



# LAGNIAPPE

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[www.nasa.gov/centers/stennis](http://www.nasa.gov/centers/stennis)

October 2008

## Cabana accepts new post

### Succeeds Parsons as director of Kennedy Space Center

NASA announced Sept. 30 that John C. Stennis Space Center Director Bob Cabana is leaving the rocket engine testing facility in mid-October to become director of the John F. Kennedy Space Center in Florida.

Cabana will succeed current Kennedy Director William Parsons, who is leaving NASA to pursue opportunities in the private sector.



Stennis Deputy Director Gene Goldman will become acting director at Stennis. Goldman, who began his NASA career in 1990, joined Stennis in October 2006. Prior to arriving at Stennis, he was manager of the Space Shuttle Main Engine Project at NASA's George C. Marshall Space Flight Center in Huntsville, Ala.

Cabana, a former astronaut, is a native of Minnesota. He graduated from the U.S. Naval Academy in 1971 with a Bachelor of Science degree in mathematics and was commissioned as an officer in the U.S. Marine Corps. Cabana is a distinguished graduate of the U.S. Naval Test Pilot School and has logged more than 7,000 hours in 36 different aircraft.

After his selection as an astronaut candidate in 1985, Cabana completed his training in 1986. He flew four space shuttle missions: as pilot of Discovery missions STS-41 in 1990 and STS-53 in 1992; as commander of Columbia on STS-65 in 1994; and as commander of Endeavour on STS-88 – the first International Space Station assembly mission – in 1998.

Before being named director at Stennis in October 2007, Cabana served as deputy director of Johnson Space Center in Houston. In addition, Cabana has worked as chief of NASA's Astronaut Office; manager of international operations of the International Space Station Program; director of NASA's Human Flight Program in Russia; deputy director of the International Space Station Program; and director of Flight Crew Operations.

"Bob Cabana is a longtime colleague, and another whose Marine training has redounded to NASA's benefit," NASA Administrator Michael Griffin said. "Bob has seen it all and done it all in human spaceflight, and done it with an open, collaborative style. There is just no better teammate. He will be a terrific successor to Bill Parsons as director of KSC."

### Last flight engine arrives

Workers at Stennis Space Center examines space shuttle main engine 2061 upon its arrival Oct. 1 at the rocket engine testing facility. The engine is the last space shuttle flight engine scheduled to be tested at Stennis. However, Stennis will continue testing other space shuttle main engine components through the end of 2009.



### CFC drive kicks off

The 2008 Stennis Space Center Combined Federal Campaign kicked off Oct. 16 and will run through Oct. 31. This year's theme is "Be a Star in Someone's Life."

The CFC is the world's largest annual workplace charity effort. Stennis has a goal of \$190,000 for this year's campaign.

From the desk of  
**Robert Cabana**  
 Director  
 Stennis Space Center



Obviously, willpower by itself isn't going to get the job done; we still need the technical skills and tools to accomplish it. But a positive attitude can have a great impact on success. Enthusiasm can be contagious – be enthusiastic about your work. Lead by example. If you're pessimistic about life and your work, the team you're on will pick up on it, and its members will be, too. On the other hand, if you're upbeat and motivated, the folks who are working with you will be also. Remember – *It's All in a State of Mind.*

How's your state of mind?

Are you motivated to complete the tasks in front of us, or are you just along for the ride? Are you a leader within your team with a positive attitude, or are you bringing the team down with dourness and complaint?

How we approach our work can have a great impact on whether we're successful or not, and one of the keys is having a positive state of mind and the mental toughness to see a job through. Mental toughness is the ability to persevere in pursuit of a goal, no matter how long it takes or how much pain is involved. It is the willpower needed to complete the mission regardless of obstacles.

“If you think you are beaten, you are.  
 If you think you dare not, you won't.  
 If you like to win, but don't think you can,  
 It's almost certain you won't.  
 If you think you'll lose, you're lost;  
 For out in the world, you'll find  
 Success begins with a person's will.  
 It's all in a state of mind.”

