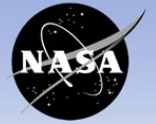


National Aeronautics and Space Administration



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John C. Stennis Space Center

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December 2017

SLS milestone

NASA conducts water flow test on B-2 stand

See page 3



On the night of December 24th last year,
I was sitting out back under a sky so clear.
I had just settled in and lit up my stogie
When what did I see but a red UFO bogey.

It got larger and larger till it lit up the yard,
Then it set itself down right there a bit hard.
When my eyes adjusted, then I could see,
It was Santa and reindeer just as big as can be.

I jumped to my feet as he climbed out the sleigh,
Adjusted his cap and walked over my way.
I sure was surprised as he said with a grin,
“Hey, there, ole Gator – good to see you again.”

I thought I was dreaming till he hugged me hello.
Then all I could say was, “Well, what do you know?”
But before I could start reminiscing and all,
He said, “Whoa, there, Gator, this is no social call.

“I have me a problem you might understand.
It may not look it, but I am a pretty old man.
And my reindeer, too, they are up there in age.
They are plumb tuckered out, as some folk would say.

“Oh, we’re not retiring, just getting quite tired.
This flying worldwide has always been hard.
But think of it now, how this world has grown.
It means a full night for us, don’t you know?”

“So, here’s what I’m thinking for a bit of a change,
And hoping it’s something you and I can arrange.
It would help the reindeer out quite a bit
If we added an engine to my old sleigh outfit.

“Now, y’all test the engines that fly us to space,
Including the ones that won the moon race.
So, how about testing an engine for me.
It would make my job easier, I think you’d agree.

“We could cover the world in no time flat.
So, tell me, what do you think about that?”
Well, I thought mighty quick and had to agree,
“Santa, you’ll get no quarrel about that from me.”

So, check out the sky late this Christmas Eve.
You could glimpse a sight you just might not believe –
Rocket-engine sleigh and reindeer flying much faster,
As Santa calls, “Ho, ho, ho, compliments of NASA!”



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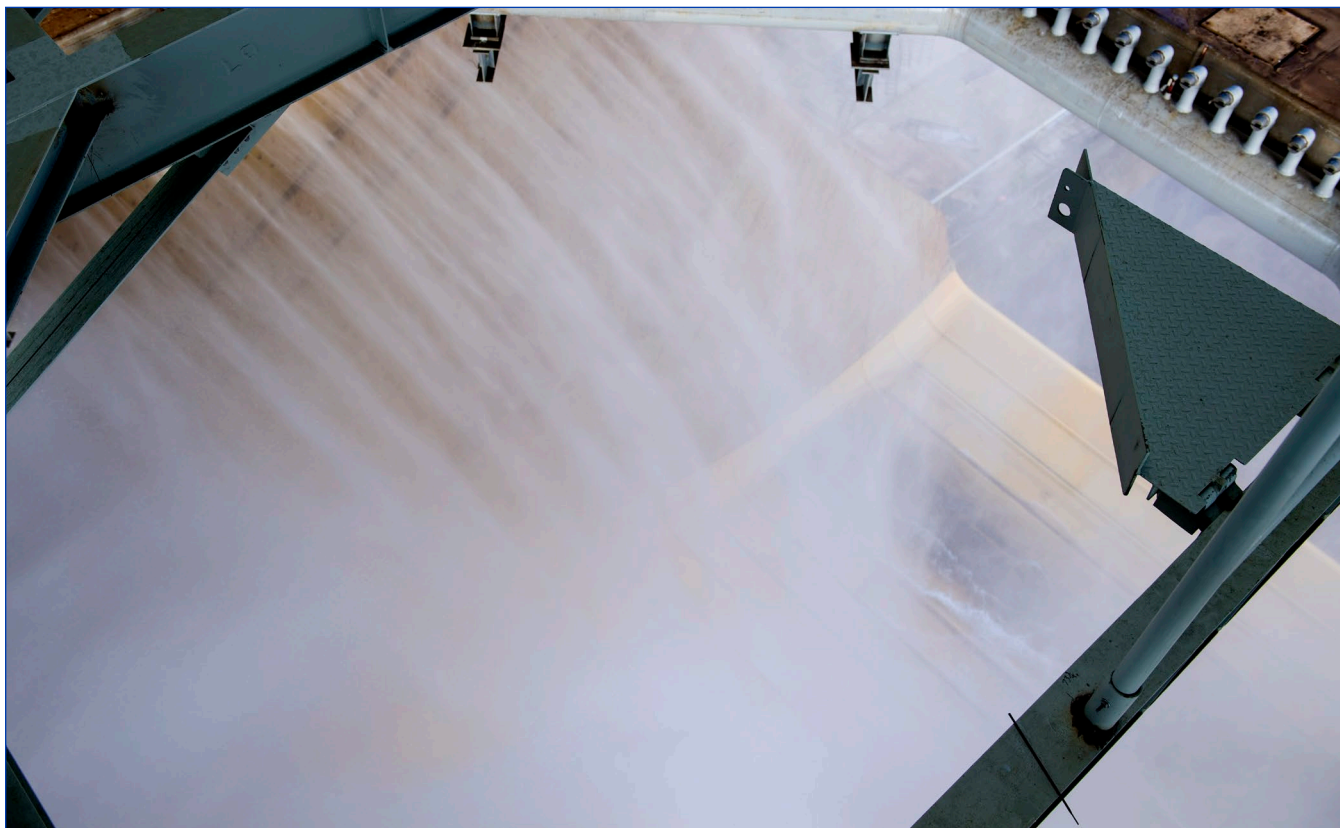
FULFILLING NASA'S EXPLORATION MISSION



