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LAGNIAPPE

John C. Stennis Space Center

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GO...GO...GO! Core stage arrives

In case you have not noticed, things are about to get hopping around Stennis Space Center quicker than a barefoot kid walking across a Gulf Coast highway in August. Ark! The core stage for NASA's new Space Launch System just arrived at the B-2 Test Stand to be installed for testing later this year. Testing is a critical hurdle before the Artemis I test flight of the rocket and Orion spacecraft can be launched.

Stennis has worked hard – and largely unnoticed – to prepare for core stage testing. That is nothing new for the south Mississippi site. It has been that way since the center was built in the 1960s. Everyone can remember the great Apollo missions that carried humans to the Moon. Many, many fewer could name Stennis as the site where the rocket stages and engines that powered those missions were tested, not to mention engines for 135 space shuttle missions.

Stennis has begun receiving more notice these days, but folk here remain content to do their hard work and take quiet pride in knowing they make a real difference.

Life is full of such unheralded people. For example, this month celebrates Martin Luther King Jr. Day, which surely will feature many clips of the famous "I Have a Dream" speech during the 1963 March on Washington. Probably no one will mention Bayard Rustin, a peer of King's who organized the entire march in just eight weeks – without modern communication tools like email and cell phones. I need someone like him to organize my birthday parties. Ark!

People like Rustin live out the words of Horace Greeley, who counseled: "Choose not your place on the battlefield, but joyfully accept that assigned you, asking not whether there be higher or lower but only whether it is here that you can most surely do your proper work and meet your full share of the responsibility. ... Believe not that the heroic age is no more, since to that age is only requisite the heroic purpose and the heroic soul."

NASA is preparing to make history – by returning to the Moon and traveling to Mars. History will record the missions, remember the explorers' names, praise the trailblazing scientists and engineers. Perhaps a footnote also will mention Stennis Space Center, where a dedicated group of folk not only dared to believe in a new great age of space exploration but worked in quiet and skilled fashion to make it happen.

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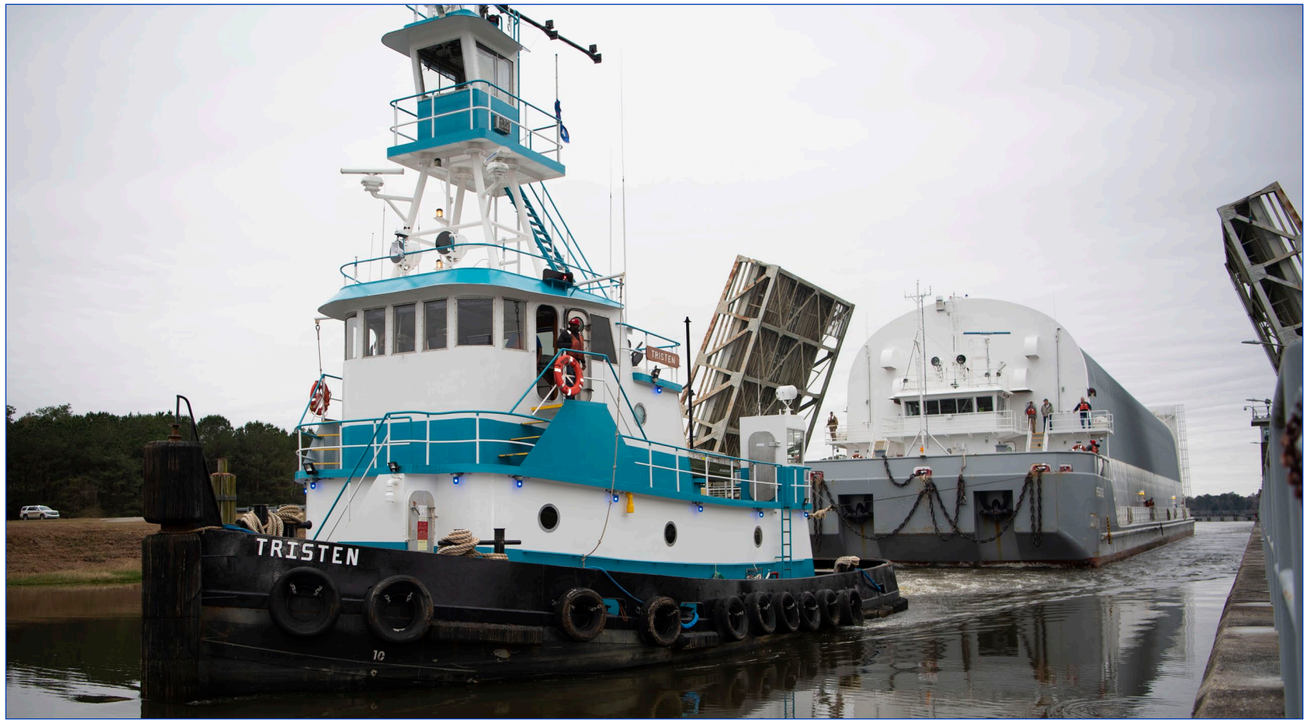
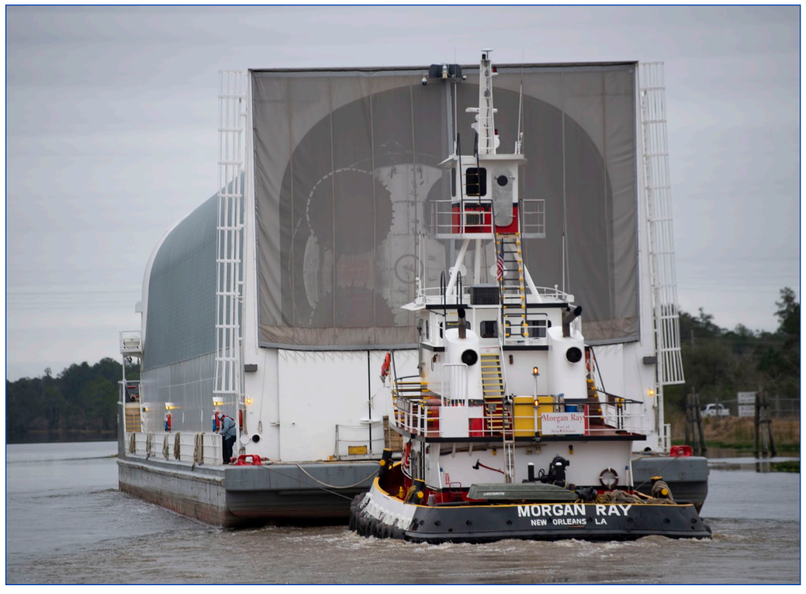
NASA's MOON to MARS MISSION

