DEFENSE & SECURITY

Abrams Maintenance Training Systems

Overview

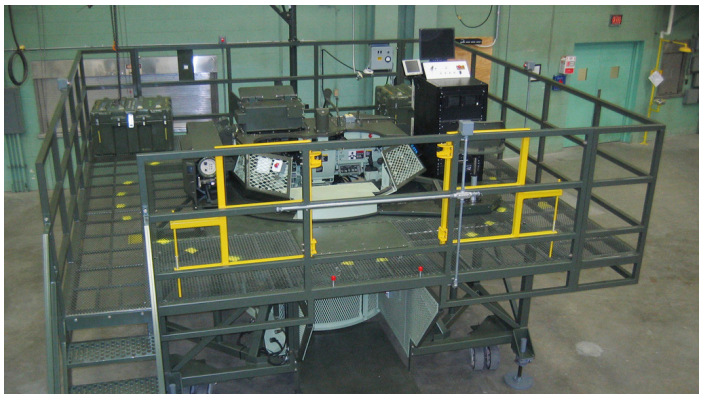
Operating and maintaining a complex military vehicle to support the delivery of combat capability is a difficult and challenging endeavor. While driving and firing a vehicle such as the Abrams main battle tank requires extensive training, so too does maintaining such a complicated combat system. CAE USA works directly with manufacturers and subject matter experts to develop, design and manufacture maintenance training systems that promote the learning process for both the beginner and the seasoned maintainer. CAE USA has worked directly with the U.S. Army to develop a range of Abrams maintenance training systems, including variants such as the baseline M1A2 and the M1A2 System Enhancement Package (SEP). The suite of Abrams M1A2 maintenance training systems include virtual maintenance trainers and hands-on full-fidelity maintenance trainers, including the most recent development of the Abrams live-engine maintenance trainers.

The Abrams Main Battle Tank

The Abrams has been the workhorse main battle tank for the U.S. Army for over four decades. The original M1, the follow-on M1A1 and the latest M1A2/ M1A2 SEP were built by General Dynamics Land Systems and have been core to the Army's ground combat firepower since the first deliveries in 1980. In addition to the U.S. Army and U.S. Marine Corps, other customers for the Abrams tank include countries such as Australia, Morocco, Egypt and several other Middle East countries.

Abrams Maintenance Training Systems

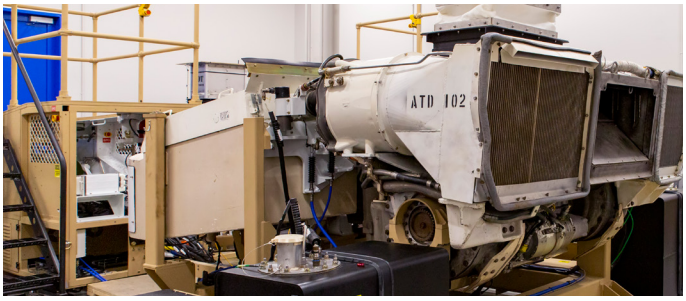
The U.S. Army's objective with its Abrams maintenance training system is to provide skill-level development for system operation, fault diagnosis, troubleshooting, and remove/replace/repair tasks for both armament and vehicle specialty soldiers supporting the Abrams tank. The suite of maintenance trainers, including hands-on trainers (HOTs), the live-engine trainer and desktop virtual trainers, simulate the Abrams tank to help train maintenance personnel in theory, understanding and practice.



Current Abrams M1A2 Program

Live-Engine Maintenance Trainers

In early 2018, CAE USA was awarded a contract by the U.S. Army to develop a suite of new Abrams M1A2 tank engine trainers. These new trainers include a driver station linked with a live-engine maintenance trainer to support diagnostic and troubleshooting maintenance training tasks on the engine. There are more than 80 simulated faults built into the engine maintenance trainer to enable students to troubleshoot and diagnose a range of common practical faults as well as isolated faults with the engine requiring more thorough examination. In addition, CAE developed modern courseware to be used in conjunction with the live-engine maintenance trainer and introduced a new instructor operator station to automate the set-up of training scenarios. A total of 11 new Abrams M1A2 live-engine maintenance trainers were delivered and put into service by the U.S. Army.



Fort Moore, Georgia: Total of 7 live-engine maintenance trainers for the U.S. Army's Armor School that is part of the Maneuver Center of Excellence

Fort Gregg-Adams, Virginia: Total of 2 live-engine maintenance trainers for the Sustainment Center of Excellence

Gowen Field, Idaho: Total of 2 live-engine maintenance trainer for the Regional Training Institute

Following is a sampling of the types of simulated faults built into the Abrams engine maintenance trainer

- Electrical System faults
- Fuel System faults
- System Serial Bus faults
- Pulse Jet System faults
- Engine Start faults
- Engine Performance faults
- Transmission faults

Previous Abrams M1A1/M1A2 Program

Hands-On and Desktop Virtual Maintenance Trainers

CAE USA has previously delivered a suite of Abrams hands-on maintenance trainers as well as Abrams desktop virtual maintenance trainers to the U.S. Army. The Abrams HOTs are full-fidelity trainers that provide a realistic training environment for evaluating and troubleshooting turret mechanics. The desktop virtual maintenance trainers are used in a classroom training environment for basic diagnostic and troubleshooting procedures.

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