Boeing Team Rebuilds B-1 'Backbone' for US Air Force

LONG BEACH, Calif., May 29, 2009 – A U.S. Air Force B-1B bomber returned to flight last week after a team led by The Boeing Company [NYSE: BA] replaced its catastrophically damaged upper-center boron longeron – the aircraft's "backbone."

The B-1, *Swift Justice*, was damaged during a routine training mission in December 2007. An engine-bleed air duct rupture triggered a temperature warning light, forcing the crew to land the aircraft at Ellsworth Air Force Base, S.D.

Replacing the upper-center boron longeron, which is essential for stability in flight, is not a simple task because the part is unique to each aircraft, with no spares available.

“The boron backbone of the B-1 is an aggressive composite design, even by today’s standards,” said Mahesh Reddy, B-1 program director for Boeing Global Services & Support. “In order to perform the repair, we worked with the Air Force and industry partners to remanufacture the entire part.”

Boeing Integrated Defense Systems and Boeing Commercial Airplanes employees from sites across the company worked together with the Air Force and material vendors to re-create the damaged part. Specialty Materials Inc. in Lowell, Mass., the original boron/epoxy supplier, provided 14,000 feet of 4-inch-wide unidirectional tape to fabricate the longeron. Cytec Engineered Materials Inc., in Tempe, Ariz., supplied the adhesive film and adhesive primer. Due to the part's complexity and 47.5-foot length, the Boeing Composite Fabrication & Assembly Center in Seattle was selected to perform the layup and cure the part in its 90-foot-deep autoclave.

“The return to flight of this B-1 is a perfect example of how Boeing solves issues by applying skills and capabilities from across the company, our suppliers and our customer,” said Reddy.

A unit of The Boeing Company, Boeing Integrated Defense Systems is one of the world's largest space and defense businesses specializing in innovative and capabilities-driven customer solutions, and the world’s largest and most versatile manufacturer of military aircraft. Headquartered in St. Louis, Boeing Integrated Defense Systems is a $32 billion business with 70,000 employees worldwide.

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