

# ARMORED CAR

THE WHEELED FIGHTING VEHICLE JOURNAL

• Issue #35 • June 1996 • \$3.00

## The D.A.F. YP-104 Scoutcar by Hans Heesakkers

During the early fifties it became clear that all armored reconnaissance vehicles in use with the Royal Netherlands Army (Koninklijke Landmacht) would become obsolete at the end of that decade. The vehicles in use formed a mixture of wheeled and tracked vehicles of World War II vintage, and the intention was to replace them all with one new vehicle.

The first steps in procuring a new vehicle were taken in 1958 when the British Daimler Ferret was taken

in service by the 11th infantry Reconnaissance Company (11e Verkenning Compagnie).

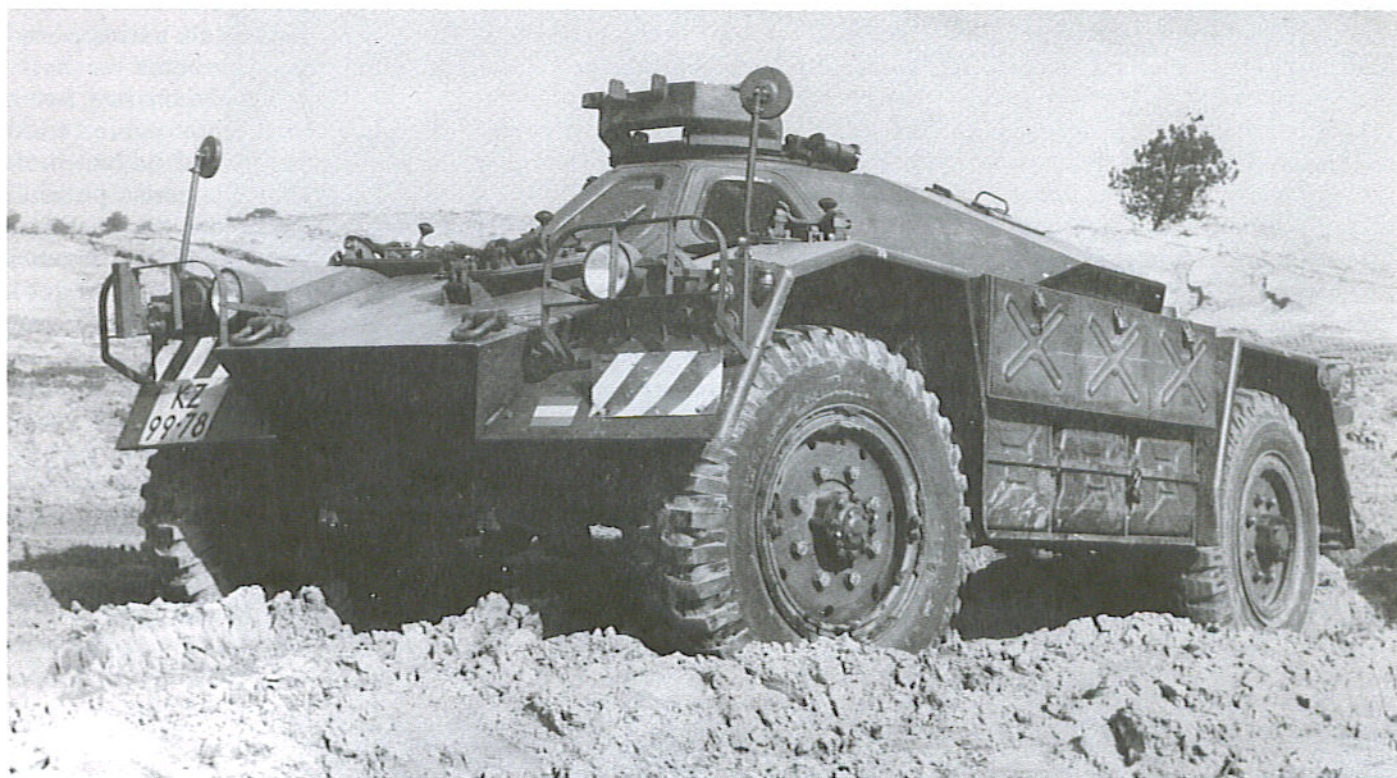
An initial set of one Mk I and six Mk IIs Ferret were taken into service, but after this first delivery, no further Ferrets were ordered. Instead "Van Doorne's Automobielen Fabriek N.V." (DAF), was awarded a contract to develop and build a com-

pletely new vehicle in cooperation with the Dutch Army.

A first study was conducted as to whether it should be wheeled or tracked, with a 4X4 wheeled vehicle being preferred. One requirement was that the vehicle should utilize as much as possible, materials and parts from those military trucks already built by D.A.F. for the Dutch Army.



