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LAGNIAPPE

John C. Stennis Space Center

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‘We are the Artemis generation – and we are going’

(See Page 8)

The "finest hour" phrase has been used many times. In the most famous instance, Winston Churchill included it in a 1940 speech as Britain braced for war with Germany. Churchill expressed confidence that history would look back on how Britain responded and proclaim it "their finest hour."'

NFL coach Vince Lombardi used the phrase when he suggested a person's finest hour "is that moment when he has worked his heart out in a good cause and lies exhausted on the field of battle – victorious."

More than 40 years ago, folk at Stennis employed the words as well to describe the site's testing of the space shuttle's Main Propulsion Test Article that proved the new vehicle was ready to fly. Years later, others described return-to-flight testing conducted at Stennis following the Challenger tragedy in the same way.

Different people and groups face differing circumstances and point to others achievements or events as their finest hour. Neal Maxwell may have described it best when he said, "Men's and nation's finest hour consist of those moments when extraordinary challenge is met by extraordinary response."

The challenge of the moment has arrived for Stennis. The first Space Launch System (SLS) core stage has been installed on the B-2 Test Stand for a series of Green Run tests prior to its maiden Artemis I mission. As with the space shuttle more than 40 years ago, NASA is turning to Stennis to prove the new vehicle is ready to launch the next great era of space exploration.

The SLS core stage is the largest ever built by NASA – and the Green Run series represents the first top-to-bottom testing of its sophisticated systems.

The challenges of the test series are many, beginning with the lift and installation of the stage on the stand last month. However, folk at Stennis have more than five decades of accumulated propulsion testing experience and knowledge. There is no reason to doubt they will meet the challenge. They have done so at every moment in the unparalleled history of the site.

In another six decades, as folk of a different era look back on the ever-unfolding history of Stennis, there surely will be a chapter dedicated to this critical time of testing. Without a doubt, it will shine yet another spotlight on Stennis' legacy of "finest hours."

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NASA's MOON to MARS MISSION

SLS core stage installed for testing

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 third installment.

All eyes are on south Mississippi with last month's delivery and installation of NASA's Space Launch System (SLS) rocket's first core stage to Stennis Space Center for a milestone Green Run test series prior to its Artemis I flight.

The Green Run testing will be the first top-to-bottom integrated testing of the stage's systems prior to its maiden flight. The testing will be conducted on the B-2 Test Stand at Stennis and the nation's largest rocket propulsion test site. Green Run testing will take place over several months and culminates with an eight-minute, full-duration hot fire of the stage's four RS-25 engines to generate 2 million pounds of thrust, as during an actual launch.

"This critical test series will demonstrate the rocket's core stage propulsion system is ready for launch on missions to deep space," Stennis Director Rick Gilbrech said. "The countdown to this nation's next great era of space exploration is moving ahead."

Largest rocket stage ever built

NASA is building SLS as the world's most-powerful rocket to return humans to deep space, to the Moon and, eventually, Mars. Through the Artemis program, NASA will send the first woman and next man to the Moon by 2024. Artemis I will be a test flight without crew of the rocket and its Orion spacecraft. Artemis II will carry astronauts into lunar orbit. Artemis III will send astronauts to the surface of the Moon.

The SLS core stage, the largest rocket stage ever built by NASA, stands 212 feet tall and measures 27.6 feet in diameter. It is equipped with state-of-the-art avionics, miles of cables, propulsion systems and propellant tanks that hold a total of 733,000 gallons of liquid oxygen and liquid hydrogen to fuel the four RS-25 engines during launch. The core stage was designed by NASA and Boeing in Huntsville, Alabama, then manufactured at NASA's Michoud Assembly Facility in New Orleans by lead contractor Boeing, with input and contributions from more than 1,100 large and small businesses in 44 states.

> ***The countdown to this nation's next great era of space exploration is moving ahead.***
>
> Stennis Director Rick Gilbrech

'An epic, historical milestone'

"Delivering the Space Launch System rocket core stage to Stennis for testing is an epic historical milestone," said Julie Bassler, the SLS stages manager. "My team looks forward to bringing this flight hardware to life and conducting this vital test that will demonstrate the ability to provide 2 million pounds of thrust to send the Artemis I mission to space."

The stage was transported from Michoud to Stennis aboard the specially outfitted Pegasus barge. It arrived at the B-2 dock on Jan. 12 and was rolled out onto the test stand tarmac that night. Crews then began installing ground equipment needed for lifting the stage into a vertical position and onto the stand.

The lift was performed Jan. 21-22 during optimal weather and wind conditions. Crews then worked to fully secure the stage in place and to stand systems.

NASA completed extensive modifications to prepare the B-2 stand for the test series. The stand has a notable history, having been used to test Saturn V stages that helped launch astronauts to the Moon as part of the Apollo Program and the three-engine propulsion system of the space shuttle prior to its first flight.

Preparing the stand for SLS core stage testing required upgrades of every major system on the stand, as well as the high pressure system that provides hundreds of thousands of gallons of water needed during a test. It also involved adding 1 million pounds of fabricated steel to the Main Propulsion Test Article framework that will hold the mounted core stage and extending the large derrick crane atop the stand that will be used to lift the SLS stage into place.

