



# GSDO

GROUND SYSTEMS  
DEVELOPMENT & OPERATIONS

EXPLORATION BEGINS HERE



## PROGRAM HIGHLIGHTS • JULY/AUG 2016

At NASA's Kennedy Space Center in Florida, the Ground Systems Development and Operations (GSDO) Program Office is leading the center's transformation from a historically government-only launch complex to a spaceport bustling with activity involving government and commercial vehicles alike. GSDO is tasked with developing and using the complex equipment required to safely handle a variety of rockets and spacecraft during assembly, transport and launch. For more information about GSDO accomplishments happening around the center, visit <http://www.nasa.gov/groundsystems>.

## NASA Reaches Platform Milestone for Space Launch System

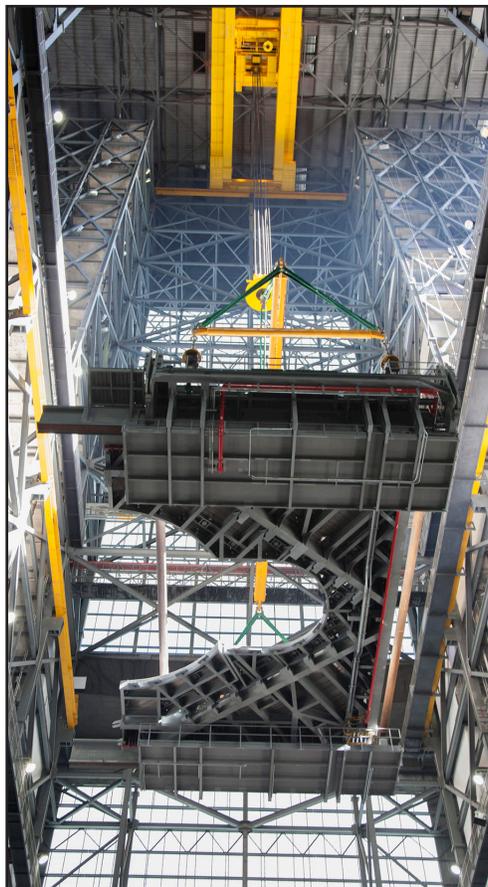
Installation of new work platforms for NASA's Space Launch System (SLS) rocket and the journey to Mars reached the halfway point in July inside the Vehicle Assembly Building (VAB) at the agency's Kennedy Space Center in Florida.

Prior to rolling out to the launch pad, the rocket and Orion spacecraft will come together in the VAB for processing and assembly. Five of the ten levels of platforms are in place in High Bay 3, all part of the massive amount of work going on inside the iconic building to accommodate SLS and Orion.

"This is a key milestone for NASA and the Ground Systems Development and Operations Program," said Mike Bolger, GSDO program manager at Kennedy.

The F North and South platforms were lifted by crane from the transfer aisle floor of the VAB, slowly raised into position, and attached to rail beams on the south and north walls of the high bay on July 15 and 19, respectively. The rail beams provide structural support and contain the drive mechanisms to retract and extend the platforms.

When all of the platforms are



*A heavy-lift crane lifts the first half of the F-level work platforms, F south, for NASA's Space Launch System (SLS) rocket, from the floor of the Vehicle Assembly Building (VAB) at Kennedy Space Center on July 15. Photo credit: NASA/ Bill White*

installed, a total of 10 levels of work platforms, 20 platform halves altogether, will surround the SLS rocket and Orion spacecraft and provide access for testing and processing for the uncrewed Exploration Mission 1 and deep-space missions, including the journey to Mars.

"This is a significant accomplishment in the production and installation of the platforms for High Bay 3," said Jose Perez Morales, VAB Element Project manager.

It takes about four hours to lift and install each of the platforms. They weigh between 300,000 and 325,000 pounds, and measure about 38 feet long and close to 62 feet wide.

Construction workers with VAB general contractor Hensel Phelps, subcontractors S&R, Steel LLC and Sauer Inc., and the Kennedy Test and Operations Support Contract contractor Jacobs are performing the work.

