



ESD

EXPLORATION SYSTEMS DEVELOPMENT

COMBINED MONTHLY HIGHLIGHTS

MARCH 2014



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SPACE LAUNCH SYSTEM

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Forward Bay Cover Jettison Test Successful



The series of ground development jettison tests of the Orion crew module forward bay cover (FBC) retention and release mechanism was successfully completed on March 6. The final two tests simulated taxing flight conditions, which proved out design robustness moving into the Exploration Flight Test-1 (EFT-1) and Exploration Mission-1 (EM-1) missions.

The first test in the series, successfully completed on Dec. 19, represented an EFT-1 flight-like condition. That test included a nominal jettison with three simulated FBC parachutes, and functional avionics and ordnance devices. The subsequent cases represented more

challenging jettison conditions including off-nominal cases. The first, completed in January, represented a FBC parachute failure condition. The final case included a firing system time delay, which creates asymmetric system loading and simulated several off-nominal ordnance issues.

Astronauts Rex Walheim, Shannon Walker, Scott Tingle and Jack Fischer personally visited the Waterton campus the day after the test to congratulate the Lockheed Martin team. Since jettison of the cover is a complex event required for subsequent deployment of the main parachutes, deceleration of the vehicle and landing the crew safely,



it is considered one of the top risk drivers. This testing provided critical verification data and represents a significant risk reduction for the program.

The FBC and its jettison system will undergo minor design evolvments and enhancements between the EFT-1 and EM-1 missions, primarily centered on mass reduction. This testing directly influences those decisions and refinements.

The FBC protects the top portion of the crew module during launch, orbital flight, and re-entry. It is jettisoned at an altitude of approximately 23,000 feet to allow for deployment of the parachute system.

Orion Makes Testing, Integration Strides Ahead of First Launch to Space

Orion is marching ever closer to its first trip to space on a flight that will set the stage for human exploration and new discoveries throughout the solar system.



The Orion team continues to work toward completing the spacecraft to be ready for a launch later this year. The initial timeframe for the Exploration Flight Test-1 (EFT-1) launch has shifted from September-October to early December to better accommodate a full slate of launches from Cape Canaveral Air Force Station this year. Completing the Orion spacecraft according to the original schedule will allow more engineers and technicians to transition to work on the Orion Exploration Mission-1 spacecraft that will fly atop the agency's Space Launch System. It will also ensure that NASA's partners are ready for the launch of EFT-1 at the earliest opportunity in the event launch manifest changes.

The EFT-1 core and starboard boosters for the United Launch Alliance Delta IV Heavy rocket that will launch Orion into space for the first time arrived at Cape Canaveral Air Force Station this month. The port booster is still in production at the company's Decatur, Ala., facility and is scheduled to arrive at KSC in April along with the rocket's upper stage. All the rocket segments will undergo additional processing and testing inside ULA's Horizontal Integration Facility prior to rollout to Launch Complex 37B.

NASA Orion Spacecraft Mock-up Arrives at Langley

A full-sized test version of the Orion crew module arrived at NASA's Langley Research Center in Hampton, Va., for testing that will examine how it performs under a variety of ocean landing conditions.

In the coming months, NASA researchers will conduct static and water impact loads evaluations on it at Langley's Landing and Impact Research Facility. The tests will simulate water landing scenarios for different velocities, parachute deployments, wave heights and wind conditions the spacecraft may encounter when it lands in the Pacific Ocean.

Prior to its arrival at Langley, the Orion test capsule was used for pathfinding operations, including simulated manufacturing, assembling and stacking procedures at NASA's Kennedy Space Center in Florida. Lockheed Martin, which built the Orion mockup, collaborated with NASA to complete a series of acoustic, modal and vibration tests on the test capsule that simulated launch and spaceflight conditions.



Continued from page 2

Meanwhile, in the spacecraft factory at Kennedy Space Center – the Operations and Checkout Facility – Orion undergoes additional testing as it nears completion.

After completing construction on the service module in January, engineers at Kennedy tested whether Orion could withstand the stresses it will endure during launch and in space. Despite being pushed and pulled in multiple directions, the service module came through the tests not only unscathed, but earlier than planned.

Once the service module testing was completed, it was the crew module's turn.

Almost all of the spacecraft's avionics components have been installed, and system by system, the engineers are powering them up. It's a methodical, deliberate process, in which each connector is checked individually before they're hooked up and the system turned on to make sure each battery, heater, camera and processor – to name a few – works on its own, before the entire system is turned on together. Otherwise, one faulty cable could damage an entire, one-of-a-kind system.

The process is called functional testing, and once it's complete and all 59 systems have been verified, the engineers will graduate to performance testing, in which all of the systems work together to operate the crew module as a whole. Ultimately, they'll be able to turn on all of the flight computers, radios and other systems at once and simulate the vehicle's sensors so that the spacecraft thinks it's flying in space.

The crew module testing will wrap up in April, and then Orion's heat shield – the largest of its kind ever built – will be installed. With that in place, the crew module, service module and launch abort system will be ready to mate this spring. Its launch later this year will send Orion 3,600 miles above the Earth for a two-orbit flight that will give engineers the chance to verify its design and test some of the systems most critical for the safety of the astronauts who will fly on it in the future. After traveling 15 times farther into space than the International Space Station, Orion will return to Earth at speeds near 20,000 mph, generating temperatures of up to 4,000 degrees Fahrenheit, before splashing down in the Pacific Ocean.



