

The FV432/30 in the Twilight War

In the 1980s prior to the introduction of the FV510 Warrior, attempts were made to increase the effectiveness of the FV432¹. One such attempt was to create an IFV using off the shelf parts. The Rarden cannon armed turret off a Fox was mated with the hull of an FV432 (covering both the rear deck hatch and commander's hatch)². A total of 13-15³ were converted (although it is believed that there were two spare turrets in case of vehicles being damaged). Changes included the changing of the fitting of the commander's hatch on the deck of the hull to a lower profile one to reduce the risk of turret strikes (although the hatch remained the same).

The turret is best described as a semi-basket design with a large 30mm

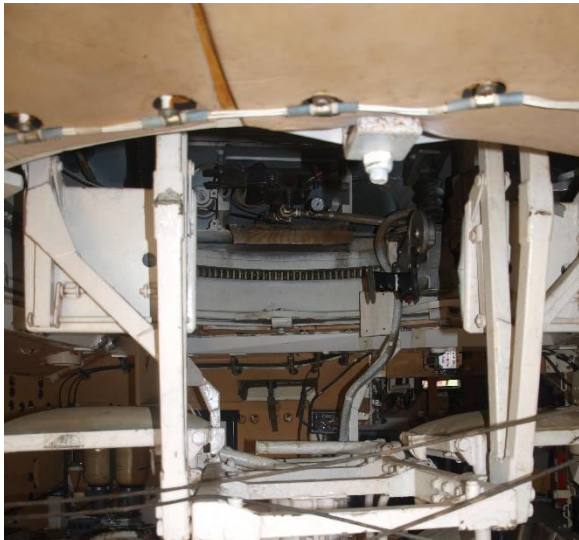


Figure 2: The turret interior showing the rear of the seats which are in the lower position (the ammunition box between the seats has been removed - as has much of the internal stowage). Note the spring loaded foot rests have not sprung back up to the vertical position.. The ropes visible are to keep people off while the vehicle is being refitted. (Author)



Figure 1: The author driving one of the original Berlin Brigade FV432/30s (this one was originally an ambulance version which can be identified only by examining the internal fittings). All four hatches are clearly visible in this shot. The box to the left of the 30mm Rarden cannon is the IR night vision equipment (missing its warning sign), the hole to the right is where the L7A2 GPMG would be fitted. Unusually, there is a ladder added to the hull front to aid mounting/dismounting. The vehicle was repainted in preparation to deploy to Saudi Arabia in 2007 (although in the end the unit upgraded to FV510 Warrior before deployment). Photo courtesy of Christine Appleyard

ammo storage bin with a seat on either side that can be used in both upper (head and shoulders out)⁴ and lower (closed down) positions.

The spring loaded foot rests are designed to spring up when no pressure is on them but by 1995 the springs were that worn that they regularly

went part way back up at best. As with any AFV space was cramped (although nowhere near as bad as on Soviet vehicles) and moving between positions was difficult at best⁵. It was noted that the turret was very stable when stationary firing on the range and it was often used by trainee Fox crews for gunnery qualifications.

The hull rear has four seats, two on each side with backs to the outer

“As with all British vehicles the FV432/30 includes a BV (boiling vessel) and built in water container to make tea and heat the (in)famous compo rations. Intended for use on the contaminated World War Three battlefield it allowed the crew to fight fully enclosed. To help with that the gunner's seat could be converted into a commode – we always thought that would be useful if he was observing and saw all the Soviets coming into Berlin!”

Lt Aaron Pickering, 1st Bn Welsh Guards quoted in “The Berlin Brigade” by Sarah Dennis, Osprey 1995

¹ The FV432 was originally to be called the Trojan but this was dropped to save confusion with the car manufacturer of the same name. 3000 were produced before production stopped in 1971.

² In order not to snag the fittings a three inch spacer was fitted. Figure 1 shows this clearly.

³ One source states that 18 were converted.

⁴ This involves using the fold down headrest on the seat to become the new seat.

⁵ The hull however is quite roomy for vehicles of this type (although anyone who is not used to AFVs will find it very cramped).

wall (the turret takes up the remaining space, replacing the three forward seats on each side in the APC version).



Figure 3: One of the few shots of FV432/30s in action. It is believed that this was taken during the advance on Hattorf Am Harz on the Oder during the 1997 drive on Warsaw. The vehicles belonged to the Queen's Lancashire Regiment and can be identified by the unusual practice of the painting of the call sign on the engine access hatch. Photo by Christine Appleyard.

