



National Aeronautics and Space Administration



LAGNIAPPE

John C. Stennis Space Center

Volume 4 Issue 11

www.nasa.gov/centers/stennis

November 2009

Report: U.S. space program must change

The U.S. Human Space Flight Plans Committee released its final report Oct. 23, concluding that NASA is on an “unsustainable trajectory” in which goals do not match available resources.

Titled “Seeking a Human Spaceflight Program Worthy of a Great Nation,” the 155-page report by the 10-member panel outlined eight options for the future of space exploration.

It made clear a time of decision has arrived, insisting the nation’s space agency is at a “tipping point” because of the mismatch of goals and funds. “Either additional funds need to be made available, or a far more modest program involving little or no exploration needs to be adopted,” the report emphasized.

Indeed, the committee report estimates NASA needs an extra \$3

billion a year, beginning in 2014, if humans are to travel beyond low-Earth orbit again. The space agency currently receives \$18.7 billion a year.

At the same time, the panel – known as the Augustine Commission for Chair Norman Augustine – suggested a new space exploration vision is needed. In fact, three of its options proposed a “flexible plan” in which the nation would aim at exploring some place other than the moon, leading to an eventual Mars mission.

Since 2003, NASA has focused on a space exploration vision presented by then-President George W. Bush following the space shuttle Columbia tragedy. That vision called for retiring the space shuttles in 2010, ending the International Space Station mission in 2015 and sending humans back to the moon and on to Mars.

See **REPORT**, Page 3



Ares I-X lifts off

After a one-day delay due to weather, NASA celebrated a successful Oct. 28 test launch of the Ares I-X rocket being developed as part of the Constellation Program plan to transport astronauts to the International Space Station after the space shuttle retires and to explore destinations beyond low-Earth orbit. The two-minute test flight was conducted to provide data for engineers designing and building the new space vehicle.

Stennis cited as ‘Project Ready’ site

NASA’s John C. Stennis Space Center was recognized Nov. 6 as the first site to earn certification in the new technology park category of the Project Ready Certified Site Program, a Mississippi Power Co. industrial site initiative to attract new industries to the region.

One of the fastest-growing trends in the site location business is the demand for “project ready” industrial sites. Companies making site loca-

tion decisions want sites ready to go and relatively risk free. Stennis Space Center already has passed qualifying steps to meet this growing demand.

“Since Hurricane Katrina, we have seen a 10 percent growth in our center’s workforce in support of NASA, other government agencies, and private technology-based companies,” Stennis Director Gene Goldman said. “We feel that our future is bright in south Mississippi, and we

hope this certification will reassure those looking at our center.”

The designation is important, Mississippi Power Economic Development Director Arnie Williams said. “We have seen how certified sites have brought major projects to other communities, and how great an impact they have on the regional economy,” he explained. “We want Stennis Space Center to see its share of this kind of growth.”

From the desk of

Gene Goldman

Director
Stennis Space Center



*“And all this science, I don’t understand.
It’s just my job five days a week.”*

(E. John, B. Taupin, “Rocket Man,” 1972)

We watched with the world last week as the Ares I-X launched from Kennedy Space Center. It was an awesome display, as a Saturn-like “stick” slowly rose from the same pad that has held Saturn V’s and shuttles earthbound until releasing all toward space on plumes of prayers and the magic of mathematics, chemistry and physics. With a slightly offset center of gravity, the Ares I-X vehicle leaned toward the Atlantic, arced gracefully over it, and splashed down at a point predicted by the latest NASA analytic software, based on the work of Newton, Kepler and others. Amazin’ stuff!

There was a lot of uncertainty about even launching the I-X. Questions regarding the future of Constellation, and especially the Ares I, are still to be answered. NASA is working now to finalize a recommendation to the president for consideration, with the findings of the Augustine panel, regarding all aspects of human spaceflight. There are multiple questions to be answered and

many associated opinions. The administrator believed that this launch was a unique opportunity to “get data,” and it achieved that.

I just took off, “leaving on a jet plane,” (fascinating in itself!) looking down at the graceful, lamp-lit curves of an interstate highway, with its coordinates defined by Euclidean geometry. Mundane, if even noticed by most, it’s art to me. The opportunity we have to work in the effort to further explore the earth and our universe is singular.