Above right: DAF YA-126, the chassis of which was used as the basis of the YP-104 Scoutcar. Photo: H. Heesakkers. Below: Left side of the YP-104 prototype, with the original three storage bins and space for extra fuel cans. The vehicle has a strong resemblance to the Daimler Ferret. Photo: DAF, via H. Heesakkers



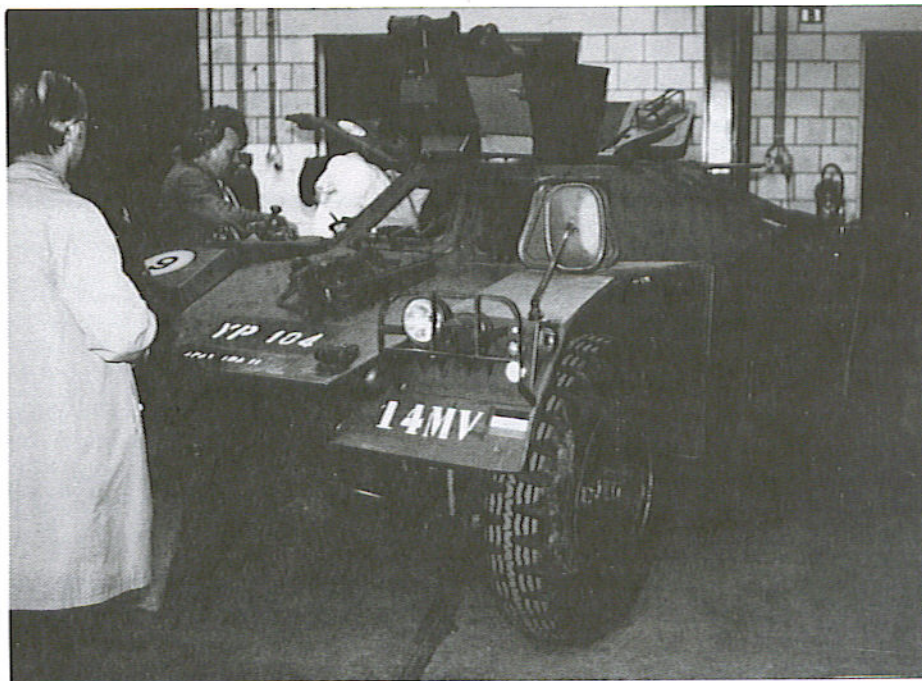
Right: YP-104 showing the split access door and the 2nd driver's hatch in the raised position. Photo: H. Heesakkers

The chassis of the D.A.F. YA-126, 4X4, 1 ton truck was taken as the basis for the new scout car, while the engine coming from the YA-328, 6x6, 3 ton truck which after some alterations became the vehicle's power unit. Further parts from both the YA-126, YA-328 and YA-616, 6X6, 6 ton truck were also used.

At first glance, the YP-104 showed some external similarity to the British Ferret, however it was bigger, heavier and carried an extra crew member. Although its armor was designed to resist small caliber ammunition and grenade fragments, the vehicle's low silhouette and high mobility were expected to provide the best protection. The YP-104 had two drivers, one in the front (1st driver), and one in the back (2nd driver), both had full driving and steering controls but only the front wheels were steerable. Once again D.A.F. had added the so called, "reversing gear", to the transmission as they had done before in 1939 with their MC-139. (see AC #30). This device made it possible to change the forward gears into reverse gears thus enabling the vehicle to drive both directions at maximum speed.

Two prototypes were to be built and tested, and with a review at the end of 1960. This review was anything but positive and it was concluded that a lot of changes and several alterations would have to take place before the car would be usable. A final review was planned for the end of 1961, but the project carried on until 1964 when it was finally stopped. This was the same year the Dutch Army decided to procure the tracked M-113 C&R as the new reconnaissance vehicle for their army, as a result the YP-104 never reached production.

As mentioned before the car was a near look alike of the Ferret, however as it carried an extra crew member it was bigger. As the vehicle was to be kept as small as possible, this led to the YP-104's biggest problem, the crew compartment was too cramped. First of all, the 1st driver



was partly positioned in the commanders compartment and hampered him in his tasks. Secondly the 1st driver's steering wheel wasn't placed centrally and was too large thus deny him decent use of his left leg. Thirdly, the 2nd driver was hampered by a oversized steering wheel, nor could he operate the pedals as they were meant, simply because the available space for his legs was insufficient and the pedals were placed in a most uncomfortable position. Furthermore several equipment items were at first stored inside the vehicle, which hampered all the crew members and had to later be moved from the crew compartment to the outer hull.

Further it was advised to:

- change the front hull so that the 1st driver could be positioned further forward, with this giving the commander the space he needed
- as the army preferred bullet proof tires, the spare wheel (carried on the right hull side) could be removed, the room that came available with this measure being used to widen the hull, with these measures most of the space related problems were solved.

Unfortunately, other problems were still to be overcome, the 1st driver had three hatches at his disposal, when these were opened clear windscreens could be put in place, the middle one being

equipped with a windscreen wiper. When meeting enemy fire these windscreens had to be removed first before the hatches could be closed. This was seen as a very cumbersome procedure. The army required that both the removing of the windscreens and the closing of the hatches be accomplished with only one simple movement.

When the hatches were closed, vision was by three fixed periscopes, the army however preferred to replace the middle periscope by a rotating version for better vision.

The 2nd driver had two of hatches with removable windscreens, when closed he had to depend on a movable periscope which was fitted in the driver's roofhatch. This periscope was placed in a most uncomfortable position, as it got in the way when entering and leaving the vehicle through his hatch. The army found it unacceptable for the 2nd driver to operate the vehicle with such a limited view. Imagine yourself driving at a speed of 100 Km/hr with your view restricted by a big engine compartment, back-wheel steering and only a rotating periscope at your disposal. So the army ordered that a visionblock be placed in each hatch, and that provision be made to make it possible to drive under fire with partly opened hatches, without being exposed.

