

British Main Battle Tanks of the Twilight War

British tank design philosophy after the Second World War has emphasised the survivability by the use of heavy armour protection and firepower at the expense of manoeuvrability.

Centurion Mk13 OPRA

With prototype versions being issued in the closing days of World War Two (although it is unlikely they saw combat), versions of the Centurion were still in service with a number of countries at the dawn of World War Three in heavily upgraded forms (in particular the engine, transmission and armament). In Britain they had been replaced by the Chieftain in the role of a fighting tank. The Royal Artillery had continued to use them into the 1980s however for forward observers (calling them OPRA – Observation Post Royal Artillery) attached to armoured battle groups to give them a measure of protection and better cross country mobility than a modified APC. These had been replaced by (cheaper) Warrior APC versions however as the Centurions aged and from the mid 1980s the tanks had been gradually converted into Centurion AVRE 105s (see below). As fighting broke out in Germany, a decision was taken to reissue those that were still serviceable (and which had not been used as range targets!) to increase protection and to give the observers more opportunity to engage targets of opportunity. Given initially to armoured units, gradually surplus tanks were issued to armoured infantry units in the same role. It is possible that some of the Centurions were secretly repurchased from Sweden and modified to British standards but no firm evidence has come to light (for a good summary of the debate see Dunstan, British Tanks of World War 3 Vol 2: Specialist Armour, Osprey 2023).



Illustration 1: Rare shot of a Centurion Mk13 in action in Poland mid 1998. In other shots from this sequence the commander can be seen to be wearing a hi visibility jacket - this can not have been a measure that enhanced his survival chances! Sky News

Centurion Mk14 OPRA



Illustration 3: Centurion Mk14/1 belonging to 2nd (East) Armoured Division Germany 1998. Note the addition of an NBC sensor to the turret roof. This was an experimental fit using equipment from the CVR(T) series. Four were modified but the design was never standardised. MoD

By late 1996 many Mk13s were upgraded to include an upgraded laser range finder and a brand new laser designator in an armoured housing directly over the gun barrel.



Illustration 2: Centurion Mk14 OPRA - note the box housing the lasers over the main gun. RA Museum

Centurion Mk14/1 OPRA

This was essentially similar to the Mk14 OPRA but instead of the armoured box over the main gun instead had a combined range finder and designator in an armoured pod mounted co-axial to the weapon on the opposite side to the co-axial machine gun.

Centurion Mk14/2

This was a Mk14 with the addition of an extra radio for air to ground communication. This was a popular variant that allowed better co-ordination by JTACs (Joint Tactical Air Controllers) who had the role of directing air strikes. Twelve rounds of ammunition storage were removed to provide an extra map board and space for a GPS unit.

Centurion Mk14/3

This was a Mk14/1 with the same upgrades as the Mk14/2.

Chieftain Mk15 OPRA

This was never an official designation but was instead used unofficially for Sho't Kal Centurion tanks transferred from the Israeli Army to the MEFF and used as AOP tanks. The Sho't Kal (as given to the British) had a Continental AVDS-1790-2A diesel engine (making them easy to identify due to the raised rear deck), Allison CD850-6, transmission, a new turret rotation mechanism, improved stabilisation and fire control systems and fitting points for Blazer reactive armour. It did not however include a laser designator. The AA MG was an M2HB. Blazer armour was fitted to some vehicles only but no designation change was made as the armour blocks were removable.

“There was a problem with our OPRA – it was an ex-Israeli one and everything was labelled in Hebrew! A quick chat with a few tankers from their 7th Armoured Brigade and a few sticky labels later we were sorted.”

Capt John Forster, Royal Artillery quoted in Centurion Main Battle Tank 1945-2012, Osprey 2012

Centurion Mk15/1 OPRA

This was a Mk15 upgraded with an Israeli model laser designator in an armoured box on the turret roof. The box was not necessary just for protection from enemy fire but also for use when the Blazer armour exploded. Relatively few were modified.



Illustration 4: AVRE165 in Iran with uparmouring package fitted

Centurion AVRE165

The AVRE (Armoured Vehicle Royal Engineers) was an attempt to provide an armoured engineering vehicle for the armoured squadrons of the Royal Engineers. Old Centurion tanks had the 105mm main gun removed and replaced with a 165mm short barrelled demolition gun. A dozer blade or mine plough was fitted as standard as was a cradle for holding a fascine (with this in place the turret had to

be rotated to the rear as the gun would be in the way of the fascine cradle). It could also tow the Giant Viper mine clearing equipment or a stores trailer. An uparmouring package of composite Dorchester armour was fitted to most AVREs once the war started although not all were ever upgraded. Popular with their users they were not



Illustration 5: 32 Armoured Engineer Regt AVRE165 moving into position in late 1996.

particularly common being restricted to the Royal Engineers.



The most photographed AVRE is perhaps “Black Prince” which has seen service in Northern Ireland. It has been used extensively to clear barricades in Belfast and has survived three hits from RPG7s.

Centurion AVRE105

When the Centurion OPRAs were being retired, some were

Illustration 6: "Black Prince" brings up the rear of a convoy moving into place at the start of Operation Motorman IV October 1997 The Sun

converted to AVRE105s. These were identical to the

AVRE165 but did not have the gun replaced, retaining the famed L7 105mm gun. When the need for OPRAs was realised in the build up to the war, no further conversions were made but those converted were retained as they were. Less common than the AVRE165, they were issued interchangeably to armoured engineer squadrons. Dorchester armour was also fitted to most AVRE105s.



Illustration 7: AVRE105 in action. This particular tank has a mine plough instead of a dozer blade. Daily Mirror

Centurion BARV



Illustration 8: 02 ZR 77 in Iran, the vehicle was still in service with the Royal Marines at the start of the Saudi War in the theatre and survived that was intact. It eventually retired in 2023 after over 60 years of service MoD

Possibly the most unusual version of the Centurion in British service. The Centurion Beach Armoured Recovery Vehicle was a specialist vehicle that was designed to pull vehicles ashore during beach landings following in the footsteps of the Sherman BARV of World War Two. Having no armament and a built up crew compartment for its crew of four (one of whom was a qualified diver) it was extensively waterproofed allowing it to operate in eleven feet of water. Very few of this conversion were made but a number are known to still be in running order, including one in the Falkland Islands, one in Iran and one in Portsmouth. One (02 ZR 77) held the record for being the longest serving vehicle in British service at the outbreak of the war, the



Illustration 9: Portsmouth BARV undergoing maintenance June 2000. It is painted in an atypical scheme as it was actually repurchased from a private collector in 1996 having been sold off in the early 1990s. Private collection

hull having been built somewhere between 1944 and 1946. They are all operated by the Royal Marines.

Chieftain Mk9



Illustration 10: Chieftain Mk9 of an unidentified unit during the Siege of Warsaw. MoD

When it was introduced in 1966 as the FV4201, the Chieftain was the best armoured tank in the world and armed with one of the most powerful guns, the 120mm rifled gun. It was also the first tank to have a supine (lying) driving position allowing better armour sloping and lower silhouette. The multi-fuel engine (adopted as a plan to standardise on multi-fuel engines across NATO) however was however

“As a driver I was really upset when we exchanged our Chieftains for Challengers. As a driver I had a reclining seat that made a great bed and I could just move back to the fighting compartment to get D-jay to get me a brew.”

