Orion Crew And Service Modules Stacked

Team Progressing Toward Exploration Flight Test-1

DENVER, June 10, 2014 /PRNewswire/ -- Following the completion of the heat shield installation, Lockheed Martin [NYSE: LMT] has stacked the Orion crew module atop of the service module. The stacking took place inside the Final Assembly and System Test (FAST) cell inside the Operations and Checkout facility at Kennedy Space Center.

As part of the process to prepare for the crew and service modules to stack together, ballast weights were added to the vehicle to ensure that the crew module's center of gravity meets design specifications. The specifications ensure that the vehicle can achieve the appropriate entry and descent performance and also ensure that the vehicle lands in the correct orientation to reduce structural impact loads.

Now, the crew and service modules will be bolted together and an electrical and fluid interface between the two, called an umbilical, will be installed onto the spacecraft. Once the bolts and umbilical are in place, the stacked spacecraft will undergo electrical, avionic and radio frequency tests.

Once the testing is finished, the team will complete the following milestones leading up to Exploration Flight Test-1 (EFT-1):

- The backshell tiles and forward bay cover will be installed onto the crew module
- The crew module and service module will mate to the Delta IV Heavy second stage adapter
- The spacecraft will be fueled and serviced at the Kennedy Space Center Payload Hazardous Servicing Facility
- The launch abort system will be stacked on top of the spacecraft
- The spacecraft will be prepped and transported to Launch Pad 37 where Lockheed Martin and United Launch Alliance will perform pad integration and launch operations

During EFT-1, the uncrewed spacecraft will launch on a Delta IV Heavy rocket and will travel 3,600 miles beyond low Earth orbit—15 times further than the International Space Station. That same day, Orion will return to Earth at a speed of approximately 20,000 mph for a splashdown in the Pacific Ocean. EFT-1 will provide engineers with data about systems critical to crew safety such as heat shield performance, separation events, avionics and software performance, attitude control and guidance, parachute deployment, and recovery operations to validate designs of the spacecraft before it begins carrying humans to new destinations in deep space.

Headquartered in Bethesda, Maryland, Lockheed Martin is a global security and aerospace company that employs approximately 113,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The Corporation's net sales for 2013 were $45.4 billion.

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