SLS core stage docks at B-2 Test Stand



The first flight core stage for NASA's new Space Launch System rocket arrived at Stennis Space Center on Feb. 12, setting the stage for a Green Run test series prior to launch of its maiden Artemis I test flight. The core stage, aboard the Pegasus barge, traveled from Michoud Assembly Facility in New Orleans, through the Stennis locks and canal system to the B-2 Test Stand dock. Within hours of arrival, the stage was rolled off of the barge onto the B-2 Test Stand tarmac (see photos on accompanying pages). The next step is to lift and install the stage onto the B-2 stand, which has been modified to accommodate the massive stage, the largest ever built by NASA. Operators will secure the stage to the stand, then begin a series of tests of the sophisticated stage systems. The Green Run series will be the first integrated test of all stage systems, just as they must operate during an actual flight. The testing will culminate with a hot fire of the stage's four RS-25 engines, generating 2 million pounds of thrust. 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. NASA is building SLS as the world's most-powerful rocket to return humans to deep space, to such destinations as the Moon and Mars. Through the Artemis Program, NASA will send the first woman and next man to the Moon by 2024.



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.

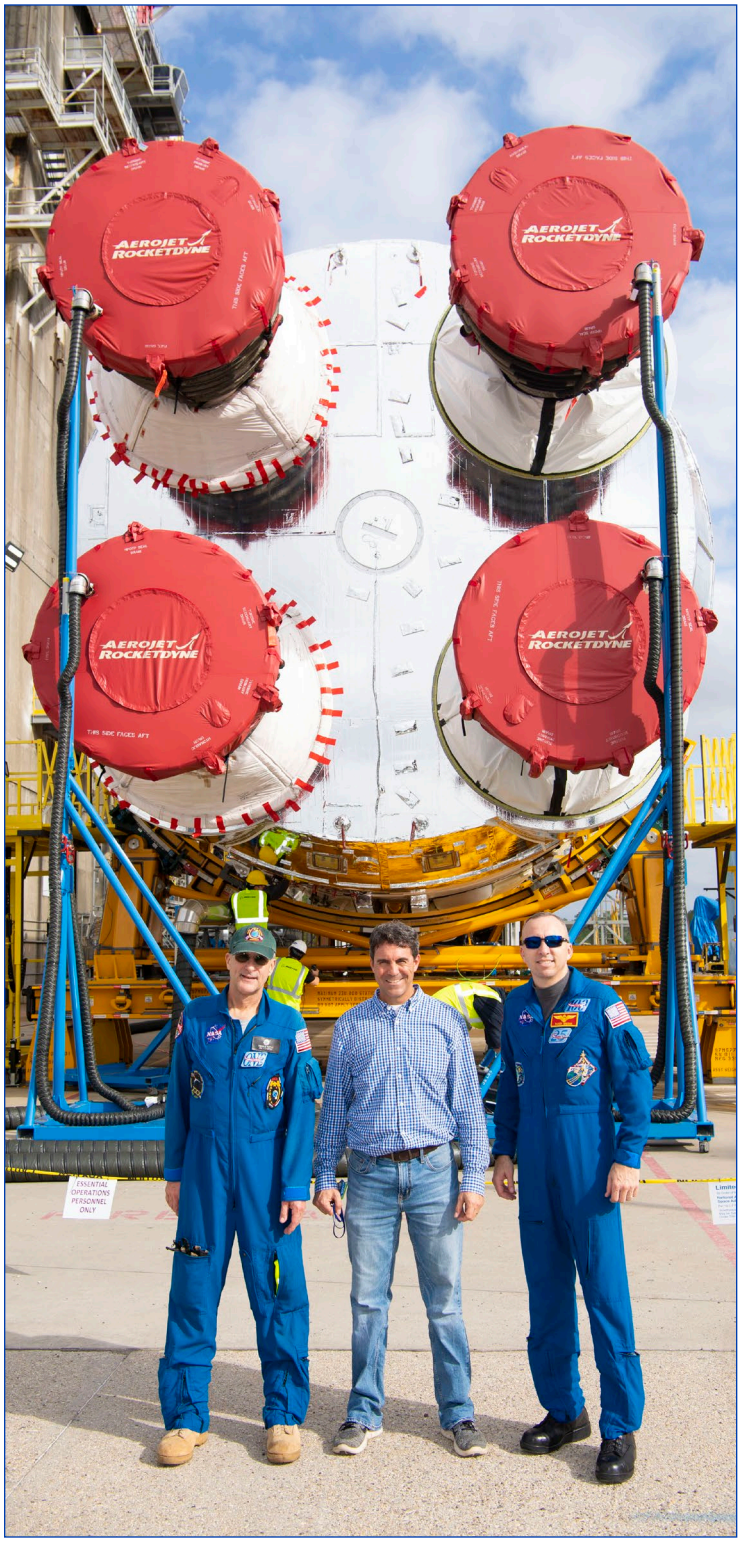
In no small part, success of the new era rests on hard work provided by Stennis Space Center, which is testing the rocket engines and SLS core stage that will power the new rocket to unprecedented destinations.

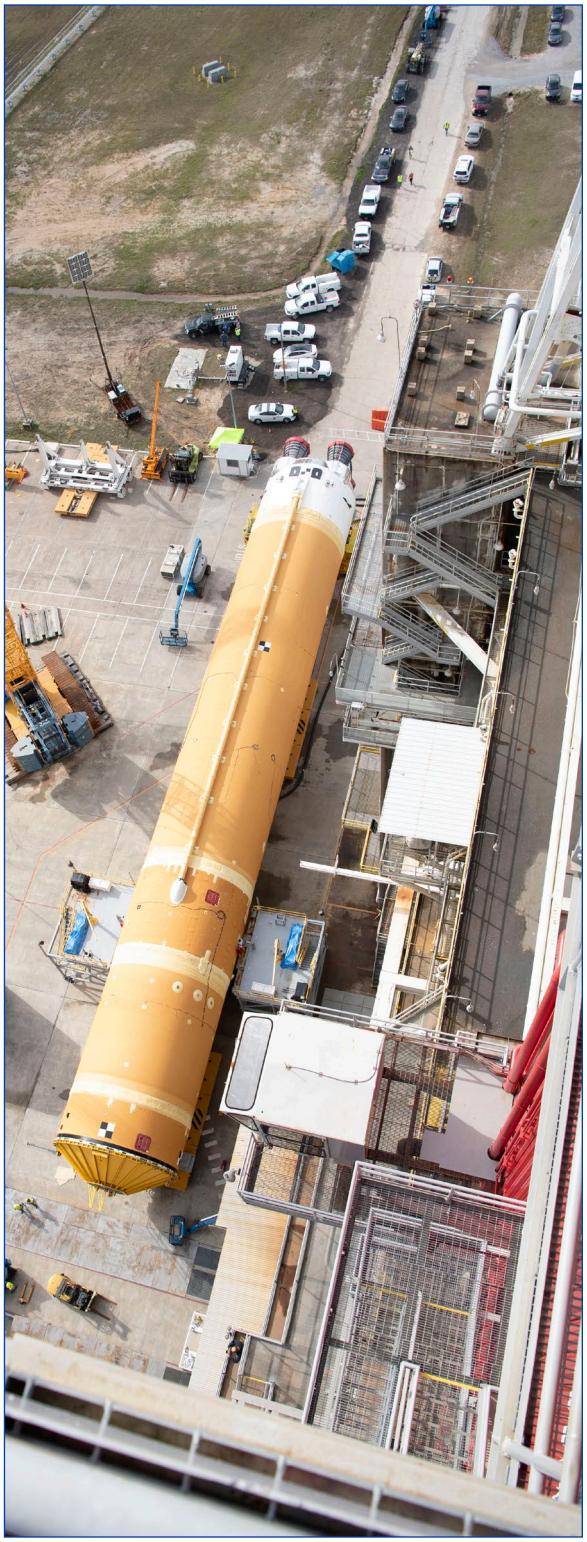
Lagniappe is featuring a series of layouts under the "Go ... Go ... Go!" heading that detail aspects of NASA's next step into deep space and Stennis' role in making such missions possible. The following represents the fourth installment.