The commander's hatch was constructed in two halves and when opened each half protected one of his flanks, when the hatch was closed he had a very limited view and three periscopes were later to be added.

The main armament, a Browning .30 caliber aircooled machinegun was rejected as it was found too light, and a heavier .50 caliber weapon was preferred. This change in armament required some modifications, first of all the gun carriage had to be strengthened to carry the heavier weight, and secondly a counter weight had to be added so the commander could handle the heavier gun.

An emergency door, situated in the right hull side, was designed in two parts to enable the crew to drive with the upper part opened. This option was also rejected by the army, which felt it was too dangerous to drive with the door open during combat. Also this door would form a weak spot in the armor, even when closed (a door made of one piece is much stronger). The army wanted the door made of one piece or only a small escape hatch in the lower side of the hull. Furthermore the two vision ports in the original door could not be closed by armored shutters. The new door was to be fitted with a vision port that could be used to fire through with personal weapons and still be shut with armor.

Right: Right hand side of the prototype YP-104. The Dutch Army wanted the spare tire removed, and the option of running the vehicle with the top of the crew access hatch in the open position, removed. Three periscopes were later added to the commander's position. Photo: DAF.

Mounted on the hull were three closable boxes for equipment and tools. Directly below these boxes was room for jerrycans. The army thought it would be better to replace the whole by two larger armored and watertight compartments.

Other deficiencies included:

- insufficient light in the crew compartment
- insufficient sound isolation
- wrong and insufficient ventilation
- hatches opened the wrong way and could not be secured properly
- the vehicle wasn't watertight, the hatches leaked and the water drainage of the engine compartment was totally insufficient, etc.

Why wasn't the project stopped in 1961? Reasons are not clear, however in my opinion they were:

- prestige, trying to show what a small nation could do
- independence and the ability to build our own range of military vehicles
- gaining experience for future projects
- economics, it was hoped to export the vehicle, brochures in the German language had already been printed
- standardization in the Dutch Army, a scout car using the same materials

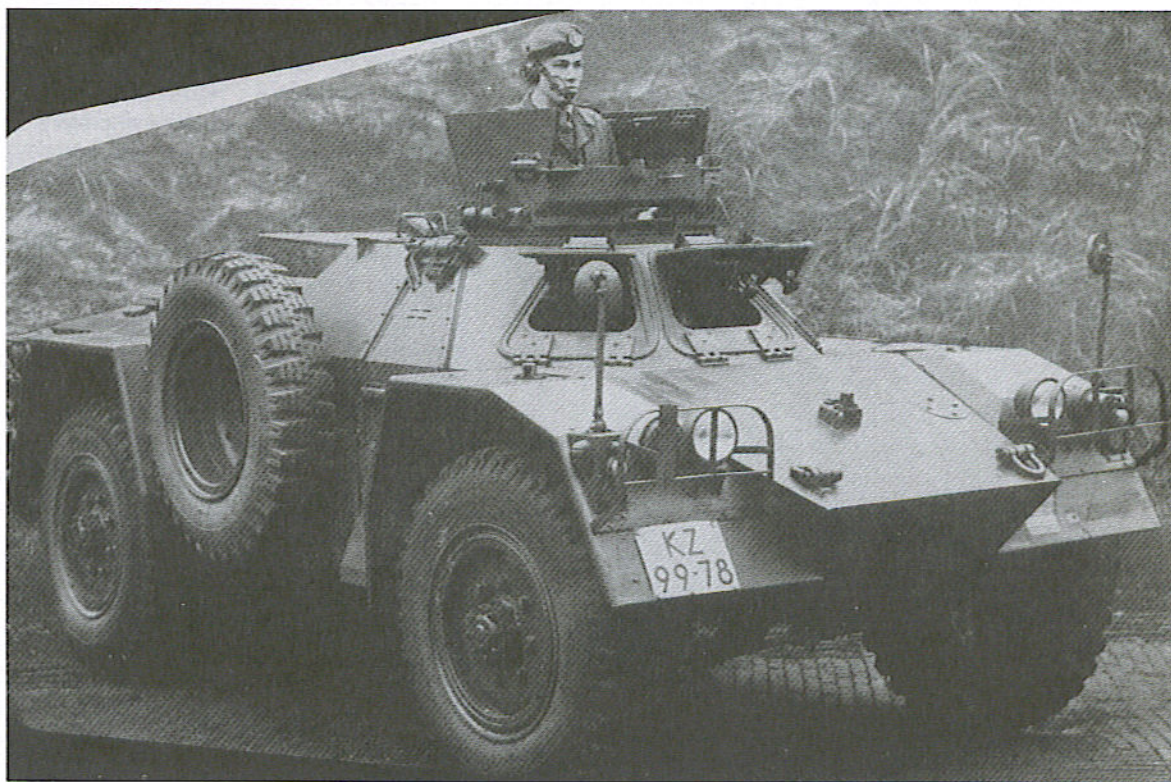
and parts as those vehicles already in use was favored.