Green Run testing and beyond

With the core stage installed, operators began the Green Run series with an initial modal test (page 7). In coming months, they will power up avionics; conduct main propulsion system and engine leak checks; and check out the hydraulics system and the thrust vector control unit that allows for rotating the engines to direct thrust and "steer" the rocket's trajectory.

They also will conduct a simulated countdown, as well as a "wet dress rehearsal," in which propellants are loaded and flow throughout the stage system. The exercise will end just prior to engine ignition, with the full four-engine hot fire to come in subsequent days.

After the hot fire test, crews plan to perform refurbishment work on the stage and inspect and configure it for shipment to Kennedy Space Center. The stage will be removed from the stand, lowered to its horizontal position on the tarmac and reloaded into Pegasus for the trip to Florida.

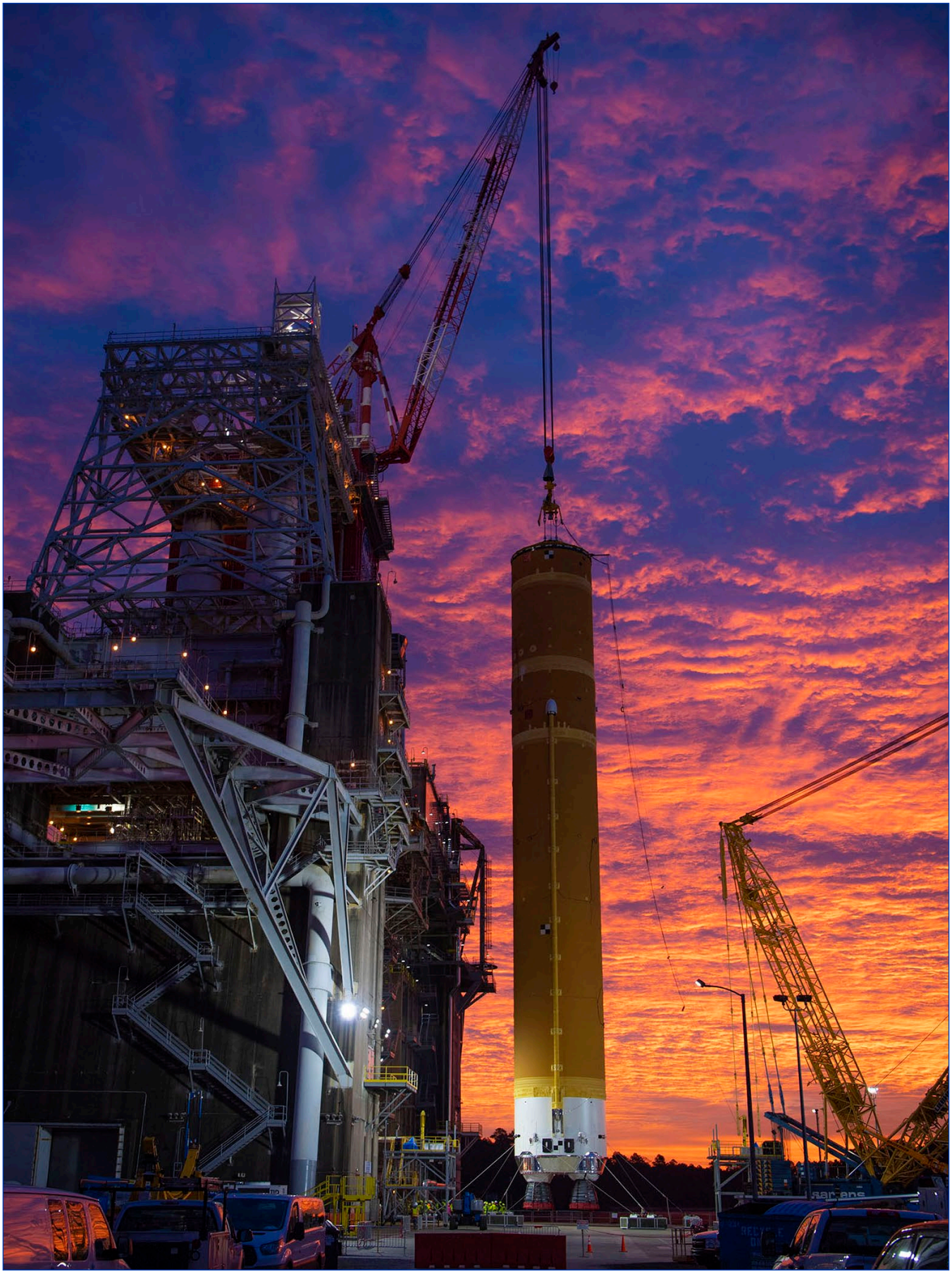
At Kennedy, the stage will be joined with other SLS elements and prepared for launch. The next time its four RS-25 engines fire, Artemis I will be taking flight.

