Boeing Redefines 'The Box' with Its New 7E7 Dreamliner Airplane

Innovative approaches lead to an airplane fresh from the ground up

Thinking outside the box is one thing, but Boeing is reinventing the box with its new 7E7 airplane, from initial concept and name to design, interiors, materials and final assembly processes.

"We are looking at our new airplane as an opportunity to change the way we do business," said Rob Pollack, vice president of Branding for Boeing Commercial Airplanes Marketing.

With 200 to 250 seats, the Dreamliner will be the most advanced and efficient commercial airplane in its class and will set new standards for environmental leadership and passenger comfort. The company expects to formally offer the new airplane to customers in early 2004 with entry into service to follow in 2008.

What's in a name?

An example of the novel approaches Boeing is applying to the 7E7 is the naming. A team led by Boeing Commercial Airplanes Marketing cultivated a variety of internal and external sources to generate ideas. An external naming consultant and numerous employees offered several ideas for names that the team thought would best fit the brand Boeing wants to create for the 7E7.

Standing near the Boeing exhibit podium and the 7E7 model, Rob Pollack, vice president of Branding for Boeing Commercial Airplanes Marketing, asks reporters attending the announcement of the winning 7E7 name at the Paris Air Show to join in a toast to celebrate the airplane's name of Dreamliner. - Ed Turner Photo

Then Boeing entered into a new marketing approach and alliance with AOL Time Warner Inc. to understand the priorities and needs of the flying public. People from around the world were invited to participate in the "Name Your Plane" effort and choose from among four potential names: Dreamliner, eLiner, Global Cruiser and Stratoclimber. Boeing and AOL Time Warner Inc. also made a special effort to involve children in the naming. A special issue of TIME For Kids, sent to more than 2 million students in grades four through six, featured the history of flight, introduced kids to the 7E7 and invited them to help name the new plane.

People from six countries -- China, France, Germany, Japan, the United Kingdom and United States -- were eligible to enter a sweepstakes as well as vote. The vote totals for those countries were China, 8,712; France, 24,461; Germany, 14,015; Japan, 6,083; the United Kingdom, 13,519; and the United States, 400,603. Nearly 478,000 people in 166 countries around the world voted, and more than 7,100 Boeing employees voted in the internal sweepstakes. The grand prize in both the external and employee sweepstakes was a two-hour "flight" in a Boeing 737-700/-800 flight simulator. (Visit www.newairplane.com for the external winners' names).

By a mere 2,500 votes the world selected the name "Dreamliner," which was announced June 15 at the Paris Air Show.

"The people of the world made a great choice," Pollack said. "The name Dreamliner reflects a new airplane that will fulfill the dreams of airlines and passengers with its efficient operations, enhanced cabin environment, and the ability to allow profitable connection to more cities without stopovers.

"The name also demonstrates how the airplane's economics will enable more people around the world to fulfill their dreams of traveling to new places, experiencing new cultures and staying connected to one another."

The passenger becomes the customer

The public was also invited to join the World Design Team, a virtual community whose members will have opportunities to provide input to the development of the 7E7, including surveys concerning design elements and sneak peeks as the design of the exterior and interior evolves.

"You can expect to see a whole new approach to how we tell the world about the airplane and encourage participation and feedback in the work we are doing," Pollack said.

Further examples of how the Dreamliner is establishing new traditions include more innovative exterior designs for the new airplane.

According to Mike Bair, senior vice president of the 7E7 program, "We are using the 7E7 concept similar to how automobile designers use concept cars, to stretch our imaginations, to consider new possibilities and to help us design the best possible product for our customer."

Bair said Boeing wants to go beyond the early, conventional image of the 7E7 to "something that people will know by sight -- like the way we all know a 747 when we see one." Designers will continue to consider alternative design features through the summer and finalize the airplane configuration by the end of the year.

In a revised look at commercial airplane production, final assembly of the 7E7 is targeted to take approximately three days instead of the 13-17 days that today's airplanes take.

"Three isn't a fixed number," Bair said, "but it gives you the idea of the magnitude of difference we are working toward with this airplane. It will be dramatically less."

The reduction in time will come from final assembly receiving fewer, bigger pieces that are easier to join and the implementation of lean manufacturing techniques.

And, in a major shift from conventional practices, Boeing has decided that the 7E7 will be the first commercial jet ever to have a majority of the primary structure -- including the wing and fuselage -- made of advanced composite materials instead of aluminum.

"Composites offer us a variety of advantages including better durability, reduced maintenance requirements and increased potential for future developments," Bair said. "We believe this choice will help position Boeing to take advantage of the most modern materials technologies as we enter the second century of flight."

It takes a village to make an airplane

In conjunction with an announcement that the Boeing 7E7 will be made primarily of composite materials, Boeing released a new image of the super efficient airplane. Work on development of the airplane continues on schedule. More than 40 airlines from around the world are engaged in dialogues with Boeing about the 7E7.
Like all Boeing airplanes the 7E7 will be a global effort requiring participation from partners and suppliers around the world. At the Paris Air Show, Bair announced the airframe candidate companies that were selected to participate in the design and manufacture of large subassemblies: Alenia Aeronautica, Fuji Heavy Industries, Kawasaki Heavy Industries, Mitsubishi Heavy Industries and Vought Aircraft Industries. In addition, several Boeing sites will be participating at this level.

Bair noted that other companies that participated in the materials technology development effort will likely become suppliers to the program by working with one or more of the main team members.

Boeing is also teaming with more than 20 international systems suppliers to develop technologies and design concepts for the 7E7. As the technology development work concludes later this year, the same companies will compete to become ongoing suppliers to the program.

According to Walt Gillette, vice president of Engineering, Manufacturing and Partner Alignment for the 7E7 program, "Just as we brought the world's best materials and aircraft structures experts together to help evolve materials and aircraft structures technologies, we have assembled a team of systems experts to help us understand the possibilities and best choices for systems on the 7E7."

Members of the Systems Technology Team include: ECE Zodiac, Messier-Bugatti and Thales from France; Diehl and Liebherr-Aerospace Lindenberg from Germany; Teijin Seiki from Japan; FR-HiTemp and Smiths Aerospace from the United Kingdom; and BAE SYSTEMS (also United Kingdom), Connexion by Boeing, Crane Aerospace, Fairchild Controls, Goodrich Corporation, General Dynamics, Hamilton Sundstrand, Honeywell, Matsushita Avionics Systems, Moog, Parker Hannifin Corporation, Rockwell Collins, and Triumph Group from the United States.

And some of the last steps in the process -- final assembly of the 7E7 -- may involve yet another new approach to building Boeing jets. If the airplane is not assembled at a Boeing site in Washington State, the work will be done in one of the other states competing for the final assembly work. Proposals were due to Boeing on June 20, and the company will decide in late 2003 where the 7E7 Dreamliner will be built.

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