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John C. Stennis Space Center

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Stennis marks rocket engine testing, space shuttle anniversaries

A space shuttle main engine test April 21 at NASA Stennis Space Center marked the 40th anniversary of the first rocket engine test at the site. The firing also marked the 25th anniversary of NASA's STS-1, the first space shuttle mission (see Page 5).

Then called the Mississippi Test Facility, the center conducted its first test on April 23, 1966. That historic test was on a S-II (second) stage, a cluster of five J-2 engines that powered the Saturn V rockets that took America's Apollo missions to the moon.

NASA and its contractor employees take part in a picnic sponsored by Space Flight Awareness.

Astronauts Chris Hadfield and Chris Ferguson join engineers in SSC's Test Control Center during the engine test.

From the desk of

Dr. Richard Gilbrech

Director,
Stennis Space Center

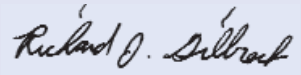
April kicked off with the annual Special Olympics and concluded with the 40th anniversary of the first test at Stennis – two major events that were conducted superbly by the Stennis team. Although "April showers" didn't cooperate with the planned public test firing of the space shuttle main engine to commemorate the 40th anniversary of rocket engine testing at Stennis Space Center, we did have an excellent Space Flight Awareness event. Hopefully, the tasty shrimp, the great music by the astronaut band, Max Q, and the fellowship helped offset the disappointment we felt at not being able to share our trade with the public. Not to worry, there will be ample opportunities to come.

April also marked the 25th anniversary of the first flight of the space shuttle, and May is a historical month for both NASA and Stennis. President John F. Kennedy made his historic speech on May 25, 1961, that laid out the plan for sending astronauts to the moon. This led Dr. Werner Von Braun and Senator John C. Stennis to pursue the construction of a large rocket engine test complex in south Mississippi. On May 17, 1963, the first tree was cut to begin clearing the test site.

Since that first Saturn stage test on April 23, 1966, Stennis has ensured the safety of our astronauts by testing and proving flight-worthy the rocket engines they ride on. We look forward to continuing this tradition with the planned launch of Space Shuttle Discovery in July and future testing of the next generation of moon rockets.

We should also remember to be mindful of our own personal safety in the workplace. As our kids get out of school and summer activities get into full swing, we need to remain focused on doing our work safely and also to consider the safety of our families at home and while on vacation.

Let's have a great summer, be safe and continue the remarkable accomplishments that will lead to future anniversaries.



INFINITY science center receives state funding

Architectural design of INFINITY at NASA Stennis Space Center

INFINITY at NASA Stennis Space Center recently received an overwhelming vote of confidence by Mississippi lawmakers. On April 14, Governor Haley Barbour signed into law House Bill 1634 appropriating $6 million for the project. The non-profit MAST Inc., made up of area business leaders, spearheaded the effort to convince state legislators of the merits of the project, and have also launched an aggressive private-sector capital campaign. "NASA and MAST Inc. have worked hard to create a center dedicated to encouraging future scientists, mathematicians and engineers that will help fill the pipeline to grow the high-tech sector of the state's economy," said Leo Seal, chairman of the MAST Inc. Board of Directors.

INFINITY will be Mississippi's first interactive science center. Upon entry to the 63,000-square-foot, two-story facility, the first stop is the Welcome Center where visitors are oriented, plan their day and purchase tickets. For travelers on Interstate 10 who want to just check things out before committing to a stay, they can breeze through the 4,000-square-foot gallery called Science Express – a quick, fun and free taste of science activities and an introduction to the larger experience at INFINITY. After obtaining a ticket for about the price of a movie, the next stop is the 3-D Immersive Theatre – INFINITY's signature experience. The exhilarating, eight minute, 3-D media event is the introduction to INFINITY and helps visitors decide how to explore INFINITY.

*See **INFINITY**, Page 5*

FULFILLING THE VISION FOR SPACE EXPLORATION

StenniSphere engine exhibit takes on new mission

An engine on display at StenniSphere, the visitor center at NASA Stennis Space Center, may find new life as NASA prepares to return to the moon. It's just one example of how the agency is building on its past successes in pursuit of the nation's bold exploration vision.

Technicians load the XRS-2200 Linear Aerospike Engine on a trailer, preparing it for its move to Stennis Space Center's rocket engine test complex. The engine had been on display at StenniSphere, the visitor center at SSC, until engineers called for its components as part of preparing for NASA's return to the moon.