"It's another giant leap for the GSDO Program as we prepare Kennedy Space Center to support the agency's journey to Mars," Bolger said.

To read the complete story, visit <http://go.nasa.gov/2aafm05>.

# Ground Systems Team Spotlight

**Vicki Ketterer** is an integration engineer with Jacobs on the Test and Operations Support Contract (TOSC) at Kennedy Space Center. Her responsibilities include integrating the requirements between the hardware providers, such as United Launch Alliance and Boeing, with the TOSC engineers to ensure that the requirements are correct and workable. Currently, her work focuses on the Interim Cryogenic Propulsion Stage and main engines of NASA's Space Launch System rocket.

Ketterer has worked at Kennedy for more than 29 years.

She previously worked in the Space Shuttle Program as a quality engineer, working with the thermal protection system and conducted structural inspections.

She moved on to orbiter structures engineering and finished her space shuttle career in the program office as a project engineer.

"The coolest part of my job is working on our nation's space program and being able to see spaceflight hardware that very few people get to see up close and personal," Ketterer said.

One of the achievements she is most proud of is receiving a Space Flight Awareness Award in 2007 for her work on Endeavour's return to flight modifications.

Ketterer became interested in space when she was in grade school.

"We watched the Apollo launches in the early 1970s, plus my parents took us to the Kennedy Space Center Visitor Complex and we saw Enterprise on top of a 747 aircraft," Ketterer said. "I got a job here, and the rest is history."

Ketterer's hometown is Pittsburgh, Pennsylvania. She moved to Florida in 1987.

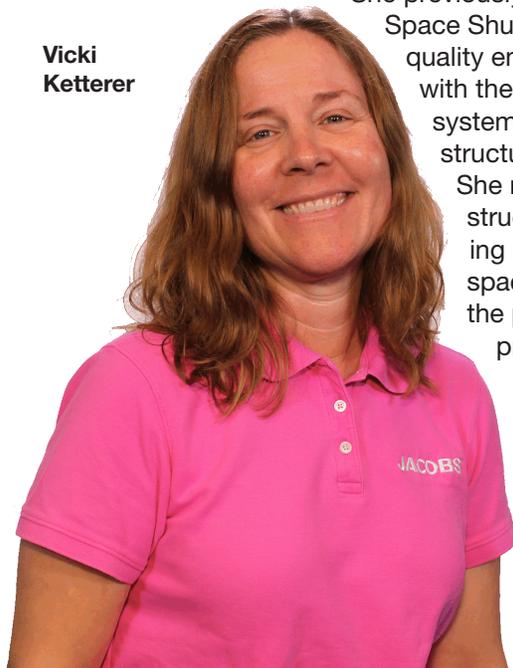
She earned a bachelor's degree in chemical engineering from Penn State University, and a master's in systems management from Florida Tech.

Her first car was a 1984 dark blue Pontiac Sunbird. It was a car from her father's company so she got a good deal on it.

"Every once in a while it made a very loud squealing noise when I started it, so I unintentionally scared a lot of people as they walked by," Ketterer said.

Her interests include traveling to as many places as possible, hiking, learning to sail, and participating in Toastmasters.

She and her husband, Kirk, have been married almost 25 years.



**Vicki Ketterer**

"I'd better plan a great trip for our anniversary," Ketterer said.

**Sean Whyard** is a mechanical engineer with SGT Inc. on the Engineering Services Contract at Kennedy Space Center. He is the lead design engineer for the mobile launcher fluids and electrical installation. He has worked at Kennedy nearly three years.

He supports the Ground Systems Development and Operations Program by assisting in the design and preparation of the mobile launcher so that it is ready for the new Space Launch System rocket for future missions launching from Pad 39B.

"As someone who grew up in the midst of the Space Shuttle Program, being a part of the next generation of space exploration is exciting," Whyard said. "Every day we are closer to establishing the new foundation from which the next big step will be made."

One of his most memorable times was when he and his team received a NASA Group Achievement Award in 2015 for their work on the mobile launcher.

