

National Aeronautics and Space Administration



LAGNIAPPE

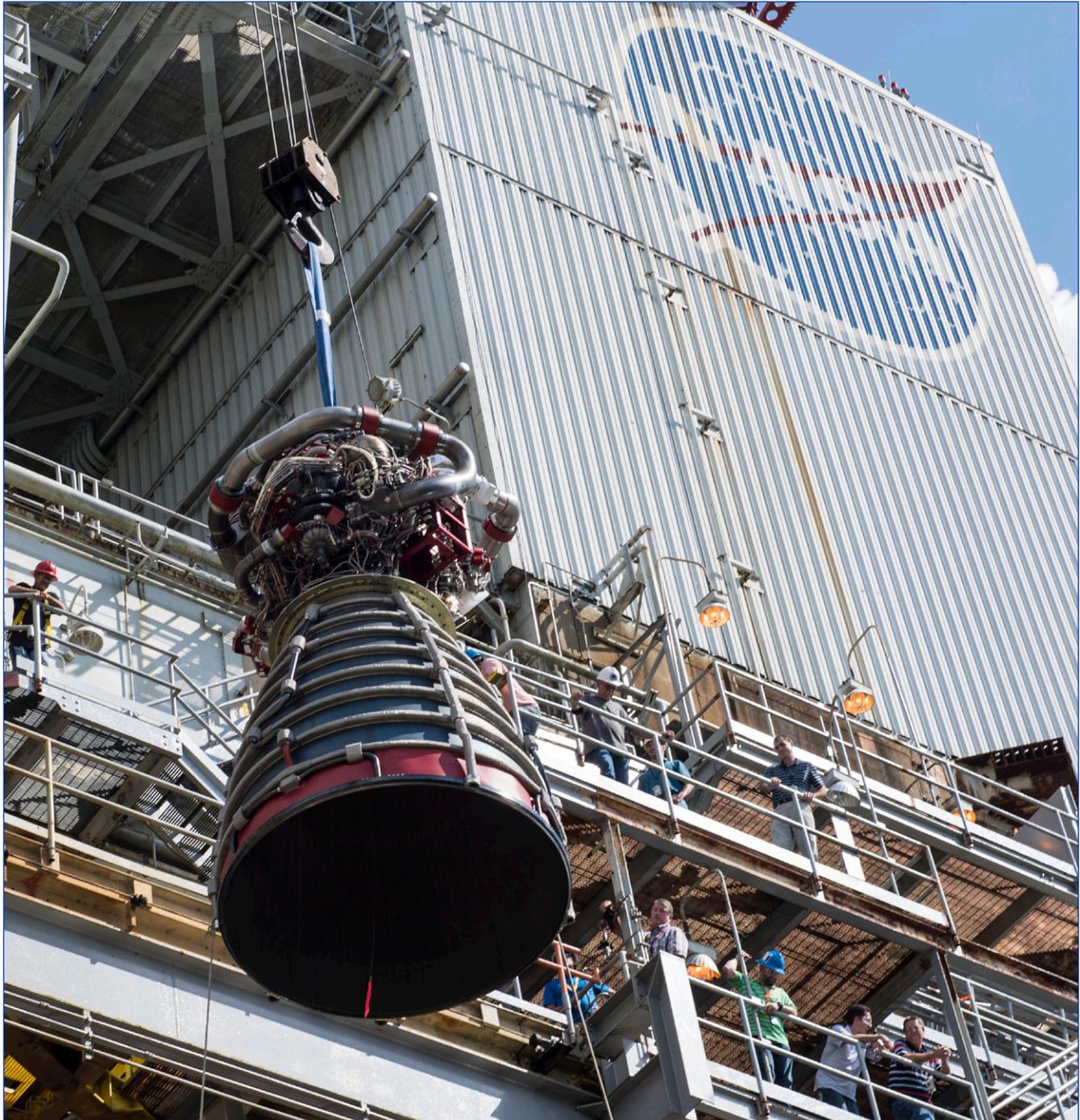
John C. Stennis Space Center

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Stennis prepares to test SLS flight engine



RS-25 flight engine E2063 is lifted onto the A-1 Test Stand at Stennis on Sept. 27 in preparation for a scheduled test firing on Oct. 19.

Last month, we played the “where-were-you” game with the solar eclipse. Just as much fun is the “what-happened-on-this-day” game. You just pick a date and do a little Web search to find all that happened on that day in history. Be careful though – you might end up learning something. Ark!

