



# LAGNIAPPE

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## A-1 takes on new work

### Historic facility will test Constellation's engines

Rising from the south Mississippi land once inhabited by explorers of the past, the monolithic giant known as the A-1 Test Stand has a storied past at NASA Stennis Space Center. That legacy is set to continue well into the future of exploration as a new era in human spaceflight unfolds.

On Nov. 9, the center held a ceremony marking the official beginning of new work at the center's rocket engine test complex.

NASA's Associate Administrator for Exploration Systems Mission Directorate Scott Horowitz called the test stand a great example of NASA's enduring legacy of exploration.

"This test stand is a testimony to the pioneering spirit that landed us on the moon in the 1960s,



and will enable us to return to the moon and go on to Mars and beyond," said Horowitz.

The A-1 Test Stand at Stennis Space Center was the focus of a ceremony held Nov. 9 to transition the storied facility to a new program of work: testing the J-2X engines that will power the Ares I & V spacecraft. Standing before the historic structure, with a plaque commemorating the change, are (from left) SSC Center Director Dr. Richard Gilbrech; NASA Associate Administrator for Exploration Systems Scott Horowitz; and NASA Space Operations Deputy Associate Administrator for Program Integration Michael Hawes.

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## STS-115 crew visits SSC

Commander Brent Jett (center) talks with employees and visitors at NASA Stennis Space Center on Oct. 25. The astronauts of NASA's STS-115 space shuttle mission shared high-lights of their 12-day mission and thanked SSC employees for the reliability of the space shuttle's main engines, which helped propel Space Shuttle Atlantis into orbit. 'Not only has Stennis tested all NASA's engines since Apollo, it's going to be integral to NASA's work for the next 30 years,' said Pilot Chris Ferguson (second from left). SSC tests and proves flight-worthy all space shuttle main engines. STS-115's other crewmembers are (from left) Mission Specialists Joe Tanner, Dan Burbank, Heidemarie Stefanyshyn-Piper and Steve MacLean of the Canadian Space Agency. The mission launched Sept. 9, resuming construction of the International Space Station. Crewmembers installed the ISS' first major addition since late 2002: a solar array truss increasing the station's power capability.

From the desk of  
**Gene Goldman**  
 Deputy Director,  
 Stennis Space Center



I appreciate this opportunity to address the Stennis Space Center team. First, thank you! I have received such a warm welcome, and I look forward to working with, and getting to know, each of you. This center has such a proud heritage, and it is an honor for me to join the Stennis family. The future is bright for NASA, and that is something we at SSC can all be excited about.

As the Space Shuttle Main Engine Project manager at Marshall, I visited the center on several occasions. Test firings are always awe-inspiring, and I feel lucky to have been drenched during one. The dedication and enthusiasm of the workforce always made the biggest impression, however, and it was always a thrill to tour the test area. Talking to the test stand personnel and seeing the pride they take in their work always reassured me the hardware was being "handled with care." I've heard members of the astronaut corps express the same sen-

timent. Their lives and the future of human space flight depend on your commitment, and it shows.

My exposure has been limited, and I was not fully aware of the extent and diversity of work at SSC. I am very intrigued by the earth science applications and believe there is tremendous potential for these technologies. Utilizing these demonstrated capabilities to improve life on the earth and expanding usage within the vision for space exploration are unique challenges, ones this center is positioned to accept and meet. Opportunity in this arena of exploration is truly limited only by imagination.

This is a unique federal and commercial city, and my immediate task is to gain full understanding of its capability. The history of Stennis Space Center is filled with overcoming adversity, meeting challenges and achieving goals. Persistence, dedication and enthusiasm are traits continually demonstrated, and they are the ones that will enable success as this nation furthers space exploration. It is an exciting time to work for NASA and to be at Stennis. Thank you again for letting me join you in this endeavor. It truly "feels like coming home!"

*Gene Goldman*

## Congressional representatives visit SSC



During a visit to NASA Stennis Space Center on Oct. 5, Scott Walker (left, in photo above) talked with NASA facility manager Mike Nichols about the disassembling of the space shuttle main engine on the A-1 Test Stand. Walker, field representative for the Southern District of Mississippi for Sen. Trent Lott, toured SSC and spoke with representatives of several resident agencies about their roles in the health of the region's economy. Walker and Nichols discussed the stand's upcoming conversion to test the J-2X engine, which will power NASA's new crew and cargo launch vehicles, Ares I and Ares V.

