National Aeronautics and Space Administration

LAGNIAPPE

John C. Stennis Space Center

Volume 16 Issue 8 www.nasa.gov/centers/stennis August 2020

Splashdown!

See page 4

We test the future. For Stennis Space Center, those four words represent both a slogan and a basic business plan. For more than 50 years, the site has tested the engines and propulsion systems that power this nation's space dreams.

That is exactly what it was doing five years ago this month when it achieved a pair of significant milestones, both directly tied to development of the new Space Launch System (SLS) rocket, which will enable historic Artemis program missions to the Moon and eventual flights to Mars.

One milestone came on the A-1 Test Stand in late August 2015 when NASA completed an initial developmental test series on the RS-25 engine that will help power the new SLS rocket. The second came earlier that month on the B-2 Test Stand, where work teams "topped out" structural steel work to extend an existing framework 100 feet higher in preparation for installing and testing the first SLS flight core stage.

Five years later, despite a COVID-19 pandemic, Stennis is moving steadily towards yet another pair of key milestones, once more directly related to SLS.

On the A-1 Test Stand, teams are moving toward a new round of RS-25 testing, with an initial hot fire expected in the next few months. The new testing will focus on collecting data for development and manufacture of new RS-25 engines to support future SLS missions. Previous testing focused on heritage space shuttle main engines that were modified for SLS use.

Likewise, teams on the B-2 Test Stand have installed the SLS core stage that will power the Artemis I mission and are continuing to work through a series of Green Run tests. Four tests have been completed – and later this fall, the test series will culminate with a hot fire of the stage's four RS-25 engines. It will be the most powerful test conducted at Stennis in more than 40 years. Let's get ready to shake, rattle and roar. Ark!

It is pretty easy to get excited about the days ahead – but no one should be surprised at the news. Achieving milestones like those that lay just ahead is really just business as usual for a site like Stennis that operates under a "We test the future" banner.

And – when it comes to powering the next great era of space exploration, that future is right now.

Lagniappe is published monthly by the Office of Communications at NASA's John C. Stennis Space Center.
Access monthly copies at: www.nasa.gov/centers/stennis/news/publications/index.html
Contact info – (phone) 228-688-3749; (email) ssc-pao@mail.nasa.gov; (mail) NASA OFFICE OF COMMUNICATIONS, Attn: LAGNIAPPE, Mail code IA00, Building 1100 Room 304, Stennis Space Center, MS 39529
Subscribe at: https://lists.nasa.gov/mailman/listinfo/stennis-space-center-lagniappe
Managing Editor – Valerie Buckingham Editor – Lacy Thompson Staff Photographer – Danny Nowlin

NASA's MOON to MARS MISSION

Stennis test complex facilities provide critical Green Run support

One day in the sooner-rather-than-later future, people across the nation will rearrange daily schedules to witness a long-anticipated event – the maiden launch of NASA's new Space Launch System (SLS) rocket.

A pair of solid rocket boosters and four RS-25 engines will fire at a south Florida launchpad to generate more than 8 million pounds of thrust, lifting the 321-foot SLS rocket into the sky on its way to the Moon and back.

The launch will herald the beginning of a new great era of space exploration, one set on establishing a sustainable presence on the Moon and placing human footprints on Mars.

In no small part, success of the new era rests on hard work provided by Stennis Space Center, which is testing the rocket engines and SLS core stage that will power the new rocket to unprecedented destinations.

Lagniappe is featuring a series of articles under the "Go ... Go ... Go!" heading that detail aspects of NASA's next step into deep space and Stennis' role in making such missions possible. The following represents the latest installment.

When it comes to rocket propulsion testing, a variety of test complex facilities and personnel are involved. For instance, an onsite High Pressure Gas Facility and High Pressure Industrial Water Facility supply megaloads of gases and water critical for any propulsion test.

For the Green Run hot fire of the first flight core stage of NASA's new Space Launch System (SLS) rocket this fall, two other Stennis facilities also will deliver key support – the E Test Complex and the Cryogenic Storage Facility. The E Test Complex will with help deliver gaseous nitrogen for the test. The cryogenic area will supply liquid oxygen and liquid hydrogen to fuel the test.

The four-engine hot fire will conclude a series of Green Run core stage tests and mark the biggest milestone yet in the march to the next great era of human space exploration. NASA will use SLS to launch Artemis program missions to return humans, including the first woman, to the Moon and to prepare for eventual missions to Mars.

E Test Complex

The E Test Complex at Stennis was constructed to support propulsion development programs in the late 1980s and early 1990s. The versatile, three-stand complex includes seven separate test cells capable of testing that involves ultra high-pressure gases and cryogenic fluids. While the High Pressure Gas Facility supplies the bulk of gases needed for propulsion system testing at Stennis, some projects on the E-1 Test Stand require gaseous nitrogen at higher pressures than the facility can provide. For that reason, E complex has a built-in capability that allows it to pump and store gaseous nitrogen at the higher pressures.

