National Aeronautics and Space Administration

John C. Stennis Space Center

LAGNIAPPE

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Return to Flight

NASA names leaders of new safety center

NASA Administrator Sean O'Keefe announced Nov. 14 the team that will lead the new NASA Engineering and Safety Center (NESC). Ralph Roe Jr. is director of the NESC, and Dr. Paul M. Munafo is deputy director. Larry Crawford is deputy director for safety.

The NESC is an independent organization that will conduct testing and safety assessments to support critical NASA programs.

Implementation plan for Space Station released

NASA's "Implementation Plan for International Space Station Continuing Flight" was released Nov. 6. The plan demonstrates NASA's commitment to using the recommendations of the Columbia Accident Investigation Board in relation to the ISS program.

The plan can be viewed on the Internet at: *http://www.nasa.gov.*

Return to Flight mission crewmembers named

Three Mission Specialists have been added to the four astronauts already in training for the STS-114 mission planned for launch no earlier than September 2004.

The new crewmembers, Andrew Thomas, Wendy Lawrence and Charles Camarda, join Mission Commander Eileen Collins, Pilot James Kelly, Mission Specialists Stephen Robinson and Soichi Noguchi of the Japan Aerospace Exploration Agency, who were named to this flight in 2001.

"What will I do today to help return to safe flight?"

Sean O'Keefe
NASA Administrator

NASA names new center director, deputy director

NASA Administrator Sean O'Keefe announced Nov. 12 that U.S. Navy Rear Admiral Thomas Q. Donaldson V will be the new director, John C. Stennis Space Center (SSC), effective Jan. 5, 2004. NASA's associate administrator, Office of Space Flight, William Readdy, also announced Nov. 12 that David Throckmorton is deputy director, SSC, effective Nov. 30, 2003.

Admiral Donaldson was the Commander, Naval Meteorology and Oceanography Command (NMOC), one of the 30 agencies on site as part of the "federal city" at SSC.

"Tom is an experienced leader and manager," Administrator O'Keefe said. "He comes to us with a great background in communications, propulsion, Earth observation sciences and remote sensing. Combined with his leadership and management abilities, and his record in quality and safety assurance, we have a real asset being added to the One NASA team."

Rear Admiral Thomas Q. Donaldson V

David Throckmorton

"No stranger to the Stennis community, Tom Donaldson will bring a fresh perspective to the wide range of tasks at Stennis, from Earth sciences to rocket testing," said Readdy.

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One NASA Rollout focuses on collaboration among centers

NASA Deputy Administrator Frederick Gregory addresses a packed StenniSphere auditorium during the all-hands meeting for the One NASA Rollout at Stennis Space Center.

Cooperation and unity were the focus of the One NASA Rollout at Stennis Space Center (SSC) on Nov. 13, which included an all-hands meeting and breakout sessions led by NASA leaders from across the Agency.

The One NASA initiative, a plan to enable NASA to better fulfill its mission and vision, seeks to foster more collaboration among the centers and applications, and promote more efficient systems and processes throughout NASA. One NASA means all the NASA centers, including Headquarters, will operate as one team applying NASA's many unique capabilities to the pursuit of a shared vision.

During the all-hands meeting, SSC Interim Director Michael Rudolphi said, "What does One NASA mean? It means let's work together, look to each other and leverage our relationships so we can do more together than as individuals."

Johnny Stephenson, Implementation Team

See ONE NASA, Page 4

From the desk of Michael Rudolphi

Stennis Space Center Interim Director

It seems like it was only yesterday that Bill Parsons was named Space Shuttle Program Manager and I assumed the role of interim center director at Stennis Space Center (SSC). Now it's time for my final column in Lagniappe as I prepare to support the needs of NASA as the manager of the Space Shuttle Propulsion Office at Marshall Space Flight Center.

First of all, I want to wish the very best to Tom Donaldson and David Throckmorton as they move into their leadership roles at SSC. It's now time for the 300 people I said were here to help me during my time as interim director to give that same outstanding support to Tom and David.

NASA is growing and evolving, but our goals and mission remain the same. We truly are One NASA, and everyone, whether you're a civil servant or a contractor, plays a very important part in ensuring SSC and NASA are successful in accomplishing our unique mission.

I know that sometimes change can be difficult; however, life at SSC remains the same. Stennis still has a very critical role in both human space flight and Earth science. This is an opportunity for you to embrace this change as an asset for making the center even better. SSC has some of the best and brightest people in NASA, and now you have the benefit of new leadership that will continue to lead the center in a positive direction.

We truly are One NASA, and everyone, whether you're a civil servant or a contractor, plays a very important part in ensuring SSC and NASA are successful in accomplishing our unique mission.

