



GSDO

GROUND SYSTEMS
DEVELOPMENT & OPERATIONS

EXPLORATION BEGINS HERE



PROGRAM HIGHLIGHTS • APRIL 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>.

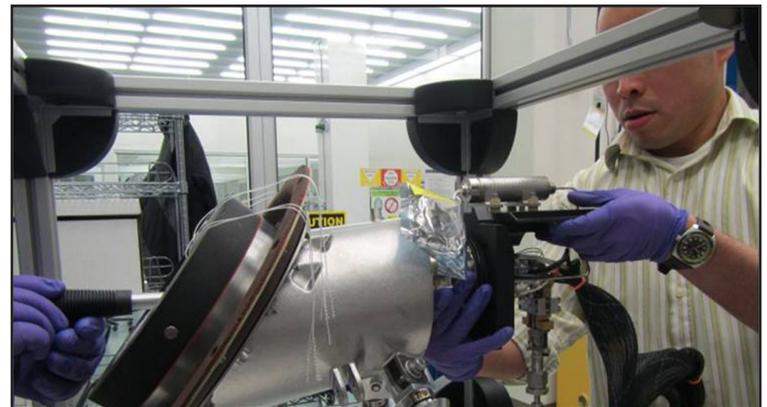
NASA Marks Progress on Space Exploration Vision

On the third anniversary of President Obama's visit to NASA's Kennedy Space Center, where he set his space exploration vision for the future, news media representatives were given an opportunity to see up close the Orion spacecraft that could take astronauts on an asteroid sampling mission as early as 2021.

Key leaders from across the agency shared progress being made on the spacecraft and infrastructure that will send humans to the asteroid, and eventually to Mars. Orion currently is being prepared in the center's Operations and Checkout Building for its first flight test, Exploration Flight Test-1, in 2014.

"Three years ago today, the president was here in an empty high bay challenging us to go to an asteroid by 2025," said Bob Cabana, Kennedy director. "Today, this is a world-class production facility with a flight vehicle, Orion, getting ready to fly next year. We've made tremendous progress in our transition to the future."

For the complete story, visit http://www.nasa.gov/exploration/systems/mpcv/orion_asteroid_mission.html.



Last RCS Pod Arrives for Exploration Flight Test-1

The last of eight reaction control system pods for NASA's Orion Exploration Flight Test-1 arrived in late April at Kennedy Space Center's Operations and Checkout Building from the manufacturer, Aerojet, in Redmond, Wash.

"Arrival of the final reaction control system pod marks a significant milestone as we prepare NASA's Orion crew module for its first flight test," said Glenn Chinn, the deputy manager of the Multi-Purpose Crew Vehicle Program in Kennedy's Orion Production Operations Office. "The pods will provide the critical maneuvers necessary for Orion's re-entry into the Earth's atmosphere."

The first set of pods arrived at Kennedy on Feb. 18, with subsequent pods arriving March 11, and April 5 and 19. The right roll thruster pod with two rocket engines was the last to arrive, and joined the other seven pods already in the facility.

Beginning in June, the pods will undergo additional proof pressure and leak testing, valve leak testing and rocket engine functional testing.

For the complete story, visit http://www.nasa.gov/exploration/systems/mpcv/orion_rcs_pod.html.



Surface Repairs Begin at Launch Pad 39B

Repairing the panels on the surface of Launch Pad 39B and the catacomb roof below them is not a simple task. The pad is being prepared to launch NASA's newest rocket, the Space Launch System (SLS), beginning in 2017.

The pathway to the top of the pad supported the weight of the crawler-transporter that carried the Apollo/Saturn stack, and the space shuttle with external fuel tank and twin solid rocket boosters atop the mobile launcher platform. Now this pathway is being upgraded to support the SLS and a variety of other launch vehicles.

"We have a number of construction projects going on in the same area, so coordination with various contractors will be the major challenge of the work," said Jose Perez Morales, the pad element senior project manager in the Ground Systems Development and Operations Program.

The work began Jan. 28 as specialists with the contractor Speegle Construction used power hoses to remove caulking between the giant panels. When that work is completed, the panels will be surveyed to determine their exact position for future reinstallation before they are removed.