NASA's MOON to MARS MISSION

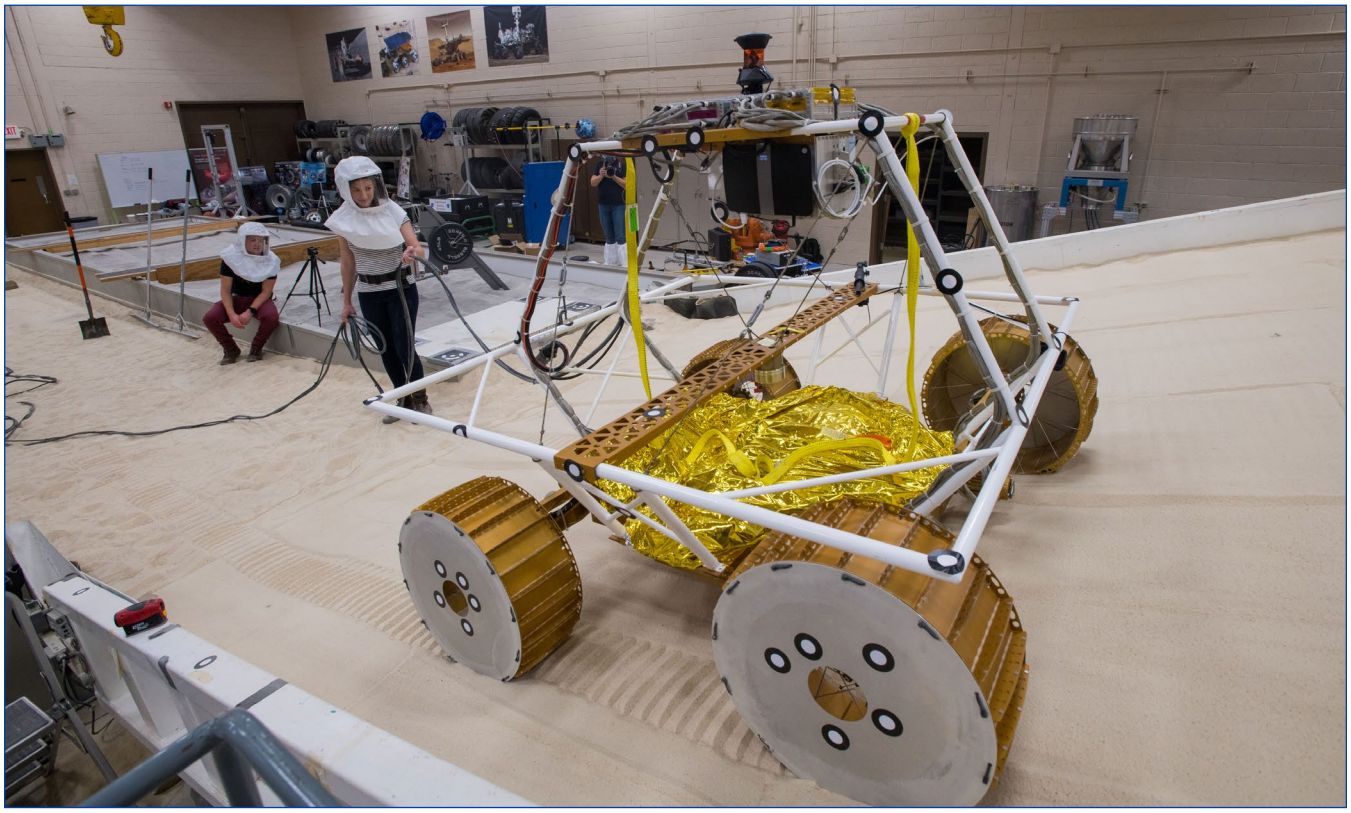
SLS core stage rolls off barge onto B-2 Test Stand tarmac