For instance, did you know Oct. 25 is a day known for historic battles? On that day in 1944, the U.S. and Japan engaged in the last battleship-to-battleship action in history during the World War II Battle of Suriago Strait. On the same day in 1854, in the Battle of Balaclava during the Crimean War, British light calvary made a disastrous attack against Russian forces. We still remember it as the Charge of the Light Brigade.

We also remember the Battle of Agincourt in 1814, during the Hundred Years’ War between the English and the French, mostly thanks to ol’ Willie Shakespeare. His *Henry V* play includes the famous St. Crispin’s Day speech from that day. In it, the king rallies his outnumbered troops to victory by declaring their deeds would be a story hailed “from this day to the ending of the world / But we in it shall be remembered / We few, we happy few, we band of brothers.”

Those lines come to mind when I remember that Oct. 25 was the day in 1961 that NASA announced plans to build a rocket engine test site in this unlikely corner of Mississippi. Okay, it was not actual battle, but the future success of this place was just as uncertain as what English soldiers faced in 1814. Some may even debate which opponent was worse – the French army of the Hundred Years’ War or the inhabiting snakes, smothering heat and prehistoric-sized mosquitos of south Mississippi. Ark!

It has been 203 years since the Battle of Agincourt, still recalled thanks to the deeds of Henry’s “band” of English soldiers. It has been more than 20,400 days since Oct. 25, 1961, and Stennis Space Center has succeeded beyond what anyone likely imagined – thanks to its own determined, committed “band” of folk.

As Stennis celebrates its 56th anniversary this month, be sure to remember all of those early men and women, community leaders and residents, dreamers and doers, not only for all they did in their day but all they made possible in this day. Theirs is a story both worth remembering – and continuing. (See y’all next month with news about Stennis anniversary activities.)



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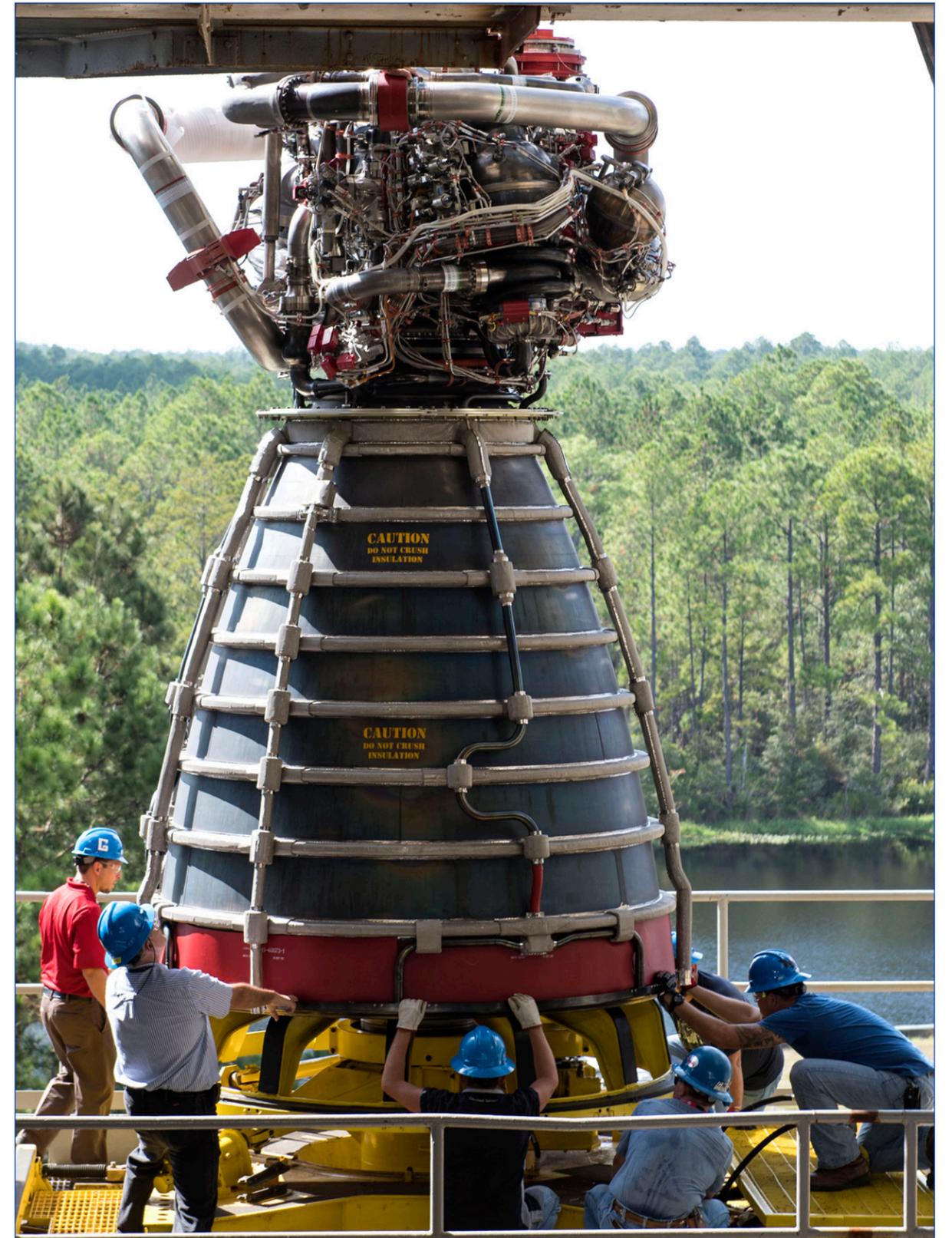