My personal conclusion: confidence in the vehicle was much too high and the hope to share in the success of vehicles like the Ferret and Panhard AML was unrealistic. Maybe if the project had of been stopped according to schedule in 1961, and the energy been put in a whole new vehicle either tracked or wheeled, without making the same blunders again, success might have been achieved. Today one of the prototypes still exist. Fully operational it is part of the historical vehicles collection of the Technical Branch of the Royal Netherlands Army.

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#### Tabulated Data

Length:	4.33m
Width:	2.08m
Height:	1.50m
Weight loaded:	5400kg
Turning radius:	15m
Ground clearance:	0.45m
Gradient:	50%
Fording:	0.90m
Range:	500km
Max. speed:	app. 98 km/hr
Crew:	3
Engine:	Hercules JXLD, 6 cyl. 131hp.



# MOWAG's Improved Product - The PIRANHA II by Raymond Surlémont

In their desire to keep their wheeled armored vehicles up to the latest requirements in terms of mobility, the MOWAG company has taken steps to upgrade the PIRANHA (8x8). While keeping its two trump cards, i.e. all-wheel drive and an independent suspension for the eight wheel stations, the vehicle now profits from improvements in the area of mobility, protection and useful internal volume. A new pilot model of what is now designated the "PIRANHA II" rolled out of the MOWAG factory at the beginning of 1992.

The Piranha II's mobility, on soft terrain, has been enhanced by adopting larger size tires; first, Michelin 325/85 B.16 on the vehicles manufactured for the Swiss Army, and then Michelin 335/80 R.20 (on the brand new prototype built by GKN Defence, MOWAG's licensed manufacturer in Great Britain). From the 137 kPa of the original version (with 11.00 x 16 tires), the ground pressure has been lowered to 97 kPa, with noticeable improvement in the vehicle's mobility on soft terrain, despite a 1,500 kg increase in weight (from 12,500 kg to 14,000 kg).

The use of large size tires has led to an increase in the distance between axles, consequently the drive shafts between the axles have also been lengthened. Total length of the vehicle has been increased from 6.30m to 6.80m, with the benefit of a growth in useful internal volume, from 8.4 m<sup>3</sup> on the Pira-



Above: Piranha II (8x8) APC with Kuka 606A1-CH .50 caliber turret and new external storage lockers. Photo: Raymond Surlémont.

nha I to 9.5 m<sup>3</sup> for the Piranha II. These dimensions remain compatible with the air transportability constraints of a C.130 Hercules aircraft.

The Piranha II's power plant is still the efficient and reliable 6V53T, 2-stroke engine from Detroit Diesel. It is a six-cylinder, V-type diesel, producing 202kW (275hp), and is still linked to an Allison MT-653 automatic gearbox, with five forward gears and one reverse. The original one-stage transfer case has been replaced by a two-speed case assembly. The differentials are now manually locked and are no longer automatic.

Equally very effective, the suspension of the Piranha II remains as before: at the front, a McPherson system combines a long helical spring with a wishbone, thus giving the wheels a 320mm range of movement; the rear wheels are mounted on trailing sus-

pension arms linked to torsion bars, with a vertical movement of 342mm.

The Piranha I's basic armor consisted of high hardness (480 to 530 BHN) steel plates which protect it against NATO 7.62mm AP bullets fired at a range of 30m. On the Piranha II the hull surfaces have been flattened and made suitable for fitting replaceable add-on armor packages. The latter make the vehicle proof against 12.7mm and 14.5mm AP projectiles fired from 200m. However the increase in the protection level involves a weight penalty of one metric ton. Large stowage bins are fitted on the sides of the vehicle, and contribute to the protection of the vehicle. The crew compartment is now internally clad with a spall liner that improves the level of protection afforded to the crew.

In July 1995, the Swiss Army took delivery of their first Piranha II (8x8) from



a contract signed in 1993 for 205 Radschützenpanzer 95s. The last machine will be completed in May 1998. The Swiss Army needs a total of 615 vehicles of this type, to be ordered in three batches. Their armament consists of a 12.7mm machinegun mounted in a Kuka Wehrtechnik turret, type 606A1-CH. Other known customers for the Piranha II include Canada and Oman.

Left: Piranha II known as the Radschützenpanzer 95 in the Swiss Army. A total of 615 vehicles are on order with delivery of the last units in 1998. Photo: Raymond Surlémont.

# British Armoured Cars in Europe 1944-45

by Peter Brown

One area which is sometimes not covered in detail is the strength of units in terms of how many vehicles they had, and also of what type. Often references will say if a unit had tanks or armored cars, and sometimes say what type they had, but more detailed records are often hard to find. One source which does shed some light on this is the "Half Yearly Reports on the Progress of the Royal Armoured Corps". This series of documents, charting events in the RAC which covered all Armored units in the British Army, has a mass of details on organization, training, vehicle development and related subjects. Early reports were short, but by the war's end a typical report was several inches thick, with extensive appendices covering figures.

These reports were compiled in June and December to cover the previous six months. Those covering the campaign in Europe are thus June and December 1944 and June 1945. They give the situation as it should have been around D Day, during the winter of 1944-45, and after the war's end. Like all sets of figures for a specific date they are best if they are taken often, as much can happen in six months. The RAC Reports are a guide but other figures for in-between would also be useful.

