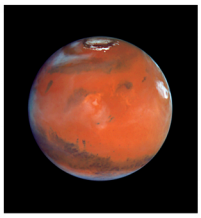
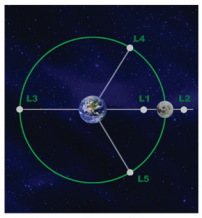
National Aeronautics and Space Administration

Space Launch System
Highlights

September/October 2013








RS-25: Still the Biggest, Baddest Engine Around

Artist rendering of the RS-25 engines powering the liftoff of the SLS from the pad. *(NASA)*

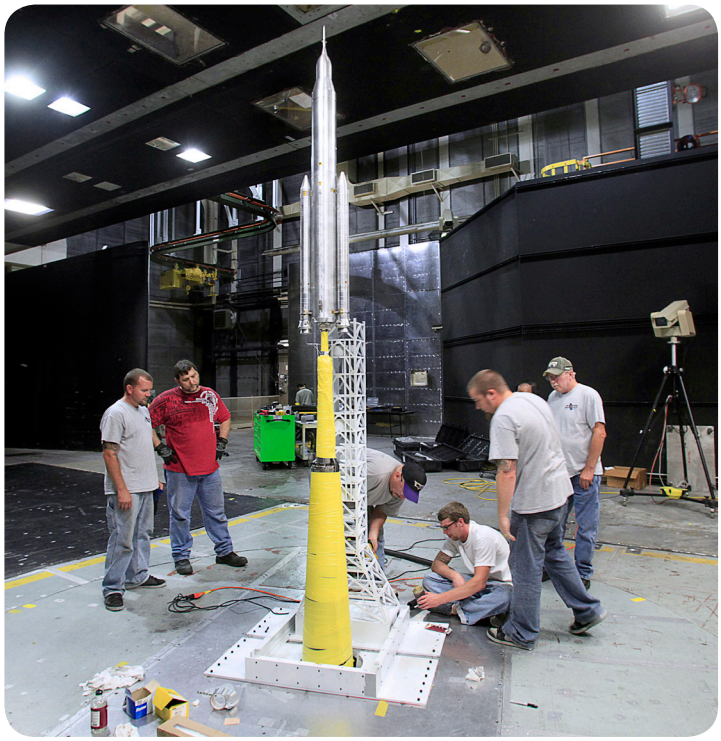
Four RS-25 engines, like the one pictured at left undergoing a hot-fire test, will power the core stage of the SLS. The RS-25, also known as the space shuttle main engine, is the first reusable rocket engine in history. “During the 30-year run of the Space Shuttle Program, the RS-25 achieved very high demonstrated reliability,” said Garry Lyles, chief engineer for the Space Launch System Program Office at NASA’s Marshall Space Flight Center in Huntsville, Ala. “And during 135 missions and numerous related engine tests, it accumulated over 1 million seconds—or almost 280 hours—of hot-fire experience. With that kind of reliability, we knew it would be the best engine to power SLS.” For the full story on the RS-25 engine, **click here**. *(Aerojet Rocketdyne)*

Spaceflight Partners: AMRO Fabricating Corp.

EDITOR'S NOTE: Every month, SLS Highlights turns the spotlight on one of the industry partners helping to create the largest rocket ever built for human space exploration. In this issue, we profile AMRO Fabricating Corp. in South El Monte, Calif.

An AMRO Fabricating Corp. employee stands on a barrel panel for the SLS. Headquartered in South El Monte, Calif., AMRO specializes in the manufacturing of lightweight, metallic structures for demanding environments on missiles, launch vehicles and spacecraft. In support of Boeing core stage manufacturing for the SLS, AMRO produces engine section barrel panels, liquid hydrogen (LH2) barrel panels, intertank barrel panels, liquid oxygen (LOX) barrel panels, forward skirt panels and tooling. Founded in 1977, AMRO is a small, woman-owned business with about 250 employees. *(AMRO)*

NASA Continues Preparation for SLS Engine Testing at Stennis



NASA engineers and contractors recently completed liftoff transition testing of a 67.5-inch model of the SLS in a 14-by-22-foot subsonic wind tunnel at NASA's Langley Research Center. Data acquired from the test will help prepare SLS for its first mission. For the full story on the testing, and to watch a video, **click here**. *(NASA/Langley)*

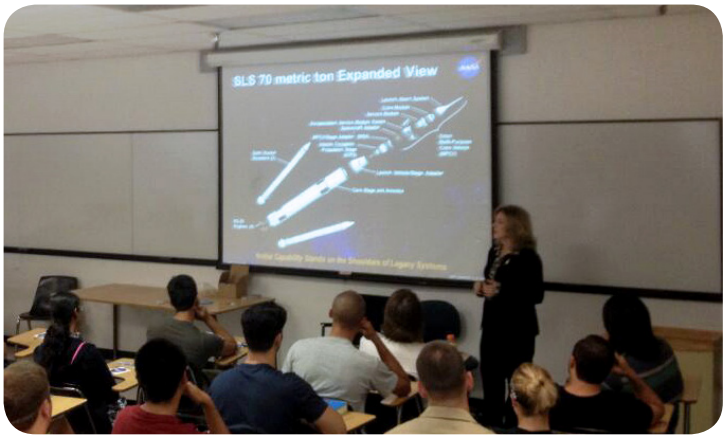
During the liftoff transition testing of a nearly 6-foot model of the SLS, engineers used a technique for studying airflow streamlines called smoke flow visualization, giving them insight into the data retrieved. Smoke is put into the wind flow and can be seen during testing. This allows engineers to see how the wind flow hits the surface of the model. *(NASA/Langley)*

Adapter Diaphragm Delivered to Marshall Space Flight Center

At right, engineers at the Marshall Center unwrap the adapter diaphragm Sept. 27. The diaphragm will undergo pressurized testing at Marshall before being integrated with the spacecraft's stage adapter—certifying it for flight conditions. *(NASA/MSFC)*

At left, the Orion's stage adapter diaphragm leaves a manufacturing facility at Janicki Industries in Hamilton, Wash., to be trucked to NASA's Marshall Space Flight Center. The diaphragm will be used to keep launch vehicle gases away from the Orion spacecraft. It was designed by a team of engineers at NASA's Langley Research Center, in close collaboration with Marshall. For the full story on the delivery and what's next for the diaphragm, **click here**. *(Janicki Industries)*

SLS On the Road…



SLS Assistant Program Manager Sharon Cobb talks to students Sept. 10 at San Diego State University about NASA's new rocket and the importance of science, technology, engineering and mathematics in fulfilling the agency's goals. Cobb was in San Diego for the AIAA Space2013 conference —an event focused on critical issues for the space industry. *(NASA/MSFC)*

Todd May, SLS Program Manager, at a podium on board the USS Alabama in Mobile, talks to the public about the SLS, NASA's "Next Great Ship," Sept. 4. NASA astronaut Tony Antonelli also was on deck to sign autographs. *(NASA/Michoud)*

While in the Mobile area, May—who grew up in nearby Fairhope—spoke about the SLS Program to students at his alma mater, Fairhope High School, on Sept. 5. *(NASA/MSFC)*

More than 300 people visited the SLS exhibit Sept. 15 at TEDx-Huntsville 2013, held at Randolph High School in Huntsville. NASA prime contractor Boeing was the principal sponsor of the event. *(NASA/MSFC)*

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