(View core stage installation photos on subsequent pages)

NASA's MOON to MARS MISSION

Crews at Stennis Space Center worked Jan. 21-22 to install the first flight core stage of NASA's new Space Launch System in the B-2 Test Stand for a series of Green Run tests in coming months. Operations required crews to lift the massive core stage from a horizontal position into a vertical orientation, a procedure known as "break over." Once the stage was oriented in a horizontal position on the night of Jan. 21, crews tied it in place to await favorable win conditions. The following morning, a beautiful south Mississippi sunrise framed the core stage (page 5 photo) as crews began the process of raising, positioning and securing the stage on the stand. The upcoming Green Run series represents the first top-to-bottom integrated testing of the stage's systems prior to its maiden Artemis I test flight.

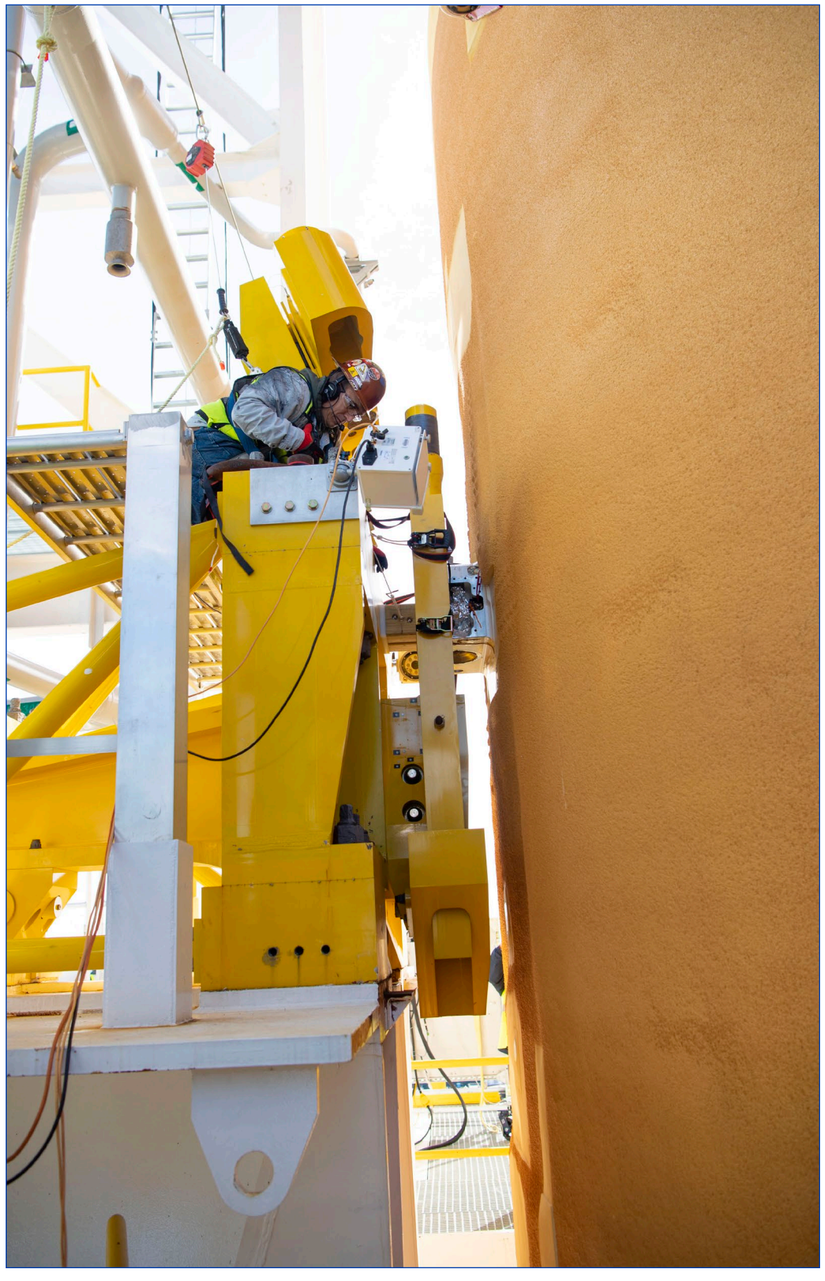
NASA's MOON to MARS MISSION



NASA's MOON to MARS MISSION

Green Run series underway

Crews complete successful modal test on SLS core stage



Crews at Stennis Space Center began the much-anticipated Green Run series of tests on NASA's new Space Launch System rocket with an initial modal test Jan. 30. The modal test at the B-2 Test Stand at Stennis was the first in a series of integrated tests of the stage's various systems. The Green Run series will take place over several months and represents the first top-to-bottom testing of the stage's systems prior to its maiden Artemis I flight. Green Run testing culminates with an eight-minute, full-duration hot fire of the stage's four RS-25 engines to generate 2 million pounds of thrust, as during an actual launch. The testing is designed to demonstrate the stage – and its sophisticated systems – are ready to fly. The initial modal testing involves assessing the core stage's natural frequency so engineers and operators can evaluate accurately how it is structurally affected by testing operations. In the left photo, a crew member prepares the stage for testing. Above, a crew members taps the "spider" component attached to the top of the stage for lifting and installation purposes with an impulse hammer to collect structural data. The SLS core stage was delivered and installed on the B-2 stand at Stennis in January. It is the largest rocket stage ever built by NASA, standing 212 feet tall and measuring 27.6 feet in diameter. It is equipped with state-of-the-art avionics, miles of cables, propulsion systems and propellant tanks that hold a total of 733,000 gallons of liquid oxygen and liquid hydrogen to fuel the four RS-25 engines during launch. Crews at Stennis will continue additional Green Run tests in upcoming weeks.

