



John C. Stennis Space Center

Volume 6 Issue 12

www.nasa.gov/centers/stennis

December 2011

Stennis ranks as one of best places to work

NASA remains one of the best places to work in the federal government. In a survey released by the Partnership for Public Service, a nonprofit, non-partisan organization, the agency retains its ranking of No. 5.

“Those of us at NASA know it’s a great place to work,” NASA Administrator Charles Bolden said. “We are the world leader in space exploration and cutting-edge science missions, and contribute to the economic vitality of our great nation. We reach for new heights, and challenge our employees to carry out missions to benefit humankind. What job could be better than that?”

Stennis Space Center stands at the top of the list of



NASA Administrator Charles Bolden (l to r), NASA Chief Human Capital Officer Jeri Buchholz, Stennis Space Center Director Patrick Scheuermann and NASA's Goddard Space Flight Center Director Rob Strain display certificates designating NASA and Stennis as best places to work in the government.

Director Patrick Scheuermann said. “The individuals who work at Stennis take pride in what they do, and they know that their efforts truly make a difference.”

NASA centers. “They were ranked second out of 240 organizations within the federal government,” Bolden said. “I’m particularly proud that Stennis was ranked first in the government for employee empowerment, fairness and support for diversity.”

The rankings draw on the U.S. Office of Personnel Management’s Employee Viewpoint Survey of more than 150,000 executive branch employees.

“I am extremely honored to lead such an exceptional workforce here at Stennis Space Center,” Stennis

NASA conducts key J-2X test



NASA conducted a key stability test firing of the J-2X rocket engine on the A-2 Test Stand at Stennis Space Center on Dec. 1, marking another step forward in development of the upper-stage engine that will carry humans deeper into space than ever before. The J-2X will provide upper-stage power for NASA’s new Space Launch System. The Dec. 1 firing focused on testing the new engine’s combustion stability, a critical area of development. Data from the test will help engineers understand more about the engine’s capabilities and how to improve upon them.



**Stennis’ 2011
Combined
Federal Campaign**

Goal

\$190,000

To-date

\$200,268

(105.4% of goal)

From the desk of
Amy Grose
 Chief Counsel
 Office of Chief Counsel
 Stennis Space Center



December is a natural time to reflect on the past calendar year while anticipating the new year right around the corner. In the Stennis Office of Chief Counsel, 2011 has been a dynamic, challenging and fun year!

In many ways, a glance back at 2011 reveals just a blur of frenetic activity, interspersed with brief periods of celebration. Stennis had not only a busy and productive 12 months, but what I think will deservedly be considered a “banner year.” You have accomplished a great deal, at times against the odds, and those of us in the Office of Chief Counsel were not a bit surprised at the recent survey results that ranked NASA, as a whole, and Stennis, specifically, as two of the very best places to work in government.

It may reflect on the occasional weird tendencies of attorneys that although we, too, dreaded a potential government shutdown in the spring, the actual legal frenzy that accompanied the month or two before the deadline was like a legal issues obstacle course. When it was over, it felt like an adrenaline-laced victory lap.

How fortunate that we segued from the appropriations deal right into the final stages of the multiyear effort to seamlessly transition the former Mississippi Army Ammunition Plant and integrate that huge amount of industrial and commercial space into Stennis. That project is illustrative of both the relentless effort of

all of Stennis, particularly the Center Operations Directorate, and the adaptability and efficiencies of the Stennis federal city.

Our office was a member of the Stennis-wide team working on the integration, and the significance of Stennis’ accomplishment didn’t really set in until the transition date: July 1, 2011, for those of you who missed it. A date that had loomed ominously for so long finally arrived and ushered in both success and a new era for Stennis Space Center.

The federal city – both the concept and its effective administration – is another one of those areas, like the Stennis buffer zone, where the Office of Chief Counsel feels a proprietary interest. There has been quite a bit of activity in the buffer zone this past year, and the necessity of preserving its critical function as an acoustical buffer is stronger now that larger engines featuring varying atmospheric acoustics are already in the test stands. The zone so enhances the operational flexibility for NASA and its federal city residents every day, and in such a variety of ways, that its core purpose (to provide an acoustical buffer for rocket engine testing) can easily be forgotten. But, no more!!