An unmanned drone photograph offers a panoramic view of NASA's water flow test on the B-2 Test Stand at Stennis Space Center on Dec. 4. The test marked another milestone in NASA's preparations for testing the core stage for the first mission of its new Space Launch System (SLS) rocket. The SLS testing will involve installing the core stage on the stand and firing its four RS-25 rocket engines simultaneously, just as during an actual

flight. Water is critical for such rocket engine and stage testing. The fire and exhaust generated during tests is directed down and out of the test stand via a large flame deflector. Water is used to cool the super hot fire and exhaust and to protect the flame trench from damage by the heat. Water to the B-2 Test Stand is supplied through a high-pressure industrial water system, upgraded for the SLS core stage project to deliver as much as 335,000

gallons per minute at 220 psi. During a test, the water deluge system will deliver more than 240,000 gallons of water a minute through 32,000-plus 5/32-inch holes drilled into the flame deflector. Dec. 4 marked a general test of the new water system valves, piping and controls put in place for SLS testing. The panoramic background includes the A-2 (l to r), A-3 and A-1 test stands, as well as the Stennis *Clermont* tugboat seen on the left.

FULFILLING NASA'S EXPLORATION MISSION

(Above photo) The B-2 Test Stand water flow test on Dec. 4 is shown from a higher level, peering down into the flame deflector.

(Below photo) Jets of water spew from patterned holes in the side of the B-2 Test Stand flame deflector during the Dec. 4 test of the system.



FULFILLING NASA'S EXPLORATION MISSION

NASA conducts final RS-25 engine test of 2017

NASA engineers capped a year of Space Launch System testing with a final RS-25 rocket engine hot fire on Dec. 13 at Stennis Space Center near Bay St. Louis, Miss. The 400-second test on the A-1 Test Stand was a “green run” test of an RS-25 flight controller. It marked the eighth RS-25 test of the year and the sixth flight controller to be tested for use on NASA’s new Space Launch System (SLS) vehicle. The engine tested also included a large 3D-printed part scheduled for use on future RS-25 flight engines. The part, a beach ball-sized pogo accumulator assembly, is a complex piece of hardware that acts as a shock absorber to dampen vibrations, or oscillations, caused by propellants as they flow between the vehicle and the engine. Initial reports show the 3D-printed hardware performed as expected, opening the door for more components scheduled for future tests. The test was part of the SLS Program’s RS-25 affordability initiative – a collaborative effort between NASA and industry partner Aerojet Rocketdyne to reduce the engine’s overall production costs by using new advanced manufacturing techniques while maintaining reliability and safety. Engineers were able to make the pogo accumulator with fewer welds using additive manufacturing, reducing the cost and time needed to make it. NASA is testing the RS-25 engines and controllers to help power the SLS rocket designed and send astronauts to deep-space destinations. The RS-25 engines for the initial SLS flights are leftover space shuttle

main engines, modified to supply the added power needed for the larger, heavier SLS rocket. A major part of that modification is the new engine controller that serves as the “brain” of the engine, communicating with SLS flight computers to ensure engines are performing at needed levels. NASA tested the first SLS flight controller unit in March. The agency then launched a series of summer flight controller tests before testing an actual RS-25 flight engine in October. During tests, the controllers are installed on a developmental RS-25 engine, which is then fired in the same manner and for the same amount of time that will be needed during an SLS launch. Once tested and certified, the new flight controllers are installed on RS-25 engines designated for use on SLS missions. Four RS-25 engines will help power the SLS at launch, providing a combined 2 million pounds of thrust and firing in conjunction with a pair of solid rocket boosters. With the boosters, total thrust at liftoff will exceed 8 million pounds. The SLS Exploration Mission-1 (EM-1) will serve as the first flight for the new rocket and will carry an uncrewed Orion spacecraft. The EM-2 flight will transport a crew of astronauts aboard Orion. In addition to testing RS-25 engines for those flights at Stennis, NASA is preparing the B-2 Test Stand at the center to test the actual SLS core stage for EM-1. That testing will involve installing the actual flight core stage on the B-2 stand and firing all four RS-25 engines simultaneously, just as during an actual launch.

Top 10 list offers looks at extent of Stennis work in 2017

One of the traditions associated with the end of a year is the practice of compiling Top 10 lists. By Dec. 31 of a given year, the lists are ubiquitous, chronicling the top movies, books, quotes, personalities, events, deaths, songs, videos ... you get the picture.

In many instances, the lists are just fun ways of summarizing the previous 12 months. However, in a day when time seems to accelerate by the hour, the lists also can help one focus on just how eventful the previous year was.

In looking back on 2017 at Stennis Space Center, a Top 10 list of events and developments offers an excellent recap of ongoing work at the site, as well as its reach and significance. Consider then the following Top 10 events of 2017 for Stennis Space Center. Contrary to most such lists, these items are presented in no ranking order.

Founders Day Open House and flight engine test

Stennis celebrated its 56th anniversary in fitting fashion Oct. 19, opening its doors to visitors for a day of activities that culminated with a test of an RS-25 flight engine. Some 1,200 people from several states visited the site for a chance to learn about its work and view an engine test firsthand. Flight engine E2063 was fired for 500 seconds on a picture-perfect afternoon. The engine is scheduled to help power the second flight of NASA's new Space Launch System (SLS) rocket, which will return humans to deep space for the first time in more than 40 years.

Successful testing of RS-25 flight controllers

The significance of 2017 testing at Stennis cannot be overstated. In addition to a flight engine, the site tested five RS-25 flight controllers for use on SLS missions. The initial RS-25 engines are former space shuttle main engines modified to provide the additional power needed for the SLS, being built as the largest rocket in the world. The controllers are a critical component that serve as the "brain" of the engines, helping them operate and communicate with the SLS vehicle as needed.

