

CLOSE COMBAT TACTICAL TRAINER (CCTT)



Army ACAT IIIA Program

Total Number of Systems: 10 fixed sites
12 mobile platoon sets

Total Program Cost (TY\$): \$850M

Full-rate production: 4QFY99

Prime Contractor

Lockheed Martin
Orlando, FL

SYSTEM DESCRIPTION & CONTRIBUTION TO JOINT VISION 2010

The Close Combat Tactical Trainer (CCTT), the first of a series of combined arms tactical training simulators, will assist armored and mechanized infantry units in preparing for combat. The use of the Abrams Tank and the Bradley Fighting Vehicle simulators to train soldiers in maneuver and in command and control, while operating in a combined arms environment, is a central component of the *dominant maneuver* force.

The CCTT system consists of a group of fully interactive, networked simulators and command, control, and communications workstations. The system will replicate, through individual manned simulators, Abrams Tanks, Bradley Fighting Vehicles, as well as other vehicles and weapon systems found in or supporting an armored or mechanized infantry company team. CCTT is designed to train from individual crew level through company/team level. Additionally, CCTT will support training of

selected battalion level tasks. CCTT will simulate, in real-time, the conduct of combat operations in a representative environment under varying conditions of visibility and weather, with an appropriate and challenging opposing force requiring realistic individual, crew, and staff actions, placing stress on all participants. This simulation will permit soldiers to train with reduced real world restrictions caused by weapon effects, safety, and terrain limitations.

The system will exist in both fixed-site and mobile versions. The fixed-site version is capable of running five simultaneous platoon-level exercises. The mobile version is road transportable within the United States to provide reserve forces platoon-level training.

BACKGROUND INFORMATION

In May 1992, the Army authorized CCTT to proceed into the EMD phase of acquisition. CCTT IOT&E was conducted from December 1997-June 1998. During this test, baseline performance data were collected at the National Training Center (NTC) from three battalion task forces that did not use CCTT in their training prior to deploying to NTC. Subsequently, a unit that used CCTT in its training prior to deploying to NTC completed a similar series of training exercises. The results of the company team task and sub-unit task performance data for the baseline units and the unit using CCTT were compared to determine if their performance differed. CCTT suitability data were collected over an 11-week period at the Ft. Hood fixed site using company-sized units. Tests were also conducted with the mobile configuration at select military sites in the southeastern United States.

Based upon system performance during IOT&E, the Director assessed CCTT as operationally effective, but not operationally suitable in his November 1998 B-LRIP.

The criteria used to determine CCTT effectiveness were whether units trained with CCTT performed at least as well as units trained without CCTT. At the National Training Center, the performance of CCTT-trained companies exceeded the performance of the baseline companies. The CCTT-trained platoons performed at least as well as the baseline platoons.

While the system met many of its suitability requirements; e.g., completing 90 percent of its training exercises without a system abort, none of the manned modules met the reliability requirement of 200 hours Mean Time Between Essential Function Failure (MTBEFF). MTBEFF values for the manned modules ranged between 30 and 153 hours. Overall, the system demonstrated a 42 percent probability (versus a 90 percent requirement) that no more than 10 percent of each type of manned module was down for more than 30 minutes during a normal training day. Additionally, as a result of system function failures, CCTT experienced frequent short duration interrupts that were excessively disruptive of unit training.

In November 1998, the Army Acquisition Executive authorized full-rate production for CCTT, while directing that CCTT demonstrate operational suitability prior to fielding.

TEST & EVALUATION ACTIVITY

FOT&E 1A was conducted in March 1999 at Ft. Knox, KY. This event was designed to assess CCTT's new image generator as well as its progress towards reducing so-called vehicle flips through improvements in the vehicle dynamics model. Image generator lock-ups were the most frequent

hardware failure noted during IOT&E; while vehicle flips were the most frequent software failure. During FOT&E 1A, image generator performance was considerably improved over its IOT&E performance, with a demonstrated 73 percent reduction in image generator failures. Vehicle flips were also substantially reduced during FOT&E 1A.

TEST & EVALUATION ASSESSMENT

The operational suitability of CCTT remains to be demonstrated. While the results of FOT&E 1A indicated that the program was making progress towards achieving operational suitability, this test was not designed to establish overall system suitability. System suitability will not be fully evaluated until FOT&E 1B, now scheduled for 4QFY00.

The CCTT program plans to implement a series of pre-planned product improvements (P3I) in the coming years. P3I initiatives include improved after action review capabilities, new terrain data bases, and improved semi-automated forces. Additionally, to ensure its training effectiveness, CCTT must be updated as changes are made to currently fielded systems as well as when new combat systems are introduced. Upgraded combat vehicles, such as the BFVS-A3 and M1A2 SEP tank, as well as new platforms and weapons systems, like the C2V, must be incorporated into the system. FBCB2 digital command and control capabilities will also need to be effectively integrated into CCTT. As these capabilities are implemented, CCTT is planned to undergo a number of FOT&E's to verify the effectiveness and suitability of these improvements. Maintaining weapons system currency will be critical to ensuring the continued viability of CCTT as a training tool.

DOT&E will continue to participate with the U.S. Army Test and Evaluation Command and the Training and Doctrine Command in implementing a Long Term Evaluation program aimed at continuous evaluation of CCTT training effectiveness. The focus of the Long Term Evaluation will be to address which combat tasks are best trained in CCTT and how to best incorporate CCTT into a unit's overall training program.

