

## MODERN BRITISH ARMY EQUIPMENT (1950's – 2000)

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While concentrating on the period from the 1970's to date (especially for non-AFV vehicles and weapons), material on armoured vehicles of various types goes back to post-war equipment. World War II-era AFV's and B vehicles remained in use into the 1950's.

### ARMOURED VEHICLES

#### TANKS

**Challenger 2 MBT** Improvement on Challenger 1, with turret of new design, uprated Chobham armour, and other improvements. Armed with 120mm L30 CHARM gun (52 rounds), coaxial and turret-mounted 7.62mm MGs. Deliveries began 1994. First regiment re-equipped 1996 (R Scots Dragoon Guards) and second in 1997 (2<sup>nd</sup> RTR). Production was scheduled to halt in 2000, by which point it would have replaced all Challenger 1's. Total ordered 386 (originally 8 regiments at 38 each and 82 in reserve; changed under SDR [Strategic Defence Review of 1998] to 6 regiments at 58 each with the remainder in reserve).<sup>1</sup> Crew of 4. Loaded weight 62,500 kg, maximum road speed 56 kph.

**Challenger 1 MBT** Originally armed with 120mm L11A5 gun (44 rounds) and two 7.62mm MGs (6000 rounds); crew 4; loaded weight 62,000 kg; maximum road speed 56 kph. The main armament later replaced with 120mm L30 CHARM gun, and the armour was upgraded for Desert Storm. First delivered in 1983 and deliveries completed 1990. Also the basis for the Challenger Armoured Recovery and Repair Vehicle (CR ARR.V). 420 in service in 1991 (the full production run) and 379 in operational service Jan 1997. All replaced by 2000.

**Chieftain MBT** Developed during the 1950's to replace the Centurion, and produced from early 1970's to 1978. Variants through Mk 12 exist; Mk 9 onwards have Improved Fire Control System (IFCS). Armed with 120mm L11 gun (64 rounds) and two 7.62mm MGs. Crew 4, loaded weight 55,000 kg and maximum road speed 48 kph. Variants include Chieftain Armoured Recovery Vehicle (CH ARV), Chieftain Armoured Recovery and Repair Vehicle (CH ARR.V), Chieftain AVLRB, and Chieftain AVRE [for latter two, see under Royal Engineers below]. In 1991 the Army had 870 in service and 400 in storage; all were replaced in the early 1990's.

**Conqueror Heavy Tank** Entered in service 1954, equipping one troop in each squadron. Withdrawn from service in the 1960's. The tank weighed 65 tons, a crew of 4, and was the first tank with a 120mm gun.

**Centurion MBT** First developed at the close of the Second World War, production ran to 1962; the final version was the Mk. 13. Armed with 105mm L7 gun (64 rounds), 12.7mm ranging MG, and two 7.62mm MGs. 4423 Centurions were built. Crew of 4, loaded weight 51,800 kg and maximum road speed 34.6 km/hr. (First built with a 17-pounder gun, later upgraded to 20-pounder.) Variants include the Centurion ARV, Centurion Beach ARV (BARV), Centurion AVLRB, and Centurion AVRE.

#### RECONNAISSANCE

**Scimitar** FV 107 Scimitar is part of the CVR(T) [Combat Vehicle Reconnaissance (Tracked)] series of vehicles, which came into service in 1972. Currently used by medium reconnaissance regiments and armoured infantry battalions for recon duties; also was the recon vehicle for mechanized battalions in Germany. Armed with 30mm Rarden L21 gun (160 rounds) and 7.62mm MG; crew of 3; maximum road speed 80 kph; weight 8070 kg. 290 were in service in 1991, 300 in 1997, and 192 in 1999. These are likely to be replaced by the Sabre.

**Scorpion** FV101 Scorpion was the initial vehicle in the CVR(T) series, intended to replace the Saladin armoured car. The vehicle had a 76mm gun (40 rounds) and 7.62mm MG, crew of 3, combat weight 8073 kg, and maximum road speed of 80 kph. First delivered 1972, Scorpion was the dominant vehicle in armoured recon regiments and the initial recon vehicle for armoured regiments (271 in service in 1991). However, it was gradually supplanted by the Scimitar (Scorpion appears largely gone by the time of the Gulf War) and finally taken out of service by 1995. A whole series of vehicles were built in the CVR(T) family, and they are scattered throughout this document. The production run of the entire CVR(T) family was over 3500 through 1995.