Delivery of Spider component to B-2 Test Stand

A single milestone event in late September represents a year of work as NASA prepares the B-2 stand for testing the core stage that will power the initial flight of the SLS rocket. The Spider component is needed to help lift and install the SLS core stage on the stand for testing. The stand awaits another milestone in 2018 with delivery of the Pathfinder replica core stage for a "fit test." It will be used to ensure the stand is ready for flight stage delivery. Once delivered, the SLS flight core stage will be installed on the B-2 stand and all four of its RS-25 engines fired simultaneously, as during an actual launch.

Final visit of former NASA Administrator

Stennis opened 2017 by welcoming exiting NASA Administrator Charles Bolden on his 10th visit to the Gulf Coast area. On the visit, Bolden affirmed the future of NASA and



An unmanned drone photograph offered a breathtaking view of the first RS-25 test of the most-recent year on Feb. 22, 2017, from above the A-1 Test Stand Feb. 22.

its space exploration program. A strong supporter of Stennis throughout his eight-year-tenure, Bolden again thanked Stennis employees for their service. "Anytime anybody gives you an opportunity to talk about what you do, take it, ..." he said, "Tell them you're responsible for getting people into space, because that's what you do everyday."

Advanced Technology and Technology Transfer

The Stennis Advanced Technology and Technology Transfer Branch within the Engineering and Test Directorate had a banner year. The branch negotiated six licenses, six times as many as the previous fiscal year, for five patented Stennis technologies. The branch also issued 63 usage agreements for Stennis software, also about six times as many as the previous year. Stennis intellectual property is now used in 30 states and 20 countries. The branch also has created a network of 550 institutions across Mississippi and Louisiana that raise public awareness of the impact NASA inventions have on daily life. In terms of technology development, Stennis continued to make significant state-of-the-art advancements in intelligent, autonomous systems in support of NASA's propulsion test and space exploration missions. Stennis developed, and continues

to enhance, the NASA Platform for Autonomous Systems, which has been successfully tested and is being implemented to operate the liquid nitrogen system at the Stennis high-pressure gas facility. For more information about Advanced Technology and Technology Transfer Branch activities and Stennis technology news, visit: <https://technology.ssc.nasa.gov>.

2017 ESSENCE Festival outreach

One of the annual priorities of Stennis is to share the NASA story. Outreach efforts at the 2017 ESSENCE Festival in New Orleans is just one example of the many ways Stennis annually seeks to inform and educate people about NASA. Add to that effort such activities as community outreach events, speakers bureau presentations, public exhibits, and website and social media postings, and the extent of outreach work that fills a typical year quickly becomes evident.

NASA Community College Aerospace Scholars classes

Education is a pillar activity for NASA and Stennis. A prime example of the center's efforts is the spring and fall NASA Community College Aerospace Scholar (NCAS) classes it hosts each year. NCAS brings selected students on site twice a

year to work with NASA mentors in a hands-on collaborative robotic competition. The classes are all a part of NASA's commitment to promoting STEM (science, technology, engineering and mathematics) studies and careers.

Top NASA small business honor

In 2017, Stennis received NASA's fiscal year 2016 Small Business Administrator's Cup. The award is presented annually to the NASA center that has the best overall small business program. Stennis has earned the cup twice in the last five years. In FY 2016, Stennis had its most successful year on record with regard to the percentage of dollars awarded to small businesses. With the awarding of 24 Multiple Award Construction Contract Two contracts near the end of 2017, the center is poised to continue building on that record.

Stennis employees serve as FEMA volunteers

Once again, a single example must stand for so many other instances that could be cited. After a string of devastating hurricanes, NASA sponsored willing employees to serve as FEMA volunteers for up to 45 days. Six NASA employees at Stennis jumped at the chance, serving in Puerto Rico, the Virgin Islands and stateside. The volunteers are representative of the quality of Stennis employees, who regularly participate and support a variety of community events and efforts. (See page 16)