Stennis hosts NASA administrator and State of NASA event

NASA Administrator Jim Bridenstine visited Stennis Space Center on Feb. 10 to deliver his annual State of NASA address and roll out "one of the strongest budgets" in agency history.

"I cannot think of a better place to roll out NASA's 2021 budget request than right here, where we are ushering in a civilization-changing era of human spaceflight," Bridenstine said, following an introduction by Stennis Director Rick Gilbrech.

The NASA leader noted that the president's fiscal year 2021 budget delivered to Congress includes more than $25 billion for NASA, a 12 percent increase that would keep the agency firmly on track in its work to launch the next great era of space exploration.

He reviewed NASA efforts across a range of areas, from space exploration to a continued human presence on the International Space Station to robotics missions to technology development to science and aeronautics. "We must build on our success by continuing to devote ourselves to the agency mission," he said.

The annual State of NASA address was broadcast live on NASA TV from the Aerojet Rocketdyne Engine Assembly Facility at Stennis. During his remarks, Bridenstine focused squarely on work underway at the center to test the engines and first core stage of the agency's new Space Launch System (SLS) rocket.

The SLS core stage was installed on the B-2 Test Stand last month, and crews recently completed the first in a series of scheduled top-to-bottom tests. Testing will culminate with a firing of the stage's four RS-25 engines, generating 2 million pounds of thrust, just as during an actual launch.

"You just heard the center director say that we're going to the Moon by 2024," Bridenstine said, pointing to an image of the installed core stage on the B-2 stand. "The rocket in the B-2 Test Stand is, in fact, the Moon. That is the SLS rocket core stage complete. We're doing the Green Run right here at Stennis … and we're going to be taking that rocket to the Moon when we launch Artemis I."

Bridenstine cited various areas of progress in the Artemis program effort to return humans, including the first woman, to the Moon and to prepare for an eventual mission to Mars. "The milestones we hit this year … will place us on the cusp of era-defining space exploration," he said. "And the science and technology we are working on right now will prepare us in this new exploration to take humanity's next giant leap to Mars. …

"We are the Artemis generation, and we are going."

Prior to his remarks, Gilbrech praised the NASA leader's work to "inspire and enable the NASA family and the public to dream, to dare and to drive forward. ...

"The excitement is palpable here at Stennis as we have an actual flight stage in our test stand for the first time in over 49 years," he noted. "This is one of the most exciting times I have experienced in my 28-year NASA career."

Video of the State of NASA address can be viewed here.

(Top photo) Against a backdrop of an American flag and a pair of RS-25 engines, NASA Administrator Jim Bridenstine speaks to employees gathered at the Aerojet Rocketdyne Engine Assembly Facility at Stennis Space Center to hear the annual State of NASA address Feb. 10.

(Bottom left photo) Stennis Space Center Director Rick Gilbrech welcomes guests gathered on site to hear NASA Administrator Jim Bridenstine deliver the annual State of NASA address Feb. 10.

(Bottom right photo) Stennis Space Center guests gathered for the annual State of NASA address Feb. 10 watch a video featuring astronaut Raja Chari (left) and NASA engineer Dawn Davis, chief of the electrical design and software branch of the Stennis Engineering and Test Directorate.

(Top left photo) NASA Administrator Jim Bridenstine (l) and Stennis Space Center Director Rick Gilbrech speak with media representatives following the State of NASA address at the south Mississippi site Feb. 10.

(Top right photo) NASA engineer Chip Ellis speaks to guests in the A Test Complex Test Control Center at Stennis Space Center during State of NASA activities Feb. 10.

(Bottom left photo) Stennis Director of Test Operations Maury Vander speaks to media representatives during State of NASA activities Feb. 10. In the background, one can see the first Space Launch System core stage installed on the B-2 Test Stand.

(Bottom right photo) B-2 Test Stand Project Manager Barry Robinson speaks to media members visiting the B Test Complex during annual State of NASA activities on site Feb. 10.

(Top left photo) NASA Administrator Jim Bridenstine speaks to NASA employee during an all hands session Feb. 10. The session was held after the agency leader delivered the annual State of NASA address to a gathering – and live NASA TV audience – at the Aerojet Rocketdyne Engine Assembly Facility on site.

(Bottom left photo) A group of guests stand against the backdrop of the B-2 Test Stand at Stennis Space Center during State of NASA activities Feb. 10.