In looking forward to a challenging and exhilarating 2012, we foresee continued dynamics of growth and change in the federal city alongside robust testing and applied science efforts. The buffer zone and the test complex, with a combination of NASA work and a broad and expanding portfolio of commercial and non-NASA partners, should keep Stennis counsel actively engaged!

Happy New Year!

Amy E. Grose

Happy Holidays

FULFILLING NASA'S EXPLORATION MISSION

Stennis prepares to test J-2X powerpack

For engineers working on the J-2X engine program, installation of the upgraded J-2X powerpack on the A-1 Test Stand on Dec. 5 had to feel like a long-awaited holiday gift.

The powerpack consists of a gas generator and turbopumps and is a critical component for the new engine. It is responsible for pumping liquid hydrogen and liquid oxygen into the engine's main combustion chamber to produce the needed thrust capability. Arrival and installation of the next-generation engine component marked the culmination of more than two years of extensive modification work to prepare the A-1 stand for the critical test series. The major work effort began after NASA engineers completed an initial series of tests on a heritage J-2 engine powerpack in mid-2008.

Data from that test series helped upgrade the powerpack that will be used on the J-2X rocket engine being developed to carry humans deeper into space than ever before. The J-2X is being developed to provide 294,000 pounds of thrust, an increase from the 230,000-pound capability of the original J-2 engine used in the Apollo Program. Testing of the upgraded J-2X powerpack is scheduled to begin in January 2012 at NASA's Stennis Space Center, in south Mississippi. The J-2X engine is being developed by Pratt & Whitney Rocketdyne for NASA's Marshall Space Flight Center in Huntsville, Ala. It will provide upper-stage power for NASA's new Space Launch System.



Stennis employees prepare to install the J-2X powerpack on the A-1 Test Stand.



Pegasus barge arrives at Stennis

NASA's Pegasus barge arrived at Stennis Space Center on Nov. 16, delivering space shuttle main engine ground support equipment to the south Mississippi facility. Since 1999, the barge has been used to deliver external tanks for space shuttle flights from Michoud Assembly Facility in Louisiana to Kennedy Space Center in Florida. The barge left with its shuttle cargo from Kennedy for perhaps the last time Nov. 10. From 1975 to 2009, Stennis Space Center tested every main engine used on all 135 space shuttle flights.

NASA continues testing of AJ26 rocket engines

A team of engineers at Stennis Space Center conducted a test firing on an Aerojet AJ26 flight engine Nov. 17, providing continued support to Orbital Sciences Corporation as it prepares to launch commercial cargo missions to the International Space Station. AJ26 engines will be used to power Orbital's Taurus II rocket for International Space Station cargo supply missions. Orbital is part of NASA's ongoing Commercial Orbital Transportation Services contract. The AJ26 flight engines are being tested on the E-1 Test Stand at Stennis. After the engines are successfully tested and inspected, and test data is reviewed, the engines are shipped to the Wallops Flight Facility launch site in Virginia for installation on the Taurus II rocket.



Stennis 2011 – a year of celebrating the past and future

For Stennis Space Center, 2011 was a time for celebrating a multi-faceted history of rocket engine testing, Earth science research and federal city growth, as well as a future role in testing engines that will power the nation's future space exploration missions.

"This past year was an affirmation of all that Stennis Space Center is about," Director Patrick Scheuermann said. "On one hand, we celebrated 50 years of support to the nation's space exploration program and of the growth of our federal city concept. On the other hand, we continued to move forward in testing the NASA and commercial engines that will enable the future of the space program and set the stage for additional growth of our site."

The nation's largest rocket engine test facility marked a number of milestones during the year. In 2011, Stennis:

- Named NASA's main administration building on-site in memory of late Stennis Director Roy S. Estess.
- Was recognized as the best place to work within NASA and one of the very best places to work within the federal government.
- Continued to provide critical research and technology support through its Applied Science and Technology Project Office.
- Became the first NASA center to implement an electronic health records system.
- Cut the ribbon on a new cryogenic facility.
- Partnered with the state of Mississippi on an innovative artificial reef project.
- Released a new *Food for Thought* education curriculum.
- Participated in its first-ever live downlink with the International Space Station.
- Saw the INFINITY at NASA Stennis Space Center science and education project move forward.
- Engaged in various outreach activities, including Astro Camp sessions, annual FIRST (For Inspiration and Recognition of Science and Technology) robotics competitions and an interactive, multicenter outreach effort in New York City.

