National Aeronautics and Space Administration

LAGNIAPPE

John C. Stennis Space Center

Volume 10 Issue 6 www.nasa.gov/centers/stennis June 2015

An RS-25 engine fired up for 500 seconds June 11 at Stennis Space Center. It was the third firing of an RS-25 development engine on the A-1 test stand at Stennis, with four more tests planned for the current development engine.

NASA fires up RS-25 again

Ladies and gentlemen, we've started our engine. An RS-25 engine fired up for 500 seconds June 11 at NASA's Stennis Space Center.

Four RS-25 engines will power NASA's new rocket, the Space Launch System, at speeds of 17,500 mph – 73 times faster than the top speeds of an Indianapolis 500 race car – to send astronauts on future missions beyond Earth's orbit, including to an asteroid and ultimately to Mars.

This is the third firing of an RS-25 development engine on the A-1 test stand at Stennis. The first RS-25 test in this series was conducted Jan. 9, and the second was May 28. Four more tests are planned for the current development engine.

"While we are using proven space shuttle hardware with these engines, SLS will have different performance requirements," said Steve Wofford, manager of the SLS Liquid Engines Office at NASA's Marshall Space Flight Center in Huntsville, Alabama. The Marshall center manages the SLS Program for the agency. "That's why we are

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2015 Hurricane Season Guide appears at end of this issue

"A clearly defined mission enhances the building of a cohesive team. Teamwork builds trust and the confidence to act."

From the desk of

Monica Allison-Ceruti

Chief Counsel, Office of the Chief Counsel, Stennis Space Center

This year at the annual senior leaders' training forum, we had the opportunity to hear from retired U.S. Army Lt. Gen. Russel Honoré who served as commander of Joint Task Force Katrina following the 2005 storm. The general candidly discussed his experiences; however, his most interesting lesson was that of leadership and lessons learned from geese.

He discussed three leadership principles: do the routine things well; do not be afraid to take on the impossible; and do not be afraid to act, even if criticized. All three principles resonated with me. He emphasized the power of a clear mission and vision. If employees do not understand the mission, they merely have a job that they leave at the end of day. The leader must also ensure that everyone sees the vision. Those following must see where you want them to go. The mission and vision provide the common direction that enables each person to work more efficiently. A clearly defined mission enhances the building of a cohesive team. Teamwork builds trust and the confidence to act.

We can learn a lot about leadership and teamwork from flying geese. Geese fly together in a V formation. Scientists speculate it makes flight easier, providing more support or lift and reducing air resistance for the geese flying behind. When people work together on a team, understanding the mission and seeing the vision, they arrive at the finish faster and easier because they are lifted up by, and feed on, the energy of each other.

When a goose falls out of formation, it requires a lot more effort and energy to fly because it does not have the support of the flock. When a teammate stops participating in the group, it is much more challenging to fly solo. The synergy and energy generated by the team are gone, so encourage them to stay on the team and wholeheartedly welcome them back into the formation. Similarly, when a goose gets sick or goes down, generally, two other geese fall out of formation to look after the sick goose until it is able to rejoin the formation. Nothing is more important than the people with whom we work, so when a teammate goes down, go see about him or her. Lend a helping hand.

When the lead goose gets tired, it will move to the back to take advantage of the lift of the other geese in front. No one has the experience, skills, expertise and capacity to lead all the time and in every situation. Various team members may take the leadership role depending on the situation and their expertise. Invest in subordinates' success and build their competence, so they will have confidence to act and lead when needed.

Geese make a lot of noise as they fly together. Some speculate honking is a form of encouragement to go faster. Keep the lines of communication open, always encouraging each other. As a leader, motivate people to perform beyond what they believe is their utmost.

I had quite a few training takeaways: The power of a clear mission and vision provides the common direction that enables people to work more efficiently and stay in formation. People are our most important resource. Leaders must invest in and take care of people, and when necessary, step back and follow, motivating and honking words of encouragement the whole time.

As the Stennis chief counsel, I will ensure the Office of Chief Counsel's mission and vision are clear so that my teammates know the importance of what they do in realizing the success of the NASA mission.

Lagniappe is published monthly by the Office of Communications at NASA's John C. Stennis Space Center.

Access monthly copies at: www.nasa.gov/centers/stennis/news/publications/index.html

Contact info – (phone) 228-688-3749; (email) ssc-pao@nasa.gov; (mail) NASA OFFICE OF COMMUNICATIONS, Attn: LAGNIAPPE, Mail code IA00, Building 1100 Room 304, Stennis Space Center, MS 39529

Managing Editor – Valerie Buckingham

Editor – Lacy Thompson Staff Photographer – Danny Nowlin

FULFILLING NASA'S EXPLORATION MISSION

'We have ignition' – NASA conducts RS-25 test

A billowing plume of steam signals a successful 450-second test of the RS-25 rocket engine May 28 at NASA's Stennis Space Center. The hotfire test was conducted on the historic A-1 Test Stand where Apollo Program rocket stages and Space Shuttle Program main engines also were tested. RS-25 engines tested on the stand will power the core stage of NASA's new rocket, the Space Launch System (SLS), which is being developed to carry humans deeper into space than ever before. The heavy-lift SLS will be more powerful than any current rocket and will be the centerpiece of the nation's next era of space exploration, carrying humans to an asteroid and eventually to Mars. Four RS-25 engines will power the SLS vehicle at launch, firing simultaneously to generate more than 1.6 million pounds of thrust. RS-25 engines are modified space shuttle main engines, which powered 135 successful low-Earth orbit missions. NASA engineers conducted an initial RS-25 engine test on the A-1 stand Jan. 9. Testing then was put on hold for scheduled work on the Stennis facility high-pressure industrial water system that provides the tens of thousands of gallons of water needed to cool the stand during an engine test. RS-25 testing is set to continue through the summer.

RS-25 ENGINE

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testing them again. This is a whole new ballgame – we need way more power for these engines to be able to go farther than ever before when it comes to human exploration. And we believe the modifications we've made to these engines can do just that."

The first flight test of the SLS – designated as Exploration Mission 1 – will feature a configuration for a 70-metric-ton (77-ton) lift capacity and carry an uncrewed Orion spacecraft beyond low-Earth orbit to test the performance of the integrated system.

"We have several objectives that will be accomplished during this test series, which will provide critical data on the new engine controller unit, materials and engine propellant inlet pressure conditions," Wofford added.

The new engine controller unit, the "brain" of the engine, allows communication between the vehicle and the engine, relaying commands to the engine and transmitting data back to the vehicle. The controller also provides closed-loop management of the engine by regulating the thrust and fuel mixture ratio while monitoring the engine's health and status. The controller will use updated hardware and software configured to operate with the new SLS vehicle avionics architecture.

The test series will show how the RS-25 engines will perform with colder liquid oxygen temperatures; greater inlet pressure due to the taller SLS core stage liquid oxygen tank and higher vehicle acceleration; and more nozzle heating due to the four-engine configuration and its position in-plane with the SLS booster exhaust nozzles. New ablative insulation and heaters also will be tested during the series. Aerojet Rocketdyne of Sacramento, California, is the prime contractor for the RS-25 engine work.

As the SLS evolves, it will provide an unprecedented lift capability of 130 metric tons (143 tons) to enable missions even farther to places like Mars.

For more information about SLS, visit online at: http://www.nasa.gov/sls.