At Stennis, we test the liquid engines that have taken humans to space since the ’60s, and we’re getting ready for the next generation. At Stennis, we use remote sensing technology to study the earth and the health of its waters for the benefit of the region and nation, as exhibited in the recent Oceans ’09 exposition in Biloxi. Here, we are involved in engineering of the A-3 Test Stand’s unique steam generating system, as well as its parking lot and access road. In all these endeavors, we use multiple branches of engineering, science, math and, hopefully, a healthy dose of social studies to build on our existing, collective human knowledge. NASA is in the business of exploring the universe for “all mankind.” All of our jobs enable that goal. I can’t think of a more inspiring place to be.

Dream big; work harder!

Gene

INFINITY board hosts legislators

INFINITY Science Center board members met Oct. 16 and voted to begin preparing bid packages for construction of the state-of-the-art Stennis Space Center visitors center. Infrastructure work for the project has been completed. Now, the focus falls on construction of the 72,000-square-foot center. During their meeting, board members also toured Stennis facilities, posing here in front of RS-68 rocket engines, which are tested at the center. Board members were joined by former astronaut Fred Haise; architectural designer Ed Schlossberg; former Stennis Director Roy Estess; Mississippi Senate President Pro Tempore Billy Hewes (R-Gulfport); Mississippi Sen. David Baria (D-Bay St. Louis); Mississippi Rep. and Speaker Pro Tempore J.P. Compretta (I-Bay St. Louis); Louisiana Sen. A.G. Crowe (R-Slidell); and Louisiana Reps. Greg Cromer (R-Slidell) and Kirk Talbot (R-River Ridge).



FULFILLING NASA'S EXPLORATION MISSION

Stennis engineer watches work crash – and enjoys it

Most people would not get a thrill out of seeing their hard work crash, but Karma Snyder – a project manager at NASA's John C. Stennis Space Center – was anxious to see the rocket engine she helped design smash into the moon during the wee hours of Oct. 9.

Snyder was a senior design engineer on the RL10 liquid rocket engine that powered the Centaur, the upper stage of the rocket for NASA's Lunar CRater Observation and Sensing Satellite mission. Part of the LCROSS mission was to search for water on the moon by striking the lunar surface with a rocket, creating a plume of debris that could be analyzed for water ice and vapor.

Snyder's work on the RL10 took place from 1995 to 2001 when she worked as a senior design engineer with Pratt & Whitney Rocketdyne. In light of the LCROSS mission, she still sees the RL10 project as one of her biggest accomplishments.

"I'm excited because I had so much to do with that engine," Snyder said. "It's

wonderful to see it come into full service. As one of my co-workers said, the original dream was to get that engine to the moon, and we're finally realizing that dream."

The mission was aired live online and on NASA-TV. Snyder said she shared the moment with her family by watching online at home. "I got goose bumps," she said. "We were all very excited."



Karma Snyder now is a project manager at Stennis Space Center. Earlier, she worked on a rocket engine that helped power NASA's LCROSS moon mission.

Snyder could see more of her work moon-bound with NASA's plans for a lunar return. She worked in a collaborative effort between NASA and the U.S. Air Force to develop technology for upgrading the J-2 engine that was used on Saturn V (in NASA's earlier moon missions) to the J-2X engine, being developed to take humans back to the moon and possibly beyond.

Snyder graduated from Auburn University with a bachelor's degree in mechanical engineering and is close to attaining a master's in aerospace engineering. She came to NASA in 2001 as a systems integration engineer. She is a native of Biloxi and resident of Diamondhead.

options would continue that plan. The others all call for extending the shuttle until at least 2011, maintaining the ISS until 2020, turning over low-Earth orbit trips to commercial operations and adopting new exploration goals. This could include exploration of such objects as asteroids and comets, or even Martian moons.

NASA successfully launched Ares I-X on a test flight Oct. 28, just five days after the final Augustine Commission report was released. How-

ever, the report offered no criticism of NASA for its Ares I work, citing changing circumstances and reduced resources for its recommendation. "With time and sufficient funds, NASA could develop, build and fly the Ares I successfully," the panel wrote. "The question is, Should it?"

That question now falls to President Barack Obama, who will use the Augustine Commission report to determine the future course of NASA and the nation's space program.

Launch schedule

Wideband Global SATCOM spacecraft (Delta IV)
Target: Nov. 19, 2009
6:45 - 7:30 p.m.

Wide-field Infrared Survey Explorer (WISE) satellite
Target: Dec. 7, 2009
8:10 a.m.

STS-130
Shuttle Endeavour
Target: Feb. 4, 2010
5:20 a.m.

STS-131
Shuttle Discovery
Target: Mar. 18, 2010
12:08 p.m.

STS-134
Shuttle Endeavour
Target: July 29, 2010
7:45 a.m.

