NASA Administrator Charles Bolden announced three changes to his senior leadership team Sept. 25, including a change in top leadership at Stennis Space Center.

Robert Lightfoot, acting associate administrator at NASA Headquarters in Washington, was assigned that role on a permanent basis. Patrick Scheuermann, director of Stennis Space Center, was named director of NASA’s Marshall Space Flight Center in Huntsville, Ala. Scheuermann’s successor as Stennis director is Dr. Richard J. Gilbrech, previously the center’s deputy director. All three changes were effective immediately.

“Robert, Patrick and Rick are three of NASA’s finest public servants who will continue to play key roles in our agency’s future,” Bolden said. “America is fortunate to have three such talented leaders assuming these important jobs at a pivotal time for NASA and space exploration.”

Blue Origin has successfully fired the thrust chamber assembly for its new 100,000 pound thrust BE-3 liquid oxygen, liquid hydrogen rocket engine. As part of Blue’s Reusable Booster System (RBS), the engines are designed eventually to launch the biconic-shaped space vehicle the company is developing.

The test was part of Blue Origin’s work supporting its funded Space Act Agreement with NASA during
Greetings and Happy New Fiscal Year from the Stennis Space Center Office of the Chief Counsel!

Some years ago, I had the opportunity to work on a leadership book that compiled the experiences and observations of lawyers. In a chapter titled Partner to Maximize Results, the author tells the story of a person who used to say, “If you’re going to be a lawyer in Iowa, you’d better know the price of corn.” The author points out that this was that person’s way of getting across the message that lawyers need to understand their clients’ perspectives, needs and concerns. Although I agree with that viewpoint, I also believe lawyers need to demonstrate that they have both the ability and desire to meet those needs.

Our organization believes the most effective means of demonstrating an understanding of our clients’ needs, concerns and perspectives is to partner with them. Partnering has many definitions, but the one I like best is “the process of collaborating with internal and external individuals or teams to achieve measurable results through agreements and productive working relationships.” Partnering helps overcome gaps in knowledge and skills and helps provide a sense of common purpose that can reduce conflict, and enable a more efficient and effective use of resources. In essence, it establishes a new and better paradigm from which to interact with others to accomplish the mission.

Our office partnered with NASA Headquarters, NASA centers, federal and state agencies, private organizations and companies, and colleges and universities to ensure the mutual accomplishment of goals and, more importantly, the mission of Stennis Space Center. For example, we were in lock-step with our center leadership when they sought authority to acquire permanent right-of-way easements to widen Hwy. 607. We played a key role in keeping the project on track by timely coordination with internal and external stakeholders and partners, both at the state and federal levels. We functioned as an invaluable member of the team and assisted in the effort to bring the project to fruition.

We also successfully teamed with our procurement customers to ensure the award of critical and mission essential contracts, including the Multiple Award Construction Contract – the largest dollar value procurement in the history of Stennis. When litigation threatened to derail a major acquisition, we formulated a winning strategy and resolved the litigation at no cost to Stennis or NASA.

We partnered with the Stennis Center Operations Directorate and Hancock County to create the INFINITY Discovery/Possum Walk Trail on NASA property in the buffer zone. Ultimately, the trail will form the west end of the Mississippi Coastal Heritage Trail, a recreational trail that will run along the entire Mississippi Gulf Coast, providing a benefit to the general Gulf Coast population.

Although FY 2013 promises to be an interesting and challenging time at NASA and Stennis, I have no doubt Stennis will meet, and even excel in meeting, the demands and challenges of the new (fiscal) year. In the Office of the Chief Counsel, we will meet the demands and challenges placed on us by continuing to partner with our customers to help them maximize results.
BLUE ORIGIN
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Commercial Crew Development Round 2 (CCDev2). CCDev2 continues to bring spacecraft and launch vehicle designs forward to develop a U.S. commercial crew space transportation capability that ultimately could become available for the government and other customers.

“Blue Origin continues to be extremely innovative as it develops a crew-capable vehicle for suborbital and orbital flights,” said Ed Mango, CCP manager. “We’re thrilled the company’s engine test fire was met with success.”

The test took place early this month on the E-1 Test Stand at NASA’s Stennis Space Center. Blue Origin engineers successfully completed the test by powering the thrust chamber to its full power level.

“We are very excited to have demonstrated a new class of high-performance hydrogen engines,” said Rob Meyerson, president and program manager of Blue Origin. “Access to the Stennis test facility and its talented operations team was instrumental in conducting full-power testing of this new thrust chamber.”

