National Aeronautics and Space Administration

LAGNIAPPE

John C. Stennis Space Center

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The ‘path’ to mission success

The Space Launch System (SLS) core stage Pathfinder – a replica of the actual core stage – sits on the B-2 Test Stand tarmac at NASA’s Stennis Space Center after it was rolled out of the Pegasus barge May 3. Stennis will use the Pathfinder to confirm all is ready for arrival of the actual SLS flight core stage, which will be tested prior to its launch on Exploration Mission-1. See page 3.

Perhaps you have seen the cartoon. A bearded, be-spectacled man sits in an office chair, holding up a single sheet of paper with a Rorschach ink blot on it. A framed academic degree hangs on his wall.

In front of the man sits a dog, looking up at the paper. "Whatever it is, I didn't do it," the dog is saying to the man. Ark!

Maybe you have participated in a Rorschach ink blot test at some point. Maybe not. If you pass by the B-2 Test Stand these days, you will find Stennis' own three-dimensonal version of the test in the shape of a long, battleship-grey steel tube positioned horizontally on the stand tarmac.

What exactly is that giant hunk of steel? A large telescope tube? A sculpture of an oversized Chinese finger trap toy? A giant piece of petrified penne pasta? (I bet you cannot say that three times real fast without chewing on your tongue. Ark!)

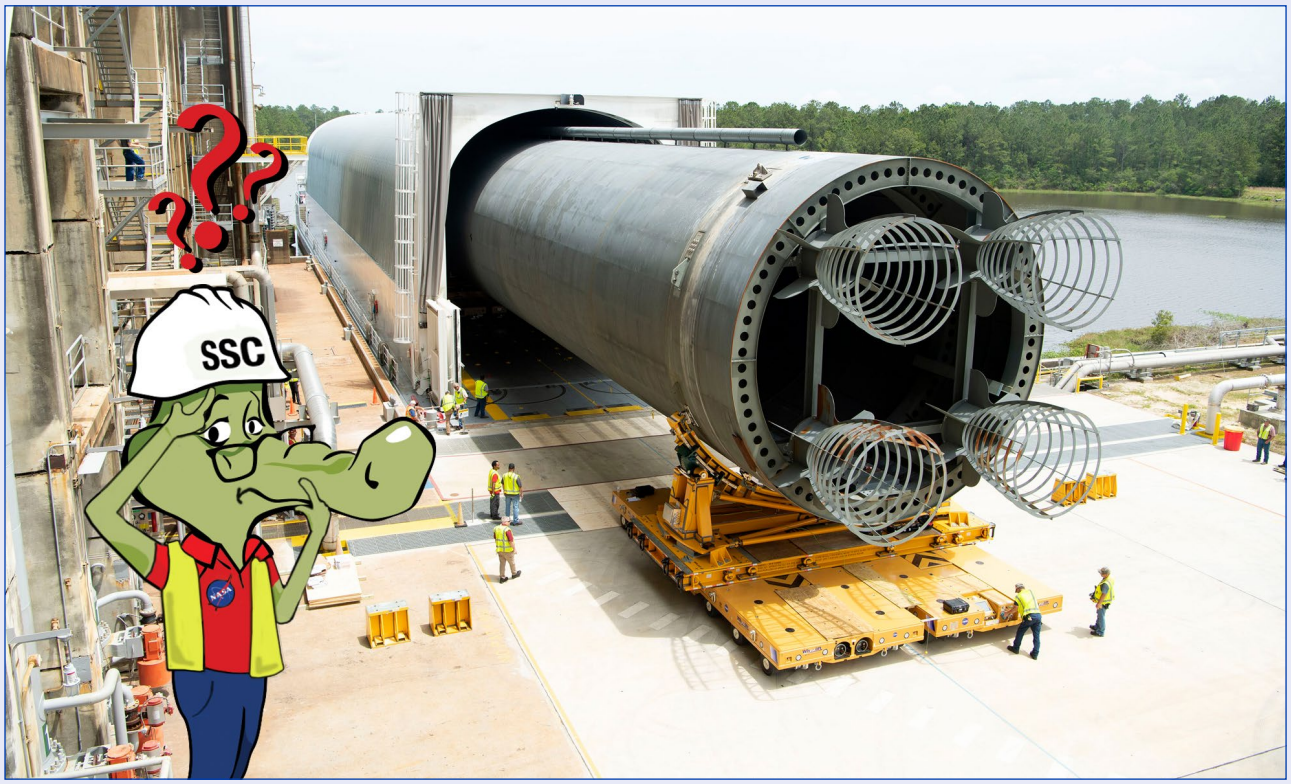
This one might be something even a *Jeopardy* champion would stumble over. And the answer is – "What is the Space Launch System core (SLS) stage Pathfinder?"

As noted in this issue (page 3), the Pathfinder is a full-scale "form-and-fit" replica of the core stage that will help power NASA's new SLS rocket. Stennis will use the Pathfinder to make sure all is ready for the SLS flight core stage to arrive for "green-run" (or flight-ready) testing. Once tested, exploration missions begin!

It is often said – the more things change, the more they stay the same. Stennis is a case in point. As with Apollo, NASA is counting on Stennis to test the new rocket that will carry humans to the Moon once more. As with the space shuttle, NASA is turning to Stennis to verify the SLS propulsion system before it launches humans on exploration missions. As more than 50 years ago, NASA is headed deeper into space than ever, ultimately to Mars, through south Mississippi.

Having the Pathfinder on site means all of that is happening sooner rather than later. As my grandgator used to say – "Hang on; tomorrow's traveling faster than bayou gossip."