STS-133
Shuttle Discovery
Target: Sept. 16, 2010
Noon

REPORT

Continued from Page 1

NASA responded with the Constellation Program and began work on a pair of new generation spacecraft, the Ares I and Ares V rockets. The Ares I upper stage and the Ares V Earth-departure stage would both be powered by the J-2X engine, which is to be tested at Stennis.

Only two of the committee's eight

NASA adopts Stennis HazNet

It has been called “the wave of the future” – and now, the “all-hazards network” system (HazNet) developed through the Innovative Partnerships Program at NASA’s John C. Stennis Space Center, is being implemented across the space agency.

HazNet incorporates maps, reports, Internet-derived data and real-time sensor input into a geographic information system (GIS)-based display to provide organizations and officials with comprehensive information during emergency and disaster situations. It also allows organizations and officials to communicate, collaborate and share data during such events, enabling a coordinated response.

“The system is a real benefit for managing incidents,” Stennis’ Emergency Director Ron Magee said. “It draws information from a variety of sources and allows you to have at your fingertips information that you need to properly respond to events.”

Based on five years of research and testing, HazNet was developed by NVision Solutions Inc., a Bay St. Louis company that worked with NASA and other federal agencies on the project. Most of the funding for



Stennis Space Center employees Mike McKinion (left) and Luke Scianna, both with the Jacobs Facility Operating Services Contract Group, monitor the facility and surrounding area on the “all-hazards network” known as HazNet. The system was developed by a Mississippi company to facilitate coordinated response during emergency and disaster situations.

development came through NASA, including the Small Business Innovation Research program.

Through the NASA partnership, the HazNet system was implemented in neighboring St. Tammany Parish, La., and Hancock County, where Stennis is located. A contract was awarded last year to install the system at three

NASA locations. At Stennis, the system was unveiled with the opening of the facility’s new Emergency Operations Center in June.

This year, an SBIR Phase III contract was awarded to install the system throughout NASA centers. The goal is to provide a real-time common operating picture for responders, so breakdowns in communication and gaps in knowledge will not hamper emergency and/or disaster response. At Stennis, a major feature of the system is to enable effective response during a possible hurricane.

A key aspect of the new system is its adaptability. For instance, 3-D building displays already are being incorporated, as well as emergency vehicle tracking and storm evacuation capabilities and an emergency shelter management system.

“This represents a very big step forward in safety and security for Stennis and all of NASA,” Magee said of the system. “We’re excited to have been a part of its development.”

Stennis Fire Department acquires ladder truck



The Stennis Space Center Fire Department recently acquired a new emergency response vehicle, Ladder-1, for use on-site. The E-One HP 78 Aerial Truck is a combination aerial ladder and fire suppression unit and is designed with the latest safety technology. Featuring a 78-foot ladder and a pumping capability of 1,500 gallons per minute, the new truck provides firefighters with a tremendous rescue and fire suppression tool, Stennis Fire Chief Clark Smith said.

Astronaut awards Silver Snoopys

A dozen Stennis Space Center employees received Silver Snoopy awards from astronaut Dominic Gorie on Oct. 22. The Silver Snoopy is the astronauts' personal award and is presented to less than 1 percent of the total workforce annually for outstanding flight safety and mission success. This year's recipients appear in accompanying photos.



Gorie (center) with Mounir Sabbagh and Marsha Ladner of Jacobs NASA Test Operations Group



Gorie with Jerry Knight (l) and Dale Green of Jacobs Facility Operating Services Contract Group.



(L to r) Gorie; Clay Brown of Jacobs FOSC; and Stennis Deputy Director Patrick Scheuermann.



Gorie (center) with Pratt & Whitney Rocketdyne recipients Chris Coogan (l to r), Sherry Giveans, Nicholas Riesner and Janine Cuevas.



(L to r) Gorie; Terry Addlesperger of NASA; Justin Junell of NASA; and Rex Cooksey of CSC.

Scholarship honors Stennis director

Meridian Community College announced Oct. 15 that an engineering scholarship has been established in honor of alumnus Gene Goldman, director of NASA's John C. Stennis Space Center in Hancock County.

The first \$1,000 scholarship will be awarded to an engineering student attending MCC in the 2010 spring semester. "I am honored a Meridian Community College scholarship will be awarded to an aspiring engineering

student in my name," Goldman said. "The real tribute is to the members of the MCC Foundation that provides the funding for this outstanding scholarship program, which benefits the youth of Lauderdale County, as well as develops our future leaders. It is a remarkable demonstration of community service."