"I'm extremely honored and proud to be a part of an amazing team, who in our time together, have made me a better person, both professionally and personally," Whyard said. "The success of this project was achieved through the sum of its parts."

Whyard became interested in space at a young age. "Who didn't dream of becoming an astronaut?" His interest peaked during his college years, as he was so close to the space center and watched space shuttle launches from his dorm room.

"I consider myself lucky to be part of it. I want to be able to contribute to the continuation of this legacy and see NASA achieve the next steps for humans to explore deep space," Whyard said. "Each person

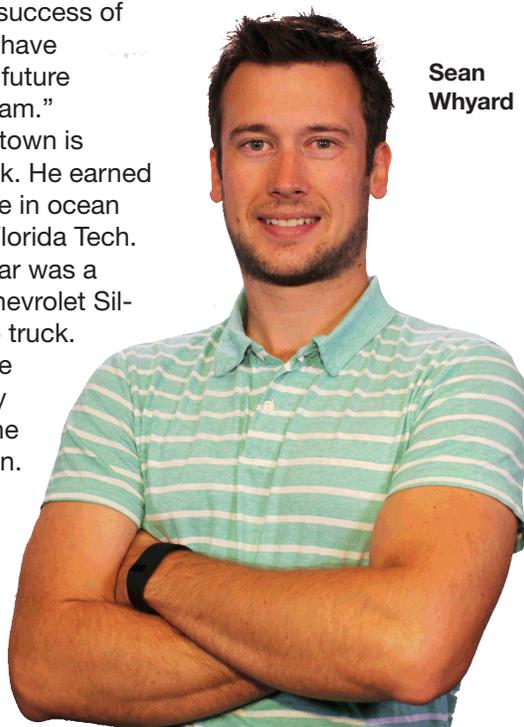
here is vital to the success of this mission, and I have high hopes for the future of our space program."

Whyard's hometown is Southold, New York. He earned a bachelor's degree in ocean engineering from Florida Tech.

Whyard's first car was a 1988 cherry red Chevrolet Silverado Z71 pickup truck.

His hobbies include carpentry, masonry and welding, and he is an avid fisherman. When he has the time, he designs and builds custom fishing rods.

He married his wife, Vanessa Martins, on April 30 of this year.



**Sean Whyard**

# Industry Spotlight - Tillett Heavy Haul

During his 40 years in business, veteran truck driver Walter “Skip” Tillett, with Tillett Heavy Haul in Titusville, Florida, would say that he’s transported some pretty large items for his customers, including NASA. But nothing compares to his recent hauling job.

Since early 2015, Tillett has transported 14 of the 20 new massive work platforms for NASA’s Space Launch System (SLS) rocket to the Vehicle Assembly Building (VAB) at Kennedy Space Center in Florida. Safely transporting the platforms is critical for NASA as the agency continues to make progress preparing the center to launch SLS and the Orion spacecraft that will take humans on to deep space.

“We started working on the transport planning phase in July 2014,” Tillett said. “We are very excited to be hauling the platforms that are being installed in the historic VAB.”

Skip has made the 29-mile trek from Sauer Corp. in Oak Hill, Florida, to the center, each time with an escort provided by the Brevard County Sheriff’s Office. Sauer is assembling the platforms. The company is a subcontractor to Hensel Phelps in Orlando, Florida, who is the general contractor for VAB High Bay 3, where the new platforms are being installed. Tillett is a subcontractor to Sauer.

There is more to the job though than just carrying the platforms to their final destination. The platforms are very large, nearly 40 feet wide, and they must be able to clear any obstacles on the right of way during the trip to Kennedy.

“It is a little bit of a challenge each time,” Tillett said. “We use a specialty trailer, which is basically a dolly system, to pick up each platform.”

When the platform is in place on top of the dolly, the job of centering it and securing it comes next. Counterweights are used to level the platform for the trip.