So, stop a minute and take the Pathfinder "ink blot" test. What do *you* see? Well, what else could it be but the future?



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Space Launch System core stage Pathfinder arrives at Stennis

NASA's Space Launch System core stage "Pathfinder" arrives at Stennis Space Center aboard the Pegasus barge May 2. A drone photo shows Stennis test complexes in the background as Pegasus clears the lock-and-dam system to travel to the B-2 Test Stand. The Pathfinder was designed and built as a full-scale "form and fit" replica of the core stage of the new SLS rocket that will enable NASA to return astronauts to the surface of the Moon by 2024. It is the same shape, size and weight (without propellants loaded) as the actual SLS core stage, with the same center of gravity. It measures 212 feet, is 27.6 feet in diameter and weighs 228,000 pounds. Stennis work crews will use the Pathfinder through the summer months to train and practice handling, lifting and installation techniques that will be needed for the SLS core stage when it arrives for testing. At some point, teams will employ the boom crane atop the B-2 Test Stand to lift the Pathfinder from its horizontal delivery position into a vertical position and install the replica unit onto the stand. Once installed, the Pathfinder will be locked into place to ensure all stand modifications are ready for the actual SLS core stage. The current schedule calls for NASA to test the SLS flight core stage on the B-2 stand next year prior to the initial SLS Exploration Mission-1 launch. The Pathfinder does not include all of the fittings and connections that will be on the core stage. However, the locations of these are marked to allow Stennis crews to verify that all stand fittings and connections are in the proper places for the core stage. Once Stennis has completed its training and practice procedures with the Pathfinder, the replica will be loaded back onto the Pegasus barge for transport to NASA's Kennedy Space Center in Florida. Work crews at that center also will use the replica to practice handling procedures. NASA contracted with Radiance Technologies and Dynetics to build the Pathfinder. Final welding and assembly of the replica was completed by G&G Steel at their Warrior River Steel facility in Cordova, Tenn.

Following its arrival on the Pegasus barge, the Space Launch System (SLS) core stage Pathfinder was rolled out onto the B-2 Test Stand at Stennis Space Center on May 3. The Pathfinder rolled out of Pegasus using self-propelled modular transporters. Arrival of the Pathfinder marked a milestone as Stennis preps for testing the actual flight core stage that will help power NASA's new SLS rocket on its maiden Exploration Mission-1. NASA recently completed six years of work preparing the B-2 Test Stand for testing the SLS core stage prior to its flight.

Blended team receives award for unprecedented AR-22 engine test series at Stennis

An integrated test team received a prestigious national achievement award April 26 for a historic series of AR-22 rocket engine tests performed last summer at Stennis Space Center.

The Rotary National Award for Space Achievement (RNASA) Foundation presented its annual team Stellar Award to the AR-22 test crew, which included engineers and operators from NASA, the Defense Advanced Research Projects Agency (DARPA), The Boeing Company, Aerojet Rocketdyne and Syncom Space Services. The blended team was recognized for its unprecedented achievement of performing 10 AR-22 engine tests in a 240-hour period in June/July 2018.

"It is hard to put into words just how remarkable this test achievement is and how much I appreciate the team and the monumental effort they put forth," said Mark Hancock, the NASA engineer at Stennis who managed the AR-22 test project. "This test series should have been extremely difficult, almost impossible. However, it went off virtually without a hitch. The team made it look easy."

The testing accomplishment was not without challenges, however. Team members collaborated for 10 months, beginning in August 2017, to plan and prepare for the historic series. "This is hard," Fred Kennedy, director of DARPA's Tactical Technology Office, said during a presentation in April 2018. "It may not work. In fact, it's likely to not work."

The testing was designed as part of DARPA's effort to develop an experimental spaceplane (XSP) – the Phantom Express – as a low-cost, reusable system for delivering small satellites into orbit. The goal of the effort is to build a vehicle that can be launched on short notice and with rapid turnaround times. The Boeing Company is building the Phantom Express, which will be powered by Aerojet Rocketdyne's AR-22 engine, assembled using materials and components from early versions of the much-tested and highly reliable space shuttle main engine.

To demonstrate the quick-turnaround capability of the new vehicle, DARPA turned to Stennis with a never-before-attempted challenge – perform a series of 10 100-second tests on the AR-22 engine in a 10-day period (240 hours).

One of the key challenges from the outset was to reduce the time needed to dry the AR-22 engine and to perform needed inspections following each test. The AR-22 engine uses liquid oxygen and liquid hydrogen at super-cold temperatures and high pressures, the two mixing to form a highly combustible fuel. Of course, mixing oxygen and hydrogen in the right proportion also creates water.

Following a test, the engine has to be "dried" of any moisture that may have accumulated internally. To do so, pressurized nitrogen or air is pushed through the system and engine.

Various members of the AR-22 rocket engine test project gather following completion of the historic test series on the A-1 Test Stand at Stennis Space Center last July. The entire blended test project team was not available for the photo.

The procedure is a must – and typically takes 18 to 72 hours. The blended team at Stennis was able to use knowledge and expertise acquired during more than 30 years of space shuttle main engine testing to reduce the drying/inspection time to six hours. The quicker turnaround process was planned down to 15-minute increments.

Team members conducted a pair of preliminary tests but were still finalizing turnaround procedures when the 10-test series kicked off June 26. All went well until a lightning strike June 29 as the team was preparing for the fifth hot fire. The strike caused substantial electrical/control systems damage at the A-1 Test Control Center and on the stand.