The Exploration Flight Test-1 (EFT-1) launch abort system fillets, which were shipped from Michoud Assembly Facility in New Orleans, arrived at Kennedy Space Center on March 13.



The Exploration Flight Test-1 (EFT-1) launch abort system (LAS) was relocated from the Launch Abort System Facility mid-bay to the high bay after completion of high bay modifications to accommodate the EFT-1 LAS to crew module/service module stacking operations.

Facility at Kennedy Prepped for Stacking Operations

NASA's Johnson Space Center Flight Test Management Office took possession of the Payload Hazardous Servicing Facility (PHSF) at Kennedy Space Center this month. This is the facility where the fuel, ammonia and high pressure gas will be loaded on the vehicle for the Exploration Flight Test-1 mission. The Layher stair towers, shown here, were moved from the Vehicle Assembly Building high bay to the PHSF airlock in preparation for the stacking operations. The scaffolding stairs will allow technicians to access the spacecraft to perform hazardous servicing operations.



AAS Honors Cleon Lacefield with Industrial Leadership Award



Cleon Lacefield, Lockheed Martin Orion program manager, was awarded the American Astronautical Society's (AAS) 2013 Industrial Leadership Award in recognition of his professional accomplishments leading a multi-corporation, nation-wide team through the Orion Program Design Review. His selection was endorsed by the AAS awards committee and approved by the society's officers and directors.

This award was first presented in 1992 and recognizes an individual in the space industry who has made an outstanding contribution through leadership in the development and acquisition of space systems.

The award was presented at an honors and awards luncheon on March 5 in conjunction with the 52nd Robert H. Goddard Memorial Symposium.

Suppliers Conference Features NASA Leadership



On March 11, Mark Kirasich, Orion deputy program manager (far right) participated in a panel discussion about NASA's program status at the Space Launch System/Orion Supplier's Conference in Washington, D.C. Joining him were (left photo: from left to right) Patrick Scheuermann, Marshall Space Flight Center director; Michael Bolger, Ground System Development and Operations program manager; Ellen Ochoa, Johnson Space Center director; Todd May, Space Launch System program manager; and Dan Dumbacher, NASA Headquarters deputy associate administrator for Exploration Systems Development.



More than 100 small businesses and suppliers participated in the event, which included industry team briefings with Congressional leadership.

The Industry Team member panel consisted of (right photo: from left to right) Jim Crocker, vice president and general manager, Civil Space, Lockheed Martin Space Systems Company, John Elbon, vice president and general manager, Boeing Space Exploration, Julie Van Kleeck, vice president, Space Programs, Aerojet Rocketdyne and Charlie Precourt, vice president and general manager, Alliant Tech Systems Space Launch Division.



Orion Small Business Wins Big with Rigel Award

Tim Wong, CEO of Arcata Associates, poses with the 2014 Rigel Award, alongside Glenn Delgado, NASA associate administrator for Small Business.

The Rigel Award is Lockheed Martin's Small Business of the Year Award that is given to a small business subcontractor who performs above and beyond its contractual commitments.

Arcata won the award this year for their continued support in supply chain management for Orion and the build of the Exploration Flight Test-1 vehicle. Plaques with each year's winners resides at the Lockheed Martin program offices in Houston and Denver.

Key Staff Members Hear About Orion

John Casper gave an Orion overview to Jerr Rosenbaum, legislative director, and Jay Guerrero, Southeast Texas regional director for Senator John Cornyn, on March 20.

Paul Marshall, Orion assistant program manager, strategy integration, discussed the latest progress on Orion with Robert

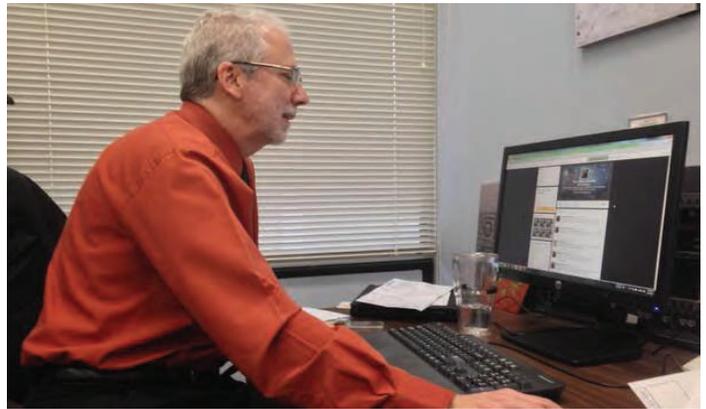
La Branche, space legislative aide; Catherine Knowles, chief of staff; and Brittany Seabury, district director, for Congressman John Culberson on March 20. Congressman Culberson is a member of the Commerce, Justice and Science Subcommittee of the House Appropriations Committee.

Orion Gets Social



Scott Wilson, Orion production operations manager at Kennedy Space Center in Florida, spoke to a room full of social media attendees at a Social Media Day hosted at NASA's Kennedy Space Center on March 14. Those in attendance were able to tour the Exploration Flight Test-1 launch abort system in the Launch Abort System Facility at Kennedy.

