

A **class** ahead

The 787 is bringing advances not only in jetliner performance but also in airline training programs



By Scott Lefebber and Tom Brabant

The Boeing 787 Dreamliner makes its first flight this year, marking a historical and technological milestone in aviation. Equally important, though often overlooked, is the complex training that helps make this dream a reality.

The 787 program and Alteon, Commercial Airplanes' training business unit reporting to Commercial Aviation Services, have been hard at work together to revolutionize 787 training to produce the best-qualified mechanics, pilots and flight attendants. Just as the 787 is a game-changer, its training program is much different than those of the past. One key objective of 787 training is to replicate the airplane in the classroom and bring digital, performance-based data to customers. All phases of 787 training use simulation, which allows students to practice on the same tools they will actually use on the airplane. Here's a look at the various elements of 787 training.

MAINTENANCE TRAINING

With the 787, a mechanic's main troubleshooting tool is a laptop computer. The Maintenance Performance Toolbox, an online repository, provides the mechanic with the real-time maintenance information needed to maintain and repair the airplane. And unlike previous training programs that used data intended just for training, maintenance training courses for the 787 will link to actual support data in the Maintenance Performance Toolbox.

"Part of training is becoming comfortable with the airplane's troubleshooting tools," said Jeff Haber, manager of 787 maintenance training.

Using interactive 3-D models, each student can walk around the airplane virtually, collect the tools needed and walk step by step through the troubleshooting process. With the laptop and access to the Maintenance Performance Toolbox, the mechanic practices the same skills in the classroom that will be used on the job.

"The maintenance laptop picks up fault codes that tell the mechanic what is wrong with the airplane—much like a car mechanic working on a modern engine," said German Rangel, maintenance training simulation lead. "Through simulation, students can correct the fault in exactly the same way they would in the field."

FLIGHT TRAINING

Computer-based training allows students to gain practical airplane systems knowledge using high-tech desktop simulation tools. They can then integrate this systems and procedures knowledge within the flight deck environment through the 787 Flight Training Device (FTD). The FTD provides flight crews with the same airplane systems and interfaces as a full-flight simulator, including electronic flight bags and head-up displays for both pilots.

This makes the FTD ideal for instrument and airplane system familiarization and procedure proficiency. It also provides a smooth transition to the 787 full-motion simulator, which allows pilots to become proficient in maneuvers and airplane handling characteristics, including takeoffs, approaches and landings.

The 787 training program is designed to expediently transition crews that fly other Boeing airplanes. The high degree of commonality between the 787 and the 777 allows "differences" training from one model to the other in only five days without the use of a full-flight simulator. Commonality between other Boeing

models and the 787 builds on the success of the Shortened Transition and Rating courses, which reduce the transition time for pilots because tasks common among models do not have to be relearned. As a result, pilots can be trained to the 787 in as few as 13 days. The 787 transition course for pilots previously flying non-Boeing models to the 787 takes 20 days, which is one day less than previous similar courses required.

"These reduced training times result in cost savings for Boeing and for our customers by reducing training costs and limiting the time their pilots are away from their home base," said Don Reiter, manager, 787 training.

CABIN SAFETY TRAINING

Boeing received U.S. Federal Aviation Administration provisional acceptance last month on the 787 cabin safety training program. The two-day training course, designed by Boeing cabin safety experts with input from airlines and industry, provides 787 customers with a framework to customize their own cabin safety programs.

The program outlines the basic processes and guidelines flight and cabin crew must follow when operating the 787. The course includes training in airplane familiarization, lighting and communication, doors, slides, evacuation, water and waste systems, and special features. The course also includes training with a hands-on cabin door device.

According to Brad Becker, manager, Cabin Safety Training, every airline is required to get approval of its own cabin safety training programs. The Boeing program is the baseline for customers and provides the framework they can use to customize their own plans.

Training consists of one day in a formal classroom setting and one day performing evaluations in a realistic environment using a cabin door device.

787 TRAINING THROUGH ALTEON

Alteon will have 787 training suites located around the world. Each suite includes a full-flight simulator and a host of flight training equipment, maintenance training tools and a hands-on door trainer device. Alteon's strategy of providing training campuses close to customers' home bases reduces airlines' training-related costs such as travel and crew down time.

Operators that purchase the 787 can choose from a selection of training options that give them more flexibility than ever. Each customer receives training points, or credits, that can be redeemed for various Alteon training services.

In addition, 787 training is environmentally progressive. Digital, Web-managed training and the use of personal computers for learning and even note-taking means reduced waste, energy, travel and costs for customers and Boeing.

"Our goal is to make carriers' transition to the 787 as easy as possible," said Reiter. "The digital technology and commonality of this airplane allow for equally remarkable training solutions that will truly provide value to our customers." ■

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PHOTO: Cameron Forrest (left), instructional systems and technologies lead, and German Rangel, 787 maintenance training simulation lead, facilitate a discussion on 787 maintenance training at the Seattle Alteon training campus. MARIAN LOCKHART/BOEING