Team members responded with what one person described as a "herculean" effort of troubleshooting and repair, working through the night with multiple shifts. Additional lightning forced delay of the fifth test even after repairs were completed, and lightning struck again on July 2, this time with minimal damage. Despite the obstacles, testing resumed and continued through the July 4 holiday.

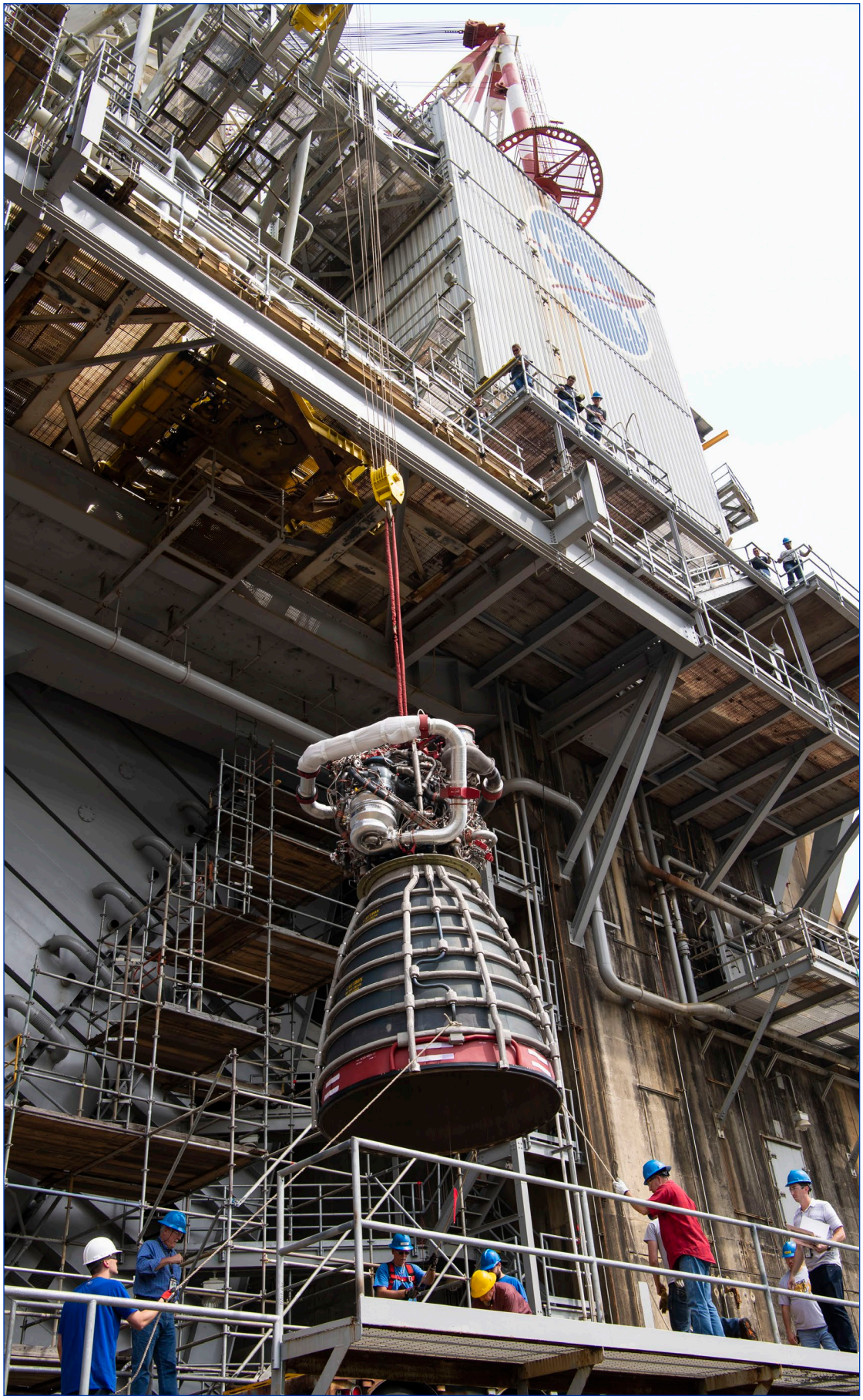
Just before noon on July 6, the Stennis test team conducted the 10th – and final – test in the turnaround series. Although it had been 11 calendar days since the first test of the series, all 10 of the 100-second hot fires had been completed in a 240-hour period – with a little more than an hour to spare.

Stennis Director Rick Gilbrech and others praised the blended team for the accomplishment, which kept the Phantom Express vehicle on track for its planned test flights in 2021. In addition to the test team itself, Gilbrech cited the critical support provided by crews at the Stennis high-pressure gas facility, high-pressure water facility and cryogenic facility as well.

"All the credit goes to the great men and women who make up our exceptional team here at Stennis," Hancock said. "We have extraordinary resources for all of our projects. Stennis is truly remarkable in that we have an extremely brilliant – and skilled – workforce at our disposal at all times. None of our projects would experience the levels of success we continually enjoy if this were not the case."

