Lockheed Martin-Built System Directs Laser Beam In Airborne Laser's Simulated Target Intercept

Lockheed Martin announced today that the Beam Control/Fire Control system for the U.S. Missile Defense Agency's Airborne Laser (ABL) has focused and directed a low-power laser beam in an engagement with an instrumented, boosting missile target, resulting in a successful simulated intercept.

In a flight test Aug. 10 aboard ABL's modified Boeing 747-400F aircraft, the Lockheed Martin-developed Beam Control/Fire Control system aimed a low-power laser beam generated by a Surrogate High Energy Laser at an instrumented target missile, called a Missile Alternative Range Target Instrumentation (MARTI). The tests also involved the Battle Management System developed by Boeing, ABL's prime contractor. This test demonstrated the full functionality of the ABL system, with the low-power laser serving as a surrogate for the Northrop Grumman-developed megawatt-class Chemical Oxygen Iodine Laser (COIL).

"The Beam Control/Fire Control System has once again proven its capabilities in flight," said Mark Johnson, ABL program director, Lockheed Martin Space Systems Company. "Completing the low-power flight testing against an instrumented boosting target is a testament to the readiness of ABL's Beam Control/Fire Control system. We successfully demonstrated the necessary pointing accuracy for reliable acquisition, tracking and atmospheric compensation to achieve shoot-down later this year. The outstanding performance of the government and industry team continues to keep the program on track."

In preparation for this low-power MARTI test, the ABL team conducted a series of tests including low-power tracking tests against non-instrumented boosting Terrier-Lynx target missiles June 6 and June 13.

The Beam Control/Fire Control system next will be tested in high-power flight operations. A series of increasingly rigorous ABL testing scenarios will culminate in an airborne intercept test against an unarmed, boosting ballistic missile target later this year.

The Beam Control/Fire Control System locates and tracks the target, determines range to the target, compensates for atmospheric turbulence and focuses and directs the High Energy Laser beam. The system's lower-energy lasers - the Track Illuminator Laser and the Beacon Illuminator Laser - determine where to point and focus the High Energy Laser. The High Energy Laser beam passes through the system's optical path before exiting through the conformal window on the nose of the aircraft on its way to the target.

ABL will destroy a ballistic missile while it is still accelerating in the Earth's atmosphere and before it can deploy its warheads. The Missile Defense Agency manages the ABL program, which is executed by the U.S. Air Force from Kirtland Air Force Base, Albuquerque, N.M. The Boeing Company provides the modified aircraft and the Battle Management System and is the overall systems integrator. Boeing's ABL industry partners are Northrop Grumman , which supplies the High Energy Laser and the Beacon Illuminator Laser, and Lockheed Martin Space Systems Company, Sunnyvale, Calif., which provides the Beam Control/Fire Control System.

Lockheed Martin is a world leader in systems integration and the development of air and missile defense systems and technologies, including the first operational hit-to-kill missile. The company makes significant contributions to most major U.S. missile defense systems and participates in several global missile defense partnerships.

Headquartered in Bethesda, Md., Lockheed Martin is a global security company that employs about 146,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The corporation reported 2008 sales of $42.7 billion.

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Approved for Public Release 09-MDA-4743

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SOURCE: Lockheed Martin

Web Site: http://www.lockheedmartin.com/

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