Bruce Evans (right, in photo at left) toured Pratt & Whitney Rocketdyne's RS-68 assembly facility on Oct. 26 with PWR's Jim Wahl. Evans, senate appropriations staff director for Sen. Thad Cochran, learned of SSC's work alongside colleagues (not pictured) Blake Thompson, legislative director; Parah Fishburn, district office staff; and Jennifer Schmidt, representing Gov. Haley Barbour's office.

## Ross receives Silver Snoopy

Astronaut Ken Ham honored NASA Stennis Space Center employee Rick Ross with a “Silver Snoopy” on Oct. 19.



**Richard Ross**  
Senior scientist  
Applied Geo Technologies

Ross, a resident of Gulfport, Miss., is a senior scientist with Applied Geo Technologies. He was recognized for providing gas and material analysis and laboratory support to SSC's Space Shuttle Main Engine Project.

Ross was given a Silver Snoopy pin flown on a space shuttle mission, along with a letter of commendation

and certificate signed by Ham. Astronauts always present the Silver Snoopy because it is the astronaut corps' own award for outstanding performance, contributing to flight safety and mission success.

## SSC taps 4 technologies for innovation contracts

NASA has selected 120 proposals for negotiation of phase 2 contract awards in the Small Business Innovation Research program. The selected projects have a total value of approximately \$72 million. The contracts will be awarded to 103 small high-technology firms in 27 states.

Four of the proposals will develop technologies for NASA Stennis Space Center under the management of the Innovative Partnership Program:

- “Automated Extraction of Crop Area Statistics from Medium-Resolution Imagery,” written by GDA Corp., State College, Pa.;
- “Wireless Integrated Microelectronic Vacuum Sensor System,” written by Invocon Inc., Conroe, Texas;
- “Virtual Sensor Test Instrumentation,” written by Mobitrum Corp., Silver Spring, Md.; and
- “Automated Feature Extraction from Hyperspectral Imagery,” written by Visual Learning Systems Inc., Missoula, Mont.

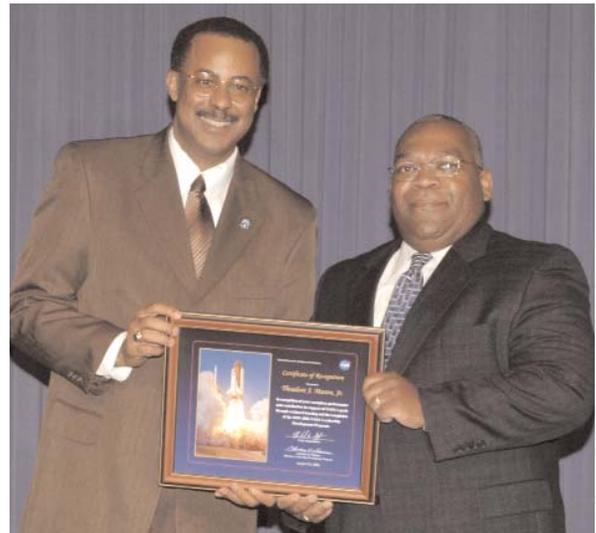
For a complete list of selected companies, visit:  
<http://sbir.nasa.gov>

## Sewell earns Star Award



Dale Sewell (left), test complex construction manager in SSC's Project Directorate, Test Project Office, receives the Star Award from Space Shuttle Program Director Wayne Hale. The Space Shuttle Program Office presents the Star Award to individuals who have exhibited initiative and dedication in ensuring successful spaceflight. Sewell received the award for 'continued outstanding leadership in providing test facility maintenance, modifications and repairs resulting in a reliable, productive and environmentally safe space shuttle main engine test infrastructure in support of the Space Shuttle Program,' according to the certificate.

## Mason completes training



Theodore J. Mason Jr. (right), of SSC's Applied Research and Technology Project Office, receives a completion certificate for NASA's Leadership Development Program from Charles Scales, NASA Associate Administrator for Institutions and Management. Mason and 23 other LDP graduates participated in an Aug. 24 ceremony at NASA Headquarters, where Scales praised their project assessing efficiency and effectiveness of NASA tools and processes. The LDP aims to create leaders who align with NASA's vision, mission and values, and create results that matter to the American people. Mason completed developmental assignments in Headquarters' offices of the Chief Engineer and Applied Science.

## A-1 TEST STAND

*Continued from Page 1*

Under the direction of NASA's Constellation Program, the A-1 Test Stand begins a new chapter in its operational history. It is being temporarily decommissioned for conversion to test the J-2X engine. That engine will power the upper stage of NASA's new crew launch vehicle, Ares I, and the Earth departure stage of the new cargo launch vehicle, Ares V.

