ARCHIVED REPORT

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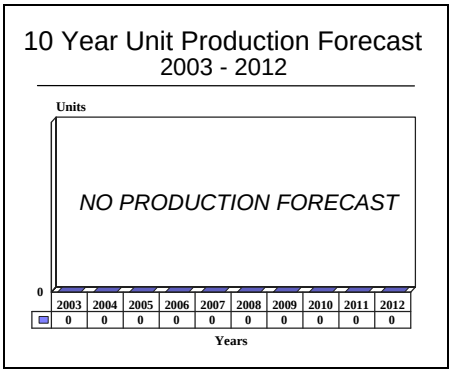
FV510 Warrior and Warrior 2000 - Archived 6/2004

Outlook

- Production complete for the British Army requirement, and for first export order
- The FV510 continues to be heavily promoted on the export market as the Warrior 2000
- There will be new modernization and retrofit opportunities for this vehicle



Orientation

Description. A tracked vehicle.

Sponsor. The development and British Army procurement of the FV510 Warrior has been sponsored by the United Kingdom Ministry of Defence through the Ministry of Defence Procurement Executive, Ministry of Defence Army Department (land weapons) and the British Army.

Contractors. The Warrior was developed and manufactured by GKN Defence, Telford, Shropshire, England, United Kingdom. In late 1998, (then) Alvis Vehicles Limited acquired the military vehicles business of GKN Defence, and now, as Alvis Vickers, is considered the prime contractor. Major subcontractors include Alliant Techsystems, the Allison Transmission Division of General Motors Corporation, Chubb Fire Security, Pilkington PE, Perkins Engines Limited, RO Defence (Royal Ordnance), and William Cook Defence.

Licensees. None

Status. The serial production of the FV510 Warrior is dormant following the final deliveries for the first export order in 1997. The Warrior is in service in the British Army and with one export customer; development and marketing (as the Warrior 2000) continue.

Total Produced. As of January 1, 2003, a total of 1,053 FV510 Warrior vehicles had been manufactured. Three Warrior 2000 prototype vehicles also had been manufactured.

Application. A mechanized infantry combat vehicle designed to transport infantry in the battlefield as well as to be able to conduct defensive and offensive missions as required. The FV510 was developed as a basis for a family of vehicles to replace FV432 armored personnel carriers and other vehicles in the United Kingdom.

Price Range. In equivalent 2003 United States dollars, the unit price of the FV510 is $2.405 million for the basic vehicle with standard armament. The Warrior 2000 equipped with the LAV-30 turret, enhanced armor suite, and uprated engine has a projected unit price of $2.708 million.

Technical Data

Crew. Two: driver and commander, along with eight infantrymen.

Dimensions. The following data are for the production-standard FV510 fitted with the 30 millimeter cannon and appliqué armor.

	SI units	US units
Length:	6.34 meters	20.80 feet
Width:	3.03 meters	9.94 feet
Height:	2.79 meters	9.15 feet
Combat weight:	28.0 tonnes	30.86 tons
Fuel capacity:	772 liters	205.32 gallons

Performance. The Warrior has no amphibious capability, as none is desired by the British Army. The automotive performance is on a metaled road.

	SI units	US units
Maximum range:	660 kilometers	409.8 statute miles
Step:	75 centimeters	2.46 feet
Trench:	2.5 meters	8.2 feet
Slope:	40%	40%
Gradient:	60%	60%
Fording:	1.3 meters	4.27 feet

Engine. The FV510 Warrior is equipped with the Perkins Engines Condor CV-8TCA eight-cylinder, liquid-cooled, supercharged diesel engine rated at 410.3 kilowatts (550 horsepower) at 38.34 revolutions per second (2,300 revolutions per minute). The power-to-weight ratio is 14.65 kilowatts per tonne (17.82 horsepower per ton). A 24 volt electrical system with a Lucas 300 ampere oilspray-cooled alternator and six 12 volt batteries are fitted. The alternator is driven by the engine power take-off mechanism.

Gearbox. This vehicle uses the Allison Transmission Division of General Motors Corporation X-300-4B automatic gearbox with four forward and two reverse gears; the gearbox is manufactured under license by Perkins Engines. A torque converter and lock-up clutch are fitted, and the power-assisted braking system is integral to the gearbox. It uses differential steering by a variable hydrostatic drive.