(Right photo) In a Marshall Ramsey cartoon created during State of NASA events at Stennis Space Center on Feb. 10, space explorer Pip listens to Stennis Deputy Director Randy Galloway talk about Space Launch System testing underway at the site. Joining Pip is NASA Space Launch Systems Stages Office Manager Julie Bassler (r) and astronaut Raja Chari. Ramsey participated in State of NASA activities as part of a social media group. He is a recognized editorial cartoonist and editor-at-large for the Mississippi Today news service. Ramsey also hosts radio and television programs and is the author of several books.

Stennis hosts NASA Day of Remembrance ceremony

Stennis Space Center Director Rick Gilbrech (l) and Associate Director John Bailey lead site employees in a moment of silence during the annual Day of Remembrance ceremony Jan. 30. Following comments and reflections, the two leaders placed a memorial wreath in remembrance of NASA family members who lost their lives while furthering the cause of space exploration and discovery, including the crews of Apollo 1 and shuttles Challenger and Columbia, all of who were lost during exploration efforts. The NASA Day of Remembrance is observed across the agency each year in January.

Record-setting astronaut returns from ISS

NASA astronaut Christina Koch is seen outside the Soyuz MS-13 spacecraft after she, Roscosmos cosmonaut Alexander Skvortsov, and European Space Agency astronaut Luca Parmitano landed in a remote area of Kazakhstan on Feb. 6, 2020. Koch returned to Earth after logging 328 days in space -- the longest spaceflight in history by a woman -- as a member of Expeditions 59-60-61 on the International Space Station. To learn more about the science Koch's mission, visit: go.usa.gov/xdX63.

NASA in the News

NASA solar mission marks 10-year mark

In February, NASA's Solar Dynamics Observatory (SDO) celebrated its 10th year in space. Over the past decade the spacecraft has kept a constant eye on the Sun, studying how it creates solar activity and drives space weather – the dynamic conditions in space that impact the entire solar system, including Earth. Since its launch, SDO has collected millions of scientific images of our nearest star, giving scientists new insights into its workings. SDO's measurements of the Sun – from the interior to the atmosphere, magnetic field, and energy output – have greatly contributed to understanding of Earth's closest star. SDO's images have also become iconic. SDO's long career in space has allowed it to witness nearly an entire solar cycle – the Sun's 11-year cycle of activity. The mission has witnessed fantastic solar flares, captured images of plasma tornadoes and waves on the solar surface, watched two comets fly by, revealed complex solar circulation patterns, helped predict hazardous coronal mass ejection events and provided new information and insight regarding the solar cycle. For more, visit: https://go.usa.gov/xdX6n and https://go.usa.gov/xdX6U.

NASA seeks Artemis generation astronauts

As NASA prepares to launch American astronauts this year on American rockets from American soil to the International Space Station – with an eye toward the Moon and Mars – the agency is announcing it will accept applications March 2-31 for the next class of Artemis Generation astronauts. Since the 1960s, NASA has selected 350 people to train as astronaut candidates for its increasingly challenging missions to explore space. With 48 astronauts in the active astronaut corps, more will be needed to crew spacecraft bound for multiple destinations and propel exploration forward as part of Artemis missions and beyond. The basic requirements to apply include United States citizenship and a master's degree in a STEM field (or a specified equivalent). Candidates also must have at least two years of related, progressively responsible professional experience or at least 1,000 hours of pilot-in-command time in jet aircraft. Astronaut candidates must pass the NASA long-duration spaceflight physical. Americans may apply to #BeAnAstronaut at: www.usajobs.gov. For more about an astronaut career and application requirements, visit: http://www.nasa.gov/astronauts.

NASA group visits Stennis

NASA visitor center representatives from across the country view the installed Space Launch System on the B-2 Test Stand at Stennis Space Center on Jan. 23. The tour was part of the NASA Visitor Center Consortium gathering at INFINITY Science Center. Fourteen NASA centers and space shuttle locations across the country offer unique exhibitions and presentations to the public each year.

Stennis unveils model of SLS core stage on B-2 stand

Stennis Space Center Director Rick Gilbrech, joined by NASA Space Launch System Stages Deputy Manager Lisa Bates, unveiled a new model of the B-2 Test Stand on site Feb. 7. The model shows the NASA Pegasus barge and features a pair of SLS core stages, one rolled out from the barge on the stand tarmac and one installed on the stand for testing. The model is one of two created by the exhibits and model shop at Marshall Space Flight Center in Huntsville, Ala. Bates presented one as a gift to Stennis for display in the Roy S. Estess Building.

Hail & Farewell

NASA bids farewell to the following:

Angelica Baker	AST, Mechanical Experimental Equipment	Engineering and Test Directorate

Stennis offers perfect fit for space-focused scientist

Lauren Underwood was a long way from her native North Caldwell, New Jersey, residing on the Mississippi Gulf Coast, when her two children were born.

To make friends, she joined a baby group, and one of the moms in the group was married to a NASA employee at Stennis Space Center. Underwood was thrilled to learn this fact, since she had always had a fascination with space and space exploration, and told the newly befriended woman that she would love to work for NASA. She asked if the woman's husband could help her make this dream come true. She certainly had the qualifications – a doctoral degree and background in optics.