Curiosity rover headed to alternate site

NASA's Curiosity rover climbed a Martian hill May 21 to approach an alternative site for investigating a geological boundary, after a comparable site proved hard to reach. The drive of about 72 feet up slopes as steep as 21 degrees brought Curiosity close to a target area where two distinctive types of bedrock meet. The rover science team wants to examine an outcrop that contains the contact between the pale rock unit the mission analyzed lower on Mount Sharp and a darker, bedded rock unit that the mission has not yet examined up close. Curiosity originally headed for a comparable geological contact farther south. However, this May 10 photo shows terrain judged too difficult for traversing. Foiled by slippery slopes on the way there, the team rerouted the vehicle.The mission's strategic planning keeps multiple route options open to deal with such situations. Curiosity has been exploring on Mars since 2012. It reached the base of Mount Sharp last year after fruitfully investigating outcrops closer to its landing site and then trekking to the mountain. The main mission objective now is to examine successively higher layers of Mount Sharp. For more on Curiosity, visit: http://www.nasa.gov/msl or http://mars.nasa.gov/msl.

NASA in the News

NASA releases climate change data

NASA has released data showing how temperature and rainfall patterns worldwide may change through the year 2100 because of growing concentrations of greenhouse gases in Earth's atmosphere. The public dataset shows projected changes worldwide on a regional level in response to different scenarios of increasing carbon dioxide simulated by 21 climate models. The data, which can be viewed on a daily timescale at the scale of individual cities and towns, will help scientists and planners conduct climate risk assessments to better understand local and global effects of hazards, such as severe drought, floods, heat waves and losses in agriculture productivity. The dataset is the latest product from the NASA Earth Exchange (NEX), a big-data research platform at NASA's Ames Research Center in Moffett Field, California. More about the climate projection dataset is at: https://nex.nasa.gov/nex/projects/1356/. The dataset is available for download online at: https://cds.nccs.nasa.gov/nex-gddp/. OpenNEX information and training materials are available at: http://nex.nasa.gov/opennex.

Impact glass detected on Mars

NASA's Mars Reconnaissance Orbiter (MRO) has detected deposits of glass within impact craters on Mars, based on data from the its Compact Reconnaissance Imaging Spectrometer for Mars (CRISM) instrument. Though formed in the searing heat of a violent impact, such deposits might provide a delicate window into the possibility of past life on the Red Planet. During the past few years, research has shown evidence of past life has been preserved in impact glass here on Earth. A 2014 study led by scientist Peter Schultz of Brown University found organic molecules and plant matter entombed in glass formed by an impact that occurred millions of years ago in Argentina. Schultz suggested similar processes might preserve signs of life on Mars, if they were present at the time of an impact. Brown University researchers Kevin Cannon and Jack Mustard detail their data about Martian impact glass in a report online in the journal Geology. For more about CRISM, visit: http://crism.jhuapl.edu/. For more about MRO, visit: http://www.nasa.gov/mro

NASA releases at: www.nasa.gov/news/releases/latest/index.html.

FULFILLING NASA'S EXPLORATION MISSION

Stennis skyline continues to change as B-2 Test Stand progresses

The Stennis Space Center skyline is taking on a decidedly different look as work continues to prepare the B-2 Test Stand for testing the core stage of NASA's new Space Launch System (SLS). SLS is being developed to carry humans deeper into space than ever before, to an asteroid and eventually Mars. Part of the stand preparation includes repositioning and extending the stand's Main Propulsion Test Article (MPTA) framework, which supports the rocket stage for testing. The framework was repositioned on the stand late last summer. Now, large structural steel sections are being lifted into place to extend its height. The existing MPTA framework stands 61 feet high and contains about 1.2 million pounds of fabricated steel. Another 1 million pounds of structural steel is being added to extend the framework in order to accommodate the larger SLS stage. The extension involves three levels of structural steel being lifted and anchored into place during the next number of weeks. Once preparations are complete, an actual flight core stage will be installed on the stand and tested. The same core stage then will be used for the first SLS uncrewed mission flight.

FULFILLING NASA'S EXPLORATION MISSION

History in the making: How static engine testing is accomplished

Editor's Note: The following is the second in a series of articles highlighting the A-1 Test Stand at Stennis Space Center. The articles focus on aspects of the stand and how they enable rocket engine testing that supports America's human space program. The series is presented as NASA engineers test RS-25 engines on the A-1 stand. The engines will power the core stage of NASA's new Space Launch System, which is being built to carry humans deeper into space than ever before.

Do not bother to check your cell phone while visiting the A-1 Test Stand at NASA's Stennis Space Center; there is no service. On the stand, you are encased in thousands upon thousands of pounds of steel and concrete that prevents reception of a signal.

A state-of-the-art thrust measurement system arrives at the A-1 Test Stand for installation in 2010. The system is a precisely calibrated component used to collect thrust data during a rocket engine test.

The steel and concrete are needed to conduct the type of rocket engine testing performed at Stennis since the mid-1960s. The stand was built to test rocket stages for the nation's Apollo Program that carried humans to the moon. It later tested engines to power space shuttle missions. It now is testing RS-25 engines that will power NASA's new Space Launch System, which will carry humans deeper into space than ever before.

The testing is critical, A-1 Test Stand Director Jeff Henderson said. "Rocket engines are complex designs, and we have to make sure they will perform as needed," he explained. "Every modification has to be tested; every possible condition has to be looked at. Only then can we fly."

The engine and rocket stage testing conducted at Stennis is sometimes characterized as "static firing." The definition of the term is simple – the engine/stage is fired just as it would be during an actual flight, but it is held in place during that time. No vehicle lifts off of a launchpad; no flaming arc rises into the sky.

Both the engine and the stand must remain anchored in place to enable collection of the precise data needed to certify the engine's performance. Thus, during a rocket engine test firing, the same thrust that would lift a vehicle into the sky during a launch must be directed and absorbed into the stand instead.

It is the same concept as a bathroom scale, which is designed to measure weight against a fixed resistance. Springs (or another flexible mechanism) inside the scale compress between the fixed resistance of the scale and the pressure of you standing on it. The compression is measured as your weight. The less the compression, the lower the weight; the more the compression, the more dieting is in store for you. However, the measurement is only as accurate as the scale's resistance; think of stepping onto a scale that is sitting on a soft mattress.

The process is basically the same on a test stand. Only, instead of dealing in weights of a couple of hundred pounds, it is measuring weights in the hundreds of thousands of pounds. The RS-25 engine alone can produce more than 500,000 pounds of thrust.

Ensuring accurate measurement in such instances is a remarkable process involving three primary test stand features – the thrust frame adapter, the thrust measurement system and the thrust takeout structure.

Typically, a rocket engine is carried to the stand on a flatbed truck and lifted to the test deck by the derrick crane atop the stand. On the test deck, the engine is lowered onto a vertical engine installer, rolled into position and held in place as it is anchored to the stand.

Its central anchor is a specially fabricated thrust frame adapter. Each adapter must match the specifications of a particular engine. The thrust frame adapter for the RS-25 engine was fabricated onsite and installed in late 2013. It weighs more than 7,700 pounds and will bear the direct thrust of the engine into the thrust measurement system.

As for the thrust measurement system, think of two huge plates of steel separated by about five feet of air; picture a giant, upside-down bathroom scale. During a test, engine thrust is directed onto the bottom of the measurement system, compressing the space between its lower and upper plates. Carefully calibrated devices measure that compression to determine exactly how much thrust the engine is producing.

A new thrust frame adapter is hoisted onto the A-1 Test Stand late in 2013. The 7,700-pound frame is a critical component needed to anchor a rocket engine in place to allow for testing and collection of performance data.