Tested at SSC from 1996 until 2001, the XRS-2200 Linear Aerospike Engines were built to power the X-33, an experimental, half-scale, sub-orbital flight demonstrator for NASA's Reusable Launch Vehicle program. When the program ended, the Aerospike engine was installed at StenniSphere, where it remained until April 24.

NASA engineers called for its removal so the liquid hydrogen and liquid oxygen pumps and valves could be removed and possibly used to assemble a test article called the J-2X powerpack.

The pumps and valves on the Linear Aerospike Engine are identical to those on the J-2 engine, which powered the second and third stages of the Apollo program's Saturn V rocket. NASA plans to use a new "J-2X" version of the J-2 engine again on the vehicles it plans to launch to the moon, and eventually to Mars and beyond.

"This will help validate some of the testing for this new program," said NASA's Gary Benton, J-2X project manager at SSC. "Why go and spend the money and time to build new pumps when these are already here?" Engineers often test the pumps first when developing a new engine, "so when they fire the engine for the first time, they reduce the likelihood of a pump failure that could damage the engine."

*See **AEROSPIKE**, Page 7*

On the Shoulders of Giants

A panel of Apollo Program propulsion project managers presented "On the Shoulders of Giants," a series of technical seminars at SSC April 25. They discussed their experience developing and testing rocket engines for the Saturn booster vehicle, the Command and Service Module and the Lunar Module. The presenters were, from left, Clay Boyce, Bob Biggs, G.R. Pfeifer, Tim Harmon, Jerry Elverum and Paul Coffman.

New gate will limit access to test complex

Stennis Space Center employees soon must pass through a new guard gate on Saturn Drive to enter the test complex, and a new badging system will control access to the area. The new procedures will control access to all testing facilities, ensuring the safety of both employees and visitors.

When the gate becomes operational, both current and new badge backdrops will be accepted in the initial phase. In the second phase, personnel requiring permanent access through the gate will be re-badged with the new backdrop. Later, the third phase will include the use of card readers to automate access to the test complex.

Saturn Drive gate to test complex

To receive a permanent badge to enter the test complex, employees must have an office located within the test complex area, or have a job that requires entry to the complex at least once per week. Eligible employees must then receive the required training for each facility in the complex where access is needed.

For those not eligible for permanent access, temporary badges may be issued for periods of up to one year. Individuals must also receive the required training for each facility.

"Escort required" badges may also be issued, however an employee with the proper permanent badge for the facility must accompany the escorted individual at all times.

Carpool drivers will receive a "carpool placard" from the guard on entry that must be returned when exiting the complex. Carpool drivers will only be allowed to drop off and pick up passengers in "G" (general) designated areas as defined by current procedures. A placard is not a substitute for a test complex badge and cannot be used for entry in to any of the test complex facilities.

Bicyclists will be treated like other passenger vehicles and must present a badge for entry, however the test complex area is not recommended for a routine exercise route. Joggers should not use the gate, as it is not designed for pedestrian traffic. Travelers to Building 5100 and the H-1 Development Complex will be required to use Leonard Kimble Road, through the Mississippi Army Ammunition Plant, to access the area.

More information will be provided to employees as it becomes available.

Stennis Space Center housing park transferred to FEMA

Effective April 14, NASA Stennis Space Center officially transferred management of the Bay Village trailer community in Bay St. Louis, Miss., to the Federal Emergency Management Agency.

NASA transferred Bay Village's operations and maintenance agreement to FEMA and its contractor. Residents will see no changes in service, according to Rob Harris, NASA's deputy procurement officer. Harris wrote the contract for Bay Village, and has helped oversee the trailer community's life, from implementation to "handing over the keys" to FEMA.

The process of establishing the park was set in motion shortly after Hurricane Katrina struck in August 2005.

Nearly a quarter of Stennis Space Center's work force lost homes to the storm, and there was a desperate need for housing in the region.

On FEMA's behalf, NASA executed the project to house 168 families in a safe, well-designed site.

The legal teams at Stennis Space Center and FEMA worked together to draft the interagency agreements to accomplish the goal.

"The priority was and is still taking care of people," Harris said. "NASA had an exit strategy from the beginning. Now the management of the park can go back into the hands of the experts."

