



T-6C GBTS

Overview

CAE is supporting Beechcraft Defense Company as its international ground-based training systems (GBTS) provider for the Beechcraft T-6C trainer aircraft. CAE has responsibility for designing and developing a comprehensive GBTS for the T-6C, which includes aircrew and maintenance technician training as well as training system logistics support. The overall T-6C GBTS started with a thorough training needs analysis and training system design conducted by Beechcraft and CAE, and since then CAE has been developing the suite of training media and synthetic training equipment for the T-6C platform. CAE is currently partnered with Beechcraft to develop and deliver T-6C ground-based training systems for the Mexican Air Force and Royal New Zealand Air Force.

The T-6C aircraft

The T-6 is versatile, safe, and effective for the most basic flight training tasks. With a top speed of 316 knots and an advanced digital cockpit, it is equally adept at teaching the most advanced aerobatic maneuvers and simulated combat training tasks — tasks that could previously be accomplished only in far more expensive aircraft. The latest T-6C variant incorporates a hard-point wing for external fuel tanks in addition to all the features of previous T-6 variants. To replicate today's advanced frontline aircraft, the cockpit includes a Head-Up Display (HUD), Up-Front Control Panel (UFCP), and hands-on throttle and stick



(HOTAS). An integrated glass cockpit and a state-of-the-art avionics suite greatly expands its training capabilities, enabling advanced systems and information management skills training. To date, Beechcraft's T-6 military trainer has been used to train pilots and navigators from approximately 20 different countries. The aircraft currently serves as the U.S. Air Force and U.S. Navy primary training aircraft, as well as the primary trainer for the NATO Flying Training Canada program, the Hellenic Air Force of Greece, the Iraqi Air Force, and the Israeli Air Force. In 2013, the T-6C trainer aircraft was selected by the Mexican Air Force and Royal New Zealand Air Force.

T-6C computer-based training and courseware

The T-6C computer-based training (CBT) courseware can be used for self-paced instruction as well as during ground-school

classroom training. The T-6C CBT uses commercial-off-the-shelf hardware and software integrated with a Learning Management System (LMS) to provide students with a thorough understanding of the T-6C and its related aircraft and avionics systems. When used in a classroom environment, the instructor can moderate lessons to instruct the entire class. The syllabus progressively trains the student on the T-6C, and each lesson builds upon the previous training. The results for each trainee are captured in the LMS for real-time evaluation. The T-6C CBT and courseware can also be delivered as e-Learning courses over the web.

T-6C mission procedures trainer

The T-6C mission procedures trainer (MPT) is a fixed-based training device used to perform entry-level training tasks and basic cockpit familiarization. It is equipped with a touch-screen display that is used to represent the cockpit instrumentation, as well as a single-channel LCD to provide an out-the-window visual scene. The T-6C MPT also includes a joystick, rudder pedals and throttle quadrant for controls to provide the trainee with a more realistic fixed-based training device. The T-6C MPT runs the same full-fidelity simulation software as the higher level training devices, which helps make the entire suite of T-6C training devices easy to maintain concurrency with aircraft software updates.

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T-6C unit training device

Trainees can progress from the T-6C MPT to the T-6C unit training device (UTD). The T-6C UTD is a full-fidelity T-6C cockpit that is used to train basic flight maneuvers and emergency procedures in a cockpit environment with fully functional panels and controls. The T-6C UTD can be configured with either one or three flat panel displays to provide the out-the-window visual scene. The flight controls are actively loaded and the cockpit features real aircraft grips to provide the same feel as the aircraft. The ejection seat is a replica of the T-6C aircraft seat with electric adjustments to accommodate individual trainees. The instructor can control the flight scenarios via a remote instructor operator station, which features rolling castors for maximum flexibility.

T-6C full-mission simulator/operational flight trainer

The T-6C full-mission simulator (FMS) or Operational Flight Trainer (OFT) is essentially the same cockpit as used in the T-6C UTD, but features a more immersive visual environment surrounding the cockpit. The T-6C FMS/OFT would typically feature a large field-of-view display or up to a complete 360-degree dome display to allow trainees to perform advanced flight maneuvers and formation flying. The T-6C FMS/OFT uses the same software as both the MPT and UTD, thus simplifying concurrency and software updates.



integrated training system that includes two CAE-built T-6C operational flight trainers, computer-based classroom training systems, and courseware customized for RNZAF pilot training. CAE has also established CAE New Zealand Pty Ltd to provide long-term training support and maintenance services at RNZAF Base Ohakea once the GBTS is delivered in 2015. The T-6C GBTS is part of an overall training solution Beechcraft is providing to the RNZAF that includes 11 T-6C Texan II military trainer aircraft and 30 years of logistics support.

Program example

In 2014, Beechcraft awarded CAE contracts to develop and support a comprehensive T-6C GBTS for the Royal New Zealand Air Force (RNZAF). The T-6C GBTS will be an



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