The Green Run hot fire will require copious amounts of gaseous nitrogen throughout a 24-hour period. To help meet that demand, the E complex will use it built-in capability to provide additional nitrogen to the site system to keep up with the pressure and flow rate demands from the core stage. The nitrogen will be stored in bottles at the E-1 stand prior to test day. On test day, a team of E complex personnel will configure the system to allow the stored gas to flow through pressure-reducing stations and back into the site system as needed.

In addition to the nitrogen, the E complex will provide supplemental gaseous helium to the sitewide system for hot fire support. A pair of helium compressors mounted on mobile trailers are being installed and activated at the E-3 Test Stand to provide this capability. The equipment is expected to be installed by the end of the month and will be activated prior to the wet dress rehearsal test that precedes the actual Green Run hot fire.

E complex personnel have participated in several dry run stress-test scenarios to make sure teams and equipment all are set. The tests helped identify equipment that needed to be replaced or improved, as well as critical spare equipment needed on hand for test day. On test day, about 16-20 people will provide the 24-hour support needed prior to, during and after the hot fire test.

"The team has done a great job identifying and correcting any issues found during the stress tests to ensure the E complex systems are ready to support," said Stephen Rawls, NASA E-3 Test Stand director. "It's hard to put into words the feelings I have to be part of such an amazing team at Stennis and to be part of making history. The Green Run test will be the culmination of countless hours of hard work put in by a diverse group of Stennis team members to make it a success. No challenge is too big for us when we work as a team."

Cryogenic Storage Facility

Four RS-25 engines will power the SLS rocket at launch. While these RS-25 engines will help power the Space Launch System, the Cryogenic Storage Facility at Stennis helps power the engines during Green Run hot fire. The area is responsible for storing, handling, transporting, and delivering the liquid oxygen and liquid hydrogen used as the RS-25 engine propellant.

Liquid hydrogen is the actual fuel. The element with the lowest molecular weight, it burns with extreme intensity. Combined with an oxidizer (liquid oxygen), liquid hydrogen is the most efficient propellant available, providing more thrust per pound of fuel than any other option.

Testing a single RS-25 engine requires more than 100,000 gallons of combined propellant. That demand is multiplied for Green Run hot fire, which will consume 610,000 gallons of liquid hydrogen and 270,000 gallons of liquid oxygen. The wet dress rehearsal test prior to hot fire will require even more – about 900,000 combined gallons – as operators simulate at least a two-hour hold, which will require extended propellant flow..

On test day, the Cryogenic Storage Facility will use three liquid hydrogen barges, each loaded to 115 percent capacity (260,000 gallons each) and five liquid oxygen barges, each loaded with 98,000 gallons. The volumes differ due to the respective atomic weights of the propellants. However, each barge essentially holds about 24 tractor-trailer loads of its particular cryogenic.

Handling the cryogenics is a careful process. Both are stored at extremely low temperatures – minus 297 degrees Fahrenheit for liquid oxygen and minus 423 degrees Fahrenheit for liquid hydrogen. Each step of loading and unloading a barge with cryogenics must be performed with great care.

It normally takes three to four days to load each barge to capacity; that process will be completed prior to test day. All maintenance and checkouts also will be completed. The barges will be moved from the storage area to the B-2 Test Stand prior to test day, transported by a single tug boat on the Stennis canal waterway. It takes two or three hours to disconnect and move a single barge.

Once in place, the barges will be connected to stand piping and used to help fill the large core stage propellant tanks and replenish the 28,000-gallon ground-based storage tank at the stand. There will be little propellant to spare, less than 10 percent. Teams must address any issues quickly to avoid running out of propellant. The transfer procedure must be precisely timed and carefully con-trolled to provide the specific flow rate needed during different phases of the loading process.

"The biggest challenge in supporting the Green Run hot fire is making sure our barges are ready to support the test without any problems," said Billy Davis, assistant operation manager at the Cryogenic Storage Facility and High Pressure Gas Facility. "We only have three liquid hydrogen barges so we can't afford to have one go down."

Four down, four to go – Artemis I rocket moves closer to hot fire test

The Space Launch System (SLS) rocket core stage for the Artemis I lunar mission has successfully completed its first four Green Run tests and is building on those tests for the next phase of checkout as engineers require more capability of the hardware before hot-firing the stage and its four powerful engines.

Green Run is a demanding series of eight tests and nearly 30 firsts: first loading of the propellant tanks, first flow through the propellant feed systems, first firing of all four engines, and first exposure of the stage to the vibrations and temperatures of launch.

"We are methodically bringing several complex systems to life and checking them out during the first seven tests," explained SLS Stages Manager Julie Bassler. "Then it is show time for the eighth test when we put it all together and fire up the rocket's core stage, just like we'll fire it up for the Artemis I launch to the Moon."

On Aug. 5, engineers at NASA's Stennis Space Center, where the stage is loaded into the B-2 Test Stand, com-pleted the fourth of eight planned tests of the 212-foot-tall core stage. For Test 4, engineers performed the initial functional checkout of the main propulsion system components to verify command and control operability (valve response, timing, etc.) and performed leak checks on the core stage-to-facility umbilical fluid and gas connections.