It has been said before, but I'll say it again – the people of Stennis are what make this such an extraordinary center. You have earned the reputation for maintaining a high-level of excellence in all you do, but you must stay focused on the values and esprit that make SSC great. I'm certain that individually as a center, and as an Agency, we will benefit from these changes.

Let's give it our all as we move forward and grow from the experience.

MURph

Columbia crew honored at astronaut memorial

A ceremonial wreath was placed at the Space Mirror Memorial at the Kennedy Space Center Visitor Complex in Florida during a dedication ceremony Oct. 28.

The names of the STS-107 astronauts who lost their lives during the Columbia accident – Rick Husband, Willie McCool, Laurel Clark, Michael Anderson, David Brown, Kalpana Chawla and Ilan Ramon – join the names of 17 other space heroes who gave their lives for the United States Space Program.

The fallen astronauts' names are illuminated on the 42- by 50-foot monument's black granite surface.

NEWSCLIPS

NASA names new Aerospace Safety Advisory Panel

On Nov. 18, NASA Administrator Sean O'Keefe announced the new NASA Aerospace Safety Advisory Panel (ASAP), which includes nine members and a new charter.

"The Columbia Accident Investigation Board report clearly indicated we need to get back to basics with our safety assessment," said Administrator O'Keefe. "By recommitting ourselves to the original concept for the ASAP, we believe a stronger, more focused advisory panel will benefit the entire agency well beyond our Return to Flight efforts."

The ASAP was originally chartered by Congress in 1967 after the Apollo One fire, to act as an independent body to advise the NASA Administrator on safety issues regarding operations, missions and other agency initiatives. The new charter calls for the ASAP to be composed of recognized safety, management and engineering experts from industry, academia and other government agencies.

NASA named best work place in federal government

The Partnership for Public Service and American University's Institute for the Study of Public Policy Implementation released the results of a comprehensive survey of federal government employees on various aspects of job satisfaction. NASA ranked first among all federal agencies in the survey. The results reflect the positive attitude of the NASA work force and its involvement in the NASA mission.

This first-ever survey of more than 100,000 government employees graded all the federal agencies on several categories related to employee satisfaction.

NASA successfully tests revolutionary ion engine

NASA's Project Prometheus recently reached an important milestone with the first successful test of an engine that could lead to revolutionary propulsion capabilities for space exploration missions.

The test at NASA's Glenn Research Center, Cleveland involved a High Power Electric Propulsion ion engine. The event marked the first in a series of performance tests to demonstrate new high-velocity and high-power thrust needed for use in nuclear electric propulsion applications.

International Space Station marks five years in orbit

The International Space Station reached the historic five years in space milestone on Nov. 20. The orbiting laboratory complex has grown from a lone, uninhabited module into a permanently staffed, house-sized research facility.

The Station remains the largest and most complex international space research project in history. The Station will eventually triple scientific capacity with components awaiting the Space Shuttle's return to flight.

The first Space Station element, the Russian Zarya control module, was launched from Baikonur, Kazakhstan, Nov. 20, 1998. Two weeks later, the Space Shuttle Endeavour delivered the second element, the U.S. connecting module called Unity. The challenges, triumphs and tragedy shared by the international partnership since then have solidified cooperation on the Station among the United States, Russia, Canada, Japan and Europe.

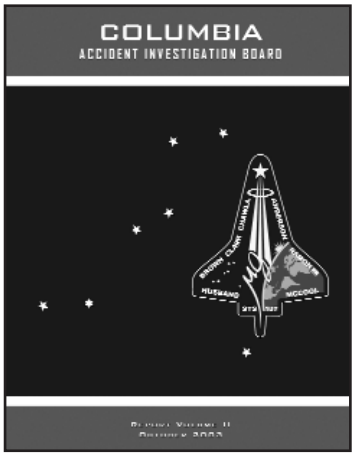
"Together with our international partners we have learned how to build, operate and maintain a very complex spacecraft, through the good times and the bad," said Bill Gerstenmaier, NASA Space Station Program Manager. "With this experience to guide us, we look forward to the future, with a vast expansion of the Station on the horizon."

At five years old, the Station is still growing. More than 80 tons of equipment and hardware are in the Space Station Processing Facility at NASA's Kennedy Space Center (KSC), Fla., being prepared for launch.

The Space Station has orbited the Earth more than 29,000 times. It is visible in the night sky as it flies more than 210 miles overhead. The living and working area inside the Station has a volume of about 15,000 cubic feet, larger than a three-bedroom house. The orbiting complex has been inhabited since Nov. 2, 2000.

Safety and Mission Success Week encourages communication throughout NASA

Following the agency-wide release of the Columbia Accident Investigation Board (CAIB) report, NASA named Nov. 17-21 as Safety and Mission Success Week.