An MCC and Mississippi State University graduate, Goldman began his NASA career in 1990. He served as deputy manager and manager of

the space shuttle main engine project at Marshall Space Flight Center in Huntsville, Ala., before joining the Stennis team. Prior to becoming director at Stennis in 2008, he served two years as deputy director of the rocket engine testing facility.

"I can't think of anyone who, despite his position, has remained as down to Earth and humble," MCC President Scott Elliott said in announcing the scholarship. "We here at MCC thought this was appropriate."



Sue Smith, a Stennis medical clinic employee, takes the temperature of colleague Karen Badon during 2009 Safety and Health Day activities Oct. 22.

Stennis employees participate in Safety and Health Day and Energy Awareness Day activities



Stennis employees Maria Etheridge (l to r), Linda Saul and Maurice Prevost visit a Coast Electric Power Association display during 2009 Energy Awareness Day on Oct. 20.

Aerial view shows Stennis wonder

Editor's Note: The following was written by Samantha Yeager, a NASA public affairs co-op student at Stennis Space Center.

One can only fully appreciate the beauty and magnitude of Stennis Space Center from the sky. Its massive test stands rising high above the pines, its 125,000-acre buffer zone and its presence in south Mississippi as host to numerous tenants working to create a unique federal city, came together as one clear picture on the bright morning of Oct. 20.

The occasion was a helicopter expedition to take aerial photographs of the center. As the pilot maneuvered – weaving through the test complex and hovering above buildings below – black and white images from the center’s beginnings flooded my thoughts. I thought of how Stennis began in the 1960s in direct response to the space vision of President Kennedy, and of how it has grown into a home for more than 30 federal, state, academic and private organizations, and numerous technology-based companies.

While the photographer captured still shots of the stands against the pale blue sky, my mind traveled through the past, present and future. There stood the B-1/B-2, A-1

and A-2 test stands, representing a past of testing for the Apollo and Space Shuttle programs. In the distance, the stunning A-3 Test Stand rose above the others, representing the future of rocket engine testing at Stennis.

A sense of Stennis’ significance to the country began to overcome me. The helicopter circled each stand, then continued to the E Test Complex, the canal system and various facilities. However, it was the images of the stands that were foremost. I thought of those who had labored to build the towering test sites, as well as the many other facilities. Could they have known how important their work would be to the nation – in those early years and for decades afterward? Could they have envisioned how Stennis would evolve? Do the men and women building the A-3 know the value of their work? Can we envision the future?

Suspended in flight above the center, decades of past – and ongoing – commitment to the testing of engines for America’s space program were laid out in a single vista. How that view will change in years to come is unknown. However, I do know that as the future of space exploration continues to evolve, so will Stennis’ view from above.



An Oct. 20 aerial photo shows (l to r) the A-1, B-1/B-2, A-2 and A-3 Test stands at Stennis. The E Test Complex is shown in the foreground.

@ Stennis

If you had a chance to tell the president one thing as he decides the future of U.S. space exploration, what would you say?

Editor's Note: @ Stennis highlights the views and opinions of Stennis Space Center employees.



“I would ask him to make sure there is adequate funding so we can set goals and continue exploring new areas of space.”

Charles Holloway
NASA Shared Services Center

“I would urge him to look to the future, to look to the next frontier.”

Kathleen Moran
NASA Shared Services Center



“Find the necessary funding somewhere so this country can continue a strong program of space exploration.”

Andrew Sones
Science Applications International Corp.

“NASA has contributed to numerous advancements in society. Without space exploration, we’re condemning ourselves to regressing economically and socially.”

Nicole Wells, Jacobs FOSC Group



Office of Diversity and Equal Opportunity

November is National American Indian Heritage Month

As was learned in grade school, “Indian” was the name Columbus mistakenly applied to the people he encountered when he arrived in what he believed was the Indies, the medieval name for Asia. Introduced in the 1960s, the term Native American offered a way of eradicating confusion between the indigenous people of the Americas and the indigenous people of India. The term “American Indian” also served that purpose, and is preferred by a majority today.

With a long history, rich culture, and more than 300 spoken languages, the wisdom of American Indian tribes has been passed down through the centuries. Consider:

Don't be afraid to cry. It will free your mind of sorrowful thoughts.