"With test gases flowing through this many parts of a complex rocket stage, we expected the test team to encounter some issues," said Jonathan Looser, who manages the SLS core stage main propulsion system. "Historically, there's never been a NASA human-rated launch vehicle flown without one or more full-up tests before flight, and they have all encountered first-time issues. As expected, we found a few with valves and seals and addressed them, and now we're ready to complete the next four Green Run tests."

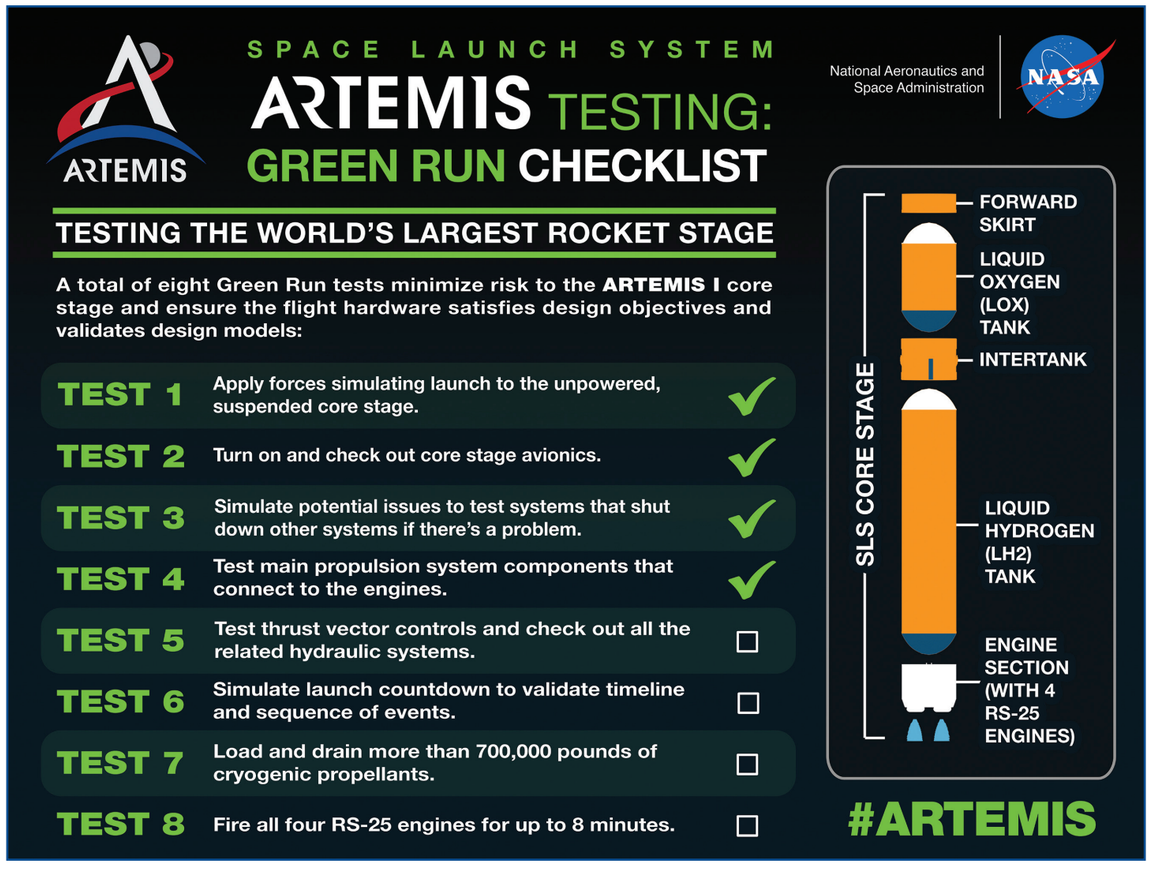
The Green Run testing series formally started in January with modal testing to verify computer models and support guidance and navigation control systems. In March, the test series was interrupted by a shutdown related to COVID-19 cases in Mississippi. When testing resumed in May with appropriate safety measures in place, the team completed Test 2, activation of computers, data collection health monitoring and other "avionics" that make up the brains and nervous system of the core stage. Test 3 was a check of the fail-safe systems that shut down the stage in a contingency situation. Each test builds on the prior test and is longer than the previous one, adding new hardware activations to those already completed.

For Test 4, functional and leak checks of the stage main propulsion systems and engines lasted three weeks. Engineers were able to conduct the test with gaseous nitrogen and helium, which is more efficient than using liquid hydrogen and oxygen propellants, which are only needed for the actual hot-fire test. As these gases flowed through systems, special instrumentation monitored for any leaks or poor connections.

Next up for the Green Run team is Test 5. It will ensure the stage thrust vector control system works correctly, which includes huge components that steer the four RS-25 engines, called actuators, and provides hydraulics to the engine valves.

Test 6 simulates the launch countdown to validate the countdown timeline and sequence of events. This includes the step-by-step fueling procedures in addition to the previous test steps of powering on the avionics and simulated propellant loading and pressurization.