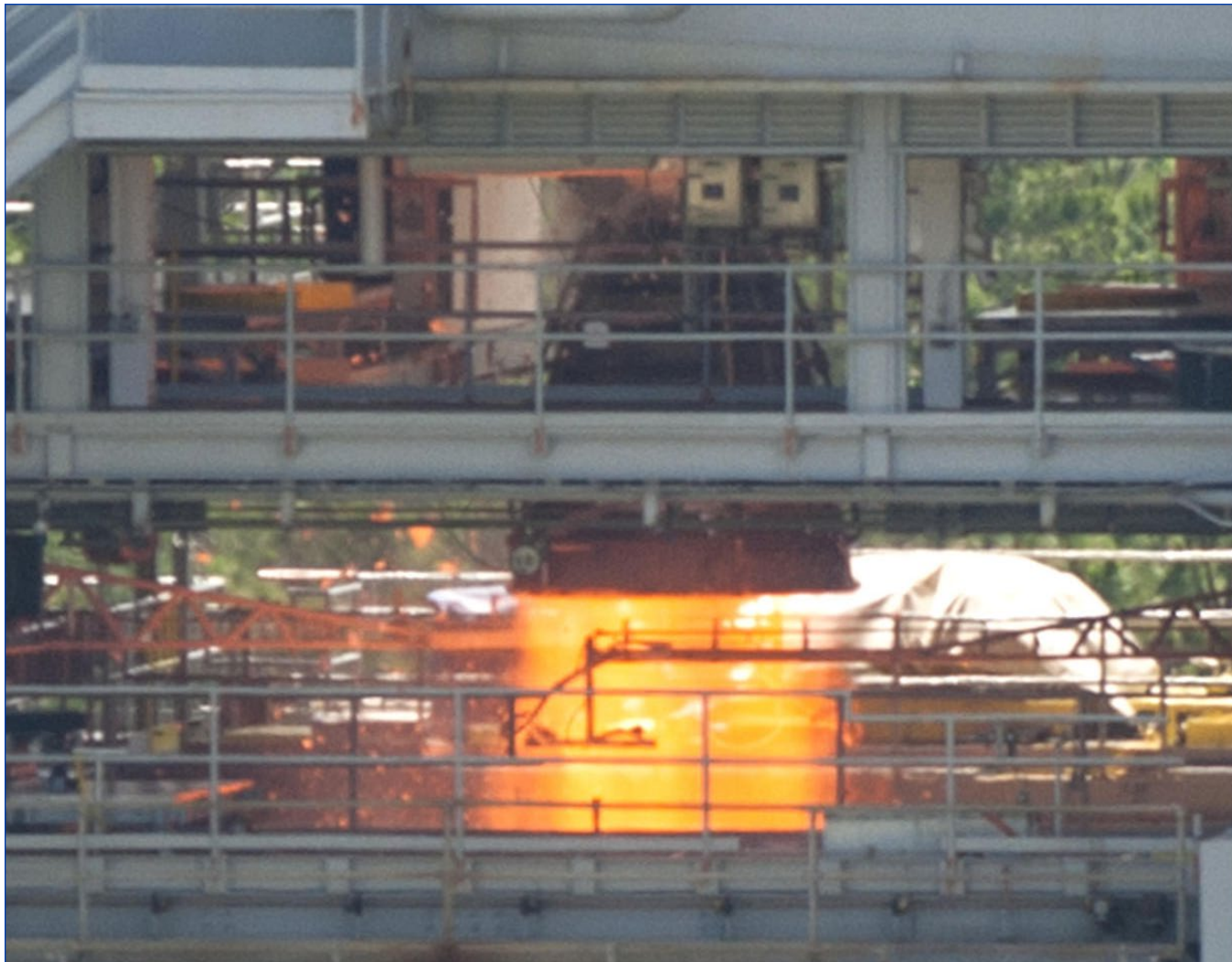
Innovative test projects

It does not get as much headline play because of the nature of the projects, but Stennis does much more than test engines for NASA use. At any given time during the year, one would find the site's test complexes busy with commercial testing projects for companies such as SpaceX, Aerojet Rocketdyne and, soon, Stratolaunch. It also supports other government agencies on testing projects, as well as small NASA prototype test initiatives.

The list of items that characterized Stennis Space Center work in 2017 could go on and on. Stennis Director Rick Gilbrech highlights the work of the center for community leaders each spring. In addition to mentioning the listed areas of work, he could also add several honorable mention items.

These include the public and employee events associated with the August 2017 solar eclipse; the move of the historic Apollo 4 command module from an onsite location to INFINITY Science Center for permanent public display; the extracurricular prominence of Stennis employees as exemplified by the appearance of NASA aerospace engineer Howard Conyers on a Cooking Channel show highlighting his traditional whole hog BBQ pitmaster skills; and the recognition of Stennis as a Project Ready site for economic development and a National Weather Service Storm Ready Community for its proactive efforts to prepare for possible natural disasters.

Thinking about it, when it comes to Stennis, maybe the end-of-the-year tradition needs to be expanded beyond just a Top 10.



(Top left photo) The four RS-25 engines – E2045, E2056, E2058 and E2060 – scheduled to power the maiden flight of NASA's new Space Launch System rocket sit in a row in the Aerojet Rocketdyne engine assembly facility at Stennis Space Center on Oct. 12.

(Top right photo) Stennis Space Center and Aerojet Rocketdyne operators conduct a test of the company's AR1 rocket engine preburner on the E-1 Test Stand in early May.

(Bottom left photo) A shot with a telephoto lens offers a closeup view of a May 23 test of an RS-25 rocket engine on the A-1 Test Stand. Stennis is testing RS-25 engines for use on NASA's new Space Launch System.

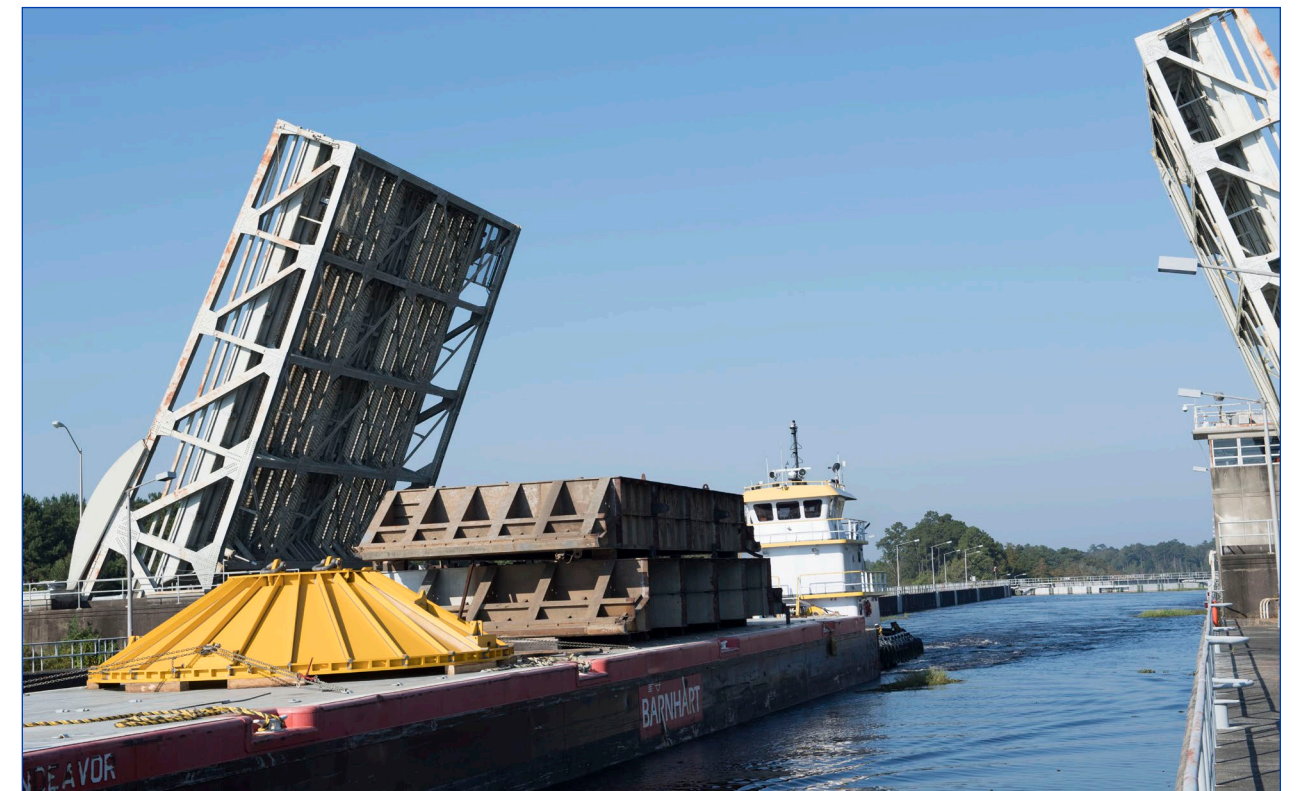
(Bottom right photo) RS-25 flight engine E2063 is removed from the A-1 Test Stand on Nov. 15 following its successful certification hot fire the previous month. The engine was tested Oct. 19 during the Stennis Founders Day Open House.



