

Arjun Tank Training Systems

CAE's comprehensive suite of Arjun tank training systems enhances combat effectiveness by offering systematic training in a real-time environment through advanced simulation techniques. CAE has developed and delivered the initial suite of Arjun tank training systems to efficiently and cost-effectively train the driver, gunner and commander in the Arjun tank. Named after one of the main characters of the famous Indian epic poem Mahabharata, the Arjun is a main battle tank (MBT) developed for the Indian Army by India's Defence Research and Development Organization (DRDO) and India's Combat Vehicles Research and Development Establishment (CVRDE). The Indian Army established the first armoured regiment of the Arjun MBT in 2009 and is in the process of equipping an additional regiment.

CAE's comprehensive suite of Arjun tank training systems offers:

- Standalone training for the driver and gunner;
- Turret level training for the gunner and commander;
- Integrated tank level training for the gunner, commander and driver;
- Troop level training by networking Arjun tank simulators to rehearse troop tactics, movement and joint operations.

Driver Training

CAE's driver trainer for the Arjun provides ab-initio driving and procedural training to individual drivers. Mounted on a six degree-of-freedom (DOF) motion platform, the Arjun driver trainer emulates the interior cabin of the tank with all driver station controls. CAE is also developing a desktop-based Arjun classroom trainer for procedural and familiarization training.



Gunner Training

CAE has developed a comprehensive suite of Arjun gunnery training devices to train personnel as they develop gunnery skills and rehearse for target identification, tracking, lasing, and firing drills. CAE's suite of gunnery trainers includes two separate types and levels of training devices.

Desktop Trainer

CAE's desktop gunnery procedures trainer, also called the Agastya simulator, supports initial training in handling the gunner station and firing procedures. The trainee uses tank specific controls just like in the actual tank for familiarization and procedural training.

Turret Simulator

CAE has developed the Arjun turret simulator to replicate the interior of the gunner and commander station of the tank. Mounted on a six DOF motion platform, the Arjun turret simulator features a 220 degree by 40 degree open hatch visual display to provide trainees with the high-fidelity visual cues required for gunnery training.

Crew Training

CAE's Arjun tank training systems can be networked to provide initial and continuation training to the Arjun commanders, gunners and drivers at the individual, crew, and troop levels. Along with developing individual skills, the Arjun driver and turret simulators create a team environment to support the development of crew teamwork, coordination and tactical skills, decision-making and planning, and crew communications. Through effective training and rehearsal of these skills, the crew will improve its proficiency in working as a team and as part of an entire troop during combat operations.

Key Features

CAE's Arjun tank training systems include the following:

- CAE Medallion-6000 visual system with a detailed and realistic external environment view of actual tank operations.
- Sound simulation system that produces sounds heard during tank operations and in synchronization with the motion and visual cues in the training device.
- Simulation host system for software management and software subsystems that simulate tank behaviour in real-time operations.
- Content rich geo-specific databases.
- Instructor station to conduct training exercises and offer evaluation solutions.
- Interface electronic unit (IEU) that provides a link between tank crew controls and simulation software.
- Networking to connect the Arjun driving and turret simulators.

Instructor Tools

CAE's Arjun tank training systems provide instructors with an intuitive, easy-to-use interface that enables the set-up of lesson parameters and trainee exercises, monitoring of the progress of the exercise, and full exercise control. The instructor can select the scenario (including target designation), insert malfunctions, and record and replay the exercise. Furthermore, the instructor is able to access the same views as the trainee, such as control of own and enemy tracks. CAE provides a facility for briefing and debriefing of training sessions. Gunner's training exercises can be conducted both in plains and desert terrain to include bore sighting, calibration, static tank to static target, static tank to moving target, moving tank to static target, moving tank to moving target, and moving tank to moving target firing practices.



Gunner station

Day and Thermal Imagery

CAE's Arjun tank training systems display realistic battlefield environments by day and night (using thermal imagery) created with a CAE Medallion-6000 commercial-off-the-shelf (COTS) image generator. The visuals are synchronized with the gunner's action. Each Arjun gunnery training device has piped optics that emulate actual sights.

Other visual features include:

- Static and dynamic targets;
- Desert and plains terrain;
- Environmental effects and special effects, such as fire, smoke and dust;
- Super imposed text display in thermal imagery;
- A comprehensive object library.



Arjun turret simulators

Realistic Sound Simulation

CAE's Arjun tank training systems offer realistic sound profiles, such as:

- Detonation and departure of rounds;
- Breech open / closing sound;
- Battle tank engine noise;
- Hydraulic power pack noise;
- Sounds that emulate the movement of turret, gun and tank under various speeds and terrain conditions;
- Ejection noise of fired cases;
- Firing hit sounds.



Arjun driver simulator

Mobility and Flexibility

CAE's Arjun tank training systems can be fitted in air-conditioned ISO containers that can be easily transported to different training locations or in-theatre. CAE's Arjun tank training systems can be modified with minimum adjustments for use with any infantry combat vehicle (ICV) gun, self-propelled artillery, present day tank guns and normal field artillery.



Arjun container

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