As one final checkout before the full firing test, Test 7 is called the "wet dress rehearsal," meaning it builds on the simulations in Test 6 and includes fueling the rocket with propellants. After once again powering on the avionics, hydraulic systems, fail-safe systems, and other related systems that have been checked out in the prior six tests, the team will load, control, and drain more than 700,000 gallons of cryogenic, or super cold, propellants.



Only after passing these seven tests will it be time for Test 8, a full countdown and hot fire test for up to eight minutes. During the test, all four RS-25 engines will be firing at a full, combined 1.6 million pounds of thrust just as they will on the launch pad. Test 8 will be the final checkout to verify the stage is ready for launch. Afterward, engineers will prepare the stage for its trip to Kennedy Space Center in Florida.

"We want to find any issues here on the ground at Stennis, where we've added hundreds of special ground test sensors to the stage for Green Run," said Ryan McKibben, one of the Stennis Space Center Green Run test conductors. "We have great access to the stage on the B-2 Test Stand and have engineers and technicians on hand who are familiar with this stage."

By the time all eight Green Run tests are complete, Boeing, the prime contractor for the core stage, estimates it will collect 75-100 terabytes of data, not including voice and video data collected. And that's a lot of homework considering that all the data in the Library of Congress amounts to just 15 terabytes.

NASA is working to land the first woman and next man on the Moon by 2024. SLS and Orion, along with the human landing system and the Gateway that will orbit around Moon, are NASA's backbone for future deep space exploration. SLS is the only rocket that can send Orion, astronauts and supplies to the Moon in a single mission.

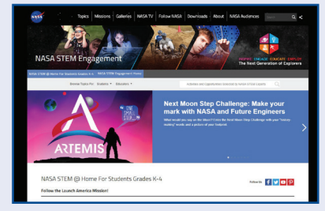
For the latest on NASA/Stennis Space Center status, please access:

Stennis Emergency Management web page

NASA Coronavirus Response Information web page

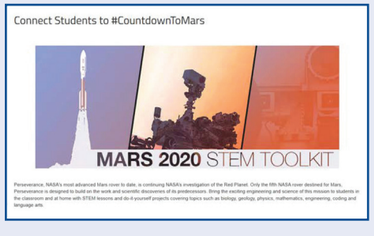
Other online resources:

NASA at Home



NASA STEM@Home for Students

How to Draw Artemis

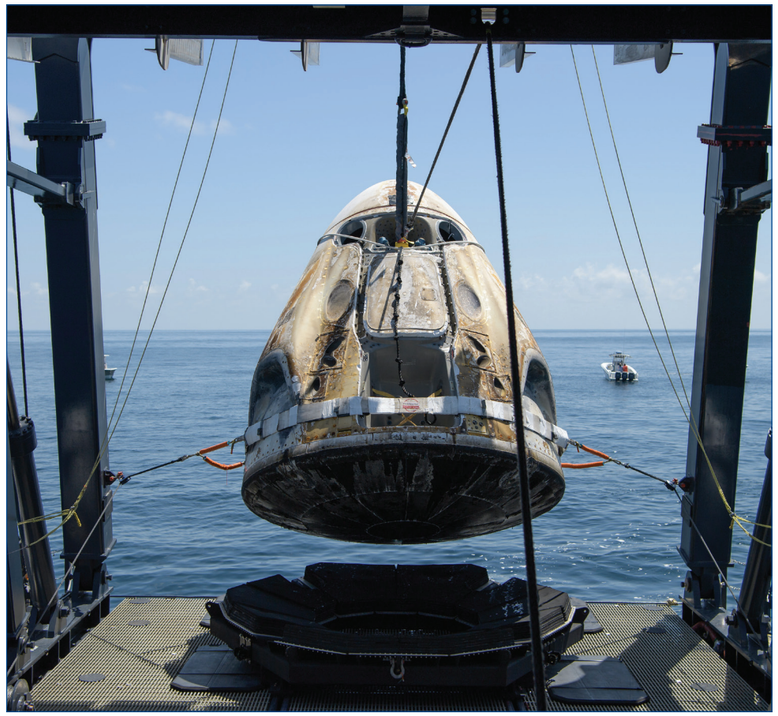


MARS 2020 STEM Toolkit

NASA E-Book Downloads

NASA's MOON to MARS MISSION

NASA astronauts safely splash down after 1st commercial crew flight to space station



(Left photo) A support team member examines the SpaceX Crew Dragon Endeavour spacecraft shortly after it landed in the Gulf of Mexico off the coast of Pensacola, Florida, on Aug. 2. The Demo-2 test flight was the first to deliver astronauts to the International Space Station and return them safely to Earth onboard a commercially built and operated spacecraft.

(Center photo) The SpaceX Crew Dragon Endeavour spacecraft is lifted onto the SpaceX GO Navigator recovery ship.

(Far right photo) NASA astronauts Robert Behnken (l) and Douglas Hurley are seen inside the SpaceX Crew Dragon Endeavour spacecraft onboard the SpaceX recovery ship.