However, just like a bathroom scale, that can only happen if there is a fixed resistance to measure compression against. That fixed resistance is created by the stand's thrust takeout structure, a configuration of large components and a large metallic cylinder that remains firmly in place while bearing the weight of the engine thrust. The thrust is subsequently directed throughout the stand, where it is dispersed and absorbed, allowing exact measurements on engine thrust and performance to be collected.

How exact? The A-1 thrust measurement system installed in 2010 is designed to measure vertical and horizontal thrust levels within 0.15 percent at 220,000 pounds. Stennis calibration of the system is even more precise, measuring vertical thrust to within 0.1 percent and horizontal thrust to within 0.08 percent. Both types of thrust measurement are critical.

Vertical thrust is easy to understand. With an engine locked into a vertical position and fired straight down, thrust is directed upwards – and it is vital for engineers planning space missions to know exactly how much thrust is being produced and directed.

Henderson uses the example of a family traveling by car across a desert. It needs to calculate carefully how much fuel is needed in order to carry the passengers and belongings across the distance. To do that, one must know how the car engine will perform at the chosen speed and in the day's conditions. Miscalculation can leave one stranded.

"Now, think of a rocket," Henderson said. "You have the weight of the rocket, the weight of the fuel and the weight of the cargo and passengers. The rocket has to lift all of that. You have to know very precisely how much thrust your engines can produce and how much fuel you need to produce that thrust in order to get to orbit. Otherwise, gravity is taking over, and you're coming back down."

Horizontal thrust measurement comes into play when an engine is gimbaled – rotated a few degrees in one direction or another. Think of a space vehicle in flight. Its trajectory must be accurate, but there is no steering wheel to guide it. Instead, its engines are rotated to direct the thrust and guide the vehicle into proper position.

Just as you must gauge the amount to turn a steering wheel in order to negotiate a curve in a road, NASA engineers must calculate precisely how much to gimbal an engine in order to ensure proper trajectory. Likewise, just as you must gauge how much engine thrust is needed to safely negotiate the curve (how much pressure to the accelerator), flight engineers must calculate the same.

"Let's just say, the thrust measurement system on this test stand is very precisely calibrated," Henderson explains. "It better be in order to produce the data we need. That's our product – data. That's why we test; that's what we supply; and that's what is going to make those deep-space missions of the future possible."

2015 NASA Honor Awards

Stennis Space Center Director Rick Gilbrech and NASA Deputy Associate Administrator Stephen Jurczyk presented annual NASA Honor Awards to center employees during an onsite ceremony June 17.

One Stennis employee received NASA's Outstanding Leadership Medal. This medal is awarded to government employees for notable leadership accomplishments that have significantly influenced the NASA mission. The award recognizes an individual's leadership and effectiveness in advancing NASA's goals and image.

Thomas Randy Galloway received NASA's Outstanding Leadership Medal for his work as director of the Stennis Engineering and Test Directorate and its predecessor organizations since 2007. Galloway reshaped the organization to respond to changes in NASA's mission, including the end of the Space Shuttle Program and the beginning of the Space Launch System Program. He also guided the Stennis E Test Complex team in highly praised testing of AJ26 rocket engines to support commercial cargo missions to the International Space Station. Galloway has led the Stennis propulsion test team through a major metamorphosis in the past eight years, while maintaining technical excellence and high levels of customer satisfaction.

Five Stennis employees received NASA's Exceptional Service Medal. This medal is awarded to a government employee for sustained performance that embodies multiple contributions to NASA projects, programs or initiatives.

Gregory C. Carmouche received the NASA Exceptional Service Medal for his work as lead engineer for the Operations and Maintenance Division within the Stennis Center Operations Directorate. Carmouche develops requirements for, and oversees, all maintenance activities across the Stennis test complexes. His knowledge of test stand facilities and engine systems, strong analytical skills, operations experience and commitment to collaboration provide a unique skill set in his services as an engineer, mentor, facilitator and leader.

Freddie Douglas III received the NASA Exceptional Service Medal for his work as director of the Safety and Mission Assurance Directorate at Stennis and in previous NASA roles. During a NASA career spanning more than 30 years, Douglas has compiled a broad range of exceptional accomplishments while serving in various engineering, management and leadership positions at NASA's Marshall Space Flight Center, NASA's Engineering and Safety Center and Stennis.

Gerald L. Norris received the NASA Exceptional Service Medal for his work as chief for the Program Management Support Division within the Office of Procurement at Stennis. His record is replete with accomplishments that have facilitated, and will continue to facilitate, the execution of the center's mission in support of NASA goals. A recognized leader at Stennis and across the space agency, Norris is honored for his exceptional service and significant role in the overall success of the Stennis Office of Procurement.

Cecile A. Saltzman received the NASA Exceptional Service Medal for her work as a human resources specialist in the Stennis Office of Human Capital. Saltzman is responsible for employee relations, including areas of performance management and workforce culture. Her achievements have had significant impact on the goals and image of Stennis and NASA. With her support, Stennis continues to be the top-ranked center within NASA and among the top five agency subcomponents as "Best Places to Work" in the federal government.

Diane M. Sims received the NASA Exceptional Service Medal for her work as a legal assistant and paralegal specialist in the Stennis Office of the Chief Counsel. Sims has sustained outstanding levels of performance and made direct contributions to NASA's mission success. She has championed the agency's ethics program and was key in revamping ethics training into an interactive experience. Her efforts have enhanced Stennis personnel compliance with NASA policy and federal statutes, ensuring that the Stennis mission is achieved with the highest level of integrity.

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Five Stennis employees received NASA's Exceptional Achievement Medal. This medal is awarded to a government employee for a significant specific achievement or substantial improvement in operations, efficiency, service, financial savings, science or technology that contributes to the mission of NASA.

Charles J. Heim received the NASA Exceptional Achievement Medal for his work as a senior contracting officer within the Stennis Office of Procurement. Heim has provided exemplary assistance to Stennis organizations, ensuring procurement needs are not only met but exceeded. He protects the interest of the government, while leveraging every opportunity to improve processes and services to effect innovative efficiencies and cost savings. Heim's dedication, professionalism and knowledge have been instrumental to past and ongoing successes of NASA.

Tessa Q. Keating received the NASA Exceptional Achievement Medal for work as the outreach and community relations coordinator for the Stennis Office of Communications. Keating has been instrumental in leading the effort to share the NASA message with the public, educators and students, and to encourage participation in NASA programs and missions. Her leadership of the outreach program is directly responsible for millions of people who have been touched in some way by NASA information and resources.

Joseph Lacher received the NASA Exceptional Achievement Medal for his work as chief of the Electrical Operations Division in the Stennis Engineering and Test Directorate. Lacher has contributed significantly to the Stennis mission and to NASA as an expert in installing and operating data acquisition instrumentation. He has supported various test projects and was a leader in the development and implementation of the NASA Data Acquisition Software, which has been instrumental to the success of Stennis' propulsion test mission.

Mansour Muhsin received the NASA Exceptional Achievement Medal for his work as the Stennis chief information security officer. Muhsin's leadership has resulted in a robust program to ensure safe, secure information technology communication to support NASA's mission. Through his vision and leadership, Muhsin revitalized and enhanced the Stennis information security program, enabling Stennis to become one of the most secure NASA centers without impacting the ability to meet mission requirements.

Claude B. Sanders received the NASA Exceptional Achievement Medal for his work as the B-2 Test Stand construction manager. Sanders' performance had been critical in the work to restore the stand for testing of NASA's Space Launch System core stage. As a project leader, Sanders manages four major construction contracts valued at a cumulative $92 million. He also oversees a diverse array of smaller construction projects with a combined value exceeding $6 million.