The week encouraged NASA employees and contractors to read the report, reflect on the important messages it contains and comment on implementation strategies for enhancing mission success and organizational performance.

Before Safety and Mission Success Week began, NASA printed around 60,000 copies of the report, and distributed them to each NASA employee and contractor.

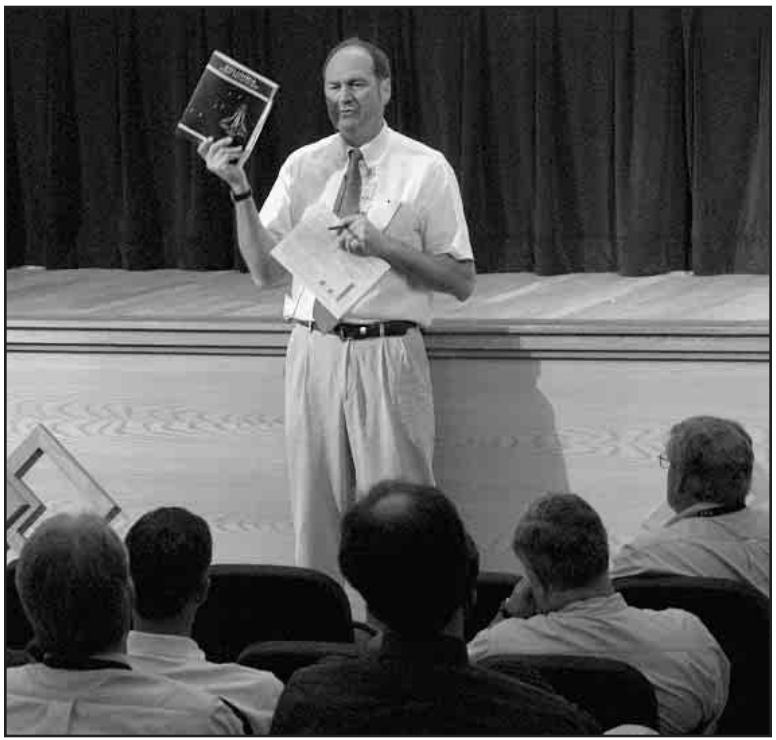
Stennis Space Center (SSC) kicked off the week with an all-hands meeting on Nov. 17 in the StenniSphere auditorium, led by Interim Center Director Michael Rudolphi, who encouraged each employee to read the CAIB report.

In addition, the briefing was broadcast live at the center and was recorded to be played throughout the week.

Following the all-hands meeting, each organization on site held discussions about safety and the implications of the CAIB report during staff meetings, team meetings and focus groups.

"Everyone ought to read this report with this in mind: What are the consequences of making a mistake and how can we as an organization think better about preventing that kind of thing from happening? It's relevant to all that we do."

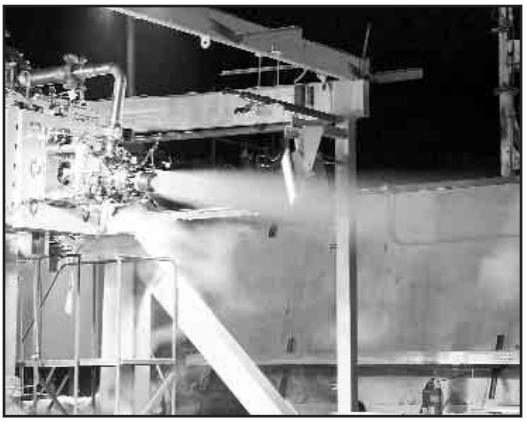
Michael Rudolphi
Stennis Space Center Interim Director



Above left, NASA's Jim Bevis, chief financial officer at Stennis Space Center (SSC), poses a question during the Safety and Mission Success Week all-hands briefing on Nov. 17.

At left, SSC Interim Center Director Michael Rudolphi gestures to the CAIB report, stressing its importance and encouraging center employees to read the report and talk about its implications to everyone.

Tests under way at Stennis helping development of rocket engine



NASA Stennis Space Center engineers recently conducted one of a series of hot-fire tests of an RS-84 engine component.

NASA Stennis Space Center (SSC) has begun testing components of the RS-84 prototype engine. The RS-84 is a reusable combustion rocket engine fueled by rocket propellant – a special blend of kerosene – designed to power future flight vehicles.

SSC engineers successfully conducted a cold-flow test of the RS-84 subscale preburner Sept. 24, when liquid oxygen was blown through the preburner. "The purpose of the cold-flow test is to characterize system performance of the facility and the resistance of the hardware," said Robert Ross, RS-84 project manager at SSC.

