

# michoud messenger

National Aeronautics and  
Space Administration



## NASA Completes Welding on Massive Fuel Tank for First Flight of SLS Rocket

Welding is complete on the largest piece of the core stage that will provide the fuel for the first flight of NASA's new rocket, the Space Launch System, with the Orion spacecraft in 2018. The core stage liquid hydrogen tank has completed welding on the Vertical Assembly Center at NASA's Michoud Assembly Facility in New Orleans. Standing more than 130 feet tall, the liquid hydrogen tank is the largest cryogenic fuel tank for a rocket in the world. The liquid hydrogen tank and liquid oxygen tank are part of the core stage – the “backbone” of the SLS rocket that will stand at more than 200 feet tall. Together, the tanks will hold 733,000 gallons of propellant



*With welding complete on one more piece of the core stage, the first flight-ready Liquid Hydrogen Fuel Tank for the world's most powerful rocket, NASA's Space Launch System, finishes final welding and is moved off the 170-foot-tall Vertical Assembly Center.*

and feed the vehicle's four RS-25 engines to produce a total of 2 million pounds of thrust. This is the second major piece of core stage flight hardware to finish full welding on the Vertical Assembly Center. The core stage flight engine section completed welding in April. More than 1.7 miles of welds have been completed for core stage hardware at Michoud. Traveling to deep space requires a large rocket that can carry huge payloads, and SLS will have the payload capacity needed to carry crew and cargo for future exploration missions, including NASA's Journey to Mars.



# Letter from Leadership

Team,



*Bobby Watkins,  
Michoud Director*

This year is closing out amidst much change within our nation, NASA, and closer to home, our Michoud family. I

am reminded of a quote from President John F. Kennedy, “Change is the law of life. And those who look only to the past or the present are certain to miss the future.”

I’m confident the outlook for Michoud is great. We are poised for success. I must give all the credit for that to you – because it’s your diligence, dedication, and passion for our mission that places this facility in such a strong position. Our team can be characterized by the impact it is having and the innovation that defines your work. It is your commitment and ingenuity that will leave a mark in Michoud’s history as the team who played a major role on this Journey to Mars.

There were many shining moments in 2016. We completed welding of the engine section, liquid hydrogen, and liquid oxygen weld confidence articles and structural qualification test articles. We also completed welding of the core stage engine section and liquid hydrogen tank that form the core stage for the first SLS flight.

We built, assembled, and delivered the Orion flight

spacecraft to Kennedy Space Center for outfitting for Exploration Mission-1. This is a critical mission because it will validate the capabilities that makes SLS the cornerstone of our deep space exploration program.

We also began work at Michoud to prepare to build the SLS exploration upper stage for Exploration Mission-2, which will provide the extra power to send people and payloads farther away from Earth than ever before. In August, we gave more than 100 social and traditional media an inside look at the progress being made on SLS. #NASAMars-Day was in the top 10 trending Twitter topics, and the potential total reach of all social posts was a combined 375.3M. Additionally, Michoud increased Facebook followers from 2,000 to 10,000.

Fiscally, we are much stronger due to combining operations and maintenance services between Michoud and Stennis Space Center under the SACOM contract. We have made great strides working with our S3 partners, and as a result Michoud has already realized \$8M in saving.

Our tenant business model has also positioned us as a more cost-effective facility. Today more than 17% of Michoud’s operating costs are funded by non-NASA tenants who lease nearly 800,000 sq. ft. of our space.

A new tenant has joined us. The Ochsner Clinic Founda-

tion will build a Health Center in Building 101 which will offer primary care services as well as specialty and rehabilitation services. This is a great addition to our tenant base and is set to open summer of 2017.

We welcomed many dignitaries, legislative representatives, celebrities and friends of NASA this year. Most recently we hosted Katherine Sanders, the granddaughter of Katherine Johnson, NASA’s “human computer” who excelled at mathematical calculations during the Apollo days. Her life is the subject of a new film called “Hidden Figures” and will be in theatres in January. It was a pleasure to meet Ms. Sanders and members of her science class at St. Peter Claver.

There isn’t anything new to report on my transition to Director of the Human Exploration Development and Operations Office at Marshall or when Keith Hefner will step into the role as your new Director. I will let you know as soon as information becomes available.

Thank you for an outstanding year. I wish everyone the best of this holiday season and look forward to a new year that holds great promise for us all.

*- Bobby Watkins,  
Director of Michoud  
Assembly Facility*

*Editor’s Note: If you have a question or topic, you’d like to see Bobby address in his column, please email him at [Bobby.j.watkins@nasa.gov](mailto:Bobby.j.watkins@nasa.gov).*

# Rollin' on the River



*Pegasus departed NASA's Stennis Space Center in Bay St. Louis, Mississippi, on Nov. 1, 2016, and traveled on the Pearl River, arriving here at Michoud that night.*

Pegasus departed NASA's Stennis Space Center in Bay St. Louis, Mississippi, on Nov. 1, 2016, and traveled on the Pearl River, arriving that night here at NASA's Michoud Assembly Facility. The barge returned here to ship parts of

the Space Launch System. Pegasus will carry core stage test and flight articles, the largest parts of the new powerful rocket SLS, from MAF to several NASA centers for testing and for launch on the first mission.