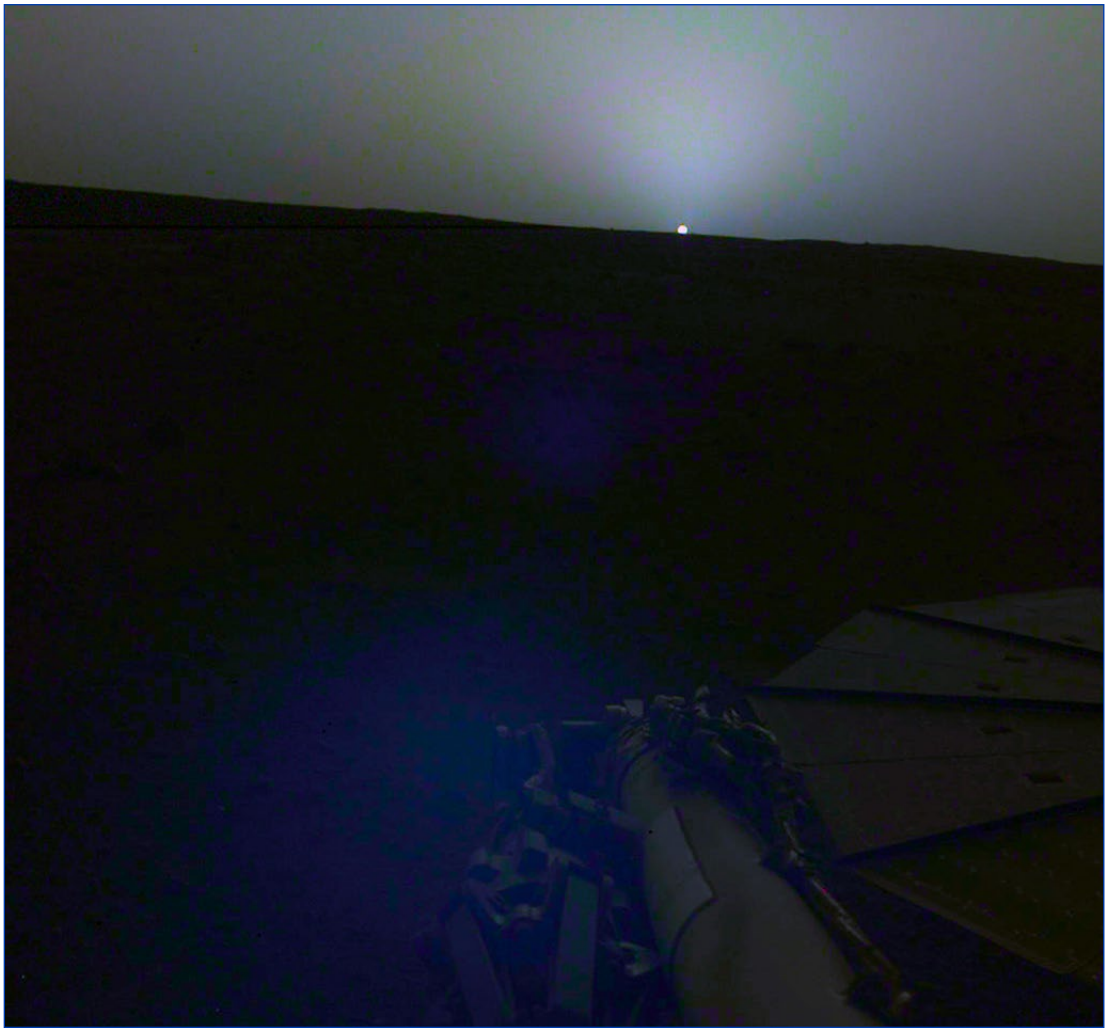
As stated on its website, the RNASA Foundation was founded by the Space Center Rotary Club of Houston in 1985 to "recognize outstanding achievements in space and create greater public awareness of the benefits of space exploration." In addition to the team recognition, it presents annual Stellar Awards in three individual age categories. Nominations for the awards are reviewed by a panel of scientists, managers, engineers and academicians who select the accomplishments that hold the greatest promise for furthering future activities in space.

RS-25 flight engine removed from A-1 stand



An A-1 Test Stand crew at Stennis Space Center removes RS-25 flight engine No. 2062 on April 22. NASA conducted a successful test of the engine April 4, marking a major milestone in development of its new Space Launch System (SLS) rocket. Four RS-25 engines will help power the SLS rocket at launch. Stennis is charged with testing all of the SLS flight engines, as well as components and modifications for the engine. The April 4 “hot fire” was the culmination of four-plus years of testing for the RS-25 engines. With the test, NASA completed acceptance testing of all 16 former space shuttle main engines that will help launch the first four SLS missions, developmental and flightworthy testing for new controllers (plus one spare) to be used by the engines for the first four missions and a 51-month test series at Stennis that demonstrated RS-25 engines can perform at the higher power level needed to launch the super heavy-lift SLS rocket. The RS-25 rocket engine test era began at Stennis on Jan. 9, 2015, with a 500-second – more than 8 minutes – hot fire of RS-25 developmental engine No. 0525 on the A-1 stand. NASA tested the first SLS flight engine on March 10, 2016. Altogether, the agency has conducted 32 developmental and flight engine tests for a total of 14,754 seconds – more than four hours – of cumulative hot fire – all on the A-1 stand at Stennis

InSight captures Mars sunset



NASA's InSight lander used the Instrument Deployment Camera on the end of its robotic arm to image this sunset on Mars on April 25, 2019, the 145th Martian day, or sol, of the mission. This was taken around 6:30 p.m. Mars local time. This color-corrected version more accurately shows the image as the human eye would see it. Click here to see both the "raw" and color-corrected images. The first mission to send back such images was the Viking 1 lander, which captured a sunset on Aug. 21, 1976. Since then, both sunrises and sunsets have been recorded by the Spirit, Opportunity and Curiosity rovers, among other missions.