Two NASA astronauts splashed down safely in the Gulf of Mexico on Aug. 2 for the first time in a commercially built and operated American crew spacecraft, returning from the International Space Station to complete a test flight that marks a new era in human spaceflight.

SpaceX's Crew Dragon, carrying Robert Behnken and Douglas Hurley, splashed down under parachutes in the Gulf of Mexico off the coast of Pensacola, Florida at 1:48 p.m. CDT on Aug. 2 and was successfully recovered by SpaceX. After returning to shore, the astronauts flew back to Houston.

"Welcome home, Bob and Doug! Congratulations to the NASA and SpaceX teams for the incredible work to make this test flight possible," NASA Administrator Jim Bridenstine said. "It's a testament to what we can accomplish when we work together to do something once thought impossible. Partners are key to how we go farther than ever before and take the next steps on daring missions to the Moon and Mars."

Behnken and Hurley's return was the first splashdown for American astronauts since Thomas Stafford, Vance Brand, and Donald "Deke" Slayton landed in the Pacific Ocean off the coast of Hawaii on July 24, 1975, at the end of the Apollo-Soyuz Test Project.

NASA's SpaceX Demo-2 test flight launched May 30 from the Kennedy Space Center in Florida. After reaching orbit, Behnken and Hurley named their Crew Dragon spacecraft "Endeavour" as a tribute to the first space shuttle each astronaut had flown aboard.

Nearly 19 hours later, Crew Dragon docked to the forward port of the International Space Station's Harmony module May 31.

"On behalf of all SpaceX employees, thank you to NASA for the opportunity to return human spaceflight to the United States by flying NASA astronauts Bob Behnken and Doug Hurley," SpaceX President and Chief Operating Officer Gwynne Shotwell said. "Congratulations to the entire SpaceX and NASA team on such an extraordinary mission. We could not be more proud to see Bob and Doug safely back home – we all appreciate their dedication to this mission and helping us start the journey towards carrying people regularly to low-Earth orbit and on to the Moon and Mars. And I really hope they enjoyed the ride!"

Behnken and Hurley participated in a number of scientific experiments, spacewalks and public engagement events during their 62 days aboard station. Overall, the astronaut duo spent 64 days in orbit, completed 1,024 orbits around Earth and traveled 27,147,284 statute miles.

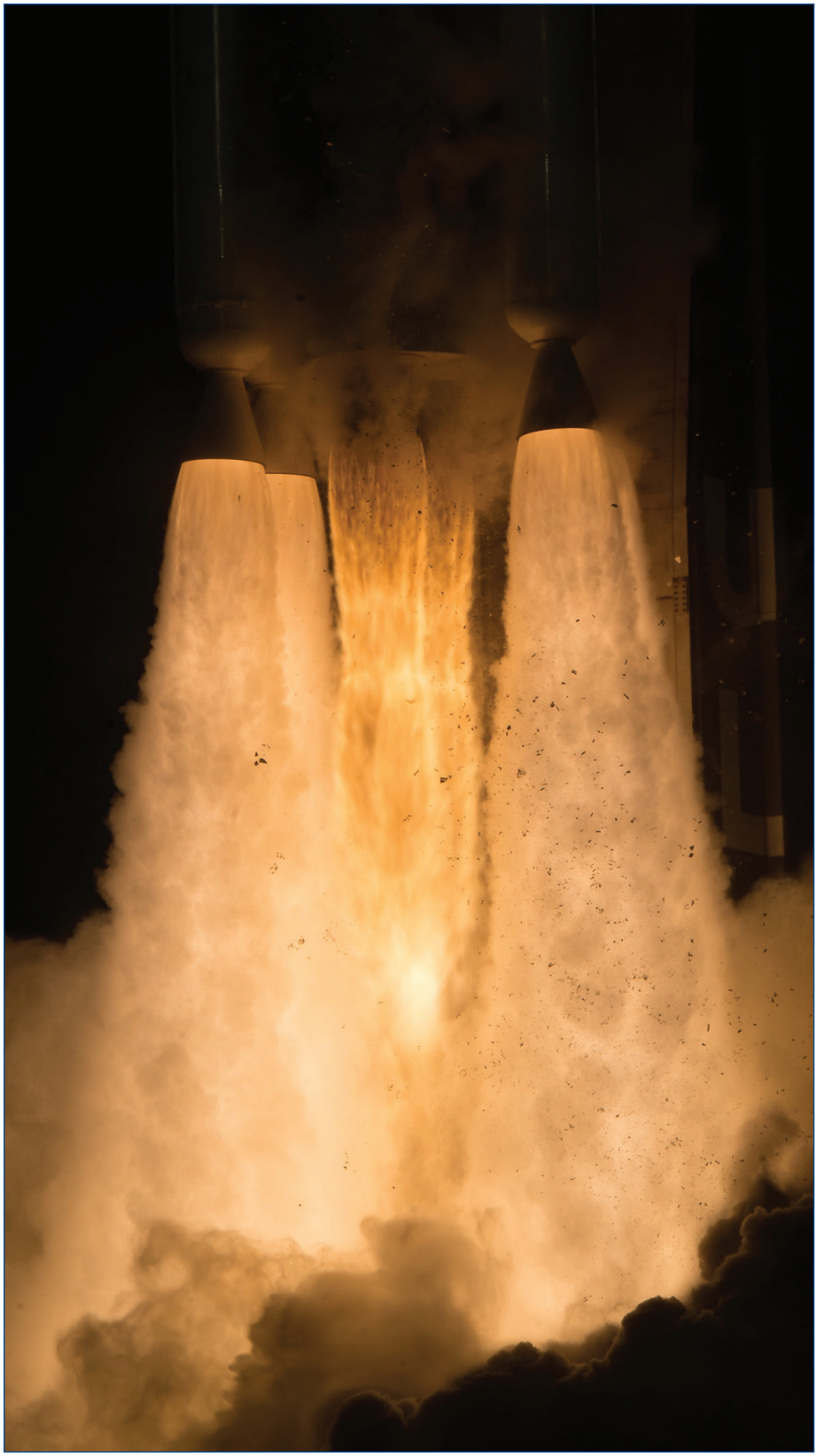
Behnken conducted four spacewalks while on board the space station with Expedition 63 Commander Chris Cassidy, a NASA colleague. The duo upgraded two power channels on the far starboard side of the station's truss with new lithium-ion batteries. They also routed power and Ethernet cables, removed H-fixtures that were used for ground processing of the solar arrays prior to their launch, installed a protective storage unit for robotic operations, and removed shields and coverings in preparation for the arrival later this year of the Nanoracks commercial airlock on a SpaceX cargo delivery mission.