Tweet That Chit Chat



Orion Program Manager Mark Geyer participated in a Space Chat on Twitter on March 24. Twitter users submitted their questions using the #SpaceChat hashtag, and they were answered by Geyer, who tweeted from @NASA_Orion. Questions can be answered any time by submitting them to Orion's social media accounts at @NASA_Orion on Twitter or via Facebook at: www.facebook.com/NASAOrion

Orion in the News



Mark Geyer was interviewed on March 27 by Eric Berger, a reporter with the Houston Chronicle, on Exploration Flight Test-1. The interview will be included in a multi-part series that will run later in the year on the state of human spaceflight.

Orion goes to SXSW



Lockheed Martin's Gina Gills represented Orion at the South by Southwest Tradeshow in Austin, Texas, on March 9-12. She participated in an Exploration Systems Development exhibit and spoke to interested people about Orion.



Joe Mayer, director, Government Relations with Lockheed Martin, was interviewed by The SpaceFlight Group during Florida Space Day. Watch the interview at: bit.ly/1i8BAAdH

High School 'Final Five' Compete for Out-of-This World Test on Orion



Five teams of high school student engineers have made it to the final round in a competition to build and test designs for radiation shields for NASA's new Orion spacecraft. The competition is part of the Exploration Design Challenge (EDC), developed by NASA and Lockheed Martin, with support from the National Institute of Aerospace (NIA).

The five finalist teams were announced during a live webcast on March 26, hosted by Lockheed Martin Orion Engineer Heather McKay and NASA Orion Program Astronaut Rex Walheim. The teams represent the following high schools:

- Team Titan Shielding Systems of Illinois Math and Science Academy, Aurora, Ill.
- Team ARES of Governor's School for Science and Technology, Hampton, Va.
- Team Aegis of Herriman High School, Herriman, Utah
- Team Erion of Erie High School, Erie, Kan.
- Team LORE of Summit View High School, North Hollywood, Calif.

Forty-six teams initially submitted engineering notebooks with proposed radiation shield designs. After review by Orion engineers, as well as NASA and NIA educators, five final teams were selected. For the next phase of the competition, the final teams will build

prototypes of their designs, which will be tested by engineers at NASA's Langley Research Center in Hampton, Va., before the winning design is chosen.

The winning team will be announced in April at the United States Science and Engineering Festival in Washington, D.C., and will have their radiation experiment flown on Orion's first test flight, Exploration Flight Test-1. They also will be invited to Kennedy Space Center in Florida to watch their payload launch into orbit.

More than 125,000 students of all ages, from 81 countries around the world, have taken part in the challenge so far. Although the deadline has passed to take part in the high school competition, students in grades K-12 still have until June 30 to participate in other Exploration Design Challenge activities to have their name flown on board Orion.

To watch the announcement of the EDC high school finalists, visit: new.livestream.com/viewnow/NASAEDC

For more information about the Exploration Design Challenge, and to complete the online activity, visit:

www.nasa.gov/education/edc

To see the latest about the challenges of space radiation, visit:

1.usa.gov/1hKqXBj

Are You On Board?



Channel your inner astronaut and artist and unleash your creativity on this new "I'm on Board" Orion coloring sheet, then show the world by sharing a photo of you with your masterpiece on social media with the hashtag **#ImOnBoard**. It's as easy as 1-2-3.

1. Watch a video about the coloring sheet:
bit.ly/1efUA94
2. Download the "I'm on Board" coloring sheet:
www.nasa.gov/imonboard
3. Share at...
www.facebook.com/NASAO Orion
www.twitter.com/NASA_Orion
www.instagram.com/ExploreNASA

Spot the Orion



Christian P. Lupo was the first person to spot the Orion fact posted on site at NASA's Johnson Space Center.

A different fact is being posted each month at a different building around the campus at Johnson to increase awareness about the upcoming Exploration Flight Test-1 mission. Keep your eyes open during your walks across campus and maybe you could be the next winner.



Read about Eric Hogan, Orion engineer at Lockheed Martin Space Systems in Littleton, Colo.

on.fb.me/1IGmqmw

Coming up in April:

- Exploration Flight Test simulations with Mission Operations
- Ogives on dock at Kennedy Space Center
- Shipment of second Delta IV Heavy booster to Kennedy