Pte Ron Jenkins, 3 RTR. Quoted in *British Tanks of World War Three*, Osprey 2021

a major let down in both performance and

“What you never read about the Chieftain in the books is the fact that some idiot decided to remove the heaters from the tank as a weight saving measure when it was designed. That should explain all the pictures of Chieftain crews in cold weather gear! At least there was a BV (Boiling Vessel) to get hot brews...”

Lt Kevin Heston-Smythe 15/19th King's Royal Hussars. Quoted in *British Tanks of World War Three*, Osprey 2021

reliability (no other NATO country ever used the concept after this). Ironically prior to the Twilight War, they were only ever used with diesel. Even then the difficulties of



Illustration 11: Chieftain Mk9s of 1RTR cross a bridge over the Oder River into Poland built by 38 Engineer Rgt. *The Guardian*

converting the engines to run on different fuels (eight hours work was required by the crew) reduced usage of alternatives. Gradually improvements in the engine resulted in slightly improved performance and reliability but these remained poor in comparison. Unusually for the era it used separate projectile (carrying up to 62) and bag charges (up to 36) for the main gun with the explosive propellant bag charge stored in a water & glycol jacket (that would soak the charge if

“On the Chieftain the bagged charges were in wet stowage. While it wasn't perfect it did tend to help, when you got hit, the charges would often give off a white smoke – that was your clue to get the Hell out. It would usually still brew up but you were usually outside by then at least.”

Lt Kevin Heston-Smythe 15/19th King's Royal Hussars. Quoted in *British Tanks of World War Three*, Osprey 2021

ruptured reducing the risk of an explosion – known as wet stowage). This system resulted in there being no empty case to eject after firing. This bagged charge system was an offshoot of an early attempt to create a gun using a liquid propellant. These features



Illustration 12: English Chieftain Mk9 showing the Cornish Flag acting in support of the KLF. March 2003 (BBC)

advanced design at the time of its introduction.

Production for the British Army ceased in 1978 and by 1995 all the Chieftains in British service had been upgraded to at least Mark 9 standard (Marks 6-9 were incremental upgrades to the Mark 5 which was the final production version).

A number of early versions (Marks 3 and 5) were sold to Iran prior to the Revolution. With the Soviet invasion, a number of these were given some or all of the upgrades.



Illustration 13: Interesting study of a Chieftain Mk9 belonging to the Royal Army of Scotland. Note the very faded paint scheme. Interestingly the vehicle number is two coloured, it is not known if this is significant or just due to a shortage of paint when the vehicle was reassigned.

In British service one tank in every squadron was usually fitted with a dozer blade (all versions had fittings for it). It took six hours to fit to a vehicle in a workshop. With the introduction of the CET it was planned to withdraw these but most units managed to retain theirs.

Chieftain Mk10

This was a Mk9 with the addition of the Stillbrew Crew Protection Package (named after the



Illustration 14: Chieftain Mk10 of 15/19th King's Royal Hussars during fighting around Neiderfinow August 1997. In the background is an FV432 of the 1st King's Regiment Battlegroup to which the tank was attached. The Stillbrew armour is clearly visible. BBC

Created by James Langham for the Twilight 2000 RPG

designers Col Still and John Brewer from the Military Vehicles and Engineering Establishment) which placed extra cast steel armour backed by four layers of rubber (not for protection but to stop the vibration when travelling making it fall off) on the turret front in order to increase protection from Soviet heavier ATGMs and guns being introduced. Armour around the ammunition storage was also increased. The basis for this upgrade was examination of damaged Iranian Chieftains captured by Iraq which somehow ended up in Jordan. Introduced in 1986 each section was intended as a one use item as it cracked and became useless (in addition the rods usually snapped resulting in it hanging or falling off). In game terms there are five units covering the turret front and one on each turret side which become useless if they take damage equal to more than the armour protection added. They work against all types of ammunition. The chance of them being hit is the number of intact units x 2 on 1D10. As they were fitted using rods fitted to the turret by REME base units (most in BAOR being fitted by 23 Base Workshops, REME at Wetter), each must be fitted individually as the rods were not placed in standard places. It adds 60 to the armour value and deducts 10% from speed. Fixing a unit takes 2 hours and requires a crane. By 1996 all of BAOR's Mk9s had been upgraded to this standard or higher but some in the UK had not. Many Mk10s though had the Stillbrew armour damaged and never replaced once fighting started. These can be differentiated from Mk9s however by the holes for the rods on close examination.



Illustration 15: Wrecked Chieftain showing the Stillbrew, note the shattered pins and four rubber layers. The Mirror

"Fitting the TOGS thermal sight to the Chieftain instead of buying Challengers may well have been a political move as the cost of the TOGS was a substantial part of the new vehicle cost. Presented as an upgrade to an existing vehicle however made it far less likely to get scrutiny by politicians trying to save money. Alternatively it can be put down to bean counting by politicians trying to keep equipment in the inventory when it should have been replaced with newer equipment."

Dunstan, British Tanks of World War Three. Osprey 2021

Chieftain Mk11

With cost restrictions resulting in the British Army being unable to replace all of its Chieftains with Challengers, a programme was instituted to upgrade the Chieftain Mk10 to Mk11 standard. This was achieved by adding the TOGS thermal sight as fitted to the Challenger I. Work started in 1986 and about half of BAOR's Chieftains had this work completed by 1996 (slowed by budget constraints).

Chieftain Mk11/1

This was a Mk9 fitted with TOGS but not Stillbrew. This version is quite rare and most pictures of a Mk11/1 are in fact a Mk11 where the Stillbrew has been removed.

The CHARM programme

While the TOGS was intended as a quick and simple upgrade to the Chieftain it was definitely starting to show its age. The CHieftain/CHALLENGER ARMament programme was therefore instituted. Stage one (CHARM I) improved the ammunition with a new improved sabot round with a denser core giving about 15% better penetration. This was followed by CHARM II. This aimed to upgrade the 120mm L11 gun of the Chieftain and Challenger I to the more effective 120mm L30 of the Challenger II.

Chieftain Mk12

This was an upgraded version of the Mark 11 with the L30 gun. Few had been produced by the start of the war but a number were gradually upgraded through 1996 and 1997.

Chieftain Mk13 OPRA

The popularity of the Centurion OPRA with Royal Artillery units led in mid 1997 to the conversion of a number of Chieftains to the same role. These were given an extra secure radio and a map board at the commander's position. To make the space the ammunition load was reduced to 50 rounds and 30 bag charges. As the conversion was based on the Mk10 TOGS was standard. Externally they are indistinguishable from the Mk10.

Chieftain Mk14 OPRA

This variant was a Mk11 given the same upgrades as the Mk13. It is essentially a Mk13 with Stillbrew. A number of Mk13s were upgraded to this standard at base refits.