Astronauts view SLS core stage





Astronauts Don Pettit (l) and Randy Bresnik stand with Ryan Roberts, B-2 Test Stand director at Stennis Space Center, during a visit to the site Jan. 15. In the Stennis test complex, the astronauts viewed the newly arrived Space Launch System (SLS) core stage, positioned on the B-2 Test Stand tarmac, and tour the stand, which offered a bird's-eye view of the massive stage from high on the stand. NASA transported the core stage from nearby Michoud Assembly Facility in New Orleans to Stennis on Feb. 12. Once installed on the B-2 stand, the flight stage will undergo an series of integrated "Green Run" tests of its systems. Following testing and refurbishment, the stage, in conjunction with a pair of solid rocket boosters, will power the maiden SLS launch, a crewless Artemis I test mission around the Moon. Above left, the astronauts stand in front of the tail end of the core stage, with its four RS-25 engines visible. At launch, the engines will fire simultaneously, generating a combined 2 million pounds of thrust. In addition to the testing the first flight core stage for use on the Artemis I mission, Stennis is testing the RS-25 engines that will help power that flight and all future SLS missions.



NASA's new VIPER Moon rover tested in lunar operations lab

An engineering model of the Volatiles Investigating Polar Exploration Rover (VIPER) is tested in the Simulated Lunar Operations Laboratory at NASA's Glenn Research Center. About the size of a golf cart, VIPER is a mobile robot that will roam the Moon's South Pole looking for water ice in the region. For the first time actually sample the water ice at the same pole where the first woman and next man will land in 2024 under the Artemis Program.

NASA in the News

Mars 2020 rover closer to getting a name

NASA's Mars 2020 rover is one step closer to having its own name after 155 students across the U.S. – including one from Mississippi – were chosen as semifinalists in the "Name the Rover" essay contest. The contest received 28,000 essay submissions. Just one of the will be selected to name the rover and be invited to see the spacecraft launch in July 2020. The rover is a robotic scientist weighing more than 2,300 pounds. It will search for signs of past microbial life, characterize the planet's climate and geology, collect samples for future return to Earth and pave the way for human exploration of the Red Planet. The next phase of judging will reduce the competition to nine finalists, and the public then will have an opportunity to vote for their favorite name online. The results of the poll will be a consideration in the final naming selection. Among the semifinalists is D.R.E.A.M. was submitted by K-4 student Clark Helm in Hernando. As he explained in his essay, the letters stand for several words related to the rover mission – "Dream. Rover. Explore. Accomplish. Mystery." For more about the upcoming rover mission, go to: https://mars.nasa.gov/mars2020/.

Newest astronauts ready for missions

NASA welcomed 11 new astronauts to its ranks Jan. 10, increasing the number of those eligible for spaceflight assignments that will expand humanity's horizons in space for generations to come. The new astronauts successfully completed more than two years of required basic training and are the first to graduate since the agency announced its Artemis Program. The new graduates may be assigned to missions destined for the International Space Station, the Moon, and ultimately, Mars. With a goal of sustainable lunar exploration later this decade, NASA will send the first woman and next man to the surface on the Moon by 2024. Additional lunar missions are planned once a year thereafter and human exploration of Mars is targeted for the mid-2030s. "These individuals represent the best of America, and what an incredible time for them to join our astronaut corps," said NASA Administrator Jim Bridenstine at the agency's Johnson Space Center in Houston where the graduation ceremony took place. The event was the first public graduation ceremony for astronauts the agency has ever hosted. For more about new astronaut class, visit: https://go.usa.gov/xd3XW.

For engineer, work at Stennis is an 'out of this world' blessing

Matt Ladner remembers playing as a young boy on his grandfather's porch in northern Hancock County when he heard a deep rumble in the distance. He asked his grandfather if a thunderstorm was brewing, only to be told the noise was from a rocket engine test at nearby Stennis Space Center.

The Necaise Crossing native and resident soon grew familiar with the sound and thought how incredible it would be to work at the site. As a Stennis facilities design and construction project manager, he now knows.

