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Network & Space Systems
Missile Defense Systems
Airborne Laser Backgrounder

Description & Purpose: The Airborne Laser (ABL) provides a speed-of-light capability to destroy ballistic missiles in their early stages of flight.



Customer: The Airborne Laser program was initiated by the U.S. Air Force in November 1996 when a product definition risk reduction contract was awarded to the Boeing ABL Team. The program was transferred to the U.S. Missile Defense Agency in late 2001 and converted to a capability-based, spiral development acquisition program.

General Characteristics: The ABL program places a megawatt-class, high-energy Chemical Oxygen Iodine Laser (COIL) on a modified Boeing 747-400F aircraft to detect, track and destroy ballistic missiles in their boost phase of flight. ABL also can pass information on launch sites, target tracks and predicted impact points to other layers of the global ballistic missile defense system. Boeing provides the aircraft, battle management and overall systems integration and testing. Northrop Grumman supplies the high-energy laser, and Lockheed Martin provides the beam control/fire control system.

Background: In late 2004, the program achieved two key milestones: "first light" of the COIL in ground testing, and "first flight" of the first ABL aircraft, YAL-1A, with the beam control/fire control system.

In 2005, two more major goals were accomplished. The program completed flight tests with the beam control/fire control and battle management systems and fired the laser at lethal power and duration in ground tests.

In 2006, the ABL aircraft will be modified to accept the COIL's six modules. The program will also conduct ground and flight tests of the ABL aircraft with two illuminator lasers that will track hostile ballistic missiles and measure the amount of atmospheric distortion between the aircraft and targets.

The program will start installing the COIL in the aircraft in early 2007. The program will conduct its first missile intercept test in late 2008.

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