One Stennis employee received NASA's Outstanding Public Leadership Medal. This medal is awarded to a person who is not a government employee for notable leadership accomplishments that have significantly influenced the NASA mission.

Eugene "Al" Watkins received NASA's Outstanding Public Leadership Medal for his work as project manager of A²Research at Stennis. Watkins supports NASA core values though consistent dedication to the agency's mission. He promotes Stennis by fostering relationships with national, state and community leaders, and serves as a role model through his volunteer work. He is an accomplished Stennis program manager who has created award-winning teams that deliver the highest quality laboratory services in support of NASA missions.

One Stennis employee received NASA's Exceptional Public Service Medal. This medal is awarded to a person who is not a government employee but has made exceptional contributions to the mission of NASA.

Charles M. Bounds received NASA's Exceptional Public Service Medal for his work as the Stennis Data Center (SDC) operations manager with ASRC Federal. His leadership has been

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instrumental in the transformation of the SDC into one of the most highly regarded facilities in NASA. Bounds is responsible for configuration management of over 250 information technology applications and over 200 servers in delivering services to Stennis customers. His management has directly contributed to the SDC's near-perfect service delivery during the last four years.

One Stennis employee received NASA's Early Career Achievement Medal. This prestigious NASA medal is awarded to any government employee for unusual and significant performance during the first 10 years of an individual's early career in support of the agency.

Jonathan C. Dickey received the NASA Early Career Achievement Medal for his work as a valve and component systems expert at Stennis. For the B-2 Test Stand restoration and buildout project, he handled valve and component procurements totaling well over $3 million. He also has conducted numerous quantity distance studies and analyses to ensure protection of personnel and capital assets from potentially explosive events and to help Stennis customers safely locate explosives and propellants.

Three Stennis employees received the NASA Silver Achievement Medal. This medal is awarded by NASA center directors to individuals or teams for a stellar achievement that supports one or more of NASA's core values.

Jeffrey Mitchell received the NASA Silver Achievement Medal for his work with Bastion Technologies at Stennis. Mitchell is responsible for defining, implementing, and executing the construction quality assurance plan for the B-2 Test Stand restoration and buildout project. Mitchell's dedication to excellence has been critical to the creation of a culture of quality at the B-2 jobsite and the forward progress of the project's construction efforts.

Billy Smith received the NASA Silver Achievement Medal for his work with the Jacobs Facility Operating Services Contract Group at Stennis. Smith is responsible for designing the liquid oxygen, high-pressure gas systems, and high-pressure industrial water interfaces for the B-2 Test Stand restoration and buildout project. Smith is key in resolving mechanical design problems, and his competence and seasoned experience have earned him the respect and confidence of his peers, management and others.

Rodney Valdes received the NASA Silver Achievement Medal for his work with the Jacobs Facility Operating Services Contract Group at Stennis. Valdes is responsible for several structural designs for the B-2 Test Stand restoration and buildout project, including civil/structural support on designs valued at about $4 million. Valdes has displayed ingenuity in resolving requirement uncertainties and finding design solutions consistent with project budget and schedule constraints.

Several additional Stennis Space Center individuals and groups were recognized for service and contributions during the NASA Honor Awards ceremony. Those honors included:

Length of Service Awards

35 years
Rena Perwien

30 years
Andrew Clarke
Jerry Cook
Jason Edge
Randolph Holland
Kathryn Lambert
Kevin Power
James Ryan

25 years
Arlen Griffey
Bartt Hebert
Sandra Ladner
Ronald Magee
Sonia Rushing

Group Achievement Awards

RS-25 Engine Test Team

NASA
Christopher Barnett-Woods
Thomas Carroll
David Carver
Jack Conley
Howard Conyers
Robert Drackett
Robert Ek
David Failla
Jennifer Franzo
Daniel Goad
Jared Grover
Aaron Head
Bartt Hebert
Jeffrey Henderson
Michael Holmes
Rebecca Junell
Lester Langford
Ryan McKibben
Michael Perotti (KSC)
Paul Rieder
Marc Shoemaker
Amanda Stein
Neil Toupin
Nyla Trumbach
Derek Zacher

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Contractor Support

Chad Albritton
Louis Arceneaux
William Averill
Barrett Brayson
Owen Brayson
Tracy Buras
Kenneth Burley
Arthur Cantin
Donald Caudill
Robert Chapman
Christopher Coogan
Edward Cook
Kenneth Cook
Brian Corr
Mark Corr
Clifton Cox
Clinton Creel
James Cuevas
Michael D'Antoni
Tiffany Dallin
Robert Delcuze
Bradley Denmark
Casey Deschamp
George Drago
Leland English
Jack Fabre
Glenn Faciane
Murray Forsman
Charles Gandy
Dwayne Garcia
Samuel Garcia
Josh Hansell
Charles Hariel
Scott Hariel
Shannon Hariel
Megan Harrington

Group Achievement Award – RS-25 Engine Test Team

Lawrence Haselmaier
Walter Haselmaier
Robert Hayward
Robert Herrin
Warren Hogue
William Hughes
Kristi Hurt
Curtis Hyatt
Anthony Jackson
Harlon Jarrell
Timothy Jarrell
Dwight Jones
Robert Jones
Yancey Jordan
Kevin Jurich
Raymond Keim
Jay Labat
Austin Ladner
Gregory Ladner
Jackie Ladner
Lynn Ladner
Marsha Ladner
Richard Ladner
Robin Ladner
Roger Ladner
Daniel Lambert
Hooper Lavigne
Harlie Lee
Joel Lee
Joseph LeSieur
Joseph Lizana
Frank Lorusso
Judy Lumpkin
Rickey Lyons
Joey Malley
Michael Marodis
Patrick Marvin
Kevin McCaleb
William Mitchell
Robert Moeller
Marlin Moran
Vincent Moran
Kent Morris
Don Necaise
Douglas Necaise
Chad Northrup
Carley Odom
Michael Olsen
Robert Pair
Todd Pearson
Ralph Penton
Robert Peterson
Brenda Petrie
Thomas Piff
Lasonya Pulliam

Group Achievement Award – Sitewide Helium Gas Distribution Systems Test Team

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Michael Reich
Nicholas Riesner
Benjamin Robertson
Stephen Rose
Mounir Sabbagh
Paul Sanderson
Matthew Seal
Raymond Seymour
Michael Sheffield
Michael Slade
Therman Smith
George Spence
Brian Sproles
Donnie Steele
Stephen Steelman
Steven Stevens
Jonathan Strickland
Oliver Swanier
Eric Vanderklis
William Vaughn
Nahlon Vogt
Roger Walters
Jason Wheat
Cleveland Whitfield
James Williams
Richard Williams
Grady Wilson

Sitewide Helium Gas Distribution System Test Team

NASA
Henry Bakker
Gregory Carmouche
Jack Conley
Michael Holmes
Jason Hopper
Jesse Lamonte
Son Le
Truc Le
Jeffrey Lott
Christopher Mulkey
Doyle Pierce
Peter Tran

Contractor Support
Cory Acosta
Jeffrey Barros
James Cain
Nicholas Coleman
Leonard Craft
Ronald Dartez
Jerry Duggan
Willie Ellis
Kenneth Hancock
Kenneth Hawkins
Wilmon Henderson
Ruth Hextall
David Hodge
Michael Hodge
Michael Howard
Kurt Jarrell
Paul Jermyn
Daniel Jocks
Marsella Jones
Joshua Kirk
Philip Kopfinger
Jody Ladner
Lavell Ladner
Alan Mayne
Kenneth McCormack
Mark Mills
Timothy Mitchell
Kenneth Montgomery
Eugene Necaise
Shelly ONeal
Bobby Rodriguez
Bonnie Sanders
Robert Saucier
David Slavinsky
Paul Smith
Stacey Smith
Frances Songy
Darrin Spansel