Space Launch System

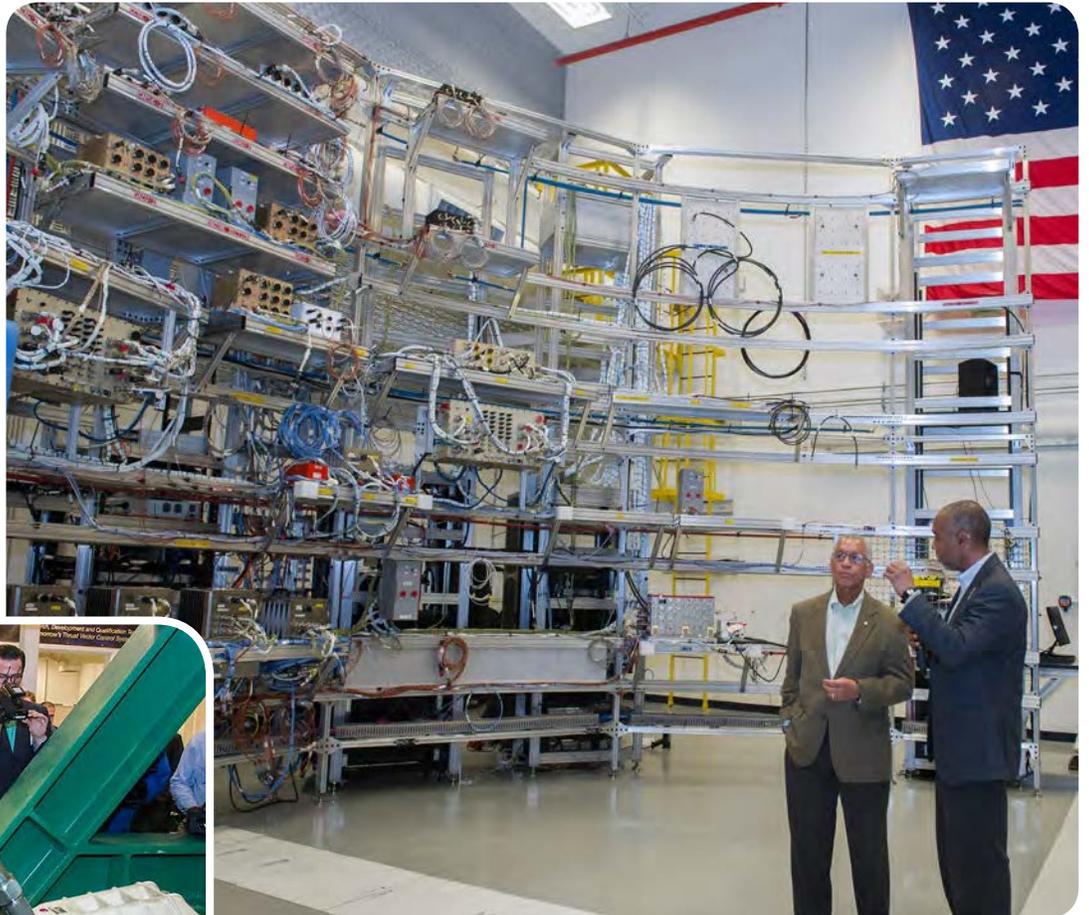
Highlights

March 2014



NASA Administrator Visits Marshall, Views SLS Progress

While visiting the Marshall Space Flight Center on March 14, NASA Administrator Charles Bolden, left, talks with Kurt Jackson, SLS software lead engineer, about progress on the SLS avionics system. Bolden toured the Systems Integration Laboratory, where the avionics units are arranged in flight configuration, along with booster hardware. The modern technology is being integrated and tested together to ultimately guide the entire vehicle. He also watched flight software simulations of how the SLS will perform during launch. (NASA/MSFC) ▶



◀ Bolden, left, checks out an actuator at Marshall's Thrust Vector Control Test Laboratory. The hardware will help guide the SLS propulsion system during flight. (NASA/MSFC)

Advancing Progress on SLS Avionics



From left, Wayne Arrington, a Boeing Co. technician, and Steve Presti, a mechanical technician at NASA's Marshall Space Flight Center, install Developmental Flight Instrumentation Data Acquisition Units in Marshall's Systems Integration and Test Facility. The units are part of SLS core stage avionics. The avionics, which include hardware, software and operating systems for the SLS, are arranged in flight configuration in the facility for testing. The new Data Acquisition Units will monitor vehicle behavior in flight—like acceleration, thermal environments, shock and vibration. That data will then be used to validate previous ground tests and analyses models that were used in the development of the SLS vehicle. (NASA/MSFC)

I am
building
SLS

Nick Chang

Electrical System Design Engineer



To find out more about the people who are building SLS, [click here](#).

I am
building
SLS

Tannen VanZwieten

Flight Controls Engineer



To find out more about the people who are building SLS, [click here](#).

NASA's Super Guppy Makes a Special Delivery



NASA's Marshall Space Flight Center is set to begin a series of structural and pressure tests on one of the largest composite cryogenic fuel tanks ever manufactured. The tank was delivered March 26 on NASA's Super Guppy aircraft and unloaded March 27. Advanced composite cryotanks will help enable NASA's future deep space exploration missions. For more information, [click here](#). (NASA/MSFC)

Spaceflight Partners: American Synthetic Rubber Co.

EDITOR'S NOTE: Every month, SLS Highlights turns the spotlight on one of the industry partners helping to create the largest rocket ever built for human space exploration. In this issue, we profile American Synthetic Rubber Co. of Louisville, Ky.

American Synthetic Rubber Co. (ASRC), a division of Michelin North America, supplies HB Polymer to ATK for the SLS. HB Polymer is the inert binder for solid rocket propellant that holds the other ingredients together in a cured matrix.

ASRC produced the HB Polymer for the first three SLS demonstration motors (DM-1, DM-2 and DM-3), and has also supplied the polymer for the qualification motors (QM-1 and QM-2). QM-1 is on track to be static tested in late 2014/early 2015, and the QM-2 test firing is scheduled for late 2015.