Walter "Skip" Tillett, with Tillett Heavy Haul in Titusville, Florida, stands near his truck after hauling Platform D South from Sauer Inc. in Oak Hill, Florida, to Kennedy Space Center. Photo credit: NASA/ Ben Smegelsky

“We work very closely with the Brevard County Sheriff’s Office motor unit, who do an awesome job directing traffic and providing an escort,” Tillett said. “We also alert Kennedy security and local authorities, and we try to notify the community to avoid traffic issues.”

Tillett is no stranger to Kennedy. He’s hauled a variety of loads to and from the center over the years. Some that come to mind include hauling load test pieces to Cape Canaveral Air Force Station in 2001, hauling an aft skirt for a booster from the center to Salt Lake City, Utah, in 2002, and transporting a piece of load test hardware for the top of the Orion launch escape system from Kennedy all the way to Sacramento, California, in 2008.

Most recently, he hauled work stands, hardware and 20-foot I-beams to the mobile launcher area.

“Being long-time residents of Titusville and with the space program being an integral part of our community, it is a privilege to be able to contribute what we can to NASA’s space program and the journey to Mars,” Tillett said.

He and his wife, Susan, are owners of the hauling company. She runs the office, while Skip drives the truck.

NASA’s Ground Systems Development and Operations Program is overseeing the upgrades and modifications to the high bay to support processing of the SLS rocket and Orion spacecraft.

Check out the VAB platform installation midpoint in 360-degree view at:  
<https://www.youtube.com/watch?v=at3cCCstD2Q>

GSDO is Go for Launch with a Facebook Page. Check it out at:  
<https://www.facebook.com/NASAGOforlaunch/>

# Employee Spotlight - Liliana Villarreal

Liliana Villarreal is manager of Spacecraft and Offline Operations for the Ground Systems Development and Operations Program at Kennedy Space Center.

She leads the team that will be responsible for the Orion and payload offline operations prior to integration with the Space Launch System rocket. This includes offline final assembly, testing and servicing of the Orion spacecraft and payloads as required. The group also is responsible for the maintenance of the ground support equipment and the facilities that will be needed to complete these operations.

Villarreal began working at Kennedy in 2000 for The Boeing Company. She was a mechanical/handling and access engineer supporting assembly missions for the International Space Station (ISS). In 2007, she moved to the NASA Operations team under the ISS Program. During the Kennedy reorganization in 2014, she moved to GSDO as an integration operations manager, and then moved into her current role about a year ago.

"The coolest part of my job is being part of history in the making. Eventually when we get to Mars, we will look back and know this is where it all started and that we were part of it," Villarreal said.

She was born in Cartagena, Colombia, and moved with her family to Miami,

Florida, when she was 10. She earned a Bachelor of Arts and a master's degree in aerospace engineering from Georgia Tech. She also has a master's in management of technology from the University of Miami.

Her first car was a 1965 289 V8 Ford Mustang, candy apple red.

"It had no air conditioning and was quite the gas guzzler,"

Villarreal said, "but it was a major reason why I got asked out in high school."

Villarreal's hobbies include reading, running, going to the beach, taking her children to the movies or to Disney World, and at least once a year, she reorganizes or redecorates areas of her home.

She is engaged to Tim O'Hare, and they are planning a fall wedding.

Villarreal has two children, Miguel, 16, and Sabrina, 18. They have a dog, a pug named Daenerys, named for Villarreal's favorite television series, "Game of Thrones." They also have a long-haired tuxedo cat named Snowball.



Prentice Washington, left, senior element program manager for Communications Development at Launch Pad 39B, received the prestigious Silver Snoopy Award during a ceremony on July 26. At right is Mike Bolger, GSDO Program manager. Photo credit: NASA



Courtney Stern, the NASA lead operational engineer for the Orion Landing and Recovery team in the Engineering Directorate, received a Space Flight Awareness Award on June 27 in Ogden, Utah, the day before the QM-2 firing in Promontory, Utah. With her during the ceremony, from left are NASA astronaut Jim Kelly, Kennedy Space Center Director Bob Cabana, and Bill Hill, deputy associate administrator for Exploration Systems Development. Photo credit: NASA