For Lauren Underwood, a new friendship led to a dream job at Stennis Space Center.

The husband agreed and helped introduce Underwood to contractors who were supporting the NASA Earth Science Commercial Remote Sensing Program at Stennis. Using that contact and her diverse physical science training and background, Underwood landed a position with Lockheed Martin Space Operations in 2001, working to track and report on NASA remotely sensed data.

During the ensuing 12 years, Underwood worked with two other contract companies at Stennis before joining the NASA family in 2013 as an aerospace technologist in the Stennis Engineering and Test Directorate. As a member of the Test Technology Branch, she now works as the Stennis Advanced Exploration Systems project manager, which includes managing Human Landing System support, and serves as point of contact for the NASA Platform for Autonomous Systems. Underwood also is assigned as the Stennis awards liaison officer.

"I am fortunate to work with an outstanding team that is respectful, talented and inspiring," Underwood said. "I am honored to have the opportunity to be part of such exciting work and such an exceptional team."

Underwood's work is in a critical area for NASA as it returns humans to deep space exploration missions. "Autonomous operations are required for NASA to remain relevant in the current space exploration business," Underwood explained. For instance, future missions will require software that can provide autonomous operations as astronauts travel beyond both low-Earth orbit and immediate guidance from Mission Control Center.

To that end, Underwood is working with the Stennis Autonomous Systems Laboratory to fully develop needed autonomous capabilities, including some for use in NASA's Artemis program to return humans, including the first woman and next man, to the Moon by 2024. This includes capabilities that can be used on the Gateway that will orbit the Moon and provide visiting astronauts access to the lunar surface.

Underwood is proud of the role she plays, noting it directly reflects the NASA vision statement that sees the agency as "an investment in America's future," committed to expanding the frontiers of air and space while also benefiting the quality of life on Earth. "I am excited to play a small role in that and in building the next-generation rockets that will carry humans beyond the grasp of Earth's gravity, stretching to the Moon, Mars and, one day, beyond," Underwood said.

The work Underwood does today is in line with her lifelong interest in exploring beyond the known frontiers of space. Her pride in the role she plays is seen in the numerous awards Underwood has earned. The recognitions include a NASA Space Flight Awareness Award, a NASA Group Achievement Award for Lander Technologies, and a NASA Certificate of Appreciation in support of the Space Shuttle Program, as well as awards for contributions as a workplace mentor and for participation in Stennis Diversity Council's Woman's History Program in efforts to promote workplace diversity.

"Stennis is one of the best places to work in the federal government," Underwood concluded. "Just a few of the reasons why is its commitment to innovation, its establishment of groundbreaking partnerships and the exceptionally flexible ability it provides employees to manage work-life balance."

Stennis 'close call' system serves as key safety resource

In order to prevent a possible injury or illness, Stennis Space Center personnel are encouraged to submit any hazard they observe to their supervisor, facility manager or Stennis' Close Call Reporting System, the site's official hazard reporting system.

Hazards can also be reported to the Stennis Close Call Reporting System hotline by:

- Calling 228-688-SAFE (7233).
- Using the paper form in the appendix of the Close Call Reporting System work instruction, "SCWI-8715-0006, SSC Close Call Reporting System."
- Using the electronic link at the top of the Stennis internal safety and mission assurance website located at: https://osma.ssc.nasa.gov/.

Reports can be made anonymously.

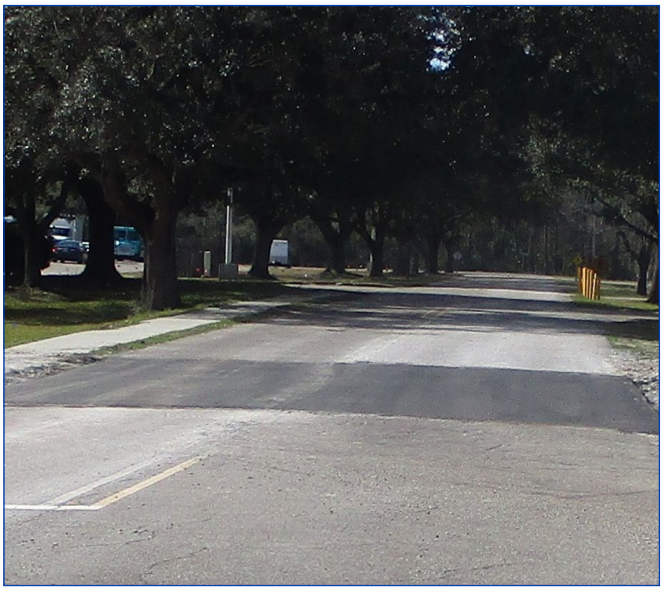
On Jan. 15, 2020, Close Call Reporting System case 20-008 was created when an Stennis employee reported a large pothole on Columbia Drive. The employee was driving east on Columbia Drive towards Balch Blvd when the pothole was spotted.

The size of the pothole would necessitate the employee to cross into the opposite lane and into oncoming traffic in order to avoid it. The employee did notice that the pothole had gotten larger in recent weeks and would possible cause damage to vehicles if driven into it.

