

Commercial Airplanes

What's old is new

Engineers, designers walk in the shoes of older passengers to understand needs of future air travelers

BY KATHLEEN SPICER

We're getting older. Really.

According to the Department of Economic and Social Affairs at the United Nations Secretariat, the year 2050 will mark the first time in human history the percentage of older persons (those over 60 years old) in the world will exceed the percentage of children (0 to 14 years old). By that year, the number of persons over 60 is projected to reach almost 2 billion, and the median age will be 38—up from 26 in 1999.

Members of tomorrow's older generation will be better versed in technology than their predecessors. They'll be more educated, more affluent and more health-conscious than previous generations, and they'll have previous experience on airplanes.

"They aren't your parents, and they aren't your grandparents—it's us, growing older and living longer," said Vicki Curtis, senior engineer at the Boeing Commercial Airplanes Payloads Concepts Center in Everett, Wash. And, Curtis said, engineers and designers at Boeing are taking seriously the need to prepare to accommodate an older class of passengers in the air travel industry.

As part of that preparation, Curtis developed the Experience Aging Workshop. The workshop brings together various types of Commercial Airplanes engineers and designers and allows them to experience the limitations aging imposes on older passengers. Workshop participants also include engineers and designers from Teague and Associates, Boeing's consultant for airplane interiors.

In his book *Sold on Seniors*, marketing expert Gary Onks said the market of mature Americans is important because older generations today in the United States spend almost \$2 trillion on goods and services each year and have an average of \$24,000 in annual disposable income. For Boeing and its customers, these are dollars that may be spent on vacations and air transportation.



JIM CONDELLES PHOTO

Carrying her list of tasks, Dolores Lystad, a functional test engineer in Everett, Wash., walks slowly down the airplane aisle wearing a "Third Age Suit" that allows users to experience the limitations felt by many older individuals.

An aging population by the numbers

2 billion

Projected number of people in the world over age 60 in the year 2050. That's more than triple the estimated 629 million there were in 2002.

19 million

The difference between the projected increase in the number of senior citizens in the United States between 2015 and 2030 (26 million) and the projected increase in the number of children born in the United States during this span (7 million).

\$2 trillion

Estimated amount spent annually by older generations today in the United States.

Sources: United Nations Secretariat, United States Census Bureau, Sold on Seniors by Gary Onks

During a recent workshop, participants changed into "Third Age Suits," outerwear developed by Ford Motor Company. These outfits impose limitations that mirror true-to-life aging conditions, such as constricted range of motion, partial dexterity and vision impairment.

In an experiment—in which Boeing partnered with Alaska Airlines and Horizon Airlines for a series of flights for four workshops—employees wore the suits onboard a regularly scheduled commercial flight from Seattle to Spokane, Wash. During the flight, participants performed a list of tasks, such as adjusting the air flow and locating their seats. A crew from ABC News also accompanied the group to include their experiences in a special series on aging.

Participants said the results were eye-opening. For Cintia Celi, a 737 interiors and emergency equipment engineer in Renton, Wash., accessibility and visibility challenges were the

most troubling. She now plans to suggest a new coloring scheme with more contrasting colors to label equipment around the airplane.

Court Lorenz, a manufacturing engineer in Everett, Wash., who designs lighting and escape systems, said the experience changed his mindset about flying the second he stepped on the airplane. He noticed that the more color contrast there was in signs and labeling, the easier it was to find his seat. Also, personal in-flight controls such as air flow, reading lights and attendant call buttons were harder to manipulate. "These experiences will definitely curb my thought process for engineering design in the future," he said.

Other participants also tapped into the psychological aspects of aging. Paul Cogley, a 737 engineer in Renton, felt the "diminished physical confidence of an older person," he said. "I found that while wearing the suit, I became increasingly aware of my limitations, which brought on some anxiety. And this surprised me."

Dolores Lystad, a functional test engineer in Everett, said she now has much more empathy for older passengers, after experiencing difficulties reading the small print on boarding passes, seat numbers and bathrooms. These challenges, as well as trying to lift her bag to the overhead stowage bin, made her feel "inadequate," she said.

"This project is about empathy and designing and building more user-friendly airplane interiors," said Alan Anderson, chief interiors engineer and Payloads Concept Center director. "It's also about how to meet the needs of and tap into a future market with a significant level of discretionary spending."

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MARIAN LOCKHART PHOTO

Ximena Rozo (right), a senior designer with Teague and Associates at the Boeing site in Everett, Wash., answers questions posed by an ABC News reporter about her experience wearing a "Third Age Suit" that simulates the effects of aging while flying.