Seatbelts are provided for each passenger (and all crew positions) although there are no vision ports for the passengers (as per British doctrine⁶). Initially no dismounted troops were carried, gradually as vehicle losses mounted it became common practice for the vehicle to carry four troops (a fire team). 3 Royal Anglian found that in many cases this was inadequate so sometimes the vehicle became used as a command vehicle carrying the platoon headquarters. Other platoons did not like this as they felt that placing the whole command element in an easily identifiable vehicle was an invitation to command decapitation and instead paired vehicles to carry a section between them. The Queens Lancashire Regiment tried a different approach, placing a pair of Milan teams plus a commanding NCO within the vehicle in the commander's position. This gave the vehicle a (dismounted) anti-tank capability (something that critics had complained that British AFVs were

lacking⁷).

The resulting vehicle was no a huge success being top heavy and complex to maintain. Initially a total of thirteen vehicles were built (using a mix of both Mark I and II hulls) and issued to the Berlin Brigade where it was felt that they would be of use in the urban environment. They were issued on a scale of four per infantry battalion to form (in modern terms) a fire support group⁸. With the disbanding of the Berlin Brigade most were initially deployed to Canada where they were used as OPFOR vehicles but were returned to the UK in 1994 where it was planned to scrap them.

⁶ British doctrine regarded the role to be moving the infantry into position on the battlefield where they would fight dismounted. It is worth noting that unlike the standard 432 there is no hatch for passengers to look through as the turret has replaced it.

⁷ It was British doctrine not to arm APC/IFVs with ATGM as it was felt the best anti-tank weapon was either a tank or a dedicated ATGM carrier. In a budgetary restricted army it is worth remembering that the ATGM is a substantial part of the cost of the vehicle. It is estimated that including ATGM on the FV510 Warrior for example would reduce the provision to at most 2/3 of the required numbers and even that would involve a substantial increase to the budget.

⁸ In at least one unit these were manned by the drummers of the battalion, an interesting change from their usual role as stretcher bearers. It appears this decision was made as an attempt to not deplete the already under strength infantry battalions. The author has not been able to identify how widespread this source of crews was. The use of the vehicles surplus to the 12 issued to the infantry battalions is unclear in all sources.

The outbreak of the war however changed this and they were issued to 3rd Battalion Royal Anglian Regiment when it deployed to Germany to supplement the FV432s. Deployed four to each rifle company in the battalion they were used to provide fire support in assaults or in defence. While not as good as the FV510 they were felt to be better enough than the standard FV432 for the unit to scrounge around for extra turrets from wrecked vehicles. As a result workshop conversions increased the numbers used by the unit although the total never rose above twenty vehicles in the unit at any point. Minor variants included the use of Scimitar turrets (and possibly although this has never been confirmed a Sabre turret – which was a slightly modified Fox turret). A more major variant was the version using the 76mm armed Scorpion turret at least three of which were built and issued to D (Support) Company⁹.

“Our 432s included some with turrets fitted to make a surrogate MICV. While they gave us fire support they did however make the vehicle difficult to handle, top heavy and needed more maintenance. The crews assigned to them hated them but those of us with standard 432s appreciated them when we came under fire so we often ended up helping maintain them in base.”

Corporal Stan Arkwright, 3 Royal Anglian quoted in British APC Variants 1995-2005, Osprey 2019



Figure 4: Interesting photograph of 1 Queens Lancashire Rgt in May 1998. All three of the standard cammo schemes are visible here, on the right is the standard European camouflage (with an unusual example of pin up style art on the hull front – this was rarely seen in front line vehicles. At the rear in the centre is a sand coloured version and on the left is a newly overpainted green/sand pattern. Of interest is the extra stowage bin welded onto the rear of the turret. This clearly identifies the unit as the Queens Lancashires as these were not present on those of the Royal Anglians.

When developed for the Berlin Brigade the vehicles were initially painted in the odd box camouflage used only by the Brigade. When deploying to Canada they were repainted into the sand and green pattern used there¹⁰. When they were issued to 3 Royal Anglian they were mainly repainted in the standard black and green European camouflage pattern. From May 1998 a number are seen using the plain sand colour camouflage. It is believed that these were being prepared for issue by 8 (Close Support) Bn REME to 1 Queens Lancashire Rgt who were planned to deploy to Iran as a surrogate FV510 (the unit was however instead

deployed to 8 Infantry Brigade under 3 (UK) Mechanised Division as the situation in Europe worsened) and as a result a number were seen in this pattern in Europe (most although not all were given a green spray in bands to resemble the pattern used in Canada). Many of the FV432/30s issued to the Queens Lancashire Rgt were new conversions using turrets from damaged Foxes and Scimitars (and at least 3 Scorpions).

