

BOEING EMPLOYEES MODEL ROCKET CLUB

“LAUNCHPAD” MONTHLY

NEWSLETTER

MAR - APR 2015

VOLUME 1 / NUMBER 2

Well, it's only the second installment of the Newsletter and I'm already late !!!!

Our pace here at the Boeing Company has become quite crazy, with the simultaneous development of both the 737 Max and the 777X.

Since I support both, things can get pretty busy.

One of the more exciting things that has been keeping me really busy, and on the road away from home, is that I have had the great pleasure of working on the Boeing portion of the new major rocket program for the United States.

The SLS, or Space Launch System, was created to develop the next heavy lift space vehicle for our national space program.

The rocket is a brute that will lift 154,000lbs in its “light”, crewed configuration, with 10% greater thrust than Saturn 5, or 286,000lbs in its “heavy”, cargo configuration, with 20% more thrust than Saturn 5.

The crewed version is currently designed utilizing the new Orion spacecraft that was test launch earlier and that I highlighted in Vol 1 Num 1 of the Newsletter.

They are currently aiming for an un-crewed flight in 2017 to demonstrated integrated vehicle performance and a crewed flight of 4, to fly in 2021.

I will provide a little more information in a later section.

I am very glad to say that we received quite a bit of positive feedback and excitement from the first edition of the newsletter, and the 4 items I listed for trying to revive the club have been received well received.

Just to recap:

1. Develop an associate membership for non-Boeing employees and their families.
 - a. We have already had several informal conversations on how this will be best accomplished, and in the next few months we will try to narrow down the path forward.
 - b. Because of the charter and rules limitations to non-employee membership in corporate clubs, we want to provide the best arrangement possible so the result may be a spin-off club that is not bound by the Boeing charter but that operates in parallel with the parent group.

(recap continued)

2. Start a recruiting campaign through associated organizations like the 4H Clubs, Girl & Boy Scouts, and Home School programs.
 - a. While we have started advertising our launch partnership and mentor opportunities, which will attract young individuals to the club, the actual memberships will have to wait until we complete the study of item number 1, but please contact Bernard or myself if you have a group that would be interested in joining us for a launch day, or that might want a classroom instructional or build event. I just did a presentation on “The Science of Rocketry” for Seattle Christian Schools and the kids loved it and I provided the time and directions to come watch our launch on Saturday if any of the students or parents are interested.
3. Select a small group of topics to have non-flying workshops on for instruction, historical education, collecting, or field trips.
 - a. I have been assembling a presentation on non-flying spacecraft modeling for those rainy day opportunities when we want to build a great indoor display. I wish that I would have had it ready last month when we got weathered out, but we will give it a try during the next poor weather event. I will work out the location for the off-site events and provide directions, This will most likely be my aircraft hangar just up the road in Kent-Covington. There is plenty of room and we have a big screen TV to show rocketry related videos.
4. Select a challenge event once a year like “Big Bertha” or “Snitch” day where everyone creates there special signature version of the challenge to fly.
 - a. As Bernard informed me after I listed the “Snitch”, since it is no longer in production he said it might be difficult to obtain, but it is still one of my favorites. Lots of noise and smoke, with no dangers of leaving the bounds of even the smallest launch area. Whatever the model or challenge is, we will have lots of fun, so if you have a recommendation or idea, please let us know in person or by email.

I apologize for my slight delay, and hope this brings everyone “up-to-speed” as to our current plans and direction.

NOTE:

IF YOU HAVEN'T ALREADY RENEWED FOR 2015 AND WANT TO STAY A MEMBER, PLEASE SEND IN, OR GIVE YOUR APPLICATION AND DUES TO ME AS SOON AS POSSIBLE !!!!!

Participation is what makes a club an exciting and happy group. Please don't ever feel an idea is dumb or too silly, it is usually the silly ones that are the most fun !!!!

Kirk Skaggs

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LAUNCH STATUS:

As you all know, March and April were both a “Bust” for flying. Since the weather hasn’t cooperated at all during the last two monthly launch windows, we have had to stay in the hangar.

Since I am a little late with this issue, we just attended May’s launch, and the weather was stellar, so look for some great pictures in the next issue.

Remember to bring water, Lip Balm, and SUN SCREEN to launches as we move into the summer time. We tend to stay longer and even small amounts of direct sun and wind can cause skin injuries and discomfort. The May launch was proof of this as even with protection, my son Nick and I received a little bit of “pink”.