The A-1 Test Stand, site of the first space shuttle main engine test in 1975, held its last test for that program Sept. 29. Closing out more than 30 years of testing the shuttle's main engines, the test stand will soon be used for the Ares I. That rocket that will carry America's next generation spacecraft, Orion, and its astronaut crew into space.

"This is truly a testament to the designers and builders of the test stands," said NASA's Don Beckmeyer, space shuttle main engine project manager in the Test Projects Office of SSC's Project Directorate. "They were built to last, and their longevity and flexibility are key assets to the agency. We are

### A-1 Test Stand Facts

<b>Construction:</b>	Dec. 1964-Feb. 1967
<b>Footprint:</b>	7,498 sq ft.
<b>Below Ground:</b>	58 ft.
<b>Above Ground:</b>	158 ft.
<b>Flame Deflector Cooling Flow Rate:</b>	170,000 gals per minute
<b>Propellants:</b>	Liquid Hydrogen at 16,500 gpm Liquid Oxygen at 6,000 gpm
<b>Maximum Thrust Load:</b>	1.1 million lbs



Completed in 1967, Stennis Space Center's A-1 Test Stand (left) was the site of the first S-II stage for the Apollo Program's Saturn V rocket Sept. 19, 1967. It was also the site of the first test on a space shuttle main engine May 19, 1975. The test stand is being modified for testing the Constellation Program's J-2X engines.

about to embark on the third generation of rocket engines to be tested on A-1, and we fully expect this test stand to be instrumental in developing and certifying these engines for years to come."

Born of President John F. Kennedy's 1961 charge to the nation "of landing a man on the moon and returning him safely to the Earth," the test site's unprecedented pace of construction and activation symbolized the pride and vitality of the surrounding communities.

The 158-foot-tall A-1 and A-2 test stands became more than just the concrete and steel that comprised them. They became the launch pad for the visions of America's future. When the center test-fired the first S-II stage for the Apollo Program's Saturn V rocket Sept. 19, 1967, the resulting roar was more than the

rumble of the J-2 engines on the A-1 stand. It was the sound of the nation's space exploration dreams becoming reality.

Stennis Space Center's mission of testing the first and second stages of the Saturn V moon rocket for the Apollo Program continued until the early 1970s when the A-1 and A-2 test stands were modified to test the space shuttle's main engines. (A-2 will continue testing space shuttle main engines through the end of the Space Shuttle Program in 2010.)

In 1998, the A-1 was called upon once again to test the engines for another futuristic spacecraft – the X-33, an experimental, half-scale, sub-orbital flight demonstrator. The XRS-2200 Linear Aerospike engine, projected to power the X-33, was successfully tested on the A-1

# Drawing on Our Past in Pursuit of Our Future

## Constellation Program



stand until the X-33 Program was canceled in 2001.

As NASA began preparations for testing components of the J-2X, engineers turned to StennisSpace, SSC's visitor center, as a rare source for the needed technology. In

April, SSC engineers removed the XRS-2200 Linear Aerospike engine on display in the visitor center to reuse some of its pumps and valves, identical to those on the J-2 engines. From the parts, the engi-

**"This test stand is a testimony to the pioneering spirit that landed us on the moon in the 1960s, and will enable us to return to the moon and go on to Mars and beyond."**

— *Scott Horowitz,*  
*NASA Associate Administrator,*  
*Exploration Systems Mission Directorate*

Constellation will be the third program to reuse similar technology. A good design just keeps on living."

Drawing on the past, NASA has merged Apollo-era visionaries with today's engineering minds to forge the exploration missions that will take us farther into the solar system. Forty years after their beginnings, SSC's test

neers assembled a "powerpack" test article for the new engine.

"The X-33 used heritage from the J-2, and it worked fine," said Brian Sproles, SSC's J-2X assembly & test program manager for Pratt & Whitney Rocketdyne. "That's the beauty of it.

stands will once again be part of the adventure.

For more information about the Space Shuttle Program, visit: <http://www.nasa.gov/shuttle>.

For information about the J-2X engines and Ares rockets, visit: <http://www.nasa.gov/ares>.