**Sabre** Brought into service in 1995 for close reconnaissance, this vehicle has the Scorpion chassis and the turret from the Fox armoured car; those two vehicles were then withdrawn from service. Virtually identical to the Scimitar, but the Fox turret has a lower profile. Armed with 30mm Rarden cannon and 7.62mm chain gun, crew of 3, weight 8130 kg. Initially used to replace the Fox, but now indicated as a replacement for the Scimitar as well. Production estimate is 104.

**Striker** Another part of the CVR(T) series, with first production vehicles delivered 1975. FV 102 Striker carries 10 Swingfire ATGM (4000 meter range; wire guided, command to line of sight)—5 in bins on top of the vehicle and 5 reloads inside—along with a 7.62mm MG. Crew 3, maximum road speed 80 kph. About 120 were in service in 1991, 68 in 1997, and 48 in 1999.

<sup>1</sup> However, since the introduction of Whole Fleet Management in 1999, each regiment has 30 tanks on strength—shared among the squadrons as needed—and the rest of the Challenger 2 fleet is kept in storage at the Base Vehicle Depot in UK to be issued as and when required by operations.

**Fuchs** The West German Transportpanzer 1 Fuchs (Fox<sup>2</sup>) was developed as a 6x6 wheeled armoured transport vehicle. The basic vehicle had a maximum road speed of 105 km/hr and weighed 17,000 kg. It had an NBC reconnaissance variant, and 11 were purchased during the Gulf War. They were later incorporated into the Royal Yeomanry Regiment, which was re-roled for NBC recce in 1994. (Under SDR a Regular regiment took over this role in 1999; 10 vehicles in service 1999.)

**Fox** The FV 721 Fox armoured car was officially a CVR(W) [Combat Vehicle Reconnaissance (Wheeled)]. Fox was a 4x4 vehicle with crew of 3 and armed with the 30mm Rarden cannon and 7.62mm MG; weight was 6120 kg and maximum road speed 104 kph. First production vehicles appeared in 1973. Originally intended as a basic recce vehicle for armoured regiments and mechanized battalions, that role soon went to the tracked Scimitar. The Fox did serve as the recce vehicle in infantry battalions mounted in the wheeled Saxon APC and also equipped two Yeomanry recce regiments. 200 were in service in 1991. The Fox was withdrawn from service around 1995, with its turrets used to create the new Sabre vehicle.

**Ferret** The FV 701/703/711/712 Ferret scout car was built in several versions between 1952 and 1971. Although it disappeared from the recce role in the 1970's, it remained in use in other roles (e.g., liaison) until the early 1990's. A lightweight 4x4 vehicle (4400 kg) with crew of 2, small turret with 7.62mm MG, crew of 2, and maximum road speed of 93 kph. The most common version was the Mk 2/3 (the first with turret), later rebuilt with improvements and larger wheels as Mk 4. There were variants armed with the Vigilant ATGM (Mk 2/6) and Swingfire ATGM (Mk 5). 1071 were in service in 1991. The full production run was 4409 vehicles.

**Saladin** A 6x6 armoured car, the FV601 Saladin was in production from 1959 to 1972. Armed with a 76mm gun (42 rounds) and two 7.62mm MGs, it had a crew of 3, maximum road speed of 72 km/hr and a weight of 11,590 kg. This was the mainstay of armoured car regiments until they became armoured recce regiments with the tracked Scorpion family of vehicles. Some remained in use into the 1980's (in Cyprus, at least through 1987).

**Shorland Armoured Patrol Car** 4x4 vehicle developed in 1965 for the Royal Ulster Constabulary. Armed with one 7.62mm MG, crew of 3, weight of 3600 kg and maximum road speed of 120 km/hr. Based on the Land Rover 110 Defender chassis. Basic vehicles are the S51 and S52 (with an extended rear cabin area for increased capacity). Over 1000 built, mostly for export.

