. Then simply follow the instructions. I used xxx acrylic cement (you have several options) to glue it together. You can easily assembly this in an evening quite easily.



I like the stand. I did have a fitment issue on a couple parts, but Apogee sent me replacements ASAP. I would recommend the stand if you have the one special model to display, mine happens to be the NCR SR99 Hyperswift.



(Continued from p. 1)

The Vendor Room included booths from eRockets, North Coast Rocketry, JonRocket.com, LOC Precision, Aerospace Speciality Products, Rocket Rick's Attic, Apogee Rockets, Hobbytown USA, DFR Technologies and Dr. Zooch to name a few.



By the end of the day I had realized that none of the seminars I attended had anything to do with model rocketry, and that they were all about real space flight. The seminars I attended were:

- A Short History of Space Shuttle Main Engine Development and the Tribulations of Other Real-World Rocket Engines presented by Dave Mohr of D&E Propulsion & Power. Dave explained how the Shuttle main engines were different from any other rocket engines and why they needed to be that way.
- I had planned to attend Brian Nicklas' discussion of his book "American Missiles, The Complete Smithsonian Field Guide", but I ended up chatting more with Dave Mohr about how rocket engines work and missed it.
- The Curimba Mission – Controlled De-orbit of Spent Upper Stages, which was a really cool presentation by a team of Embry-Riddle Aeronautical University students about space junk, how much of it there is, why it is dangerous, and their unique plans on how to get rid of it.
- Orion Multi Purpose Crew Vehicle Status and EM-1 and EFT-1 Flight Processing at Kennedy Space Center presented by Jules Schneider from Lockheed Martin. This was a detailed status report on the development and future plans for the Orion spaceship.
- Rapid Disassembly Just Outside the Blockhouse was an eyewitness account of the Delta II rocket that exploded 13 seconds after its launch in 1997 that was presented by Marc Lavigne and Carleton Bailie. Marc was on the launch team and was actually in the blockhouse as burning debris fell all around it, and Carleton was covering the launch as a photojournalist. Some of Carleton's photographs were instrumental in the failure investigation. They shared their stories from their vantage points and some uncirculated photos of the devastation around the pad.
- Future Launch Vehicles on the Drawing Boards was a presentation by Matt Steele of ATK (and owner of North Coast Rocketry). Matt gave us an in-depth look at the projects that NASA and commercial companies are currently working on for future space flights, ranging from projects that will launch this year to concepts that are decades away.



The day concluded with a banquet dinner that featured an amazing panel of three astronauts; Bob Cabana (veteran of 4 shuttle flights), Sam Durrance (veteran of 2 shuttle flights) and Winston Scott (veteran of 2 shuttle flights and a spacewalk).

Sunday started out with the NAR Town Hall, led by NAR President and MASA member Ted Cochran. Ted described the current state of the NAR as a viable and healthy organization, and discussed future plans for improvements.

After that, attendees boarded posh coach busses for a behind-the-scenes excursion through the inner workings of Cape Canaveral Air Force Station. For me, one of the highlights was the stop at Launch Complex 34, the site of the Apollo 1 fire that claimed the lives of Gus Grissom, Ed White and Roger Chaffee in 1967. This launch complex was also the site where they launched Saturn 1B's. A stop at one of the large hangars revealed freshly-restored treasures such as a Redstone, Bomarc, Snark, Jupiter and other monster missiles. A final stop was at the museum located at Launch Complex 26, the site of America's first satellite launch – Explorer 1. The firing room in the blockhouse contains much of the old launch, control and telemetry equipment used in the 1950's. The adjoining rocket garden includes an upright Mercury Redstone, an Honest John, Minuteman, Pershing, Polaris, Titan and many more.

Enter the following URL into your browser to access Carol Marple's NARCON 2014 photo album on Facebook: <https://www.facebook.com/media/set/?set=a.10152001796262321.1073741841.723597320&type=1&l=cede6674de>

More photos from NARCON 2014
(by Jeff Taylor)



1970 ESTES

L X S R R J Y J T Z Q O N T B T R W D B
 V U W X X H M S V H U A H T R E B G I B
 J J R I A U U H D L B O L V P R S N Z I
 L A V E N G E R E M R Z L O N C R O Q E
 Y A H P L A M I N A P U O M O U N Y D N
 B H J F D B M K G B V N R U T A S I U I
 V J Z G X N M E K K S S T A C J F V X X
 Z U R W V K N A C S T R S S O A V Z P B
 O R B I T A L T R A N S P O R T O S U M
 O D M V B P Z A R C P I Q S Y K D F W L
 H F T E D Y M L E J S S I K G Y A T Y N
 U X Z V U N I T A B O D H T B B N D F B
 N M Y M I G W X Y M E H G Z F V Q E W I
 X G J X H J M A H J F S R X X F T L F O
 E N O T S D E R Y R U C R E M X K J G U