E2063 is 2nd RS-25 flight engine to be tested at Stennis



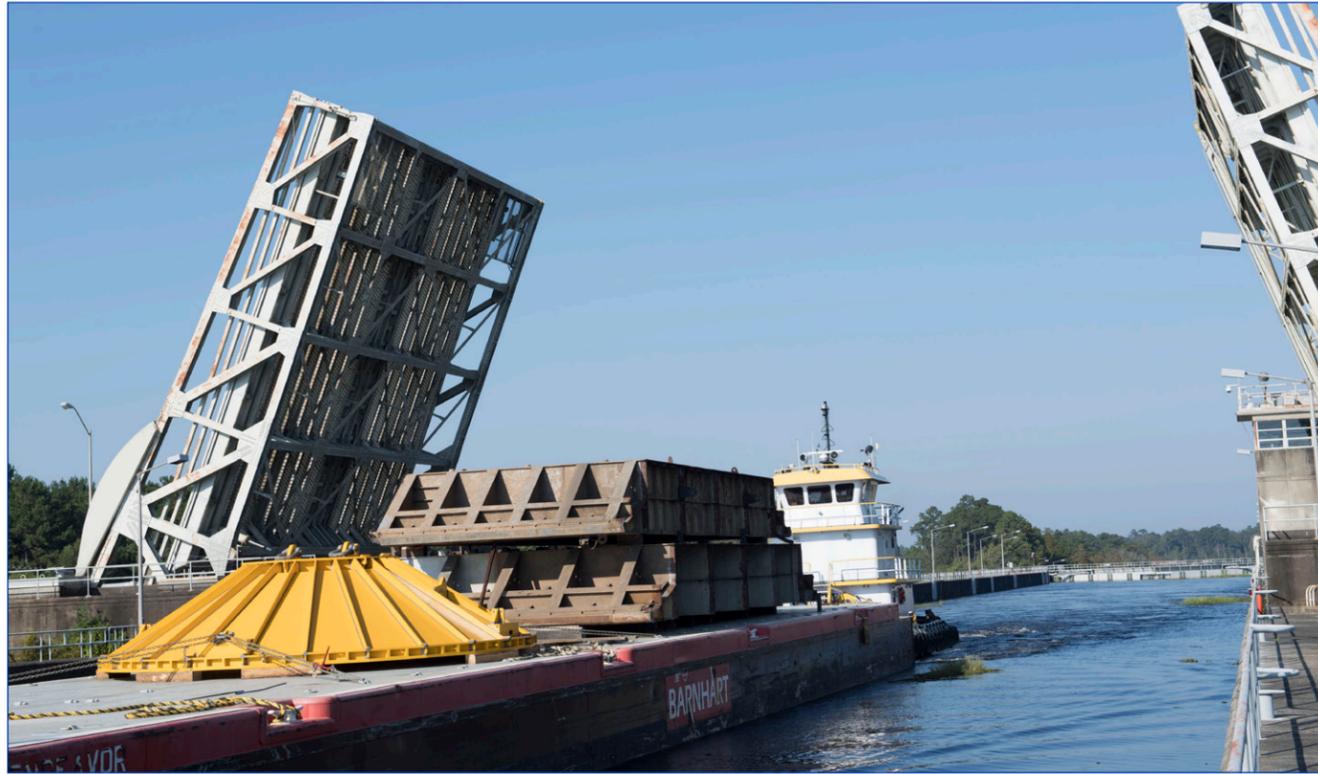
RS-25 engine E2063 was delivered to the A-1 Test Stand at Stennis Space Center on Sept. 27, setting the stage for the second test of a Space Launch System (SLS) flight engine at the site. Engine E2063 is scheduled to be tested Oct. 19 as part of Stennis Founders Day Open House activities. Using data from the test, NASA engineers will decide whether to certify the engine for use on an actual flight of the new SLS rocket. If certified, the engine is designated for use on the historic Exploration Mission-2 (EM-2) flight of SLS. NASA is building the new SLS rocket to carry humans to deep-space destinations, including Mars. The Exploration Mission-1 flight of SLS will be an uncrewed final test of the rocket and its systems. The EM-2 flight will carry astronauts aboard the Orion spacecraft, marking the return of humans to deep