#### APC/MCV

**Saxon APC** Wheeled 4x4 APC for mechanized infantry battalions, mounting a 7.62mm MG. (Machine gun originally on a pintle mount, later replaced by a fixed cupola or small turret.) Carries 2+8 troops, maximum road speed 96 kph, weighs 11,660 kg. Originally a private venture (hence the number AT-105 rather than something in the FV series). While the first production vehicles were in 1976, it was first taken into service by the British Army in 1983 and intended for UK-based infantry battalions tasked to support BAOR in wartime. Variants include command post [AT105-Q], ambulance [AT105-A] and recovery vehicles. In 1991 there were 527 in service and 137 on order; 655 were in service in 1997 and 550 in 1999. Over 700 built through 1995. Current APC model is the AT105-E. A variant for use in Northern Ireland is the Saxon IS (Patrol); this has a different engine and various enhancements for internal security (searchlights on the roof, improved armour, anti-wire device, etc.)

**Warrior MCV** FV510 Warrior (originally MCV-80) was developed for armoured infantry, but has seven variants (including command vehicle, Milan carrier, mechanized repair and recovery vehicle (MRRV), engineer combat vehicle, and artillery observation and command vehicles). Basic MCV has a 30mm Rarden L21 cannon with coaxial 7.62mm chain gun, crew of 3+7, and maximum road speed of 75 kph. 24,500 kg weight fully loaded. Deliveries began in 1986 and were completed in 1995, equipping 8 battalions. Originally intended only for battalions in BAOR, this changed with the redeployments following the 1992 Options for Change (which left six battalions in Germany and two in the UK). Under SDR, a ninth battalion will be equipped with Warriors (giving three in the UK). Original order of 1053, with about 376 in service in 1991, 789 in 1997, and 497 in 1999. Production may have stopped in 1995 with the 789 vehicles then delivered.

**FV432** Tracked APC, delivered from 1963—1972, with 14 variants (including command post, ground surveillance radar mount, ambulance, recovery and repair and maintenance [FV434], 81mm mortar carrier, specialist vehicles for the RA [fire control and mortar locating], signals vehicle [FV439] and minelayers). Originally given name Trojan but that was little used and has disappeared. Basic APC has a 7.62mm MG, crew of 2+10 and maximum road speed of 52 kph. Weighs 15,280 kg. As an APC for the infantry, the FV432 was replaced from 1987 by the Warrior MCV. A few were given the Fox turret with its 30mm gun and many were later equipped with a small one-man turret with 7.62mm MG mounted above the rear troop compartment. 2338 were in service in 1991 and about 1600 still in service (as command vehicles, ambulances, 81mm mortar carriers) in 1997 and 1999. Over 3000 were delivered during the production run.

**FV438** Developed from the basic FV432 APC, this vehicle mounted the Swingfire ATGM and was deployed in armoured regiments. It had two launchers, which could be replenished from inside. The FV438 seems to have disappeared by the Options for Change (1992/93).

**Spartan** FV103 Spartan is the APC derivative of the CVR(T) series. It entered service in 1978 and is also used to carry mortar fire control teams, AA teams (Blowpipe originally, now Javelin), or as an engineer vehicle (for command or assault teams). As an APC has a crew of 2+5 (or 3+4) and a 7.62mm MG. Weight 8170 kg, maximum road speed 80 kph. A variant of the Spartan ("Spartan MCT") has a two-man turret with two Milan ATGM in launch positions. 500 were in service in 1991, 400 in 1997, and 450 in 1999.

<sup>2</sup> This vehicle is always known as the *Fuchs* in British service instead of the English translation "Fox", since there was already a vehicle with the Fox name.

**Stormer** Entered production 1981 as an APC (derived from the CVR(T) family); never adopted by the British Army in that role. However, a variant was selected late in 1986 as a mount for the Starstreak HVM SAM. The original APC version would have had a crew of 3+8, 80 kph road speed and weight of 12,700 kg.

**Sultan** FV104 Sultan is the command and control variant of the CVR(T) family; used in armoured and armoured recon formations since 1972. Crew of 6 and weight of 8.66 tonnes.

**Samaritan** FV105 Samaritan is another derivative of the CVR(T) series, an armoured ambulance with crew of 2 and up to 6 casualties.