It seems natural that Ladner would end up at Stennis, but his path to the site was not as straightforward as one might expect for an electrical engineering graduate from Mississippi State University. "After graduation, I decided to take time off and play music with my band," he said. "After a few months, I began to get bored and reminded myself that I was sitting with an electrical engineering degree in my back pocket."

For Matt Ladner, working at Stennis Space Center is an "out of this world" blessing.

Soon afterward, a fellow church member approached Ladner and mentioned the multiple electrical engineering positions open at Stennis. Ladner applied and began work as a contractor on site in October 2008. He transitioned to the NASA team in 2012 as a Stennis facilities design and construction project manager.

Currently, Ladner works as the Stennis demolition program manager, focused on reducing the site's footprint as part of a federal agency initiative. He also manages several construction of facility projects at Stennis.

Ladner also has served as the lead electrical high-voltage engineer to renovate and prepare the B-2 Test Stand to test the core stage of NASA's new Space Launch System rocket. NASA will test the core stage at Stennis prior to its first test flight as part of the Artemis Program to return humans – including the first woman – to the Moon.

Part of the return to the Moon is to develop and test technologies and capabilities needed to travel deeper into space, including to Mars. "The Artemis Program is the future of deep space exploration," Ladner said. "To be part of that is beyond exciting."

The core stage arrived at Stennis on Jan. 12 and has been installed at the B-2 stand for the "Green Run" testing of all of its systems, including a hot fire of its four RS-25 engines. Ladner will continue to support B-2 electrical power systems during that period. "It's exciting to see the B-2 Test Stand come alive for the testing of the SLS core stage and to be such a vital part of contributing to NASA's mission," he said.

Ladner also delights in being a member of the Stennis family. "Stennis continues to be one of the best places to work in the all of the federal government," he said. "We have an exhilarating mission as the premiere rocket engine test facility in the world, able to test the biggest and most powerful engines and rockets for long durations due to the great national asset of the 125,000-acre buffer zone."

Ladner praises the Stennis workforce as one of the best on the planet. "It is made of amazing people from all walks of life and vast backgrounds of technical and life experiences," he said. "This diversity allows us to thrive when confronting some of the most complex problems in the industry."

Ladner is making his mark at the site. Just a few years into his NASA tenure, he already has earned a prestigious Space Flight Awareness Award, as well as a pair of group achievement awards for construction projects.

Outside of NASA, Ladner enjoys spending time with his wife, Danielle, and their five children, serving his church, music (he plays multiple instruments), sports, fishing and reading. He and his wife initially lived in his grandfather's old house and soon will live just across the street, close enough still to hear the rumbling rocket engine tests that drew his attention to Stennis so many years ago.

"I get to work for NASA right down the road from my house," he said. "What a blessing to have a job that supports a variety of activities that are 'out of this world!'"

Stennis ranks high on 2019 Best Places to Work list

For the eighth consecutive year, NASA has been selected by the Partnership for Public Service as the Best Place to Work in Government. The rankings reflect NASA's unified focus and dedication to sending humans farther into space than ever before, and the agency's highest employee satisfaction results since this index was developed.

In the same survey, Stennis Space Center ranked high on the list of federal agency subcompotents. Stennis ranked second among all NASA centers and 11th out of 420 federal agency subcomponents. The south Mississippi site has ranked no lower than 11th in that category since 2007. It also has ranked as high as second among all agency components on three occasions.

"NASA's selection as the Best Place to Work in Government for the eighth year in a row is a testament to the excellence of our workforce and their determination to maintain America's leadership in space exploration, ..." NASA Administrator Jim Bridenstine said. "The daily devotion of our employees makes them well deserving of this award. I am honored to lead such a dedicated team. They are what makes NASA the Best Place to Work in Government."

The Best Places to Work rankings are based on responses from almost 883,000 employees at 490 federal agencies and subcomponents to the Office of Personnel Management's annual Federal Employee Viewpoint Survey. This is the 16th edition of the Best Places to Work rankings.

NASA has led the charge in space exploration for more than six decades. Through its Artemis Program, the agency is charting America's return to the Moon and human exploration of Mars. As the agency strives toward sending the first woman and next man to the Moon by 2024, the employees at NASA are a crucial component to the mission's success.

For the complete list of the 2019 best places to work rankings, visit: https://bestplacestowork.org.

Stennis hosts 2020 MLK Jr. Day program

Kori Chisham, director of communications and volunteer outreach with Volunteer Louisiana, speaks to Stennis Space Center employees during the 2020 Martin Luther King Jr. Day of Service Program on site Feb. 15. During the program, speakers discuss the importance of community service and volunteerism, Representatives of various community organizations also were on hand to provide information about opportunities for volunteer service. King's legacy is honored every January with a federal holiday designated as a national day of service. This year's theme was: Remember! Celebrate! Act! Serve! A Day on, Not a Day off." In response to the theme, a call to action was issued for members of the Stennis community to commit to service and to share about their experiences with others.