As part of CCDev2, Blue Origin also completed a system requirements review of its spacecraft. During the review, engineers and technical experts representing NASA, the Federal Aviation Administration and the company assessed the spacecraft’s ability to meet safety and mission requirements to low-Earth orbit. That review also included results from more than 100 wind tunnel tests of the vehicle’s aerodynamic design, stability during flight and cross-range maneuverability.

All of NASA’s industry partners, including Blue Origin, continue to meet their established milestones in developing commercial crew transportation capabilities.

While NASA works with U.S. industry partners to develop commercial spaceflight capabilities, the agency also is developing the Orion spacecraft and the Space Launch System (SLS), a crew capsule and heavy-lift rocket to provide an entirely new capability for human exploration. Designed to be flexible for launching spacecraft for crew and cargo missions, SLS and Orion will expand human presence beyond low-Earth orbit and enable new missions of exploration into the solar system.
Two large-engine tests were conducted simultaneously for the first time at Stennis Space Center on Aug. 16. A plume on the left indicates a test on the facility’s E-1 Test Stand. On the right, a finger of fire indicates a test under way on the A-1 Test Stand. In another first, both tests were conducted by female engineers. The image was taken from atop the facility’s A-2 Test Stand, offering a panoramic view that includes the new A-3 Test Stand under construction to the left. The A-3 stand is the first large test structure built at Stennis since the 1960s. Once completed, it will allow testing of rocket engines at simulated altitudes up to 100,000 feet.
NASA honored for shuttle program

Ronnie Rigney (r), chief of the Propulsion Test Office in the Project Directorate at Stennis Space Center, stands with agency colleagues to receive the prestigious American Institute of Aeronautics and Astronautics George M. Low Space Transportation Award on Sept. 12. Rigney accepted the award on behalf of the NASA and contractor team at Stennis for their support of the Space Shuttle Program that ended last summer. From 1975 to 2009, Stennis Space Center tested every main engine used to power 135 space shuttle missions. The final space shuttle main engine test at Stennis was conducted July 29, 2009, on the A-2 Test Stand. Stennis continued to provide flight support services through the end of the Space Shuttle Program in July 2011. The center also supported transition and retirement of shuttle hardware and assets through September 2012. “The employees who served the Space Shuttle Program at Stennis Space Center for 35 years have set an example of sustained excellence that will not soon be forgotten,” Rigney said. “They began the task with immeasurable challenges in front of them, and finished strong. Their accomplishments will yield benefits to the future of human space flight for generations to come.” Established in 1988, the AIAA award is presented every two years in recognition of a timely, outstanding contribution to the field of space transportation. It is named for Dr. George M. Low, who played a leading role in planning and executing NASA’s Apollo missions and who originated the plans for the nation’s first manned lunar orbital flight, Apollo 8, in December 1968. The 2012 award was presented to the space shuttle team “for excellence in the conception, development, test, operation and retirement of the world’s first and only reusable space transportation system.” Joining Rigney for the award ceremony at the 2012 AIAA Conference in Pasadena, Calif., were: (l to r) Allison Zuniga, NASA Headquarters; Michael Griffin, former NASA administrator; Don Noah, Johnson Space Center in Houston; Steve Cash, Marshall Space Flight Center in Huntsville, Ala.; and Pete Nickolenko, Kennedy Space Center in Florida.

NASA awards additional construction contracts at Stennis

NASA has selected four more companies for indefinite-delivery, indefinite-quantity multiple-award construction contracts at Stennis Space Center. These are in addition to six companies selected in August.

The fixed-price contracts consist of a performance period of five years, with a total value not to exceed $700 million.

The companies selected are:
• American Contractor & Technology Inc. in Scott, La.
• D.N.P. Inc. in Biloxi.
• Healtheon Inc. in New Orleans.
• Southeast Cherokee Construction Inc. in Montgomery, Ala.

Work under the contracts include, but will not be limited to, building and facility maintenance, repair and alteration; mechanical, civil and electrical engineering; heating and air conditioning maintenance; demolition; painting; earthwork; fencing; steel fabrication and welding. Additional work also may include design-and-build projects for new construction of buildings or facilities.
Scheuermann became director at Stennis in 2010, the same year Gilbrech assumed duties as Stennis’ deputy director. Gilbrech began his NASA career in 1991 at Stennis in the area of propulsion test technology. From 1998 to 2000, he served as chief of the Propulsion Test Engineering Division at Stennis. In 2003, he was named manager of the Propulsion Integration Office, responsible for managing NASA’s rocket propulsion test facilities.

Gilbrech served in roles away from Stennis from 2003 to 2006, when he returned to the facility as director. He served in that role until assuming leadership of NASA’s Exploration Systems Mission Directorate at Headquarters in Washington, in 2007.