**Saracen** A wheeled 6x6 APC, the FV603 Saracen was in production from 1953-1972. It could carry 2+10 personnel, had a small turret with 7.62mm MG (and could have another MG on a ring mount on the rear of the top), maximum road speed of 72 km/hr, and weighed 10,170 kg. To the extent used in mechanized battalions<sup>3</sup>, this was replaced by the tracked FV432 (although it lingered in second-line use for some time; note that its production run continued even after the FV432 began deliveries). It probably served in armoured car regiments until they were converted to armoured recon with the Scorpion/Scimitar recon vehicles and Spartan APC later in the 1970's. Variants included command [FV604 and 610] and ambulance [FV611] versions. 1838 were built through 1972.

**Humber One-ton APC** 4x4 variant of the basic Humber FV1600 series of one-ton trucks. Original version, with open roof at rear, was FV1609. Basic APC is FV 1611. Crew 2+6/8, no armament, 5790 kg weight and 64 kph maximum road speed. Variants included radio vehicle [FV1612] and ambulance [FV1613]. 1700 were built. Initially these replaced trucks or halftracks in the motor battalions of armoured brigades, and may have extended to other battalions in BAOR. Most were withdrawn or scrapped following introduction of the FV432 in the 1960's. A number were brought back into service in Northern Ireland, where it is known as the Pig.

#### FUTURE

**Tracer** A planned successor vehicle for the armoured recon role; still a concept vehicle and might be joint venture with the US. Earliest service date planned currently is 2007. Intended to have improved sensor capability.

**Multi Role Armoured Vehicle (MRAV)** A planned vehicle to replace the FV432 APC (and variants) and the Spartan/Sultan/Sampson/Samaritan light APC series vehicles. Earliest date in service would be 2005; details unknown.

#### RECOVERY AND RELATED

**Challenger Armoured Repair and Recovery Vehicle (ARRV)** Variant of MBT, in service since the early 1990's; also shown as CR ARRV. Crew of 3 with space for 2 additional REME fitters. Fitted with two winches and a crane. 62,000 kg weight, 59 kph maximum road speed. Replaced all of the Chieftain ARV's in service. 80 in service in 1997 and 1999.

**Chieftain Armoured Recovery Vehicle (ARV)** Variant of the MBT, entering service in 1976. Crew of 4. Many were converted to armoured recovery and repair vehicles by adding a hydraulic crane boom on the left side of the chassis. Also known as CH ARV or CH ARRV, and is FV4204.

**Samson Armoured Recovery Vehicle (ARV)** FV 106 Samson is the ARV for all vehicles in the CVR(T) class. Weight 8.74 tonnes, crew of 3, and armed with 7.62mm MG. First production 1977/78.

**Centurion Armoured Recovery Vehicle (ARV)** Produced beginning 1956/57, this was the basic British ARV into the 1970's. Crew of 4.

**Centurion Beach Armoured Recovery Vehicle (CEBARV or BARV)** Recovery vehicle in amphibious role, intended to recover drowned or broken vehicles, push beached landing craft back, or provide a breakwater for small craft and men. Can ford 2.9 meters of water. Small numbers were built from 1961, and used by the Royal Marines at least into the late 1980's. (Replaced the Sherman BARV.)

#### ARTILLERY

##### TOWED

**105mm Light Gun** In service since 1975, replacing the 105mm pack howitzer. Used by the parachute and commando field regiments. Maximum range (HE) 17.2 km; crew 6. 150 were in service in 1991 and 72 in service in 1997 and 1999.

**105mm Pack Howitzer** Italian-designed weapon that came into service in 1957 and exported to a number of countries including the UK. Maximum range (HE) 10.5 km; crew 6.

<sup>3</sup> Two squadrons were formed in 1957, one for each battalion in the two armoured brigades in Germany. These squadrons were manned by personnel from an armoured regiment until Apr 1963 when the infantry battalions finally took over this role. It does not appear that any other infantry battalions were mechanized with APC's until the FV432 was introduced.

**FH 70 Howitzer** Towed 155mm howitzer developed jointly by West Germany, Italy and the UK. Introduced 1978. Maximum range (HE) 24 km. 79 were in service in 1991, in Regular and TA units; after Options for Change only in use by two TA regiments (36 left in service 1997). SDR eliminated the weapon from the Army.

**8" Howitzer M115** Towed weapon, with maximum range of 16.8 km, formerly used in mixed regiments with the Honest John rocket. These were probably replaced in those units by the M110.