### A-1 Test Stand Legacy of Testing

#### Apollo Program

Apollo S-II stage - 5 J-2 engines

First Test:	Sept. 19, 1967
Final Test:	Nov. 14, 1969
Total Tests:	7

#### Space Shuttle Program

Space Shuttle Main Engine

First Test:	May 19, 1975
Final Test:	Sept. 29, 2006
Total Tests:	1,007

#### X-33 Program

XRS-2200 Linear Aerospike Engine

First Test:	Oct. 2, 1998
Final Test:	Aug. 6, 2001
Total Tests:	35

The site is listed on the National Register of Historic Landmarks. Designated on Oct. 3, 1985, it is referred to as the "Rocket Propulsion Test Complex," Bay St. Louis, Miss.; National Register No. 85002805.



SSC conducted the final space shuttle main engine test on its A-1 Test Stand on Sept. 29. The A-1 stand began a new chapter in its operational history this month. Temporarily decommissioned, it is undergoing modifications to convert it for testing the J-2X engine, which will power the upper stage of NASA's new crew launch vehicle, Ares I.

# SSC observes Total Health & Safety Day

Under one of many tents that sheltered attendees from looming rains, Astronaut Ken Ham addresses employees at NASA Stennis Space Center about a variety of safety issues during the center's observance of Total Health & Safety Day, held Oct. 19. Ham is a distinguished graduate of the U.S. Naval Test Pilot School, and has logged more than 3,700 flight hours in more than 40 different aircraft. He is performing technical duties while awaiting assignment to a spaceflight mission.



## *Astronaut, others present safety reminder sessions*

Booths offering everything from bone density scans to safety equipment demonstrations were part of NASA Stennis Space Center's Total Health & Safety Day on Oct. 19. The event is an annual observance to raise awareness of safe work practices. All NASA spaceflight centers observe the day simultaneously.

Astronaut Ken Ham spoke to employees about the importance of preparation and safety awareness, and answered employees' questions.

Guest speaker Isabel Perry, "The Safety Doctor," offered sessions on reducing risks, costs and fear, and improving quality of life through safety improvements. A seminar



Kealey Probst (left), a registered nurse at Northshore Regional Medical Center in Slidell, La., checks SSC employee Mike Smith's blood pressure during Total Health & Safety Day. The blood pressure readings were one of many free medical screenings conducted throughout the day.

called "Street Smarts," delivered by the Personal Safety Coalition, aimed to help attendees become more aware of personal safety and crime prevention in their daily lives.



## **NASA family holds fall barbecue**

Ashton (left) and Aidan Cuevas decorate pumpkins at NASA's fall family barbecue, held Nov. 3 at Stennis Space Center's newly-remodeled Cypress House. Ashton and Aidan's parents are Cheri and Durant Cuevas of Picayune. At the annual barbecue, NASA employees and their families were entertained by the Beech Brothers Band, and enjoyed ribs, hamburgers and hot dogs, in addition to the pumpkin-decorating contest and being eligible for door prize drawings.

# Indian Heritage Month honors Code Talkers

During National American Indian Heritage Month in November, we honor generations of American Indians for their accomplishments.

On Oct. 30, President George W. Bush proclaimed America blessed by the character and strength of American Indians: “We are especially grateful for the Native Americans who have served and continue to serve in the nation’s military. These brave individuals have risked their lives to protect our citizens, defend our democracy and spread the blessings of liberty to people around the world.”

## From the Office of Diversity and Equal Opportunity

Their contributions are exemplified in the establishment of the Code Talkers. The U.S. suffered losses in World War I because of German interception of U.S. communications. Capt. Lawrence, commander of the U.S. Army’s 142nd

Infantry Regiment, devised a solution after overhearing two Choctaws speaking in their native language, and arranged for them to become radio communicators. Replacing military terms with common Choctaw words, they became the first Code Talkers.

In WWII, the Army continued the program and recruited Comanches, Choctaws, Kiowas, Winnebagos, Seminoles, Navajos, Hopis and Cherokees. The Marine Corps then took the Army’s work and codified, expanded, refined and perfected it into a true security discipline, exclusively using Navajos, whose language was unwritten and more secure.

The first 29 Navajo recruits began training in May 1942. The Code Talkers developed a radio vocabulary of 600 words, many not literal translations. For example, a bomb was called an “egg.” A fighter plane was a “hummingbird,” and a submarine, an “iron fish.” They created an alternative Navajo language, unintelligible even to other Navajo speakers.

Over the course of the war, approximately 400 Navajos became part of this very successful program. The Japanese never broke the code. Military experts credit the Code Talkers with turning the tide in the Pacific theater. The role of Navajo Code Talkers was kept a secret until 1968. In December 1981, President Ronald Reagan at last recognized the Navajo Code Talkers for their achievements, patriotism and courage.

