

U.S. Air Force 1st Lt. Matt Woodfield “flies” an F-15C trainer at the Boeing-operated Mission Training Center at Langley Air Force Base, Va. Through work such as this, Boeing is a leader in Air Force Distributed Mission Operations initiatives.



BOB FERGUSON PHOTO

Uniting the forces

Boeing's work advances training initiatives with coalition partners

By STACEY RITTER

When the U.S. Air Force announced its vision for joint, full-combat-mission training capabilities for the F-15C in the mid-1990s, Boeing leveraged its extensive experience with networked training to deliver a Distributed Mission Operations solution.

DMO is a simulated training environment in which pilots use network-connected, high-fidelity trainers around the world to “fly” a mission. There’s no fuel burned, no ordnance

fired, and no wear and tear on the aircraft—meaning training costs are reduced. Pilots can fly over hostile “territory” without being put in harm’s way and can review their missions in a comprehensive debrief.

As a pacesetter in U.S. Air Force DMO initiatives, Boeing is applying this knowledge to programs for U.S. coalition teammates. Training trials recently began on a U.K. Ministry of Defence program that parallels DMO. This milestone represents Boeing’s latest achievement in defining, developing and deploying distributed, joint and coalition training solutions for military customers—a market where Boeing is a leader (see box on Page 47, bottom right).

DEFINING REQUIREMENTS

The Ministry of Defence program

is known as the U.K. Mission Training through Distributed Simulation Capability Concept Demonstrator (U.K. MTDS CCD). This program is assisting the United Kingdom in defining its future distributed-mission training requirements. Boeing and QinetiQ, a United Kingdom-based defense-technology and security company, are leading Team ACTIVE, a group of contractors under a three-year contract to the MoD to provide the U.K. MTDS CCD.

To better understand these requirements, Team ACTIVE opened a demonstration facility in July within the Air Battlespace Training Center at RAF Waddington in the United Kingdom. The facility provides an extensive exercise-management center with computer-generated military forces, a role-playing capability, situational awareness and VIP viewing area; team-perfor-

Inside Exercise Battle Buzzard

Exercise Battle Buzzard was the first training trial under the U.K. Mission Training through Distributed Simulation Capability Concept Demonstrator program. Trials began in October. The five-day event involved U.K.- and U.S.-based crews using simulators in their respective countries and “flying” in a common, simulated airspace against a common opposing force.

Day 1: System familiarization. Pilots became acclimated to their respective simulators and planning, briefing and debriefing facilities.

Day 2: Trial began in earnest. The mission: Provide air support for coalition ground forces. Coordination among the forward air controllers and U.S. and U.K. forces in adjacent geographic areas were key close-air-support training issues.

Days 3 and 4: F-16 and Tornado GR4 pilots flew close air support. The pilots rotated to a new geographic region each day, dealing with new targets and unanticipated threats.

Day 5: Additional complexity was added by increasing ground or air elements. Clearly, close coordination among ad hoc coalition teams was necessary for success.

The five days of training provided significant challenges for even the most experienced pilots and crucial practice in coordination of coalition forces.

mance assessment; forward-air controllers; distributed planning, briefing and debriefing; and Tornado aircraft air-to-ground mission training simulators.

Trials using front line aircrew began in October. The first, known as Exercise Battle Buzzard, was a five-day exercise involving U.K. trainees at RAF Waddington and U.S.-based crews at the Mesa, Ariz., Air Force Research Lab. Participants manned simulations in their respective countries but “flew” in a common, simulated airspace against a common opposing force (see box above).

“This trial was the first of seven events that will help define the requirements for any future U.K. MTDS program,” said Steve Monson, Boeing manager of MTDS CCD. “The trials will assist us in defining the training value for the participants, determining the right level of fidelity for the equipment used in team and collective training, and establishing a roadmap for persistent U.S. and U.K. coalition training.”

MANY TRAINING OBJECTIVES

The trials linked four Tornado GR4 aircraft and two forward air controller training simulators at RAF Waddington with training simulators at the Mesa research lab for



At the F-15C Mission Training Center at Langley Air Force Base, Va., U.S. Air Force 1st Lt. Matt Woodfield (left) and Bob Johnson, an instructor for Boeing Aerospace Operations, sit at a brief/debrief station to review a training mission Woodfield conducted in a simulator.

four F-16s, two A-10s, an Airborne Warning and Control System aircraft and a Joint Tactical Air Controller. The mission: provide air support for coalition ground forces while maintaining air superiority and demonstrating the ability to respond to time-sensitive targets. Target designation was provided by both air and ground controllers. Training objectives included enhancing coordination among forward air controllers and between U.S. and U.K. forces.

“What our joint and coalition training and engineering research is doing is helping to identify what to train, how best to train, and how often various players need to connect in a DMO environment to prepare for actual operations,” said Winston “Wink” Bennett, senior scientist for Training Systems and Performance Assessment for the Warfighter Readiness Research Division at the Air Force Research Lab.

Not only is Boeing supporting training research initiatives through U.K. MTDS CCD, it also plays a significant role in the U.S., Canada, Australia and U.K. coalition mission training research being conducted at the U.S. Air Force Research Lab. In this role, Boeing, with other contractors, works in partnership with AFRL to provide coalition mission training support.

“As contractors, we support both the engineering work of connecting the simulators together and the behavioral research that measures the potential training effects of exercises where the participants are separated by such large distances,” said Sara Elizabeth Gehr, a Boeing Human Factors Design specialist on the Mesa team. “The knowledge gained from this research will help our warfighters to train as they fight—as a part of an international coalition team.” ■

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A track record in training

Boeing has leveraged its extensive experience with networked training to support the U.S. Air Force’s expansion of its Distributed Mission Operations initiatives. The company also has worked with military customers worldwide to support similar programs. Here are some of the DMO programs Boeing supports.

- Boeing has delivered and currently operates F-15C DMO Mission Training Centers (MTCs) for the U.S. Air Force at Eglin, Langley and Elmendorf Air Force bases, Kadena Air Base in Japan and at the air base Royal Air Force Lakenheath in the United Kingdom.
- Boeing is the prime contractor for the Air Force’s F-15E MTC contract. The company is responsible for the design, development, construction and integration of MTCs at Mountain Home, Elmendorf and Seymour Johnson Air Force bases, and at RAF Lakenheath. First deliveries are expected in early 2007.
- As a provider of major components for the Air Force’s F-16 MTCs, Boeing delivers DMO-capable systems for the Royal Saudi Air Force and the Finnish Air Force. It also builds similar DMO components for Apache Longbow aircrew trainers for the United Kingdom.