In 2013, ASRC completed production and delivered HB Polymer for the Exploration Mission-1 (EM-1), an uncrewed flight of the SLS, targeted for 2017. EM-1 flight mission objectives are to demonstrate integrated system performance of the SLS rocket and the spacecraft prior to the crewed flight of Exploration Mission-2 (EM-2).

The HB Polymer for the left motor of EM-2 has been produced, and approximately 179,000 pounds of the HB Polymer will be delivered by five tank trucks to ATK by May 19. Remaining production for the right motor is scheduled to begin in October and delivered in 2015.

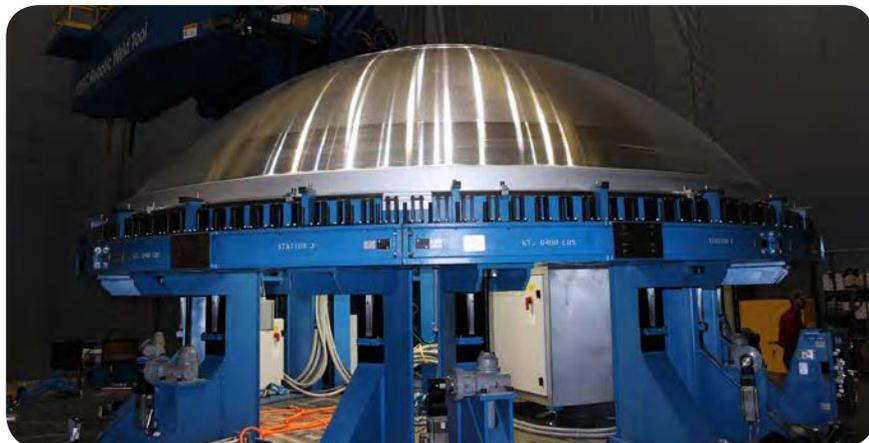


American Synthetic Rubber Co. of Louisville, Ky., supplies HB Polymer to ATK for the SLS. HB Polymer is the inert binder for solid rocket propellant that holds the other ingredients together in a cured matrix. (ASRC)

EM-2 will be the first test of the integrated SLS and Orion system with a crew.

“ATK has a long-standing working relationship with ASRC, and we appreciate all the great products they have contributed to America’s space program,” said Fred Brasfield, ATK’s vice president, Next-Generation Booster. “We look forward to continuing to work with ASRC, as NASA and our country utilize SLS to pursue deep space exploration.”

Advanced Booster Work Continues at Marshall for SLS Cryotank



Using the robotic weld tool at NASA’s Marshall Space Flight Center, the Dynetics of Huntsville, Ala., friction stir weld team successfully completed the first two dome to y-ring welds as part of its work on a full-scale cryogenic tank for the SLS. The cryogenic tank is an 18-foot diameter welded aluminum structure that weighs more than 20,000 pounds and is composed of some of the thickest material ever welded on that tool. The two-dome assemblies will be welded to barrels on the vertical assembly tool at Marshall later this spring to form a complete tank. This will be the first full-scale hardware to be welded on the vertical assembly tool. For more information, [click here](#). (NASA/MSFC)

Construction Continues on World's Largest Welding Tool



Progress continues on the Vertical Assembly Center (VAC) at NASA's Michoud Assembly Facility in New Orleans. The VAC, measuring 170 feet tall and 78 feet wide, will be one of the world's largest welding tools for the SLS core stage. It is scheduled to be completed this summer. (NASA/Michoud)

SLS Core Stage Model 'Sounds' Off for Testing



A 5-percent scale model of the SLS core stage fires up for another round of acoustic testing at NASA's Marshall Space Flight Center. The acoustic tests, which began in January, will show how powerful noise from the engines and boosters can impact the rocket and crew, especially at liftoff. Data from the tests will help verify the rocket's design and help develop an effective suppression system to stifle the sound. The current test series, which began March 20, will be used to determine the noise reduction capabilities of the water suppression system at NASA's Stennis Space Center. The system will be used for core stage "green run" testing. "Green run" testing ensures all stage and engine parts have been exposed to flight-like environments prior to use on a mission. (NASA/MSFC)

SLS On the Road...

SLS Program's Trey Cate, right, talks with the news media at the NASA booth at South by Southwest—an annual set of film, interactive, and music festivals and conferences in Austin, Texas, in March. Members of the SLS team talked to thousands of participants at the annual event about America's next great rocket. *(NASA/MSFC)*



NASA leadership had the opportunity to talk about America's next great rocket at the SLS/Orion Supplier's Conference held March 11-12 in Washington. From left, panelists at the conference included Marshall Space Flight Center Director Patrick Scheuermann; Ground System Development and Operations Program Manager Michael Bolger; Johnson Space Center Director Ellen Ochoa; SLS Program Manager Todd May; NASA Deputy Associate Administrator for Exploration Systems Development Dan Dumbacher; and Orion Deputy Program Manager Mark Kirasich. *(NASA/MSFC)*



NASA's Michoud Assembly Facility Director Roy Malone, center in background, talks to students about the work being done at Michoud in support of the SLS at Louisiana State University's Space Day on March 28. The educational outreach event—targeting middle schoolers—was held to encourage and inspire students to learn about science, technology, engineering and math (STEM) by participating in space-themed activities throughout the day. *(NASA/Michoud)*