Bay Village's first resident moved in Dec. 19. Ninety-seven Stennis Space Center families were housed there in the beginning. The number has dropped to about 70, proof that Bay Village is serving its purpose as a well-managed, safe waypoint on the road to returning displaced Gulf Coast residents to permanent homes.

"This is a great example of two government agencies with totally different missions working together to take care of people," Harris said, "then transferring the authority and responsibility where it belongs. We see this as a positive example of what we're capable of doing."

SSC leaders participate in space shuttle anniversary

Stennis Space Center senior management and engine testing personnel traveled to Washington on April 26 to mark the 25th anniversary of STS-1, NASA's first space shuttle flight.

On April 21, 1978, Stennis Space Center began testing the Space Shuttle Main Propulsion Test Article, a complete simulation of the space shuttle's main propulsion system including an external tank and three space shuttle engines. That test helped pave the way for the successful launch of STS-1 on April 12, 1981.

Pictured at the Smithsonian Institute's National Air and Space Museum are, from left, Director, Science and Engineering Directorate, Miguel Rodriguez; Stennis Space Center Director Richard Gilbrech; Jody Knight, NASA Test Operations Group; Terry Addlesperger, NASA's lead facilities manager for the propulsion test complex at Stennis; Gary Bennett, NASA Test Operations Group; and Rocky Pullman, captain of the NASA tugboat. Attending, but not pictured, are: SSC Deputy Director David Throckmorton; Dave Epperson, NASA aerospace technologist, electronics instrumentation systems; Dave Geiger, site manager, Pratt & Whitney Rocketdyne; and Jim Wahl, director of operations, Pratt & Whitney Rocketdyne.

INFINITY

Continued from Page 2

Twenty thousand square feet are dedicated to two main galleries called Earth and Space.

The Earth gallery will help visitors understand the dynamic interactions between our planet's varied land surfaces, its vast oceans and its ever changing atmosphere. Visitors will come to understand the Earth as an intricate system of systems.

The Space gallery will transport visitors beyond our own cradle of life and help them understand the Earth's relationship to our solar system and to the universe.

The primary goals for INFINITY are to inspire the next generation to take up the important work of exploration and to enhance science literacy among the general public.

Fred Haise, Apollo 13 astronaut and MAST Inc. board member, believes those are two very important goals. Like the Governor's Commission on Rebuilding which cites INFINITY as critical to the Coast becoming a Tier One destination, Haise says, "INFINITY is an important resource that should feature prominently in the landscape of the new Coast."

Engine test marks a first

An engine developed to demonstrate advanced rocket technologies for future launch vehicles ran the full duration of 27 seconds during a May 2 test at NASA Stennis Space Center. The test on the Integrated Powerhead Demonstrator engine was the first long-duration test at three power levels: 80 percent, 85 percent and 90 percent. Technologies developed through the IPD project may benefit NASA's Vision for Space Exploration to return humans to the moon, paving the way for eventual journeys to Mars and beyond. The project is managed by the U.S. Air Force Research Laboratory at Edwards Air Force Base in Calif., in cooperation with NASA's Marshall Space Flight Center in Huntsville, Ala. Industry partners include Aerojet and Pratt & Whitney Rocketdyne.

Annual Old Timers' Day is May 19

NASA Stennis Space Center will celebrate its annual Old Timers' Day on Friday, May 19, beginning at 4 p.m. at the Cypress House pavilion. Former and current SSC employees, regardless of their organizational affiliations or length of service, are invited to attend. Because of numerous address changes following last year's hurricane season, many SSC retirees may not receive their invitation in the mail. Employees are encouraged to help spread the word to retirees.

The SSC Recreational Association Old Timers' Club sponsors this event. For information, call Jeanne Kellar at (228) 688-3043.

SSC celebrates Earth Day

Stennis Space Center celebrated Earth Day on April 20, with exhibits from the SSC Natural Resources Team, Mississippi State County Extension Service and the Mississippi Audubon Society.

Topics included native wildlife, invasive species control, ornamental landscaping, insect and pest control, tax deductions from landscape lost in last season's storms and more.

Pictured above, John Kendrick of Mississippi Space Services (left) shows NASA's David Lorance a bird feeder made from recycled materials.

