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BACKGROUNDER

BOMBARDIER LEARJET 45 XR

Background: In service since July 2004, the *Learjet 45 XR* aircraft is designed specifically to meet customer needs in the evolving super-light business jet segment. This eight-to-nine passenger jet offers two significant improvements to the *Learjet 45* aircraft's already impressive performance capabilities: reduced balanced field length and improved payload-range capabilities. Other benefits include increased flexibility, faster time-to-climb under hot and high conditions and cruise speeds.

Bombardier introduced the *Learjet 45 XR* aircraft to provide operators in the super-light business jet segment with even greater performance capabilities.

Description: The *Learjet 45 XR* aircraft is an evolution of the *Learjet 45* aircraft designed to deliver greater payload-range capabilities through a 1,000-pound (454-kg) increase in maximum takeoff weight (MTOW) and enhanced engine performance.

The jet's improved payload-range capabilities enables *Learjet 45 XR* aircraft operators to take greater advantage of its unique eight-passenger standard configuration, resulting in significantly higher levels of flexibility. For example, the *Learjet 45 XR* aircraft is able to fly eight passengers on long journeys such as Los Angeles-Atlanta, Moscow-Paris or Cairo-Geneva.

The *Learjet 45 XR* aircraft also features Honeywell TFE731-20-BR turbofan engines, leading to significantly reduced balanced field lengths at higher temperatures, improved time-to-climb capabilities, particularly under ISA plus conditions, and faster high-speed cruise at all altitudes.

Out of Aspen, Colorado, the TFE731-20-BR-equipped *Learjet 45 XR* aircraft flies approximately 906 nautical miles 1,678 km further with eight passengers than the TFE731-20-AR-equipped *Learjet 45* aircraft.

Capable of operating at cruise speeds up to Mach 0.81 (535 mph; 861 km/hr), the *Learjet 45 XR* aircraft has a maximum range of 1,973 nautical miles (3,654 km) with four passengers, two crew and NBAA IFR (100 nm) fuel reserves.

The aircraft can climb directly to 43,000 feet (13,106 m) in approximately 23 minutes with four passengers and full fuel, under ISA conditions, the aircraft is certified up to 51,000 feet (15,545 m).

Based on the *Learjet 45* aircraft cabin and inspired by customer feedback, the sleek *Learjet 45 XR* aircraft interior has been specifically designed to provide superior comfort and functionality. It offers a cabin length of 19 feet, 9 inches (6.02 m), combined with an oval cabin cross-section of 4 feet, 11 inches high by 5 feet, 1 inch wide (1.49 m high by 1.55 m wide). Standard double club seating, combined with a flat floor, offers unprecedented seated comfort for eight passengers. The improved interior features redesigned seats which are 2 inches (5 cm) wider and result in 6 inches (15 cm) of additional cabin legroom.

The *Learjet 45 XR* aircraft also offers enhanced functionality due to its increased galley storage and improved accessibility to systems behind the aft lavatory bulkhead. The cabin's lighting system is provided by a Light Emitting Diode (LED) system, which lasts longer, is more robust, and emits less heat. Finally, major interior components have been redesigned to allow for removal in 20 minutes or less.

Standard avionics include Honeywell's Primus 1000 integrated avionics system. All flight and navigation information is displayed on four large, 8-inch by 7-inch (20-cm by 18-cm) EFIS screens which also display Engine Instrument and Crew Alerting System (EICAS) information. In addition, most of its systems incorporate diagnostic capabilities, allowing maintenance technicians to download and analyze detailed status information, dramatically reducing the time required for troubleshooting.

Honeywell TFE731-20-BR turbofan engines provide the aircraft with excellent hot-day, high-altitude performance. The engine is flat-rated to 3,500 pounds (15.56 kN) of thrust, up to 104 degrees Fahrenheit (40 degrees Celsius) at sea level. An automatic power reserve (APR) provides an additional 150 pounds (0.67 kN) of thrust at takeoff.

Status: On February 2, 2009 Bombardier announced that it is now offering a Wide Area Augmentation System (WAAS) capable Flight Management System on *Learjet 40 XR* and *Learjet 45 XR* aircraft. WAAS enhances navigation capabilities through the use of a network of ground reference stations collecting global positioning system (GPS) satellite data.

Highlights:

Max. cruise speed:	Mach 0.81 (535 mph; 861 km/hr)
Max. range:	1,973 nm (3,654 km) with 4 pax, 2 crew, NBAA IFR (100 nm) fuel reserves
Max. altitude:	51,000 feet (15,545 m)
Passengers:	8-9 in standard seating configuration

Milestones*:

Program launch:	July 21, 2002
First flight:	July 8, 2003
Upgrade available:	May 19, 2004 U.S. FAA Sept. 21, 2004 Transport Canada Oct. 14, 2004 European EASA
First delivery:	July 1, 2004
Aircraft manufactured:	383 (including Learjet 45 and 45 XR, as of April 30, 2009)

* Deliveries include all *Learjet 45* and *Learjet 45 XR* aircraft manufactured by Bombardier Aerospace that have received their Certificate of Airworthiness. Backgrounders reflect number manufactured to end of last reported fiscal quarter.

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May 2009

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