The close call investigator visited the area and confirmed the pothole was deep and hard to see when heading east on Columbia Drive. The pothole was located on a section of road where a new sanitary sewer line was being installed parallel to Balch Blvd.

The contracting officer representative of the construction project informed the investigator that the identified section of asphalt roadway was scheduled to be repaired in the near future. On Feb. 3, 2020, the Close Call Reporting System investigator visited the area and saw the pothole had been repaired with asphalt.

This hazard reported to Close Call Reporting System may have prevented an injury. Seemingly small hazards can



A pair of photos shows a hazardous pothole on a Stennis Space Center before (top) and after (below) it was repaired.

have big consequences, which makes it very important to correct them. Those who see a hazard that has the potential to cause personal injury or property damage should notify their supervisor and report it in the Close Call Reporting System.

Employee involvement in identifying and reporting hazards is one way all employees can support a strong safety culture.

An engaged safety culture keeps Stennis Space Center rocketing forward!

To contribute to this page, contact:

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1978 – 'Steel City' comes to Stennis Space Center

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.

One thing Jackson Balch tried to do as director of the then-Mississippi Test Facility (MTF) was bring agencies and organizations together so that their work and research would benefit each other.

In 1971, the U.S. Army was looking for a place to build a plant for their ammunition modernization program. This was a classified program named "Steel City." At first, it was suggested that the Army look at Camp Shelby, just south of Hattiesburg, for their ammunition plant. However, but the Army had its sights on the Mississippi Test Facility to the south.

The Army estimated that the plant was going to cost $500 million, and employ around 1,200 people, quite overwhelming numbers to the smaller installations on site at MTF. Balch also worried that the ammunition plant would overshadow the space and environmental work that was being done at MTF.

However, Balch need not worry. The Army did suggest some changes at MTF, like engine testing could possibly move to a site in Florida. However, NASA and Sen. John C. Stennis kept to their word and said the decision had already been made that engine testing would stay at MTF.

The Army, MTF and Senator Stennis all wanted to work together to make "Steel City" work. The U.S. Senate Armed Services Committee, which Senator Stennis chaired, gave the Army funding to begin construction of the Mississippi Army Ammunition Plant.

A lot was happening at MTF at that time as Balch focused on building up the agencies that would call MTF home, so he convinced Dr. George Constan, a former manager of Michoud Assembly Facility in nearby New Orleans, to serve as the liaison between NASA and the Army for the Steel City project.

The building of Steel City began with the groundbreaking ceremonies 42 years ago on Jan. 10, 1978. Senator Stennis joined Jerry Hlass, who had become site director by then, along with U.S. Reps. Trent Lott and Sonny Montgomery; Deputy Secretary of Defense Charles Duncan Jr.; Secretary of the Navy W. Graham Clator Jr.; Rear Adm. J. Edward Snyder Jr.; and NASA Deputy Administrator Alan Lovelace.

In his address at the groundbreaking ceremony, Senator Stennis congratulated the arrangement of agencies at the site, "Today, this facility exists as a national model of federal agency coordination and cooperation."

About 1,500 people from the surrounding area joined in the celebration of this monumental facility.

An aerial photo shows the former Mississippi Army Ammunition Plant facilities at Stennis Space Center. Constructed by the U.S. Army on acreage in the northern portion of Stennis, the plant opened in 1983 as the most sophisticated munitions-manufacturing facility in the nation. Plant production of 155mm howitzer projectiles and grenade bodies ended in 1990. In 1992, the U.S. Army began leasing space to tenants. The facility was designated for closure in 2005 and officially closed in 2009. It was transferred to NASA ownership in 2011, with a dozen tenants already occupying former plant facilities.

Office of Diversity and Equal Opportunity

African American schools have storied history

Black History Month, also known as National African American History Month, is an annual celebration of achievements by African Americans and a time to recognize the immeasurable impact African Americans have had on the history of the United States.

Historically Black Colleges and Universities are an important part of American history and a source of accomplishment and great pride for the African American community, as well as the entire nation.

Before the Civil War, when the majority of African Americans in the United States were enslaved, educational opportunities for African Americans in the South were virtually non-existent, particularly for higher education. Those like Frederick Douglass, who pursued an education in spite of it being illegal for him to do so, were forced to study informally and often on their own.

In 1837, Philadelphia Quakers created the Institute for Colored Youth. It was the first institution of higher learning for African Americans and is known today as Cheyney University of Pennsylvania.

In the years between the Civil War and World War I, the nation made a commitment to university studies across the country, predominately through government "land-grants" to help states form colleges and universities. Unprecedented funds poured into the creation of public colleges and universities, but few were open or inviting to African Americans.

This left the African American community to spearhead their own higher education movement. With the support of the American Missionary Association and the Freedmen's Bureau, seven black colleges had been founded by 1870. Many of these are still graduating students today.

Over the past 150 years, there were many notable moments in the evolution of Historically Black Colleges and Universities. Among the most striking occurred in the early part of the 20th century, when two graduates from these fledgling institutions began a debate about the direction African American higher learning should take.

