

# BOMBARDIER

## BACKGROUNDER

### LEARJET 40 XR

**Background:** In service since December 2005, the *Learjet 40 XR* aircraft is designed to meet the most demanding mission requirements in the light business jet segment. This six-to-seven passenger jet offers multiple improvements to an already impressive performance: faster time-to-climb and cruise speeds under hot and high conditions, and improved payload-range capabilities.

Operators flying the *Learjet 40*, *Learjet 45* or their *XR* jet derivatives benefit from fleet commonality, particularly in pilot and maintenance training, spare parts, warranties and aircraft maintenance. This translates into improved dispatch reliability, lower fleet maintenance costs and common flight maintenance crews.

**Description:** The *Learjet 40 XR* aircraft is an evolution of the *Learjet 40* aircraft designed to deliver greater payload-range capabilities through enhanced engine performance and a 650-pound (295-kg) increase in maximum takeoff weight (MTOW).

The *Learjet 40 XR* aircraft 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 levels.

Out of Jackson Hole, Wyoming, at 78.8°F (26° degrees Celsius), the TFE731-20-BR-equipped *Learjet 40 XR* aircraft flies approximately 944 nautical miles (1,748 km) further with six passengers than the TFE731-20-AR-equipped *Learjet 40* aircraft. Under the same conditions and payload, it also offers faster climb times, requiring only 23 minutes to reach 43,000 feet (13,106 m).

Capable of operating at cruise speeds up to Mach 0.81 (535 mph; 861 km/hr), the *Learjet 40 XR* aircraft has a maximum range of 1,723 nautical miles (3,191 km) with four passengers, two crew and NBAA IFR (100 nm) fuel reserves, and is certified to 51,000 feet (15,545 m). It is designed to fly with full fuel and a maximum payload up to 2,050 pounds (930 kg).

City pairs linked non-stop at Mach 0.75 (495 mph, 797 km/hr) by the *Learjet 40 XR* aircraft include New York-Denver, Los Angeles-Atlanta, Athens-London, Hong Kong-Singapore and São Paulo-Santiago\*.

Based on the *Learjet 40* aircraft cabin and inspired by customer feedback, the sleek *Learjet 40 XR* aircraft interior is specifically designed to provide superior comfort and functionality. The cabin length of 17 feet eight inches (5.39 m), combined with an oval cabin cross-section of four feet 11 inches high by five feet one inch wide (1.49 m high by 1.55 m wide), forward club seating and a flat floor, offers outstanding cabin comfort, with seating for up to seven passengers. It also offers a full-size galley, a full-across aft lavatory and LED lighting.

Featuring the same avionics, engines, wing, forward fuselage and cockpit as well as similar interior components, major systems and center fuselage as the *Learjet 45* aircraft series, the *Learjet 40* aircraft series offers operators exceptional systems commonality.

Standard avionics include Honeywell's Primus 1000 integrated avionics system. All flight and navigation information is displayed on four large, eight-inch by seven-inch (20-cm by 18-cm) EFIS screens which also display Engine Instrument and Crew Alerting System (EICAS) information. Like the *Learjet 40* aircraft, the *Learjet 40 XR* aircraft incorporates an EICAS system as standard equipment. 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.

**Highlights:**

Max. cruise speed:	Mach 0.81 (535 mph; 861 km/hr)
Max. IFR range: reserves	1,723 nm (3,191 km) with 4 pax, 2 crew, NBAA IFR (100 nm)
Max. altitude:	51,000 feet (15,545 m)
Passengers:	6+1 in standard seating configuration

**Milestones\*\*:**

Program launch:	Oct. 11, 2004
Upgrade available:	Aug. 19, 2005 U.S. FAA Oct. 17, 2005 European EASA Jan. 2006, Transport Canada
First delivery:	Dec. 22, 2005
Aircraft manufactured:	123 (including <i>Learjet 40</i> and <i>Learjet 40 XR</i> , as of April 30, 2010)

\*Theoretical range ( $\pm 5\%$ ) with 4 pax / 2 crew, NBAA IFR 100 NM reserves, ISA.

\*\*Aircraft Manufactured include all *Learjet 40* and *Learjet 40 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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