Suspension and Running Gear. The FV510 uses torsion bar suspension with six aluminum roadwheels and three track-return rollers on each side. The hydraulic shock dampers are built into the suspension pivot housing; they are positioned at the first, second, and sixth roadwheel stations. The 45.9 centimeter track assembly and sprocket assembly is provided by William Cook Defence.

Armament. The basic vehicle is fitted with the L21 RARDEN cannon in a fully powered turret with manual backups. The L21 is a 30 millimeter cannon that is in an unstabilized mounting; it was developed and is manufactured by RO Defence (Royal Ordnance). A single 7.62 millimeter L94A1 machine gun (EX-34 Chain Gun®) comprises the secondary armament. A total of 250 30 millimeter rounds are carried, while 2,000 rounds of 7.62 millimeter ammunition are carried. Two banks of four smoke grenade launchers are fitted on the sides of the turret.

Fire Control. Both the commander and gunner are provided with the Pilkington Optronics dual magnification (x1 and x8 – day/x2 and x6 – night) Raven sight. The commander's sight has a greater degree of traverse.

Variants/Upgrades

Variants. A number of variants of the Warrior are in various stages of development both as a private venture and for the British Army.

MCV/S. The section vehicle as described above; this vehicle comprises the majority of the British inventory.

MCV/C. Three different command vehicle variants of the Warrior are in the British Army inventory. These vehicles are manufactured as described above, with the additional communications equipment integrated by the British Army in its workshops. Otherwise, the platoon,

company, and battalion command vehicles are the same as the basic vehicle.

MCV/MRV(R) - FV513. An armored recovery vehicle with a hydraulically operated dozer blade at the front, a crane with a 6.5 tonne capacity, a capstan winch, an earth anchoring system, and a 7.62 millimeter L94A1 machine gun in a cupola. The British Army ordered a total of 67.

MCV/MCRV - FV512. This vehicle, almost identical to the FV513, is a mechanized combat repair vehicle with a hydraulic crane with an extendable jib mounted at the rear. The anchoring device and recovery winch of the FV513 are not included on this vehicle. A cupola-mounted L94A1 7.62 millimeter machine gun is fitted. The FV512 is often used to tow the T4 high-mobility trailer, which has a maximum laden weight of 10.5 tonnes (11.57 tons); the payload is often a complete powerpack for the FV4034 Challenger 1 tank.

MCV/MOR. A mortar carrier with an 81 millimeter mortar mounted at the rear. A cupola on top of this vehicle mounts a 7.62 millimeter machine gun.

MCV/AC (MAOV). A mechanized artillery observation vehicle that entered service in 1990. Although similar to the basic vehicle, the 30 millimeter cannon is a dummy. The observer is provided with a Pilkington PE Osprey day/night thermal viewer with integral laser rangefinder. The standard Raven sight is also provided for the assistant observer, and a remote display for the thermal imaging system is located between the observer and assistant observer's positions. Also fitted to this variant is the former Ferranti FIN 1150 inertial land navigation and attitude reference system, the Battlefield Artillery Target Engagement System, and the new Man-portable Surveillance and Target Acquisition Radar system.

MCV/Engineer. A mechanized engineer combat vehicle with a cupola-mounted 7.62 millimeter machine gun and the EMI Ranger anti-personnel mine-dispensing system. The British Army ordered a total of 110.

Alvis Vickers' Variants. The contractor Alvis Vickers has a number of other vehicles based on the Warrior in various stages of development:

MCV/APC90. An austere version fitted with a one-man cupola and single 7.62 millimeter machine gun.

MCV/ATGW. An anti-tank guided-missile launcher. Missiles such as Swingfire and MILAN were originally contemplated. The HOT ATGW Warrior, the first version of this Warrior version to be developed, integrates the one-man Euromissile HOT Compact Turret with four missiles at the ready, with 14 additional HOT missiles in reserve. For the Second Gulf War, the British Army funded the development and integration of the Euromissile MILAN launcher with the Warrior. The contract was awarded on October 22, 1990, and the first kits were delivered a week later. The integration of the long-range component of the PARS 3 (TRIGAT) anti-tank missile system with the Warrior has been proposed; this system would mount the missile launcher and associated sighting system on an elevating arm.