Keep charging,

## Area leaders visit Stennis, view engine test



(Top photo) Stennis Space Center Director Bob Cabana (right) shakes hands with Mississippi Rep. Billy Broomfield of Moss Point (center) and state Rep. Percy Watson of Hattiesburg, who serves as chair of the Mississippi House Ways and Means Committee. Fifteen state legislators from Mississippi and Louisiana, along with community leaders, visited Stennis on Sept. 10 to hear an update on current and future activities involving NASA and the Stennis facility and to view a space shuttle main engine test.

(Right photo) Mississippi and Louisiana legislators stand in front of the A-2 Test Stand at Stennis Space Center just prior to a space shuttle main engine test Sept. 10. Since 1975, Stennis has tested every main engine used in the Space Shuttle Program and is scheduled to continue testing of the shuttle engines and components through 2009.



## FULFILLING NASA'S EXPLORATION MISSION

# Team works to upgrade B Test Complex

At NASA's John C. Stennis Space Center, engineers are continuing major modification work to prepare the B Complex Test Facility for testing stages of the new Ares rockets that will carry humans back to the moon.

Stennis has been assigned responsibility for testing the upper stage of the Ares I crew launch vehicle and the first stage of the Ares V cargo launch vehicle. The rockets are the centerpiece of NASA's Constellation Program to retire the space shuttle, go back to the moon and possibly travel beyond.

The rockets are in the design and development phase, so testing will not be scheduled for several years. However, Stennis engineers have seized this opportunity to perform valuable upgrades on the B Complex Test Facility. "Looking at the schedule and the long list of things to do, we wanted to start early and do the most difficult things first," said David Liberto of the Stennis Project Office.

A small team was assembled to develop requirements; perform design; and engage assembly of high- and low-speed data acquisition and facility control systems, event systems, software development, a new test control area and other related work. Dawn Davis of NASA serves as the electrical design lead; B.T. Wigley of NASA oversees fabrication and procurement; Andy Kuhn of Pratt & Whitney Rocketdyne manages data acquisition design engineering; and Ronald Roberts of PWR leads control system work. Other team members have contributed to the process, but these four have remained on board and led the way, Liberto said. The result is a tribute to what a small, self-directed, "badgeless" group of individuals can

do when working toward a common goal, he added.

Since its construction in the 1960s, the two sides of the B Test Stand either have shared systems or created makeshift systems to serve their needs. So, test-related activity on one side of the stand could preclude or



(L to r) Ronald Roberts and Andy Kuhn of Pratt & Whitney Rocketdyne stand with Dawn Davis and B.T. Wigley of NASA in a new control room being assembled in the B Complex Test Facility. The four-person team has been working to complete valuable upgrades to the B Complex and test stand.

delay activity on the other. "To remedy that, team members reviewed needs and requirements, then set about designing and creating new control systems and data acquisition and recording systems for the B-2 side of the test complex," Davis said.

Since the B Complex is unique as a dual position test facility, care had to be taken to ensure new systems worked for the common good. Part of the new control system – primarily controlling propellant transfer – remains common to both test positions. That aspect was integrated into operation with no interruption of ongoing activity.

Now, with that and the new independent systems in place, many activities on both sides of the stand can continue simultaneously with minimal interference. Also, the new systems were designed with expansion capabil-

ity – adaptable to whatever testing NASA needs. "This is just a great investment for the center," Kuhn explained. "It's an addition to our B Complex capabilities, and it's an enhancement of existing capabilities."

With many initiatives ongoing at the test facility, none of the team members spend full time on the B Complex project, so the amount of work completed is even more impressive.

Once the effort is complete, PWR technicians Ed Peterson (lead), Bob Pair, Scott Steelman and Shawn Cordray will have made some 25,000 wire terminations. In addition, Jacobs Technology's Curtis Lockwood and crew have worked closely with PWR to assist with efforts.

As part of the overhaul project, designers have paid careful attention to centralizing test systems, a change that will help engineers monitor and troubleshoot problem areas more efficiently and effectively.

Team members also are upgrading fire and gas detection systems on both sides of the test stand. Previously, stand workers only had audible warnings to notify them of a problem and no system for informing them exactly where the issue was located. With the changes, stand personnel will be notified of a problem by an automated voice that will pinpoint the location and give visual indication of the affected area.

With completion of this particular effort expected in the next 12-14 months, Liberto said the B Complex will be better positioned for providing one of Stennis' primary products – high quality data and state-of-the-art control.