Hail & Farewell

NASA bids farewell to the following:

Patricia Fairley	Supervisory Accountant	Office of the Chief Financial Officer
Brian Hey	Equal Employment Specialist	Office of Diversity and Equal Opportunity
Jenette Gordon	AST, Aerospace Environmental Control Techniques	Center Operations Directorate
Gabrielle Stokes	AST, Logistics Engineer Management	Center Operations Directorate

2004 – Engine records 1 million seconds of hot fire

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 million is a large number. It is a number to be celebrated when it represents a milestone, especially a milestone of human space flight.

Sixteen years ago on January 21, 2004, Stennis Space Center reached such a milestone with the 1 millionth second of successful test and operations hot fire of the space shuttle main engine. If you add it all up, that is over 277 hours (or a little more than 11 and a half days) of testing and operations hot fire.

After the Apollo Program ended, NASA chose Stennis (then Mississippi Test Facility) to conduct all sea-level testing of the space shuttle main engine. With that announcement, engineers began work to convert the stands that once tested the Saturn V boosters to test individual space shuttle main engines.

The first space shuttle flight was in 1981, but testing of the engines to power shuttle missions began in 1975. Each engine test taught the NASA and contractor teams how to make the engines more reliable and safer – while also extending their life span – in order to continue to take the shuttle into low-Earth orbit.

From 1981 to 2011, space shuttle main engines tested at Stennis powered a total of 135 missions. Testing of the engines was comprehensive. From 1975 to 2009, Stennis alone conducted 2,307 hot fire tests, in addition to some early tests at other sites and all of the launch firings.

Another thing to celebrate in 2004, along with 1 million seconds of test and operations hot fire, was the record of the space shuttle main engines. From the first launch in 1981, up to 2004 and until the final shuttle flight in 2011, no shuttle mission failed due to engine malfunction or failure.

The engine that had the honor of recording the 1 millionth second of hot fire operations was a flight engine for one of those shuttle missions, the STS-121 flight of space shuttle Discovery. During the test at Stennis, it was successfully fired for 8-and-a-half minutes, the same amount of time it took to power the space shuttle from the launch pad in Cape Canaveral, Florida, into orbit.

A test on the A-2 Test Stand at Stennis Space Center on Jan. 21, 2004, marks the 1 millionth second of space shuttle main engine test and operations hot fire. By the time the Space Shuutle Program ended in 2011, space shuttle main engines had been fired 3,171 times for a total of 1,095,677 seconds. The bulk of that time was recorded at Stennis, which conducted 2,307 tests for a total time of 820,475.68 seconds.

Office of Diversity and Equal Opportunity

MLK Day of Service – a day 'on,' not a day off

Everybody can be great because everybody can serve.
Martin Luther King Jr.

The Martin Luther King Jr. holiday on Jan. 20, 2020, marks the 25th anniversary of the day of service to celebrate the civil rights leader's life. Observed each year on the third Monday in January, the MLK Day of Service is the only federal holiday designated as a national day of service – "a day on, not a day off."

In recognition of an incredible legacy of service and leadership to gain equality for all Americans, Congress designated the Dr. Martin Luther King Jr. federal holiday as a national day of service in 1994.

King devoted his life to advancing equality, social justice and opportunity for all. The MLK Day of Service is a way to transform King's life and teachings into community service that helps solve social problems.

That service may meet a tangible need, such as fixing up a school or senior center, or it may meet a need of the spirit, such as building a sense of community or mutual responsibility.

The MLK Day of Service empowers individuals, strengthens communities, bridges barriers, creates solutions and moves us closer to King's vision of a "beloved community."

Americans can take up the challenge to experience the power of service King shared in his "Drum Major Instinct" sermon: "Everybody can be great because everyone can serve." Service is a solution and a powerful tool for strengthening communities – on MLK Day and throughout the year.

The most effective intervention in a troubled child's life is a mentor; tutors help children reach and graduate from high school; volunteers provide critical health and independent living services and help people find jobs, gain hope, and reach their potential. Service breaks down barriers by bringing people from different backgrounds together. Service also benefits those who serve: youth do better in school, seniors are healthier, families are closer and all gain fulfillment and a sense of purpose.

Coretta Scott King, King's widow, once said, "The greatest birthday gift my husband could receive is if people of all racial and ethnic backgrounds celebrated the day by performing individual acts of kindness through service to others."