MCV/AA. A self-propelled anti-aircraft system with twin 30 millimeter cannon mounted in a turret. Elevation is +85°, depression is -5°, and traverse is 360°. The Thales (formerly Thomson-CSF) Sabre turret with twin Örlikon KCB-B 30 millimeter cannon has been selected for this version of the Warrior.

MCV/SAML. This proposed variant is a self-propelled Rapier missile carrier/launcher with eight missiles in ready-to-launch position.

MCV/RECCE. This variant was originally conceived as an armed reconnaissance vehicle fitted with 75 or 90 millimeter cannon. The MCV/CM 90 was the original designation for the Warrior when integrated with the Cockerill CM 90 two-man power-operated turret and Mark III 90 millimeter gun. It is fitted with a two-axis power stabilization drive system from Textron Marine and Land Systems and an OIP fire control system. A 7.62 millimeter machine gun is coaxially mounted. This integration/test program was carried out in 1984 at the request of an unidentified Middle Eastern nation.

More recently, a different reconnaissance version of the Warrior has been developed. Under a private effort, the Desert Warrior (Reconnaissance) vehicle has been developed by the contractor Alvis Vickers. First shown at the 1996 European Fighting Vehicle Symposium, this new version is based on a shortened (the fourth roadwheel has been eliminated) chassis, with the same automotive components. The Intervehicular Information System is fitted in order to share information with the command net as well as other vehicles. This vehicle is fitted with the electrically operated Delco Light Armored Vehicle 25 turret armed with the stabilized M242 cannon and the BGM-71 TOW launcher, with one launch tube mounted on each side of the turret. A variety of sensors are available. The vehicle's level of protection has been significantly enhanced. This new version of the Warrior has been tested in the Middle East by an undisclosed nation.

MCV/105. This proposed variant is a 29 tonne tank with 105 millimeter cannon. More recently, this paper proposal has called for the integration of the Denel LMT 105 turret mounting the GT7, a 51 caliber 105 millimeter tank cannon that is ballistically identical to the L7. This light tank has been proposed to Malaysia, the Republic of China, and Thailand.

MCV/MLRS. This proposed variant is a stretched chassis vehicle fitted with the Lockheed Martin M270 227 millimeter Multiple Launch Rocket System launcher.

MCV/MLC. This proposed variant is a modular load carrier on a stretched chassis.

Desert Warrior/Fahris. At the 1986 British Army Equipment Exhibition, a new version of the Warrior developed especially for the export market was shown for the first time. Called the Desert Fighting Vehicle or the Desert Warrior and named Fahris, this version of the Warrior integrates either the two-man turret from Vickers Defence Systems armed with the M242 25 millimeter cannon or the CM 25 two-man turret from Cockerill armed with the 25 millimeter KBB cannon. Another option is the integration of the Delco Light Armored Vehicle 25 turret armed with the stabilized M242 cannon and the BGM-71 TOW launcher. The engine is slightly modified so that it can operate at higher ambient temperatures. An option is enhanced fire control equipment, including a thermal imaging system. Additional storage capacity, a combined air conditioning and nuclear, biological, and chemical defense system, and an auxiliary power unit are available. In addition, revised seating arrangements are offered, as are a modified door and modified firing ports.

The 254-unit order from Kuwait was for a modified version of the Desert Warrior model. The Kuwaiti vehicles are fitted with the Delco Light Armored Vehicle 25 turret armed with the stabilized M242 cannon and the BGM-71 TOW launcher, with one launch tube mounted on each side of the turret. The turret and chassis are fitted with additional armor and the firing ports are deleted. The driver's position is fitted with a redesigned hatch cover in which three periscopes are mounted in order to improve visibility; the center periscope can be replaced with a night vision device as needed. An engine-driven air conditioning system is fitted, as is an overpressure nuclear, biological, and chemical protection system. The Condor engine has been further modified for the high temperatures encountered in Kuwait.