#### SELF-PROPELLED

**Abbot** FV433 Abbott was a SP 105mm gun, using many components of the FV432 chassis. It had a crew of 4 and was produced between 1964 and 1967. Maximum range was 17 km. It allowed retirement of the World War II towed 25-pounder (and US M44) and was a main weapon of SP field regiments until supplemented by the US M109. 155 were in service in 1991 and it was expected to be replaced by 1992.

**AS90** SP 155mm gun, first delivered 1993 (first regiment re-equipped October 1993), replacing the M109 and Abbot in field regiments. Maximum range 24.7 km; crew 5. The original gun was 39 calibers, but a 52-caliber gun (30 km range) is planned for introduction in 2002/2003 (half upgraded each year). The vehicle carries 48 rounds. 179 in service in 1997 and 1999.

**M109** US 155mm SP howitzer. Maximum range of M109A1 and M109A2 variants (which had a longer barrel) was 18,100 meters (HE). These were taken into British service for field regiments, possibly as early as the late 1960's, supplementing the lighter Abbot. 110 of the M109A1 were in service in 1991 and all were replaced beginning 1993.

**M107** US 175mm SP gun, with maximum range of 32.7 km. Same basic vehicle as the M110. (Crew of 13 split between M107 and M548 tracked cargo carrier.) Used by heavy ("depth fire") regiments until replaced by the MLRS. The British acquired 36.

**M110** US 203mm (8") SP howitzer; M110A1 had longer barrel and M110A2 a muzzle brake. Maximum range 16.8 km. First US production 1962. (Same basic vehicle as M107.) The British acquired at least 16 and removed them from service by the early 1990's. Crew of 13 split between M110 and the M548 tracked cargo carrier.

**M44** US 155mm SP howitzer (open-topped compartment). Developed after World War II, with M44A1 variant also existing. Maximum range 14.6 km. Regiments with the two armoured brigades acquired these about 1956, replacing the wartime Sexton SP 25-pounder.

#### ROCKETS AND MISSILES

**MLRS** 227mm Multiple Launched Rocket System, on a fully-tracked vehicle, introduced with heavy regiments to replace the M107 gun. Maximum range (M77 rocket) 11.5-32 km, (AT2 SCATMIN [scatterable AT mines]) 39 km; crew 3. The first regiment was re-equipped in 1990, before deployment to the Gulf. These replaced tubed weapons (175mm) in heavy "depth fire" regiments. 70 were ordered and 63 in service in 1997 and 1999 (54 in operational units).

**Honest John** A 762mm rocket with a range of 37 km and a nuclear warhead. Placed in three mixed heavy regiments (Honest John rocket and towed 8" howitzer) 1960-1976. Probably only 12 acquired.

**Lance Missile** A 557mm battlefield missile with a range of 112 km and a nuclear warhead. One regiment re-equipped with it from 1975-77 (12 launchers); no longer in use from Mar 1993.

#### ANTI-TANK

**Wombat** 120mm recoilless rifle (1 km effective range), carried in ¾-ton Land Rovers or mounted on top of an FV432 APC. Deployed by the 1970's and withdrawn later.

**Swingfire** ATGW with 4 km maximum range. Mounted on FV438 (APC variant for armoured regiments) and FV712 Ferret (found in armoured car units into the 1970's) and Striker (CVR(T) variant for armoured recce regiments).

**Milan** French-German developed ATGW, with a 2 km range (current version is Milan 2). Sire-guided with command to line of sight. Man-portable but can be mounted on vehicles. UK purchases of Milan estimated at over 50,000.

**Trigat LR [long range]** European collaborative venture, with an intended 5000+ meter range. Could replace Swingfire, but there is no current funded production or expected in-service date.

**Trigat MR [medium range]** European collaborative venture, to have 2000 meter range like the Milan and intended to replace it beginning 2005 (first battalion; a brigade by 2007 and the Army by 2010).

**Light AT Weapons** The 3.5" rocket launcher lasted until 1965 when replaced by the 84mm Carl Gustav (500m range, two-man crew). The British also acquired some of the US 66mm "throw-away" AT weapons. Both of those were then replaced by the LAW-80 (500 meter range). A potential replacement for the LAW-80, NLAW (600 meter range) might appear 2004 or later.