NASA in the News

Lander records audio of Mars 'quake'

NASA's Mars InSight lander has measured and recorded for the first time ever a likely "marsquake." The faint signal, detected by the lander's Seismic Experiment for Interior Structure instrument, was recorded on April 6. This is the first recorded trembling that appears to have come from inside the planet, as opposed to being caused by forces above the surface, such as wind. Scientists still are examining the data to determine the exact cause of the signal. "InSight's first readings carry on the science that began with NASA's Apollo missions," said InSight Principal Investigator Bruce Banerdt of NASA's Jet Propulsion Laboratory in Pasadena, California. "We've been collecting background noise up until now, but this first event officially kicks off a new field: Martian seismology!" Scientists hope InSight's seismometer, which the lander placed on the planet's surface on Dec. 19, 2018, will enable them to learn how other rocky worlds, including Earth and the Moon, formed. Listen to audio of this likely marsquake at: https://youtu.be/DLBP-5KoSCc. For more about InSight, visit: https://www.nasa.gov/insight.

Astronomers assemble view of universe

Astronomers have put together the largest and most comprehensive "history book" of galaxies into one single image, using 16 years' worth of observations from NASA's Hubble Space Telescope. The deep-sky mosaic, created from nearly 7,500 individual exposures, provides a wide portrait of the distant universe, containing 265,000 galaxies that stretch back through 13.3 billion years of time to just 500 million years after the big bang. The faintest and farthest galaxies are just one ten-billionth the brightness of what the human eye can see. The universe's evolutionary history is also chronicled in the sweeping view. The portrait shows how galaxies change over time, building themselves up to become the giant galaxies seen in the nearby universe. This ambitious endeavor, called the Hubble Legacy Field, also combines observations taken by several Hubble deep-field surveys, including the eXtreme Deep Field (XDF), the deepest view of the universe. To view the image, visit: https://bit.ly/2V2TJEl. View a video zoom-out of the new image, online at: https://go.usa.gov/xmU8m.

Pair of leadership groups visit test stands

Members of the Hancock County Leadership Class (above) stand in front of the B-1/B-2 Test Stand during their visit to Stennis Space Center on April 24. A week earlier, on April 17, Hancock County Youth Leadership Academy participants (below) also visited the rocket engine test site. They are shown in front of the A-2 Test Stand. Both groups had the opportunity to tour various Stennis facilities and learn about ongoing work at the center. Members of the Hancock County Youth Leadership Academy also learned about career and internship opportunities at Stennis and had a chance to view an Aerojet Rocketdyne RS-68 engine test on the B-1 Test Stand.

Stennis observes annual Earth Day

Kathy Haley and Evelyn Abrams, NASA Shared Services Center employees at Stennis, visit an exhibit featured during an onsite Earth Day expo April 25. At the exhibit, Jeanette Delcambre with A^{2}Research on site offered free plants and free advice on the importance of bee-friendly pesticides. Each year, the center hosts an Earth Day expo to showcase environmentally focused information and presentations, and acquaint employees with eco-friendly merchandise. Earth Day was launched in the United States in 1970 and now is observed worldwide every April 22.

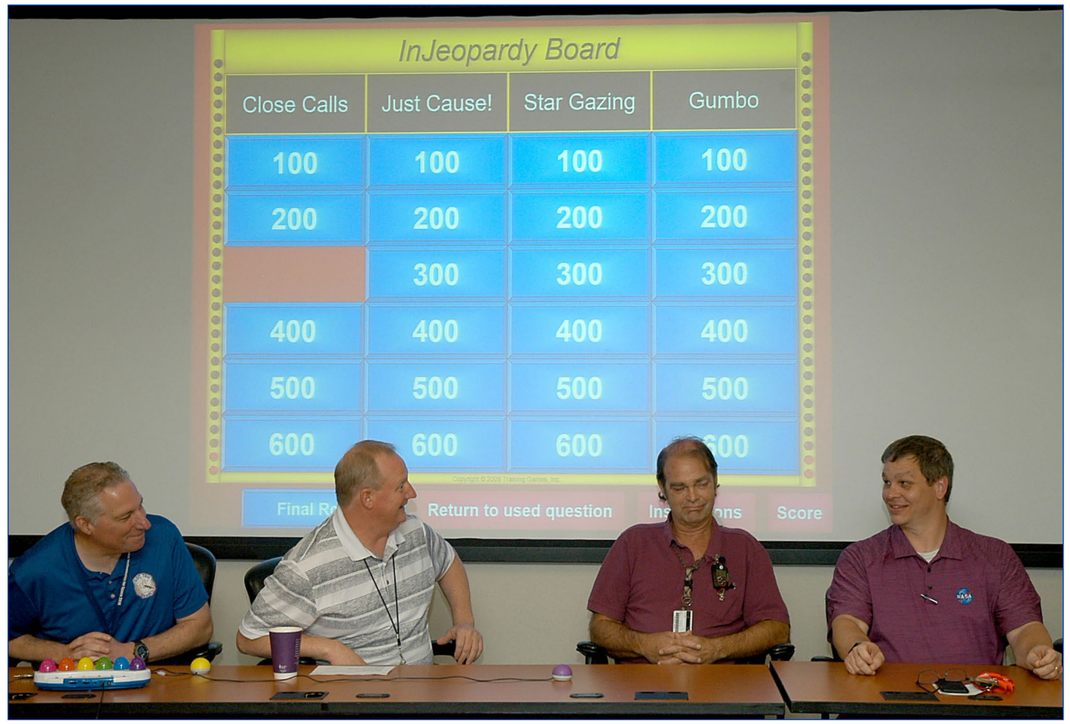
Holocaust Day of Remembrance

Dara Bramson, a doctoral student in aging studies at Tulane University, speaks to Stennis Space Center employees during an onsite Holocaust Days of Remembrance program May 2. Holocaust Days of Remembrance are observed annually. The theme of this year's is "Beyond Religious Boundaries: Learning from the Holocaust."