For more SLS news, updates and resources, visit www.nasa.gov/sls

Follow SLS on:



SLS on Deck:

- USA Science & Engineering Festival
- Scale Model Acoustic Testing (SMAT) continues
- Booster forward skirt structural test



GSDO

GROUND SYSTEMS
DEVELOPMENT & OPERATIONS

EXPLORATION BEGINS HERE



PROGRAM HIGHLIGHTS • MARCH 2014

At NASA's Kennedy Space Center in Florida, the Ground Systems Development and Operations (GSDO) Program Office is leading the center's transformation from a historically government-only launch complex to a spaceport bustling with activity involving government and commercial vehicles alike. GSDO is tasked with developing and using the complex equipment required to safely handle a variety of rockets and spacecraft during assembly, transport and launch. For more information about GSDO accomplishments happening around the center, visit <http://go.nasa.gov/groundsystems>.

NASA Marks Major Milestone for Spaceport of the Future

NASA achieved a major milestone in its effort to transform Kennedy Space Center into a multi-user spaceport by successfully completing the initial design and technology development phase for the Ground Systems Development and Operations (GSDO) Program March 20.

The major program milestone, called the Preliminary Design Review, provided an assessment of the initial designs for infrastructure at Kennedy and allowed development of the ground systems to proceed toward detailed design. The thorough review has validated the baseline architecture is sound and aligns with the agency's exploration objectives.

"The preliminary design review is incredibly important, as it must demonstrate the ground systems designs are on track to process and launch the Space Launch System (SLS) and the Orion from Kennedy," said Mike Bolger, GSDO program manager.

Engineers and managers in GSDO are preparing the spaceport's infrastructure to support several different spacecraft and rockets in development for human exploration. They will provide an entirely new capability for human exploration beyond low-Earth orbit with the flexibility to launch spacecraft for crew and cargo missions to destinations in the solar system, including an asteroid and Mars.

For more information about GSDO, Orion, SLS and NASA's future human spaceflight exploration plans, visit: <http://www.nasa.gov/exploration>.



GSDO Program Manager Mike Bolger speaks to participants during completion of the preliminary design review March 20 in the Mission Briefing Room inside Kennedy's Operations and Checkout Building.

To read the news release, visit:
<http://go.nasa.gov/QDxQuM>.
To view a PDR Concept of Operations video,
visit: <http://go.nasa.gov/QDxCDU>.

Contract Awarded to Modify Vehicle Assembly Building High Bay 3



NASA, on March 5, announced the selection of Hensel Phelps Construction Co., of Orlando, Fla., to modify High Bay 3 in the Vehicle Assembly Building (VAB) at Kennedy Space Center. The high bay will be used to process the agency's Space Launch System (SLS) rocket.

Hensel Phelps will receive a fixed-price contract, consisting of the base amount and three options. The period of performance is about two years and one month. The potential maximum value of the contract is \$112.70 million, if additional awarded options are exercised.

Contract services include all required management, labor, facilities, materials and equipment, other than government-furnished equipment, to modify the VAB and construct new vehicle access platforms and related systems for the SLS.

The work includes removing, modifying or reusing current structural component systems, and constructing and installing new structural, mechanical and electrical material, systems and equipment.

The work done on this contract will support the GSDO Program. Building on five decades of launch and processing excellence, GSDO is transforming Kennedy into a multi-user spaceport capable of accommodating a wide array of government and commercial space activities.

This computer-generated image shows NASA's Space Launch System and Orion spacecraft surrounded by new work platforms in Vehicle Assembly Building High Bay 3 at Kennedy Space Center.

Ground support technicians assist as a crane lifts a section of the treads on the C truck of crawler-transporter 2 away from the vehicle March 28 in the Vehicle Assembly Building high bay 2 at Kennedy Space Center.



Doppler Radar Wind Profiler Upgrades Begin

When countdown clocks are ticking, the launch team closely monitors information about the wind speeds and direction along the rocket's planned flight path. Soon forecasters at Kennedy Space Center and nearby Cape Canaveral Air Force Station (CCAFS) will have a new tool to help characterize those winds to maximize launch success.

Kennedy's GSDO Program is replacing NASA's aging 50 megahertz Doppler radar wind profiler with a state-of-the-art version. Decommissioning of the original system began March 3 and will clear the way for the new system to be installed in the same location, a 3.7-acre field northeast of the center's Shuttle Landing Facility (SLF).