The only known surviving running example in service is of a standard Fox turret equipped FV432 which is housed on loan from the Army in the Imperial War Museum (South) in Portsmouth although a number are believed to be in private hands. The Royal Armoured Corps Museum (now housed in Leicestershire) is in the process of converting a standard 432 into the 432/30 format using a spare Fox turret.

⁹ Interestingly one used a Scorpion turret from a Canadian Cougar FSV which had mounted a Scorpion turret on a MOWAG Piranha 1 APC. The origin of this turret is much disputed but appears to be a vehicle recaptured from a Russian unit.

¹⁰ This is usually known as Suffield pattern camouflage after the training area where it was used.

STATISTICS

2nd Edition Twilight 2000

Price \$80,000 (R/-) \$78,000 (R/-) if based on the Mk 1

Wear value: Vehicles were in a poor state due to wear and tear and none have a wear value of less than 4 (these are generally wartime conversions) and many are worse.

RF + 2

Stabilisation: Fair although most were that worn that they should be treated as none.

Armament: 30mm Rarden plus L37A2 GPMG coax, 2 x four barrelled smoke dischargers on turret front¹¹

Ammo: 200 x 30mm 1000 x 7.62N belted

“One thing they never tell you about the 432 in the history books is that the hull is made of steel and it rusts! Ours weren’t in a good state when we got them as they had been withdrawn ready for disposal. Add to the fact that they were manufactured in the 60s and the turret weight added to the wear and tear and you can see the difficulties in maintaining them.”

Corporal Stan Arkwright, 3 Royal Anglian quoted in British APC Variants 1995-2005, Osprey 2019

Engine: K60 engine (Rolls Royce B series in Mark 1)

Fuel: AvG G D A (or G A if based on the Mark 1)

Weight 16 tons

Load: 400kg

Crew 3 + 4

Mnt: 10

Night vision: White light headlights and Passive IR sights for two turret crew

Radiological: shielded

Exits: Hull top driver and commander, Turret top gunner and “loader”, Hull rear large door. Note all are in one large compartment so can use any exit with some effort.

Damage record

Crew members driver O gunner O commander O loader O (Note the commander is technically located in the hull but usually sits in the turret leaving the “loader” who is in reality often the dismount commander to occupy the command position in the hull)

Passengers 1 O 2 O 3 O 4 O

Radio O

Night vision equipment O

L21A1 30mm Rarden O

Co-ax L7A2 O (Sabre version has a chain gun with poor reliability due to change in direction of fitting)



Figure 5: FV432/30 during preparation for deployment to Saudi Arabia in 2007. Oddly it appears to be flying a Royal Artillery flag, possibly it is being used as an artillery observation vehicle. Some accounts indicate that one was deployed to Saudi Arabia as an AOP (Artillery Observation Post) vehicle but the relevant records are not available under the 30 year rule regarding government papers and no photographic evidence has yet come to light. [Courtesy of Christine Appleyard]

¹¹ The standard FV432 has two three barrelled launchers on the hull. Many vehicles were seen with both the hull and turret dischargers fitted, especially when they were field converted.

Suspension Minor damage O Immobilised O
 Engine O
 Fuel OOOOOOOOOO

TR Move 165/110 Com move 50/35
 Fuel Cap 390 Fuel Cons 160
 Note that even if the amphibious wading screen is fitted (most were removed) the vehicle is no longer amphibious due to weight and the fact that firing the canon frequently caused damage to it.

*“Cannot say what they were actually used for in Berlin but we used them and they were ***** lethal as the majority of the turret locks were knackered so the turret used to fly around. They were also not designed for anything other than flat streets because the amount of nasty protrusions in the turret led to a lot of leg bites from the turret monster..”*

Sgt Alan McCormack, 3 Royal Anglian quoted in the draft version of “Steelbacks at War” by Brigadier (Ret) Harry Thornley. The unfinished draft was lent to the author by his daughter Sarah.

Config Trt
 Susp T3
 HF 6 HS 3 HR 3
 TF 6 TS 3 TR 3

The Scorpion version is identical except 76mm gun with 40 rounds carried.