Chieftain Mk15

This was not an official British Army mark but the manufacturer's term for the final production versions for Oman in 1985. It had initially been given a high number to differentiate it from British marks, later developments however led to the gap numbers being used.



Illustration 16: Interesting photo of IRTR Chieftain Mk9 (Desert) being landed at Bander Abas. Just visible is the large air conditioning/filter unit on the turret roof. Intriguingly the colour appears more brown than sand. ITN

Chieftain Desertisation Kit

All of the Chieftains listed above were capable of being modified to be more suitable for use in the Middle East.

Modifications included the addition of an air conditioning/filter unit on the front left turret deck, new air filters



Illustration 17: 37 Armoured Engineer Squadron, Chieftain AEV with trailer. The vehicle number –

43 shown on the vehicle side, indicates that this is the third vehicle of the fourth troop. This is something of a mystery as only ten were delivered and this would make twelve. Also the standard establishment was three troops. Maybe one troop had Centurion AVREs or other vehicles made up part of the strength of each troop. RE Association

for the engine and a new track that could cope better with the conditions. It extended the average life of power packs between breakdowns by 50%.

Chieftain AEV

With the introduction of the Challenger II, it was proposed that some of the obsolete Chieftains were converted to engineering vehicles and used to replace the Centurion AVRE 105 and 165. The Chieftain Armoured Engineer Vehicle had been designed previously in 1970/71 and two prototypes made but not pursued as the Combat

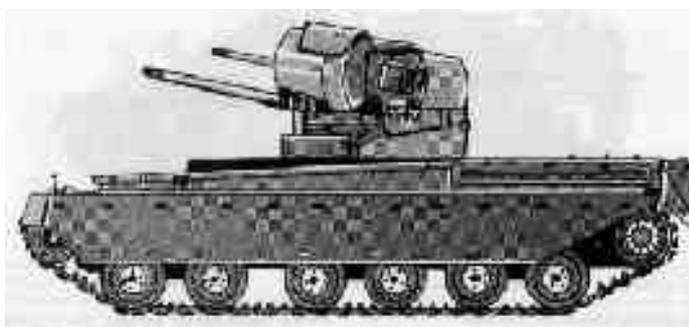
Engineer Vehicle (CET) had been felt superior. Plans to create a gun armed version had also been dropped on financial grounds and its slow speed. With the surplus hulls available the AEV was again considered as a low cost option. It had the turret removed, carried three fascines or nine rolls of trackway (or a mix of the two) or up to 14.5 tons of engineering stores, had a dozer blade fitted as standard and had a specially designed trailer to carry extra engineering stores. It also had a crane with a capacity of 2.9 tons and a reach of 5m. By late 1993 ten had been converted and handed over to the Army for testing. While the design was approved in mid 1994, events overtook the production of further vehicles. With the outbreak of the Sino-Soviet War the British Army put plans to retire the Chieftain as an MBT on hold. As a result the existing vehicles were issued to 37 Armoured Engineer Squadron, 35 Field Regiment Royal Engineers in Germany. Some were given extra armour but it is not known how widespread this was.

Chieftain Marksman

In 1993 with the gradual replacement of the Chieftain with the Challenger II, it was suggested that the Chieftain tanks that were being withdrawn could be used to provide the hulls for a number of new vehicles such as AVREs. Another was a proposed tracked anti-aircraft gun system. A competition was launched for an off the shelf package, Marconi entered the Marksman system which consisted of a Marconi Series 400 radar and twin 35mm Oerlikon cannon. As the trials continued the two front runners were the Chieftain Marksman and Anglo-French Chieftain Sabre programmes (ahead of the German Gepard 2A2 and the US/Swiss entry featuring the same turret as the M691 Diana). The Gepard 2A2 was felt to have problems with the high cost (although the radar was acknowledged as the best) and the US entry was regarded as having too low an availability as the bulk of the production would be needed by the US. By late 1994 only the two British systems remained in the competition. With both vehicles meeting the service requirements the competition continued. With the outbreak of the Sino-Soviet fighting however, the Ministry of Defence decided that the need was that great that both systems would be purchased. Production was however limited as with the British decision to aid Germany it was found that few hulls could be spared so further production was halted.



Illustration 18: Chieftain Marksman of an unknown unit. Salisbury 2003. MoD



Chieftain Sabre

The Anglo-French produced Chieftain Sabre was also a contender in the self-propelled anti-aircraft gun system trials. This used twin 30mm cannon paired with a Thompson CSF radar. Like the Chieftain Marksman this was taken into limited service in 1995 before the comparative trials were completed.

Chieftain Starstreak

In addition to the anti-aircraft gun systems, another proposal was to use the hulls to produce an anti-aircraft missile armed tank. This combined the Chieftain hull with a quadruple Starstreak launcher. The design only reached the mock up stage as it was felt that the quadruple launcher did not need

such a heavy hull even if the radar detection unit was incorporated.

Chieftain Mk6 AVLB

The Chieftain Armoured Vehicle Launched Bridge was first delivered in 1974 (in the earlier Mk5 version) and consisted of a Chieftain hull with a bridge mounted above. It replaced the two Centurion bridging tanks in service. It was also in service with Iran. There are three different bridges that can be used, including the option to have two independently launched No 12 Tank Bridges. It was sometimes given enhanced Dorchester armour.

Bridge	Length	Capacity	Notes
No 8	22.9m	80 tons	Scissor type – had been removed from service but reissued in 1996
No 9	12m	80 tons	Swung horizontally – had been removed from service but reissued in 1996
No 10	24.5	70 tons	Scissor type
No 11	14.5	70 tons	Up and over type
No 12	12	70 tons	Up and over type



Illustration 19: Chieftain AVLB with a No 10 bridge putting on a demonstration of bridge laying pre-war. MoD

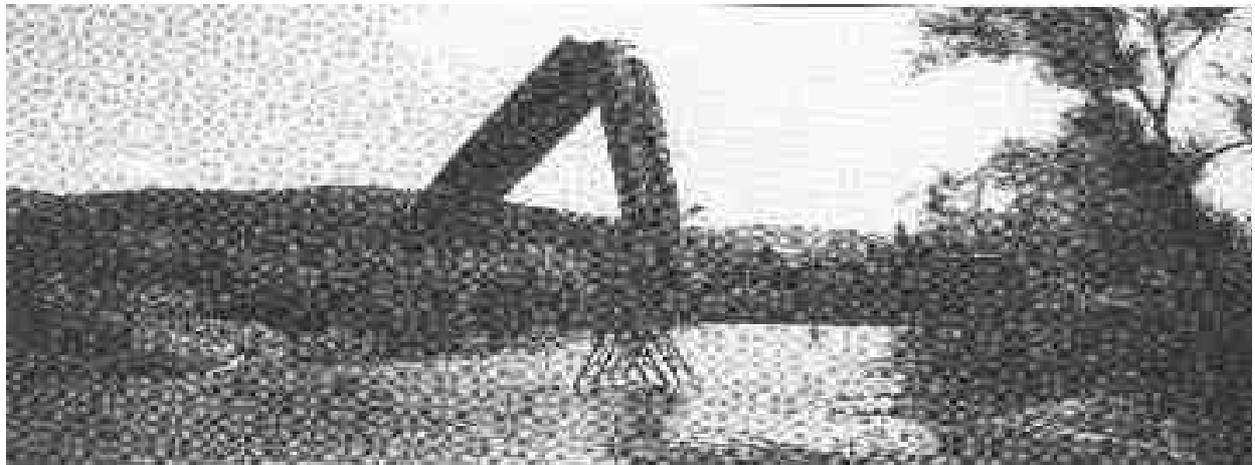


Illustration 20: By using tressels or placing the bridge on a bridge the gaps spanned by the AVLB can be increased dramatically as demonstrated by an AVLB in Poland mid 1998. RE Association

