



# GSDO

GROUND SYSTEMS  
DEVELOPMENT & OPERATIONS

## EXPLORATION BEGINS HERE



### PROGRAM HIGHLIGHTS • JAN / FEB 2015

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>.

## New Year Ahead Busy for GSDO Program

NASA's Kennedy Space Center is transforming into a multi-user spaceport that can support government and commercial launches. During 2015, the Ground Systems Development and Operations (GSDO) Program at Kennedy will continue its efforts to upgrade and prepare ground support equipment and facilities to support a variety of commercial launches, including NASA's exploration missions.

During the year, 10 new platform assemblies will be delivered for installation in High Bay 3 in the Vehicle Assembly Building (VAB). Installation of the platforms will take place from late 2015 through mid-2016.

Construction upgrades are nearly complete on the 175-ton crane and its control system. In March, the crane will be lifted out of the VAB transfer aisle and installed onto its mounting rails on Level 16 of the facility.

The second part of the verification and validation test of the crawler-transporter 2 roller bearings will be completed later this month, with renovations of the remaining gearboxes completed by the end of the year. Upgrades to the 16 jacking, elevating and leveling cylinders also will be completed by the end of the year.

Mobile Launcher structural modifications to support NASA's Space Launch System (SLS) are 77 percent complete and are expected to be fully completed by June. A contract for installation of ground support

equipment on the Mobile Launcher will be awarded this year.

At Launch Pad 39B, where NASA's SLS and Orion spacecraft will launch in the coming years, upgrades are about 75 percent complete. A contract for the construction of a new flame deflector was recently awarded.

Inside the Launch Equipment Test Facility, engineers and technicians will begin qualification testing for two aft skirt electrical umbilicals. Data acquired during these tests will be used to verify design parameters for this launch accessory.

The GSDO team also is progressing with completion of modifications to the Multi-Payload Processing Facility and ground support equipment fabrication and installation. Access stands for Orion servicing and deservicing were delivered and installed.

In the Rotation, Processing and Servicing Facility, platform modifications to support the new booster configuration for the SLS rocket were completed. Final verification and validation of the platforms will be completed in early spring.

Release of the software baseline to support hazardous ground operations is on schedule for May in Firing Room 1.

It's a busy year ahead for GSDO as the program continues to make significant progress on upgrades and modifications to the facilities and ground support equipment that will help send NASA missions beyond low-Earth orbit.



*This artist illustration shows NASA's Space Launch System and Orion spacecraft atop the Mobile Launcher rolling out of the Vehicle Assembly Building, with Launch Pad 39B in the background.*

# Employee Spotlight: Joe Madden

Joe Madden is the chief of the Command, Control, Communications and Range Project Management Branch for the Ground Systems Development and Operations (GSDO) Program at Kennedy Space Center.

This branch of GSDO is responsible for bringing to life the Mobile Launcher, Launch Pad 39B, the Multi-Payload Processing Facility and the Vehicle Assembly Building. If those systems and the software don't work, then rockets don't launch.

Madden has worked at Kennedy for 28 years. Prior to being part of the GSDO team, he was the Launch Site

Equipment project integration manager for the Space Shuttle Program. In that role, his group took a look at sustaining efforts that were required for all types of launch site equipment and performed upgrades on that equipment.

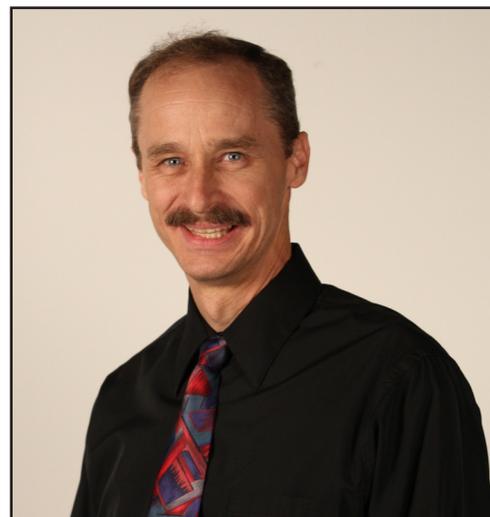
"The thought of joining a program that had a focus on deep space exploration

was very appealing to me," Madden said. "The coolest part of my job is that we're starting to deliver software to Pad B and supporting real tests against real hardware on the pad." Madden said it's

really exciting to see engineers sitting in the firing room, providing command and control capabilities to ground systems around the space center. More importantly, those engineers are working from the same firing room that launched the Apollo missions to the moon.

The achievement he's most proud of is completing the Command, Control, Communications and Range preliminary design review.

"It was very satisfying to see that the designs that we're currently delivering will meet the operational needs of the next-generation heavy-lift spacecraft and our launch vehicle. It's starting to feel real," Madden said.



Madden's first car was a 1966 Oldsmobile Jetstar 88 that he purchased for \$350 when he was 16. It had no air conditioning.

He is married to his wife, Linda, and they have two teenage children, Matthew and Colleen. Their family pet is a Dalmatian named Crystal Blue.

Madden's hobbies include studying the Word of God and teaching an adult Sunday School class.

To view previous employee spotlight profiles, visit <http://www.nasa.gov/content/i-am-gsdo>.



## NASA 3DV App Now Available for Download

Smartphone and tablet users now can experience the excitement of standing on the launch pad beneath NASA's new rocket, the Space Launch System (SLS), with a new interactive app from NASA. The NASA 3DV app now is available to the general public and ready for download.

Currently, the app is only available for iOS devices (iPhone, iPad and iPod), with an Android version coming soon. The 3DV mobile app allows you to examine several of NASA's deep space human exploration projects that will take our space program to asteroids, Mars and beyond. In the app store, search for NASA 3DV. It also can be found in the education section.

Media Fusion, of Huntsville, Alabama, produced the app in conjunction with NASA.

To read the complete story, visit <http://go.nasa.gov/1vuJI5o>.

View the latest ESD quarterly update video at:  
<http://go.nasa.gov/1DJJ4QJ>

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