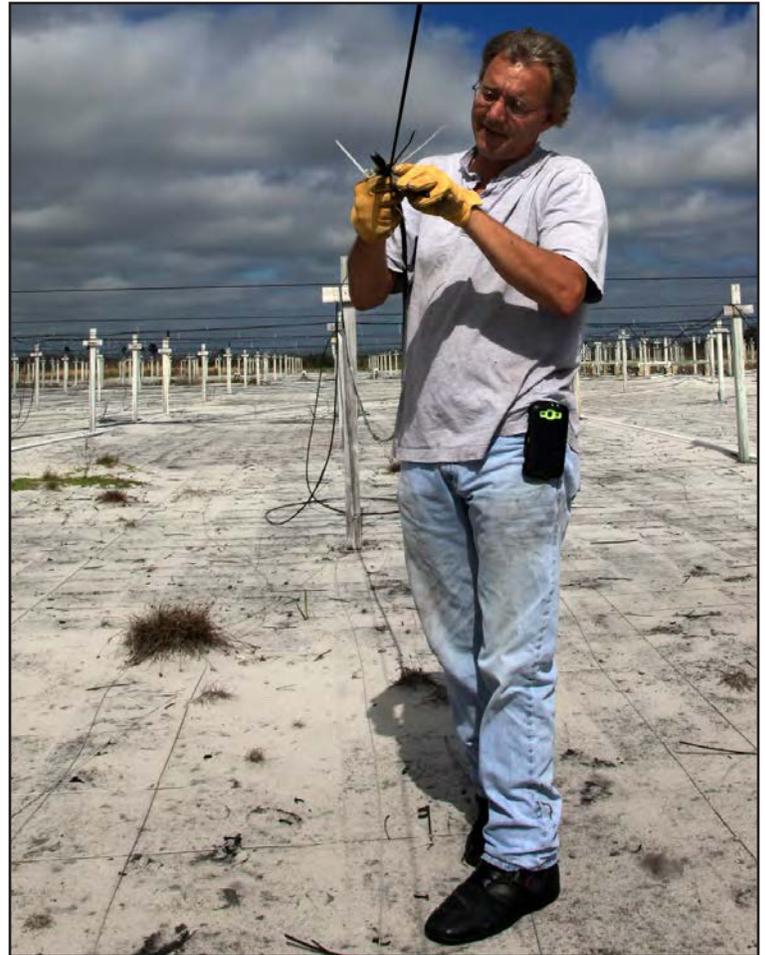
Winds below 60,000 feet are a major concern during a countdown. Every liftoff requires a rocket to pass through the atmosphere, and launch team members need accurate data in order to program the vehicle's guidance and steering commands to ensure the vehicle reaches its proper orbit without exceeding its aerodynamic wind load limits.

The new profiler joins a suite of instruments across the spaceport that forecasters use to analyze and predict wind and weather conditions along the Eastern Range.

The profiler comprises a phased array of dipoles, mounted on poles several feet above the ground and arranged across the octagonal antenna field. A trailer at the facility houses the system's electronics.

Once installed, the new system will feature new electronics and a new pattern of dipoles, which together will provide greater flexibility and reliability while reducing interference. A modern system also will be easier to maintain because parts will be readily available.

The new profiler is expected to be certified for primary use in the fall of 2015, giving weather forecasters and



William Gober of Kegman, Inc. removes one of the 168 coaxial collinear antennas from the antenna field near Kennedy Space Center's Shuttle Landing Facility.

launch managers one more way to decide whether a rocket is "go" for liftoff.

For the complete story, visit <http://go.nasa.gov/QDxe8k>.



A group of news media and social media tweeters toured the Vehicle Assembly Building at Kennedy Space Center March 14 where they viewed work being done by GSDO to upgrade crawler-transporter 2.

Employee Spotlight – Jessica Parsons

Jessica Parsons is a systems integration lead in the GSDO Program at Kennedy Space Center. In this position, she leads the system integration function for the Exploration Systems Development enterprise. She manages a set of cross-functional, cross-discipline engineering teams to develop program-to-program interface specifications, integrated test and checkout plans, operations and maintenance requirements, and avionics and software integration processes and plans.

Recently, Parsons received the Outstanding Woman Engineer Award from the Society of Women Engineers-Space Coast to recognize her work and contributions to the enhancement of women's status on the job and in the community.

"I was totally surprised," Parsons said. "It's good to be recognized outside of NASA for the work we do here at Kennedy Space Center."

She has served as a judge for NASA's Lunabotics Mining Competition and is a participant in the Gates Millennium Scholars Alumni Association. Through this alumni network, Parsons serves as a mentor to students to help foster new leaders across the nation.

Parsons is originally from Cali, Colombia, and came to the U.S. when she was 15 years old. She earned a bachelor's in aerospace engineering from Embry Riddle Aeronautical University in Daytona Beach, Fla., and a master's in space systems and systems management from Florida Tech in Melbourne. She has received several NASA awards and recognition, including group achievement awards, certificates of commendations, and the



NASA Exceptional Achievement Medal.

Parsons and her husband Jeremy, who also works for GSDO at Kennedy, have a two-year-old daughter, Isabelle, and one on the way.

Her hobbies currently focus on taking care of her daughter and two golden retrievers.

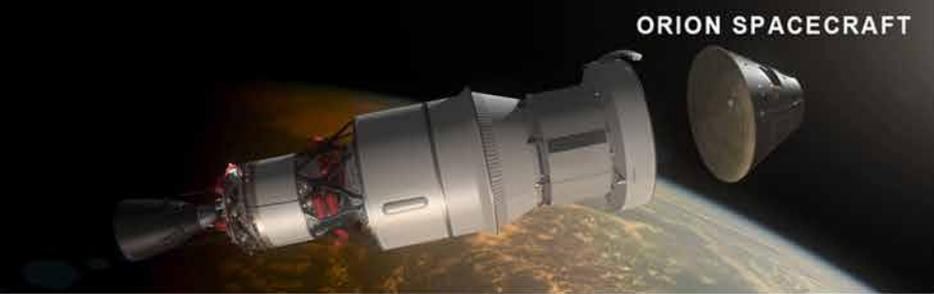
Other hobbies include scrapbooking, baking and travel.