A visit to the Public Record Office in Kew, London turned up file WO205/151 with sets of figures for various AFVs of the 21st Army Group in North West Europe. Taking these two sources together, the following should show something of what British armored car units had in the way of equipment. Comments have been added where I spotted areas where things are not what they



Above: Armored Car, Humber Mk III, just finished being overhauled and refitted. Photo: D.R. Haugh, Collection.

seem. While all sets of figures include Armoured Car Regiments, some figures do not list the Reconnaissance Regiments which served with Infantry Divisions. They do not cover those RAF Regiment Flights which used various armored cars.

I have tried to repeat these figures accurately here. In all cases, the layout of the figures has been made as far as possible similar, so as to enable you to compare like with like. To do this I have altered the order in which both units and vehicle types were recorded. Hopefully I have not added errors in the process.

There are some problems with using these figures, mostly relating to what constituted an "Armoured Car" to the British Army of the day. They had three classes of "armored cars". The gun-armed Car, Armoured was in simple terms a fighting car, those used in NW Europe being Daimler, Humber, AEC 'Matador with a bigger gun and used to support the lightly armored cars', the American T17E1 Staghound and M8 Greyhound and the Canadian Fox. The smaller and lighter Car, Scout was designed for reconnaissance work, and in the form of the open-topped Daimler Dingo or en-

closed Humber Scout Car. These usually had a BREN LMG, although some crews increased the firepower as they saw fit and opportunity presented itself. Scout Cars were also used by various units, both armored and non-armored, as protected liaison vehicles. The final type was the Car, Light Reconnaissance, with the main types in Europe being the British Humber LRC Mk III series and the GM Canada Lynx.

Armament was a BREN in a small turret, sometimes a .55" anti tank rifle was carried but by this date these were largely out of service. Again extra weapons may have been added. There were also American M3A1 White Scout Car, often called Whites, and officially 'Truck, 15cwt, 4x4, Armoured Personnel'. These were used by various units as ambulances, radio vehicles and troop carriers. These, and the Car Light Reconnaissance, were officially classed as 'B' vehicles, these being usually unarmored cars (automobiles), jeep and trucks. Armoured vehicles were classed as 'A' vehicles, and the figures I have seen only include these. Unit organization tables include both A and B vehicles, and I have listed these where relevant.

(TABLE ONE) 21 A.Gp U.E., Res Entitlement and Holdings June 1944 (Extract 1 of 3)

Unit	Daimler I 2pdr	Staghound III 37mm	AEC 75mm	M3H/T (8)	Anti Aircraft (8)	Daimler Scout 5	Humber Scout 52
War Establishment	45	14	(8)	(8)	5	52	13
2 Household Cavalry Regt	45	14	8	-	5	52	13
Inns of Court	45	14	8	-	5	52	13
Royal Dragoons	45	14	-	8	5	52	13
11th Hussars	45	14	-	8	5	52	13
18 Canadian Armoured Car Regt	-	67	-	-	0	-	-
Belgian Armoured Car Sqn	18	-	-	-	0	12	-
Dutch Recce Unit	-	-	-	-	-	10	-

Note - all units were listed as fully equipped, apart from the 18 Canadian AC Regt lacking its five AA armoured cars, and the Belgians were short of two AA cars.

ture was as in Table Three.

Of the reserves, 32 Staghounds, 37 Humber Scout Mk I and 80 Humber Scout Mk II were held by the Canadians. One anomaly, the 2nd Derbyshire Yeomanry were the Recce Regiment of 51st (Highland) Division, but were equipped with Daimler Armoured Cars, not Humbers.

They are not listed

### Who had What

The June 1944 RAC Report gives a 'Statement of 21 A Gp UE Res Entitlement and Holdings for 30 Jun 1944', or the Unit Entitlement (UE) or as it was often known, War Establishment of W.E., Reserve (Res) Entitlement and what they actually had (holdings). The figures are listed by vehicle type, including tanks and related vehicles, but have been stated here to show what each unit had. As all but a few units are shown at full strength, I would suspect they refer to the situation prior to D Day, or else show that replacement of vehicles in the field was 100% efficient.

Table One shows that armoured car units had a variety of different types of car, with Daimler armoured cars in fighting squadrons and Staghounds in unit headquarters. Support units had either AEC Mk III or M3 Half Tracks with 75mm guns. Anti aircraft cars should have been Staghounds with twin 5" Browning machine guns, a note with the figures states 'Humber held in aid until Staghound T.17.E.2 available'. This would have been the AA version, converted from old Mk I cars and carrying four 7.92mm BESA machine guns. Both Daimler Dingo and Humber scout cars, Dingo seemed to be allocated to the fighting squadrons, and Humbers to unit headquarters.

Also listed are 18 Canadian Armoured Car Regiment which was based on Staghounds and not Daimlers, the Belgian Armoured Car Squadron with a smaller unit establishment, and a Dutch Reconnaissance

Unit with a few Dingos. Apart from the few AA vehicles all units were up to strength. Accounts of the Belgian Armoured Car Squadron and their own printed history, tell us that the Belgians did get Staghound AA cars just before landing in Europe.