PAD PICS:

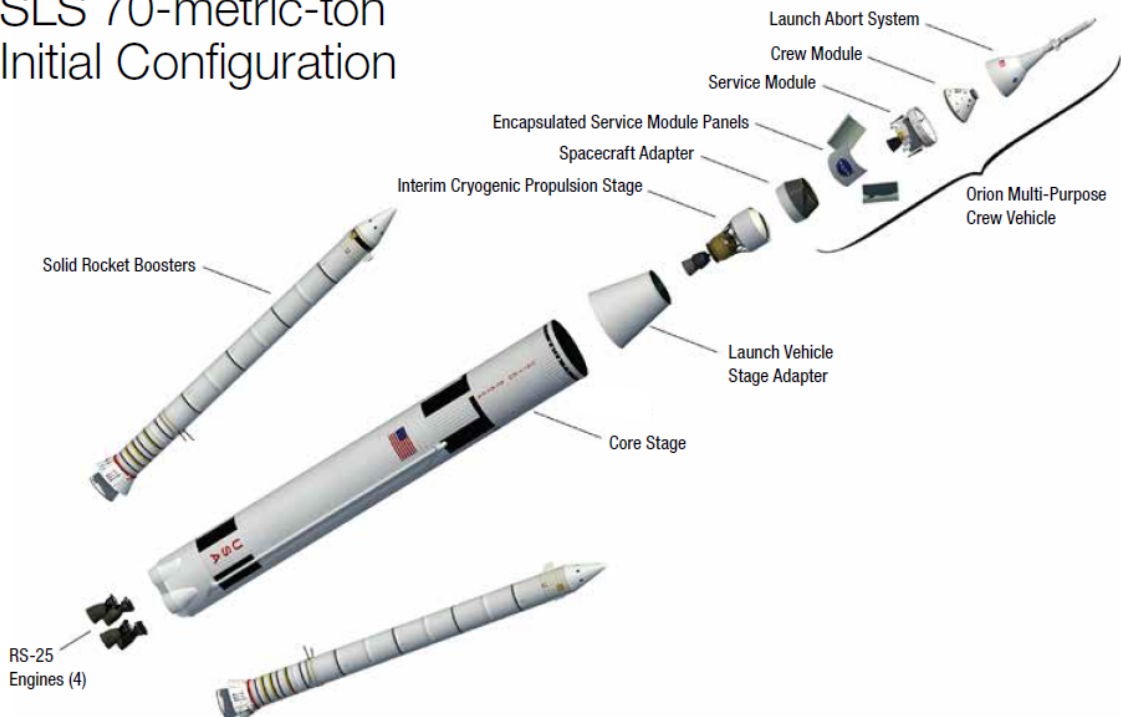
With the two consecutive cancellations of the previous months launch dates, I have no launch pictures to display in this issue ;(

FULL SCALE THRUST:

As I mentioned in my opening, working on the SLS vehicle is a high point in my life as an engineer. To have an opportunity to work on the next major vehicle to visit other celestial interests in our solar system is a real treat, especially when you’re a long time rocket nut !!

Here is an image of what the 154,000lb (70 metric ton) configuration looks like.

SLS 70-metric-ton Initial Configuration



FULL SCALE THRUST: (CONTINUED)

We have actually seen a scale model of this vehicle !

Glen & Tim Doggett had an excellent miniature version of it in their collection of Dr. Zooch rockets earlier in the year, as seen in the image below next to the artists concept of the real thing.

Looks pretty accurate to me !!



To save development funding, the SLS uses many of the components from the STS (Shuttle Transportation System), otherwise known as the Space Shuttle, as starting points for strengthened and updated designs.

