Boeing News Cooperation is Key to Successful Team ABL Wind-Tunnel Testing Template

Through cooperation of Team ABL members Boeing, Lockheed Martin, TRW and the U.S. Air Force - and teamwork within The Boeing Company - the design of the modified 747-400F freighter with a unique laser weapon aboard is being tested and confirmed through high-speed and low-speed wind tunnel tests.

"The tests results so far have been consistent with our predictions," said Tom Wayman, test director for Boeing in Wichita, Kan. "While completing all our objectives we have found no surprises - the results are giving us insights into what to expect during flight tests at the end of 2001."

When in operation, the Airborne Laser (ABL) will be able to locate and track theater ballistic missiles in the boost phase of their flight, then accurately point and fire the laser with such energy that the missiles will be destroyed near their launch areas. Production of the risk reduction aircraft begins this summer on the 747 commercial manufacturing line in Everett, Wash.

"ABL aircraft model testing last fall at the Boeing transonic wind tunnel and the University of Washington low-speed wind tunnel, both in Seattle, confirmed the viability of the Team ABL design while validating specific design changes. This establishes a configuration baseline for flight testing in early 2002," said Pete Super, Boeing ABL test manager in Seattle.

"These successful tests are helping the team to verify answers to crucial questions: how has the design affected the performance of the aircraft, will it fly other than predicted and is the Team ABL prepared for the aircraft Preliminary Design Review?" Super said.

"These wind tunnel tests are the final overall look for us at the ABL configuration prior to flight test and all predictions were confirmed."

The tests were conducted Oct. 18 through Nov. 25, first at the Boeing transonic facility, then concluding at the University of Washington Kirsten Wind Tunnel. Running the gamut of flight regimes, the ABL configuration was compared with the commercial version of the 747-400 freighter in aircraft stability, performance, control effectiveness, and air data system impact.

Results from the wind-tunnel tests will be shared during the upcoming Aircraft IPT Preliminary Design Review at the end of February.

Both Wayman and Super said the wind-tunnel tests were on-time and on-budget - matching the overall progress of the Team ABL effort.

Key to the success in both cases has been the program's ability to mine the expertise and resources of each team member. In the Boeing instance, expertise from the company's Commercial Airplane Group has been critical to the testing success.

The ABL program is proceeding with tasks defined in the $1.1 billion Program Definition and Risk Reduction contract awarded Nov. 12, 1996 by the Department of Defense to Team ABL.

The Air Force envisions a fleet of seven ABL aircraft, rapidly deployable anywhere around the world to provide a strong deterrent to any potential use of theater ballistic missiles.

The ABL program is managed by the U.S. Air Force Airborne Laser program office at Kirtland Air Force Base, N.M.

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