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Group Achievement Award – HFCF-225 Solvent Replacement Team

(Right photo, bottom photos)

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William Spansel
Joshua Spence
Roberto Van Peski
Gregory Walls
James Williams
Danny Woods
Rickie Zerkus

Hydrochlorofluorocarbon-225 Solvent Replacement Team

NASA

Randall Canady
Bruce Farner
Thomas Galloway
Howard Burns (MSFC)
Samuel Davis (MSFC)
Timothy Gautney (MSFC)
Steven Gentz (MSFC)
Gail Gordon (MSFC retired)
John Griffin (MSFC)
Susana Harper (WSTF)
Brian Jensen (LARC)
Jennifer McMillian (MSFC)
Mark Mitchell (MSFC)
Barry Morris (MSFC)
Sandra Pearson (MSFC)
Stephen Peralta (WSTF)
Christina Pine Arpin (WSTF)
Michael Smiles (NESC)

Contractor Support

Curtis Bahr
Steven Bailey
John Bouvet
Taylor Davie
Gary Glass
Dale Green

Group Achievement Award – E-1 C3 Test Facility Repairs Team

Group Achievement Award – Building 4400 Emissions Project Team

Erick Guttierrez
Judson Hudson
Brian Jensen
Richard Joye
Alfredo Juarez
Marry Kerschbaum
Nikki Lowrey
Kenneth McCormack
Buford Moore
James Morgan
Jennifer Nye
Horacio Perez
George Quezada
Randy Rodriguez
Scott Rohe
Harold Ross
James Smith
Darrin Spansel
Brannon Standridge
Joel Stoltzfus
Stefanie Walburg
Roger Welker

Building 4400 Emissions Project Team

NASA

Henry Bakker
Jenette Gordon
Carolyn Kennedy
Michael Kersanac
Kenneth Kimbrough
David Lorance
Ronald Magee
Aaron Mannion
Scott Olive
John Pazos
Harry Ryan
Richard Wear
Casey Wheeler
Charles Willis
Neil Toupin

Contractor Support

Joshua Ankeny
Clayton Brown
Kirby Campbell
Anna Carver
Logan Dedeaux
Daniel Ezell
Kristie Foster
Hans Holzinger
Daryl Kosturock
Jesse Luc
Bridget Moody
Bernie Parker
Randall Pigott
Robert Stephens
Rodney Valdes
Ryan Weir
Rodney Wilkinson

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AWARDS

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E-1 C3 Test Facility Repairs Team

NASA

Katie Carr
Robert Gargiulo
Melba Harris
Randolph Holland
Melissa Huggins
James Huk
Justin Junell
Thomas Meredith
Christopher Mulkey
Rosa Obregon
David Roberts
James Ryan
Robert Southers
Keith Stockstill
Kelly Sullivan
Charles Thurman
Neil Toupin
Richard Wear

Contractor Support

Alan Alderman
Cheryl Bennett
Gary Bennett
Clifford Bigelow
David Blansett
Van Bolden
Don Brewster
Marla Carpenter
Nicholas Coleman
Edward Cook
Brian Corr
Mark Corr
Cody Cuevas
Lou Deken
Donald Dunn
Willie Ellis
Susan Fendley
Adam Fulks
Dwayne Garcia
Scotty Gibson
Eric Goller
Patrick Guidry
Kenneth Hancock
Michael Haralson
Charles Hariel
Scott Hariel
Kenneth Hawkins
Wilmon Henderson
Rubin Herrin
Petter Hobgood
David Hodge
Michael Hodge
Gerald Howard
Michael Howard

Group Achievement Award – Administrative and Clerical Support Services Contract Acquisition Team

Daniel Hultgren
Curtis Hyatt
Kurt Jarrell
Timothy Jarrell
Marsella Jones
James Jordan
Kevin Jurich
Travis Kennedy
Joshua Kirk
Gregory Ladner
Jody Ladner
Angela Lee
Dion Lee
Harlie Lee
Joseph LeSieur
Mark Lewis
Joseph Lizana
Frank Lorusso
Michael Marodis
Bruce Matthews
Kenneth McCormack
Mark Mills
Timothy Mitchell
Melissa Montgomery
Bobby Rodriguez
Rodney Sampson
John Searles
Raymond Seymour
Mark Sherrer
Marcus Shoemake
David Slavinsky
Curtis Smith
Paul Smith
Therman Smith
Darrin Spansel
William Spansel
George Spence
Joshua Spence
Adam Spiers
Kevin Stockstill
Jonathan Strickland
Terry Wactor
Gregory Walls
Cleveland Whitfield
Rodney Wilkinson
Raymond Williams
Grady Wilson
Carol Wolfram
Daymond Wood
David Yarborough
Robert Zar
Rickie Zerkus

Administrative and Clerical Support Services Contract (ACSS) Acquisition Team

NASA

Beth Bradley
Anita Douglas
Jason Edge
Wendy Bateman
Sarah Maine
Toni Watkins

Special Center Recognition Awards

Director's Certificate of Appreciation

Cynthia Simpkins
Carl F. Flettrich

Peer Award

David Keith

Special Agency Recognition Awards

NASA Robotics Alliance Project

Christopher Copelan

Stennis employees receive Silver Snoopy awards

Astronaut Pat Forrester, Stennis Space Center Director Rick Gilbrech and NASA Shared Services Center Director of Service Delivery Ken Newton stand with the recipients of NASA's 2015 Silver Snoopy awards, presented during an onsite ceremony June 3. Thirteen Stennis employees received the astronauts' personal award, presented to less than 1 percent of the total NASA workforce annually in recognition of contributions to flight safety and mission success. This year's Silver Snoopy recipients and ceremony participants were: (l to r) Forrester; Newton; David Haselmaier (Aerojet Rocketdyne); Brenda Petrie (Aerojet Rocketdyne); Ken Hawkins (Lockheed Martin Test Operations Contract Group); Robin Martin (Jacobs Technology Facility Operating Services Contract Group); Steve Taylor (NASA); Anthony Jackson (Jacobs Technology Facility Operating Services Contract Group); Kim Billingsley (Aerojet Rocketdyne); Susan Fendley (Lockheed Martin Test Operations Contract Group); Sandra Duncan (NASA Shared Services Center); John Mitchell (ASRC Federal); Louis Arceneaux (Lockheed Martin Test Operations Contract Group); David Carver (NASA); Darryl Smith (NASA Shared Services Center); and Gilbrech.

Stennis leadership training forum hosts Honoré

Stennis Space Center Director Rick Gilbrech (fifth from left) and other senior staff members hosted retired U.S. Army Lt. Gen. Russel Honoré (sixth from left) during its annual leadership training forum at INFINITY Science Center on May 15. Honoré served as commander of the Joint Task Force Katrina following the 2005 hurricane. He spoke about his experiences and principles of leadership with Stennis staff members.

Early leaders help to shape engine test site

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 provides a glimpse into the history of the south Mississippi rocket engine test center.

A change in leadership at the newly created rocket test facility in Hancock County, Mississippi, transpired about four years after its formal announcement of the future site. The site's first manager, Capt. William C. Fortune, and his successor, Jackson Balch, both appointed by German scientist and Marshall Space Flight Center Director Dr. Wernher von Braun, were the masterminds of what would evolve into the John C. Stennis Space Center.