2019 Astronaut class visits Stennis

Members of the 2019 NASA Astronaut Candidate Class pose in front of the B-1/B-2 Test Stand during their visit to Stennis Space Center on April 17. During a full day of activities, the astronaut candidates received briefings about the work of Stennis, as well as the NASA Shared Services Center located on site. They also met with senior management from both centers and toured the Aerojet Rocketdyne Engine Assembly Facility and Stennis propulsion test complexes. The candidates had a chance to view a test of the Aerojet Rocketdyne RS-68 rocket engine on the B-1 Test Stand.

Stennis hosts annual Health and Safety Day activities



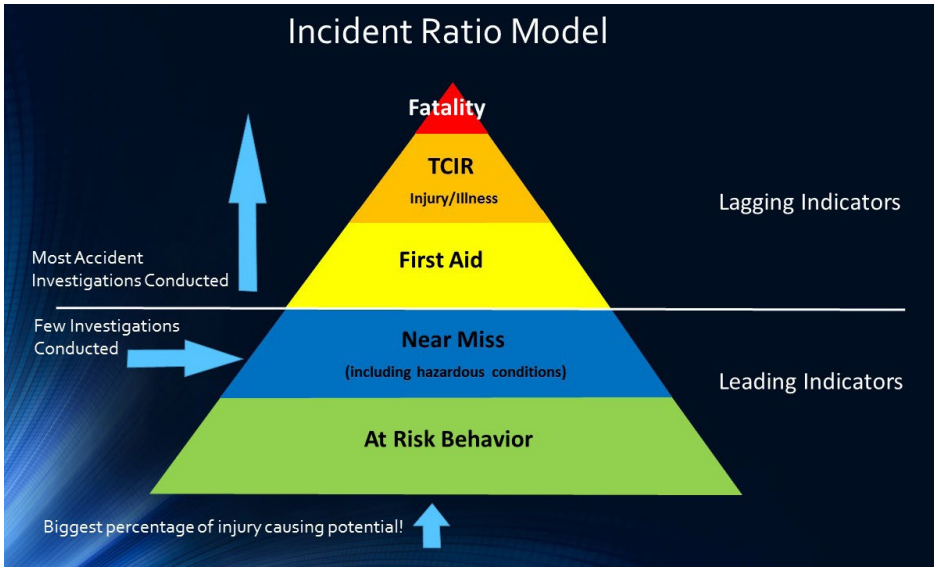
Stennis Space Center participated in a variety of activities during a Health and Safety Day emphasis April 17. The day began with a Safety Day stretch session (top left photo). During the day, employees also were able to visit various exhibits to learn about health and safety (bottom right photo). They also had a chance to hear a presentation by Curtis Weber, who spoke about his electrocution as a construction worker at age 17 when safety precautions regarding electrical engineering were ignored (bottom left photo). The day also featured a safety-themed "InJeopardy" game played by Stennis leaders (top right phot). Health and safety are an ongoing emphasis at Stennis, which has earned status as a Voluntrary Protection Program Star site for it commitment to helping employees live and work safely.

Company employs near miss/good catch safety system

Note: The following is part of a regular focus on safety and health at Stennis Space Center. It was written by Ronnie Good, Todd Sandeman and Craig Bramley of SaiTech, Inc.

In 2019, the SaiTech Information Technology Services (ITS) Contract team developed a near miss/good catch internal reporting system. This new approach is the result of SaiTech finding new ways of being proactive.

Employees are encouraged to identify hazards and look for leading indicators of potential accidents and injuries. SaiTech is fortunate that we have a very good accident or injury rate, but as a small contract, when the contract team suffers a mishap it has a significant impact on the OSHA recordable rates.



The focus of the near miss/good catch reporting system is for SaiTech team members to stand up for safety and report incidents they witness, or that personally impacts them, such as walking distracted with a cell phone or stumbling on stairs.

Near miss/good catch is an enhancement to current reporting methods and not a replacement to the Close Call Reporting System (CCRS), the NASA Mishap Information System (NMIS) or the NASA Safety Reporting System (NSRS). The terms are defined as:

- **Near miss** is defined as an accident waiting to happen. The only difference between a near miss and an accident is often a fraction of an inch or a second in time. Most accidents are preceded by multiple near misses.

- **Good catch** is recognizing an unsafe condition, action, defect or flawed piece of equipment and acting to prevent an event from occurring. It can be as simple as one employee notifying a supervisor that there is an unsafe condition present or, even better, saying there is an unsafe condition and "this is what I just did about it."

SaiTech encourages all near misses to be reported immediately so that notifications can be made timely to other eam members about the hazard. Reporting the situation allows the company to track the patterns, pinpoint the problem, and take corrective action. Reporting a near miss/good catch may be done anonymously. Its purpose is NOT to chastise workers or to collect evidence for disciplinary procedures.

Some examples of near misses:

- Almost tripped on extension cord.
- Stumbled on stairs.
- Slipped on floor but did not fall.
- Almost slammed drawer on my hand.
- Walking distracted with cell phone.
- Almost hit by an opening door.
- A heavy object fell off the shelf.
- Leaned back in chair and almost tipped over.