Arctic Warrior. This model of the Warrior is similar to the Desert Warrior/Fahris described above except that the air conditioning system is replaced by a high-performance heater which operates off the main fuel supply. This model was developed for the Norwegian competition for a new mechanized infantry combat vehicle; the competition was won by a version of the Stridsfordon 90.

Low Profile Warrior. This version of the Warrior was developed for the British Army's now defunct Future Family of Light Armored Vehicles competition. The first application of this version of the Warrior was the integration of the ADATS air defense/anti-tank missile system, revealed in July 1988.

Warrior 2000. This version of the Warrior was developed specifically for Switzerland, which had a requirement for 310 vehicles of this type under the Schützenpanzer 2000 program. The Swiss had evaluated the original FV510 Warrior and found it deficient in several ways:

- Too low power-to-weight ratio
- Level of armor protection not up to requirements
- Inadequate access (the rear door was considered unacceptable)
- Inadequate turret and armament suite
- Deficient driver's station

The contractor went to work and, using the Desert Warrior as the base, developed what has come to be known as Warrior 2000. The main feature of Warrior 2000 is the Delco LAV-30 fully powered two-man turret. This all-electric turret mounts a two-axis stabilized Bushmaster II 30 millimeter cannon and a coaxially mounted 7.62x51 machine gun. The vehicle uses inward-sloping smooth surfaces, and is slightly longer, at 23 centimeters (9.05 inches), and heavier, at 2.4 tonnes (2.65 tons), than the original FV510. Incorporated into the turret are a digital fire control system with second-generation thermal sights, a color camera with automatic tracking capability, and a display for the commander. A power-operated ramp replaces the rear door for easier access to the vehicle. A redesigned driver's hatch is fitted; the driver's station has been redesigned and now includes an option for a night-driving periscope. Additional spaced armor is mounted on the front and sides of the vehicle.

To address the greater weight of the new version of the Warrior, the output of the Perkins Condor CV-8TCA diesel engine has been increased to 484.71 kilowatts (650 horsepower). The engine cooling system is improved over that of the original FV510. Finally, a new, more durable design double pin track is used on the Warrior 2000.

The Warrior 2000 was shortlisted by Switzerland along with the Stridsfordon 9030 and Kuka AM-12, an upgraded Schützenpanzer Marder. The Stridsfordon 90 won this competition in April 1999, but the contractor Alvis has continued to market the Warrior 2000 to other nations.

One version that has generated a good deal of interest has been developed from the MCV/105 as described above. This variant mounts a 105 millimeter tank gun, specifically the Denel LMT 105 turret mounting the

GT7, a 51 caliber 105 millimeter tank cannon that is ballistically identical to the L7. This light tank has been investigated by the Republic of China.

More recently, the contractor Alvis Vickers has integrated the Hagglunds Vehicle E30 turret as fitted to the Stridsfordon 9030 with the Warrior 2000. This all-electric turret features digitized components and has the Alliant Techsystems Bushmaster II 30/40 millimeter cannon in a stabilized mount and a coaxially mounted M2HB machine gun.

Vehicle Electronics Research Defence Initiative-1 and -2. As part of the British Army's ongoing Vehicle Electronics Research Defence Initiative program, a FV510 Warrior has been modified in order to evaluate program components. The present Vehicle Electronics Research Defence Initiative –2 effort follows the earlier Vehicle Electronics Research Defence Initiative –1 effort, which was more limited in nature. For the –2 program, the Warrior vehicle is modified with components that demonstrate the technology related to a new armed reconnaissance vehicle operated by a two-man crew. A mast-mounted sensor suite is integrated with the vehicle, as are a number of other advanced-design electronic components such as two infrared cameras, inertial-type and Global Position System-based navigation and position systems, an eye-safe laser rangefinder, and a fiber-optics-based command and control databus. While the Vehicle Electronics Research Defence Initiative –1 and –2 programs are trial vehicles only and will not lead to a production vehicle, some of the technology developed under the two-phased program was expected to be incorporated into the vehicle that was being developed under the Tactical Reconnaissance Armored Combat Equipment Requirement program.

Modernization and Retrofit Overview. Other than for the special programs related to the Second Gulf War, the MILAN integration and the Battle Group Thermal Imaging program, both described below, no major modernization or retrofit programs are in effect or planned for the Warrior. While a mid-life upgrade program had been in development, in late 1999 it was decided to not implement such a program but to wait for the Future Infantry Fighting Vehicle to enter service around 2012.

