Boeing 7E7 Offers Preferred Cabin Environment, Study Finds

A comprehensive study of more than 500 people found that Boeing [NYSE: BA] 7E7 Dreamliner passengers will feel more relaxed and less fatigued thanks to cabin-pressurization improvements on the all-new airplane.

Oklahoma State University and Boeing conducted the study, which was based on U.S. Army Research Institute of Environmental Medicine methodology characterizing 68 possible altitude symptoms. The goal was to determine participants' comfort levels at various pressurization levels.

"Improving the passenger experience with flying is important to us," said John Feren, vice president of Sales and Marketing for the 7E7 program. "We want to make sure that the changes we introduce represent a real improvement, and clearly our studies show that a lower cabin altitude will have a positive effect on passengers."

Because their structures are primarily metal, today's commercial airplanes are certified to a maximum altitude equivalent of 8,000 feet to minimize structural fatigue during normal operation. The 7E7 will be pressurized to a maximum altitude equivalent of 6,000 feet during normal operation, a decision enabled by the stronger, more-durable composite materials from which the airplane will be constructed. Composites are not subject to the same fatigue conditions that limit the amount of pressure cycles that can be applied to an aluminum airplane.

Study participants reported feeling less achy, more relaxed and more comfortable with the 6,000-foot cabin pressurization.

The participants experienced a 20-hour flight regime in an airplane-cabin simulator. The simulator was pressurized to five different altitude equivalents, and each level was tested nine times. Participants sat in standard economy-class seats, ate typical airline food, watched movies and slept as they would during a real flight.

The participants were carefully selected by gender and age to fairly represent the flying public. They completed surveys before and during the simulation, while also undergoing memory, coordination and visual tests.

"Passengers experience flying as an overall event," Feren said. "On the 7E7, they may not be able to quantify the role that a lower cabin altitude plays in creating a better experience but they will know they feel better during and at the end of the flight."

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