## AIR DEFENCE

**Blowpipe** Man-portable low level air defence weapon; maximum effective altitude 1500m and maximum effective slant range 3000 m. Entered service in 1972 and not completely replaced by Javelin until after 1992.

**Javelin** An evolution of the Blowpipe SAM, and also a short-range, shoulder-launched weapon. Carried in Land Rover and trailer, FV432 or Spartan (four missiles), but man-portable over short distances. Maximum range 4.5 km and maximum altitude 3000 m. Still in testing during 1985 so it entered service sometime between then and 1991 (240 fire units in service in 1999). To be replaced by Starstreak HVM in the Regular regiment, but continues to exist alongside the newer weapon. Can be found in a mount with three missiles, shoulder launcher, and support tube with tripod.

**Starstreak HVM** Continuing the path from Blowpipe and Javelin, the Starstreak HVM [Hyper Velocity Missile] is fired from the Lightweight Multiple Launcher (LML) or borne on the Stormer APC (8-round launcher, with 12 reload missiles). Maximum range 5 km. Entered service ca. 1992, with 135 fire units in service in 1997 and 108 in 1999.

**Rapier** Low level air defence weapon. First regiments converted by 1973. Current version is Field Standard C (FSC), which is carried in a launcher with 8 missiles. Maximum range is around 8 km and ceiling 3000 m. An earlier version (62 ordered 1983-87) known as **Tracked Rapier** had eight missiles on a variant of the US M548 tracked cargo carrier (crew of 3). More common was a towed mount with four missiles. Earlier Rapiers had a maximum range of 6.5 km and ceiling of 3500 m. 120 of the towed version were in service in 1991 and 40 still in service in 1997. 1999 in-service Rapier totals were 64 fire units.

**Thunderbird** One of two British medium- or higher-level SAM's, the Thunderbird II had a maximum effective altitude of around 30,000 meters and maximum effective slant range of 40,000 meters (both estimates). Originally equipping two regiments in Germany, the weapon was eventually withdrawn from service.

**40mm Bofors** Basic light AA weapon, lasting until replaced by the Rapier SAM. L/70 introduced 1951 as successor to World War II L/60. A towed gun, with maximum horizontal range of 12,500 meters, maximum effective slant range of 3000 meters and ceiling of 1200 meters.

## SURVEILLANCE

**Phoenix** An unmanned air vehicle: a surveillance and target acquisition drone.

## RECENT INFANTRY WEAPONS

**Rifles** 7.62mm Self Loading Rifle (SLR), in service from the mid 1950's to the late 1980's. Replaced from 1985 by the SA80 5.56mm Individual Weapon (IW). Drivers and technicians could be armed with a 9mm sub machine gun in lieu of a rifle.

**Machine Guns** 7.62mm General Purpose Machine Gun (GPMG), in service from the early 1960's. (Replaced the old Vickers GPMG.) Can be fitted with a bipod in the light role or a tripod as a heavy machine gun. Later replaced in the light role by the 5.56mm Light Support Weapon (LSW), developed from the SA80 IW.

**Mortars** 51mm mortar (750 meter range; 2093 in service 1999), which can be carried and fired by one man, and found in the headquarters of all infantry platoons. This replaced the 1940's-era 2" mortar. The normal battalion support weapon is the 81mm L16 mortar (5800 meter range; 500 in service 1999). The World War II 4.2" mortar Mk 3 (3750 meter range) remained in use into the 1950's, although it moved from the infantry (in the old machine gun battalions) to the Royal Artillery.

## ROYAL ENGINEERS

**Tank Bridge Transporter (TBT)** 8x8 mobility transporter, which can carry one No 10 bridge [can cover gap of 24.5 meters] or two No 12 bridges [gaps of 13 meters].

**Armoured Vehicle Launcher Bridge (AVLB)** Launches single Close Support Bridge (gaps to 24.5 meters), or combination of bridges for gaps up to 60 meter. Version based on the Chieftain in service beginning 1974 (49 on strength in 1999). Can launch either the No. 8 bridge (folding scissors type) or No. 9 bridge (one-piece unit). Most Chieftain AVLBs have both, the No. 8 mounted in front and the No. 9 towed by a truck. Prior to that there were two types of Centurion AVLB (one similar to World War II Ark, with a folding bridge carried on top of the tank chassis, the other with a scissors bridge in front).