According to "21st Army Group Order of Battle" by Malcolm A Bellis, these armored car units were Corps troops and did not serve as part of divisions, although they operated with them and later on became part of their establishment. Their initial attachments were -

- I Corps: Inns of Court Regiment (August 1944)
- VIII Corps: 2 Household Cavalry Regiment (August 1944), Inns of Court Regiment (from September 1944)
- XII Corps: Royal Dragoons
- XXX Corps: 11 Hussars (August 1944), 2 Household Cavalry Regiment (from September 1944)
- II Canadian Corps: 18 Canadian Armoured Car Regiment (Manitoba Dragoons)

Other units also used armoured cars and scout cars, these are shown in Table Two. Note that here, some formations are listed individually, while for others just a total is given, and these are listed as 'Five'. AGRAs are Army Groups Royal Artillery, designed to provide extra artillery to lower formations as needed. SS Brigades are Special Service or Commando units.

There were also reserves, some with Armoured Replenishment Groups and others available to replace them. With these, the total pic-

among the Daimler figures, and nine infantry divisions are listed as having signals cars, but only eight with Recce Regiments listed having Humbers. 3rd, 15th (Scottish), 43rd (Wessex), 49th (West Riding), 50th (Northumbrian), 51st (Highland), 53rd (Welsh) and 59th (Staffordshire) Infantry Divisions were in France as of June 1944, with 52nd (Lowland) still in the UK but this still gives nine infantry divisions in all to be counted. I suspect somehow 2nd Derbyshire Yeomanry were missed for administrative reasons, perhaps not included in Daimlers which they had but should not have had, and not in Humbers which they did not have. 3rd Canadian Infantry Division were in France in June while 2nd Canadian Infantry Division arriving in July.

The PRO figures lists what various units had in service on 21 October 1944. It shows what the units should have had - their W.E. or War Establishment, equivalent to a US unit's TOE - and also what they actually had. This only includes armoured cars, and not scout cars. See Table Four. They should have had eight support cars, and these were still either AEC Matadors or M3 half-tracks. Note that the old M3 half-track with 75mm gun were described as being "condemned", that is, unfit for use...

Malcolm Bellis also gives detailed breakdowns of what vehicles Armoured Car and Reconnaissance Regiments had. Counting only armoured vehicles, his lists give each Armoured Car regiment as having

(TABLE TWO) 21 A.Gp U.E., Res Entitlement and Holdings June 1944 (Extract 2 of 3)

Unit	Humber IV 37mm	Staghound 37mm	Humber Scout	Daimler Scout
21st Army Group Protection Troop	-	6	-	-
2nd British Army HQ	-	3	-	-
GHQ Liaison Regt	-	-	1	-
GHQ Car Company RASC	-	0	-	-
Five British AGRAs	5	-	-	-
Four British Corps Signals CCRA	2	0	-	-
Four British Corps Car Companies	-	-	12	-
Four British Corps Protection Troops	-	12	-	-
Four British Armoured Divisions	3	4	215	18
Three British Tank Brigades	-	-	141	-
1st Tank Brigade	-	-	42	-
4th Armoured Brigade	-	-	41	-
8th Armoured Brigade	-	-	41	-
27th Armoured Brigade	-	-	35	-
30th Armoured Brigade	-	-	30	-
33th Armoured Brigade	-	-	35	-
Nine British Infantry Division Signals *	6	0	-	-
Eight British Recce Regiments	224	-	-	-
Two SS Brigade HQ	-	0	-	-
30 Assault Unit Royal Marines	-	-	2	-
1st Canadian Army HQ	2	1	-	-
Canadian AGRAs	-	0	-	-
One Canadian Corps Signals	-	3	-	-
One Canadian Corps Car Companies	-	-	3	-
One Canadian Corps Protection Troops	-	3	-	-
4th Canadian Armoured Division	-	2	74	-
2nd Canadian Armoured Brigade	-	-	35	-
Two Canadian Infantry Division Signals *	-	0	-	-
Two Canadian Recce Regiments	56	-	-	-
Polish Armoured Division	0	2	68	6
Czech Armoured Brigade	-	-	26	-

\* the U.E. for these units stated that each British Corps Signals CCRA and each Armoured Division CRA should have had one Humber IV 37mm. Also, each British Corps Signals unit should have had two Staghound 37mm each, and each British Infantry Division should have had one Humber IV 37mm and two Staghound 37mm in its Signals organisation, while Canadian Infantry Divisions were due 3 Staghounds. The Canadian AGRA was due on Stag-hound 37mm. The fact that units did not have all their cars was noted, and the lists states that 'alternative provision to complete made from within 21 A Gp resources'

an HQ with 3 Staghounds and a White Scout Car - used as an ambulance - the AA Troop had 5 Staghound AA, the Intercommunication Troop had 13 scout cars, and each of the 4 Squadrons had a HQ of 4 Staghounds, a scout car and a

White, and commanded five Troops each with 2 Daimler Armoured Cars and 2 Scout Cars, a Heavy Troop with 2 "75mm Armd Cars" and a scout car, and a Support Troop with a scout car and three half-tracks - total 19 Staghounds, 5 Staghound AA,

