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Pentagon stays the course with laser weapon

Airborne Laser given a reprieve — and challenging development schedule



Jim Shryne / USAF

The Boeing-led Airborne Laser team exposes the Airborne Laser's conformal window during a test flight. Such an exposure is necessary for the weapon system to complete its mission of shooting down a ballistic missile during the boost phase of flight.

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John Daniels, the effort's program director.

The Airborne Laser, or ABL, is a Boeing 747 aircraft being equipped with a high-powered chemical laser to destroy ballistic missiles in their boost phase. Chicago-based Boeing Co. is the prime contactor on the effort.

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As envisioned, the aircraft would fly in a figure-eight pattern over an area deemed a likely site of a missile launch. Onboard infrared sensors would detect the launch and feed that information into a computer that would direct the laser turret to point at the ascending missile. The turret would then fire two lower-powered solid-state lasers — one to track the missile and one to measure atmospheric distortion — before shooting the high-powered chemical laser at the target.

The ABL program's inability to meet cost and schedule targets in past years once made it a candidate for termination. Just prior to his 2004 retirement, U.S. Air Force Lt. Gen. Ronald Kadish, who was then serving as the Missile Defense Agency's director, said the program could be canceled if it did not perform well in initial flight and ground tests that were scheduled for late in the year.

Those tests were a flight of the aircraft outfitted with the battle-management and fire-control systems, and a brief firing of the chemical laser on the ground. Both went smoothly, and the senior Missile Defense Agency officials have not invoked similar termination threats in relation to any upcoming ABL test, Daniels said in a telephone interview.

As the 2004 demonstrations approached, markers, called "knowledge points," were laid out to ensure that progress on the program — or lack thereof — would be easy for senior MDA officials and their congressional overseers to gauge, said Daniels, who took over the program in April 2005. He replaced Brig. Gen. Ellen Pawlikowski, who now serves as the director of the Air Force's military satellite communications joint program office.

Flight testing planned

The ABL program has a budget of \$471.6 million in 2006. Knowledge points laid out for this year include testing of the solid-state lasers for missile tracking and atmospheric-distortion correction. Ground-based tests of those lasers are slated to wrap up in August, with flight testing to take place by the end of the year, Daniels said.

During the flight test, the lasers will be fired at a military NKC-135 aircraft with a picture of a ballistic missile painted on its fuselage, according to Greg Hyslop, Boeing vice president and ABL program director.



relatively

low-powered, the aircraft will be shielded and the pilots will wear protective goggles, he said.

Also planned for 2006 is the refurbishment of the optical hardware on the high-power chemical laser for a new round of ground testing in 2007, Daniels said.

That hardware has been used extensively over the past 18 months, and the military plans to give it a thorough cleaning and inspect it to ensure it is ready for the next series of tests and then the 2008 intercept, Daniels said.

MDA has requested \$631 million for the ABL effort in 2007. During that year, the MDA plans to install the refurbished chemical laser hardware on the 747 aircraft, and run ground tests to prepare for the 2008 intercept demonstration, Daniels said.

Demonstration to determine future

Air Force Lt. Gen. Henry "Trey" Obering, the MDA's current director, has indicated that the 2008 demonstration likely will factor heavily into a decision on whether to continue with the ABL program beyond then. The ABL has been positioned as a competitor to the Kinetic Energy Interceptor, a boost-phase missile defense system slated for a flight test in 2008, and MDA officials have indicated that only one of the programs may be funded over the long term.

Daniels said an operational ABL fleet ultimately could consist of seven aircraft.

When it submitted its 2006 funding request to Congress last year, the MDA said it was planning to begin design work on a second ABL aircraft in 2007. The plan accompanying the budget submission for 2007 delays that work to 2009, to take advantage of the lessons learned from the intercept demonstration, Daniels said.

If the 2008 demonstration is successful, it likely would be followed by attempts to shoot down longer-range missiles, Daniels said.

Other work that could follow a successful 2008 intercept demonstration includes testing the ABL against other airborne targets, and possibly using the system to track space debris, Hyslop said during a March 10 briefing for reporters.

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