(Left photo) An unmanned drone photo offers an on-high look of the B-1/B-2 Test Stand at Stennis Space Center, highlighting modifications made to enable testing of NASA's new Space Launch System (SLS) core stage. The SLS stage will be tested on the B-2 portion of the stand, shown to the right.

(Top photo) The beginning of the Aug. 21 solar eclipse is shown above the B-1/B-2 Test Stand at Stennis Space Center. Stennis Space Center and INFINITY Science Center hosted employees and visitors for a day of viewing activities during the Solar Eclipse Across America event.

(Right photo) Preparations for testing NASA's Space Launch System core stage marked another milestone Sept. 28 with arrival of the Spider component – via barge – to the B-2 Test Stand.





(Top photo) NASA brought space exploration to New Orleans on June 30 to July 2 during the 2017 ESSENCE Festival with interactive exhibits and a panel presentation. The national space agency has engaged in outreach/education efforts for several years during the festival.

(Middle top photo) More than 150 athletes with special needs competed in the Stennis Space Center Area II Special Olympics Field Games hosted at INFINITY Science Center on April 8.

(Middle bottom photo) Stennis Space Center Director Rick Gilbrech shares a laugh with visitors during Stennis Founders Day Open House activities Oct. 19.

(Far right photo) A young participant launches his "stomp" rocket during Stennis Founders Day Open House on Oct. 19.



(Top left photo) Astronauts Butch Wilmore and Steve Bowen visit with Stennis Space Center test conductors in the A Test Complex control center during an RS-25 engine test July 25.

(Top right photo) NASA Administrator Charles Bolden talks to Stennis Space Center employees on Jan. 6 during his 10th – and final – visit to the Gulf Coast area since he was confirmed as NASA administrator in July 2009.

(Bottom left photo) A group of New Orleans students gaze in wonder at the Aug. 21 solar eclipse during their visit to INFINITY Science Center.

(Bottom right photo) Michele Sanders enjoys the view of an RS-25 engine test on July 25. Sanders is a New Orleans educator and granddaughter of Kathryn Johnson, one of the so-called “human computers” who worked at NASA in the early days of the space program and is profiled in the award-winning film “Hidden Figures.”





International Space Station offers view of California wildfires

December wildfires in southern California, driven by powerful Santa Ana winds, were visible from low Earth orbit by the Expedition 53 crew on the International Space Station. NASA astronaut Randy Bresnik, who took this

photo on Dec. 5, 2017, wrote, "I was asked this evening if we can see the SoCal fires from space. Yes, Faith, unfortunately we can. May the Santa Ana's die down soon."

NASA in the News

NASA fires Voyager 1 thrusters

A set of thrusters aboard the Voyager 1 spacecraft successfully fired up Nov. 28 after 37 years without use. Voyager 1, NASA's farthest and fastest spacecraft, is the only human-made object in interstellar space, the environment between the stars. The spacecraft, which has been flying for 40 years, relies on small devices called thrusters to orient itself so it can communicate with Earth. The thrusters fire in tiny pulses, lasting mere milliseconds, to subtly rotate the spacecraft so that its antenna points at Earth. With the successful test, the Voyager team will be able to use the four backup thrusters, dormant since 1980, enabling the space agency to extend the life of the Voyager 1 spacecraft for two to three years. NASA engineers noticed in 2014 that the thrusters originally used to orient the spacecraft had been degrading. After studying the issue, they decided to test the dormant thrusters. They now plan to switch to those thrusters in January. For more on Voyager, visit: <https://www.nasa.gov/voyager> or <https://voyager.jpl.nasa.gov>.