space for the first time in more than 40 years. The SLS rocket will be powered at launch by four RS-25 engines firing simultaneously and in conjunction with a pair of solid rocket boosters. The RS-25 engines for the initial SLS flights are leftover space shuttle main engines, modified to provide the added power needed by the SLS rocket. Stennis has been assigned to test all RS-25 engines used on SLS. It also has been conducting tests of new controllers for the engines, a key component in their modification. With the E2063 test, Stennis will have tested two of the four engines designated for use on EM-2. It tested the E2059 flight engine on March 10, 2016. In addition, NASA will test the SLS core stage to be used on the EM-1 flight on the B-2 Test Stand at Stennis.



FULFILLING NASA'S EXPLORATION MISSION

Key component for SLS core stage testing arrives at Stennis



Preparations for testing NASA's Space Launch System (SLS) core stage for the rocket's maiden Exploration Mission-1 flight marked another milestone Sept. 28 with arrival of the Spider component to the B-2 Test Stand. Built by G & G Steel in Cordova, Ala., the massive lift component arrived at Stennis via barge, passing through the lock system to enter site canalways. At the B-2 dock, the component, weighing about 45,000 pounds, was offloaded by the derrick crane atop the stand. The Spider component will be installed on one

end of the horizontal SLS core stage when it arrives by barge, providing an attachment point for the crane as it lifts the stage to a vertical position onto the stand. Stennis crews expect to spend time working with the Spider component prior to the arrival of the core stage or its Pathfinder sister. Pathfinder is a full-scale model of the core stage that will be installed on the B-2 stand to make sure all stand mechanisms and equipment are ready for the actual flight stage. It is expected at Stennis in the first half of 2018.