Figure 6: If gaming in 15mm, these models from Butler's Printed Models are ideal. (Badly) painted by the author.

4th Edition Twilight 2000

Vehicle	Type	REL	Combat Speed	Travel Speed	Front Armour	Side Armour	Rear Armour	Fuel Type	Fuel Cap	Fuel Cons	Crew	Cargo	Main Weapon	Secondary Weapon	Price
FV432/30 Mk 1	IFV	B	4/3T	7/5	4	4	4	G	390	9	4+4	150	30mm Rarden (T)	L7 ©, SD, R	200,00
FV432/30 Mk 2	IFV	B	4/3T	7/5	4	4	4	D	390	9	4+4	150	30mm Rarden (T)	L7 ©, SD, R	200,00
FV432/76 Mk 1	IFV	B	4/3T	7/5	4	4	4	G	390	9	4+4	150	76mm (T)	L7 ©, SD, R	200,00
FV432/76 Mk 2	IFV	B	4/3T	7/5	4	4	4	D	390	9	4+4	150	76mm (T)	L7 ©, SD, R	200,00

Weapon	Ammo	REL	ROF	Damage	CRIT	Blast	Range	Mag	Armour
30mm Rarden	APSE	A	3	6	2	-	20	2 x 3	+1
	APDS	A	3	6	3	-	20	2 x 3	+0
	HEI	A	3	5	3	D	20	2 x 3	+2
76mm	HESH	A	1	7	3	D	15	1	-1
	HE	A	1	5	4	C	15	1	+2
	Smoke	A	1	-	-	C	15	1	-
	Canister	A	1	3	3	Special	15	1	+0

Canister rounds have a special burst that uses the searchlight template rather than the usual burst template.

Ammunition

When dealing with ammunition for prices and weight use the following comparison

APSE: HE

HEI: HE

HESH: HEAT

Canister: WP

APDS does not have a figure given for 30mm, Wt ¼ Price 30

Seven Days to the River Rhine

Type	Name	Armour		Wpn	To hit	Morale	ATGM		Notes	Points	BP	Design notes
		Front	Side				To hit	Wpn				
Light	FV432/30	10	8	4a	4+	4			APC-	20	3	
Light	FV432/76	10	8	7h	5+	4			APC-	20	3	

References to other articles:

- Expansion of the references in British Other Armoured Vehicles
- Brigadier Harry Thornley – 7th Armoured Brigade in Twilight 2000



Figure 7: Unlike American APCs and IFVs that have a ramp, British vehicles have a large power assisted rear door.

Note on pictures:

All pictures of real vehicles were taken at Armouredgeddon in Leicestershire where the company runs tank driving and paintball events.

Annex A: Berlin Camouflage

In 1982, the 4/7 Royal Dragoon Guards squadron in Berlin initiated a series of experiments with replacing a normal Deep Bronze Green paint scheme of the British Army with something giving a more effective camouflage in the urban environment.

The resulting Chieftain paint scheme must still rank as one of the most unusual and visually appealing tank camouflages ever devised. Influenced by the dazzle scheme of Royal Navy in WWII, the striking rectangular pattern was intended not only to conceal, but also to mislead, and was reportedly extremely effective.

The scheme was subsequently adopted by all British forces in Berlin. **All vehicles were painted exactly to the same pattern**, thereby denying the Soviets the possibility of determining the strength of the British Forces by recognizing individual tanks¹². While this was well intentioned, all the Soviets had to do was look over the wall of the barracks with the vehicles all being lined up on inspections according to one source!

During the Twilight War the scheme was resurrected by a number of units when fighting in the urban environments in Europe, particularly in Warsaw. These later versions were not always painted in the standard pattern and there were extensive variations in colours with units using what was available at the time.

¹² There is a story, possibly apocryphal that when the vehicles were repainted for the Queen's Silver Jubilee in 1977 they were inspected by a member of the Guards who demanded three Foxes were repainted as one on the boxes was four inches too large.

Annex B: Vehicle markings

432/30s do not usually have a large amount of markings in photos of the period. Most have the vehicle call sign painted on the turret (or more usually hull) side. This was usually a two digit number with a letter suffix although some units appear not to have used the suffix¹³. Vehicles with the code 0 (always followed by a letter) are command vehicles. When used as call signs with multiple units on the net there would be an addition of a letter before the vehicle identification number¹⁴. If only one unit was on the net the prefix was often dropped. In some cases these were stencilled inside small squares or diamonds (it appears that the shape used is not significant in this case). These were in a contrasting colour to the colour underneath, usually black on tan or yellow or white on black or green.

