



CAE Tactical Mission Trainer

In today's network-centric environment, the sensors and systems being used to capture data and support operational and tactical decision-making are becoming increasingly complex. Advanced training systems are needed to ensure tactical aircrews such as air combat systems officers, sensor operators, electronic warfare operators, and observers – are mission ready. CAE's Tactical Mission Trainer (TMT) solution provides clarity in a complex world by exploiting advanced synthetic training aids and commercial-off-the-shelf applications to deliver a complete tactical aircrew training environment that is adaptable to new or existing airborne platforms.

CAE TMT Overview

The CAE TMT system enables tactical training support from initial desktop-based procedural training through to advanced mission rehearsal within a common user interface. The system delivers a modular, adaptive training environment that is reconfigurable and can support multiple crew training programs ranging from a single system setup in a classroom configuration to an installation in airborne platforms.

CAE TMT Common interfaces

CAE's TMT system provides a common training interface supporting desktop through to in-aircraft training, which increases the training efficiency experienced as students familiarize themselves with new control panels, consoles, and interfaces at each phase of the training curriculum. A common interface environment from the classroom to the aircraft shortens training times and avoids negative training.

CAE TMT Modularity

The CAE TMT system addresses the diverse training needs of the entire tactical aircrew.

The system's modularity allows the instructor to add new training capabilities as needed. A range of training capability modules are available and can be tailored to provide basic to advanced training.

CAE TMT Flexibility

CAE's TMT has been designed for complete flexibility. The system's flexibility supports multiple roles and platforms, including:

- Basic crew training (undergraduate level);
- Advanced crew conversion/continuation training (graduate level);
- Part task training for mission subsystems (radar, electro-optical/infra-red (EO/IR), communications, Electronic Warfare (EW), Acoustics and data link);
- Unmanned air vehicle (UAV) Sensor operator and mission commander ground control training.

CAE TMT Classroom configuration

The CAE TMT creates a realistic mission environment that simulates all aspects of departure, transit, mission, and recovery. The classroom can consist of any number of networked instructor and student workstations. The instructor can control

multiple student stations, giving each a training scenario to run in isolation or as a crew. Within the training scenario, all aspects of the student's vehicle movement can be pre-determined or dynamically adjusted as required.

The TMT's interfaces can be tailored to faithfully replicate those used operationally. The training system provides sensor simulation of radar, EO/IR, acoustics, and electronic warfare environments to enable training for a diverse range of crew requirements. The instructor can introduce or modify target parameters during the scenario to enhance training value. The TMT system also provides simulated radio communications. Each student can communicate over simulated HF, VHF, UHF, Satcom, and intercom networks as required.



CAE TMT Airborne platform configuration

CAE's TMT system can be installed on an airborne platform. This in-aircraft configuration continues the seamless progression of training complexity into the invaluable mission vehicle training domain. The TMT in the airborne platform uses the same system interfaces and layout as the classroom configuration, but it offers the student the ability to train using actual sensor systems where appropriate. The TMT provides exceptional instructional flexibility with the unique ability to introduce synthetic targets into the real sensors. The instructor has complete control of mission complexity to meet the training requirements.

The TMT is scalable in design and can be tailored to any training platform requirement. The common software for classroom and airborne platform configurations allows for single-version control and dramatically reduced support costs.

CAE TMT Features and Benefits

CAE's TMT is a feature-rich training device designed to meet all non-pilot tactical aircrew training needs. Some of the key features are:

- Reconfigurable interfaces support different sensor and equipment setups;

- Configurable for individual or crew training;
- A networked configuration allows multiple aircraft trainers to operate together in a common scenario from any location;
- Scripted or free play training scenarios and exercises;
- The instructor has full control of all entities in the scenario;
- Instructor-designed scenarios define the gaming area, environmental parameters, other entities, and scripted and triggered events;
- Missions are recorded for after action review and debrief;
- Supports flexible instructor-to-student ratios.

The TMT is designed such that it can be installed as a classroom-based, simulation-driven, training device or in an airborne platform as the training mission system. In the case of the airborne platform installation, the TMT can interface with simulated and/or real mission equipment.



A low risk system in service today

CAE's TMT is currently in use with Ascent Flight Training in the United Kingdom for Royal Navy Observer training. The system consists of a classroom installation of four student and two instructor stations, and a King Air 350ER aircraft installation with two student and two instructor stations on each of four aircraft. CAE was also contracted by the Royal Canadian Air Force (RCAF) to deliver a classroom installation of 24 networked instructor and student workstations and a Bombardier Dash-8 100 aircraft installation with four student and two instructor consoles on each of four aircraft to train Air Combat Systems Officers and Airborne Sensor Operators. The RCAF TMT has also been used to train tactical aircrew from Germany, Singapore, Norway, Australia, New Zealand and South Korea. The U.S. Navy is using CAE's TMT configured as a multi-crew simulator (MCS) equipped with 6 student and 6 instructor stations at their Pensacola base.



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