**M2/M3 Amphibious Ferry** Can be driven into a river and used as a ferry, or joined together with other rigs to form a bridge capable of carrying the Challenger MBT. Eight rigs can span a river 100 meters wide. Crew of 3 (M2), 4 (M3). The earlier version, M2, was in service from after 1972. Both M2 and M3 were designed and built in West Germany. The Army has 72 M2 rigs, which are being replaced by 34 of the newer M3. An MBT can be carried by two M3 ferries or five of the M2s.

**Armoured Vehicle Royal Engineers (AVRE)** Designed for breaching minefields, crossing gaps, and clearing obstacles. Crew of 3/4. Current version is based on the Chieftain, and also known as CHAVRE; 48 were delivered by the end of 1995. The Centurion AVRE was developed in the 1950's and lasted until the CHAVRE. The Centurion AVRE 165 had a 165mm demolition gun. Later, some Centurions were converted as AVRE 105 and retained the standard 105mm tank gun. All Centurion AVRE's towed a trailer with either the Giant Viper mine clearing system or additional supplies. Centurion AVRE developed in the 1950's to replace World War II era Churchill AVRE. There are plans for a replacement to the AVRE and AVLB.

**Combat Engineer Tractor (CET)** FV180: tracked AFV for clearing obstacles, digging pits, preparing barriers, or towing other vehicles. Armed with 7.62mm MG; crew of 2. Entered service 1977 and 140 on strength in 1999. Equipped with dozer blade in front and able to carry trackway, fascines, or other engineer equipment. Planned replacement vehicle will be called the Terrier, with a projected 2008 in-service date.

**Medium Wheeled Tractor** Commercially available bucket loader used in close support and general support engineer regiments. There is also a 4x4 Ultralight Wheeled Tractor, with a front-mounted bucket.

#### OTHER VEHICLES

**Light Strike Vehicle (LSV)** Wheeled reconnaissance vehicle used by units in 24 Airmobile Brigade and certain specialist forces. To be replaced by GMWP.

**Ground Mobile Weapons Platform (GMWP)** Specially modified Land Rovers to be utilized as mounts for Milan ATGM or GPMG in fire support role.

**All Terrain Mobility Platform (ATMP)** Lightweight 6x6 load-carrying vehicle used by airborne and airmobile battalions; also known as Supercat. Can be fitted with GPMG and/or Milan as a mobile fire support base. Maximum road speed 130 kph.

**Hagglund BV 206** Joined, two-car tracked vehicle designed for operation on snowy terrain. Utilized by forces on the AMF(L) assignment as well as Royal Marines. Maximum load 2.25 tonnes and maximum speed 52 kph.

**Truck Utility Light/Medium (TUL/TUM)** Land Rover Defender 90 and 110 (4x4) vehicles used in a variety of roles (about 15,000 in service). Half due to be replaced by a military high specification vehicle, also produced by Land Rover, entering service from 1997. One variant of the TUM is the Battlefield Ambulance (4 stretchers or 6 seated wounded). This was slated to replace other wheeled ambulances 1997-1999.

**Truck Utility Medium and Heavy** The Truck Utility Medium (Heavy Duty) –TUM(HD), designed to meet the airportability requirements of 5<sup>th</sup> Airborne and 24<sup>th</sup> Airmobile Brigades, as well as 3<sup>rd</sup> Commando Brigade RM. Payload 1.4 tonnes. The Truck Utility Heavy (TUH) has a similar payload.

**Other Trucks** Truck Cargo 8 tonne 4x4 Medium Mobility Load Carrier (MMLC); can carry 6 pallets, general stores, fuel, and certain container loads, and can also tow a trailer of up to 8 tonnes.<sup>4</sup> Foden created an improved version, designated Improved Model Mobility Load Carrier (IMMC), which is primarily used as an ammunition carrier in support of the AS90. Truck Cargo 16 tonne 8x4 Commercial Pattern Low Mobility; designed for rear operational areas; can carry 12 pallets; variants include a tanker fuel truck (12,000 liters with improved mobility or 22,500 liters with low mobility). The Foden GS 6x6 Recovery Vehicle is used primarily to recover immobile wheeled vehicles. There is also a Foden 6x6 used to tow the FH70 howitzer.