# Stennis prepares for the fu

*Note: NASA celebrates its 50th anniversary this year, marking five decades of space exploration and excellence. This article presents part of Stennis Space Center's role in that history.*

When President George W. Bush visited NASA's Headquarters in Washington, D.C., on Jan. 14, 2004, it was just two weeks from the first anniversary of one of the space agency's darkest moments.

On Feb. 1, 2003, space shuttle Columbia disintegrated during re-entry from its mission to the International Space Station. Mid-morning, Bush delivered the somber news to the nation – “The Columbia is lost; there are no survivors.”

Less than a year later, the president was set to deliver more space-related

news to the nation – this time in determined tones.

“America is proud of our space program,” the president began on that day in early 2004. “Inspired by all that has come before, and guided by clear objectives, today, we set a new course for America's space program. We will give NASA a new focus and vision for future exploration. We will build new ships to carry men forward into the universe, to gain a new foothold on the moon and to prepare for new journeys to the worlds beyond our own.”

Bush then outlined his plan – to return the space shuttle to flight until the year 2010, to complete the International Space Station, to build a new space vehicle and to go back to the moon and possibly beyond.

For the nation, it was a bold vision of exploration. For everyone at NASA's John C. Stennis Space Center, it was a clear signal – there was work to be done.

Stennis Space Center, near Bay St. Louis, Miss., was established in the mid-1960s to test the massive Saturn rocket engines and stages that carried Apollo astronauts to the moon. Every manned Apollo mission was powered by engines tested at Stennis.

After surviving the post-Apollo transition, Stennis then became responsible for testing every engine used in the Space Shuttle Program. Stennis engineers tested the first space shuttle main engine in 1975 and continue such testing today.

However, even as that work continues, Stennis engineers are looking to the future and what will be needed to power the new Constellation Program, the name given to NASA's program to go back to the moon and travel beyond.

The Constellation Program calls for the development of two new rockets – Ares I crew launch vehicle and Ares V cargo launch vehicle. The rockets will be powered by two types of engines – the J-2X engine, an upgraded design of the J-2 engine that was used to propel the Saturn rockets, and the RS-68B, a modified version of the RS-68.



The J-2 power pack is lowered down the side of the A-1 Test Stand at Stennis Space Center. In early May, Stennis engineers successfully completed the first series of tests in the development of the J-2X engine that will power the upper stages of the Ares I and Ares V rockets, key components of NASA's Constellation Program to go back to the moon and possibly beyond. The round of testing was designed to gather data from heritage J-2 components as they operated at the higher power levels the new J-2X will require. The new J-2X is being developed based on the heritage J-2 engine that helped power the Saturn I and Saturn V rockets four decades ago. The Stennis testing focused on the J-2's power pack, collecting data from more than 1,300 seconds of operation. Upon completion of the tests, the power pack was removed from the test stand and sent to California for Pratt & Whitney Rocketdyne engineers to study.

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# uture of space exploration

Work on both are under way – and Stennis is playing a key role.

The massive test stands at Stennis will be used to test both engines. Work has begun to prepare the B Test Complex for testing the RS-68B. The A-1 and A-2 Test Stands will be used to conduct sea-level testing of the J-2X engine. Also, in August 2007, NASA officials broke ground for the construction of the new A-3 Test Stand for altitude testing of the J-2X. It is the first test stand to be built at the facility since the 1960s and will be the largest ever constructed on site. About 4 million pounds of structural steel will be used to construct the 300-foot-tall test stand. The height and design will enable engineers to simulate altitudes of up to 100,000 feet. That is critical since the J-2X must have the capability of starting at such altitudes.

In addition to the new stand, Stennis engineers are providing valuable data for development of the J-2X engine. They recently completed a series of tests on critical J-2 components, pushing them to limits that will be needed for the J-2X and recording how they performed. The data supplied by Stennis engineers will be used to upgrade the components, which then will be returned for additional testing.