Engineers are now moving to the next phase of the test project, hot-fire testing, which is expected to continue into February 2004. Hot-fire testing is the term used to describe combustion tests, which demonstrate how a device performs when its fuel is ignited for the expected duration of firing.

The final RS-84 prototype is expected to begin full-scale test firing by the end of 2007.

Final design and fabrication of the prototype engine and component test articles will be provided via a December 2003 Request for Proposals solicitation, which is open to all competitors. NASA will award the Booster Engine Prototype Phase II contract in late 2004. The effort will include an option for the design of a flight engine, expected to commence in 2007.

SSC is partnered with Marshall Space Flight Center (MSFC) in Huntsville, Ala., and Boeing Rocketdyne in Canoga Park, Calif., for development and testing of the RS-84, one of two competing efforts under way as part of NASA's Rocket Engine Prototype effort, which seeks to develop lower-cost, highly reliable engine technologies.

The Rocket Engine Prototype project, managed by NASA's Next Generation Launch Technology (NGLT) program, is a risk-mitigation effort intended to deliver a large-scale prototype of an oxygen-rich, staged-combustion engine – one that will enable near-term development of flight-ready engines for a next generation reusable booster.

The next competitive contract phase is open to all interested organizations that can demonstrate the ability to design and develop a prototype engine meeting NASA's requirements.

Administered for NASA's Office of Aerospace Technology by the MSFC, the NGLT program seeks to develop key technologies that will provide the foundation for America's future space fleet – yielding low-cost space access and reinvigorating the U.S. space launch market to compete with space agencies and commercial enterprises worldwide. For more information, visit *http://www.ngltnews.com.*

New 3-D technology developed through NASA program

The next generation of three-dimensional viewing may be just around the corner thanks to a Small Business Innovation Research (SBIR) program contract through NASA Stennis Space Center's Office of Technology Development and Transfer. The prototype of a high-resolution 3-D display system technology, called VolumeViewer, was developed by Genex Technologies Inc., of Kensington, Md.

VolumeViewer is a patented 3-D display system with a 360-degree, group-viewing capability. The system requires no special eyewear, so viewers can realistically perceive the physiological and psychological depth cues of 3-D objects.

Most existing display systems hinder a viewer's ability to accurately visualize the high-dimensional data of advanced engineering design and space mission planning because they handle only two-dimensional, flat

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ONE NASA . . .

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Lead for One NASA, said the purpose for the One NASA Rollout at SSC, the sixth such rollout among the centers, was for employees to learn more about their sister centers and how they fit into NASA's vision. "Stennis serves a very unique place in NASA – all 10 centers do," Stephenson said.

NASA Deputy Administrator Frederick Gregory said, "How we work together collaboratively is how we'll show we're capable of great things." Gregory called NASA the "greatest organization, the greatest visionary, with the greatest people."

Following the all-hands meeting, employees were given the opportunity to participate in breakout sessions designed to increase understanding of various NASA initiatives.

Al Diaz, center director of Goddard Space Flight Center, spoke on NASA-wide implications of the Columbia Accident Investigation Board (CAIB). "It [the CAIB report] will provide us with an opportunity to be better by realizing the Columbia accident was caused by broader issues than human space flight," he said.

Susan Garman, associate director at Johnson Space Center in Texas, conducted a session on the Freedom to Manage initiative, aimed at creating a more efficient, effective and accountable management system within NASA.

Tim Owen, on detail to NASA Headquarters as full cost training lead, conducted a session on the President's Management Agenda/Full Cost with SSC's Jim Bevis, chief financial officer, and Rena Perwien, deputy chief financial officer.

Dr. Dorothy Hayden-Watkins, assistant administrator for Equal Opportunity Programs at NASA Headquarters,

Joan Peterson (right), director of the Personnel Division, Office of Human Resources at NASA Headquarters talks with Ron Magee (left), acting deputy manager for the Program Integration Office at SSC and Nancy Sullivan (center), External Affairs, Office of Education. Peterson along with other members of the One NASA group visiting Stennis participated in the annual Stennis barbeque at the Cypress House following the One NASA rollout. Sharlene Kodrin, External Affairs, Office of Public Affairs and Gerry Meeks, Technology Development and Transfer Office (in background) help with the event.

and Joan Peterson, director of the Personnel Division, Office of Human Resources at NASA Headquarters, presented a session on Alternative Dispute Resolution and Human Capital Planning.

John Shannon, acting manager of the Space Shuttle Flight Operations and Integration Office at Johnson Space Center, presented the Return to Flight session. "There's nothing in the technical aspect [of return to flight] we can't do," Shannon said. "We're NASA. The more difficult task is changing the cultural and organizational problems raised by the CAIB report."