In September 1995, the AST Group was awarded a contract to strip, treat, and repaint 200 FV510 vehicles. While this was reportedly part of a hull corrosion program, a new chemical resistant coating/paint was applied to the vehicles as well.

Armor. The Warrior vehicles used in the Persian Gulf War were fitted with additional appliqué armor developed and manufactured by RO Defence. This effort was conducted in Saudi Arabia. This armor suite has subsequently become standard on all Warrior vehicles.

Pipe Fascine. In order to allow the Warrior to breach trench-type defenses, a number of the vehicles were fitted with pipe fascines. These were retrofitted by the British Army in Saudi Arabia, with components supplied locally and from the United Kingdom.

Satellite Navigation Aids. A number of section and infantry command Warriors were retrofitted with the specialized NAVSTAR Global Positioning System receivers for use in the desert.

Battlefield Identification. Following a renewed effort by NATO to adopt a common and interoperable combat identification system, the British Army should retrofit the system to its inventory of Warrior vehicles.

Mineclearing Attachments. The Warrior can be field-fitted with either the UDK-2 Combat Dozer Blade or the Pearson Engineering Mine Plough. More recently, as a result of the British Army's operations in Bosnia-Herzegovina, the Warrior has been test-fitted with the APC Mine Roller equipment, a product of Pearson Engineering.

Maintenance Free Batteries. Soon after the British Army deployed the Warrior to Saudi Arabia, the crews began to experience trouble with the standard pattern batteries, which are not optimized for desert conditions. The standard batteries were replaced with no-maintenance types, and no further problems were reported.

Thermal Imaging System. Under the two-phase Battle Group Thermal Imaging program, the British Army is retrofitting a thermal imaging system from Thales Optronics to the FV510. The Group 1 portion of the contract addresses 450 Warrior FV510 vehicles, while the Group 2 portion covers 100 FV513 Mechanized Repair and Recovery vehicles. The program, which began in early 2003, replaces the existing image intensification sights with a new day/night gunner's sight with thermal imaging component and an eye-safe laser rangefinder.

A number of other minor modifications were carried out in the field by the British Army. One major retrofit program, the integration of an air conditioning system, was begun, but the rapid termination of hostilities precluded the units from being delivered.

More recently, some additional upgrades for the Warrior are being considered; chief among these is the retrofit of a stabilization system and the possible fitting of a new turret and armament.

Program Review

Background. In the early 1970s, it became apparent that the United Kingdom would have to augment and eventually replace its aging FV432 armored personnel carriers by the mid-1980s. In 1972, a contract was issued to what was then known as GKN Sankey to develop the new vehicle, originally designated MCV-80 under General Staff Requirement 3533. GKN Sankey had produced over 1,250 units of the FV432 armored personnel carrier. During the late 1970s, procurement studies compared the United States' new M2 Bradley Infantry Fighting Vehicle and the MCV-80. By early 1980, three prototypes of the MCV-80 were being evaluated, and a final selection, in favor of the GKN Sankey design, was made in June of that year. In mid 1985, the MCV-80 was named the FV510 Warrior.

GKN Sankey received an initial production contract for the first 290 vehicles in early 1985. The rest of the vehicles were procured under competitive contracts, the first time such a process had been used in the United Kingdom. While such an action did not please GKN Sankey, which invested a considerable amount of its time and money in developing the Warrior, the second and third contracts, bringing the originally planned total procurement objective to 1,053 vehicles, were awarded to GKN Sankey in June 1985. The firm subsequently changed its name to GKN Defence, and in 1998 was acquired by Alvis Vehicles Limited, now known as Alvis Vickers.