(Top photo) Jackson Balch (r) inspects the propellant facilities at Mississippi Test Facility in 1965, along with George Mueller, NASA's associate administrator for manned space flight; Wernher von Braun, Marshall Space Flight Center director; and Gen. Edmund O'Connor with Marshall Space Flight Center Industrial Operations.

(Right photo) William C. Fortune (l) reviews construction plans with Marshall Space Flight Center Director Wernher von Braun at the Mississippi Test Operations site in 1963.

Fifty years ago on June 10, von Braun announced Fortune's special task assignment – to evaluate the modes of cooperation between the main elements of the government/industry Saturn rocket team. The purpose of his study was to ascertain that maximum utilization was obtained from the giant new super rocket family under development.

"Captain Fortune has done a fine job at our Mississippi Test Facility," said von Braun. "Under his leadership, this country's largest and most complex rocket static-testing facility has literally been carved out of the swamp and piney woods. His has been a challenging and rewarding task."

When von Braun was looking for someone in 1962 to head up the awesome task of building a test site, he chose Fortune, a true pioneer in American rocketry. Von Braun met and became friends with Fortune when the two worked together during the launching of the first large rocket from a U.S. Navy ship in 1947. Fortune was in charge of the launch project for the Navy and personally designed the launcher used on the USS Midway to launch a V-2 rocket designed and built under the direction of von Braun.

Von Braun said Fortune's "new mission – to point out areas where the cooperation within the successful government/industry team can be made even more effective for future uses of our Saturn super rocket – is equally as challenging."

Fortune was engaged in the development, fabrication and assembly of the Saturn I-B and Saturn V rockets.

Meanwhile, Balch became the facility's first designated "director" while the site was still operating under the auspices of Marshall Space Flight Center. Balch was largely responsible for the transformation of the facility from a single-mission entity to a multi-agency scientific research center during the 1970s, in which a number of federal and state agencies involved in space applications, oceanography and environmental sciences located to the facility.

Von Braun appointed Balch, who was his technical assistant, to take over the south Mississippi installation in May 1965 when construction and activation of the $300 million rocket engine test facility was at its peak.

Balch's experience as a colonel in the Alabama National Guard and an aide to Gen. Douglas MacArthur near the end of World War II helped prepare him for the leadership task of managing the efforts of NASA, the Corps of Engineers and approximately 250 private contractors in building the site.

(Interviews from 2011 with Fortune and Balch children are available at: Wealtha Fortune Weaver and Jackson "Jack" Balch Jr.)

Office of Diversity and Equal Opportunity

Make the choice – show respect in the workplace

"I speak to everyone in the same way, whether he is the garbage man or the president of the university."
Albert Einstein

Respect has received a lot of attention in the work environment lately, as it relates to equity, fairness and just getting along with those around us.

But respect reaches much further than manners and compliance. It also plays a key role in recognition, engagement and creation of a strong organizational culture. Think about it. Recognition, at its core, is really just a form of respect. People who have been recognized tend to rise to that recognition, and strive in the future to be worthy of it. People who are not recognized for hard work tend to feel forgotten, unappreciated and disrespected.

Respect is top of mind for today's workers. "It's not a do-your-work-and-keep-your-head-down environment anymore," says Brian Kropp, a managing director at CEB. "Everyone is looking to be recognized and respected for their individual contribution."

Do you ever ponder why people are the way they are? Do you respect differences in people? Is your way always the right way or the only way? As a manager, do you consider other people's feelings in your attempt to be recognized by your peers?

Everyone is born into the world as a person, and everyone leaves the world as a person. Yet, we have the tendency to forget that fact when interacting with others.

Instead, we get caught up in "secondary differences" among us. Those could be age, race, ethnicity, religion, how introverted or outgoing we are, wealth, rank or status, or any number of things. When we look at people and interact with them, we have the tendency to see all these differences rather than the simple fact that we are all just people. This creates challenges between us, making it difficult for us to trust each other and collaborate.

Just think about your day at work. You might catch your fellow employees whispering about you, or maybe they send nasty emails to one another or gossip about others behind their backs. So, what can be done? Perhaps, if we all just tried to adopt one simple strategy to treat people with respect, we could make a difference in the quality of the lives of those around us, and of our own life as well.

We always have a choice. Treat people the same no matter their race, age, gender, or religion. Praise more frequently than you criticize, look over your emails before sending them. Email is not the forum for communicating bad news, anger, frustrations, etc. It rarely, if ever, comes across in a constructive manner; rather, it destroys relationships.

Have a positive attitude toward others. A positive attitude can make all the difference in how you interact with others and how successful you are as well. Remember that saying we all probably heard from our parents, "If you don't have anything nice to say, don't say anything at all."

Studies confirm this. One 2012 study of workers highlighted respect in the workplace as a key factor in voluntary turnover. When respondents felt or perceived a lack of respect and support from various levels of the organization (including supervisors and coworkers), they reported feeling "devalued as individuals and within their organization." A reoccurring theme in the qualitative data was a lack of appreciation and recognition for hard work.

Supervisors have a choice, do they want a workforce that marches to their orders, or do they want a cohesive workforce that enjoys the environment that they work in and gives it their all. To have the latter, a supervisor should demonstrate thoughtfulness, empathy, and kindness if they desire a cohesive workforce.

(Parts of this article taken from contributions by Joyce E. A. Russell)

Hail & Farewell

NASA bids farewell to the following:

Charles Thurman	Electrical Engineer	Engineering and Test Directorate

And welcomes the following:

Thally Dao	Summer Intern (Legal)	Office of the Chief Counsel
Joshua Reeves	Program Analyst and Management	Office of the Chief Financial Officer

Nicholson elementary project claim honors

It isn't every day that you hear about students who help a city solve a long-term and costly problem with their infrastructure. And it isn't every day that you hear about those same students becoming grand prize winners in a national science, technology, engineering and mathematics, or STEM, contest held by a Fortune 500 company.

But that's exactly what happened to this elementary school in Mississippi. Nicholson Elementary is a rural school in the south-central town of Picayune. At Nicholson, 98 percent of the students receive free or reduced-price lunches. And like so many schools in the country, Nicholson has faced numerous budgetary cuts. With those cuts, its teachers have had to rely on nationally accessible programs and projects to help provide enrichment activities for their students.

Nicholson Elementary School students Anna Lander and Kaydee Hensiek, along with teacher Maureen Pollitz, meet with Donald James, NASA's associate administrator for education, during a visit to Washington, D.C., to present their award-winning robotics project. The Nicholson project was a grand prize winner in Samsing's "Solve for Tomorrow contest.

Nicholson Elementary educator Maureen Pollitz, a 14-year teaching veteran, knew that NASA's Stennis Space Center, located near her school, could help fill the gap of some of those needed enrichment opportunities. Pollitz first learned of NASA's education offerings when representatives from Stennis visited the school in 2005. Since then, Pollitz has participated in many NASA projects and programs, including Summer of Innovation, downlinks with the International Space Station and FIRST Robotics.

Pollitz has witnessed firsthand the impact of NASA education projects and programs on the students of Nicholson Elementary.

"By being involved with NASA, the students at Nicholson Elementary have had the opportunity to engage in hands-on activities, which they normally would not have experienced. These programs are extremely important to our area. Nicholson Elementary students are at risk because of economic deficiencies outside their control that, in many cases, greatly hinder their learning connections. Being involved with NASA will reduce our student risk factors and help promote student achievement," Pollitz said.