Behnken now is tied for most spacewalks by an American astronaut with Michael Lopez-Alegria, Peggy Whitson, and Chris Cassidy, each of whom has completed 10 spacewalks. Behnken now has spent a total of 61 hours and 10 minutes spacewalking, which makes him the U.S. astronaut with the third-most total time spacewalking and the fourth most overall.

The Demo-2 flight is part of NASA's Commercial Crew Program, which has worked with the U.S. aerospace industry to launch astronauts on American rockets and spacecraft from American soil to the space station for the first time since 2011. The mission marked SpaceX's final test flight and provided data on the performance of the Falcon 9 rocket, Crew Dragon spacecraft and ground systems, as well as in-orbit, docking, splashdown, and recovery operations.

Crew Dragon Endeavour returns to SpaceX's Dragon Lair in Florida for inspection and processing. Teams will examine the spacecraft's data and performance from throughout the test flight. The completion of Demo-2 and the review of the mission and spacecraft will pave the way for NASA to certify SpaceX's crew transportation system for regular flights carrying astronauts to and from the space station. SpaceX is readying the hardware for the first rotational mission, called Crew-1, later this year. This mission would occur after NASA certification, which is expected to take about six weeks.

The goal of NASA's Commercial Crew Program is safe, reliable and cost-effective transportation to and from the International Space Station. This could allow for additional research time and increase the opportunity for discovery aboard humanity's testbed for exploration, including helping to prepare for human exploration of the Moon and, eventually, Mars.



Perseverance rover launches

Engines fired as a United Launch Alliance Atlas V rocket with NASA's Mars Perseverance rover onboard launches July 30, 2020 from Space Launch Complex 41 at Cape Canaveral Air Force Station in Florida. NASA's Mars 2020 Perseverance rover mission is on its way to the Red Planet to search for signs of ancient life and collect samples to send back to Earth.Learn more about the Mars 2020 mission here. For more about America's Moon to Mars exploration approach, visit here.

NASA in the News

NASA awards contract for laboratory services

NASA has awarded the Laboratory Services Contract to Alutiiq Essentials Services LLC of Kodiak, Alaska, to provide laboratory services at Stennis Space Center and nearby Michoud Assembly Facility in New Orleans. The award is a firm-fixed-price, core services operations and indefinite delivery/indefinite quantity contract with a value of about $34 million. The base period of performance begins Nov. 2, with two 12-month options and one 13-month option, and an ultimate completion date of Nov. 1, 2025. Requirements include: contract management; logistics; safety; health and environmental; general laboratory services; metrology assurance; measurement standards and calibration services; gas and material analysis services; environmental laboratory services; and Stennis institutional geographic information system services.

NASA sets launch date for Webb telescope

NASA now is targeting Oct. 31, 2021, for the launch of the James Webb Space Telescope from French Guiana, due to impacts from the ongoing COVID-19 pandemic, as well as technical challenges. The decision is based on a recent schedule risk assessment of the remaining integration and test activities prior to launch. Previously, Webb was targeted to launch in March 2021. Webb is NASA's next great space science observatory, which will help in solving the mysteries of our solar system, looking beyond to distant worlds around other stars, and probing the mystifying structures and origins of theuniverse. For more information about Webb, visit here.

For NASA engineer, work at Stennis is a perfect fit

For Jasper Cook, landing a position at Stennis Space Center right out of college was ideal. It fit perfectly with his interests and his dreams.

