GROUND SYSTEMS Development and Operations

EXPLORATION BEGINS HERE



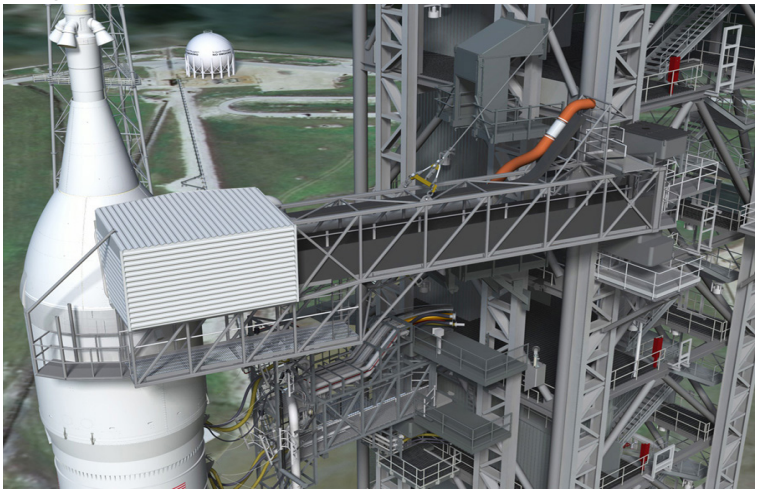
PROGRAM HIGHLIGHTS • SEPTEMBER 2012

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.

Mobile Launcher Crew Access Arm in Design

Engineers at the Kennedy Space Center's Ground Systems Development and Operations Program (GSDO) are combining heritage technology and new innovations to design the crew access arm for the tower on the mobile launcher that will be used for NASA's Orion spacecraft atop the Space Launch System (SLS) rocket.

The mobile launcher's new 60-foot-long hydraulic arm will be similar in length and speed to the arm used during the Apollo missions. It will have two levels and incorporate hardware from NASA's Apollo and Space Shuttle Programs.



The upper level will include a new "White Room" that provides access to the Orion crew module. The lower-level walkway will provide access to two panels on the spacecraft's service module.

The access arm will rotate out to the crew module on giant Apollo-era hinges. The hinges will be refurbished and retrofitted with new digital encoders to accurately obtain the arm's position. For the complete story, visit http://www.nasa.gov/centers/kennedy/home/orion_crew_access_arm.html

Ground Support Equipment Salvaged

Some of the parts of NASA's trio of mobile launcher platforms are being removed to support the agency's Space Launch System and Orion vehicles. The huge steel structures, which acted as launch bases for the Apollo/Saturn program and every space shuttle mission, will have a part in serving the next American-made vehicles.

Kennedy Space Center's GSDO program has overseen the removal of much of the hardware used to support space shuttle launches, making it available to the new 355-foot-tall mobile launcher in development for the SLS. *(cont. pg. 2)*

To accomplish this, the program carefully decided what hardware should be removed from the platforms in order to ensure two would remain available.

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

Orion Service Module Umbilical Arm in LETF

Inside the Launch Equipment Test Facility high bay, system installation and integration of the Orion Service Module Umbilical Arm was completed. It will be attached to the Mobile Launcher Tower Simulator and go through tests at ambient and cryogenic temperatures to validate the NASA design models that will be used for GSDO umbilical development.

Mobile Launcher Utility Interfaces

The Pad team at Launch Pad 39B has begun fabrication of the utility interfaces that will be the connection points between the systems, which are based on the launch pad, and the mobile launcher that distributes the utilities to their locations. These interfaces include potable water, freeze protection water, chilled water and fire suppression. Core drilling began to replace five mobile launcher-to-pad interface pipes.

Inside the Operations and Checkout Building at NASA's Kennedy Space Center, a birdcage tool along with work platforms have been placed around the Orion Exploration Flight Test 1 crew module. The birdcage will be used to continue installation of external components in preparation for Orion's first uncrewed test flight in 2014 atop a Delta IV rocket.

Inside High Bay 3 of the Vehicle Assembly Building at NASA's Kennedy Space Center, workers have removed a space shuttle era work platform. The platform was moved to the VAB north parking area for temporary storage. The work is part of a centerwide refurbishment initiative under the GSDO program. High Bay 3 is being refurbished to accommodate NASA's Space Launch System and Orion spacecraft.

Employee Awards

John Rigney, GSDO lead architect, received the Exceptional Service Medal "for outstanding leadership in architectures development, furthering the mission of NASA and expanding the useful range of Kennedy Space Center facilities and launch systems,"during Kennedy Space Center's awards ceremony on Aug. 28.