



GSDO

GROUND SYSTEMS
DEVELOPMENT & OPERATIONS

EXPLORATION BEGINS HERE



PROGRAM HIGHLIGHTS • SEPT/OCT 2013

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://go.nasa.gov/groundsystems>.

Mike Bolger Named GSDO Program Manager

Mike Bolger recently was named director of the Ground Systems Development and Operations (GSDO) Program at Kennedy Space Center. He had served as acting manager of the GSDO Program since April 2013.



Bolger is responsible for leading the government and contractor team that is preparing the ground systems, infrastructure, facilities and processes required to support NASA's next-generation space launch systems and spacecraft.

"We are charged with modernizing the launch infrastructure of the Kennedy Space Center and upgrading our ground systems to support the Space Launch System (SLS) launch vehicle and the Orion spacecraft," Bolger said. "Kennedy will be a modern multi-use spaceport. It's an exciting mission and I'm proud to lead the great team that is going to make it happen. Exploration starts here!"

Bolger began his career in 1987 as a software engineer supporting space shuttle processing at Kennedy. He later managed a project controls office and acted as the contracting officer's technical representative for the Joint Base Operations Support Contract. In 2006, he was named the chief information officer and most recently spent eight months as the acting deputy director of the center.

Bolger was born in Bellefonte, Pa., and grew up in Oxford, Ohio. He graduated from Indiana University in

1987 with a bachelor's in computer science and a minor in mathematics. He earned a master's in business administration from the University of Central Florida in 1999.

Bolger lives in Merritt Island with his wife, Samantha, and their three children.



Ground support equipment technicians prepare one of the jacking, equalizing and leveling, or JEL, hydraulic cylinders for removal from crawler-transporter 1 at the crawler transporter maintenance facility Oct. 22. New JEL hydraulic cylinders will be installed on CT-1 to test their increased load-carrying capacity and reliability.

Pad 39B Flame Deflector will Support a Variety of Launch Vehicles

Significant changes are happening at Launch Pad 39B at NASA's Kennedy Space Center in Florida as the Ground Systems Development and Operations (GSDO) Program prepares it to support the launch of a variety of vehicles, including NASA's Space Launch System (SLS).

A stark, gaping space can be seen between the walls of the pad's flame trench. Construction workers have completely removed the massive flame deflector structure that served to protect the pad and space shuttles during 30 years of launches from the site.

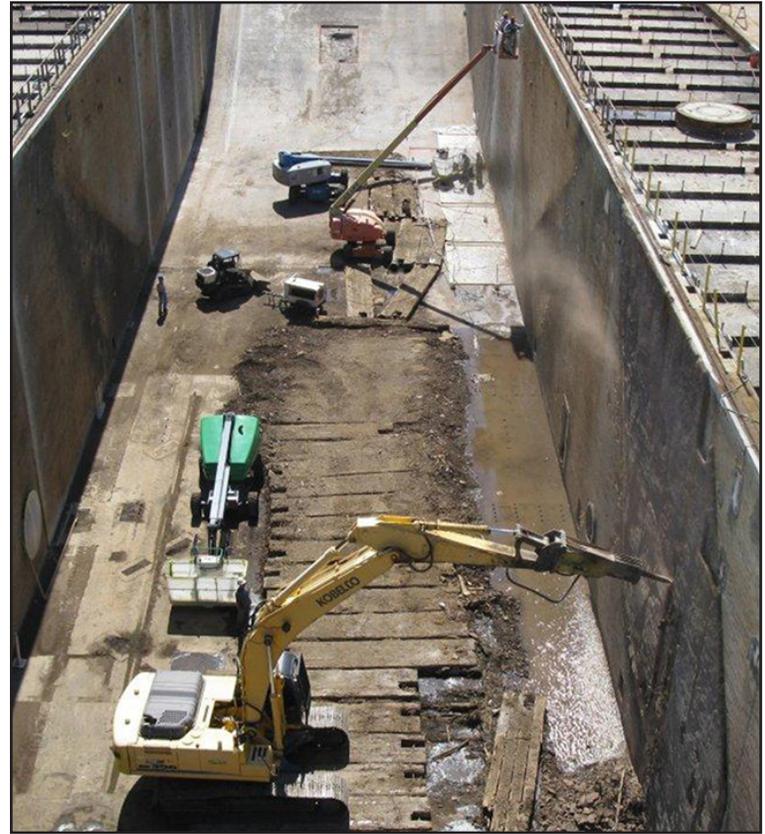
Jose Perez Morales, the GSDO Pad Element project manager, said there will be substantial changes in the design of the new flame deflector.

