Boeing Completes Destructive Testing on 787 Dreamliner Wing Box

SEATTLE, Nov. 15 /PRNewswire-FirstCall/ -- Boeing (NYSE: BA) completed destructive testing today on a full-scale composite wing box of the 787 Dreamliner, the first all-composite wing box ever built for a Boeing commercial airplane. This test is part of the certification process for the all-new jetliner.

"Successful completion of the wing box destruction test marks a major step forward in highlighting the innovation on the 787," said Mark Jenks, vice president of 787 Development. "In addition to determining the strength of the structure, the test helps us verify the analytical methods we have used to calculate the loads the structure will have to carry."

The wing box is a cantilevered beam that carries the wing to the fuselage and supports leading- and trailing-edge devices, control surfaces, engines and landing gear. The test piece represents a portion of the wing section that begins at about the center of the airplane and stops at approximately one-half of the span of the wing -- approximately 50 feet (15.2 meters). The piece measures approximately 18 feet (5.5 meters) at its widest point.

The upper and lower surface panels and the spars of the wing are made entirely of the same composite material being used on the fuselage. The wing ribs are monolithic aluminum structures, each machined from a single piece of aluminum plate.

To meet certification requirements, the wings must withstand loads up to 1.5 times, or 150 percent, of the highest aerodynamic load that the jet could ever be expected to see in the entire lifetime of the 787 fleet.

The test wing box weighs 55,000 pounds, including a great deal of test- only hardware and instrumentation. It was designed and built by a joint team of Boeing, Mitsubishi Heavy Industries and Fuji Heavy Industries.

Structural testing will continue on two full-scale 787 airframes as part of the certification process for the airplane. Those tests will further demonstrate the performance of the structure through multiple lifetimes of normal operational loads and test the structure beyond the points expected to be seen in service.

Video highlights of the test will be posted tohttp://www.boeing.com/ and http://www.newairplane.com/ on Tuesday morning, Nov. 18.

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