There are 176 panels, each weighing about 30,000 pounds. Using a forklift, each panel will be lifted and set aside. All of the sand will be removed, and the structural roof of the catacomb will be repaired.

A special mat and drain system will be added on top of the roof to remove the water that seeps below the panels. New sand and lightweight concrete will be installed. Then the refurbished panels will be transported back to the pad and reinstalled. Twelve new panels will be fabricated by the contractor to replace the ones that were damaged. The upgrades will take about a year to complete. For the complete story, visit http://www.nasa.gov/exploration/systems/ground/pad_b_repairs.html.

Roller Bearings Replaced on CT-2

For more than a year, NASA's crawler-transporter 2 has been undergoing a major tuneup in Kennedy Space Center's Vehicle Assembly Building (VAB). Recent work has included preparations to install upgraded components that will enable the crawler to carry the greater loads anticipated with the agency's new rocket designed to take astronauts beyond low-Earth orbit for the first time since the early 1970s.

The crawler-transporter modifications are part of NASA's Ground Systems Development and Operations (GSDO) Program efforts to upgrade Kennedy's infrastructure to support the 21st-century spaceport. Earlier CT modifications were checked out during an extensive test drive to Launch Pad 39A last November. In February, the crawler returned to the VAB's high bay 2 for further work.

The next step will be to remove and replace the roller bearing assemblies. The process involves removing the treads and jacking two of the crawler corners four feet off the ground to remove the old assemblies. The current work is being supported by NASA's Test and Operations Support Contract by Jacobs Technology Inc. and NASA's Engineering Support Contract by QinetiQ Inc., both at Kennedy.

For the complete story, visit http://www.nasa.gov/exploration/systems/ground/crawler-transporter_bearings.html.



GSDO Quarterly Highlights Video:

To view the most recent accomplishments in the GSDO Program, visit:
<http://go.nasa.gov/10CHGJT>



Inside the Vehicle Assembly Building at Kennedy Space Center, technicians monitor the progress as a large crane is used to lower a new Cummins engine and generator for installation inside crawler-transporter 1 (CT-1). Work continues in high bay 3 to upgrade CT-1 as part of its general maintenance. CT-1 could be available to carry commercial launch vehicles to the launch pad.



The Ground Systems Development and Operations Program at Kennedy Space Center continues modifications to Firing Rooms 2 and 3 in the Launch Control Center. In Firing Room 3, the wiring and conduits below the floor have been upgraded and new flooring is being installed. Kennedy's Launch Complex 39 is transitioning to support multiple users with firing rooms that are modified to be more generic in nature for upcoming programs.



GSDO supported NASA Public Affairs at the TICO Warbird Airshow in Titusville, Fla., on March 23-25, with a display featuring models of NASA's Space Launch System, Orion crew module and Commercial Crew partner spacecraft.

Employee Spotlight: Scott Colredo

Began his NASA career: 1986, as a NASA co-op student in the Launch Accessories Branch of the Engineering Development Directorate

Title: GSDO Chief Architect and Acting Deputy Program Manager for the 21st Century Space Launch Complex initiative

Primary responsibilities: Developing architecture for major Kennedy assets supporting the Space Launch System and Orion Programs. Responsible for ensuring GSDO architectures are aligned with NASA programs, potential commercial customers and center priorities.

Wanted to be: A pro athlete, but always liked building things and wanted to do something exciting and unique, so NASA has been great to me for 27 years!

Family: Married to wife Lisa, two children, ages 14 and 16

First car: 1978 Chevy Impala

In his spare time: Enjoys camping, golfing, basketball, kickball, paddle boarding and boating. (Update: On May 19, Scott will transition to the Center Planning and Development Directorate and serve as the director.



GSDO supported NASA Public Affairs at the Sun n' Fun airshow event in Lakeland, Fla., on April 9-14. Volunteers shared NASA's message with hundreds of people from all over the world, including Brazil, Italy, England, Germany and the Slovak Republic. Interest was focused on the recently announced asteroid retrieval mission, the GSDO Program, NASA's Space Launch System and Orion.