Cook, a Slidell, Louisiana, native and current New Orleans resident, was first taught about planets in kindergarten. He still remembers the excitement. "I wanted to learn all I could about these new worlds," he said.

Years later, leaving college with engineering degree in hand, Cook dreamed of finding a job near home. "I wanted an opportunity to work at a location that would let me be close to home for my family and to still be involved in the communities I grew up in," he said.

Jasper Cook (l), an electrical design engineer in the Stennis Space Center, speaks to employees during the site's 2020 Black History Month program Feb. 27. Cook was joined on the "Stennis Hidden Figures of Artemis" panel by Stennis engineers Dawn Davis and Barry Robinson.

Cook began work as an electrical design engineer at Stennis five years ago. After working one year with a site contractor, he accepted a similar position on the NASA team.

The timing was perfect as Stennis worked to prepare for the largest onsite test project in more than 40 years – Green Run testing of the first flight core stage for NASA's new Space Launch System (SLS) rocket. SLS is being built to power humans deep-space missions, first to the Moon through the Artemis program and, eventually, to Mars. The first flight core stage, equipped with four RS-25 engines and now installed on the B-2 Test Stand at Stennis, will launch the uncrewed Artemis I mission.

Cook is right in the thick of the work. He currently is working on the hardware/software design for the facility control system at the B-2 Test Stand, where the SLS core stage is undergoing the series of Green Run tests.

Teams at the stand recently completed the fourth of eight scheduled tests. The series will culminate with a hot fire test of the stage, which involves firing its four RS-25 engines just as they will later during the actual launch of the Artemis I mission.

Cook also is preparing the B-2 Test Stand facility control system design that will be needed when teams perform similar tests of the SLS Exploration Upper Stage.

The work involving core stage testing has been challenging. "Meeting schedule requirements and constraints have been a major driver for several challenges I have faced during this project," Cook said. "However, with the help of the rest of the test team, we have been able to overcome these challenges."

The COVID-19 situation also has posed challenges for Cook and others, who have adjusted work schedules and settings to help protect the health and safety of employees. The situation, which continues to impact all areas of life and work, also has heightened the importance of people staying informed and supporting charities and causes of their choice, Cook said.

Challenges notwithstanding, Cook is proud to be part of the team effort at the B-2 stand and part of the Stennis family as a whole. "I appreciate that I have the opportunity to be involved in a project this impactful in the history of space exploration," he said. "The best thing about Stennis is being a part of the long history and future of NASA, as well as being able to work on projects (like Green Run) that have such a big impact on the world and the advancement of technology."

His efforts have not gone unnoticed. Already, Cook has been included in team awards for work on hydrogen burn-off igniters at B-2, as well as efforts to support the renovation and activation of the test facility.

All of the work came together early this year with arrival of the core stage at Stennis. Cook speaks of the pride he felt as it saw the stage finally lifted and installed on the B-2 Test Stand. It was affirmation of all of the hard work by the entire B-2 team in so many areas.

For that excited kindergartner-now-NASA-engineer, it was nothing less than a dream come true as well.

Stennis has long history of weathering hurricanes

Note: NASA's John C. Stennis Space Center has played a pivotal role in the nation's space program. The following offers a glimpse into the history of the space program and the rocket engine test center.

Hurricane season reaches its peak time along the Gulf Coast in the months of August and September. Reminders to be prepared can be seen and heard everywhere.

Not only do people who live along the Gulf Coast need to be prepared, but Stennis Space Center needs to be prepared as well. Stennis has a hurricane preparedness plan that serves the site well. Leading up to the 21st century, the plan helped the site survive hurricanes like Betsy in 1965, Camille in 1969, and Elena in 1985, one of the trickier Hurricanes in center's history.

A NASA photo taken during STS-65 space shuttle mission shows Hurricane Emilia in the eastern Pacific Ocean, including its well-developed eye. Stennis has weathered numerous such storms.

Hurricane Betsy was the first test of being prepared. Betsy formed on Aug. 27, 1965. The then-Mississippi Test Facility (MTF) watched the storm as it tracked toward the Gulf Coast. The storm only inflicted minor damage on the test facility when it made landfall near Grand Isle, Louisiana, on Sept. 10, 1965, and moved into the Mississippi coast area. MTF reopened the following Monday.

Hurricane Camille made landfall at Waveland, Mississippi, on Aug. 18, 1969. At MTF, the days prior to Camille arriving were spent watching, waiting, securing hydrogen and oxygen barges, and tying down anything that might be blown away in 160 mile-per-hour winds. Camille ravaged the area and MTF, but the Gulf Coast is a resilient community and quickly rebuilt.

Hurricane Elena was a tricky storm to prepare for; it followed an unpredictable track, going east in the Gulf of Mexico, then doubling back west to make landfall near Biloxi, Mississippi, on Sept. 2, 1985. Hurricane warnings for the area were issued, canceled, and issued again leading up to that time. The then-National Space Technology Laboratories (NSTL) remained ready, and thanks to efforts of "ride out crews," employees who are assigned to "ride out" the storm at the site and protect critical facilities, there was little damage sustained.