Ultimately, SaiTech wants all ITS team employees to be aware of their surroundings and to report situations they encounter or experience.

The bottom line is that it is critical to pay attention to even the most minor mishaps or observances. The new SaiTech near miss/good catch reporting system helps employees identify those early warning signs that can prevent significant injury.

An engaged safety culture keeps Stennis Space Center rocketing forward!

To contribute to this page, contact:

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1970 – A defining year for NASA and 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.

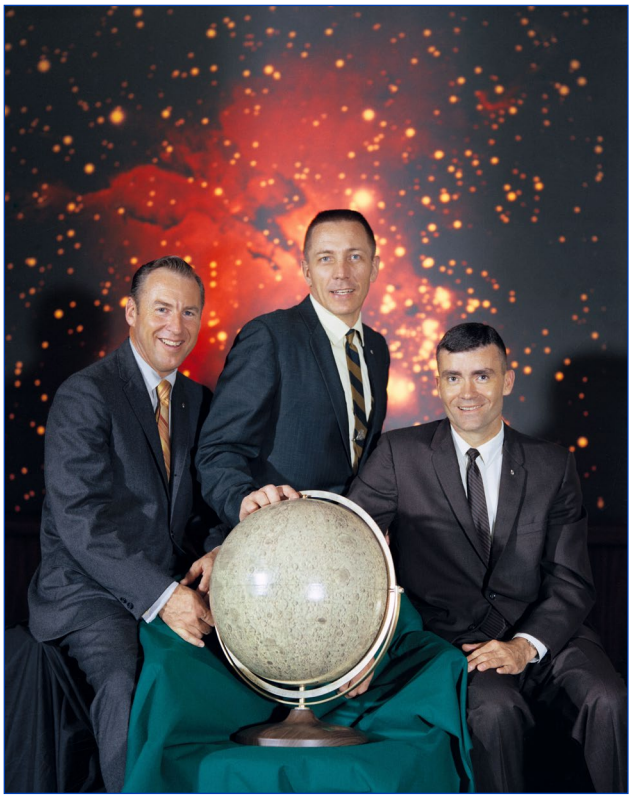
1970 was a defining year in the history of what is now Stennis Space Center. The Mississippi Gulf Coast was still reeling from the devastating blow of Hurricane Camille, the Apollo Program was ending and NASA budgets were being cut.

The workforce at the Mississippi Test Facility (MTF) had been cut back to under 2,000 workers. Facility Manager Jackson Balch jumped on the offensive and began working with Sens. John C. Stennis of Mississippi and Allen Ellender of Louisiana, as well as NASA Administrator Thomas Paine and the White House, to keep MTF viable.

Balch began to talk to other government agencies about locating to the facility, including the Earth Resources Observation Systems Program, the U.S. Navy, the U.S. Coast Guard and the Bureau of Commercial Fisheries. However, communications were confused, and agencies were being contacted multiple times by different people from MTF, Marshall Space Flight Center and NASA Headquarters, harming the chance to gain a commitment from the agencies.

On Feb. 3, 1970, less than six months after Hurricane Camille hit the Mississippi Gulf Coast, NASA Deputy Administrator George Low stated while visiting Marshall that MTF "would be reduced to a caretaker status, employing no more than 150-200 persons." That prediction meant 1,800 people could be laid off from MTF.

In the midst of the possible serious cutbacks at MTF, Apollo 13 launched successfully from Cape Canaveral, Fla., on April 11, 1970, with one of the Mississippi Gulf Coast's own on board, Fred Haise. Haise, along with James Lovell Jr. and John Swigert, were on their way to the Moon for the third lunar landing attempt. However, two days into the mission, oxygen tank No. 2 blew up, causing tank No. 1 also to fail.



Apollo 13 crew members pose for a NASA portrait prior to their mission. Shown are mission commander Jim Lovell (l to r), command module pilot John Swigert and lunar module pilot Fred W. Haise.

The command module had no electricity or water, and the crew was 200,000 miles from Earth. News agencies flocked to the homes of the astronauts to get family reactions, which included the home of Haise's family in Biloxi. MTF dispatched a representative to the home of Haise's mother and helped the family by fielding all questions and phone calls for them from April 14-17.

Due to NASA ingenuity and quick thinking, the Apollo 13 crew was safely returned home, and Biloxi celebrated the return of Haise with a celebration on May 30, 1970.

The Mississippi Test Facility managed many successes that year and the following one, including securing the engine testing assignment for the Space Shuttle Program and having many non-NASA agencies locate offices to the facility. Today, Stennis Space Center continues testing rockets for the journey to the Moon and Mars.

Hail & Farewell

NASA bids farewell to the following:

Katie Kopcso	AST, Experimental Facilities Techniques	Center Operations Directorate
Timothy Rustine	AST, Safety and Mission Assurance	Safety and Mission Assurance Directorate
Michael Vallan	Attorney-Adviser	Office of the Chief Counsel

Office of Diversity and Equal Opportunity

Celebrate Asian/Pacific Islander Americans heritage

According the 2019 Presidential Proclamation on Asian American and Pacific Islander Heritage Month, the contributions by Americans of Asian and Pacific Islander descent are firmly woven into the diverse fabric of the nation. Asian American and Pacific Islander Heritage Month celebrates the remarkable accomplishments by Americans of Asian and Pacific Islander heritage that have enriched the country and helped define its history. These Americans bolster the economy as entrepreneurs, business owners and employees who initiate and expand opportunities for their families, communities and country. Their languages, art, cuisine and other cultural elements have enriched the American experience, and many have fearlessly answered the call of duty to defend freedom as members of the Armed Forces.