Fairly common were the additions of TRF (Tactical Recognition Flashes) – small patches used on combat jackets to indicate battalion or regimental affiliations¹⁵. Brigade badges were also seen and both could be found on the same vehicle.

Nearly all vehicles were also usually seen with a white number-number-letter-letter-number-number vehicle licence plate visible on the front of the hull and on the rear of the vehicle in the centre of the door.



Figure 8: A very unusual marking found on a 432/30 belonging to 3 Royal Anglian. Interviews with the surviving members of the unit indicate that this was developed around the time of the siege of Warsaw. Interestingly the plate is removable for when the unit went into action. (Author)

¹³ These were usually A, B, C or D to correspond with the call signs (although usually C and D were reserved for dismount elements).

¹⁴ This could be any letter except I or O which were not used to avoid confusion with numbers. The exact letter would change on a daily basis and would be taken from the radio code sheet in use that day (known in military terminology as BATCO – Battalion Code).

¹⁵ Confusingly some units used different badges for each battalion, others used the same badge for the whole regiment.

When operating outside of the front line the rear of the vehicle often had the addition of the small peacetime high visibility yellow and orange striped panels above the tracks to alert drivers following. The peacetime flashing light was almost never seen.

Graffiti on vehicles was not common in the early months of the war, as the war went on it became more and more common with vehicles often being given names although the highly coloured examples loved by the cameras were rare as these gave an aiming mark for enemy troops. By 2000 the lower use of anti-armour weapons and lowering discipline had started to allow this to increase again. As no examples of 432/30s are known to be used by marauder groups (with their sometimes intimidatory paint schemes) there are no known examples of unusual paint schemes recorded.

With the return of BAOR to the UK, efforts were made to standardise the paint schemes of vehicles to European standards but photos as late as 2008 still



Figure 9: 3 Royal Anglian TRF colours



Figure 11: Queens Lancashire Regiment TRF colours



Figure 10: A view of "Poppy" from further away showing the vehicle call sign in a triangle on the NBC housing. It does not fit the usual pattern with the number 69 and it is conjectured that this is a sexual reference and unofficial. [Author]

show the Suffield pattern in use. The use of most of the unofficial markings vanished alongside the return.

Annex 3: The FV432/76 Salamander

A number of Scorpion CVR(T)s were converted in BATUS (British Army Training Unit Suffield) in Canada to form OPFOR vehicles (representing the T72) and given a dummy gun. These remained in service in Canada when the FV432/30s were withdrawn to the UK to be scrapped. With the Soviet invasion the British contingent took under command two German units that were there for training, Panzer Abteilungen 53 and 81. In a stroke of diplomacy, the combined unit was officially called the Anglo-German Brigade but was known to all as the Waterloo Brigade after the last time British and German (Prussian) troops had fought alongside each other¹⁶.

With both of the British battalions being equipped with FV432s and being short on ATGMs (as resupply had been diverted to Europe), the BATUS REME detachment reconverted the Salamanders to Scorpion standard. Two vehicles in repair were however beyond fixing due to the state of the engines. The turrets were however operative and the REME fitted these to two of the 1st Bn Royal Hampshire Regiment 432s¹⁷. Two further turrets were obtained as surplus from Canadian Grizzly FSVs and these were also converted. The four 432/76s were originally known as Suffields but after the nuclear strikes were rechristened Salamanders as they were reborn from fire like the mythical creatures. This was never an official name but was in widespread semi-official use. The four were placed together within the HQ company of the Royal Hampshires as FSVs. During their move to contact the Soviets a reorganisation added 2 TH301s from Panzer Abteilung 81 and 2 Scimitars to the unit to give some anti-armour and improved anti-infantry capability¹⁸.

The fate of the FV432/76s in Canada is unknown. They did not return to the UK and were not handed over to the Canadian Government so it can be assumed that they were lost in action.

¹⁶ Although pedantic historians would point to the Boxer Rebellion 85 years later.

¹⁷ The 1st Bn Cheshire Rgt did not need the enhanced firepower to the same level as they were short A Coy (detached to Belize) and had C Squadron, 1 Royal Tank Regiment under command (and were technically called 1st Cheshire Battle Group).

¹⁸ Although during the Gulf War it had been found that the 30mm APFSDS round of the Scimitar could penetrate the frontal armour of the T62.