Lockheed Martin Team Tests Orion's Protective Panels

Team Progressing Toward Exploration Flight Test-1

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SUNNYVALE, Calif, Nov. 7, 2013 /PRNewswire/ -- Testing at the Lockheed Martin [NYSE: LMT] Sunnyvale facility in California using a series of precisely-timed, explosive charges and mechanisms, proved the Orion spacecraft can successfully jettison its protective fairing panels.

PHOTOS: http://lockheedmartin.com/us/news/press-releases/2013/november/1101-ss-orion.html

The Orion spacecraft has three fairings that protect the service module radiators and solar arrays from heat, wind and acoustics during ascent. This test was the second in a series of fairing separation tests—this time adding a thermal element. Engineers used strip heaters to heat one of the fairings to 200 degrees Fahrenheit, simulating the temperature the spacecraft will experience during its climb to orbit.

The testing revealed there was a successful separation of all three fairings while under flight-like thermal and structural conditions. The separation velocity and trajectory of each panel were within the Lockheed Martin predicted tolerances. The test data provides a high level of confidence that the panels will jettison as expected during the launch vehicle ascent.

"This successful test provides the Orion team with the needed data to certify this new fairing design for Exploration Flight Test-1 (EFT-1) next year. The test also provides significant risk reduction for the fairing separation on future Orion manned missions," said Lance Lininger, engineering lead for Lockheed Martin's Orion mechanism systems.

Unique to Orion, the spacecraft's fairings support half the weight of the crew module and the launch abort system during launch and ascent. This is a new design that improves performance, saves mass, and maximizes the size and capability of the spacecraft.

The Orion Multi-Purpose Crew Vehicle is NASA's first spacecraft designed for long-duration, human-rated, deep space exploration. Orion will transport humans to interplanetary destinations beyond low Earth orbit, such as asteroids, the moon and eventually Mars, and return them safely back to Earth. Lockheed Martin is the prime contractor to NASA for Orion, and is responsible for the design, build, testing, launch processing and mission operations of the spacecraft.

In September 2014, Orion will complete its first high orbital mission. EFT-1 will launch an uncrewed spacecraft from NASA's Kennedy Space Center 3,600 miles beyond low Earth orbit. On the 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 critical data about Orion's heat shield, flight systems and capabilities to validate designs of the spacecraft before it begins carrying humans to new destinations in the solar system.

Headquartered in Bethesda, Md., Lockheed Martin is a global security and aerospace company that employs about 116,000 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 2012 were $47.2 billion.

Media Contact**:**
Allison Rakes,
(303) 977-7135; allison.m.rakes@lmco.com

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For more information about Orion visit:
http://www.nasa.gov/exploration/systems/mpcv/index.html
http://lockheedmartin.com/us/products/orion.html

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