First, Pegasus will carry core stage structural test articles from Michoud to NASA's Marshall Space Flight Center in Huntsville, Alabama, for testing. Then, Pegasus will transport the assembled core stage with its four RS-25 engines from Michoud to Stennis for green run testing--hot-fire testing to ensure the stage is ready for launch. Later, the barge will take the stage to NASA's Kennedy Space Center for integration with other components for the first SLS flight.

The SLS will have the payload capacity needed to carry crew and cargo for future exploration missions, including sending the first humans to Mars

## Safety and Health Fair - October 26, 2016

The Annual Michoud Assembly Facility Safety and Health Fair was held in October. This year's theme of "Safety & Health Fair for Life" engaged over 425 attendees. The fair hosted 28 vendors that covered Safety, Health and Environmental Education, providing many services and demonstrations to employees with safety and health information for work and home use, including fall safety and electrocution. Employees who attended received free health and medical type screenings were provided to employees who attended the event, such as, flu shots, blood sugar, blood pressure, even first-aid and automatic emergency defibrillator's awareness training. Throughout the day, 228 raffles awarded prizes

ranging from first aid kits to composting kits.

Representatives from Ochsner Hospital administered flu vaccinations, using employee insurance wellness coverage for payment. The 76 vaccines administered allowed Michoud funds normally used for flu vaccines to be used to purchase expensive shingle vaccines and provide those to employees.

The health fair is another way that Michoud continues to take care of their employees "It's important to bring awareness and take advantage of the free services that are provided all in one location, as it is easy to overlook your health and safety. So providing the free screenings is a cost-effective way of making sure your health is okay.

## 3rd Annual Veteran's Day Celebration



*Michoud hosted a Veterans Day Celebration. Veterans of every U.S. military branch were honored. The U.S. Coast Guard presented the colors, and Ron Adams sang the National Anthem to open the ceremony. Center Director Bobby Watkins, Center Operations Officer Malcom Wood and Colonel Michael Robinson USMC addressed the attendees during a coinig ceremony. They spoke on how we all deeply appreciate the sacrifices they have made in the lives to keep our country free. We need to be mindful and thank our veterans every day. A reception followed immediately after the ceremony.*

# Katherine Sanders Tours Michoud

Katherine Johnson's granddaughter, Katherine Michelle Sanders toured Michoud on November 8 with the 7th grade science class she teaches at St. Peter Claver School, in New Orleans. They were greeted by Michoud Director Bobby Watkins, and the tour was led by the Space Launch STEM group with Dr. Renee Horton, who works at Michoud building the SLS rocket.

Sanders was inspired by her grandmother: Katherine Johnson, who was also a teacher before coming to work for the National Advisory Committee for Aeronautics (NACA) and later for NASA Langley as a human computer. President Barack Obama presented her with the Presidential Medal of Freedom, Tuesday, Nov. 24, 2015. Interviews with Johnson will be featured in the Hidden Figures campaign in January. <http://www.nasa.gov/feature/katherine-johnson-the-girl-who-loved-to-count>

Following the tour, Ms. Sanders and her students enjoyed a lunch and learn. The group had the opportunity to participate in many hands on STEM activities, even to do mock interviews

with Dr. Horton. The day certainly sparked the students and teachers interests in science and space as they were amazed to see that NASA is building the world's most powerful rocket here at Michoud so close to their homes.



With special ties to NASA, Katherine Sanders 7th grade science class from St. Peter Claver's School visited Michoud. Ms. Sanders is the granddaughter of Katherine Johnson who's work for NASA earned her The Presidential Medal of Freedom, presented to her on Nov. 24, 2015 by President Obama.

## Toys for Tots 2016

The Toys for Tots program was launched 67 years ago by the U.S. Marine Corps to help spread Christmas Cheer to kids in need. The program focuses on helping less fortunate children experience the joy of Christmas and to play an active role in developing one of our nation's most valuable resources – our children. The biggest reward is knowing you're helping put a smile on the face of a child. Please help by donating a new unwrapped toy for ages 0-14. The Deadline for donations is December 15, 2016, so Michoud employees let's fill up these boxes!

### Drop Box Locations

Vivace H-7 / 2nd floor  
LMCO 101-2-EB48  
S3- Executive 320-2-C4

S3- Safety/Quality B102-EH2  
LMCO 102-2-EH29

LMCO BLDG 103-1-Q17  
LMCO BLDG 318



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