A new century has not lessened the danger of seasonal hurricanes and the need for ongoing vigilance and preparedness. Just five years into the current century – on Aug. 29, 2005 – Hurricane Katrina dealt the Mississippi Gulf Coast a devastating blow. Stennis sustained some damage but, more importantly, emerged to play a vital role in helping its surrounding communities respond and recover, a story that also will be noted in history.

Hail & Farewell

NASA welcomes the following:

Lorrie Gibson	Management and Program Analyst	Office of Chief Financial Officer
Michael Tubbs	Administrative Specialist	Center Operations Directorate
Anita Wilson	Management and Program Analyst	Office of Chief Financial Officer

NASA bids farewell to the following:

Heather Hendrix	Contract Specialist	Office of Procurement

Office of Diversity and Equal Opportunity

Special Emphasis Programs need employee involvement

Special Emphasis Programs (SEP) are an integral part of the Equal Employment Opportunity and Civil Rights Program. The purpose of the programs is to ensure that agencies take affirmative steps to identify barriers in employment practices and policies that hinder the accessibility of equal opportunity to all NASA employees.

"Special Emphasis Programs" refers to employment-related programs that focus special attention on groups that are conspicuously absent or have a lower-than-expected participation rate in a specific occupational category or grade level in the agency's work force.

These programs serve as a channel to management officials. Monthly SEP observances serve as conduits to bring cultural awareness and education to employees and to highlight the full realm of diversity and inclusiveness, connecting employees together through unity.

The goals of SEP include, but are not limited to, efforts to:

- Improve employment and advancement opportunities for respective constituents in the federal service.
- Identify systemic causes of discrimination against minorities, women, and people with disabilities.
- Seek ways to help minorities, women, and people with disabilities advance by using their skills more fully.
- Monitor agency progress in eliminating discrimination and adverse impact on minorities, women, and people with disabilities in employment and agency programs.
- Educate federal employees and managers about the extent of various forms of discrimination within the federal service.

In order to assist SEP managers in accomplishing the goals for their areas of focus, committees often are established.

Why should someone become a SEP committee member?

SEP committees can provide a safe and positive forum for group members to raise issues of common concern to management. Committee members may have knowledge or information that can be useful to the SEP managers or other committee members in such areas as career planning, organizational culture, and expectations, as well as techniques for target group recruitment.

Committee members with strong analytical skills can be very useful in assisting SEP managers to understand workforce statistics and trends. Properly structured and managed, SEP committees can ensure continuous publicity and understanding of the goals and benefits of workforce diversity. They also can help dispel some of the myths and suspicions about these programs.

Who is eligible to be a SEP committee member?

Committee membership is open to any and all federal employees who are committed to the overall goals of SEP and who are specifically interested in helping SEP managers meet their objectives.

Individuals who are generally regarded as being open-minded, self-confident, good listeners, thoughtful, and positively oriented will add value to SEP. Prospective committee members should have the support of their supervisors in devoting a portion of their work time to committee activities.

A professional approach

SEP itself is sometimes judged by how agency employees view SEP committee members personally. This could be a real burden if members are not aware they are sometimes perceived as being the program. For that reason, it is important that members project a professional image and foster formal and professional relationships built on trust. Remember – the best surprise is no surprise.

All persons are urged to consider joining the SEPMs by volunteering to be a part of the a SEP committee. SEP areas at Stennis and the NASA Shared Services Center are:

- African American Employment Program
- American Indians and Alaska Natives Program
- Asian Americans and Pacific Islanders Program
- Federal Women's Program
- Hispanic Employment Program;
- Individuals with Disabilities Program
- Disabled Veterans Program
- Lesbian, Gay, Bisexual, Transgender, and Queer (LGBTQ) Program

The Office of Diversity and Equal Opportunity invites employees to share their special talents and to experience the benefits of being a SEP committee member. Committees are comprised of federal employee volunteers who collaborate with the SEP managers to plan and execute special monthly observances, educational workshops/seminars, "lunch and learns," and more.

Those interested in becoming a committee member should contact a SEP manager or Cecy Lewis at cecy.lewis@nasa.gov with the subject line "SEPC Interest."

Stennis at COVID-19 Stage 3 – onsite work continues absent many employees who remain in telework status

Stennis Space Center facilities have a different look in the midst of a COVID-19 Stage 3 response, which has moved many employees to a telework status while others continue to provide onsite services. Various signs and hand sanitizer stations have been placed for employees who continue to access and work on site. Tables have been strategically situated in the atrium of the Roy S. Estess Building (top left photo), and the hand sanitizer stand can be seen in the middle of the area. The facility cafeteria has placed signs, as well as safeguards, for patrons and employees like Ashley Parker at the checkout register (bottom left photos). Barbara Gaines wears a mask and gloves while performing janitorial tasks (top middle). Other on-site personnel follow safety precautions as well while performing work tasks – Jose Lopez (r, middle right photo) provides tablet tech support for Kyle Necaise; electrician Brock Saucier works in the Roy S. Building.