“I am honored to once again be asked to lead the incredible team at Stennis Space Center during such a historic and pivotal time for the agency,” Gilbrech said. “I look forward to continuing the strong legacy of previous leaders at this great center. Stennis has a solid future and a clear mission in component, engine and stage testing for development of NASA’s Space Launch System and a continued role in testing commercial rocket engine hardware.”

Reflecting on his tenure at Stennis, Scheuermann said: “It has been a privilege to have served NASA at Stennis, where I was close to home, working alongside some of the best NASA has to offer. Stennis has a solid future and continues to be on the front end of the critical path of our nation’s space program. The center has achieved much and, with its strong leadership team, is well-prepared to continue its forward posture in proudly executing the NASA mission and managing the federal city.

“Now, I look forward to the move to Marshall Space Flight Center and building on the already strong foundation and the center’s key role in development of NASA’s Space Launch System,” Scheuermann continued. “This new position offers an opportunity to grow and strengthen the already great partnership between Marshall and other space flight centers.”

U.S. congressman visits Stennis, tours test stand facilities

U.S. Rep. Alan Nunnelee, R-Miss., visited Stennis Space Center on Oct. 5, meeting with leaders and touring facilities to learn about ongoing work at the south Mississippi site. During the afternoon visit, Nunnelee met with Stennis Director Rick Gilbrech and with Applied Science & Technology Project Office personnel to learn about forestry and agricultural initiatives under way. He also toured the B-1/B-2 Test Stand. Joining Nunnelee at the B-1/B-2 Test Stand were: (l to r) Ken Human, Stennis associate director; Randy Galloway, director of the Stennis Engineering & Test Directorate; Ted Maness, chief of staff for Nunnelee; Nunnelee’s wife, Toni; Nunnelee; Myron Webb, Stennis legislative affairs officer; Gilbrech; and Meyer Seligman, legislative director for Nunnelee. A Tupelo native, Nunnelee serves Mississippi’s 1st Congressional District.
DRIFTER monitoring devices prove their worth during Hurricane Isaac

Scientists at Stennis Space Center have a good picture of the impact of storm surges on area waters as Hurricane Isaac lumbered ashore in late August, thanks to a pair of prototype environmental monitoring buoys designed as easy-to-build school projects.

A monitoring buoy – or DRIFTER – anchored to a pole just offshore in Mississippi’s Heron Bay, almost due south of Stennis, transmitted information about water temperature and conductivity throughout the storm, except when it was completely submerged. Once waters receded, the DRIFTER resumed transmission of data that enabled scientists to calculate how Isaac’s storm surge affected levels of fresh and salt water in the area.

A second DRIFTER anchored just off Half Moon Island, about four miles south-southeast of Heron Bay in Louisiana waters, transmitted information until the storm disrupted service from its cell tower. Once the skies cleared, the DRIFTER began sending data once more.

“The DRIFTERs are inexpensive, but obviously rugged,” said Duane Armstrong, chief of the Stennis Applied Science & Technology Project Office (ASTPO), which designed and built the two DRIFTER prototypes. “It’s amazing how well they endured days of hurricane and tropical storm conditions, even being submerged for hours by the storm surge, and were still able to collect and transmit valuable information about the storm.”

This project began as an effort to help Gulf Coast oyster fishermen who were dealing with the effects of fresh water intrusion resulting from the 2010 oil spill in the Gulf of Mexico and the 2011 flooding of the Mississippi River.

ASTPO reached out to Mississippi oyster fishermen to see if NASA’s Earth science expertise could help. The fishermen asked for help monitoring the temperature and salinity of leased waters. If that could be accomplished, oyster fishermen could gauge when they needed to harvest their beds or take other actions, such as moving the beds to avoid contamination.

“It’s difficult to accurately measure salinity of coastal waters using satellites, and there simply are not enough sensors in the water to monitor local conditions,” Armstrong explained.

Each DRIFTER is about 18 inches high and constructed of PVC pipe and simple electronics. It includes a GPS receiver to monitor the position of the DRIFTER, a cell phone modem to transmit data to a website, a solar panel and battery to supply power over extended periods, and a simple computer to configure and control the device. Sensors collect data on water temperature and conductivity, which is used to calculate salinity.

“We tried to design something for the hobbyist,” Armstrong said. “No special skills are required. You can build one with about $500 of parts. NASA provides instructions and even the software needed. The DRIFTER provides a lot of opportunities for students and teachers to explore aspects of science and engineering, and even participate in NASA scientific research. Simply register your DRIFTER on our web site and provide its Twitter handle and NASA will retrieve and analyze your data, map the location of your DRIFTER, and make the data available to the public.”