Rudolphi summed up the One NASA initiative saying, "We are Stennis. We are small but mighty, and wherever this agency goes, we go."

Earth Science Applications participates in first geospatial conference

NASA recently supported the first-ever Gulf Coast Geospatial Conference, held Oct. 22-23 at the Palace Casino Resort in Biloxi. The conference, organized by the University of Southern Mississippi's Gulf Coast Geospatial Center (GCGC) in Ocean Springs, drew more than 250 geospatial professionals from across the United States and from as far away as Bogota, Colombia.

The University of Southern Mississippi (USM) created the GCGC in 2001 with a NASA grant. Attendees to the conference represented private industries including Lockheed Martin Space Operations (LMSO), Digital Globe and Planning Systems Inc., and universities including the University of North Dakota, Louisiana State University, the University of New Orleans and USM.

The conference was "extremely successful," according to Edward Pinero, GCGC associate director, who conceived and organized the event.

Members of the Earth Science Applications (ESA) Directorate staff at NASA Stennis Space Center (SSC) presented research results at the conference.

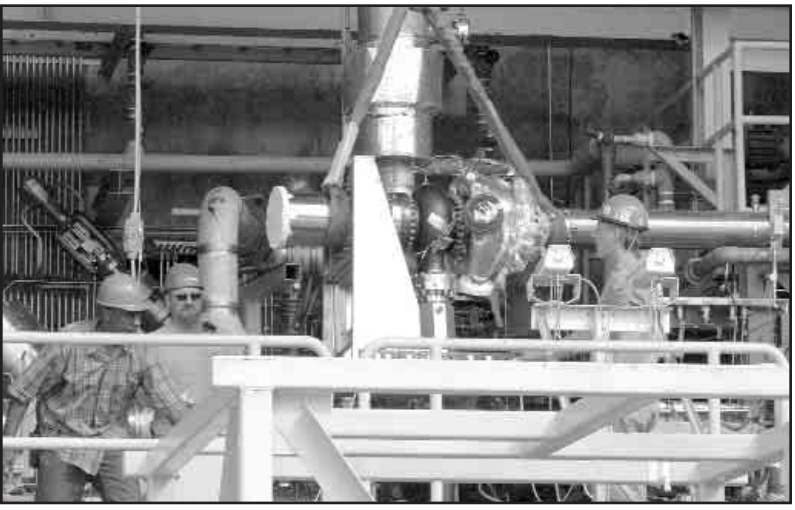
The Mississippi Association for Spatial Technologies and The Nature Conservancy co-sponsored the event, which aimed to educate the geospatial community about current applications and trends, Pinero said. He added, "That's where NASA played a key role, in helping provide that knowledge."

"It was very encouraging to see the results of the Gulf Coast Geospatial Conference partnership," said Marco Giardino, chief of ESA's Applications Integration Division. "It clearly demonstrates the growing regional importance of Mississippi's academic institutions in the field of geospatial technology and applications."

Dan Lee (left) of GeoTek, and Milton Chambliss of the Mississippi Space Commerce Initiative discuss one of the displays at the first Gulf Coast Geospatial Conference, held Oct. 22-23 at the Palace Casino Resort in Biloxi. NASA participated in the event.

Pinero said plans are already under way for the second conference in 2004. "The partnership between USM and NASA laid the groundwork for a successful geospatial conference, and has positioned the conference to be a major, ongoing event on the Mississippi Gulf Coast."

Key milestones achieved on new, innovative hydrogen-fueled engine



Olen Hargett, Paul Miller and Greg Byrd, of the Boeing Co., remove the Integrated Powerhead Demonstrator (IPD) fuel turbopump Nov. 11. Boeing will inspect the turbopump and then incorporate it into assembly of the IPD engine system.

NASA, the U.S Air Force and two prime aerospace contractors have successfully completed testing of two key rocket engine components – critical milestones in the development of innovative engine systems that could power a new generation of American space launch vehicles.

The tests – of a new, liquid-hydrogen turbopump and a unique oxidizer preburner – are part of a project called the Integrated Powerhead Demonstrator (IPD). The project is a joint venture between NASA's Next Generation Launch Technology (NGLT) program, managed for NASA at the Marshall Space Flight Center (MSFC) in Huntsville, Ala., and the Integrated High Payoff Rocket Propulsion Technologies program, managed for the Department of Defense by the U.S Air Force Research Laboratory at Edwards Air Force Base, Calif. The turbopump test series, conducted at NASA Stennis Space Center (SSC), was completed Oct. 29.

