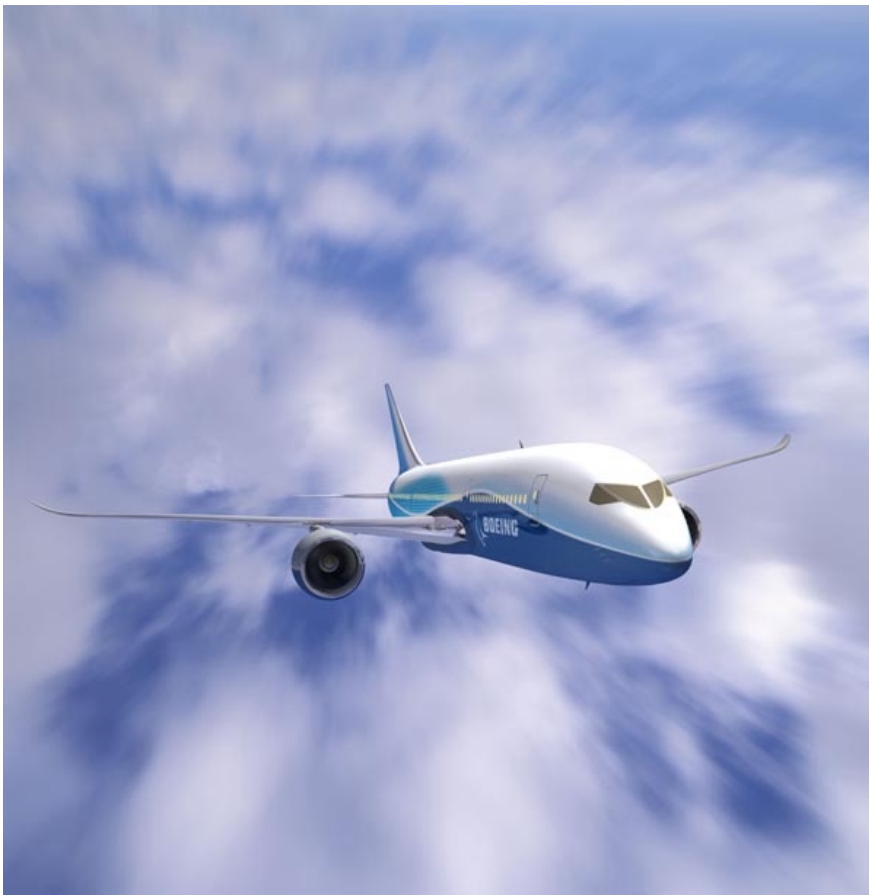


Boeing's 7E7

Efficiently Going to a New Generation

Boeing has been struggling with developing new aircraft to compete with Airbus' A330 and A340. Boeing is losing a lot of 757/767 customers to Airbus who is doing very well with their best seller, the A330-200, which appears to be the best replacement for 767 operators. The 7E7 is intended to replace 757, 767 and A300 aircraft. Boeing was looking to fill up the gap between the 737NG and 777, which up until now, was the 757/767 combination. Many people don't see the 757/767 as an old aircraft, but the 757/767 hasn't been selling well the last few years. Airlines are losing interest in the 757/767 and the 757/767 productions was even threatened to be closed all together if no more sales were coming in from customers. This made Boeing decide to come up with an all-new aircraft featuring the latest in aviation technologies, explaining the 'dolphin-like' design of the 7E7.

By Roger Cannegieter



*The Boeing 7E7 will be made primarily of composite materials.
Photo The Boeing Company*