The "Solve for Tomorrow" contest hosted by Samsung focuses on getting students excited about STEM as education and career paths. The contestants must use STEM in solving a problem, and the winners receive technology products and/or grants as awards. Pollitz believed her students would benefit from participating in the contest, so she got them involved by taking them to Picayune's city hall to find out what problems the students might be able to help solve. As it turned out, Picayune had an issue with flooding and water drainage; the pipes would become clogged at some location, but the city had no way to find the exact spot.

The Nicholson Elementary students came up with an idea of using a small robot to track down the problem. They contacted the local high school's NASA-sponsored Pearl River County robotics team, and together the two groups worked to create a prototype able to navigate into the pipes. Using an attached camera, the robot could easily detect where blockages were located. As a result of this student endeavor, the city of Picayune no longer has to dig up streets and pipes searching for the location of the blockage.

While working on the robot, the students relied heavily on the engineering design process. To help learn more about that process, Pollitz and her students contacted NASA education specialist Steve Culivan from Stennis Space Center for information on the process steps. "It was a privilege to present a NASA education program demonstrating how STEM and the engineering design process can be applied to solve a real-world problem and help the local community," he said.

With the assistance of NASA, the students were able to follow the design process and discover three to four plausible ideas of how to design a visual robot to inspect the city drain system. The robot was a huge success. The students continue to make modifications and will present the final version to the city this month. The city hopes to save thousands of dollars and work hours with the help of the student-designed robot.

But it wasn't just the city that was impressed with the students work.

Nicholson Elementary entered their robot in Samsung's "Solve for Tomorrow" contest and was awarded one of the five Grand Prizes, for which they received $120,000. Pollitz and some of her students had the opportunity to travel to Washington, D.C., to present their work. During a visit to NASA Headquarters, they met with astronauts and NASA officials, including Donald James, NASA associate administrator for education; Roosevelt Johnson, deputy associate administrator for education; John Grunsfeld, former astronaut and associate administrator for the Science Mission Directorate; and Dave Lavery, program manager for solar system exploration.

They also met with government officials from Congress and the White House. Pollitz and her students then traveled to New York City where they were interviewed by a major news channel for a segment in a technology show.

What started out as an idea to help the community and engage students in a hands-on STEM project blossomed into an incredible accomplishment for the Nicholson Elementary School students and teachers.

History personnel visit Stennis

History Office representatives from NASA centers across the country stand at the base of the B-2 Test Stand during a tour of Stennis Space Center facilities in mid-May. Stennis hosted the agency representatives for their three-day annual History Office program review May 19-21.

Marshall early career employees visit Stennis

NASA early career employees from Marshall Space Flight Center in Huntsville, Ala., prepare to view a RS-25 engine test on the A-1 Test Stand at Stennis Space Center during a May 28 visit. The group spent the day at Stennis, learning about ongoing work at the rocket engine test site and touring various facilities.

Stennis hosts 2015 Old Timers' Day

Pat Mooney and Bob Delcuze visit during 2015 Old Timers' Day activities at Stennis Space Center on May 15. The annual fellowship was attended by more than 100 retirees, guests and employees. The gathering was sponsored by the Stennis Recreational Association, with contributions from Jacobs Technology; Aerojet Rocketdyne; Keesler Federal Credit Union; V.B.S., LLC; IAM Local 2249; and Seals Grocery.

Hurricane Guide

The 2015 hurricane season has arrived – and NASA's John C. Stennis Space Center has prepared this four-page guide as a resource for Stennis employees. The guide offers invaluable information: a hurricane tracking map, storm-rating information and contact numbers for emergency situations. It also serves as an important reminder for every Stennis employee to be prepared and alert for whatever the 2015 storm season may deliver.

Stennis Space Center

WILL NOT

serve as a shelter

to any workers or families.

As part of their hurricane season preparation, individuals are urged to contact county/parish offices to identify available shelters in their areas.

In both Mississippi and Louisiana, persons are reminded they may call 2-1-1 to obtain information about health and human services available in their areas. The number is staffed 24 hours a day in Louisiana and on weekdays, 7 a.m. to 6 p.m., in Mississippi. It offers information on various services, including food, clothing, shelters and transportation assistance.

Stennis employees are reminded to discuss their evacuation plans with supervisors so they can be contacted after a storm or to acquire their company/agency policy on contacts after a storm. NOTE: If NASA employees cannot contact Stennis due to downed communications after a storm, they should call 877-776-4654 to report their status.

Emergency preparation checklist

- ❑ Gather a two-week inventory of emergency supplies, such as flashlights, batteries, a battery-operated radio, blankets and pillows, canned and dried food, non-electric can opener, eating/cooking utensils, emergency cooking facilities (grill or camp stove), fuel, cash and/or credit cards, clothes, toiletries, water (1 gallon per person a day), prescription medications, first-aid kit/handbook, fully-charged cell phone, towels, sleeping bags, etc.
- ❑ Back up computer files.
- ❑ Collect valuable papers, such as social security cards, birth certificates, marriage and death records, insurance policies, savings and checkbooks, etc.
- ❑ Prepare an inventory of household goods.
- ❑ Gather basic post-storm cleanup and repair supplies, such as axes, brooms, a camera to record damage, cleaning supplies, mosquito repellent, trash bags, hand tools, a chain saw, duct tape, plastic tarps, extension cords, a ladder, generator and fuel, etc.

National resource information

American Red Cross (www.redcross.org)	800-REDCROSS (733-2767)
Federal Emergency Management Agency (www.fema.gov)	800-621-FEMA (3362)
National Oceanic and Atmospheric Administration (NOAA)	www.noaa.gov
NOAA National Hurricane Center	www.nhc.noaa.gov
NOAA National Weather Service Southern Region (www.srh.noaa.gov)	Jackson 601-965-4638
	Mobile 251-633-6443
	Slidell 985-649-0357
NOAAWatch - NOAA's All-Hazard Monitor	www.noaawatch.gov
U.S. Department of Homeland Security	www.dhs.gov
National Flood Insurance Program (www.floodsmart.gov)	888-379-9531

Mississippi resource information

Mississippi Emergency Management Agency (www.msema.org)	866-519-MEMA (6362)
	(24 hrs) 800-222-MEMA (6362)
Mississippi Department of Transportation (www.mdot.ms.gov and www.mdottraffic.com)	866-521-MDOT (6368)
Mississippi Highway Safety Patrol (www.dps.state.ms.us)	601-987-1212 (*HP from any cell)
Mississippi Public Broadcasting (www.mpbonline.org)	(24-hour hotline) 601-326-1184
Governor's Office (www.governorbryant.com)	877-405-0735 or 601-359-3150
Mississippi Insurance Department (www.mid.ms.gov)	800-562-2957
U.S. Coast Guard - Sector Mobile (www.uscg.mil/D8)	251-441-5720
Mississippi Power (www.mississippipower.com)	800-487-3275
Coast Electric Power (www.coastepa.com)	877-769-2372

Louisiana resource information

Office of Homeland Security and Preparedness (www.gohsep.la.gov)	800-256-7036 or 225-925-7500
Louisiana Department of Transportation (www.dotd.louisiana.gov)	877-4LA-DOTD (452-3683)
National Weather Service Forecast Office (New Orleans/Baton Rouge)	504-522-7330
Louisiana State Police (www.lsp.org)	225-925-6325 (*LSP from any cell phone)
Louisiana State Police Road Closure Hotline	800-469-4828
Louisiana Road Conditions (www.511la.org)	888-ROAD511 (762-3511)
Louisiana Governor's Office (www.gov.louisiana.gov)	866-366-1121
Louisiana Department of Insurance (www.ldi.louisiana.gov)	800-259-5300 or 225-342-5900
U.S. Coast Guard - Sector New Orleans (www.uscg.mil/D8/sectNOLA/)	504-365-2200
Cleco Corporation (www.cleco.com)	800-622-6537
Entergy (www.entergy-louisiana.com)	800-ENTERGY (368-3749)
	Power outages: 800-9OUTAGE (968-8243)
Washington-St. Tammany Electric Cooperative (www.wste.coop)	985-643-6612
	Power outages: 866-672-9773

Louisiana-Mississippi interstate contraflow plan

In an effort to assist Louisiana in the event of a mandatory hurricane evacuation, the Mississippi Department of Transportation will implement contraflow (lane reversal) for I-59 and I-55 when requested by Louisiana and approved by the Mississippi governor.

