

Airborne Laser

High Energy Laser



Airborne Laser

Defense at the speed of light

NORTHROP GRUMMAN

Northrop Grumman Space Technology is a member of a team selected by the U.S. Government to develop and demonstrate a revolutionary new weapon system – Airborne Laser (ABL). Team ABL includes the Missile Defense Agency (MDA), USAF, Boeing, Northrop Grumman and Lockheed Martin. **Northrop Grumman is designing and developing the system's Chemical Oxygen Iodine Laser (COIL) and the Beacon Illuminator Laser (BILL).** Boeing, the team leader, is responsible for weapon system integration and supplies the 747-400F aircraft and BMC4I (battle management, command, control, communications, computers and intelligence). Lockheed Martin supplies the Beam Control/Fire Control system.

ABL is one part of a layered ballistic missile defense system that addresses the world's growing ballistic missile threat. In the near term, only ABL can destroy hostile missiles while they are still in the highly vulnerable boost phase of flight – before separation of the warheads. ABL will operate above the clouds, where it will autonomously detect and track missiles as they are launched, using an onboard surveillance system. The Beam Control/Fire

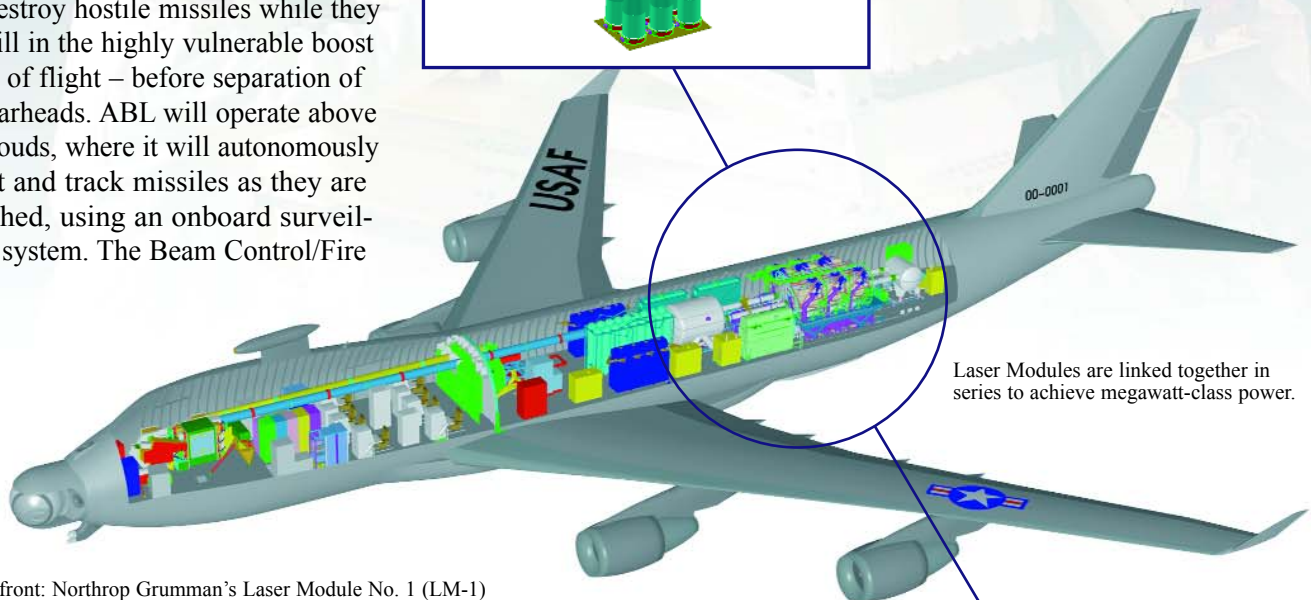
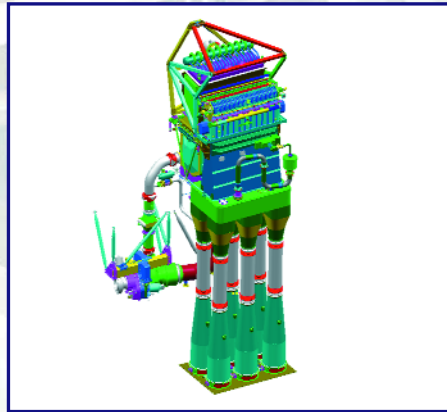
Control system will acquire the target, then accurately point and fire the high energy laser to destroy the missile.

Northrop Grumman's laser will use common industrial chemicals to create ABL's lethal beam. The laser's fundamental building block is a laser module (LM). Six LMs will be linked in series to achieve ABL's megawatt-class power. Built of advanced, lightweight materials, the laser is designed for simple, safe operations and maintenance.

Northrop Grumman has designed and developed advanced lasers since 1961. The company produced the world's first high-energy chemical laser and the nation's only megawatt-class chemical lasers, MIRACL and Alpha. Northrop Grumman develops a wide range of chemical lasers (e.g., deuterium fluoride, hydrogen fluoride, and oxygen iodine) and diode-pumped solid-state lasers for force defense against a broad spectrum of threats.

ABL Laser Module

- Chemical Oxygen Iodine Laser (COIL) technology uses common chemicals (e.g., hydrogen peroxide, chlorine and iodine)
- World record for chemical efficiency set by Northrop Grumman
- Advanced materials - plastics, composites, titanium - used to reduce weight
- Designed for aircraft safety and field maintainability



Laser Modules are linked together in series to achieve megawatt-class power.

On the front: Northrop Grumman's Laser Module No. 1 (LM-1) in testing at Northrop Grumman's Capistrano Test Site.

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