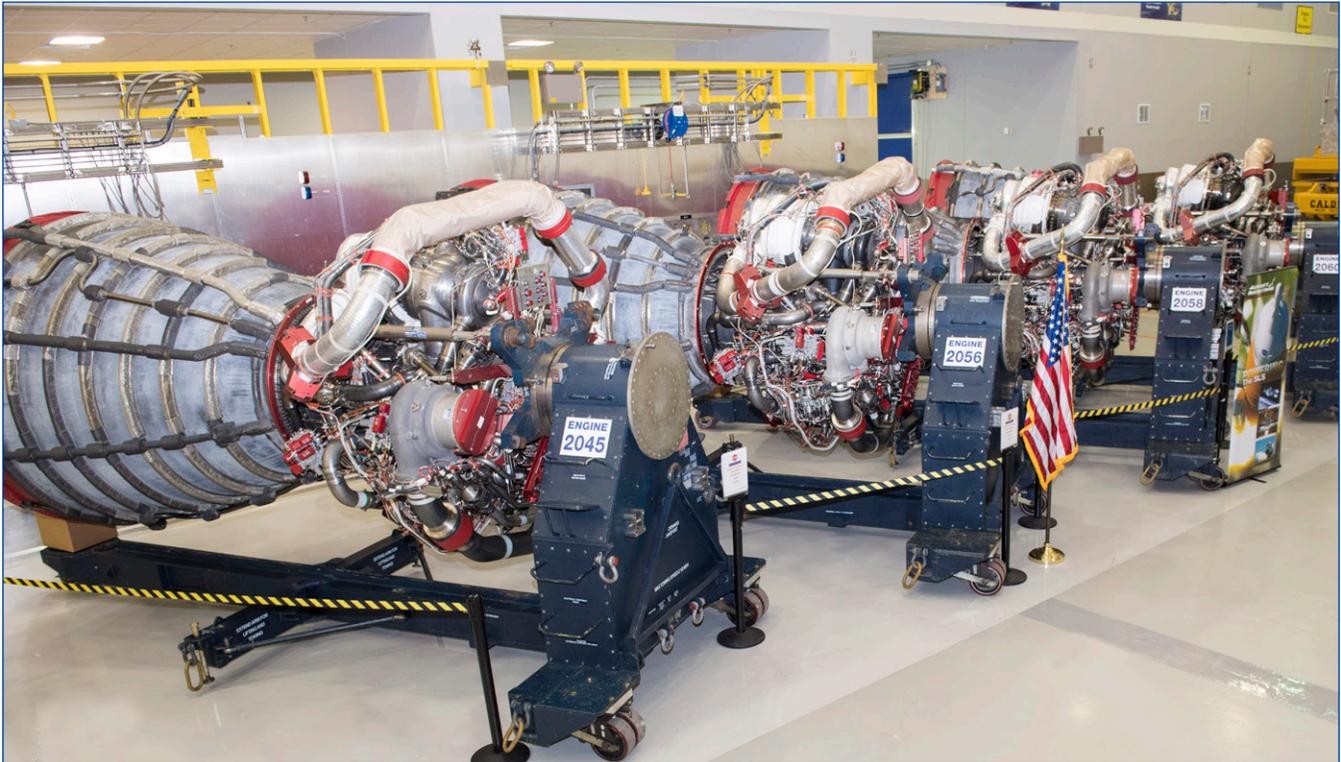


FULFILLING NASA'S EXPLORATION MISSION



FULFILLING NASA'S EXPLORATION MISSION

'... And four to go'



The four RS-25 engines scheduled to power the maiden flight of NASA's new Space Launch System (SLS) rocket sit in a row in the Aerojet Rocketdyne engine assembly facility at Stennis Space Center on Oct. 12. Engines E2045, E2056, E2058 and E2060 eventually will be crated and shipped to NASA's Michoud Assembly Facility in nearby New Orleans for installation on the SLS core stage that will fly on the rocket's uncrewed Exploration Mission-1. The core stage then will be transported to Stennis for testing on the B-2 Test Stand. The four core stage engines are former space shuttle main engines, outfitted with new controllers and modified to provide additional power needed by SLS. During the Space Shuttle Program, each

of the four engines flew to space – E2045 on 12 missions, E2058 on six missions, E2056 on four missions and E2060 on three missions. Interestingly, engines E2045 and E2060 have been configured together on multiple shuttle missions, including the final flight of the Space Shuttle Program, STS-135, in July 2011. New controllers for all four engines already have been tested at Stennis and installed. Subsequent B-2 testing will involve installing the flight core stage on the stand and firing all four of its engines simultaneously, just as during an actual launch. Once tested and certified, the core stage will be transported to Kennedy Space Center in Florida, for launch of the EM-1 mission.

Hail & Farewell

NASA bids farewell to the following:

Ray Bryant	AST, Data Systems	Center Operations Directorate
Bill Camus	AST, Electrical Experimental Equipment	Engineering and Test Directorate
Robert Harris	Procurement Officer	Office of Procurement
Eric Traill	AST, Technical Management	Engineering and Test Directorate

NASA welcomes the following:

Aundra' Brooks	AST, Safety and Mission Assurance	Safety and Mission Assurance Directorate
Matthew Scott	AST, Facility Systems Safety	Safety and Mission Assurance Directorate
Kevin Stiede	AST, Experimental Facilities Techniques	Center Operations Directorate



SLS Pathfinder arrives at Michoud; next stop – Stennis

The Space Launch System (SLS) core stage pathfinder, which is similar in size, shape and weight to the 212-foot-tall core stage, arrived at NASA's Michoud Assembly Facility early on Sept. 27. To reduce the risk of first-time operations with one-of-a-kind spaceflight hardware for SLS, the agency built a core stage pathfinder. Like SLS, the core stage pathfinder will be

doing something that has never been done – testing new shipping and handling equipment and procedures from the manufacturing site to the test site to the launch site. Pathfinder's next stop is Stennis Space Center in 2018, where it will be lifted and installed on the B-2 Test Stand to make sure the stand is ready for testing the actual SLS core stage.

NASA in the News

Webb telescope set for launch in 2019

NASA's James Webb Space Telescope now is planning to launch between March and June 2019 from French Guiana, following a schedule assessment of the remaining integration and test activities. Previously, Webb was targeted to launch in October 2018. Testing of the telescope and science instruments continues to go well and on schedule at NASA's Johnson Space Center. The spacecraft itself, comprised of the spacecraft bus and sunshield, has experienced delays during its integration and testing at Northrop Grumman. The additional environmental testing time of the fully assembled observatory – the telescope and the spacecraft – will ensure that Webb will be fully tested before launching into space. All the rigorous tests of the telescope and the spacecraft to date show the mission is meeting its required performance levels. The James Webb Space Telescope is NASA's next great multi-purpose observatory and will be the world's most powerful space telescope ever built, serving thousands of astronomers worldwide.