"We have achieved a 30-percent design review and are now moving toward a 60-percent design review," Perez Morales said. "The flame deflector is going to look very different."

With the help of NASA's Ames Research Center at Moffett Field, Calif., GSDO engineers ran computational fluid dynamic simulations of engine launches of five existing launch vehicles and discovered that the exhaust could be redirected to only the north side of the flame deflector.

Perez Morales said the new flame deflector will be positioned about six feet south of the old flame deflector's position to accommodate the design of the new mobile launcher.

The bricks on both sides of the trench walls, dating back to Apollo days, are being removed to make way for new heat-resistant bricks. The north walls of the flame trench will be covered in bricks and Fondu Fyre, while the south side concrete walls will be left bare.



Construction workers use machinery to remove Apollo-era bricks and Fondu Fyre from the flame trench walls at Launch Pad 39B.

Construction of the new flame deflector and renovation of the flame trench walls are scheduled to begin in January 2015.

For the complete story, visit <http://go.nasa.gov/1h6y74k>



A technician completes the installation of a new bearing on crawler-transporter 2 in Vehicle Assembly Building high bay 2, Sept. 10. Modifications underway on the crawler are designed to ensure its ability to transport launch vehicles currently under development, such as NASA's Space Launch System, to the launch pad. GSDO is overseeing the upgrades.



During the 2013 KSC Innovation Expo, GSDO supported three showcases in several facilities to demonstrate and communicate the exciting work that is being done here at the center.

Employee Spotlight - John Rigney

John Rigney is the lead architect for the Ground Systems Development and Operations Program (GSDO) at Kennedy Space Center. He is responsible for leading architecture and operations trade studies for NASA's Space Launch System, Orion, GSDO and commercial users.

Rigney recently received the Catalyst Award from the Center Planning and Development (CPD) Office.

"It is a great honor to receive such a prestigious award for doing work that I truly enjoy and is so vital to KSC," Rigney said.

The Catalyst Award is given to members of the Kennedy workforce who have made significant contributions to the vitality of the space industry at the center. Award recipients are distinguished as having pioneered new approaches that enable the center to support the development of successful and viable commercial space endeavors.

"We would like to express our deep appreciation to John for his support of the CPD team, and his efforts to bring new commercial launch business opportunities to Kennedy Space Center," said Scott Colloredo, CPD director.

Rigney began his career at Kennedy in 1983 working for a contractor. One of his favorite memories is working



John Rigney recently received the Catalyst Award from the Center Planning and Development Office. Presenting him with the award is Vicki Johnston, manager of the Partnership Development Office.

on ground systems integration during the Space Shuttle Program.

His first car was a white 1970 Ford Maverick. If he hadn't worked at Kennedy he would have pursued a career as a veterinarian. His hobbies are golf, college football and traveling. He is married to wife Betsy, and they have one daughter, Morgan, and one son, Johnny.



Technicians monitor the progress as the Orion ground test vehicle was lifted high in the air by crane in the transfer aisle of the Vehicle Assembly Building on Oct. 22, and lowered toward a mockup of the service module in high bay 4. The ground test vehicle is being used for pathfinding operations, including simulated manufacturing, assembly and stacking procedures.



On Sept. 19, crawler-transporter 1 (CT-1) successfully rolled out from Vehicle Assembly Building high bay 3 to the crawler-transporter yard so that installation of the two jacking, equalization and leveling (JEL) qualifications units could begin. After installation, CT-1 will roll out to the Launch Pad 39A slope to ensure that the JEL cylinders fit within the CT structure. After a successful test, full production of JEL cylinders will begin. CT-1 will be available for a variety of launch vehicles.