VehicleDescription. Despite the fact that the main armament is not stabilized, the FV510 Warrior is a vast improvement over the FV432 series of vehicles. The all welded aluminum hull affords increased protection against small arms projectiles and ballistic fragments, while the troops are given greater nuclear, biological, and chemical protection as well as improved viewing through periscopes mounted at strategic points. The driver is seated at the front of the vehicle on the left side with the powerpack to his right. He is provided with a single piece hatch cover and a wide-angle periscope which can be replaced with a passive image intensification device for night driving. The troop compartment is accessed through two doors at the rear of the vehicle. Additionally, two roof hatches are positioned over the compartment. However, there is no provision for the troops to fire their personal weapons from within the vehicle. The two-man turret is of welded steel construction and seats the commander on the right and the gunner on the left. The turret is located in the center of the vehicle slightly offset to the left. Both crew members are provided with hatches, with Pilkington PE providing the Raven day/night sight, a third-generation image intensification device; each vehicle has two sights. A 30 millimeter RARDEN cannon is the standard armament, with a Alliant Techsystems 7.62 millimeter L94A1 machine gun (the British designation for the EX-34 Chain Gun®R) mounted coaxially with the main armament. The turret has power traverse with a manual backup.

The suspension is a torsion bar type, and the six aluminum roadwheels are covered with rubber tires. Shock dampers are fitted on the first and sixth wheel stations. Standard equipment on the Warrior includes a nuclear, biological, and chemical defense system, day/night vision equipment, and interior/exterior storage capacity. Chubb Fire Security provides the engine fire protection system, which is a Halon type with a backup and a remote (outside vehicle) activation capability. In addition, three handheld extinguishers are carried internally and two externally.

Operational Analysis. The Warrior's baptism by fire took place in 1991 when the British Army used the vehicle in the Second Gulf War. All versions of the Warrior were used, including the MCV/AC mechanized artillery observation vehicle and the MILAN conversions. Passive armor suites were added to the Warriors in Saudi Arabia. Other specialized retrofits are described above. All reports indicate that, despite its unstabilized main armament, the Warrior's performance in the war was exemplary. It was highly survivable and lively on the battlefield yet easy to operate and maintain. Its effectiveness is again being tested in the war in Iraq as this report goes to press.

Funding

Funding for the final development and procurement of the FV510 Warrior has been provided by the United Kingdom Ministry of Defence through the British Army.

In September 1991, the United Kingdom Ministry of Defence announced that it was cutting the 1,053 planned procurement objective for the FV510 to slightly less than 700 units. GKN Defence stated that it would initiate a multimillion-pound compensation claim against the government. The firm stated that it would seek compensation for lost profit as well as possible redundancy payments. Largely as a result of this proposed action, an order for 100 additional Warriors was placed in November 1991. The procurement objective was changed to 789 units.

Recent Contracts

Not available, as contractual information is not released.

Timetable

Month	Year	Major Development
	1969	Initial requirement issued
	1977	New requirement – General Staff Requirement 3533 – issued
November	1977	Design initiated
Mid	1979	First prototype completed (test rig)
	1980	Second and third prototypes completed (test rigs)
	1981	First actual full prototypes completed
June	1982	First public display of MCV-80
April	1984	Production go-ahead given
July	1985	MCV-80 named Warrior
July	1986	Fahris first shown
May	1987	First production deliveries
Early	1991	Warrior used in combat in Persian Gulf War
September	1991	Procurement objective reduced to less than 700 units
December	1991	Additional 100 Warrior vehicles ordered
August	1993	Warrior ordered by Kuwait
March	1995	Last deliveries to the British Army
Mid	1996	Desert Warrior (Reconnaissance) unveiled
	1997	Development of Warrior 2000 begun
Mid	2003	Production dormant; development, marketing continue

Worldwide Distribution

Export Potential. GKN Defence's FV432 did not garner any international sales. While this was not expected to preclude market penetration by the FV510, we never believed that GKN Defence would significantly dent this market with the Warrior. In 1988, the Warrior was under competitive evaluation against the M2 Bradley for a potential 400-unit order from Kuwait. This competition was won by the Warrior in early 1993 when an order for 254 vehicles was announced. It was also under evaluation in Turkey, where the Warrior is known as Savasci, but it lost out in that competition to the Armored Infantry Fighting Vehicle from United Defense. The Warrior also failed to be shortlisted by Norway. The Warrior has also been heavily promoted in Jordan, which possibly sponsored the development of one or more of the specialized variants described above. And as noted above, the Warrior 2000 was shortlisted for the Swiss requirement for a new mechanized infantry combat vehicle but lost out to the Stridsfordon 90. Of course, since the program is now under Alvis Vickers, the Warrior apparently has lost out to one of the firm's other products. Other nations that have an active interest in some version of the Warrior include Malaysia and Saudi Arabia.

