

Modern Warrior: Upgrading the British Army's infantry fighting vehicle

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Sam Cranny-Evans examines how the British Army Warrior is being upgraded to meet the needs of a modern battlefield

The Warrior Capability Sustainment Programme (WCSP) is the UK's effort to upgrade and modernise the only infantry fighting vehicle (IFV) it has in service.

Warrior, or FV510 as the IFV variant is known within the British Army, entered service in 1988. The Warrior family was designed to provide the UK's heavy armoured forces, primarily equipped with Challenger 1 main battle tanks (MBTs), with an IFV that could counter similar vehicles in use with Soviet forces. For this, it was armed with a 30 mm RARDEN cannon, an unstabilised weapon designed to be accurate when stationary.



A close-up of the Warrior 2 turret. The commander's and gunner's sights are just visible. (IHS Markit/Patrick Allen)

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RARDEN was designed to defeat a BMP in a single three-round burst but its ultimate rate of fire is limited as it is manually fed with clips of three rounds (two per magazine) and cannot fire on the move. This and other limitations of the original Warrior led to a requirement for the WCSP, which was launched in 2005, and in 2011 Lockheed Martin UK (LMUK) was awarded a GBP300 million (USD371 million) contract to develop the WCSP for the British Army.

By August 2018 LMUK had completed the integration of its turret onto 11 legacy Warrior hulls and shipped the vehicles to the UK's Armour Development and Trials Unit in Bovington, Dorset, for Reliability and Growth Trials (RGT). The WCSP became the first vehicle to enter RGT with a main armament since the Challenger 2 MBT in the early 1990s, Lee Fellows, the WCSP programme director, told *Jane's*. It then completed its first 20 battlefield missions (BFM), which are used to assess its ability to meet reliability requirements. About 100 more BFMs are to be completed before design acceptance, Fellows said, adding that the process is "grinding reliability into the platform".

A new turret

The core of the offering is the turret, which was designed and built by LMUK with the assistance of 27 other companies, including BAE Systems, Elbit Systems, and CTA International (CTAI: a joint venture between BAE Systems and Nexter Systems). The turret is a manned design intended to accommodate a commander and gunner on the right and left respectively. Peter Somerville, the business development manager for LMUK, explained that the turret was designed to accommodate the 95th percentile infantry soldier. The turret's hatches are designed so they can be easily lifted, and other elements are designed to ensure that male and female operatives can use them without adjustment, he added.

The turret is built from welded aluminium armour. It has distinctive vertical sides and the 40 mm Cased Telescoped Armament System (CTAS or CT40), developed by CTAI, is installed off centre to the left of the turret.

This configuration is so the ammunition handling system (AHS), which is a bespoke design built by Meggitt Defense Systems for the UK's Warrior and Ajax programmes, can be installed on the right of the turret. The AHS for WCSP is designed to carry 70 rounds, according to Meggitt data at the time of writing, and an access hatch is provided in the right side of the turret so further rounds can be reloaded as required.

Meggitt has said the AHS uses its linear linkless technology: each round is handled individually without a metal link or belt, which reduces the likelihood of snags or stoppages. The AHS stores the ammunition in what the company has described as a "serpentine" arrangement to make the most of the available space.

According to LMUK, the AHS enables the ammunition nature to be selected by either the gunner or commander via a switch. Once the round reaches the CT40, it is rotated and inserted into the breech by the 'introducer', where it pushes the previous casing out of the weapon. The spent casing is

then ejected from a port on the left of the turret. The new round is rotated to face the direction of fire and then fired before the process starts again.

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