Both tests are part of component-level, risk-reduction studies, intended to lead to development of a hydrogen-fueled, full-flow, staged-combustion rocket engine – the first of its kind. The engine will employ preburners featuring both oxygen-rich and hydrogen-rich staged combustion, which help to cool engines during flight, achieve higher engine efficiency and reduce exhaust emissions.

"Completion of these tests moves us two steps closer to full-scale, integrated testing of the entire IPD system," said Garry Lyles, manager of the NGLT program at MSFC. "America's future in space hinges on cutting-edge technology development, and together with our Air Force and industry partners, we're focused on creating a more reliable, robust engine system.

Integrated system testing is scheduled to begin in late 2004.

The liquid-hydrogen fuel turbopump was developed for NASA by the Rocketdyne Propulsion and Power division of The Boeing Co. of Canoga Park, Calif.

The design of the fuel turbopump addresses key maintenance schedules of current reusable rocket engines, and is intended to achieve a lifespan goal of 200 flight missions and 100 flights between periods of engine refurbishment – 10 times the current capability of reusable rocket engines.

"With the successful completion of the fuel turbopump component test series, we have substantially lowered the risks associated with pursuing the future integrated engine system test series," said Harry Ryan, IPD project manager at SSC.

The IPD is a cornerstone of NASA's NGLT program, which seeks to provide safe, dependable, cost-cutting technologies for future space launch systems, increasing engine operability and leading to aircraft-like flight operations.

NASA seeks diverse recruits to join work force

NASA recently created the Corporate Recruitment Initiative (CRI) to attract and maintain a work force that captures the full potential of this nation's diversity, and to address the national need for a new generation of people skilled in science, technology, engineering and mathematics. On Sept. 9, NASA began hosting a series of recruitment events, "NASA Awareness Days," on college and university campuses across the country to kick off the CRI.

Eight employees from NASA Stennis Space Center (SSC) will lead recruiting efforts at the University of Texas, El Paso, Nov. 16-18: Dorsie Jones, lead, human resources specialist; Dewey Herring, education officer; Jean Rhodes, equal opportunity officer; Ramona Travis, aerospace technologist, technical management; Patrick Scheuermann, deputy director, Center Operations Directorate; Freddie Douglas, lead, System Management Office; David Throckmorton, SSC assistant director; and Fernando Figueroa, aerospace technologist, Electronic Instrumentation Systems. They will be joined by Jim Gorman, Phillip Sakimoto and Mabel Matthews from NASA Headquarters.

The team also visited New Mexico State University in Las Cruces, N.M., and the American Indian Science and Engineering Society in Albuquerque, N.M.

NASA has outlined a five-year plan for the CRI, which is an integrated NASA-wide approach to human capital management, coordinated by NASA's Office of Education, Office of Human Resources and Office of Equal Opportunity Programs. The aim of the approach is to attract a work force that is not only diverse, but has the technical competencies that are needed to achieve sustained levels of high performance to accomplish NASA's challenging mission.

The CRI is designed to focus on high-demand competencies in need at NASA: Systems Engineering, Test Engineering, Mission Assurance, Human Factors, Nuclear Engineering, Integration Engineering, Design and Development Engineering, Quality Engineering and Assurance, Business Management and Mission Execution.

The CRI will also link NASA's many

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Memorial service earns award for NASA Public Affairs Office

From more than 220 entries, NASA's Public Affairs Office at Stennis Space Center (SSC) won five regional awards, including a prestigious Lantern Award, at the Southern Public Relations Federation (SPRF) awards banquet held Oct. 24 at Auburn University.

The SPRF is the premier organization for public relations professionals in the Gulf South, consisting of members from Alabama, Mississippi, Louisiana and the Florida Panhandle.

The Lantern Award was presented for the Public Affairs Office's planning and implementation of the memorial service at SSC in honor of the STS-107 crew.

Additionally, the Public Affairs Office won Certificates of Excellence for the following projects: the visit of the STS-113 astronaut crew; the live, streaming Internet broadcast of a test firing of a Space Shuttle Main Engine; and the SSC Mission Brochure.

The Public Affairs Office was also presented a Certificate of Achievement for a feature story about former SSC Center Director Bill Parsons, who now manages NASA's Space Shuttle Program.

Star Scene at StenniSphere Visitor Center

Above, Brittany Bolden (front) and Jennifer Hibbs explore the Spinoff Technologies display Nov. 18. They were visiting StenniSphere as part of a group of Slidell High School students from Slidell, La., who work as interns at NASA Stennis Space Center.

At left, Emily Davis (left), Sara Dumas, Caroline Bondurant and Arnesha Weeks, students from Fairhope Intermediate School in Fairhope, Ala., learn about the history of spaceflight from the timeline on display. The fifth-graders visited StenniSphere Oct. 21.

