TRW Approved to Begin Manufacturing First Laser Hardware for Airborne Laser System

Less than four months after being awarded a $1.1 billion contract to develop the Air Force's 747-based Airborne Laser (ABL) system, Team ABLBoeing, TRW, and Lockheed Martin has received the go-ahead to begin fabricating the program's first laser hardware.

The approval from the Air Force, which manages the ABL program, came in late February after the TRW-designed Flight-weighted Laser Module (FLM), the basic 'building-block' for the ABL system's megawatt-class laser, successfully passed its critical design review. Successful development and testing of the laser module is one of the critical 'exit criteria' that Team ABL must satisfy to pass the program's first 'authority-to-proceed' (ATP-1) milestone, scheduled for June 1998. Testing of the laser module is expected to be completed by April 1998.

"The FLM is a key element of the risk reduction activity undertaken by the ABL program," said Paul Shennum, Boeing vice president and ABL program director. "The critical design review was successfully completed on schedule, and we see no difficulty validating the performance and packaging design of the ABL system's laser to meet the system weight requirements prior to ATP-1."

According to Joanne Maguire, vice president and general manager of TRW's Space & Technology Division, the rapid start for the ABL laser system development resulted largely from the laser development and risk reduction investments undertaken by TRW and Team ABL during the competitive phase of the ABL program. "Our customer's acceptance of this key laser component for manufacturing verifies the team's approach for lowering the risk and ensuring the success of this revolutionary new laser defense system," she said.

The ABL weapon system will use a high-energy, chemical oxygen iodine laser (COIL) mounted on a modified 747-400F (freighter) aircraft to shoot down theater ballistic missiles in their boost phase. It will protect civilian and key military assets from attack by missiles such as the Scuds used by Iraq during the Persian Gulf War.

The flight-weighted ABL module will be similar in performance and power levels to the multi-hundred kilowatt class COIL Baseline Demonstration Laser (BDL-2) module demonstrated by TRW in August 1996. As its name implies, though, it will be lighter and more compact than the earlier version due to the integration of advanced aerospace materials into the design of critical hardware components. For the operational ABL system, several modules will be linked together in series to achieve ABL's required megawatt-class power level.

For Team ABL, TRW is building the COIL laser and the related ground-support subsystem, Lockheed Martin is developing the ABL target acquisition and beam control systems, and Boeing is developing the battle management system. Boeing will also integrate the ABL subsystems into the 747-400F aircraft.

In 2002, Team ABL will complete production, integration and flight demonstration of the first ABL system, culminating in the successful boost-phase shoot-down of a theater ballistic missile.

TRW Space & Electronics Group (S&EG), an operating unit of Cleveland, Ohio-based TRW Inc., has been engaged in the research and development of lasers since 1961. Today, the Group designs and develops a variety of lasers, including high-energy, hydrogen fluoride lasers, deuterium fluoride lasers, chemical oxygen iodine lasers and diode-pumped solid-state lasers.

TRW Inc. provides advanced technology products and services for the automotive, space and defense, and civil systems markets worldwide. Its 1996 sales totaled $9.86 billion.

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