Chieftain Mk7 ARV

The Chieftain Armoured Recovery Vehicle was first delivered in 1975 and consisted of a Chieftain hull with the turret removed and a large winch fitted. It also replaced the Centurion version in service prior to this. It has a crane rated at 6.5 tons and two hull mounted winches (one 30 ton for heavy work, one 3 ton for light – this is also used to make the deployment the heavy cable easier if required). The hull mounted dozer blade can be used as an earth anchor. (this is better as a scoop than the standard dozer blade) – this allows the heavy winch to move 90 tons. It was sometimes given enhanced Dorchester armour. It is fitted with a GPMG on the commander's position for close defence. It was also used by Iran and Jordan.



Illustration 21: Chieftain ARV of 1st Armoured Division on return to the UK in 2003. MoD



Illustration 22: Chieftain ARV of 2RTR recovering a Chieftain AEV in Poland Spring 1997. Note the shelter rigged up over the engine that serves as a crew shelter at night (retaining the engine heat). Chieftain variants fitted with a dozer must be recovered backwards as here due to the blade. MoD

FV4211



Illustration 23: FV4211

This project was the first attempt to create a replacement for the Chieftain, using mainly Mk5 components with the addition of Chobham composite armour. Development ended in 1972 when the decision was made to co-operate with the Germans to try and standardise a vehicle for increased inter-operability.

Future Main Battle Tank (FMBT)

This was the second attempt to find a Chieftain replacement and was a joint Anglo-German project started in 1972. Many innovative ideas were considered and prototypes built, including an assault gun version (nicknamed the Jagdchieftain) before the project was terminated in 1977 by mutual agreement.



Illustration 24: Jagdchieftain prototype

Shir Iran/Khalid



Illustration 25: Khalid. The Chieftain ancestry is obvious. RAC Museum

Parallel to the British search for a replacement for the Chieftain, Iran had ordered the Shir Iran I (Lion of Persia I). This was a developed version of the Chieftain with a new Rolls Royce engine with a David Brown Gear Industries automatic transmission combined into a new power pack. This was designed to overcome the problems with the Chieftain's original engine. After initial problems with the steering the Iranians took delivery of the first of the Shir Iran Is while work continued on a further enhanced version, the Shir Iran II. Design work was complete but two months before production started the contract was cancelled by the new Iranian Revolutionary Government. Fortunately an order from Jordan was received for the Shir Iran II, known as the Khalid in Jordanian service. This order ensured

the continued existence of the manufacturer.

MBT80



Illustration 26: MBT80 prototype - location unknown. It had been stored at the Tank Museum at Bovington but vanished during the war. This photo obviously post-dates this from the graffiti but as of yet it is unknown what happened to it.

In 1979, the British Government looked again at the need to replace the Chieftain. Initially consideration was given to purchasing either the Leopard II or the XM1 Abrams which were about to come into service. As budgets necessitated the replacement in the late 80s it was felt that by this point both would be mature designs that might no longer meet British requirements (although there is some considerable justifiable belief that this was an excuse to not buy a foreign design). A more attractive option was the purchase of the Shir Iran II but this was not felt to meet the requirements of the Army. Drawing on the lessons of the FMBT project, a new programme known as the MBT80 programme was developed. This was however dropped fairly quickly as costs looked excessive and delays looked set to push the project back to 1990 at the earliest.

Challenger I Mk1

In 1979 a decision was made to modify the Shir Iran II to meet British Army requirements as the Challenger tank. An order was placed for 243 tanks and the design was accepted in December 1982 provided solutions to a number of problems were found. The first Challenger was delivered to the British Army in March 1983. These did not have the TOGS (Thermal Observation and Gunnery System) thermal sight system which was still under development (although the box was in place to retro fit it). This became known as the Challenger I Mk1. The biggest enhancements over the Chieftain were the much improved power pack (which could be replaced within an hour in a workshop), improved suspension (giving a much improved cross country performance) and the Chobham armour protection. A decision was made to retain the L11A5 120mm rifled main armament instead of changing to smoothbore like the rest of NATO. This controversial decision was felt to give a greater variety of ammunition type availability.

Challenger I Mk2

As TOGS became available, all the Challenger I Mk1s were all upgraded and became the Challenger I Mk2. In 1984, the MoD ordered a further 64 Challengers to equip a fifth armoured regiment. In 1985 however controversy ensued when the Royal Scots Dragoon Guards represented the UK in the Canadian Army Trophy of 1985 (CAT'85) competition for tank gunnery open to all members of NATO in the Central Region. The SCOTS DG who had changed to Challenger Is came last, a situation made worse by the fact that it was the Hohne Ranges which they usually used and they had come second in CAT'83. The Royal Hussars were determined that this would not be repeated in CAT'87. Unfortunately a series of unlucky incidents resulted in a disastrous performance with the Hussars coming last – getting lower scores than the Chieftain!



Illustration 27: Challenger I Mk 2 crosses a bridge in Poland mid 1997. MoD

Challenger I Mk3

As Mk2 tanks were shipped to Saudi Arabia, a number of upgrades were added. These included increased armour for the ammunition bins, a pump mounted in a jerry can on the rear hull that could feed diesel from the two reserve fuel drums onto the exhaust to produce a dense white smoke (in the same way as a Soviet tank) – this had no effect on the TOGS sight that did not see it. Some Mk2s were upgraded to Mk2(ACB) which was functionally identically to the Mk3 although the ammunition stowage bin upgraded grouped the charges in twos not threes as on the Mk3.

Challenger I Mk4



Illustration 28: Mine damaged Challenger I Mk4 of an unknown unit being recovered by REME technicians using a Unipower (Scammel) Commander. MoD

As the Challenger II came on line, improvements were considered for the Challenger I. The Mk4 retrofitted the L30 120mm rifled gun of the Challenger II to the Challenger I Mk2 under the CHARM II programme. Initial problems with the computer software of the range finder were quickly overcome and the Mk4 entered service. By the start of the war only a small proportion of Mk2s had been upgraded. A number however were later upgraded in base workshops.

Challenger I Mk4/1

A number of Mk4s were converted for the use of JTACs. These were given an extra radio for air to ground communication at the expense of 10 rounds of ammunition and 6 bag charges.

Challenger I Mk4/2

Some Mk4/1s were given an upgrade to the laser range finder allowing it to be used as laser designator at the expense of a further 6 projectiles stored in the turret. The number of bag charges was not affected.

Challenger I Mk5

This was the Mk3 or Mk2(ACB) given the same gun upgrade as the Mk4.