**Steyr 716M Pinzgauer**, a 4x4 vehicle officially known as Truck or Utility Medium (Heavy Duty) (TUM(HD)) and used to tow the guns in 24<sup>th</sup> Airmobile Brigade; also found in light truck role in that brigade.

Reloads for the MLRS are carried in an 8x8 **Heavy Expanded Mobility Tactical Truck (HEMTT)**.

The **FV622 Stalwart**, a 6x6 high mobility load carrier, was built 1966-1971 and in use throughout most of this period. It was fully amphibious and had a payload of 5000 kg. Variants included the FV623 (basic vehicle with hydraulic crane to unload pallets of artillery ammunition) and FV624 (REME fitter's vehicle).

**M548 Cargo Carrier** US-built fully tracked cargo carrier found in artillery regiments using US-built SP weapons or the Lance SSM. It was primarily intended as an ammunition resupply vehicle. A variant (M752) became the launch vehicle for the Lance SSM. Another variant was used by the British as the basis for a SP version of the Rapier SAM, and the basic M548 was also found in those units for missile resupply. Units utilizing the M548 also had the US M578 light armoured recovery vehicle (introduced the end of the 1970's and built around the chassis of the M110 SP howitzer).

#### AIRCRAFT

**Longbow Apache Attack Helicopter** Selected to replace the Lynx; armed with 30mm cannon and 16 Hellfire "fire and forget" missiles. Maximum range 462 km, cruise speed 272 kph, crew 2. Alternative payloads include 76x2.75" rockets or 4 air to air missiles. Based on the US AH-64D, and known as WAH-64D or Apache AH1. 67 will be built in the UK by GKN Westland and enter service beginning 2000.

<sup>4</sup> The new vehicles use the DROPS system (Demountable Rack Off-load & Pickup System). These are basically tractors with a flatbed and an integral lifting system for fast loading and unloading of pallets.

**Gazelle Helicopter** Primarily used in observation and reconnaissance, but also as Air Observation Post (AOP), forward air controller, casualty evacuation, liaison, command and control, passenger transport, and communications relay. Maximum speed 265 kph and range 670 km. Can be fitted with two 7.62mm MGs. 159 were in service in 1991, 168 in 1997, and 154 in 1999. Currently paired with the Lynx AH.7 in the anti-tank role.

**Lynx Helicopter** Lynx AH (Marks 1/7/9) is equipped with 8 TOW ATGM and 2-4 7.62mm MGs and intended as an anti-tank helicopter. Can be used in the utility role without the ATGW system mounted (approximately 10 passengers). Maximum speed 330 kph, combat radius 100 km with two-hour loiter. Crew of two. 120 were in service in 1991, 126 in 1997, and 115 in 1999. Currently the Lynx Mk 7 serves in the anti-tank role and the Mk 9 in the light battlefield helicopter (LBH) role [similar to US utility helicopter role]. LBH helicopters can carry 6 soldiers. (Estimated that 24 in service are Mark 9.) TOW 2B has maximum range of 3750 meters; an improved version (range to 5000 meters) is expected.

**Scout Helicopter** Placed in service in 1962, these had 4 SS-11 ATGM and 2 7.62mm MGs. Maximum speed was 210 kph. 30 were still in service in 1991.

**A-109** Liaison and general purpose helicopter, with 5 in service in 1999. Pilot, observer and up to 7 passengers. 272 kph cruising speed and 500 km range.

**BN-2 Island** Fixed wing aircraft, with 9 in service. Crew of 2 and designed for stand-off radar for surveillance. 257 kph speed and range of 1153 km (1965 km with optional fuel tanks).

**Transport Helicopters** Transport helicopters are provided by the RAF rather than being organic to the Army Air Corps. Principal types used by the RAF are

- Chinook HC2 [US CH-47], with payload of 45 troops or 8164 kg, crew of 3, 270 kph cruising speed and 55 km mission radius; 29 in service 1999 (including the OCU).
- Puma HC1, crew of 2/3 and capacity 16 troops; 258 kph cruising speed and 550 km range; 33 in service in 1999

Some Wessex HC2 craft were still in use in the late 1990's, with 15 on strength in 1999. The RAF were due to begin receiving the Merlin HC3 helicopters 1999-2001. The Merlin can handle 30 troops or 16 stretchers. Underslung cargo capacity is 5443 kg.

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