# AT-6 GBTS



## Overview

In 2010, Beechcraft selected CAE USA as its ground-based training systems (GBTS) provider for the Beechcraft AT-6 Light Attack and Armed Reconnaissance (LAAR) aircraft. As part of this agreement, CAE has responsibility for designing and developing a comprehensive GBTS for the AT-6, which includes aircrew, maintenance technician and embedded training solutions. The overall AT-6 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 AT-6 platform.



## The AT-6 aircraft

The Beechcraft AT-6 incorporates the very best of proven training methods and close air support capability to meet light attack and armed reconnaissance requirements. AT-6 capabilities cover a wide-mission spectrum that includes training, manned Intelligence Surveillance and Reconnaissance (ISR) and light precision attack, while at the same time offering non-traditional capabilities for homeland defense and civil support

missions. Based on the proven T-6 aircraft, the AT-6 has been upgraded with a more powerful Pratt and Whitney engine and has been structurally strengthened for a combat role. The primary flight avionics system is provided by CMC Esterline, while Lockheed Martin has leveraged the A-10C mission system in integrating the mission avionics of the AT-6. The result is a plug-and-play mission system architecture that combines state-of-the-art data link, combat communications capabilities, extensive variety of weapons delivery modes and precision weapons tailored for the AT-6.

## AT-6 computer-based training and courseware

Based on the well-established T-6 courseware, the AT-6 computer-based training (CBT) courseware can be used for self-paced instruction as well as during ground-school classroom training. The AT-6 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 AT-6 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 AT-6, and each lesson builds upon the previous training. The results for each trainee are captured in the LMS for real-time evaluation. The AT-6 CBT and courseware can also be delivered as e-Learning courses over the web.



## AT-6 mission procedures trainer

The AT-6 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 AT-6 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 AT-6 MPT runs the same full-fidelity simulation software as the higher level training devices, which helps make the entire suite of AT-6 training devices easy to maintain concurrency with aircraft software updates.

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## AT-6 unit training device

Trainees can progress from the AT-6 MPT to the AT-6 unit training device (UTD). The AT-6 UTD is a full-fidelity AT-6 cockpit that is used to train basic flight maneuvers and emergency procedures in a cockpit environment with fully functional panels and controls. The AT-6 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 AT-6 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.



## AT-6 full-mission simulator

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

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