Challenger I Mk6

As an alternative to the Mk5, in late 1994, a Challenger II turret was fitted to a Challenger I hull. While this worked perfectly and was given a mark number, the design was quickly dropped due to a lack



Illustration 29: Challenger I Mk6 at the Imperial War Museum. This is in a non-typical US style paint scheme as it was briefly used by an American unit and has been restored to this condition for display.

of turrets (which are the hardest part to manufacture). No more than ten were manufactured.

Challenger I Mk-- (uparmoured)

All of the Challenger models listed above could have extra panels of Dorchester and/or ERA armour fitted. This was not considered a full mark change as the panels were removable so the designation (uparmoured) was added to these.

CRARRV – Challenger Armoured Repair and Recovery Vehicle

When the Royal Hussars tested the Challenger in 1983, they found that the Chieftain Recovery Vehicle was unsuitable for the new tank. As a result a new vehicle using the Challenger hull was developed with a planned in service date of May 1991. The Gulf War however resulted in this being brought forward. In Operation Granby it was outstanding being an



Illustration 30: CRARRV during Operation Porridge, Poland 1998

outstanding asset being able to not just recover but also repair broken down vehicles and as a result extra vehicles to replace all the Chieftain ARVs were ordered. The crane is capable of lifting a full Challenger power pack and the vehicle can tow a 70 ton tank at 30mph.



Illustration 31: CTTs mothballed at Warsaw Barracks, Portsmouth. June 2002

Challenger Training Tank

This vehicle, the first of its type purchased by the British Army, was a driver training tank used the armoured units and REME. It consisted of a Challenger I hull with a small unarmoured turret with windows all around. The 17 vehicles were delivered in 1991. By 2000 they had been stripped for spares to keep gun tanks going although in 2007 one was restored to running order and used for driver training and to pull stores trailers.

Challenger Plans

Once the Challenger II came into service it was suggested that surplus Challenger I hulls as well as Chieftain hulls be used for variant vehicles. These plans were put on hold in the build up to the war and never restarted. Suggested versions were anti-aircraft, bridge layers and AVREs.

Challenger II

Initially called the Challenger 2 Mk2 this was renamed to avoid confusion. Trials were held in 1990 as it was now felt that after the problems of CAT'87 made it impossible to continue the plans to field a mixed fleet of Chieftains and Challenger Is through the 1990s. Options were the Challenger II, the Le Clerc, the Leopard II Improved (which was regarded as inadequately armoured) and the M1A2. It was at this point the Gulf War occurred where the Challenger I performed excellently in real life conditions. This and the political will not to abandon the British tank industry resulted in the decision to purchase the Challenger II. An order for 127 tanks was placed in June 1991. The sudden coup in Moscow radically changed British options however and further orders were placed although the acquisition rate was never high (by December 1995 a total of 305 had been delivered).



Illustration 32: 3RTR Challenger II tank pushes into Austria during the counter attack against the Italians in Operation Herald. The Independent

Challenger II (uparmoured)

The Challenger II could have extra Dorchester armour fitted. This was not considered a full mark change as the panels were removable so the designation (uparmoured) was added to these. These panels were mounted on the turret front and sides adding 100C armour as long as the units remain intact. Unlike ERA these are only destroyed on taking 100 damage points.



Illustration 33: The mysterious photo. Collection of John Beattie

Challenger Marksman

This vehicle is a bit of a mystery, no records of any Challengers being fitted with a Marksman turret exist (although the turret was designed to be capable of fitting them). However a mysterious photo that appears to be in factory setting (as opposed to a REME workshop) shows a Marksman turret being fitted to a Challenger I hull. Unfortunately the vehicle number is obscured by the angle making further research difficult.

Challenger III

In 2007 the British Army issued a requirement for a new tank. In early 2008 the

Challenger III was announced as the selected model (although admittedly it was the only entry!). The design used the same base hull as the Challenger I/II but with remote turret mounting the same L30 gun as the Challenger II. This was a radical departure for the



Illustration 34: "Polyphemus" of 5/B/2RTR on arrival in Saudi Arabia before uparmouring kits were attached. It is a pre-production model with a larger less well armoured commander's sight. The Independent

British Army which had always rejected automatic loaders. With the outbreak of the Saudi War, A (Badger) & B (Cyclops) Squadrons of 2RTR were shipped to Saudi Arabia with the first versions (at least four of the tanks appear to have been pre-production models) where they performed well against the Iranian armour. It has been proposed that a Mk2 version featuring a 120mm smooth bore gun be created for possible export orders.

ChERP – Challenger/Chieftain Enhanced Radiological Protection

This upgrade programme to the NBC systems of Chieftain, Challenger I and Challenger II used special composite material inserts to the interior of the vehicle, new filter system and a specially developed paint that was easier to decontaminate. It was in the advanced prototype stage when the nuclear attacks ended any further development. The advanced paint was later used on the Challenger III.

Chronicler

When the Challenger III was put into production it was realised that a lower cost version might be an option both for sale to the UK and possibly for export. In 2009 the Chronicler was revealed as a private venture. This was a turret-less assault gun that used many components from the Challenger III including the gun, engine, hull and autoloader. Initial sales were slow, with Saudi Arabia ordering 50 to re-equip the 2nd Armoured Brigade after the losses it



Illustration 35: Chronicler photographed during Canadian Army trials. Note the white Maple leaf. Toronto Times

had taken in action against the Iranians. Their successful use under the command of Major General Prince Said al-Abbas prompted world interest with Canada, Jordan and Norway purchasing small numbers for trials. Norway later decided against purchasing the Chronicler, Canada ordered 43 (to equip one regiment) and Jordan ordered 80. The British Government also purchased 86 as a lower cost alternative to the Challenger III to equip two regiments retiring the last of the Chieftain tanks in service.

Vickers Mk 3

This tank was never officially used by the British Army but was designed by Vickers-Armstrong as a private venture to be a low cost but effective tank as an alternative to the Centurion and Chieftain, mainly for the export market. Seventy of the Mk I were sold to Kuwait and India manufactured a large number of modified versions as the Vijayata. The enhanced Mark 3 was completed in 1975 (the Mk 2 which only reached prototype stage, was a Mk 1 with a new turret which added four Swingfire missiles). This improvement of the Mk 1 included extra armour, a new diesel engine and a more modern fire control system. Kenya bought 76 and Nigeria bought 136.