- A contraflow decision is not automatic and will only be used when absolutely necessary. Citizens should not delay evacuation plans in anticipation of contraflow.

- I-59 contraflow will begin in Louisiana, extend into Mississippi and end just south of Poplarville.

- I-55 contraflow will begin in Louisiana, extend into Mississippi and end just south of Brookhaven.

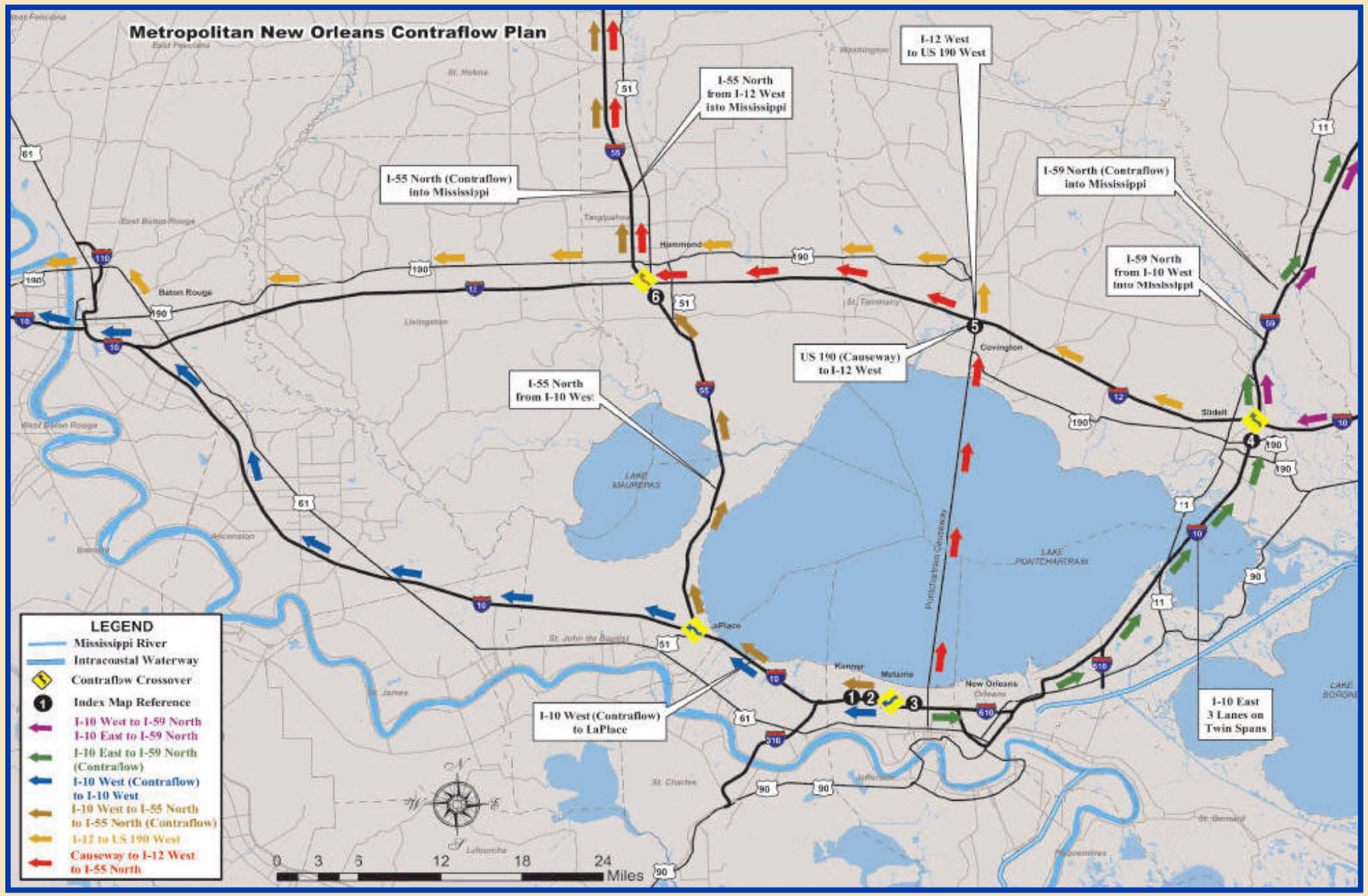
- Exits within the contraflow sections of the interstate highways will remain open as conditions allow. Law enforcement officers will assist with traffic control.

- Shoulders of both Interstates 59 and 55 should be kept clear for emergency vehicles. Motorists needing to stop should use the next available exit.

- Motorists traveling west into Louisiana on I-10 will be routed north onto I-59 at the I-10/I-12 split.

- Tune in to public broadcasting radio stations for emergency information and road conditions.

- The following procedures will be enforced in the Hattiesburg area to avoid severe congestion:
  - Northbound traffic on Hwy. 49 may not be allowed to exit at either Hwy. 98 or I-59.
  - Northbound traffic on I-59 can only exit at Hwy. 11 (Exit 60) or west onto Hardy Street/Hwy. 98 (Exit 65).
  - Westbound traffic on Hwy. 98 will not be allowed to exit onto Hwy. 49, but directed to merge onto I-59 instead.



Hurricane strength

Category One
Winds 74-95 mph. Storm surge 4-5 feet.

Category Two
Winds 96-110 mph. Storm surge 6-8 feet.

Category Three
Winds 111-129 mph. Storm surge 9-12 feet.

Category Four
Winds 130-156 mph. Storm surge 13-18 feet.

Category Five
Winds greater than 157 mph. Storm surge more than 18 feet.

Severe weather terms

Storm surge
An abnormal rise of sea/gulf water along a shore as the result, primarily, of winds from a storm.

Watch
Adverse conditions are *possible* in the specified watch area, usually within 36 hours. A watch may apply to thunderstorms, tornadoes, floods or hurricanes.

Warning
Adverse conditions are *expected* in the specified warning area, usually within 24 hours. A warning may apply to thunderstorms, tornadoes, floods or hurricanes.

Public shelter information

Shelters are operated by trained individuals and are designed to ensure the safety, security and basic needs of sheltering residents are met. As a reminder, no one is allowed to shelter at Stennis Space Center.

What to bring to a shelter
Residents seeking shelter should bring a change of clothing, a blanket and a pillow for each person in their family or group. Residents also should bring their disaster supply kit, including food, medications, comfort items and special items for infants or elderly persons.

What not to bring to a shelter
No weapons, drugs or alcohol are allowed.

Hurricane preparedness apps

Alert FM

Functions as a weather radio, with unique local alerts from emergency officials.

FEMA

Provides safety tips, interactive aids and maps of shelters and recovery centers.

Your Plan

An Insurance Information Institute app with various preparation and mitigation aids.

Way to Geaux

A Louisiana roads hands-free, eyes-free, location-based audio traffic allert system.