



GROUND SYSTEMS

Development and Operations

EXPLORATION BEGINS HERE



PROGRAM HIGHLIGHTS • AUGUST 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>.

Mock-up Orion Stack in the Vehicle Assembly Building

Recently, a full-size Orion spacecraft mock-up was placed atop a model of the service module in the Vehicle Assembly Building (VAB) transfer aisle at NASA's Kennedy Space Center in Florida. Also in the VAB is the Launch Abort system model.

The mock-up stack, which is 27 feet tall, will allow engineers and technicians to determine the exact dimen-



sions for connectors that will run from the launch pad structure to the spacecraft before liftoff. NASA routinely uses mock-ups, also known as boilerplates or pathfinders, to test equipment and techniques for all of its human spacecraft programs.

The Orion model is a replica of the spacecraft and is empty on the inside, except for four model astronaut seats and a hatch. NASA' and Boeing prototype shops at Kennedy created the crew module for Ground Systems Development and Operations Program testing. The framework and metal cylinder are the same dimensions as the service module and can support Orion's weight. The mockup also has been used to show firefighters and emergency medical technicians what to expect if they have to get astronauts out of the spacecraft quickly. For the complete story, visit <http://www.nasa.gov/exploration/systems/ground/orionvabstack.html>.

Launch Complex 39 Modifications in Work

Modifications are underway to make Launch Pad 39B a launch pad of the future. This updated facility will support multiple types of launch vehicles, including commercial vehicles and NASA's Space Launch System, or SLS, and its Orion spacecraft.

With the removal of the rotating and fixed service structures last year, Pad B sits clean on top, surrounded by three, 600-foot-tall lightning protection towers. Each tower has a complete weather station with four levels for data collection.

Beneath the pad, workers have been busy removing more than 1.3 million feet of cables, some dating back to the Apollo era, and replacing them with fiber optics. All of the shuttle-era systems also have been removed and upgraded with state-of-the-art hardware. A new "universal" flame deflector is being designed for use with the SLS, as well as various commercial vehicles. Liquid

hydrogen and liquid oxygen propellant storage tanks have been completely drained and are being refurbished and painted to support launch operations for the next 20 to 30 years.

“With new systems, upgrades and refurbishment to Pad B, it will be almost like new,” said Jose Perez-Morales, NASA’s Pad Element Project manager for GSDO. Work is on schedule to have Pad B ready by 2017. For the complete story, visit http://www.nasa.gov/centers/kennedy/news/apollo_4_rollout.html.



GSDO Participates in SpaceFest

The GSDO Program participated in SpaceFest, July 19-22, at the Intrepid Sea, Air, and Space Museum in New York. The four-day event celebrated the opening of the Space Shuttle Pavilion, where space shuttle Enterprise now is on permanent display. For SpaceFest, the GSDO booth featured a special exhibit and educational handouts for the public. The event featured exhibits, displays and educational demonstrations from other NASA centers and programs.



Employee Awards

Dave Zeiters

Dave Zeiters, a senior systems engineer with Stinger Ghaffarian Technologies, Inc., under the Engineering Services Contract, recently received the Catalyst Award from the Center Planning and Development Office.



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

Specifically, Zeiters applied his engineering and architectures expertise to assist a planning team with the layout of a large aircraft hangar, a vehicle processing and integration facility and multiple launch processing service enhancements such as liquid oxygen and rocket propellant fueling, storm water retention, pneumatic services, site power upgrades and communications extensions.

Zeiters’ efforts have contributed significantly to the development of potential commercial partnerships.



Catherine Bond

Catherine Bond, a senior project analyst and facilitator with Craig Technologies, under the KLXS contract, received an Exceptional Administrative Achievement Medal for 2012 for outstanding initiative, exceptional analysis and overall dedication to the Ground Systems Development and Operations Program, during NASA’s Honor Awards ceremony on Aug. 28, 2012.

This prestigious NASA medal is awarded to employees to recognize significant, specific achievements or contributions that clearly demonstrate a substantial improvement in administrative support contributing to NASA’s mission.