In late 2003 a major surprise occurred when elements of 9/12 Lancers acting as the recce element of East Division were nearing the outskirts of Newcastle when they were fired on by a heavy calibre gun destroying a Scorpion in a catastrophic explosion. Withdrawing immediately the 9/12th reported the contact before advancing more cautiously. To their surprise they saw an MBT that they did not recognise moving north. This mystery tank aroused much speculation among East Division. Further recces again came under fire but this time a Milan team from 9/12th engaged the tank and destroyed it. Intelligence troops from the division examined the tank and discovered it was a Vickers Mark 3. What worried them however was that it had been left in situ for some time and could not have been the one that had engaged them previously. The Division held in place and waited for 24th Armoured Brigade to be brought up (which arrived in place at 19:30 the following evening). Taking time to assess the options and routes overnight, 14/20th King's Hussars (with Challenger Is) assigned A Squadron to 1st Green Howards and received A Company in return. The two battle groups cautiously advanced into the outskirts in a two pronged advance towards the city centre and at 11:43, a Challenger I of the 1st Green Howards Battlegroup engaged a Vickers Mk 3. "Ascot" commanded by Lt Paula Dickinson reported they had engaged and hit it with three rounds to no effect. When accompanying infantry reached the position they found that the Vickers Mk 3 had been abandoned some time previously. Pushing on the crew of "Ascot" could only listen with embarrassment as "Binky" from 14/20th King's Hussars Battlegroup engaged a moving Vickers Mk 3, getting a first round hit at 1000m. This caused a mobility kill and as the crew started to abandon it, "Binky" engaged again causing the vehicle to explode sending the turret 30 feet into the air. Pushing on 24th Armoured later discovered that the tank just killed was the only mobile one and that the defenders were fleeing northwards. Prisoners were found to be

"Moving into Newcastle was nerve wracking, many of our troops were replacements and had never had to fight tank to tank – plus we didn't know how many to expect – they might even have had more than us for all we knew – they had kept them secret rather well."

Lt Col Colin Clayton, commanding officer 14/20th King's Hussars Battlegroup. BBC Interview 2005

marauders from the Scottish Fringe, a smaller faction of the Tartan Army. They had kept the discovery of the tanks in the ruins of the Armstrong-Vickers factory secret even from the Tartan Army Council (hence the surprise as English agents in the Tartan Army were unaware of the secret). Thus ended the first recorded MBT verses MBT battle on English soil.



Illustration 36: "Valiant" pictured at the end of the trek to Mombassa prior to loading aboard the freighter that would carry it to Iran. Most of the external stowage has been removed by this point. February 2001. Picture by the commander Lt Andy Abnett

Whilst never used officially at least two Vickers Mk 3 have seen British service. These were two ex-Kenyan tanks which were used by the British Army Training and Liaison Staff Kenya in their march to the coast with the US 173rd Airborne. One had been captured from the Lord's Resistance Army (after being captured from government forces previously), the origin of the other is unclear. One broke down on the way ("Victory") and had to be destroyed, the

second ("Valiant") was shipped to Iran in the evacuation where it was handed over to the Iranian Army in March 2001.

Vickers Mark 7

A later developed version of the Vickers Mark 3 was the Mark 4 using an aluminium hull but this was found to be incapable of supporting the weight of the turret.

From this the Mark 7 was developed which used a Leopard II hull mated with an enhanced version of the Mk4 turret using composite armour. This could be armed with the 105mm or the L11 120mm of the Challenger I or the German 120mm smooth bore of the Leopard II. This was entered in the trials that resulted in the Challenger II being selected. After this it was offered for export. With the German rearmament leaving no spare Leopard II hulls, this version was soon put on hold.



Illustration 37: Mark 7 during British Army trials. MoD

In October 1997, the German government enquired about the possibility of purchasing 300 Mark 7 turrets (which the Germans would fit with 120mm smooth-bore guns) to fit to surplus Leopard III hulls (which were barely modified Leopard II hulls) as turret production had fallen behind. These were to be known in German service as the Leopard IIIA1 and by Vickers-Armstrong as the Mark 7A. After the nuclear exchanges a month later however these plans were abandoned.

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Vickers Marksman/Musketeer



Illustration 38: Photo showing vehicle number 4002 during pre-service trials. Note the lack of markings and pristine condition. Vickers-Armstrong

When the Sino-Soviet war broke out, Marconi submitted a late entry to the anti-aircraft gun competition. They pointed out that as an alternative to their Chieftain Marksman, the Vickers Marksman could be completed. This would use new production Vickers Mark 3 hulls mated with exactly the same turret. Cost was not actually greatly higher as the cost of reconditioning the Chieftain hulls was considerable and service life costs were actually lower.



Illustration 39: Waterloo Battery, 18 Air Defence Rgt RA Vickers Marksman test firing before embarking for the Middle East

Initially this proposal was not looked on favourably but once the fighting broke it in Europe, an emergency procurement of 100 Vickers Marksman was made as the FV4507 Musketeer. Most of the initial batch of 50 was assigned to the Middle East Field Force as spares could be obtained from Iranian production lines. In addition an order for a further 200 turrets for Iranian use was made. These were fitted to a variety of hulls including T55 and Centurion but this is beyond the scope of this article (there is some debate as to the number actually supplied).

RHAAMG (Remote Heavy Anti-aircraft Machine Gun)

British tanks were armed with a 7.62mm GPMG for the commander. Early experiences in Poland however convinced the MoD that an intermediate weapon between the GPMG and the main gun was required. An autocannon was the preferred option but the difficulty of retrofitting this was considered insurmountable and a smaller calibre option was eventually decided on. Using either an M2 or M3 .50cal HMG in a remote mount using the new L12 mounting on the turret roof this used armoured cables and a TV link to allow the weapon to be fired from either the gunner or commander's position without exposing the firer (although the weapon had to be reloaded externally by either the gunner or commander). This could be fitted to any British MBT and could be used in addition to the normal AAMG (although the two together could



Illustration 40: Challenger II (uparmoured) featuring the RHAAMG upgrade. Poland 1999 MoD*

occasionally make it difficult to exit the hatch in a hurry). It has a traverse of 45 degrees each side of the main gun. Vehicles fitted with RHAAMGs added * to the vehicle designation.

MIMIC

This was a British designed anti-mine system that was deployed during the Gulf War. Designed to detect and ignite mines that used magnetic fuses. Initially deployed on Chieftain AVLBs and AEVs, by 1995 they were more common and were deployed on a range of MBT based vehicles. They were particularly common on engineering vehicles and also on dozer equipped MBTs. They were however very susceptible to EMP and so by the end of the war they were very rare. Most armoured vehicles deployed to Saudi Arabia in the Saudi War were fitted with the few surviving examples.



Illustration 41: 2RTR Challenger I Nov 1996. The panel displaying the red Maltese Cross is a squadron and troop designator (the cross being the second squadron and the red being the 2nd troop). The red marking on the turret side is of unknown significance. What is of interest is that the commander is unusually wearing a DPM combat jacket, a very unusual practice for tank crew as the baggy jacket was too prone to snagging in an emergency exit. MoD

Command Tanks

British tanks have three antennas, on a normal tank only two of these are actually used. Command tanks use this third antenna. It is therefore impossible to tell a command tank without other clues. Usually the best clue is the vehicle identification number (if visible).

Field Modifications

Through the war many field depots introduced local modifications to British MBTs. The most common was the addition of extra external stowage bins as space is always at a premium on tanks.