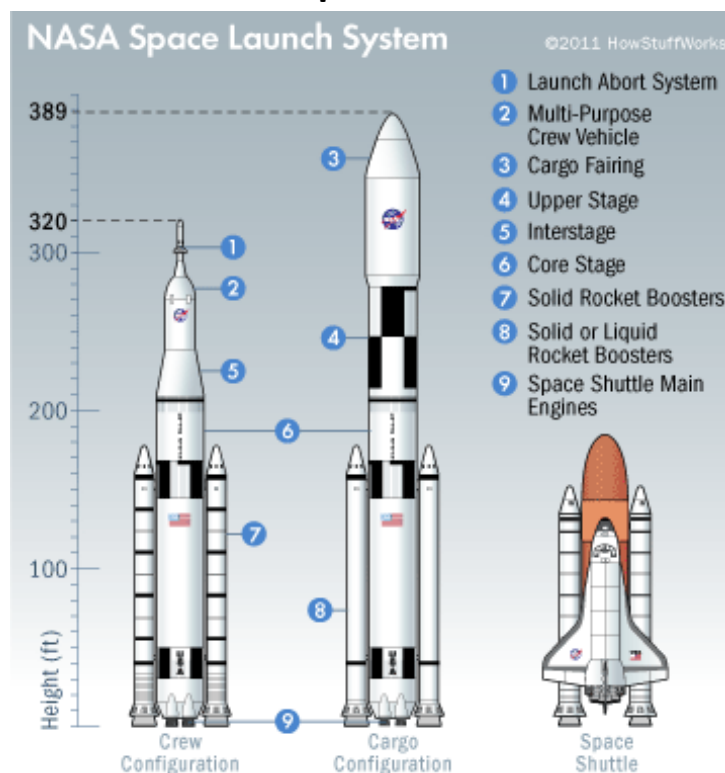
FULL SCALE THRUST: (CONTINUED)

The solid boosters are an outgrowth of the Shuttle booster program, with an improved design that saves over 60% in time and labor over the Shuttle version, and greatly improves the safety while increasing the thrust.

The original STS booster produced 3.1 Million pounds of thrust and the SLS version produces 3.6 Million pounds.



SLS Max Temp Booster Test Burn



Program Size and Configuration Comparison

FULL SCALE THRUST: (CONTINUED)

The RS-25 Space Shuttle Main Engines are also re-utilized for the SLS.

Since the SLS vehicle requires more thrust than the Shuttle, the number of liquid fueled engines was increased from three to four, and their internal thrust was increased from 491,000 pounds vacuum thrust up to 512,000 pounds vacuum thrust.

The four engines have a voracious appetite for fuel and consume 1500 gallons every second.

That would empty your average Family Sized Swimming Pool in 60 seconds.



I will provide more information on the SLS project in the future as it progresses.

NON-FLYING SCALE ROCKETRY

Those of us that really like rockets are usually interested in all forms of rockets, whether they fly to great heights or adorn our desks or collections.

So for those rainy days when we can't fly and want to build something that might have a much longer life span, I am adding this section to cover some of the items that are available as static models.

Dragon Models 1:72 Scale Skylab Saturn V Launch Vehicle

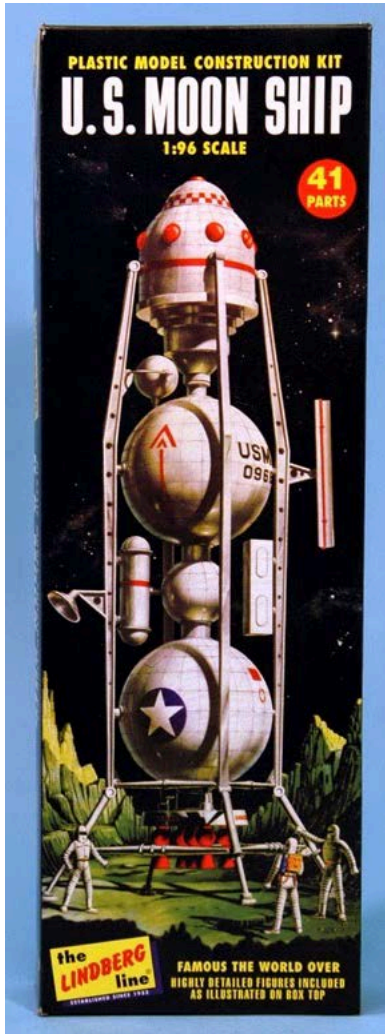
Dragon has been developing some really fantastic space models in the past few years. They started with a 1:400 scale series of multiple historic vehicles and has expanded into a full grouping of offerings, in both pre-assembled and kit forms. I purchased the pre-assembled 1:72 Apollo Saturn V Moon Mission Launch Vehicle companion about a year ago and was very pleased. While not inexpensive, the finished vehicle is VERY impressive, standing nearly 5 feet tall.

The pre-assembled and finished version of either configuration is around \$250 and the kits are around \$125.