President signs new space policy directive

President Donald Trump is sending astronauts back to the moon. On Dec. 11, the president signed Space Policy Directive 1, a change in national space policy that provides for a U.S.-led, integrated program with private sector partners for a human return to the moon, followed by missions to Mars and beyond. The policy calls for the NASA administrator to "lead an innovative and sustainable program of exploration with commercial and international partners to enable human expansion across the solar system and to bring back to Earth new knowledge and opportunities." The policy grew from a unanimous recommendation by the new National Space Council after its first meeting Oct. 5. In addition to the direction to plan for human return to the moon, the policy also ends NASA's existing effort to send humans to an asteroid. Work toward the new directive will be reflected in NASA's Fiscal Year 2019 budget request next year. For information about NASA's missions, programs and activities, visit: <https://www.nasa.gov>.

Companies earn small business awards



Two Stennis Space Center companies have received 2017 NASA Small Business Industry Awards for achieving or exceeding small business goals. NASA annually recognizes companies who support its small business goals. Stennis Director Rick Gilbrech presented the center awards Dec. 4. The Stennis companies now will compete against recipients from other NASA centers for agencywide awards. SaiTech Inc. was recognized with the Small Business Prime Contractor of the Year award. Manufacturing Technical Solutions Inc. received the Small Business Subcontractor of the Year award.



(Left photo) Gilbrech (l to r) stands with SaiTech Inc. President Mangala Annambhotla, Vice President Krishna Annambhotla, Program Manager Samuel G. Sumwalt, Stennis Small Business Specialist Kay Doane and Stennis Procurement Officer Gerald Norris following the Dec. 4 presentation of 2017 NASA Small Business Industry awards.

(Right photo) Gilbrech (l to r) stands with Manufacturing Technical Solutions Senior Vice President Tammie Hayes, President Paul Curd, Program Manager Catherine L. Lizana, Doane and Norris at the Dec. 4 award ceremony.

Stennis seeks developer partner for Enterprise Park

NASA has opened a search for a non-federal partner to lead in development of a 1,100-acre technology corridor called Enterprise Park at Stennis Space Center.

An official Notice of Availability (NOA) has been posted online at FedBizOpps.gov (reference NOA # 80SSC018L0004). Official responses to the Notice of Availability are due on Jan. 12, 2018. Stennis has scheduled an Industry Day on Feb. 7, 2018, where interested parties can learn more about the Enterprise Park opportunity.

The objective of the NOA is to identify a private or public entity to enter into a structured partnership with NASA to lead in the multiphased development and longterm operation of the park, located at the nation's largest rocket engine test facility. Stennis serves as the space agency's primary Rocket Propulsion Test Center for both government and commercial customers and is a "federal city" home to more than 40 federal, state, academic and commercial entities with a combined, growing workforce of approximately 5,000 people.

Development of Enterprise Park is designed to enable private sector participation in space exploration, to

support commercial space transportation activities, to promote commercial development of technologies for use in space and on Earth, and to provide opportunities for companies and other organizations to co-locate at Stennis to support the missions of existing federal city tenants at Stennis.

Stennis Space Center is located on 13,800 acres of secured government property, surrounded by 125,000 acres of leased/owned land, controlled by a perpetual easement that serves as an acoustical buffer zone for the rocket test activities. Established in 1961 to test rocket engines and stages that carried humans to the moon during the Apollo Program, NASA also tested engines that powered all 135 space shuttle missions at Stennis. The agency currently is testing engines for its new deep-space rocket, the Space Launch System, at the site as well.

Recent master planning efforts identified a need for a technology park area at Stennis Space Center, and the first phase of the Enterprise Park focuses on 1,100 acres identified as the most development ready. The property is located on the northern edge of the 13,800-acre secured area and includes sites both inside and outside the security perimeter.

Let it snow! Let it snow! Let it snow!

Stennis Space Center took on a rare look Dec. 8 as snow fell at the site. The wintery conditions lasted only one day, but it was still enough time to enjoy venturing outside and take in the white sights. B-2 Test Stand employees even enjoyed a surprise miniature snowman visitor. (Snowman photos courtesy of Nick Nugent)



1960s – NASA conducts acoustic study at Stennis

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.

On Dec. 17, 1966, the Saturn V S-IC-T rocket stage was installed on the B-2 Test Stand, and the electrical and mechanical hookup work began immediately. The test of the S-IC-T was the ultimate test of the B1/B-2 Test Stand and its support facilities.

For this test, only the east side (B-2 position) was activated so that the B-1 side would be available for use in case something were to go wrong. The NASA and Boeing test team was eager to get the test going, but there was concern about the large volume of sound that it would produce.

The big rocket would produce a 7.5-million-pound thrust and the great noise that accompanied it. The surrounding communities were also concerned about the level of noise the test was going to make. NASA knew the test program would never be welcome in Mississippi without public acceptance.

NASA had begun acoustic studies in December 1962 with the U.S. Weather Bureau and the Mississippi Test Facility Acoustic Laboratory. The tests were conducted using a giant acoustic horn. The Weather Bureau sent balloons with measuring instruments to gather data about the sound level. The tests were conducted under different atmospheric



A 1965 photo shows the acoustical air horn used by NASA to conduct noise level studies prior to rocket engine and stage testing at Stennis.

and weather conditions because the slightest variation can have a major impact on sound travel and intensity.

However, the S-IC-T stage hot fire would be the first true acoustic test. The test took place in March 1967, and the low-frequency sound produced by the test was heard as far away as Picayune. The test was a success, lasting the scheduled 15 seconds and allowing engineers to record 850 measurements of the rocket's performance.