NASA statement on National Space Council

The following is a statement, in part, from acting NASA Administrator Robert Lightfoot about the results from the first meeting of the National Space Council on Oct. 5: “(Council Chair and Vice President Mike Pence) made it clear that space is a national priority. The vice president also announced a call for renewed U.S. leadership in space – with a recommendation to the president that NASA help lead and shape the way forward. Specifically, NASA has been directed to develop a plan for an innovative and sustainable program of exploration with commercial and international partners to enable human expansion across the solar system, returning humans to the moon for long-term exploration and utilization, followed by human missions to Mars and other destinations. The recommendation (would) ... remove a previous guideline that NASA should undertake a human mission to an asteroid as the next human spaceflight milestone beyond low-Earth orbit.” To read the full statement, visit: <https://go.usa.gov/xnxJz>.

Stennis employees serve as FEMA volunteers

In the aftermath of recent major hurricanes, six NASA employees from Stennis Space Center are acting out a modified version of one of life's great maxims and "doing unto others as others have done unto them."

The employees signed up last month to spend up to 45 days as FEMA volunteers, despite the possibility of challenging living and working conditions, perhaps even staying in tents with a lack of electricity and running water.

Nevertheless, to a person, each characterized the opportunity as a chance to repay the kindness and help they experienced following earlier natural disasters, most notably Hurricane Katrina in 2005.

"As a former Katrina victim with two young children, I remember receiving various kinds of assistance from others," said Dao Kooamphorn of Diamondhead, a contract specialist and contracting officer at Stennis. "Since then, I have been wanting to do the same for others in return."

"I felt led to help families that are hurting," said Vince Pachel of Gulfport, a test engineer at Stennis.

"I have family in Florida who were affected by Hurricane Irma," said Nick Cenci of Slidell, an aerospace engineer at Stennis. "It brought back lots of personal memories, as our house and lives here were significantly affected by Hurricane Katrina. The timing was right for me to do something now and maybe give a little something back to others who were not as fortunate as my family."

NASA colleagues at Stennis Space Center hosted a send-off reception Sept. 20 for six fellow employees who are spending up to 45 days as FEMA volunteers in the wake of several recent major hurricanes. They are: (l to r) Vince Pachel, Nick Cenci, Alex Elliott, Dao Kooamphorn, John Stealey and Bruce Farner. The six employees traveled Sept. 22 for FEMA training, then were individually assigned to work locations. They could remain in those areas until early November.

"I was impacted pretty heavily during Hurricane Katrina in 2005, and this is a way to give back to those organizations that helped my community," added Alex Elliott of Slidell, an aerospace technologist at Stennis. "Hopefully, I can lend a hand or give advice, having already been through some of what the affected residents are now experiencing."

"The Gulf Coast received a lot of outside assistance after Hurricane Katrina," said John Stealey of Diamondhead, assistant director of the Stennis Engineering and Test Directorate. "I'd like to be a part of returning the favor."

"We were affected by Hurricane Katrina with four feet of water in our house," echoed Bruce Farner of Slidell, a contract officer representative, technical monitor and facility manager at Stennis. "Everyone helped each other after that storm. It just seems like a good idea for people to help where they can."

The six employees are sponsored in their work by NASA, which is continuing to pay their salaries and also covering their travel costs. All six traveled on Sept. 22 for training before being assigned to different locations.

Kooamphorn stayed on the Gulf Coast, to work out of Biloxi. Pachel and Stealey were assigned to the Virgin Islands. Cenci, Elliott and Farner all were sent to work in Puerto Rico.

The volunteers could remain in their roles until early November.



Employee involvement key in A²Research safety approach

Note: The following is part of a regular focus on safety and health at Stennis Space Center. This month's article was written by Shane Mendel, a safety specialist with A²Research.

As the first organization at Stennis to achieve Voluntary Protection Program certification, A²Research has a longstanding example of one of the cornerstones to a strong safety culture: employee involvement. A²Research established the Safety Maintenance and Review Team (SMART) in 2008 to communicate safety goals and initiatives and to serve as a forum for the discussion of issues, concerns and best practices. SMART also helped to facilitate compliance with regulatory and A²R safety and quality requirements and to encourage the highest level of safety awareness by all A²R personnel.