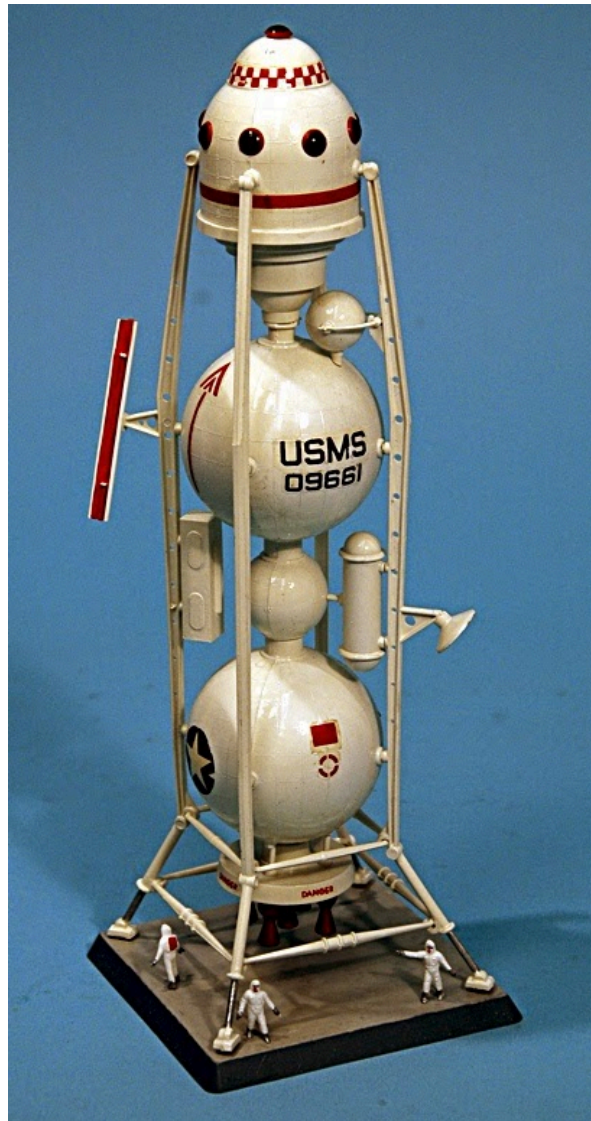
NON-FLYING SCALE ROCKETRY: (CONTINUED)

Lindberg Models 1:96 scale U.S. Moon Ship



For those of us who are from the more golden age of space travel, this is a cool model one of the concept moon landing vehicles.

It has been re-released several times but they have done a pretty good job tuning up the mold so that it creates a clean, crisp model and at around \$15 it make for a great nostalgic addition to any collection.



LAUNCH WINDOWS:

2015 BEMRC Launch Dates at Pacific Raceways:

~~January 10th~~
~~February 14th~~
~~March 14th~~
~~April 14th~~
~~May 9th~~
 June 13th
 July 11th
 August 15th
 September 12th
 October 10th
 November 14th
 December 12th

LAUNCHPAD IMAGES & ARTICLES:

If you take any photos that you think would be really cool for the Newsletter please forward them to me: kd_skaggs@msn.com

Also if you would like to do a review of a new kit, a historic rocket vehicle or event, or a restoration of an old rocket, please write it up and send it to me. I will review it and find a place for it in one of the upcoming *LAUNCHPAD* editions.

LAUNCH VEHICLE DATA:

HERE ARE A FEW LINKS TO SITES THAT HAVE TECHNICAL DATA OR INSTRUCTIONS FOR MODEL ROCKETS.

THESE ARCHIVES ARE A WEALTH OF KNOWLEDGE AND MAKE IT POSSIBLE TO DESIGN A ROCKET FROM SCRATCH, OR RE-CREATE JUST ABOUT ANY OF THE HISTORIC VEHICLES.

<http://www.nar.org/>

National Association of Rocketry

<http://www.nar.org/NARTS/>

National Association of Rocketry Technical Studies

<http://www.oldrocketplans.com/>

Ye Old Rocket Plans

DATA LINKS:

Don't forget to visit the BEMRC Facebook page for more photos and videos of the previous launches, along with upcoming schedules for other area and national model rocketry, space, and aviation related events of interest.

<https://www.facebook.com/pages/Boeing-Employees-Model-Rocket-Club/214804701872759>