Supplying New Technology and Relationships

Now Boeing is working on the proposed 7E7, which will be one of the most efficient aircraft to date once it will be produced. Now you ask, what's so special about the 7E7? The 7E7 will have a new cabin interior as well as new glass cockpit based on their very successful 777. To make the 7E7 as efficient as possible, the aircraft's complete design is different from all other aircraft types we've known up until now. The new production facility for the 7E7 will be based on the modular production method introduced by Airbus. With the 7E7 Boeing will open the door for a complete new range of aircraft, all of which will be based on the 7E7's design. New features on the 7E7 are a new wing design, which will be using a combination of the raked wingtip technology (767-400) and blended wingtips technology (BBJ/737NG). A new tail design and new engines are other revolutions on the 7E7, with the latter being the most important revolution. Boeing has announced it will chose between two engine manufacturers to be the sole providers of the engines for the 7E7. When developed these engines will be the most efficient engines yet. The 7E7 will carry 200-250 passengers on routes between 6,600 and 8,000 nautical miles (12,200 to 14,800 kilometres). The 7E7 will use 20 percent less fuel for comparable missions than any other wide body airplane. It will also travel at speeds similar to today's fastest wide bodies, Mach 0.85. Another new technology is the health-monitoring systems that will allow the 7E7 to self-monitor and report maintenance requirements to ground-based computer systems. The wingspan is 57 meters, while the aircraft's length will be 56 meters. The cargo capacity (besides the baggage) will be approximately 5 pallets and 5 LD3 containers. The maximum take-off weight (MTOW) will be 408,800 lbs (185,400 kg). A proposed stretched version of the 7E7 will 62 meters in length, carry 6 pallets and 8 LD3 containers and have a maximum take-off weight of 490,500 lbs. (222,400 kg). The baseline 7E7 will have 57 percent more cargo capacity com-

pared to the Airbus A300-600. The stretched version of the 7E7 will have 44 percent more cargo capacity than the Airbus A330-200. With the 7E7 programme, Boeing will also re-invent the structure of its supplier partnership. Included in this new relationship is the possibility of suppliers to purchase shareholdings in a special purpose company set-up to build the aircraft. Boeing will adopt the modular production approach used by Airbus, which transfers the production emphasis from the final assembly line to the sub assembly builders. Boeing has also secured joint technology development co-operations with three Japanese companies, Fuji, Kawasaki and Mitsubishi Heavy Industries of Japan. Other co-operations have been made with Alenia of Italy, GKN of the United Kingdom, Stork Fokker and Fischer of the Netherlands and Hawker de Havilland of Australia.

New Generation coming?

With all these new technologies, the 7E7 may well be the next generation in aircraft manufacturing and development. Boeing has already indicated that with the 7E7 a new product line will be introduced at Boeing. We may see a complete new line of aircraft coming in the years ahead. Airbus has not announced any plans to develop a next generation A330 to compete with the 7E7. Airbus is still busy with their three latest products, the A340-500, A340-600 and moreover, their A380-



Photo The Boeing Company

800. Airbus believes in more capacity, while Boeing is sticking to more frequency and its point-to-point strategy. This explains in part, why Airbus isn't rushing into development of a next generation A330 as the A330 still meets all the latest requirements. Any new development from Airbus will come after the A380 with Airbus' A310/300 aircraft type being the next product due for replacement in Airbus' entire product line. Industry sources say a new aircraft type will be designed to directly compete with the stretched 7E7 variant. This new aircraft would grow and possibly be rewinged as a future replacement aircraft for the A330-200/300.

Customer Base

The 7E7 is intended to replace the 757, 767 and A300 and even the successful A330. This is why Boeing has a lot of opportunities in this market segment. With almost every U.S. major airline operating a large fleet of 757/767 aircraft, this will be the main target market for Boeing's 7E7. American Airlines, Delta Airlines and United Airlines may all be the customers we want to pay attention to. American Airlines also operates a significant fleet of A300-600's, which will also be due for replacement in the coming years. As these airlines all operate the 737NG and 777, the 7E7 is the gap to be filled when their 757/767 aircraft need replacement. As the 7E7 rollout will be in 2008 this will give these and other airlines the time to return to profitability. Japan is also a market where Boeing is aiming at with the 7E7 as most Japanese airlines currently operate sizeable fleets of the 767 which makes them potential candidates for the 7E7.

With no orders placed by airlines yet, Boeing is working hard on the 7E7. If Boeing can deliver all that the 7E7 is supposed to offer, they will have a very successful aircraft, which may revolutionize airline operations as well as the way we fly. In meantime, we will have to keep an eye on Airbus for any surprises...



Photo The Boeing Company