



‘I want to do *that!*’

C-17 is at the center of Ralph Mead's career with the Air Force, Boeing

By Stacey Holloway

Driving with his wife one day nearly 15 years ago, Ralph Mead spotted two enormous objects in the sky. “Flying in formation about 300 feet above ground, two C-17 Globemaster IIIs went into a left-hand bank and crossed the highway right in front of my car,” Mead recalled. “I said to my wife: ‘That is cool. I want to do that!’”

And that he did. A year later, he received his C-17 assignment from the U.S. Air Force to Charleston Air Force Base, S.C., and the Boeing-built C-17 became the heart of his career. Mead's Air Force career included eight years as a C-17 pilot and six years as a C-17 instructor. After retiring from the service, he joined Boeing as a C-17 instructor. Today, he is program manager of the company's C-17 Aircrew Training System in St. Louis.

This successful system provides student instruction to more than 1,000 new pilot, loadmaster and maintenance engine-run students each year while maintaining continuation training for more than 5,000 active, Reserve and Air National Guard aircrew and maintenance personnel (see box on Page 33).

Boeing conducts C-17 training not only for crew and maintenance technicians for the U.S. Air Force but also for the Royal Air Force of the United Kingdom, as well as the Royal Australian and Canadian air forces. As program manager, Mead has oversight of the entire Aircrew Training System program.

Mead said the training initially includes a lot of courseware and self-paced training. Once students learn about the aircraft and its procedures and graduate to simulated exercises, there's more interface with instructors. “Unlike a lot of other platforms where there are 15-20 students in a class, C-17 training is one-on-one

or at most two students per instructor,” he said.

A major element of the training is the C-17 Weapons Systems Trainer. This two-story, full-motion simulator allows students to train and build confidence for what they may experience in an actual aircraft such as wind, storms, turbulence, emergency situations and missile attacks. “The only thing the simulator doesn't emulate is the smell of jet exhaust,” Mead laughed.

“What makes the simulator so realistic is the motion you feel as it rocks back and forth and tilts,” he said. “It's feeling your stomach drop when it lifts toward the sky during a simulated takeoff. It's the visuals you get flying over forest-covered mountains or towering city buildings. It's the sound of the engines spooling up as you push the throttle forward, and the feel you get in the foot pedals and controls as you're trying to land the aircraft on a small strip of runway.”

Mead said proof of the trainer's effectiveness is that students typically only have to fly an actual C-17 aircraft once in preparation for their evaluation mission flights, compared to up to five times on other platforms.

“The simulator's detail and fidelity are amazing,” said Maj. Kenneth Kaupp, Air Force Command and C-17A evaluator pilot. “It allows us to do most of our training in the simulator instead of the aircraft. This saves us time and money, especially in fuel cost, and that saves taxpayer money. Boeing instructors do a great job of creating scenarios in the simulator that provide real-world training for aircrews.”

As much as he's loved flying C-17 missions himself, Mead says his real passion over the years has been teaching student pilots. As an instructor, his No. 1 goal has been to teach pilots



how to safely operate the aircraft in a real-world environment. And that is exactly what he expects of the instruction team he now manages.

"I'm proud of the C-17's great safety record, especially considering some of the threat-filled environments it flies in," he said. "And, it's always been my goal in training to make sure that I never read the name of one of my students in a mishap report of any kind."

Indeed, Mead said that during training, he gives students a list of malfunctions that could potentially occur if a missile actually hit an engine—things like structural damage or loss of engine thrust, hydraulics or electrical power. "Then I'd let the students prioritize and determine what required immediate action and how to safely recover or land the aircraft," he said.

Mead recalls closing his eyes during his students' simulated exercises, thinking: "Oh no, this is going to hurt!" You are immersed in a virtual environment that is so real you instinctively react to mishaps as if they're real," he said.

Mead's many years of experience—both as a C-17 pilot and as an instructor—have given him a depth of credibility

with customers, which he says is invaluable in his current position.

"When I was in the Air Force, the thing I liked about Boeing was its flexibility and willingness to quickly adapt its training to the operational environment," he said. "I think one of Boeing's strengths—besides the reputation of the C-17 aircraft itself—is its willingness and ability to change the way it does training almost on a day-to-day basis in order to meet customer requirements and the needs of aircrew members. That is very important to customers, and it's my responsibility as program manager to ensure that we maintain that flexibility." ■

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PHOTOS: Left: The C-17 Globemaster III played a major role in Ralph Mead's career in the U.S. Air Force. Today, he's the program manager of Boeing's C-17 Aircrew Training System. PETER GEORGE/BOEING

Right: Larry Allison (left), Lead Instructor Loadmaster for the C-17 ATS at Altus Air Force Base, Okla., works with Staff Sgt. Keith Bryer of the U.S. Air Force.

BOB FERGUSON/BOEING

Just like the real thing

Boeing's C-17 Aircrew Training System is a proven, total training solution for C-17 Globemaster III aircrews worldwide. Here's a look at some of the components of ATS.

Weapons Systems Trainer: A high-fidelity, full-motion simulator exactly replicating the C-17 flight deck. The simulator has a high-resolution day/night visual system with a 225 degree field of view from flight deck windows; aircraft attitude and movement is simulated using a 6-degrees-of-motion system. The simulator's flight deck is night vision goggle compatible.

Loadmaster Station: This trains crewmembers in preflight procedures and on aircraft systems and emergency procedures. Cargo compartment video animation is projected on a 31-inch (79-centimeter) monitor. The system can operate stand-alone or be linked to the Weapons Systems Trainer.

Cargo Load Model: This 1/10 scale replica of the aircraft fuselage, complete with scaled cargo, is used in load planning exercises and when practicing loading checklists in a classroom environment.

Computer-based training: Computer-aided courseware provides efficient and effective instruction for pilots, loadmasters and maintenance engine-run technicians.

Cargo Compartment Trainer: This trainer replicates a full-scale C-17 cargo bay, utilizing real property assets (vehicles, cargo, etc.) to provide highly realistic load preparation and planning exercises. The device offloads training performed on operational aircraft, minimizing impact to the fleet.

Crew Systems Simulator: This trainer is used for pilot tasks not requiring motion or visual cues. Its flight deck is physically identical to the aircraft.

The C-17 Aircrew Training System is in St. Louis and these U.S. Air Force bases:

Alaska: Elmendorf AFB

California: March AFB and Travis AFB

Delaware: Dover AFB

Hawaii: Hickam AFB

Michigan: Jackson AFB

New Jersey: McGuire AFB

Oklahoma: Altus AFB

South Carolina: Charleston AFB

Washington: McChord AFB