Vehicle numbers and callsigns

British tanks followed a simple numbering system, tanks were given a two digit number with the first being the squadron number and the last being the vehicle number within the troop. This corresponded to their radio callsigns. Telling units from different squadrons was difficult just using this as there was a letter prefix which changed on a daily basis so was not painted on. The commander's vehicle was designated 0C (pronounced zero charlie). Some units adopted different methods of identifying squadrons, in the MEFF, the rotating chevron used by the Israelis (via the USMC) was used whilst in Europe colour was often used (usually a coloured backing, occasionally coloured numbers). 2RTR was unique in that they incorporated symbols as well as colours into the system. As ever there was considerable latitude in what method was employed by regimental commanders.

"I was sick of getting my sleeping bag which was stored on the outside shot up and leaving a trail of feathers over the battlefield. I was happy when they told us that the REME LAD (Light Aid Detachment) were adding extra stowage bins on our refit. Afterwards I found the box didn't stop bullets so my doss bag still got shot to pieces but at least the box kept the feathers together..."

Cpl Kevin Howard

2 Royal Tank Regiment

"Tally Ho!" Arms Press 2011

Organisation

British tank units come from three main sources, the Royal Tank Regiment, the cavalry and the yeomanry. In addition there was also the small Household Cavalry which in addition to its horsed ceremonial role also formed two recce units. Whilst all (excepting the Household Cavalry) were theoretically part of the (administrative) Royal Armoured Corps, all units placed the emphasis on their regimental identity. The Household Cavalry is technically a Corps in its own right but for all practical purposes acted as part of the Royal Armoured Corps in wartime).

The Royal Tank Regiment was the youngest of the armoured units being established from the Heavy Branch of the Machine Gun Corps in the First World War. The Royal Tank Regiment battalions are composed only of heavy tank units and there were no Territorial Army units. 1RTR is unique among non-Scottish, Gurkha and Irish units in the British Army for having a pipe band.

The cavalry regiments made up a substantial part of the British tank unit strength. These were horsed cavalry that had converted to a mechanised role (completing this during World War Two). These could be found operating either as heavy tank units or in a reconnaissance role using light tanks (often but not always based around historical roles). In the 1980s and 1990s many swapped between these roles on a seemingly arbitrary series of re-rollings.

The yeomanry units were composed of Territorial Army cavalry units. These operated only in a reconnaissance role with most being equipped with wheeled vehicles such as the Fox or Land Rover.

As the war progressed it was planned that a number of infantry units were to be re-rolled as tank units. These plans were only ever implemented in a limited way with 2nd Bn Coldstream Guards and 2nd Bn Scots Guards, both of whom converted to armoured battalions using Chieftain tanks drawn from war reserves. These both adopted the all seeing eye of the Guards Armoured Brigade of World War Two. This often causes confusion on identifying vehicles. Infantry insignia was retained. Despite being deeply unpopular with the units concerned, plans were made to convert further battalions. These plans to increase the armoured strength using infantry conversions were stopped as numbers of vehicles held in storage were rapidly being depleted as battlefield replacements.

In BAOR prior to the start of the war, the organisation of the heavier tank units was based around the Type 57 organisation introduced in 1984. In this a regiment (full strength 44 officers and 539 other ranks) was made up as follows:

- Regimental HQ
- Regimental HQ section
 - 1 x MBT
 - 3 x Sultan
 - 1 x Spartan
 - 3 x Ferret
 - 1 x Land Rover FFR
- Recce troop
 - 8 x Scorpion (some replaced by Sabre from 1994-1995 and Scimitar from 1995)
- Tank destroyer troop
 - 2 x Ferret
 - 9 x Striker
 - 2 x 4ton truck
 - 2 x Land Rover (REME)
- HQ Squadron
 - 6 x Land Rover FFR
 - 2 x Land Rover
 - 1 x 1 ton Land Rover
 - 10 x 4 ton trucks
 - 2 x stalwart or 4 ton trucks
 - 1 x FV432 Ambulance
- Light Aid (LAD) Detachment – REME
 - 1 x armoured recovery vehicle
 - 1 x FV432
 - 1 x Land Rover
 - 1 x Sampson
- 4 x Tank squadrons each
 - HQ Section
 - 2 x MBT
 - 1 x Ferret
 - 1 x Land Rover
 - Admin troop
 - 1 x Land Rover FFR
 - 1 x Land Rover
 - 3 x Stalwart or 4 ton trucks



Illustration 42: Good study of the issued intercom system, goggles and vehicle crew helmet. Guards Museum

- 1 x 4 ton truck
- FV432 Ambulance
- REME Section
 - 1 x FV432
 - 1 x FV434
 - 1 x Recovery vehicle
- 4 troops each with
 - 3 x MBT

As the Challenger I came into service, these were initially assigned to Type 43 units that had an identical organisation except there were only 3 tank squadrons. Most of the Type 43 units in BAOR were upgraded in the build up to war to Type 57 at least initially until losses resulted in the Type 43 becoming the standard from 1st January 1998 (even then few units reached this level of equipment). From 7th November 1998 the following organisation (Type 20) became the official structure of a British armoured regiment:

- Regimental HQ
- Regimental HQ section
 - 2 x Sultan
 - 1 x Spartan (defence section)
 - 2 x Ferret
 - 2 x Land Rover FFR
- Tank destroyer troop
 - 1 x Land Rover FFR – occasionally Ferret or Spartan
 - 6 x Striker – sometimes replaced with Spartan with Milan or dismount-able Milan teams
 - 2 x 4ton truck
- HQ Squadron
 - 6 x Land Rover FFR
 - 2 x Land Rover
 - 1 x 1 ton Land Rover
 - 10 x 4 ton trucks
 - 2 x stalwart or 4 ton trucks
 - 3 x Land Rover Ambulance
- Light Aid (LAD) Detachment – REME
 - 1 x armoured recovery vehicle
 - 3 x FV434 or Sampson (minimum 1 FV434)
 - 2 x Land Rover
- 2 x Tank squadrons each
 - HQ Section
 - 1 x MBT
 - 1 x Land Rover or Spartan or Sultan
 - Admin troop
 - 1 x Land Rover FFR
 - 1 x Land Rover
 - 3 x Stalwart or 4 ton trucks



Illustration 43: Badge worn on the upper right arm (above NCO rank badges) by members of the Royal Tank Regiment

- 3 troops each with
 - 3 x MBT
- 1 x Recce tank squadron – often the troops were dispersed to the tank squadrons with each squadron reinforcing another squadron. Some units instead had two Scimitars/Scorpions/Sabres with 1 Spartan in each troop.
 - HQ Section
 - 1 x Land Rover or Spartan or Sultan
 - Admin troop
 - 1 x Land Rover FFR
 - 1 x Land Rover
 - 2 x Stalwart or 4 ton trucks
 - 2 troops each with
 - 3 x Scorpion/Scimitar/Sabre (occasionally Fox) – often mixed types
 - 1 troops
 - 3 x Spartan

From 1st January 2002 the organisation changed again depending on type. Challenger units were equipped as follows (on paper at least):

- Regimental HQ
- Regimental HQ section
 - 2 x Sultan
 - 1 x Spartan (defence section)
 - 2 x Land Rover FFR
- HQ Squadron
 - 4 x Land Rover FFR
 - 4 x Land Rover
 - 1 x 1 ton Land Rover
 - 10 x 4 ton trucks
 - 2 x stalwart or 4 ton trucks
 - 3 x Land Rover Ambulance
- Light Aid (LAD) Detachment – REME
 - 1 x armoured recovery vehicle
 - 3 x FV434 or Sampson (minimum 1 FV434)
 - 2 x Land Rover
- 2 x Heavy tank squadrons each
 - HQ Section
 - 2 x MBT
 - 1 x Land Rover or Spartan or Sultan
 - Admin troop
 - 1 x Land Rover FFR
 - 1 x Land Rover
 - 3 x Stalwart or 4 ton trucks
 - 3 troops each with
 - 4 x MBT



Illustration 44: British tank commander 1997. The DPM version of the NBC suit was rarely issued to tank crews who usually continued to use the OG version throughout the war.