Armstrong is hopeful funding can be established so local schools can build DRIFTER devices and deploy them as real-time, real-life science projects.
Stennis construction transforms south Mississippi area

Note: For more than 50 years, NASA's John C. Stennis Space Center has played a pivotal role in the success of the nation's space program. This month's Lagniappe highlights a moment in the history of the south Mississippi rocket engine test center.

NASA announced formation of the Mississippi Test Facility (now known as Stennis Space Center) on Oct. 25, 1961, for testing engines for the Apollo Program. A high-terrain area bordering the East Pearl River in Hancock County, Miss., was selected for its location. NASA entrusted the U.S. Army Corps of Engineers with the difficult task to procure each land parcel either by directly purchasing the land or through acquisition of a perpetual easement.

To achieve this goal, five small towns – Logtown, Gainesville, Santa Rosa, Napoleon and Westonia – would need to be removed from the area. The process of land acquisition and town relocation was documented in more than 3,200 folders, one for each parcel for its test program, the French, British and Spanish colonial governments ruled the region. Settlers came from many parts of the U.S. to participate in the lumber business, which was a prosperous industry due to the vast timber resources located both in Honey Island Swamp to the west and Devil's Swamp to the east of the area. At least twice in the past, the East Pearl River served as an international boundary between European colonial powers and the newly established government of the United States.

By 1961, less than 1,000 people lived or owned property in the five former towns. NASA and the Corps of Engineers would need to acquire more than 3,200 parcels, one for each numbered parcel – including a photograph of every standing structure located in and adjacent to the buffer zone and fee area. These documents contain a wealth of historical and sociological information.

It is the history of these families and their notable ancestors that is recorded in the Corps files. The files also include letters from historic figures – like then-U.S. Attorney General Robert Kennedy and others relevant to NASA history such as Dr. Werner von Braun; Bernard Tessman, von Braun's German colleague at Peenemunde and deputy director of Marshall Space Flight Center Test Laboratory; and James Webb, NASA administrator. Most importantly, the land records minutely record the history of the five towns' original residents, many of whom still live in nearby communities, and whose children and grandchildren have worked in numerous capacities for the space program.

In addition, many of the residents of the towns were descendants from original settlers dating from as early as 1767. They had lived there all their lives and expected to retire and die on their ancestral lands. Negotiations were often contentious, and appraisals were often disputed. The Corps' task was further complicated by a constant stream of congressional inquiries, including some from very powerful elected officials such as Stennis, Earl Bennett in Mississippi and Hale Boggs in Louisiana.

Each negotiation session, land appraisal and court decision was painstakingly recorded in individual files – one for each numbered parcel – including a photograph of every standing structure located in the buffer zone and fee area. These documents contain a wealth of historical and sociological information.

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Stennis kicks off 2012 FIRST LEGO® season

Stennis kicked off the 2012 FIRST (For Inspiration and Recognition of Science and Technology) LEGO® League (FLL) season with a Sept. 13 virtual event viewed by student participants across Mississippi.

FLL is an annual high-energy robotics competition for children ages 9-14. The focus is on celebrating science and technology through hands-on participation and learning. In partnership with the LEGO® Group, students use the MINDSTORMSTM NXT system to build robots designed to complete particular tasks related to the competition theme.

The virtual kickoff webinar hosted by the Stennis Digital Learning Network attracted 200 unique IP address hits to review this year’s “Senior Solutions” challenge. In addition to preparing robots to compete, participants are asked to partner with senior adults, learn about problems they face and create innovative solutions to help the seniors.

The 2012 FLL Mississippi Championship Tournament is scheduled for Dec. 1 in Hattiesburg. As many as 50 teams are expected to compete, being judged in such areas as robot performance, robot design, project presentation and FLL Core Values.

Stennis Space Center supports FIRST by providing mentors and training, as well as competition judges and personnel. They are seeking volunteers to staff key roles at the 2012 tournament, including judges, referees, scorekeepers and logistics personnel. Volunteers should call Randall Hicks at 228-688-3653 or email randall.t.hicks@nasa.gov.

The 2012 FLL season is expected to involve more than 20,000 teams and 200,000 students in at least 50 countries. For information about FLL, visit: www.firstlegoleague.org. For information about the Robotics Alliance of Mississippi, visit: www.ramrobots.org.

Stennis sponsors Energy Awareness Day

Troy Frisbie (l) of NASA and Lowell Webb of the Naval Oceanographic Office talk with Brent Bailey of 25x25 about the organization’s campaign for renewable energy usage in the United States. The group was one of several to visit Stennis for the center’s annual Energy Awareness Day. Stennis employees were able to visit exhibits and learn about steps they can take to help conserve energy in their daily lives.