

Statement of:  
General Robert T. Marsh, USAF (Retired)  
Chairman  
Airborne Laser Independent Assessment Team

Hearing before Strategic Subcommittee  
Senate Committee on Armed Services  
11 March 1999

Thank you Mr. Chairman. I am pleased to appear before you and your committee today to present the findings of the Airborne Laser Independent Assessment Team. This assessment was conducted pursuant to the FY 1999 National Defense Authorization Act which directed the Secretary of Defense to assess certain technical and operational aspects of the Airborne Laser Program utilizing an outside independent team of experts.

Specifically, the team was tasked to assess the following:

1. Whether additional ground testing or other forms of data collection should be completed before initial modification of a commercial aircraft to an Airborne Laser configuration.
2. The adequacy of exit criteria for the program definition and risk reduction phase of the Airborne Laser Program.
3. The adequacy of current Airborne Laser operational concepts.

I served as Chair of the team of seven highly qualified experts with varied backgrounds and expertise in fields relevant to the Airborne Laser Program including laser power generation; optical systems; measurement, prediction and compensation for atmospheric optical turbulence; aircraft modification; testing; operations; and acquisition. The individuals are identified along with their backgrounds in an Appendix of the report. We

conducted an intensive review of the program during the past several months involving many hours of briefings, examination of prior studies and reports, visits to contractor facilities and test sites, and team deliberations.

Our task was complicated by the on-going restructuring of the ABL Program necessitated by the \$25 million funding reduction from the President's FY 1999 budget request. As part of the restructuring, in addition to accounting for the reduced funding, the ABL SPO is proposing to strengthen and accelerate a number of important risk reduction efforts. These latter efforts are, in the IAT's view, a proper and necessary response to the legitimate concerns raised in a number of outside reviews including those of the Independent Assessment Team.

Since our report is being provided to you under separate cover by the Secretary of Defense, and in the interest of brevity, I will not repeat all of our detailed findings and observations. Instead, I would like to summarize our conclusions with regard to those technical and operational aspects of the program specified in the Authorization Act.

First, the ABL Program as described prior to the current restructuring included insufficient atmospheric measurement, data reduction, analyses and testing to provide adequate confidence to proceed with aircraft modification at the time planned. The IAT concluded that the proposed restructured program, if successful, could provide the requisite confidence. This conclusion is conditioned on at least the following additionally planned risk reduction efforts yielding favorable results prior to commencement of the modification.

- Acceleration of the North Oscura Peak dynamic test program.

- A comprehensive data reduction and analysis of archived data.

- Additional scintillometry data collection and analysis.

- An aggressive lethality/vulnerability program.

- A countermeasures test and analysis effort.

Second, the exit criteria for the PDRR phase are generally adequate; however, the definition of “demonstrating the ability to acquire, track and destroy a boosting TBM-representative target” should be more broadly interpreted such that the actual flight demonstration(s), when combined with other flight test data, ground test data, lethality analyses and data, and countermeasures analyses and data show conclusively that the development of an operationally effective ABL is feasible.

Finally, the ABL current operational concept is sufficiently developed to guide the development and testing of the PDRR hardware and software. It must be continually refined as the development progresses and uncertainties of the driving parameters of the system are narrowed. Such driving parameters include effective range, TBM vulnerability, time to acquire and kill, “magazine” load, atmospheric turbulence prediction and compensation capability and effectiveness against countermeasures. The objective of the PDRR phase is to address these areas and gain sufficient understanding to demonstrate the feasibility of an operational system. With the more specific expected characteristics of the operational system and its environment known at the end of PDRR, a more comprehensive and realistic operational concept can be developed.

In summary, the IAT believes that the plan to proceed with the flight test of the Airborne Laser is sound. The additionally planned near term risk reduction efforts, if successful, will provide reasonable confidence of PDRR flight test success.

Thank you, Mr. Chairman. I will be pleased to answer your questions.