Engineers Jason Hopkins and Lisa Lutz talked to attendees at the GSDO display during the Center Director Update March 6 at the Kennedy Space Center Visitor Complex. Community leaders, business executives, educators, and state and local government leaders were briefed on the center's programs and accomplishments by Kennedy Director Bob Cabana and other senior managers.

To view the latest
ESD Quarterly video, visit
<http://go.nasa.gov/1IAEM8F>

ORION SPACECRAFT



SPACE LAUNCH SYSTEM



EXPLORATION SYSTEMS DEVELOPMENT

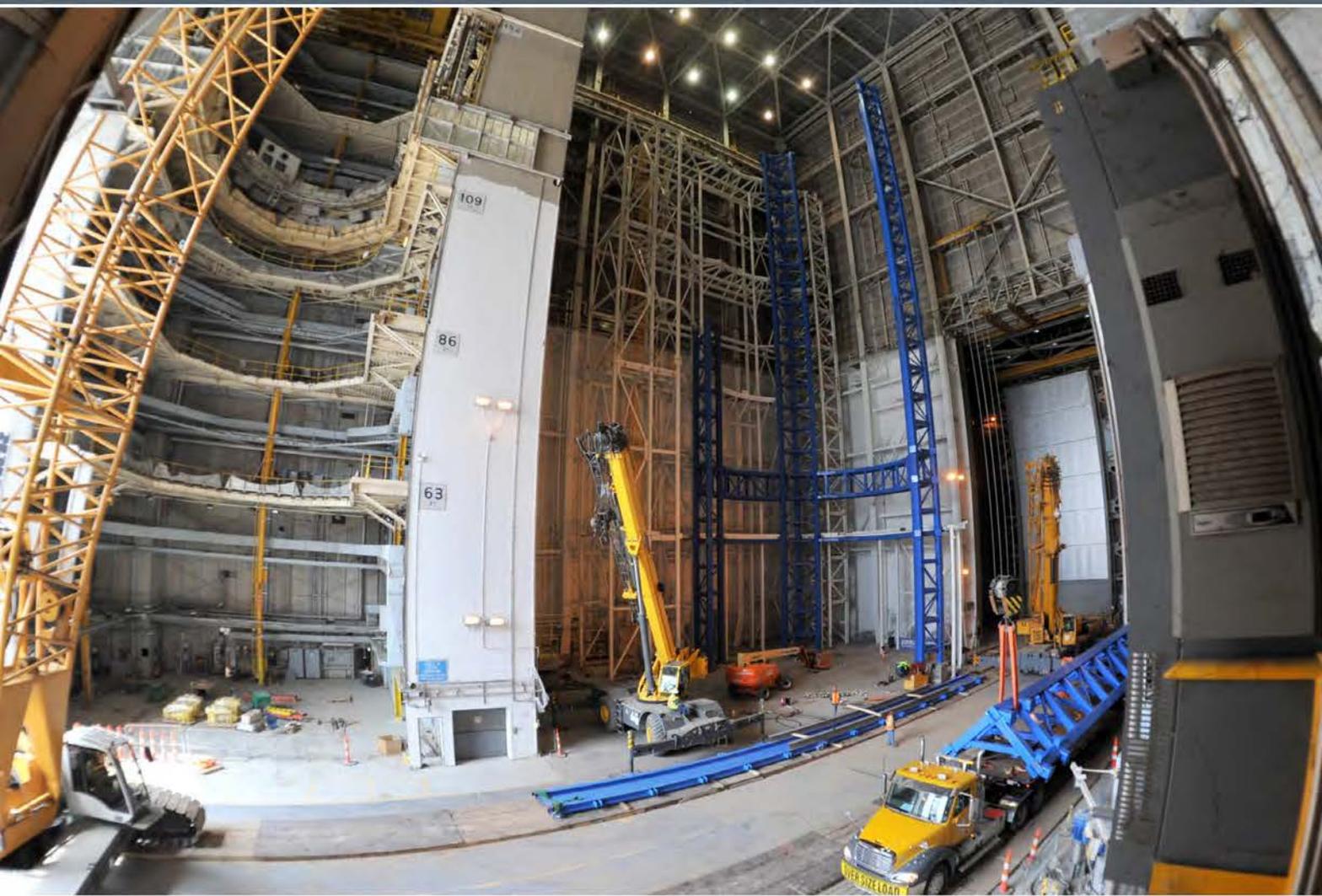


GROUND SYSTEMS DEVELOPMENT & OPERATIONS



ESD

EXPLORATION SYSTEMS DEVELOPMENT



Progress continues on the Vertical Assembly Center (VAC) at NASA's Michoud Assembly Facility in New Orleans. The VAC, measuring 170 feet tall and 78 feet wide, will be one of the world's largest welding tools for the SLS core stage. It is scheduled to be completed this summer. (Image credit: NASA/Michoud)