Countries. The Warrior is in service with **Kuwait** (254) and the **United Kingdom** (789).

Forecast Rationale

As of mid-2003, the serial production of the Warrior remains dormant, as it has for some years now. However, Alvis Vickers continues its rather vigorous worldwide marketing effort, albeit for the Warrior 2000, and the program is far from dead as a competitor.

Although our forecasts are, out of necessity, conservative, and we are currently forecasting no production, it is still probable that some export nation will respond to the strong marketing effort and place an order for the Warrior 2000 or one of its variants within the next few years. The Warrior 2000 addresses one of the main

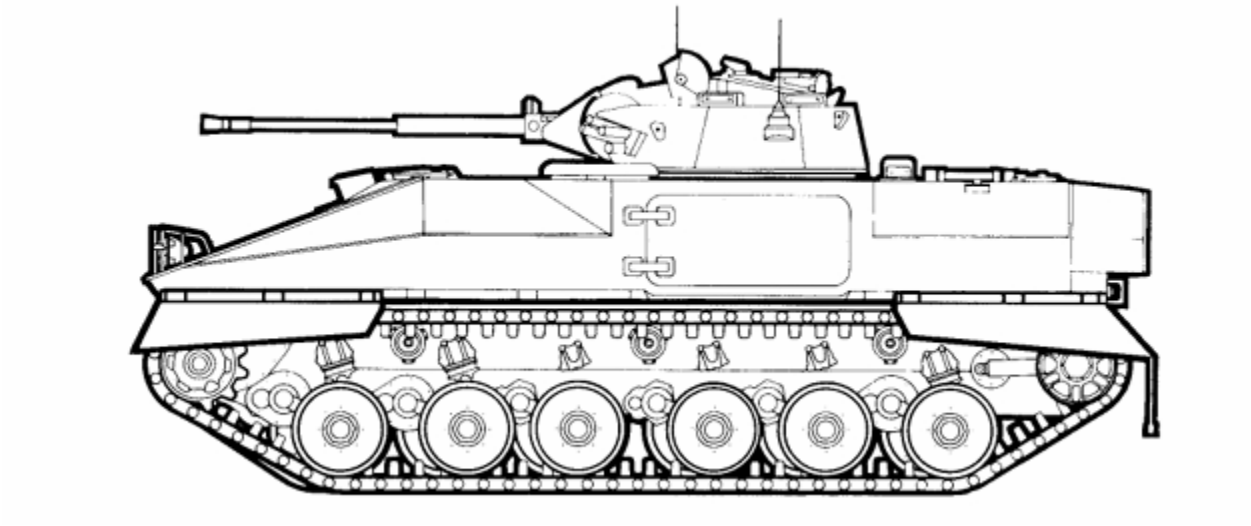
concerns over this vehicle, the lack of a stabilization system for the main armament. In fact, international interest in the Warrior 2000, the Warrior Light Tank, and the Desert Warrior has been rather high, a development that warrants further observation. We will, of course, continue to monitor this program and will issue an interim report if warranted.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR PRODUCTION

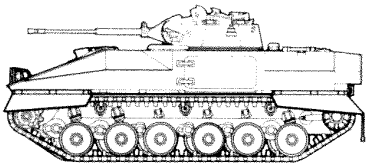
			High Confidence Level			Good Confidence Level				Speculative			
Vehicle	**(Engine)**	**thru 03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**	**13**	**Total 04-13**
ALVIS VICKERS LIMITED													
FV510 [a]	CONDOR V8-CA	799	0	0	0	0	0	0	0	0	0	0	0
FV510 [b]	CONDOR V8-CA	254	0	0	0	0	0	0	0	0	0	0	0
WARRIOR 2000 [c]	CONDOR V8-CA	3	0	0	0	0	0	0	0	0	0	0	0
Total Production		1056	0	0	0	0	0	0	0	0	0	0	0

(a) The historical production includes ten prototype and developmental vehicles. Production shown is for the British Army procurement only.
(b) This production is for Kuwait only.
(c) The through 2003 production reflects the initial prototype vehicles.