Throughout 2011, the Stennis family reflected on the 50-year history of the site. Activities included a Legends Lecture Series inviting past leaders back to the center to recount their experiences, Hour in History sessions focused on various aspects of Stennis development, a public Open House, a sitewide celebration for employees and a 50th Anniversary Gala dinner event. NASA and other Stennis resident agencies also buried a time capsule of items to be opened on the 100th anniversary.

NASA publicly announced plans on Oct. 25, 1961, to



(Top left photo) NASA Administrator Charles Bolden (left) and Stennis Director Patrick Scheuermann view an Aerojet AJ26 engine test at Stennis' E-1 Test Stand on Feb. 7. (Bottom left photo) An area student prepares to ask a question of International Space Station astronauts during a live downlink at Stennis Space Center on Aug. 18. (Top right photo) Space shuttle Atlantis soars from Kennedy Space Center on the STS-



135 mission – the last flight of the 30-year Space Shuttle Program – on July 8. (Middle right photo) A commissioned portrait of late Stennis Director Roy S. Estess is unveiled during a May 2 ceremony naming a center facility in his memory. (Bottom right photo) An 85,000-gallon liquid hydrogen tank is installed atop the A-3 Test Stand on July 25, marking a milestone in construction of the test structure.

build a facility in south Mississippi to test the engines and rocket stages needed to carry humans to the moon during the Apollo Program. When that program ended in the early 1970s, Stennis focused on growing as a federal city where resident agencies could share resources to fulfill their individual missions. Soon, Stennis also was charged with testing engines for the new Space Shuttle Program. From 1975 to 2009, Stennis tested space shuttle main engines, including those used on all 135 missions.

The last of those shuttle missions launched in July. In September, NASA announced plans for a new Space Launch System (SLS). It also announced engines for the new spacecraft – the J-2X and RS-25D/E engines – will be tested at Stennis.

Five of the RS-25 D/E engines will be used to power the core stage of the new SLS. The J-2X is being developed as an upper-stage engine that will carry humans deeper into space than ever before. Just days after Atlantis returned to Earth to mark the end of the Space Shuttle Program, Stennis conducted its first test on a J-2X developmental engine.

"The future is set for Stennis Space Center for several decades to come," Scheuermann said. "As in the past, this facility will be at the forefront, powering the dreams of this nation's space exploration program."

Stennis also continues to test engines, such as the Aerojet AJ26, to power commercial flights into space. With NASA committed to partnering on commercial flights into low-Earth orbit, Stennis figures to play a central role in testing the engines needed for such efforts.

In addition, the center plans to build on its federal city concept. On Aug. 24, NASA marked the official transfer of 1.6 million square feet of facility space from the U.S. Army to Stennis Space Center, setting the stage for years of major expansion. The property transfer increases Stennis facility space by about 33 percent. The space will be used to attract employers that complement NASA's mission, to support new government tenants and to offer added space for current on-site work. The growth promises to have a major economic impact on the surrounding region.

"This really is an exciting time," Scheuermann said. "NASA is poised to build on its past successes and launch space exploration missions unlike any ever attempted. Likewise, Stennis is poised to build on five decades of excellence and federal city growth to play a major role in the future of space exploration."

NASA tests atmospheric acoustics at Stennis



Note: For 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 issue of Lagniappe highlights a moment in the history of the south Mississippi rocket engine test center.

