



# Backgrounder

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## The Boeing 747-8 Family

The Boeing 747-8 Intercontinental and 747-8 Freighter are the new, high-capacity 747s that offer airlines the lowest operating costs and best economics of any large passenger or freighter airplane in its class – while providing enhanced environmental performance.

This latest family of 747 jetliners meets airline requirements for a passenger airplane that serves the 400- to 500-seat market between the Airbus A380 and the Boeing 777-300ER airplanes, and for a freighter that continues the leadership of the 747 Freighter family in the world cargo market.

Boeing studied the market feasibility of a new 747 for some time, working with operators to establish their requirements for an incrementally larger 747 to continue the profitability of current 747 fleets. By working together with customers and applying the innovative new technologies of the 787 Dreamliner, Boeing created the 747-8 family. In fact, the designation 747-8 was chosen to show the technology connection between the 787 and the new 747. The 747-8 program launched Nov. 14, 2005, with firm orders for 18 747-8 Freighters: 10 from Cargolux of Luxembourg and eight from Nippon Cargo Airlines of Japan.

Both the passenger and freighter versions of the 747-8 allow operators to maximize their profitability. The new Intercontinental has 51 additional seats to accommodate 467 passengers in a typical three-class configuration and offers 23 percent more revenue cargo volume than the 747-400. The airplane features an all-new, 787 Dreamliner-inspired interior and a redesigned staircase. Boeing delivered the first 747-8 Intercontinental to an undisclosed BBJ customer Feb. 28, 2012. Launch customer Lufthansa took delivery of the first airline Intercontinental April 25, 2012.

Compared one on one, the 747-8 Freighter has no competitors. With a maximum structural payload capacity of 137.1 metric tonnes (137,166 kg) or 151.2 tons (302,400 lbs) including tare weight, the 747-8 Freighter offers 16 percent more revenue cargo volume than the 747-400 Freighter. The additional 4,245 cubic feet (120 m<sup>3</sup>) of volume means the airplane can accommodate four additional main-deck pallets and three additional lower-hold pallets.

The 747-8 Freighter offers a range of 4,120 nautical miles (7,630 km) and enables operators to choose between carrying greater revenue payload—up to an additional 24 tonnes (26 tons)—or flying up to 900 nautical miles (1,660 km) farther in markets where cargo density requirements are lower. The airplane upholds its predecessor's legendary efficiency, with nearly equivalent trip costs and lower ton-mile costs than the 747-400 Freighter. Boeing delivered the first 747-8 Freighter to launch customer Cargolux Oct. 12, 2011.

Both airplanes represent a new benchmark in fuel efficiency and noise reduction, allowing airlines to lower fuel costs and fly into more airports at more times of the day. The 747-8 Intercontinental gives double-digit fuel improvements over the 747-400 and has a 30-percent smaller noise footprint, with QC2 takeoffs and QC1 arrivals. The 747-8 is designed to operate safely at any airport that currently has 747-400 service. The 747-8 builds on the current 747's capability to fly into most airports worldwide, using the same pilot type ratings, services and most ground-support equipment. With a range of 7,790 nautical miles (14,430 km), the 747-8 Intercontinental can connect nearly any major city pair in the world.

The new 747-8 is the right size for the large airplane market, lowering risk for airlines in a highly variable operating environment.

| <b>Technical Characteristics</b>  |  |  |
|---|--|--|
|   | <b>747-8 Freighter</b>   | <b>747-8 Intercontinental</b>  |
| <b>Passengers</b><br>(three-class configuration)  | N/A  | 467  |
| <b>Cargo</b>  | Total cargo capacity 30,288 ft <sup>3</sup> (857.7 m <sup>3</sup> ); total main-deck volume capacity 24,462 ft <sup>3</sup> (692.7 m <sup>3</sup> ), consisting of 34 pallets (96 in x 125 in, or 2.4 m x 3.2 m) pallets of which 27 are 10-ft (3-m) high units; total lower-hold volume capacity 5,826 ft <sup>3</sup> (165.0 m <sup>3</sup> ), consisting of 12 pallets (96 in x 125 in, or 2.4 m x 3.2 m), 2 LD-1 containers and bulk storage of 496 ft <sup>3</sup> (14.0 m <sup>3</sup> ) | Total cargo capacity 5,705 ft <sup>3</sup> (161.5 m <sup>3</sup> ), including 7 pallets and 16 LD-1 containers plus bulk storage of 640 ft <sup>3</sup> (18.1 m <sup>3</sup> ); revenue volume 3,895 ft <sup>3</sup> (110.3 m <sup>3</sup> ) |
| <b>Engines</b><br>Maximum thrust  | GEEx-2B67<br>66,500 lb (296 kn)  | GEEx-2B67<br>66,500 lb (296 kn)  |
| <b>Maximum Fuel Capacity</b>  | 59,734 U.S. gallons<br>(226,095 L)   | 63,034 U.S. gallons<br>(238,610 L)   |
| <b>Maximum Takeoff Weight</b>   | 987,000 lb (447,696 kg)  | 987,000 lb (447,696 kg)  |
| <b>Maximum Range</b>  | 4,120 nautical miles (7,630 km)  | 7,790 nautical miles<br>(14,430 km)<br>Typical city pairs:<br>New York - Hong Kong<br>Los Angeles - Mumbai<br>London - Singapore   |
| <b>Typical Cruise Speed</b><br>at 35,000 feet   | Mach 0.85  | Mach 0.86  |
| <b>Basic Dimensions</b><br>Wing Span<br>Overall Length<br>Tail Length<br>Interior Cabin Width<br>Diameter | 224 ft 5 in (68.4 m)<br>250 ft 2 in (76.3 m)<br>63 ft 6 in (19.4 m)<br>20.1 ft (6.1 m)<br>255.5 in (649 cm)  | Same<br>Same<br>Same<br>Same<br>Same   |

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