## AROUND NASA

■ **NASA announces new Hubble service mission:** Shuttle astronauts will make one final mission, dubbed SM4, to NASA’s Hubble Space Telescope as part of an effort to extend and improve the observatory’s capabilities. On Oct. 31, NASA Administrator Michael Griffin announced plans for a fifth servicing mission to Hubble. Astronauts will use the Space Shuttle to bring new instruments to Hubble along with gyros, batteries and other devices crucial for the telescope’s continued success through the year 2013. At the end of SM4, Hubble will be at the peak of its capabilities.

■ **Aviation safety reporting system turns 30:** NASA’s Aviation Safety Reporting System recently marked its 30-year anniversary. The confidential reporting system is used by pilots to identify potential safety hazards. Established in 1975, the system collects, analyzes and responds to voluntarily submitted aviation safety incident reports to reduce aviation accidents. The reports are also used to identify deficiencies and discrepancies in the National Aviation System. The system is located at NASA Ames Research Center, Moffett Field, Calif. It has issued more than 2,500 safety alerts to the commercial and private aviation community, and approximately 42 percent of the alert recipients have taken action to correct the hazardous condition and improve safety.

■ **Study concepts chosen for future missions:** NASA has selected three concept studies for missions:

- The Origins Spectral Interpretation, Resource Identification and Security mission would survey an asteroid and provide the first return of asteroid surface material samples to Earth.
- The Vesper mission is a Venus chemistry and dynamics orbiter that would advance our knowledge of the planet’s atmospheric composition and dynamics.
- The Gravity Recovery and Interior Laboratory mission would use high-quality gravity field mapping of the moon to determine the moon’s interior structure.

The proposals were among approximately two dozen submitted in response to NASA’s Discovery Program 2006 Announcement of Opportunity in April.

## Hail & Farewell

### NASA welcomes the following to SSC:

**Beth Bradley** – Business Management Directorate

**Gerald Norris** – Business Management Directorate

**Thomas Rich** – Center Operations Directorate

**Robert Gargiulo** – Office of Safety and Mission Assurance

### And bids farewell to the following:

**Miguel Rodriguez, Acting Director** – Rocket Propulsion Test Directorate

### CORRECTION

**Bo Clarke** – Project Directorate

(Clarke’s affiliation was incorrectly listed in October’s *Lagniappe*)

# Annual fund-raising campaign begins

The 2006 Stennis Space Center sitewide Combined Federal Campaign began Oct. 26 with events in Building 1100 Atrium. SSC employees participated by speaking with representatives from local charitable organizations and registering for door prizes. A brief ceremony kicked off the event. About 15 charitable organizations from the Mississippi Gulf Coast, Greater New Orleans and Mobile set up informational booths.

This year's campaign was coordinated by the Commander, Naval Meteorology and Oceanography Command. It ran through Nov. 6. The contribution deadline has been extended until Dec. 15 for those unable to make contributions during the initial campaign. The sitewide goal for the CFC is \$215,100. NASA alone set a goal to raise \$60,500. Last year, in spite of Hurricane Katrina, NASA donated \$27,252, nearly reaching its modified goal of \$30,000. Sitewide, \$127,344 was raised.

For more information, contact CNMOC's Chris Denz,



Jason Daniels (center) and Nicolas Waters, both of 3001, Inc., talk with Uyen Phan of the Cancer Association of Greater New Orleans, one of several charities that took part in the Combined Federal Campaign kickoff held Oct. 26. The CFC is the world's largest annual workplace giving campaign.

688-4233, or Julie Bylsma, 688-4341; or NASA's Cheri Miller, 688-3802.



## Storied J-2 engine exhibited at XPrize

Stennis Space Center's J-2 rocket engine is displayed in a 'history of space exploration' area at the Wirefly XPrize Cup event held Oct. 20-21 in Las Cruces, N.M. The engine, one of the original Apollo Program engines, was accompanied by NASA employees Mike Nichols and Bryon Maynard of SSC's Engineering and Science Directorate. Approximately 20,000 space enthusiasts and tourists attended what was billed as 'Earth's Great Space Exposition.' The retired J-2 test engine left its SSC home in late June to travel to the Joint Propulsion Conference in Sacramento, Calif.; then to Space 2006 in San Jose, Calif.; the Dryden Flight Research Center Air Show and the XPrize event. It will end its tour in December at Space Exploration in Houston. The engine is a permanent display of SSC's visitor center, StennisSphere.

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