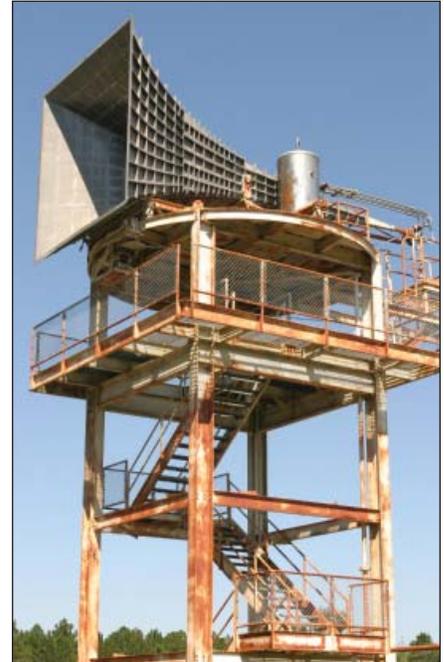
A giant horn began operation in December 1962 to simulate the rumbling of rocket engine firings at NASA's Mississippi Test Facility, now John C. Stennis Space Center.

The horn, mounted on a 40-foot tower, was designed and built at NASA's Marshall Space Flight Center in Huntsville, Ala., where it was used for two years. Part of the Advanced Atmospheric Sounding Station, the horn has a 12x12-foot nozzle.

Once moved to Stennis, the horn was set up to investigate atmospheric conditions and the propagation of sound to assure that when rocket engine test firings began at the site, the resulting sound would not prove an inconvenience to surrounding residents.

The Raytheon Co. in Burlington, Mass., operated the horn and took sound measurements up to 10 miles from the source. The U.S. Weather Bureau furnished data on at-

Beginning in 1962, NASA used a giant horn mounted on a 40-foot tower to prepare for rocket engine testing at Stennis Space Center. The horn was sounded repeatedly, with measurements taken at various distances, to ensure the noise of a rocket engine test firing would not disturb area residents. Measurements were taken as far as 10 miles away. Stennis conducted its first rocket engine test in 1966 and continues testing engines for NASA and commercial companies.



mospheric conditions during the times of the soundings. The Tulane University School of Engineering in New Orleans evaluated, analyzed and correlated data from both sources.

All three organizations operated under contracts awarded by Marshall Space Flight Center.

NASA honors Stennis contractor with agency award

NASA recognized a Stennis Space Center company with its prestigious Large Prime Contractor of the Year Award during the agency's Small Business Symposium in Herndon, Va., on Nov. 3.

Jacobs Technology Inc. has held the Facility Operating Services Contract (FOSC) at Stennis since 2007. The contract encompasses a range of areas, including food services, engineering, education support, multimedia services, visitor center support and facility maintenance.

"I was very proud when Jacobs Technology Inc. was selected to receive this award," NASA Stennis Space Center Procurement Officer Rob Harris said. "Jacobs Technology Inc.'s achievements and recognition are indicative of the high caliber contractor support we have at Stennis."

NASA Administrator Charles Bolden and NASA Office of Small Business Programs Associate Administrator Glenn Delgado presented the award to Jacobs Senior Contracts Specialist Deborah Case and Jacobs FOSC General Manager Dan Pierre during the Nov. 3 gathering.

"This is a notable achievement for Jacobs FOSC and an affirmation of the team's close partnership with NASA



NASA Administrator Charles Bolden (l) and NASA Office of Small Business Programs Associate Administrator Glenn Delgado (r) present the agency's Large Prime Contractor of the Year Award to Dan Pierre and Deborah Case of Jacobs Technology Inc., which holds the Facility Operating Services Contract at Stennis Space Center. Pierre is general manager of the Stennis contract. Case is senior contracts specialist for Jacobs.

and the small business community at Stennis Space Center," Pierre said. "I am excited about the future as we continue to support the Stennis federal city and NASA's space flight mission that will power the future of America's space program."

Office of Diversity and Equal Opportunity

Evergreen tree tradition has long history

"There are exactly as many special occasions in life as we choose to celebrate."

Robert Brault

The tradition of having an evergreen tree as a symbol of Christmas goes back past recorded written history.

The Druids in ancient England and Gaul, and the Romans in Europe both used evergreen branches to decorate homes and public buildings to celebrate the winter solstice. Over the years, these traditions were adopted by Christians as part of their seasonal celebration.

Trees used specifically to celebrate such an occasion are mentioned in the early 1600s in Germany and surrounding countries. Families would set up trees in a prominent location of their home and decorate them with colored paper, small toys, food and sometimes candles. As these people emigrated, they carried this tradition with them.

