Fighter/Attack Aircraft Training

Overview

Fighter/Attack aircraft training requires support for the entire training continuum for both land-and sea-based operations. Pilots and crew require tactically relevant training on demand. Systems need to replicate aircraft maneuverability, avionics operations and real-world weapons/sensors procedures. High-fidelity visuals, along with accurate weather and environmental details, allow for maximized training capacity and the full complement of training tasks. Commonality is key through all phases of training, from classroom and part-task training to full-fidelity mission training. Commonality also provides higher learning retention for the pilot, as well as repeatable lesson planning for the instructor. Training is the backbone of future generations of pilots and requires a dependable, proven system. CAE provides customers open and modular training system architectures that fully support aircraft concurrency, mission evolution and future technology growth.

Instructor and Briefing/Debriefing Capabilities

The Instructor Operator Station (IOS) is a PC-based, network-connected component of the training system, controlling multiple devices in a distributed training environment. The IOS provides the capability to initialize, support, control and monitor all aspects of a training exercise. When combined with a scalable video wall consisting of displays, the IOS provides a state-of-the-art mission observation facility. The video wall (a scalable debrief system) comprises multiple wall-mounted flat screen color displays and interactive whiteboard technology. These displays provide a crew station display repeater function, an overhead eye view of the mission replay over associated tactical maps or geographic terrain representations, and a variety of images, including a stealth viewer, an event timeline, 3-D or 2-D displays, and a pair of data displays that fully supports multi-ship tactical debriefing. Along with instruction, the IOS can also fulfill other training needs, such as lead for wingman training, wingman for lead training, two-ship lead and four-ship lead training, tailoring threat air presentation, and engaged maneuvering of an entity.

Training Devices: Full-mission Trainers

Comprehensive, integrated training solutions employ multiple training media based on the tasks and the trainee. Supported by a single simulation, tasks are allocated to electronic classrooms, tablets, part-task trainers, full-mission trainers (FMTs) and live aircraft based on the training objective. The continuum of media includes devices designed to support the full Strike/Fighter training continuum. From Fleet Replacement Squadron (FRS) or basic flight through the most complex tactical employment training, FMTs deliver highly realistic simulations that can support single-ship individual, multi-ship team and combat mission rehearsal training. The FMT provides a proven training solution for stand-alone, local and long-haul networked training requirements to support an interoperable, scalable and full-spectrum combat training environment.

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Training Devices: Unit-level Trainer Without Motion

Our Unit-Level Trainer (ULT) contains a vibration cueing system (to enhance the motion cueing environment) in a containerized design, permitting transportation via trailer. The transportable module includes the simulator, IOS and Brief/Debrief Station. Our ULT provides an accurate replication of the aircraft and allows for complete aircrew training and mission execution, including system functionality, system emergencies, malfunctions, and degraded system operations.

Maintenance Training

Our maintenance training products provide training and development to the maintenance team and technicians. Working with a variety of tools, students are able to undertake physical, hands-on learning supported by virtual courseware and instruction for real-time training on demand. Robust, high-fidelity physical and virtual environments build the maintenance and technician teams' competence in individual and team air vehicle support. Our maintenance training solutions support the entire range of progressive learning and development, including avionics, electrical interface, fuselage, engine control, flight control, hydraulic and armament systems. Our maintenance solutions are air vehicle-specific, including weapon systems for fighter/attack platforms.

Training Capabilities

- Individual or team training
- High off-boresight weapons employment training
- Digital close air support
- Single-ship and multi-ship employment
- Normal and emergency procedures
- Low-altitude operations
- Mission rehearsal
- Basic air work, formation and local area operations
- Precision target acquisition training
- Airfield takeoff and landings, carrier operations
- Instruments, navigation and all-weather operations
- Night vision goggle training and employment
- Air-to-air and air-to-surface tactical employment training
- Air-to-air and air-to-surface weapons training
- Surface-to-air threat and counter tactics training
- Multi-functional Information Distribution System (MIDS) training

Integrated Visual Environment

Our fighter/attack training solutions provide a realistic, high-fidelity synthetic environment simulation that immerses pilots and crews in high-definition, dynamic training scenarios. The visual solution supports day/night, low-altitude, and all-weather mission training in addition to realistically simulating employment of a full range of weapons and sensors. The virtual world significantly enhances the operational environment being simulated by adding rich, physics-based dynamic behaviors representative of indigenous civilian and insurgent populations.

By adding increased realism and clutter within a simulated urban environment, the warfighter's ability to acquire targets is hampered. Highly interactive physics-based vehicle models offer movement that is more realistic, consistent collision detection and results. Precision weapon effects with improved, more accurate battle damage assessment enhance training knowledge transfer. Our visual solution also allows game-based interactive role players to enter the simulation to perform in a variety of training scenarios.

Accelerated Learning

Today's students are proficient in technology and they expect individualized information for their specific needs. Such students prefer an immersive "learn-by-doing" approach. Our accelerated learning training approach enables advanced learning by using the latest technology to tap into these student preferences.

Accelerated learning approach:

- Revolutionizes the entire training environment (including the structure and content of the curriculum)
- Provides immersive media that delivers realistic training scenarios
- Enables measurement of student performance and the time each student spends in the training environment

CAE's total tailored training solution includes all content and material for advanced and efficient training delivery, required technology and personnel for training operations, and the strength and global presence for ongoing training support.

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