8 Matadors, 5 Whites, 40 armored cars and 65 scout cars.

Here, the figures suggest more armored cars were on strength, and Staghounds were either those with 37mm guns or Command /Control versions. Scout car figures tally. The Reconnaissance Regiment of each Infantry Division had a Scout Car in its HQ. Under this HQ was an HQ Squadron with mortars and anti tank guns towed by trucks or carriers (the small tracked Universal Carrier used at the time) and three Squadrons, each with its own HQ containing one armored and one light recce car, controlling three Scout Troops with a Recce Section of two armored and two scout cars. The troop also had two Carrier Sections with three carriers each, while each Squadron also had an assault troop carried in 15cwt (3/4 ton) trucks. Total armored cars of all types should thus have been 21 armored cars, 21 Light Recce Cars and a Scout Car. However, the various figures list 28 armored cars for each Infantry Division, which would indicate that maybe another Squadron (seven cars) was employed? As the Scout Car strength is not listed, this is not easy to confirm. Mr Bellis' figures agree with notes in a training pamphlet of March 1944, and more or less agree with the table in "Only the Enemy In Front", although there each Troop was said to have had two armored cars and three recce cars, replacing an earlier system of using four recce cars. The training pamphlet describes a Troop as being split into two patrols, so I would think it would have two cars of each type.

Another possibility is that the 'other' cars were employed by the Division, perhaps as protection for its HQ units. One list of vehicles in service with units (given in Orders of Battle by Lt Col HR Joslen) states that an Infantry Division should have had 31 Armoured and 32 Light Recce cars, enough for the equivalent of another squadron of the Recce Regt or a similar sized unit for HQ protection.

The Inns of Courts regimental history says they had 12 AEC Matadors - 3, not 2, in each Heavy

(TABLE THREE) 21 A.Gp U.E., Res Entitlement and Holdings June 1944 (Extract 3 of 3)

	Daimler I 2pdr	Humber I	Staghound V 37mm	AEC III 37mm	M3 H/T 75mm	Anti Aircraft	Daimler Scout	Humber Scout
With Units	198	297	159	16	8	20	254	853
Reserves	92	84	128	9	4	5	51	294

(TABLE FOUR) from PRO File WO205/151

Unit	Daimler	Staghound	AEC III	M3 H/T
W.E.	45	14	(8)	(8)
2 Household Cavalry Regt	41	18		8
Inns of Court Regiment	43	17	-	8
Royal Dragoons	45	15		7
11th Hussars	43	17	8	-
W.E.	-	68	-	-
18 Canadian Armd Car Regt	-	67	-	-

Troop, but otherwise as above, prior to D Day. Photos show vehicles of these types. Other regimental histories do not quote figures, but photos in others confirm that 11th Hussars had Daimler Armoured Cars, often with the Littlejohn attachment fitted and usually with a single Vickers K machine gun on the turret top, Staghounds, both Humber and Daimler Scout Cars, and at times Half-track 75mm guns and AEC Matadors. The Royal Dragoons had Daimler Armoured and Scout Cars, Humber Scout Cars and Staghounds, although I have not seen shots of any Matadors belonging to them. The use of Daimlers by the 2nd Derbyshire Yeomanry is taken from photos in an account of a former member's service and the unit history. The PRO file also listed 18 Canadian Armoured Car Regiment (12 Manitoba Dragoons) who had 67 Staghounds of the 68 they should have had. No mention is made of other wheeled armor. They must have used a different W.E., compared to British units who used 72 armored cars of all types they may not have been too different.

Another set of figures in the same file (see Table Five) lists what vehicles were available in depots to be issued to units on 30th September 1944 with projections of what would be available at the end of following months assuming expected production and shipping plans were met. It could not of course forecast how many vehicles would be issued to replace battle damaged and worn out vehicles, but was intended as a guide as to what replacements should have been on hand.

It does seem to show two in-

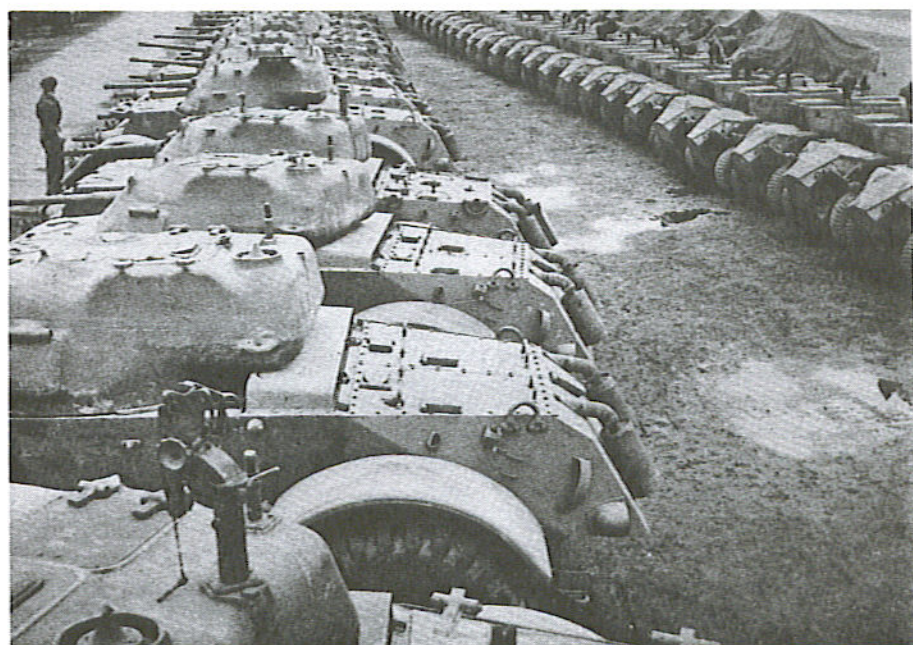
teresting things however. Although not conclusive proof in itself, where the numbers of vehicles expected to be available continues to increase, as in Daimler and Staghound armored cars and Daimler (Dingo) scout cars, these vehicles would still