Favres were among first to settle the area surrounding SSC

Editor's Note: *Archaeologist Dr. Marco Giardino of NASA's New Business Development Office at SSC provides this LAGNIAPPE column dedicated to the history of Stennis Space Center and the surrounding area.*

Napoleon Baptist Church

On Dec. 18, 1767, the British government granted Jean Claude Favre, an expert interpreter of the local Indian languages, 500 acres on the East bank of the Pearl River, which later became the town of Napoleon. The town was one of the five that relocated to make way for the construction of SSC.

Jean Claude's son Simon, became the most prominent citizen of Hancock County and was an interpreter of Muskhogean. Simon was Commandant of the Pearl River under the Spanish. He was appointed as Justice of the Peace for the U.S. government in 1811, and approved numerous land grants along the East Pearl.

Simon is believed to have built the first house and store in Hancock County at Napoleon; the store eventually became the back of the Napoleon Baptist Church. Six miles south of Napoleon was the site of Simon Favre's other land claim, which eventually became the town of Pearlington. His descendants fought in the Civil War, owned sawmills and one in particular moved to Green Bay to win more than a few football games.

National Women's Health Week observed in May

From the Office of Diversity and Equal Opportunity

National Women's Health Week was founded seven years ago by the United States Department of Health and Human Services to promote awareness in women on manageable steps they could make to have a longer, healthier and happier life. The week immediately following Mother's Day was chosen as the official timeframe for the National Women's Health Week since people's attentions were focused towards women's issues at that time.

This year, National Women's Health Week is May 14-20. The Department of Health and Human Services has organized a Women's Challenge to promote awareness in each woman to take appropriate healthful action that is right for her. On a local level, community health centers, hospitals and other providers will participate by offering preventative health screenings.

The Women's Challenge for 2006 is an eight-week event in which an individual or a team (men are welcomed) can register for one of six different virtual routes where you can explore the country without leaving town. You move along the route based on your physical activity that you log into the website. By registering for this event, you can receive a free pedometer, a tracking log to record your physical activity, motivational e-mails and progress reports. For a map of the routes and to register, visit www.4woman.gov/whw/woman.

There are several activities planned in the local area in Mississippi and Louisiana. In Laurel, Miss., the Family Health Center will have blood pressure screening, blood glucose monitoring, breast exams and health education material available. The center will be open 8 a.m.-5 p.m. May 18. For more information, call Laura Valentine at (601) 425-3033, ext. 112.

On May 20, the Family Planning Program of the Louisiana Office of Public Health will sponsor a Women's Health Walk at Woldenberg Park in New Orleans. The walk is to support healthy lifestyles. More information can be found by calling the Louisiana Office of Public Health, Family Planning Program at (504) 568-5450.

NASA employees and families enjoy annual Crawfish Boil

NASA's Jim Huk and Bob Heitzmann prepare heaps of crawfish for NASA employees and their families at the annual NASA Crawfish Boil held April 28 at SSC.

AEROSPIKE

Continued from Page 3

The Linear Aerospike Engine was moved to the E-4 test stand at SSC, where it will be disassembled and the pumps and valves shipped to Canoga Park, Calif., where Pratt & Whitney Rocketdyne engineers will inspect it and decide whether to test it again. Pratt & Whitney Rocketdyne owns the design of the J-2 engine.

"The J-2X project office at Marshall Space Flight Center definitely wants to take a look at this hardware, because they want to use very similar hardware on the new J-2 engine," Benton said.

SSC's A-1 test stand, currently configured to test space shuttle main engines, will be refurbished and modified for testing the powerpacks starting in October and continuing through 2007. The first powerpack series is scheduled to be tested in January 2008, and the second powerpack series the following year. The first full J-2 engine is scheduled to begin testing in July 2010.

Hail & Farewell

NASA welcomes the following to SSC:

Bradley Messer, Systems Engineering & Integration
Michelle Craft, Center Operations
Lavaniel Ward, Center Operations
Mike Kersanac, Center Operations
Ray Nichols, Systems & Test Integration

AROUND NASA

■ **NASA announces 14th space station crew:** NASA astronauts Michael Lopez-Alegria and Sunita Williams and Russian cosmonaut Mikhail Tyurin have been named as the 14th crew of the International Space Station. Expedition 14 is scheduled to begin this fall.

