GROUND SYSTEMS Development and Operations

EXPLORATION BEGINS HERE



PROGRAM HIGHLIGHTS • JULY 2012

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.

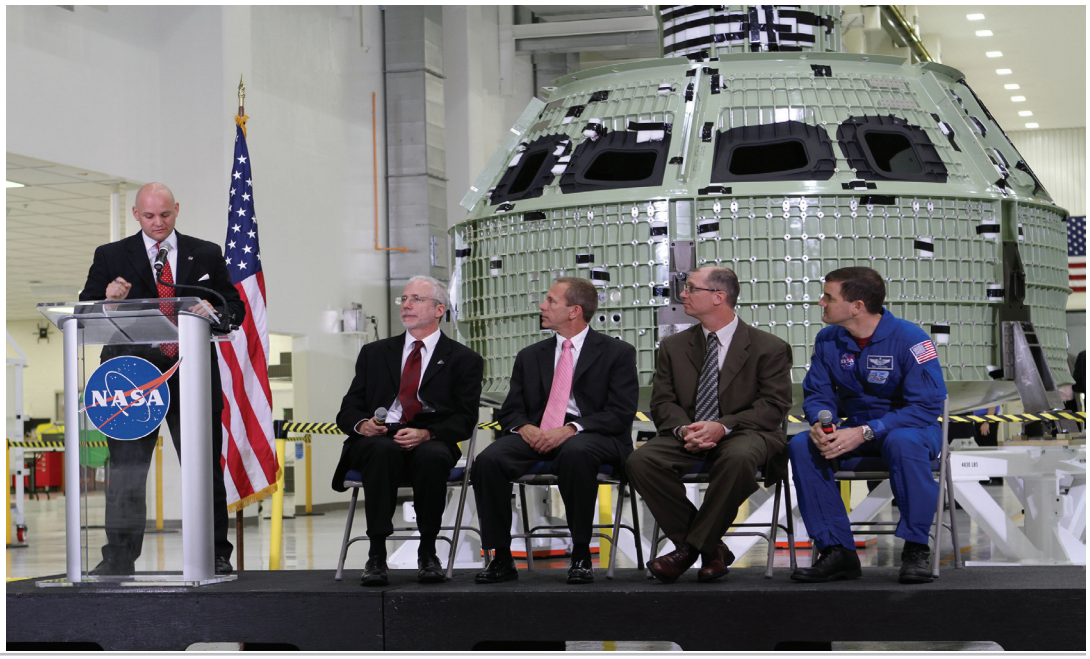
EFT-1 Crew Module Arrives

The Orion Exploration Flight Test-1, or EFT-1, crew module arrived at Kennedy Space Center on June 29. On July 2, about 450 Space Flight Awareness honorees, VIPs and members of the media attended a special event in the Operations and Checkout (O&C) Building high bay to view the Orion EFT-1 and the Orion ground test vehicle.

As many as 400 members of the Orion team will work on final assembly and integration operations prior to the EFT-1 uncrewed launch in 2014. Orion will be the most advanced spacecraft ever designed. It will provide emergency abort capability, sustain astronauts during space travel and provide safe re-entry from deep space.

The focus for NASA and Lockheed Martin, the spacecraft's builder, is on preparing the capsule for space. Assembly at Kennedy will take place in the high bay of the O&C Building. The O&C was refurbished extensively in 2006 and has been outfitted with large fixtures and tools to turn the aluminum shell of Orion into a functioning spacecraft complete with avionics, instrumentation and heat shield.

For the EFT-1 mission, a Delta IV-Heavy rocket from United Launch Alliance will lift the spacecraft into orbit. The mission will last only a few hours, long enough to make two orbits before being sent plunging back into the atmosphere to test it at deep-space reentry speeds. For the complete story, visit http://www.nasa.gov/exploration/systems/mpcv/orion_arrival.html



Trent Perrotto, left, with NASA Public Affairs addresses an audience of participants during an event to mark the arrival of NASA's first space-bound Orion capsule in Florida. Joining him on stage, from left are Mark Geyer, Orion program manager; David Beaman, NASA Space Launch System spacecraft and payload integration manager; Pepper Phillips, program manager for NASA's Ground Systems Development and Operations; and NASA astronaut Rex Walheim.

RESOLVE Dry Run Test

The Regolith Environmental Science Oxygen and Lunar Volatile Extraction (RESOLVE) team began its Operations Dry Run in Kennedy Space Center's Launch Control Center Firing Room 1 (FR-1) on June 25. The purpose of the dry run was to help train the operations team for the actual analog control activities of the third generation rover in Mauna Kea, Hawaii, which began on July 12.

Kennedy provided the Launch Control System capability to control the rover and associated experiments remotely from FR-1 so that the project staff did not have to travel to Johnson Space Center to support the lunar analog mission timeline, which would have required 24 hour operations support. For the complete story, visit http://www.nasa.gov/exploration/systems/ground/resolv-erover.html

Inside Firing Room 1 at the Launch Control Center, workers provided support during NASA's RESOLVE experiment in Mauna Kea, Hawaii.

Firing Room 3 Modifications

Planning is underway for modifications to Firing Room 3 at Kennedy Space Center's Launch Control Center. The modifications will convert the firing room from a Space Shuttle Program support configuration to a development lab area. Crews began removing the legacy consoles, cables and flooring. Electrical and data cables will be replaced.

Work is expected to be complete by the end of September 2012. The space center's command and control system will be restructured. Initial testing of the software developed in Firing Room 3 will take place in the newly modified Firing Room 1.

The firing rooms also are being modified to be more flexible in nature for upcoming programs. For the complete story, visit http://www.nasa.gov/exploration/systems/ground/firingroom_mods.html

United Space Alliance workers remove consoles from Launch Control Center Firing Room 3 at NASA's Kennedy Space Center in Florida.

Focus On…. Herbert Rice

Title: Flight Systems Engineer

Years at KSC: 44

Grew up in: Louisa, Ky., a small town on the state line with West Virginia

Currently working on: Helping develop the Space Launch System, an advanced heavy-lift vehicle that will provide a new capability for human exploration beyond Earth orbit. He is coordinating radio frequency agreements between KSC, Johnson Space Center in Houston and Marshall Space Flight Center in Huntsville, Ala., to ensure NASA's Space Launch System or other flight vehicles launching from Kennedy Space Center can communicate with ground control rooms while at the pad and during flight.

Thoughts on NASA's future: "I'd like to see us build a spacecraft with a nuclear/electric propulsion system for travel to the nearest star – Alpha Centauri. I think we could get the speed up to 25 percent of the speed of light."

For the complete story, visit http://www.nasa.gov/centers/kennedy/about/rice.html