Newest Boeing 747 Achieves First Design Milestone

The Boeing 747-400X, the newest and highest gross-weight version of the 747, achieved firm design configuration this month, according to Boeing Commercial Airplane Group.

"Many of our key 747-400 operators have told us they need increased payload and range capabilities beyond the existing 747-400," said Patricia Rhodes, 747-400X program manager. "We've now identified the basic 747-400X design characteristics to accomplish this, and we're ready to begin developing the specific design details needed to build parts, tools and assemblies for the airplane."

The 747-400X offers a maximum takeoff weight of 910,000 pounds (409,500 kg) and a range of 8,860 statute miles (14,260 km). This is 35,000 pounds (15,876 kg) and 570 statute miles (917 km) more than the current 747-400.

"The additional capabilities of the 747-400X translate into increased revenue and flexibility for our customers," Rhodes said. "This airplane will allow airlines to fly more payload - at least 15,000 pounds more - on existing 747-400 routes. Or they can use the airplane's increased range to establish new non-stop routes, such as New York to Hong Kong, Los Angeles to Melbourne, or Newark to Taipei."

Additional fuel capacity and structural changes are needed to accommodate the weight and range increases. One or two auxiliary fuel tanks will be installed in the airplane's lower cargo area, something Boeing and other airplane manufacturers have done for more than 30 years.

The external physical dimensions of the 747-400X are identical to those of the existing 747-400. The airplane will incorporate the strengthened 747-400 Freighter outboard wing, and it will have strengthened body sections and landing gear to support the additional weight. Modifications also will be made to the existing 747-400 structure, cargo systems and fuel systems to allow installation of the additional fuel tanks.

An additional body fuel tank will be installed directly forward of the center wing tank, with a second one offered as an option. Each tank is removable and will hold 3,180 U.S. gallons (12,040 L). Total fuel capacity with one additional tank is 60,465 U.S. gallons (229,570 L).

The 747-400X shares a majority of common features with the 747-400, including the same pilot type rating, same reliable engines and most spare parts, as well as common maintenance procedures, manuals and inspection requirements. Engines currently being offered include the Rolls-Royce RB211-524H-T, the Pratt & Whitney PW4062 and the General Electric CF6-80C2B5F, with thrust levels ranging from 59,500 pounds to 63,300 pounds, depending on the engine.

"By making a few key changes and capitalizing on the superior features of today's 747-400, we're meeting our customers' needs, while at the same time maximizing shareholder value," said Gregg Smith, 747-400X chief project engineer.

The 747-400X currently is being offered in passenger and combi versions to airlines worldwide, with first deliveries targeted for October 2000 and June 2001, respectively. The option of a 747-400X Freighter also is being explored.

The interior configurations of the passenger and combi airplanes are the same as their existing 747-400 counterparts. For example, in a typical three-class configuration the passenger version will carry 416 passengers, while the combi will accommodate 266 passengers as well as six or seven main-deck cargo pallets.

The company's decision on when to launch the 747-400X program will be based on market response.

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