In early 2013, A²R created Built In Safety and Quality (BISQ) by combining the SMART team, the Quality Built In (QBI) program requirements and the VPP program requirements. The seven main principles of BISQ are:

1. Safety First
2. Understanding Customer Expectations
3. Process Ownership
4. Engineering Controls
5. Measurement and Monitoring
6. Verification
7. Continuous Improvement

Over the last few years, several BISQ Team activities and accomplishments include having the crosswalk painted



in Building 8110 parking lot to warn pedestrians and motorists of traffic in a blind spot at the corner of the building; adding stop signs in parking lots and driveway intersections adjacent to Building 8100; assisting in training of employees in the transition from Material Safety Data Sheets to Safety Data Sheets and Globally Harmonized System compliance; identifying the need for and obtaining ergonomic mats for standing laboratory work bench areas; initiating the involvement of employees in conducting required inspections; initiating community outreach projects; coordinating annual employee morale events; and developing and presenting safety topics.

The annual rotating membership is comprised of employee and team leads from various A²R departments. Current members of BISQ who are to be commended for giving their time and energy to the effort include Wanda Williams, Bobby McLain, Mark Lumpkin, Steve Weiss, Kim Palmer, Jeanette Richard, Erick Guittierrez, Sheila Varnado, Tabatha Butler, Rick Ross, Charles McElroy and Shane Mendel.

Stennis hosts 2017 Energy Awareness Day

Stennis Space Center employee Damon Jones with the U.S. Geological Survey examines a lighting comparison exhibit presented by Coast Electric representative Phillippe Michel during the 2017 Energy Awareness Day on Sept. 27. Stennis hosted a variety of area companies and organizations for the annual energy emphasis. Employees were able to visit exhibits to gather information and tips on various energy-related topics, such as conservation, energy efficiency, controlling energy costs and renewable energy.



1961 – NASA selects Mississippi for new test site

Note: For more than 50 years, NASA's John C. Stennis Space Center has played a pivotal role in the success of the nation's space program. This month's Lagniappe provides a glimpse into the history of the south Mississippi rocket engine test center.

In 1955, the United States announced it would launch a satellite for the International Geophysical Year, an international scientific program that opened scientific exchanges between the East and the West that had been interrupted during the Cold War. The Soviet Union responded that they would also launch a satellite “in the near future.” The Space Race began.

On Oct. 4, 1957, the Soviet Union launched Sputnik I into low-Earth orbit. They also put the first human in space, Yuri Gagarin. The United States had its eye on the big prize, though. The U.S. was going to the moon. The Space Race morphed into the Moon Race and the then-Mississippi Test Facility was a very important factor in the U.S. winning the race to the moon.

NASA needed a place to test the large rocket engines and stages needed to carry humans to the moon.

In August 1961, an ad hoc committee of members from NASA Headquarters and Marshall Space Flight Center began the work of finding the perfect location.

There were several variables to consider since the rockets would be assembled at the Michoud Assembly Facility outside of New Orleans and launched from Cape Canaveral, Florida. NASA needed a facility that, ideally, would lie between these two places, be away from a densely populated area because of the noise associated with testing rocket engines and stages, have access to both

waterway and highway, have a mild climate so testing could conceivably be done year round and have supporting communities nearby. Several already existing facilities were in the running, but the committee kept coming back to a marshy, pine tree-covered area along the Pearl River in Mississippi.

The Pearl River site won out over the final six locations. On Oct. 25, 1961, NASA announced that a rocket engine

test site would be established in Hancock County, Mississippi. The site, then known as Mississippi Test Operations, would test the Saturn rockets that would launch the Apollo missions to the moon. Construction would begin as soon as possible, but first, residents living along the Pearl River would need convincing to leave their homes in preparation for the building of the test site.

U.S. Sen. John C. Stennis had been a proponent of the Pearl River site from the beginning, using his contacts in Washington to plant the seed of having NASA operations in Mississippi. Following NASA's announcement, Stennis himself visited residents of the Pearl River communities and appealed to

their patriotism in asking them to give up their land and their homes “as a sacrifice in America's crusade against the Soviets.”

The Soviets had already put humans in space, and America was aiming to win the space race to get a person on the moon. Stennis promised residents of the Pearl River communities that day that he would make sure that their sacrifice was not in vain, that they were compensated for their property, and that they would never be forgotten for “taking part in greatness.”



Logtown Post Office employees lower the flag after completing their final mail delivery in May 1963. Logtown was one of several towns relocated for construction of Stennis Space Center, then known as Mississippi Test Operations.

Office of Diversity and Equal Opportunity

Key steps can help reduce risk of workplace conflict

Conflict is inevitable, but combat is optional. Max Lucado

No employee wants to become embroiled in a workplace dispute. If conflict at work is not resolved, it can cause stress, frustration, loss of sleep, a bad temperament, illness or other issues for individual employees.