Booker T. Washington was a freed slave from Virginia who had taken the helm of the Tuskegee Institute in Alabama (now Tuskegee University). He believed that the best way for freed slaves and other African Americans to attain equality in the United States was to prepare for the jobs that were available, mainly agricultural and mechanical trades.

W.E.B. DuBois was raised in Massachusetts and not exposed to segregation until he was an undergraduate at Fisk University in Nashville. He believed African Americans needed to look beyond vocational training. He maintained equality would only come if African Americans studied the arts and sciences and became thought leaders for the next generation.

Black colleges and universities responded by trying to create programs that reflected both the practical necessities that Washington espoused, as well as DuBois' broader intellectual vision. Students who have attended these institutions have thrived and gone on to influence many important fields. Graduates include Thurgood Marshall, Martin Luther King Jr., Alice Walker and Charles Drew, who organized the first large-scale U.S. blood bank, to name just a few.

The colleges remain standouts for student achievement. While representing just 3 percent of the nation's institutions of higher learning, they graduate nearly 20 percent of African Americans. In addition, the institutions graduate more than 50 percent of African American professionals and public school teachers, as well as the majority of the African American doctoral degree recipients.

The schools no longer exclusively serve African Americans. Today's institutions have a significant percentage of non-African American students. All of these students benefit from the unique education steeped in African American history and culture.

Historically Black Colleges and Universities are still in high demand because of their unique educational environment and their proven record of helping African Americans achieve success. After nearly more than 150 years, these schools continue to keep their eyes on the horizon and will surely be reflecting and shaping the African American experience for many generations to come.

Information in this article came from the National Museum of African American History & Culture. For more about African American history, visit: www.nmaahc.si.edu.

Gulf Coast transplant finds 'dream' work at Stennis

Dorothy Brown readily acknowledges that she loves a challenge. The fact that she is continuing to build on a two-decade career of work at Stennis Space Center is clear evidence of her determination to overcome.

Twenty years ago, Brown was married and newly arrived to the Mississippi Gulf Coast area, looking for a place to work. She was quickly told by some that there was no need to inquire about positions at Stennis because it was impossible to get hired at the site.

Predictably, Brown set her sights on landing a job at the center. Surprisingly, soon after she filled out an application at a staffing agency, she received a call about a temporary assignment in the NASA Human Capital Division at Stennis.

For Dorothy Brown, a temporary job assignment has grown into a continuing 20-year career at Stennis Space Center.

Not only did Brown accept the assignment, but she has continued to work at the site. She currently serves as an accountant in accounts receivable within the Financial Management Division of the NASA Shared Serves Center located at Stennis.

In addition to her work at NASA Shared Services Center, Brown serves as the Special Emphasis Program manager for African Americans at Stennis. Special Emphasis Programs were established more than 40 years ago to focus attention on groups that have been historically absent or underrepresented in specific occupational categories or grade levels in the federal workplace. Several managers work at the NASA Shared Services Center and Stennis to highlight affected groups.

Brown is "elated and honored" to have been chosen for the Special Emphasis Program manager role. In this role, she provides advice and assistance to management officials to help them meet equal employment opportunity goals.

"The best thing about working at Stennis is that NASA is highly committed to promoting diversity and equal employment opportunities," emphasized Brown, a native of Rockford, Illinois, and resident of Carriere, Mississippi. "NASA's greatest strength is its workforce, and it encourages a culture of respect, creativity, equal opportunity, inclusiveness, trust, open communication and empowerment. It is not hard to understand why NASA is annually rated as one of the top 10 federal government places to work."

Brown initially worked as a data processing support analyst in the E Test Complex at Stennis, helping to facilitate test operations. She also served for a time as calibration manager for the complex. Among other responsibilities during her time of service to E Test Complex operations, Brown worked to ensure testing schedules and milestones were met, helped process and analyze test data and made sure calibration equipment was in place and in working order for the complex.

Brown's current position focuses on financial management for activities across all NASA centers. She regularly supports the accounts payable team and contributes to daily accounting operations. "My position allows me to interact with fellow NASA employees from other centers who do extraordinary work," she said. "Working for NASA is incredible."

Brown is delighted about the role Stennis Space Center is playing in testing engines for NASA's Artemis Program to send humans to the Moon by 2024, and the role the NASA Shared Services Center plays in support of the Artemis program through providing financial management procurement and human resources support. "The fact that I will be able to say I contributed to NASA's program in which lunar astronauts returned to the lunar surface is extremely exciting," she said. "Our American astronauts, including the very first woman and next man, will step foot where no human being has ever been – the Moon's South Pole."

Outside of NASA, Brown's greatest joy is her family; she and husband Craig have two children and one grandchild. She also enjoys her work with the young people in her church. Among other things, she reminds youth to hold their expectations high, dream big and reach for the Moon as they may land amongst the stars.

The counsel from brown comes as no surprise. It tracks well with her own story, as well as a Harriet Tubman quote she shares – "Every great dream begins with a dreamer. Always remember, you have within you the strength, the patience and the passion to reach for the stars, to change the world."