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"Tom also will be a huge asset for our Return to Flight efforts. I am confident he will continue the Stennis legacy for accurate testing, innovation and aerospace leadership," Readdy said.

"Over the past three years working with the leadership here on site, and in the surrounding communities, I remain convinced that Stennis is unique in its capability and capacity as the only place where world-class space and ocean organizations work together in one location," Donaldson said.

Donaldson replaces interim SSC director Michael Rudolphi, who has held that position since May 2003. Rudolphi is moving to the Marshall Space Flight Center (MSFC), Huntsville, Ala., where he will serve as manager of the Space Shuttle Propulsion Office.

"Rudi did a terrific job at Stennis, and he will be a tremendous addition to the Marshall team," Administrator O'Keefe said. "His experience within NASA and his leadership skills will greatly benefit our Return to Flight efforts."

Throckmorton has been assistant director of SSC since August 2003 as part of the Space Flight Enterprise's Corporate Executive Development Program. Prior to arriving at SSC he was the MSFC engineering directorate deputy director.

At MSFC, Throckmorton led a large, multidisciplinary work force engaged in engineering design, analyses, development, and testing in support of the broad array of NASA space flight programs.

"David has a wealth of engineering and multidiscipline experience," Readdy said. "Coupled with his extensive knowledge of the Space Shuttle and other NASA programs and his leadership skills, he will be an invaluable member of NASA's Space Shuttle Return to Flight team."

Throckmorton said, "This is truly an honor and a privilege for me, and I am really pleased to become a permanent member of the Stennis family and the Gulf Coast community."

Throckmorton is an Associate Fellow of the American Institute of Aeronautics and Astronautics (AIAA), and has previously served the Institute as Chairman of the Thermosphysics Technical Committee, as a director-at-large, and as the director, Technical Aerospace Sciences Group. He serves on the AIAA National Board of Directors in the elected position of director, Technical Structures, Design and Test Group.

GENEX . . .
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images. VolumeViewer's ability to provide sharable 3-D visualization of mission scenarios could enhance the accuracy and efficiency of validation, decision-making and collaboration on satellite data analysis and visualization.

VolumeViewer was developed to offer NASA a system to visualize various types of three-dimensional data collected by satellite sensors. Genex proved the technology's feasibility through extensive experiments in visualization, data analysis and manipulation of NASA's geospatial data acquired by remote sensors.

"This SBIR project is an excellent example of how NASA and industry can partner to develop a NASA-needed technology while at the same time help fulfill a commercial market place need," said Ray Bryant, NASA Technology Development and Transfer Office SBIR/STTR manager.

Genex's highly accurate 3-D data can provide precise 3-D measurements in software packages for use in applications from plastic surgery to custom-fitting hearing aids, and from facial recognition systems to cleft-palate research studies.

"We are very grateful for the opportunities provided for us by the SBIR program," said Patrick May, Genex's vice president of sales and marketing. "We believe that the U.S. economy and homeland defense will experience significant benefits as our solutions are deployed in the commercial, medical, governmental and military sectors."

For more information on the SBIR program, contact the Technology Development and Transfer Office at (228) 688-1929 or visit *http://technology.ssc.nasa.gov.*

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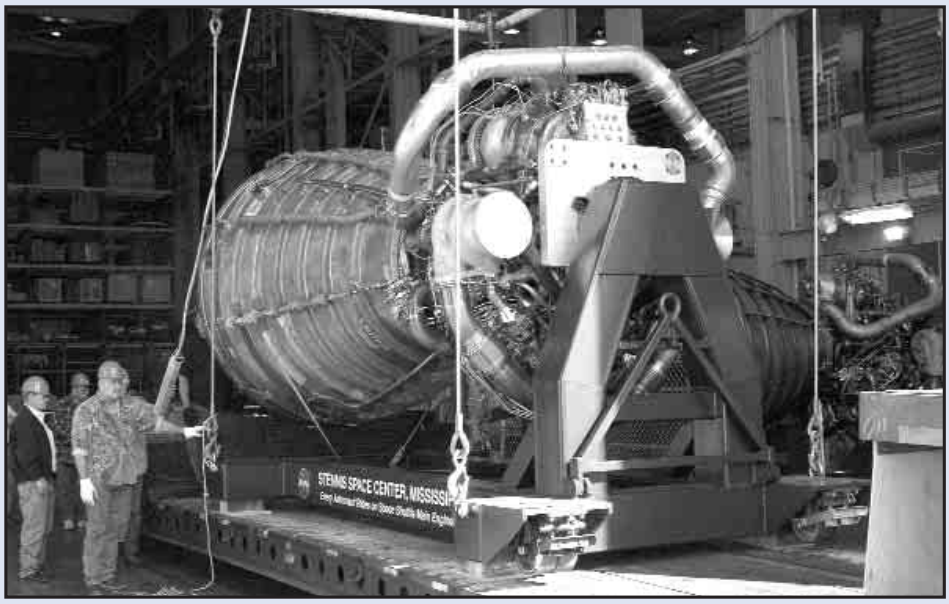
student research and grant programs while leveraging its networks with minorities, women and individuals with disabilities to maximize workforce diversity.