- 1 x Light tank squadron
 - HQ Section
 - 1 x Land Rover or Spartan or Sultan
 - Admin troop
 - 1 x Land Rover FFR
 - 1 x Land Rover
 - 2 x Stalwart or 4 ton trucks
 - 3 troops each with
 - 3 x Scorpion/Scimitar/Sabre (occasionally Fox) – often mixed
- 1 x Recce squadron
 - HQ Section
 - 1 x Land Rover or Spartan or Sultan (usually Land Rover)
 - Admin troop
 - 1 x Land Rover FFR
 - 1 x Land Rover
 - 2 x Stalwart or 4 ton trucks
 - 2 light recce troops each with
 - 4 x Land Rover
 - 1 light recce troops each with
 - 4 x Spartan



Illustration 45: Tank commander of a Chieftain uses the telephone to speak to infantry (this is located on the rear hull). Note the black overalls and the beret worn pulled down on both sides. The Independent.

Occasionally the light armour or recce squadrons were replaced by cavalry but this was usually restricted to the light role regiments.

In many ways this organisation reflected what was already happening with the shortage of tanks. Chieftain units usually retained the Type 20 organisation but reduced the number of tank squadrons to one.

Paint Schemes



Illustration 46: Royal Hussars Challenger 1 tank in typical paint scheme.

Most British Army AFVs in Europe were painted in light olive green with wide irregular black stripes. Occasionally the stripes are instead in dark olive. The black often faded to a dark greyish

colour over time. Some units were using a variant scheme initially used in Canada which substituted a sandy-brown for the black in about a 50:50 split. This had originally been used for OPFOR vehicles but was found to be very successful in lighter coloured terrain.

In the siege of Warsaw, a number of 15/19th King's Royal Hussars Chieftains were repainted in a peculiar white and grey box over grey pattern initially developed for use by the Berlin Brigade.



Illustration 47: An unidentified Chieftain Mk 9 tank from the 15/19th King's Royal Hussars in Warsaw. In the original photograph the identification number is obscured by troops so has been left off here.

Intended for use in an urban environment this was initially believed to only be used by C Company who were part of the Devon and Dorsets Battlegroup (who appear to have also painted FV432s and support vehicles in the same scheme). It has since become apparent that this scheme was also used by other companies. It is unlikely to have lasted beyond the refitting after the withdrawal.

Tanks assigned to the Middle East Field Force were repainted in a uniform sand coloured scheme.

All notes on paint schemes however should be taken with a pinch of salt as local conditions and deteriorating supplies often resulted in atypical schemes based on the resources available and the tactical usage.

Of interest is the paint scheme adopted as English troops pushed north towards Scotland. Expecting a confrontation with similarly looking armour, a 4" wide recognition stripe of orange paint was painted around the turret of English tanks.

Tank crew uniform



Illustration 48: Based on a photo from a corporal of 1RTR in mid 1997, this illustration shows the black coveralls with white insignia and the red shoulder slides of 1RTR (2RTR used yellow, 3 RTR blue and 4 RTR green). He is carrying an L22 with a 30 round magazine (it was issued with a 20 round version). He appears to have replaced the excellent issue sling with a simple one possibly from an SLR. On his right hip is an NBC pouch with it's integral belt.

British tank crew uniforms really deserve a book to themselves but in the interests of completeness a few notes are given here. Most tank crew wore coveralls at the start of the war. These were of a fireproof material and were usually green although the Royal Tank Regiment had a tradition that theirs were black. Over this was frequently worn a web belt with (rarely) or without (more commonly) any pouches (these were usually 58 pattern belts although 37 pattern and PLCE were sometimes used, the plastic belt was almost never seen). Rank was worn on the shoulder slides by officers and on the sleeve by other ranks either pinned directly to the sleeve or more usually on a brassard (often incorporating a pen holder – this was also frequently worn without rank insignia by officers). As the war progressed non-flame resistant materials were often used and both types could be found manufactured in DPM. A version in DPM with thick straps sown into the uniform shoulders to aid casualty evacuation was common from late 1997 (sometimes with a velcro flap cover to reduce the chances of snagging). From mid 1996 a special assault vest was issued to tank crews which incorporated zipped material panels to cover the pouches making it easier to get in or out of vehicles without pouches snagging. This was never widespread but was popular with those who could obtain in. Most however had to rely on PLCE webbing or assault vests (many chose the small chest rigs as they were easier to enter or exit the vehicle wearing). For those without the specialist vest, normal practice was to put the webbing on the outside of the tank, ideally near the hatch to be grabbed on dismounting.



Illustration 49: Imperial War Museum reconstruction of a dismounted tank crewman in Iran 1999. Note the vehicle crew helmet (with separate boom mike attached to earphones) and goggles, Northern Ireland leather gloves, mix of temperate and desert items and battered and torn SAS issue smock. He has an SA80 sling supporting an unknown weapon. Imperial War Museum



Illustration 50: Good example of the green coveralls worn by cavalry units. MoD

Small Arms

British tank crews started the war equipped with each crew being issued two L9A1 Browning High Power pistols plus two L85s (these were usually A1 versions with SUSAT sights). It was planned to issue the L22 carbine but this had barely started by the outbreak of hostilities. As the war progressed the official issue remained the same but occasionally the pistol became the L105A1 (P226) although this was never an official issue (these were mainly issued to the Royal Navy and Royal Air Force). The L85s were frequently upgraded to A2s or replaced by the L22 both of which could be found fitted with either iron sight or SUSAT although many crew were issued with the L2A3 Stirling which was popular due to it's small size. In addition many foreign weapons were unofficially carried. Particularly popular were folding stock AKs, Car15s, Uzis and G11s. Pintel mounted GPMGs were often dismounted and carried by crews who's vehicle was destroyed. By the time most had converted to dismounted infantry it was hard not to tell tank crew from normal infantry.

"We were issued Brownings and SA80s when we went to war. By early 1997 replacements were turning up with a mix of weapons, lots had Stirlings and a few had Stubbies (L22s), one even had a Stirling 7.62 a bit later on. No matter what we had we always tried to make sure we had a decent ammo supply. A lot of people forget us tankies had frequently acted as infantry in Northern Ireland so we could act in that role if needed (which was all too often the rate we were losing tanks) "

Sgt Ron Evans

1 Royal Tank Regiment quoted in
Osprey Warrior: 107 British Tank
Crewman 1996-2007 Osprey 2013