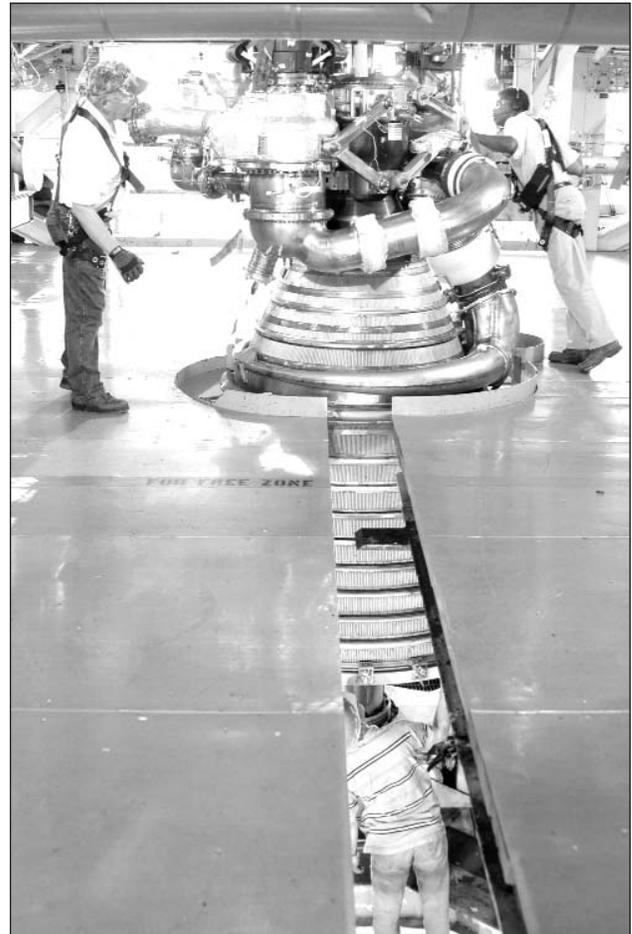
Before the J-2X and RS-68B engines are used to lift a spacecraft into

Stennis Space Center workers prepare to remove the J-2 power pack they tested to gather data for the development of the new J-2X engine. The J-2X is being based on the heritage J-2 engine that helped power the Saturn rockets involved with the Apollo Program in the 1960s and early 1970s. In turn, the new J-2X engine will help power the Ares I and Ares V rockets that are the centerpiece of NASA's Constellation Program to go back to the moon and possibly beyond. Following removal of the J-2 power pack in May, Stennis engineers began modifications and upgrades needed to prepare the A-1 Test Stand for future testing of the J-2X engine. Stennis Space Center is responsible for proving the engine is flight worthy before it is used in the Constellation Program.

space, Stennis engineers will make sure they will perform as needed. It is a mission responsibility they are used to fulfilling – and a mission challenge they are determined to continue meeting.

Indeed, when the Stennis Space Center was designated as a historic aerospace site earlier this year by the American Institute of Aeronautics and Astronautics, center Director Robert D. Cabana paid homage to the past while emphasizing the work of the future.

“Our test stands are monuments to our accomplishments of the past, but they are also the launch pads for the dreams of what we can accomplish in the future,” he said. “Once again, we have a new challenge in front of us as we ... prepare to



return humans to the moon. The historic test stands at Stennis will continue to pave the way to space.”

Apollo. The Space Shuttle Program. Constellation. Whatever success these NASA endeavors enjoyed and will enjoy, they all share one thing in common – the path to space must go directly through south Mississippi and Stennis Space Center.

As the president concluded on that January day at NASA's Headquarters in 2004, “Mankind is drawn to the heavens for the same reason we were once drawn into unknown lands and across the open sea. We choose to explore space because doing so improves our lives and lifts our national spirit.

“So, let the journey continue.”

## Stennis tower stands in tribute to von Braun



**Editor's Note:** NASA's John C. Stennis Space Center has played a pivotal role in the success of the nation's space program. Each month, Lagniappe looks back on important moments in the center's history.

Rising 90 feet above the ground, the observation tower at NASA's John C. Stennis Space Center has a commanding presence, much like world-renowned scientist Wernher von Braun. Stennis Space Center named its tower in tribute to von Braun on Oct. 23, 1998.

In the ceremony, von Braun was honored for his contributions to the national test facility in south Mississippi, which is currently known as NASA's John C. Stennis Space Center.

As director of the Marshall Space Flight Center in Huntsville, Ala., von Braun served as chief architect of the Saturn V launch vehicle and had input into the design of the Central Control Building, which is now home to StenniSphere, the visitor center at Stennis.