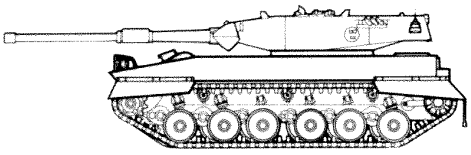


FV510 WARRIOR

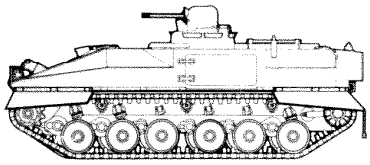
Source: Alvis Unlimited



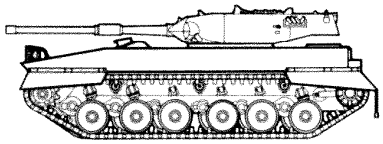
MCV/P Platoon Vehicle



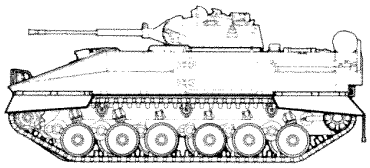
MCV/105 30 tonne Battle Tank



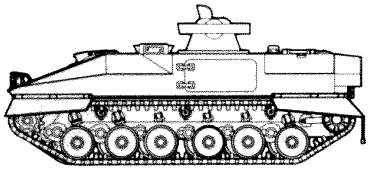
MCV/APC Armoured Personnel Carrier



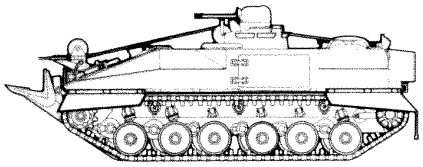
MCV/Recce (75/90mm) Reconnaissance Vehicle



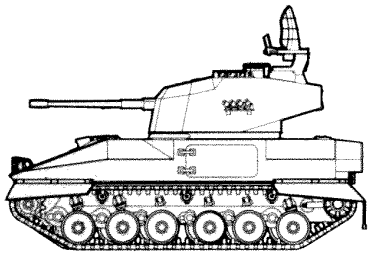
MCV/C/MCV/AC Command Vehicle



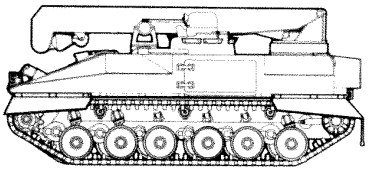
MCV/ATGW Anti-Tank Guided WeaponsVehicle



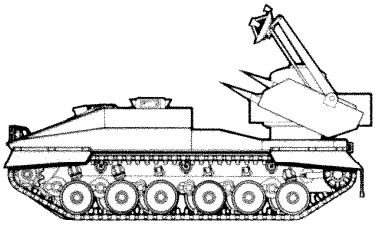
MCV/MRV Recovery Vehicle



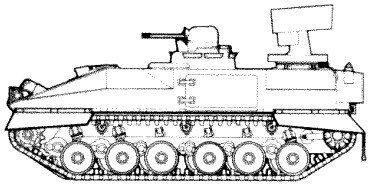
MCV/AA Anti-Aircraft Vehicle



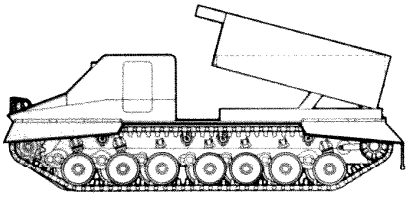
MCV/CRV Combat Repair Vehicle



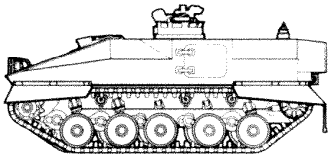
MCV/SAML Surface-to-Air Missile Launcher



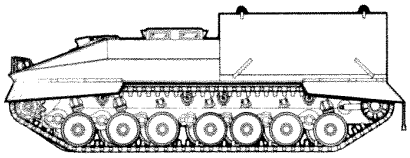
MCV/MOR Mortar Vehicle



MCV/MLRS Multiple Launch Rocket Systems



APC 90 Armoured Personnel Carrier



MCV/MLC Modular Load Carrier

Source: Alvis Limited