- ALPHA
- AVENGER
- BIG BERTHA
- FARISIDE
- GYROC
- MARS SNOOPER
- MERCURY REDSTONE
- ORBITAL TRANSPORT
- SATURN 1-B
- SATURN V
- SCOUT
- SCRAMBLER
- SHRIKE
- SPACEMAN
- STARLIGHT
- THOR AGENA-B
- X-RAY

MASA Showcase

FiTi Chuter Two by Brian Uhlenkamp



Last Issue's Solution

+ + D R Z O O C H E + + + + Y
 + + R + + + + Q + E + + T Q
 + M A D C O W U + + R G L M +
 + + W + D A E H T E K C O R +
 + + N + + S + H V + P D C P M
 S + U + T + G I + S E H + + A
 U + S Q U I R R E L W O R K S
 I H + + L D + C I + + L C + D
 R C + R E + A N + + S V U + N
 I E A R + P G C O R M E S + O
 S T I K S I L F + + + R T + M
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 A A + + + + + + + + + + +

MASA DIRECTORY

Established 1998

Founding President: Russ Durkee

2014 President

Neal Higgins—nthiggins@gmail.com

2014 Vice President

Jeff Taylor— jeff.taylor@mn-rocketry.net

2014 Secretary/Treasurer

Carol Marple— MASA576Treasurer@gmail.com

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Club Website

www.masa-rockeetry.org

Webmaster

Alan Estenson — estenson@mn-rocketry.net

Club Yahoo Group

<http://groups.yahoo.com/group/masarocketry>

MASA Calendar

Launch

Date: Saturday, March 29 (NOTE CHANGE OF DATE!)

Time: 10:00 A.M. — 3:00 P.M.

Place: Elk Field/Otsege VFW Soccer Fields

(Maximum motor size of “E”)

Space Quote

“Frequently on the lunar surface I said to myself, ‘This is the moon, that is the earth. I’m really here, I’m really here!’”

—Alan Bean, Apollo 12



Meeting

Date: Thursday, April 3

Time: 7:00—9:00 P.M. (Room set-up at 6:30)

Place: Hennepin County Brookdale Library

6125 Shingle Creek Pkwy, Brooklyn Center

Topic: Glen Overby: Rocket electronics and “dual deployment.”

Things to do:

1. Write an article for the next issue of *The MASA Planet* and/or choose photos to submit to MASA Showcase.
2. Email them to Andy at planet.editor576@gmail.com.



For more information, please go to the
 MASA website at
www.masa-rockeetry.org/events

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Mailing Label Here

MASA

Minnesota Amateur Spacemodeler Association, founded in 1998, is an active rocketry club with members from the Twin Cities and surrounding areas of Minnesota and western Wisconsin. MASA is dedicated to the safe and enjoyable pursuit of the rocketry hobby. MASA is a registered section (Section #576) of the National Association of Rocketry (NAR). MASA has been recognized by the NAR as “Medium-Sized Section of the Year” in 2006 and 2007, has received the NAR’s North American Rockwell Trophy for best newsletter in 2008, 2009 and 2010, and has hosted NARCON (the NAR’s Annual National Convention) in 2007 and 2008. MASA has an official club launch on the 4th Saturday of each month (weather dependent) year round at one of several different flying sites located in Nowthen, White Bear Lake and Otsego. We also hold monthly club meetings on the 1st Thursday of each month, typically held at the Science Museum of Minnesota in St. Paul. We host a Club Picnic in July and a Holiday Party at the end of the year. MASA also participates in numerous rocketry-related outreach activities including Cub Scouts, Girl Scouts, schools, 4H, TARC and USLI to name a few. Visitors, spectators, and prospective members are always welcome to join us at club events! MASA welcomes rocketeers of all ages and experience levels. MASA members share their building and flying experience to help you hone your skills and become a better and safer rocketeer. Flying in a club environment keeps you in touch with the latest rocketry techniques and products, as well as offers encouragement and support through camaraderie of fellow club members. You do not need to belong to the NAR (National Association of Rocketry) in order to join MASA. However, we do encourage you to consider NAR membership. (Find out more about the NAR at www.nar.org) You can find more information on the MASA web site, www.masa-rocketry.org, or email us at masarocketry@rocketmail.com.

For more information, or to join MASA ,go to www.masa-rocketry.org



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