The late Mack Herring, former Stennis Space Center historian, noted that von Braun suggested building the tower as a good vantage point for engineers to study the tests and for media members and important visitors to view the static firings at a safe distance.

Von Braun often visited Stennis and viewed many static firings from the tower. At the time, the enclosed portion of the tower was equipped with closed-circuit television monitors so engineers could observe all points of the test stands.

In an article published at the time of the Stennis tower dedication, Herring wrote about his memories of waiting for test firings in the tower with von Braun. He recalled a man with a wonderful sense of humor, who "accepted the disappointments when a test had to be scrubbed, and (who) cheered and applauded a successful test firing."

With its bird's-eye view of the test complex, the StenniSphere tower often served many purposes. Today, it is utilized as a conference facility and by the NASA Education Office as its home for Astro Camp.



## Stennis personnel participate in test program

Fernando Figueroa, an aerospace technologist at Stennis Space Center (left), and John Schmalzel, a professor on loan from Rowan University in Glassboro, N.J. (center), recently joined Ray Wang, president of Mobitrum Corp. in Silver Spring, Md., to test a virtual sensor instrument in development. The test was performed as part of NASA's Facilitated Access to the Space Environment for Technology Development and Training program. The FAST program provides opportunities for emerging technologies to be tested in a space environment. The technologies are tested during parabolic aircraft flights that simulate near-zero-gravity environments. This fall, NASA's Innovative Partnerships Program selected several small businesses to participate in initial FAST flights. The flights allow the companies to test technologies that show promise but are not yet mature enough to be adopted into major development programs. During their flight, Figueroa, Schmalzel and Wang tested a device being developed by Mobitrum Corp. to collect and share in-flight data measurements in a network.



## J-2X engineers review work

Gary Benton, J-2X engine test project manager (front left) and engineers from Stennis Space Center, Marshall Space Flight Center in Huntsville, Ala., and Pratt & Whitney Rocketdyne in Canoga Park, Calif., conducted a Sept. 17 preliminary design review of work under way to modify the A-1 Test Stand for testing the J-2X engine being developed for NASA's Constellation Program. Paul Rieder of Stennis serves as NASA's mechanical design lead for the A-1 modification project. He said the preliminary review was a major design step in the project and went very well. The project is on track, and engineers are scheduled to meet in late October for a followup intermediate design review.

# Use conflict management resources

As part of the agencywide conflict management initiative, Stennis employee focus groups were interviewed and provided feedback. One area that was identified was the need for clarification of the resources available to an employee dealing with personal or workplace conflict.

From the  
**Office of  
Diversity  
and Equal  
Opportunity**

sary to ensure full utilization and development of NASA's human resources. This is accomplished through programs of recruitment, employment and retention; performance management; qualifications, classification, pay and allowances; attendance and leave; employee relations; employee benefits; employee and organizational development. **Dorsie Jones, ext. 8-2337**

The goal of conflict management is to attempt to resolve disputes and problems at the lowest possible level. Those in conflict have a duty to try to resolve issues directly. A first step should be raising the concern through the supervisory chain of command and providing them an opportunity to resolve it. Managers and supervisors need to ensure the chain of command path is open and encourage "upward and downward communication."

If direct communication fails to resolve the problem, then, seek assistance through one of the following:

**Employee Assistance Program.** Many situations improve with access to professional consultation. Stennis' EAP offers professional and confidential assistance to employees experiencing emotional stress, mental health disorders, family or relationship difficulties, financial and/or legal concerns, and alcohol or drug abuse problems. **Porter Pryor, ext. 8-3005**

**Office of Diversity and Equal Opportunity.** One of ODEO's primary efforts is proactively to address workplace issues and concerns. Those who believe they have been discriminated against on the basis of race, color, national origin, sex, religion, age, retaliation or disability should contact ODEO as a neutral and confidential resource. **Jo Ann Larson, ext. 8-2079**

**Office of Human Capital.** The OHC is committed to providing managers and employees with the tools neces-

**Ombuds.** The Stennis Ombuds Program was established to provide the civil servant and contractor workforce a confidential, supplemental and informal channel to communicate critical issues and concerns that could impact safety, organizational performance or mission success. The ombuds will listen to concerns, conduct inquiries and investigations and seek to facilitate a mutually-satisfactory resolution. **Karen Vander, ext. 8-3054**