Lopez-Alegria, a veteran of three space flights, will command Expedition 14 and serve as the NASA station science officer for the six-month mission. He and Tyurin, a veteran station crew member from Expedition 3, are in training to launch aboard a Russian Soyuz spacecraft in September 2006. Tyurin will serve as flight engineer and Soyuz commander. Williams will join Expedition 14 in progress and serve as a flight engineer, after traveling to the station on space shuttle mission STS-116. This will be Williams' first space flight.

■ **NASA launches satellites for weather, climate, air quality studies:** Two NASA satellites were launched April 26 from Vandenberg Air Force Base, Calif., on missions to reveal the inner secrets of clouds and aerosols, tiny particles suspended in the air. CloudSat and Calipso (Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations) will eventually circle approximately 438 miles above Earth in a sun-synchronous polar orbit, which means they will always cross the equator at the same local time. Their technologies will enable scientists to study how clouds and aerosols form, evolve and interact.

■ **NASA names Worden new Ames center director:** NASA Administrator Michael Griffin has announced that Simon P. "Pete" Worden will be the next director of NASA's Ames Research Center. Worden, a retired U.S. Air Force brigadier general, is a research professor of astronomy at the University of Arizona, Tucson.

■ **NASA launches soon to be broadcast in high-definition:** NASA and the national television network HDNet have teamed up to bring TV coverage of space to a new level: high definition. Space shuttle launches through 2010 – as well as some of the agency's unmanned launches – will be broadcast in the highest quality television format available, known as HDTV. HDTV provides a quality image at least twice the resolution of standard television.

■ **Viking Program celebrates 30 years:** Langley Research Center and the Jet Propulsion Laboratory are co-hosting a technical conference June 22 commemorating the Viking 30th Anniversary. Thirty years ago this July, the Viking 1 Lander made its historic landing on Mars to study atmospheric and soil composition, meteorology and seismology. Viking 2 joined its partner on Mars two months later. The crafts provided a catalog of more than 50,000 images from the Martian surface and from orbit. Managed from Langley Research Center, Viking was a collaborative effort. The Jet Propulsion Laboratory built the orbiters and later managed the science mission. Glenn Research Center, known then as NASA Lewis, designed the Atlas/Centaur rockets.

NASA takes part in Space Day at PRCC

Pearl River Community College in Poplarville, Miss., sponsored its first annual Space Day on May 2 with the help of StenniSphere, the visitor center at NASA Stennis Space Center. South Mississippi middle and high school students and PRCC faculty and students kicked off the day with the launch of an Estes model rocket, toured exhibits that included a Moon Rock and footage of rocket engine tests at SSC, and interacted with StenniSphere's astronaut mascot (right).

PRCC alumnus Ronnie Rigney spoke to students about his career and opportunities with NASA, and how his PRCC education prepped him for higher education and his job as Deputy Director of the Project Directorate at SSC.

NASA welcomes its newest Explorer School in Mississippi: Lillie Burney Elementary School in Hattiesburg

For more information about the NASA Explorer School program, visit:
http://www.explorerschools.nasa.gov/portal/site/nes

Astro Camp Plus caters to teens with in-depth activities

Astro Camp, the popular summer day camp at NASA Stennis Space Center, is launching a new camp designed specifically for students age 13-15: Astro Camp Plus.

Two one-week sessions for teens will be offered this summer, June 19-23 and July 17-21. Keeping with Astro Camp's theme of "Moon, Mars and Beyond," the sessions will focus on activities that engage campers in hands-on activities, computer learning experiences, onsite field trips and presentations by Stennis Space Center engineers and scientists.

"We developed Astro Camp Plus to hold the interest of teens," said Maria Lott, Astro Camp director. "The sessions are designed to match the school curricula at the sixth- through ninth-grade levels, incorporating computer technology and requiring the kids to come up with more sophisticated solutions. It should keep them on their toes."

Astro Camp uses the activities to teach math and science principles and explore science- and space-related career possibilities. Its themes vary from year to year, but the goal for every camp is that students have fun while learning the basics of rocketry, propulsion and human space travel. Astro Camp Plus is an extension of this successful program.

Cost for Astro Camp Plus is $180 per camper, which includes a T-shirt, supplies, lunch and snacks. A $20 registration fee is required to reserve your child's space. For more information, call (800) 237-1821, Option 4, or visit http://education.ssc.nasa.gov/astrocamp.asp.

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