In line with the overall goal, NASA expects the CRI will specifically strengthen NASA's college recruitment program; increase awareness of and interest in NASA education and employment opportunities; use workforce analysis as a foundation for NASA-wide recruitment; and partner with professional, scientific research and education organizations for minority, women and individuals with disabilities to enhance interest and participation in NASA career opportunities.

By Nov. 18, teams of NASA representatives, including NASA Administrator Sean O'Keefe, Deputy Administrator Frederick D. Gregory and Associate Deputy Administrator for Institutions and Asset Management James Jennings, expected to have met with students from nearly 40 institutions.

For information about NASA's Office of Human Resources on the Internet, visit: *http://nasapeople.nasa.gov.*

SSC participates in Centennial of Flight celebration at Kitty Hawk



Above, a Space Shuttle Main Engine (SSME) is loaded onto a flatbed trailer in preparation for its journey to Kitty Hawk, N.C. The SSME will be part of the NASA exhibit at Kitty Hawk for the Centennial of Flight celebration Dec. 12-17 at the Wright Brothers National Memorial. The SSME, normally on display at StenniSphere, will be seen by more than 100,000 guests at the centennial celebration.

SAFETY CORNER

Caution is key when using space heaters

As winter draws near, nightly news stories are filled with tales of house fires created by the improper maintenance and lighting of space heaters.

The following tips on space heaters will help kick off the winter season safely:

■ Use only the fuel recommended by the heater's manufacturer. Never use gasoline in a space heater. Kerosene is crystal clear, never yellow in color.

■ Fill the heater outdoors. Do not overfill, and do not refuel the heater while it is hot. Operate the space heater on a drip pan to contain spills.

■ Keep clothing, furniture, draperies and carpeting at least three feet away from the space heater.

■ Keep a multipurpose dry chemical fire extinguisher handy.

For electric space heaters, the following safety tips are recommended:

■ Use only electric heaters equipped with a thermostat or an automatic shut-off.

■ Keep all combustible materials at least three feet away.

■ Never leave any space heater unattended, nor use one while you're sleeping.

■ Make sure your home is equipped with smoke detectors with fresh batteries.

Remember to place all space heaters on a raised metal surface, not directly on carpets or other combustible surfaces. Using these tips will help ensure a safe transition to the winter months.

QUICKLOOK

Stennis security staff hosted the Counterintelligence Agent, Chief of Center Security and the Criminal Investigator Conferences Nov. 4-6 at the SSC Conference Center. David Saleeba, NASA's Assistant Administrator of the Office of Security Management and Safeguards, conducted briefings on the future of NASA's security programs and initiatives. Presentations included a local threat briefing by the Gulfport FBI office and a Defense Intelligence Agency briefing on the Ana Montes espionage case.

NASA and the U.S. Geological Survey will sponsor the International Workshop on Radiometric and Geometric Calibration at the Grand Casino Gulfport Hotel, Dec. 2-5. The workshop is part of the efforts of the International Society for Photogrammetry and Remote Sensing (ISPRS) to standardize radiometric and geometric parameters of sensors. For more information, visit: *http://www.edudevweb.com/isprs*.

Astro Camp Saturday is now accepting applications for children ages 9-12 to attend the Dec. 6 camp themed "From First Flight to Space Flight." The fee is $50 and includes all supplies. For more information, call StenniSphere at (228) 688-2370.

The University of Southern Mississippi will offer a master's degree in computer science at Stennis Space Center beginning in January 2004. Registration deadline is Jan. 8, 2004. For more information, call the Center of Higher Learning at (228) 688-3113.

Wilbur and Orville Wright made their historic first flight Dec. 17, 1903. In support of NASA Quest's Centennial of Flight Project, LAGNIAPPE offers trivia questions about NASA's role in flight each issue during the yearlong celebration.

Q. How many spacecraft have flown to the planet Mercury?

A. Only one spacecraft has been sent to the small planet closest to the Sun. In early 1973, NASA launched Mariner 10, which on its way to Mercury, passed by Venus and used that planet as a "gravity assist" to send it toward Mercury. Through 1974, Mariner 10 flew by Mercury three times, each time returning the first-ever photographs of the surface of the planet, which showed a terrain similar to that of the Moon.

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