NASAfacts

X-48B Blended Wing-Body

Boeing Phantom Works has partnered with NASA and the Air Force Research Laboratory to study the structural, aerodynamic and operational advantages of the Blended Wing Body concept, a cross between a conventional plane and a flying wing design. The Air Force has designated the prototype the X-48B based on its interest in the design's potential as a multi-role, long-range, high-capacity military transport aircraft.

The program's goal is to learn more about the low-speed flight-control characteristics of the concept when applied to large transport or cargo aircraft. Engineers are also intrigued by the design's potential to get up to 30 percent better fuel economy than traditional aircraft due to its unique shape, a combination flying wing merged with a triangular body.

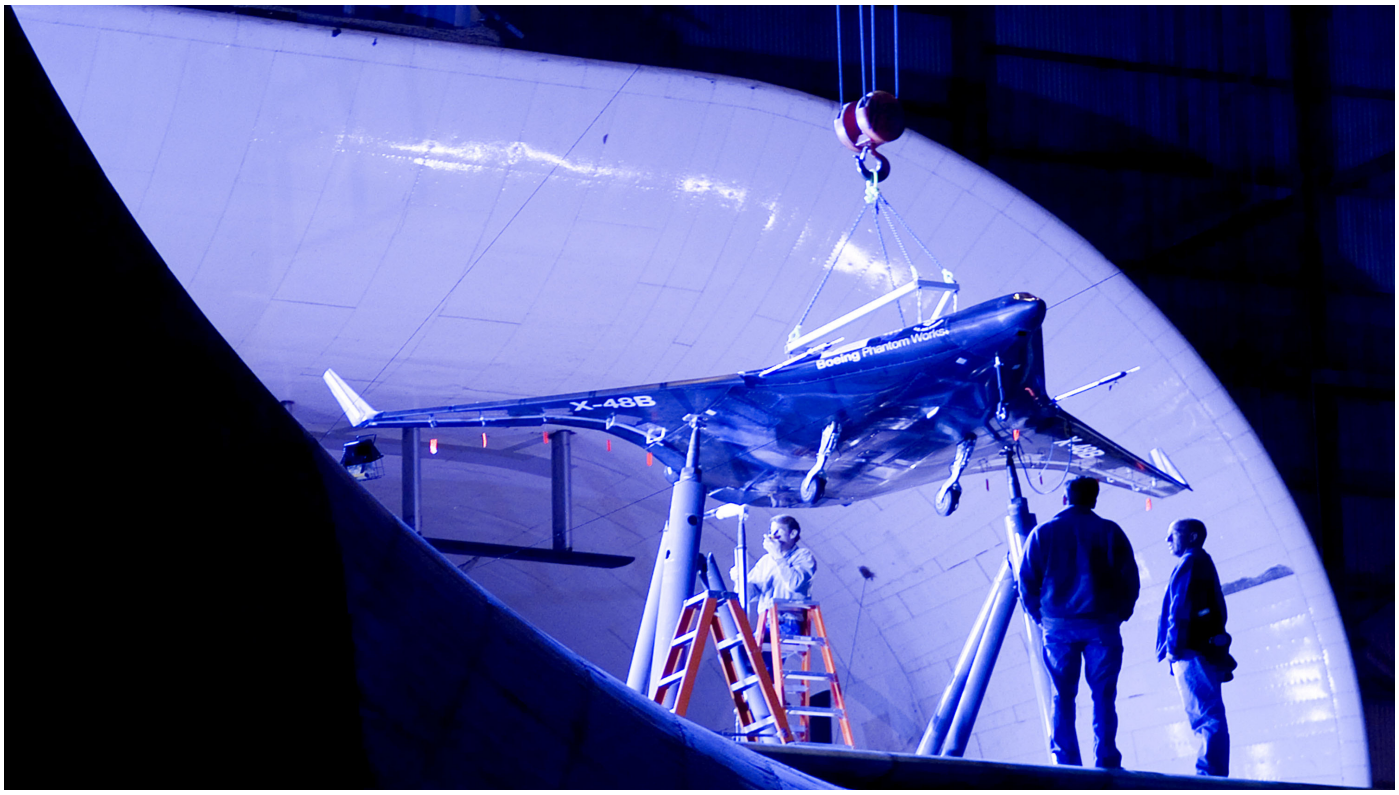
The Blended Wing Body research team successfully completed 250 hours of wind tunnel tests on X-48B Ship No. 1 at the historic full-scale wind tunnel at NASA's Langley Research Center in Hampton, Va., In May 2006. NASA's Dryden Flight Research Center at Edwards Air Force Base, Calif., is hosting the X-48B flight test activities and providing in-depth flight research expertise garnered from years of operating a variety of cutting-edge unmanned air vehicles.

X-48B at Dryden Flight Research Center on Rogers Dry Lake ED06-0201-1

Following completion of installation of test instrumentation, the second X-48B Blended Wing-Body technology demonstrator began ground checkout at NASA Dryden in late 2006, with five test flights in early 2007. Flight testing at NASA Dryden was to focus on the low-speed, low-altitude flight characteristics of the blended wing-body configuration, including engine-out control, stall characteristics and handling qualities. The short flight test program was designed to demonstrate that the novel design can be flown as safely as current transports having a traditional fuselage, wings and tail configuration. The 8.5 percent scale, remotely piloted X-48B is dynamically scaled to fly much like the full-size aircraft would fly.

The two X-48B Blended Wing Body technology demonstration aircraft were built by Cranfield Aerospace in the United Kingdom to Boeing's specifications. The subscale prototypes have a wingspan of 20.4 feet, with prominent vertical fins and rudders at the wingtips and elevons along the trailing edges of the wings. Three small model aircraft turbojet engines, providing a maximum combined thrust of about 160 lbs, power the 523-lb. gross weight aircraft. The X-48B has an estimated top airspeed of 118 knots (138 mph), a maximum altitude of about 10,000 feet and a flight duration of about 40 minutes.

Read more on the X-48B at: (*http://www.boeing.com/news/releases/2006/q4/061027b_nr.html*)



X-48B in full-scale wind tunnel at NASA's Langley Research Center ED06-0070-1

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