Hopi

Day and night cannot dwell together. *Duwamish*

It is better to have less thunder in the mouth and more lightning in the hand. *Apache*

They are not dead who live in the hearts they leave behind. *Tuscarora*

All plants are our brothers and sisters. They talk to us and if we listen, we can hear them. *Arapaho*

If we wonder often, the gift of knowledge will come. *Arapaho*

When we show our respect for other living things, they respond with respect for us. *Arapaho*

Most of us do not look as handsome to others as we do to ourselves. *Assiniboine*

What is life? It is the flash of a firefly in the night. It is the breath of a buffalo in the wintertime. It is the little shadow which runs across the grass and loses itself in the sunset. *Blackfoot*

When you were born, you cried and the world rejoiced. Live your life so that when you die, the world cries and you rejoice. *Cherokee*

Those who have one foot in the canoe, and one foot in the boat, are going to fall into the river. *Tuscarora*

The weakness of the enemy makes our strength. *Cherokee*

A good soldier is a poor scout. *Cheyenne*

**NASA Stennis Space Center
Shooting For A Star**



Congratulations to Pratt & Whitney Rocketdyne and Applied Geo Technologies Inc., Stennis Space Center's newest "Stars."

These companies have received notice that they have been granted the Star Demonstration designation by OSHA. PWR received its Star in September, AGT in October. Stennis has two more contractors to proceed through the Voluntary Protection Programs process; then, Stennis will apply to become a Star site as well.



2009 Disability Awareness Day

Members of STARC, a non-profit organization in Slidell, La., that seeks to help people with disabilities lead meaningful, productive lives, pose with their appreciation awards during Disability Awareness Day at Stennis Space Center on Oct. 15. The group members received appreciation awards for their dedicated service to the rocket engine testing facility. Disability Awareness Day was hosted by the Stennis Diversity Council and included guest speakers from several area agencies.

We will be known forever by the tracks we leave. *Dakota*

Do not judge your neighbor until you walk two moons in his moccasins. *Cheyenne*

There is nothing as eloquent as a rattlesnake's tail. *Navajo*

Force, no matter how concealed, begets resistance. *Lakota*

Our first teacher is our own heart. *Cheyenne*

All who have died are equal. *Comanche*

Everyone who is successful must have dreamed of something. *Maricopa*

What the people believe is true. *Anishinabe*

You can't wake a person who is pretending to be asleep. *Navajo*

Beware of the man who does not talk, and the dog that does not bark. *Cheyenne*

He who would do great things should not attempt them all alone. *Seneca*

If a man is as wise as a serpent, he can afford to be as harmless as a dove. *Cheyenne*

A brave man dies but once, a coward many times. *Iowa*

When a man moves away from nature his heart becomes hard. *Lakota*

Hail & Farewell

NASA welcomes the following:

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LAGNIAPPE

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

Comments or suggestions should be forwarded to:

NASA PUBLIC AFFAIRS OFFICE
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National Aeronautics and
Space Administration

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FIRST LEGO League seeks volunteers

The Education Office at Stennis Space Center are seeking volunteers and judges to assist in the Mississippi Championship FIRST LEGO League competition scheduled for Dec. 5 at Mississippi Gulf Coast Community College in Gautier.

During the daylong competition, teams use LEGO® MINDSTORMS® NXT robots constructed to complete assigned missions. They also present research on selected topics. This year, the chosen theme is "Smart Moves," which focuses on solving problems related to the transportation of people, things and information.

FIRST activities are designed as a hands-on method to increase student knowledge of science, technology, engineering and mathematics. Persons who wish to volunteer for the Dec. 5 competition should call Randall Hicks at 228-688-3653 or e-mail him at randall.t.hicks@nasa.gov.

Stennis visits USM

Stennis Space Center personnel treated fans attending the University of Southern Mississippi in Hattiesburg on Oct. 17 to pre-game activities and space-related exhibits in conjunction with a first-ever Stennis Space Day at USM. Prior to the game, Stennis employees set up exhibits and Astro Camp activities for children adjacent to the football stadium. In this photo, Falon Nettles (left), an Astro Camp counselor at Stennis Space Center, assists a young fan in launching a balloon "rocket."



Stennis Space Center kicks off annual Combined Federal Campaign



Using American sign language, Greg Crapo (right) director of de l'Épée Deaf Center Inc. in Biloxi helps Shanda Bennett of the Environmental Protection Agency at Stennis Space Center spell out her name. Bennett is joined by colleague Charles Kennedy during a tour of charitable organization displays for the Oct. 29 kickoff of the Stennis portion of the 2009 Combined Federal Campaign. The CFC is the world's largest annual workplace charity effort. Contributions to the campaign support organizations providing health and human service benefits throughout the world. Stennis employees gave \$198,000 in gifts in 2008. This year, the Stennis goal is \$200,000. For the kickoff, a number of charitable organizations set up exhibits at Stennis, providing employees an opportunity to see where their contributions could be directed.