During the last quarter-century, the MLK Day of Service has grown in size and impact as more Americans embrace the idea that citizenship involves taking an active role to make communities better. Serving on MLK Day can establish a habit of volunteering and build connections that can last a lifetime.

King once said, "Life's most persistent and urgent question is, 'What are you doing for others?'" The MLK Day of Service on January 20 is an opportunity for people to remember King's life and to recommit themselves as citizens to answer that question by volunteering to serve one another and their communities.

The Corporation for National and Community Service, the federal agency responsible for national service programs such as AmeriCorps and Senior Corps and the nation's volunteer efforts, leads the MLK Day of Service. Each year, thousands of nonprofit and community groups, faith-based organizations, and schools and businesses nationwide lead or participate in the MLK Day of Service projects.

For nonprofit and community groups, participating in MLK Day provides an opportunity to bring in new volunteers, partners and funders who can provide resources to support their work throughout the year.

Making time to volunteer for the 2020 MLK Day of Service is a great way to engage with the community while honoring the legacy of King. Whether grabbing a paintbrush, mentoring a young person, or helping to clean up a public space, know that it all makes a world of difference.

Looking for a way to participate in the MLK Day of Service? Check out local volunteer opportunities at: https://www.nationalservice.gov/serve.

Information included in this article was obtained from the Corporation for National and Community Service webpage: www.nationalservice.gov.

Stennis offers perfect 'career lagniappe' for employee

Mark Moody has an understandable affinity for military veterans. Although he has worked as an engineer at Stennis Space Center for more than 31 years, he has deep lifelong roots with the United States armed services.

Moody's father was an active duty officer in the U.S. Army, which led his family to live on various military bases. Moody was born during a stint in New Orleans, which is also where the family located once his father left active duty.

Moody subsequently followed in his father's footsteps with his own 29-year military career. The ongoing New Orleans resident eventually retired as a lieutenant colonel with the U.S. Army Corps of Engineers, Reserves.

However, he continues his focus and relationship to the armed services community. In addition to his work as lead engineer in the NASA Rocket Propulsion Test (RPT) Program Office at Stennis, he serves as the site's Special Emphasis Program manager for disabled veterans.

At Stennis Space Center, Mark Moody has found a perfect marriage of his military and space interests.

"Growing up in a military family and serving in the military for a total of 29 years, it excites me personally to be Special Emphasis Program manager for disabled veterans," Moody said. "It gives me the opportunity to assist and work with a community of employees and potential employees who are near and dear to my heart."

Special Emphasis Programs were established more than 40 years ago to focus attention on groups that have historically been 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 various affected groups.

For Moody, the assignment at Stennis offers a perfect marriage of his military roots with his lifelong career focus. As a tool design engineer for Martin Marietta at NASA's Michoud Assembly Facility in New Orleans in the mid-1980s, Moody began his space-related career working on the program to construct space shuttle external tanks.

In 1988, Moody migrated to Stennis, working on space shuttle main engines as a combustion devices engineer for Rocketdyne. He joined the NASA team in 1994, serving in the Office of Safety and Mission Assurance for seven years to support space shuttle main engine development and certification testing. He also supported projects in the innovative E Test Complex at Stennis during that time.

"Stennis provides a unique opportunity to be involved in rocket propulsion testing from development to flight certification of components and systems," Moody said.

Moody was assigned to the NASA Propulsion Test Program Office in 2001 and promoted to lead engineer of the unit two years later. He continues in that role in what has since become known as the RPT Program Office.

Though based at Stennis, the office's responsibility extends to multiple NASA test facilities across the nation with the goal of maximizing their utilization from an agency perspective.

Currently, that means coordinating a lot of work directly and indirectly impacting NASA's new Artemis Program to return humans, including the first woman, to the Moon. Artemis-related work is underway at several RPT sites, including Glenn Research Center in Ohio, Marshall Space Flight Center in Alabama and White Sands Test Facility in New Mexico.

Stennis is playing a lead role in Artemis testing. The site has been charged with testing all RS-25 engines to help launch the new Space Launch System (SLS) rocket that will fly Artemis missions. It also is beginning a series of integrated Green Run tests of the SLS core stage that will be used to launch the Artemis I uncrewed test flight of the rocket and the Orion spacecraft to carry astronauts.

Altogether, for the boy who grew up in a military family and with a photo of NASA Gemini astronauts in his bedroom, working both to serve and represent disabled veterans and to enable the nation's next great era of space exploration provide what can only be described as a perfect definition of career lagniappe.