Into the 1900s, many trees were decorated with strings of popcorn, homemade cards and pictures, cotton to look like snow, candy in all shapes and sizes and, occasionally, fancy store-made glass balls and hand-blown glass figurines. Candles were sometimes used, but they often caused devastating fires, and many different types of candle holders were devised to try to prevent tree fires. Electric tree lights were first used just three years after Thomas Edison had his first mass public demonstration of electric lights in 1879. The early tree lights were hand-made and quite expensive.

Today, tree ornaments can be found in nearly every size, color and shape imaginable, and they are used to decorate millions of Christmas trees throughout the world.

Much like the tree ornaments, humans come in every size, color and shape. Much like the ornaments on the tree, we all can shine bright, being unique and different, but coming together in unison to accomplish the task. Regardless of backgrounds, where we came from or what we look like, we can draw from those unique abilities to provide the best possible outcome. To appreciate the diversity of co-workers would be the best gift we could ever give, and it would last all year long.

On Dec. 1, 2011, the First Family lit the National Christmas Tree in Washington, D.C. To read President Obama's remarks on this 89-year-old tradition, visit <http://www.whitehouse.gov/the-press-office/2011/12/01/remarks-president-lighting-national-christmas-tree>.

Hail & Farewell

NASA bids farewell to the following:

Carol West	Contract Specialist Office of Procurement
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And welcomes the following:

Justin Smith	Security Specialist Center Operations Directorate
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Lagniappe is changing!

Beginning January 2012, the monthly Lagniappe newsletter from Stennis Space Center will be available solely through electronic means. This will save taxpayer money and allow for a more colorful and appealing presentation. Individuals will be able to enjoy Lagniappe each month in one of two ways – via the Stennis website or through email delivery of a PDF copy. To receive email delivery of Lagniappe, send email address to: ssc-pao@mail.nasa.gov. To access current and past monthly Lagniappe issues online, visit www.nasa.gov/centers/stennis/news/publications/index.html.



Stennis lights annual holiday tree

Stennis Space Center Director Patrick Scheuermann and other NASA employees at Stennis Space Center celebrated the lighting of the facility's annual holiday tree in the Roy S. Estess Building on Nov. 28. Participants enjoyed caroling and refreshments during the annual lighting ceremony.

LAGNIAPPE
 is published monthly by the
 Office of External Affairs - Public Affairs
 at NASA's John C. Stennis Space Center

NASA PUBLIC AFFAIRS OFFICE
 Attn: LAGNIAPPE
 Mail code IA10
 Building 1100, Room 304
 Stennis Space Center, MS 39529
 or call 228-688-3749



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National Aeronautics and
 Space Administration

John C. Stennis Space Center
 Stennis Space Center, MS 39529

Official Business
 Penalty for Private Use \$300

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FIRST LEGO® League marks 10 years in Mississippi

Forty-five teams of Mississippi students in grades 5-8 marked the 10th year of FIRST (For Inspiration and Recognition of Science and Technology) LEGO® League activity in the state during the 2011 championship tournament in Hattiesburg on Dec. 3.

Stennis Space Center is the primary sponsor of the tournament, providing funding and a variety of volunteers and mentors. At the competition, the Central Mississippi Robotics team from Brandon won the most prestigious award of the tournament, the Champion's Award. The Gladiators team from Armstrong Middle School in Starkville placed second. The Shadow Ninjas team from Armstrong Middle School won the Core Values Award for teamwork.

More than 400 Mississippi elementary and middle school students participated in the 2011 competition. FIRST LEGO® League is designed as a hands-on method to increase student knowledge of science, engineering, technology and mathematics.



In partnership with the LEGO® Group, registered FIRST LEGO® League participants use the MINDSTORMS™ NXT system to build robots prior to each year's annual competition. In turn, during the daylong tournament, younger visitors are able to enjoy a play table full of traditional LEGO® pieces and all sorts of construction possibilities.



The 2011 Mississippi FIRST LEGO® League Championship Tournament attracted more than 1,000 participants and guests to the Lake Terrace Convention Center in Hattiesburg.



FIRST LEGO® League competitors from Stokes-Bear Magnet Elementary School in Columbus urge their robots on during the annual Mississippi tournament Dec. 3.