Stennis signs licensing agreement for patented devices

Stennis Space Center Director Rick Gilbrech (seated, center) signs a licensing agreement with C-Suite Services of New Orleans on Dec. 7 to market five technologies invented and patented by agency engineers. C-Suite already reports interest in the technologies by companies outside of NASA. The licensing agreement reflects efforts by the Stennis Advanced Technology and Technology Transfer Branch to encourage and highlight patented inventions from the center. Three of the technologies included in the licensing agreement are a cryogenic butterfly valve, a conical seat valve and a piezoelectric transducer tester. All were invented by NASA engineers at Stennis and have been patented within the last five years. Their inventors attended the recent signing ceremony. Participating in the event were: (standing, l to r) Duane Armstrong, Stennis Advanced Technology and Technology Transfer Branch manager; Scott Jensen, inventor of the piezoelectric transducer tester; Kenny McCormick, inventor of the cryogenic butterfly valve; Bruce Farner, inventor of the conical seat valve; Chris Copelan, technology transfer specialist in the Stennis branch; (seated, l to r) Kevin Pollard, C-Sweet Services co-manager; Gilbrech; and Todd Thompson, C-Sweet Services co-manager.



Office of Diversity and Equal Opportunity

Understanding generational diversity is important

Diversity is the art of thinking independently together. – Malcolm S. Forbes

In today's workplace, there are multiple generations of people working and interacting together, approaching and solving problems with divergent perspectives and experiences.

Dealing with diversity in the workplace means understanding and relating effectively with people who are different than us. A type of diversity that typically is not included in discussions is "generational diversity."

For the first time in American history, there are four different generations working side-by-side in the workplace. According to a NASA presentation, the various generational groups are commonly defined as: Traditionalists (1945 or earlier); Baby Boomers (1946-64); Generation X (1965-1980); and Generation Y (1981 or later).

The way these generations communicate and work together impacts all organizations, and disruption can occur due to miscommunication, confusion, and stress. However, creating an awareness of generational strengths and workplace values can increase team productivity, creativity, and retention – turning these issues of inter-generational tension into inter-generational strengths.

At work, generational differences can affect everything, including recruiting, team-building, motivation, managing and productivity. Research indicates that people communicate based on their generational backgrounds. Each has distinct attitudes, habits, values, behaviors, etc.

Learning how to communicate with different generations can eliminate many challenges in the workplace. For instance, when considering core values, Traditionalists value

conformity, respect for authority and discipline; Baby Boomers value optimism and involvement; Gen Xers value skepticism, fun and informality; and Gen Yers value realism, confidence, extreme fun and social events. Traditionalists view work as an obligation, while Baby Boomers see it as an exciting adventure, Gen Xers see it as a contract and a difficult challenge and Gen Yers see it as fulfillment and a means to an end.

In communication, Traditionalists prefer a formal memo, Baby Boomers want in-person communication, Gen Xers want direct and immediate communication and Gen Yers want an email, voice mail or text message.

As for motivating Traditionalists, the important message is "your experience is respected;" for Baby Boomers, it is "you are valued and needed;" for Gen Xers, it is "do it your way; forget the rules;" and for Gen Yers, it is "you will work with other bright, creative people."

All of us have unique perspectives and different ways of relating. We cannot expect to work with all employees in the same way. Each generation adds value, but each has differences that are important to understand. Respect for generations goes both ways. Younger employees can learn to value the experience of their older coworkers. Likewise, older workers may benefit by embracing the fresh perspectives of their younger counterparts.

The next time you find yourself scratching your head in disbelief over the work habits of a colleague, stop and consider whether generational factors are at play. It may just provide you with the enlightenment you need to successfully manage the situation.



Stennis lights 2017 holiday tree

Stennis Space Center employees kick off the holiday season with the annual Holiday Tree Lighting Ceremony on Nov. 27 in the main lobby of the Roy S. Estess Building. In addition to comments by Center Director Rick Gilbrech and the ceremonial tree lighting, employees sang carols and enjoyed holiday treats.

Stennis employees recount experiences as FEMA volunteers

Bruce Farner had traveled to Puerto Rico previously and remembered it as a pretty green island. That was not the scene that awaited him when he returned to the area in October as one of six FEMA volunteers from Stennis Space Center.

“There was not a leaf on a tree,” he said. “The whole place was incredibly brown.”

John Stealey and Vince Pachel had experienced disastrous hurricanes firsthand as Gulf Coast residents, but the stories they encountered during their volunteer work on the islands of St. Croix and St. Thomas were heartwrenching nonetheless.

“We went to the people wherever they were and set up ‘offices’ (to register individual for disaster relief) wherever we could,” Pachel recounted. “We would listen, and they would tell their stories, open up their phones, show the pictures.”

Dao Kooamphorn did not travel far for her work as a volunteer, remaining at the FEMA Travel Service Center in Biloxi, but it was as if she had been transported to a different world as she learned and worked to assist volunteers in arranging finances.

“It was a big learning curve,” she said. “It was very stressful at first. I felt like a preschooler.”

All four NASA employees, along with colleagues Alex Elliott and Nick Cenci, answered the call following the string of major hurricanes in August and September to serve as FEMA volunteers. All six traveled from Stennis to Aniston, Alabama, in late September for training at the Department of Homeland Security (DHS) Center for Domestic Preparedness.

From there, Cenci and Farner traveled to Puerto Rico to help register people for disaster assistance. Elliott, Pachel and Stealey did the same type of work in the Virgin Islands. Kooamphorn provided critical service support to volunteers in all locations during the assistance effort.

The six were part of more than 4,400 federal employees outside of FEMA and the DHS who signed up to serve 45-day stints as volunteers after hurricanes Harvey, Irma and Maria wreaked havoc in Texas and Caribbean locations. The FEMA Surge Capacity Force represented 38 government agencies and included 112 NASA employees from various centers.

DHS created the Surge Capacity Force concept after Hurricane Katrina in 2005. It features five tiers of individuals as possible disaster works and volunteers. The first three are filled with FEMA and DHS personnel. Tier 4 opens the force to employees of other federal agencies. Tier 5 calls in state and local government employees. This year marked the first time the force has extended down to Tier 4.