A rather broad term, Asian/Pacific Islander encompasses all of the Asian continent and the Pacific islands of: Melanesia (New Guinea, New Caledonia, Vanuatu, Fiji and the Solomon Islands), Micronesia (Marianas, Guam, Wake Island, Palau, Marshall Islands, Kiribati, Nauru and the Federated States of Micronesia) and Polynesia (New Zealand, Hawaiian Islands, Rotuma, Midway Islands, Samoa, American Samoa, Tonga, Tuvalu, Cook Islands, French Polynesia and Easter Island).

According to the article *The First Asian Americans* by C.N. Le on the Asian-nation.org website, the first Asians have been in the U.S. for a long time. The history of Asians in the U.S. is the history of dreams, hard work, prejudice, discrimination, persistence and triumph.

As presented in the excellent PBS documentary series *Ancestors in the Americas*, the first Asians to come to the western hemisphere were Chinese Filipinos who settled in Mexico. Eventually, Filipino sailors were the first to settle in the U.S. around 1750 in what would later be Louisiana. Around 1840, to make up for the shortage of slaves from Africa, the British and Spanish brought over slaves or "coolies" from China, India,and the Philippines to islands in the Caribbean, Peru, Ecuador and other countries in South America.

However, the first large-scale immigration of Asians into the U.S. did not happen until 1848. Lured by tales and dreams of making it rich on "Gold Mountain," the Gold Rush was one of the factors that led many Chinese to come to the U.S. to find their fortune and return home rich and wealthy.

As portrayed in the excellent PBS documentary *Becoming American – The Chinese Experience*, the Chinese also worked as small-time merchants, gardeners, domestics, laundry workers, farmers and, starting in 1865, as railroad workers on the famous Transcontinental Railroad project.

At its peak, 9,000 to 12,000 Chinese worked for the Central Pacific in some of the dirtiest and most dangerous jobs. Although there are no official records, some sources claim that up to 1,000 Chinese died during the project as a result of avalanches and explosive accidents as they carved their way through the Sierra Mountains.

Even though the Chinese workers performed virtually all of the hardest, dirtiest and most dangerous jobs, they were only paid 60 percent of what European immigrant workers got paid. The Chinese workers actually went on strike for a few days and demanded that they get paid the same amount as the other ethnic groups. Officials of the Central Pacific were able to end the strike and force the Chinese workers back to work by cutting off their food supply and starving them into submission.

The railroad project was completed on May 10, 1869, and a famous ceremony was staged where the two railroad lines met in Promontory Summit, Utah. There is a well-known photograph in which everybody is posed in front of two train engines facing each other. Although a handful of Chinese workers were allowed to participate in the final ceremony and a small group were personally congratulated by Stanford Leland and his partners who financed the project, perhaps not too shocking, the Chinese workers were forbidden from appearing in the famous photograph of the ceremony, even though without their work and their lives, the project may never have been completed.

After they returned to California, the Chinese increasingly became the targets of racial attacks and discriminatory legislation because their labor was no longer needed and whites began seeing them as an economic threat. This anti-Chinese movement, which was accompanied by numerous anti-Chinese riots, lynchings and murders, culminated with the Chinese Exclusion Act of 1882. This act barred virtually all immigration from China and prevented all Chinese already in the U.S. from becoming U.S. citizens, even their American-born children. For the first time in U.S. history, a specific ethnic group was singled out and forbidden to enter the U.S.

This month honors the more than 20 million Asian Americans and Pacific Islanders who call America home. It recognizes the achievements by Americans of Asian American and Pacific Islander heritage in education, business, science, the arts, government and the Armed Forces, which have strengthened the nation. Their story is celebrated as a unique part of the American story.

Reference: Le, C.N. 2019. "The First Asian Americans" Asian-Nation: The Landscape of Asian America. Access online at: http://www.asian-nation.org/first.shtml (May 8, 2019)

Faces of Stennis

Each month, Lagniappe will feature an employee 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.

Mark Hancock

Mark Hancock always envisioned working at Stennis Space Center. Growing up in nearby Nicholson and Picayune, Hancock recalls the low rumble and rattle of engine tests. “It seemed like the whole ground would shake,” he says. Such experiences peaked Hancock’s interest in NASA and space. He obtained a mechanical engineering degree from Mississippi State University in 2003 and began work with a site contractor as a design engineer. He filled various contractor roles before joining the NASA team as a systems engineer in 2017. Now a project manager, Hancock currently heads the AR-22 rocket engine test project and serves as deputy project manager of the B-2 Space Launch System (SLS) core stage test project. For him, the best part of working at Stennis is the chance to help shape the future through such projects. “We work with and around cutting-edge technology, and a lot of engines/components we test eventually make their way to space,” he says. “Knowing we all have a part in that is very fulfilling.” Last summer was particularly fulfilling as his AR-22 team performed 10 engine tests in a 10-day period, an unprecedented accomplishment. He now looks forward to the first SLS core stage test and the first launch of the new rocket.

It is just the type of career Hancock imagined as he climbed his boyhood tree house to catch a glimpse of an engine test steam cloud. However, Hancock had another reason for pursuing his particular career path as well. While his father grew up near Stennis, his mother was from Kansas. She arrived to the Gulf Coast when her father accepted a job at NASA’s Michoud Assembly Facility in nearby New Orleans. As Hancock explains, “If not for NASA, I guess my parents never would have met.”