**Hail & Farewell**

**NASA bids farewell to the following:**

<b>Jared Grover</b>	AST, Mechanical Experimental Tech Engineering and Test Directorate
<b>Judy Bruscano</b>	Contract Specialist Office of Procurement
<b>Rachael Broussard</b>	Accountant Office of the Chief Financial Officer

**And welcomes the following:**

<b>Aaron Brooks</b>	Student Trainee/Human Resources Office of Human Capital
<b>Scott Granger</b>	Student Trainee/Engineering Engineering and Test Directorate
<b>Cheryl Lunt</b>	Management and Support Assistant Office of Procurement
<b>Daniel Allgood</b>	AST, Theoretical Simulation Tech Engineering and Test Directorate

## @ Stennis

**As NASA celebrates 50 years, what is your favorite experience or memory related to the space program?**

**Editor's Note:** @ Stennis is a monthly feature highlighting the views and opinions of Stennis Space Center employees.



"When they first decided to allow teachers to go in space. It was exciting to think how they would be able to bring it all into the classroom." **Vickie Garner, Jacobs FOSC**

"I remember the televisions being on at the University of New Orleans as the first astronauts were walking on the moon." **Robert Taggart, Computer Sciences Corp.**



"John Glenn's initial orbit of the earth. I remember working under a car in mechanic's class, listening to it on the radio." **Pat Walsh, Computer Sciences Corp.**

"Truthfully, it would be watching the movie 'Apollo 13.' I'm only 24, so the only other thing I would really remember is the Columbia accident." **Eric Johnson, NASA**



# Deadline set for '09 INSPIRE

Students wishing to participate in NASA's Interdisciplinary National Science Project Incorporating Research and Education Excellence in 2009 must complete their online applications by Dec. 31.

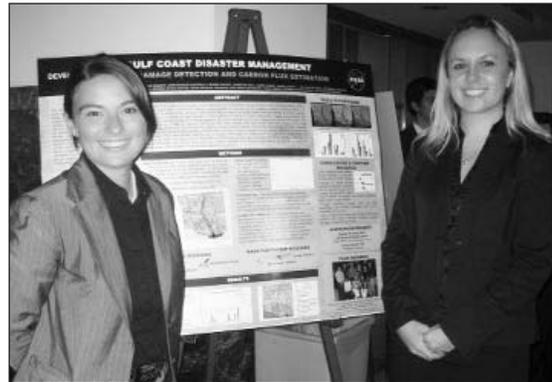
INSPIRE is a multitiered program designed to help students in grades 9-12 learn more in the fields of science, technology, engineering and mathematics. At Stennis, students selected for the INSPIRE program can participate in one-day tours and workshops on site, take part in a two-week summer program at the facility or qualify for a paid summer internship. Students also may join an online community that allows them to participate in learning modules and teleconferences.

INSPIRE students must be U.S. citizens, have a 2.5 grade point average and demonstrate the desire and academic preparation to pursue a field of study related to science, technology, engineering or math.

To apply for INSPIRE, visit: <https://inspire.okstate.edu>.

## LEGO League teams to compete

Teams across Louisiana and Mississippi are preparing to compete in FIRST LEGO League tournaments at Mississippi State University in Starkville on Nov. 15 and at Mississippi Gulf Coast Community College in Gautier on Dec. 6. As shown in this photo from last year, teams use LEGOs to build robots to complete assigned missions. Teams also spend time researching an assigned topic. This year, the theme and topic is "Climate Connections."



## Student team presents at HQ

Late this summer, DEVELOP students from Stennis Space Center traveled to NASA's Headquarters in Washington, D.C., to make a presentation on Gulf Coast disaster management. The team included Madeline Brozen (left) and Lauren Childs. They were joined by fellow Stennis DEVELOP team member Matthew Batina, and others from Louisiana and Alabama.

## Stennis Energy Awareness Day

Donnie Thompson, site energy manager for the Jacobs Technology FOSC Group at Stennis Space Center, demonstrates the efficiency of fluorescent bulbs during the Energy Awareness Day held on site Sept. 30. The emphasis featured several exhibits to educate Stennis employees about energy usage.



# LAGNIAPPE

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