(Near right photo) A group shot prior to deployment assignments shows the six NASA employees from Stennis Space Center who recently served as FEMA volunteers – (l to r) Alex Elliott, Vince Pachel, Dao Kooamphorn, Nick Cenci, John Stealey and Bruce Farner.

(Far right photo) A hand-lettered sign announces the location of the FEMA registration “office” set up by FEMA volunteers in one Virgin Islands neighborhood.

(Bottom right photo) Wild St. John donkeys seek a handout from FEMA volunteers as they travel the hurricane-lashed island.



All six Stennis volunteers traveled to Alabama not knowing how they would be used or where they would be deployed. They were told to prepare for possible austere conditions, which they thankfully did not encounter.

Still, there were difficulties, including deploying issues and spotty communication capabilities. However, Stealey reported there was never a sense of danger or threat once the volunteers arrived in the hard-hit locations. “The people were absolutely amazing,” he said.

In Puerto Rico, the volunteers worked out of Ponce on the southern coast of the island. The damage they witnessed was different from what they had experienced in Gulf Coast storms. There was little tidal surge damage but tremendous wind damage, Farner said. However, the spirit of the island was good. “People were all working to save what they could save,” he said.

The diverse group of volunteers from all walks of government life meshed well together during the experience, and the overall effort offered a positive example of government at work.

Pachel and Stealey initially traveled to St. Croix, then spent the bulk of time on St. Thomas. They were housed on a berthing vessel, which Stealey described as a cruise ship minus all the fun. Typical cruise ship amenities were shuttered; the vessel was reduced to spare living arrangements.

Back in Biloxi, Kooamphorn did not have to deal with such

living conditions, but her work featured its own challenges. As designed, volunteers would incur expenses, then have to submit a “concur” for reimbursement purposes. There could be delays, which meant volunteers faced large bills for which they had not yet been reimbursed. Add to that the fact many had very spotty phone and email capabilities needed to seek service center help, and the stress levels could rise quickly.

Despite her early learning curve, Kooamphorn learned how to help volunteers negotiate the system. By the time her time of service was done, she had been declared a “Total Jedi of the Concur Force.” She has the certificate – and the testament of grateful volunteers she helped – to prove it.

“It is like an honor of my life to do this,” Kooamphorn said of her experience. “I wanted to help. And if it is needed, I’ll help again.”

The others agreed with the sentiment, although some said they might choose a different role as a frontline responder. Still, the experience was gratifying in being able to help others in need and enlightening in gaining new appreciation for the blessings of their own lives.

“There are just so many people in need, and we are so blessed,” Pachel said. “It’s good to be able to lend a hand. We should always be ready to help, to give aid. But I would hope and pray that this is the last time this (kind of surge response) needs to be done. You just hope there’s not that many disasters like this.”





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 employees are highlighted on the following pages.



Ron Bald



Ron Bald is fairly new to Stennis Space Center, completing his first year as an attorney-adviser in the center's Office of the Chief Counsel in September. He also is new to the non-military work world, having spent all his previous years in Department of Defense positions. After retiring from the U.S. Coast Guard in 2009, Bald worked as a civil servant with the U.S. Navy Office of General Counsel as the deputy counsel for the U.S. Marine Corps Forces Reserve in New Orleans. "I had colleagues who worked for NASA and raved about the agency," he says. "So, I jumped at the opportunity to compete for an open position at Stennis." Bald now serves as a general law attorney at the center, primarily focused on employment law, ethics, environmental law, real property and administrative law. He says he enjoys the different perspective of the non-military workplace and in seeing ideas come

to life. "Our office is diligent and steadfast in our efforts to get clients a 'yes' answer," he explains. Bald's earliest space-related memory is watching the Apollo 11 moon mission, and he now looks forward to NASA once more sending astronauts beyond low-Earth orbit. "I'm looking forward to watching construction of the Deep Space Gateway (a concept vehicle that would orbit the moon and serve as a staging point for exploration missions)," he says. Bald is a native of Closter, New Jersey, a small borough in the northeast corner of the state that serves as a bedroom community for New York City. He and his wife, Hope, now live in Slidell, Louisiana, where the couple's younger son is a high school freshman. An older son is in law school at the University of Notre Dame. Both sons are Eagle Scouts, so Bald says the family spends a lot of time on scouting activities.

Michael Pannell



It took awhile for Mike Pannell to make his way to Stennis Space Center, but one could say it was inevitable that he would arrive at the site. Born in Washington, D.C., Pannell lived in various locations because of his father's work with the Pentagon before ending up in Merritt Island, Florida. There, Pannell's father worked at Kennedy Space Center – "I have a photo of him working on the Apollo 11 lunar module," Pannell says. Pannell's own journey to NASA detoured through the U.S. Air Force, Los Alamos National Laboratories and the Veteran's Administration. He worked in positions ranging from weapons director to intelligence officer to safety manager to industrial hygienist. He arrived at Stennis two years ago as a NASA occupational health officer, providing technical and contract oversight in a range of occupational health areas. He cites three "best" things about what he

hopes will be the last job of his career – dedicated people, supportive management and the history of Stennis. "I get a thrill walking the test stands," he says. Pannell looks forward to NASA's return to deep-space missions and to the continued use of the agency's technological resources in addressing weather, disaster and climate issues. And if the career journey is not impressive enough, Pannell also has found time to acquire a coffee plantation in Costa Rica, to build a nonprofit organization to help girls in remote agricultural communities receive an education and to excel as a track-and-field world Masters champion in the 400-meter intermediate hurdles, as well as a nine-time U.S. Masters champion in the event and a male Masters Athlete of the Year. He now lives in Bay St. Louis, the proud father of two Green Beret sons and one "brilliant and handsome" grandson.