According to research undertaken by personality assessment consultancy OPP, in conjunction with the Chartered Institute of Personnel and Development, 85 percent of employees have to deal with conflict at some point. Perhaps not surprisingly, another big trigger for disputes is the relationship that employees have with their line managers.

Is it possible to avoid workplace conflict entirely? The answer is: probably not. Conflict, disputes and disagreements are a part of daily life, so it is important that people feel able to deal with them when they arise.

However, there are tactics that people can adopt to reduce the risk of becoming involved in conflict that adversely affects their health. Some of them are highlighted below:

1. Be positive

If you want to work in a more positive environment, you have to be positive. It is amazing how much of an effect a cheerful disposition can have during the working day. In addition, a number of studies show that positive people are better placed to deal with stress, anxiety and challenges.

Remaining positive will make it more difficult for others to behave badly towards you, thereby reducing the likelihood of you becoming involved in serious disputes.

2. Be aware of personality clashes

The OPP report indicates that 49 percent of workplace conflict can be attributed to personality clashes. Managers find this type of problem difficult to resolve, although there is value in identifying underlying tensions before things become serious.

Avoiding certain individuals in the office will not work, but you should certainly not become involved in other people's disagreements. Cliques in the workplace can be particularly damaging and can even result in dismissals if the environment becomes impossible. If anyone asks you to align yourself with them against others, simply say that you value working with everybody.

3. Communicate respectfully

The old mantra of "treating people as you would like to be treated" is a good tactic in avoiding workplace conflict. Asking people for their cooperation rather than giving instructions, inquiring about people's weekends and thanking others for help they have given you will help you to maintain positive relationships with others.

You should also be careful of how you convey messages by email. It is easy to cause offense because the other person cannot see your body language and you cannot adjust what you have said when you see their reaction.

4. Do not get involved in emotional manipulation

Some people are used to getting their own way by using emotions, be they angry, fearful or upset. If they succeed in doing this in the workplace, it will cause resentment and lead to arguments or blame shifting.

If you have to deal with someone who regularly becomes tearful, you should simply tell them that you are going to give them some breathing space, walk away and then return at another time. A calm approach will help you to avoid unnecessary conflict and contribute to a better working environment.

5. Know what is important

Disputes can grow from the smallest of issues. Something as inconsequential as taking someone else's pen can escalate into accusations of poor work performance. Once you have an impression of a colleague from a particular incident, you will look for other examples, however small, to reinforce that opinion.

It is important to acknowledge that squabbles will take place now and again and that they should stay at that level – minor disagreements that should be figured out and forgotten.

During October, Stennis Space Center will join agencies and organizations across the globe in observing Conflict Resolution Month. Several activities will be conducted. For more information about these activities and the NASA Conflict Management Program, contact the Office of Diversity and Equal Opportunity at 228-688-1037.

Source: Katherine Graham, CMP (Close, Manage and Prevent) Resolutions for www.mediate.com.



Faces of Stennis

Each month, Lagniappe will feature employees at Stennis Space Center whose work enables the center to fulfill its mission as the nation's largest rocket engine test center. This month's employee is highlighted on the following page.



Chris Carmichael



Take an Orlando native, who remembers standing in his driveway as a five-year-old to watch space shuttle launches from Cape Canaveral, move him to the Mississippi Gulf Coast to grow up in Pascagoula, have him become a huge Star Wars fan. Where do you expect to find him working? Stennis Space Center, of course, which is exactly where Chris Carmichael has spent the last eight years. Carmichael serves as the chief technology officer for information technology in the Stennis Office of the Chief Information Officer. He enjoys the challenges of the work, including current efforts to establish the Stennis Innovation and Efficiencies Program (IEP). He is particularly proud of the support that effort is giving to the Young Engineers Design Challenge (YEDC) and IEP. “With YEDC, we have a working environment in which to gather valuable

data that will help the agency determine what next steps to take with collaboration technology,” Carmichael says. “With IEP, we have a chance to change the environment to be more attractive to young talent and to open up lines of communication and collaboration that were not there before in order to provide the center with the most innovative and efficient means of working.” Thanks to such efforts, Carmichael looks forward to a new NASA era of young talent and innovation. He also is excited about NASA’s pending return to human spaceflight, including missions to deep-space destinations like the moon, which he hopes will unify and excite the public. After spending so many years on the Mississippi Gulf Coast, Carmichael now lives in nearby Slidell, Louisiana, with his wife of almost 20 years, eight-year-old son and three-year-old daughter.