have been in production. However, monthly production of the Daimler armored car was expected to fall from 1944 to 1945, Daimler Scout Car production was steady each month. The Humbers, both armored cars and scout cars, were expected to be no longer built after the end of 1944, as figures for them do not increase after December 1944, and AEC III production was to end shortly afterwards.

Staghounds seem also to have been still in production, or per-

haps large enough stocks were on hand in the US or UK to supply anticipated needs. There were no figures recorded for Staghound Mk III armored cars - the British conversion mating old Crusader tank Mk III turret refitted with a 75mm gun to the standard car - or for the Anti Aircraft version, although the latter type may well be listed elsewhere among other AA vehicles.

The December 1944 RAC Report has its figures laid out with vehicle type against unit, and is thus easier to follow and copy, my version is Table Six. Note that some organizational changes had taken place. 11th Hussars were now attached to 7th Armoured Division, Inns of Court to 11th Armoured Division, 2nd Household Cavalry Regiment to the Guards Armoured Division, Royal Dragoons to 3rd British Infantry Division, and 1st Corps-Troops included 18th Canadian Armoured Car Regiment. I am also pleased to see the lone Staghound of 2nd Der-



Above: T17E1 Staghounds and Humber Scout Cars. Photo: D.R. Haugh, Collection.

(TABLE FIVE) Forecast of Estimated Availability of AFVs to 21st Army Group Appendix 'A' to WO Letter No RAC2(a)BM/226 dated 25 Oct 44

Type	Sept	Oct	Nov	Dec	Jan	Feb	Mar
Humber Armd Car	4	11	31	57	57	57	57
Daimler Armd Car	43	93	133	173	203	233	263
Staghound Armd Car	0	50	110	170	230	290	350
AEC III Armd Car	7	27	47	67	87	91	91
Daimler Scout	72	160	210	260	310	360	410
Humber Scout	217	277	327	327	327	327	327



Wiltshire Yeomanry, taken into use around August 1944, listed. If nothing else it suggests the compiling process was thorough.

Oddly, figures for scout cars in infantry divisions apart from 3rd (British) Infantry Division are still not listed. As such I would also think the totals are lower than what was actually in service. Note that the Ford Lynx is now listed, although only 1 Corps Troops have them. As to designations, the marks of Daimler and Humber have been dropped. Whether the Daimlers now include

Mk I and Mk II is not certain, although as all Humbers are described as having 37mm it is safe to assume they are Mk IV cars. Figures for Staghound include those converted to Command and Control vehicles with extra radios. All AA armored cars are classified as Staghound, none are in unit service although 9 are available in the Armoured Replenishment Group or ARG.

A few M3 Half-tracks with 75mm were still in use with 11th Hussars. The total figures for these lists 105 with just 8 recorded, where

the rest came from is not even hinted at! Note also that some Ford Lynx scout cars are now in use, and the numbers of Armoured Command Vehicles is now listed. As these are wheeled and armored I have included them here.

With the war over, the June 1945 figures in Table Seven are for those units which were still occupying Germany. Some units have gone and some new types of car have been taken into service, or at least recorded separately. American M8 Greyhounds have appeared in very small

(TABLE SIX) 21 Army Group Armoured Vehicle Holdings as at 30th December 1944 (Wheeled Vehicles ONLY)

	Daimler 2pdr	Humber 37mm	Staghound 37mm	Staghound Comd/Cont	AEC 75mm	M3 H/T 75mm	Staghound A.A.	Daimler Scout	Humber Scout	Ford Scout	ACV
2 Br Army	3	-	-	-	-	-	-	1	1	-	-
1 Corps	-	-	72	-	-	-	-	-	6	51	-
8 Corps	-	3	-	-	-	-	-	-	3	-	-
12 Corps	3	-	-	-	-	-	-	-	7	-	-
30 Corps	-	1	3	-	-	-	-	-	2	-	-
7 AD	45	-	18	3	-	8	-	95	88	-	17
11 AD	45	-	18	-	-	-	-	64	88	-	19
Guards AD	42	1	19	2	10	-	-	55	96	-	18
79AD	-	-	-	2	-	-	-	-	35	-	3
1 Assault B	-	-	-	-	-	-	-	-	57	-	-
8 AB	-	-	-	-	-	-	-	-	42	-	-
6 Gds TB	-	-	-	-	-	-	-	-	60	-	-
29 AB	-	-	-	-	-	-	-	-	40	-	-
30 AB	-	-	-	-	-	-	-	-	30	-	-
31 TB	-	-	-	-	-	-	-	-	37	-	-
33 AB	-	-	-	-	-	-	-	7	39	-	2
34 TB	-	-	-	-	-	-	-	-	48	-	2
3 Inf Div	71	4	15	-	8	-	-	53	13	-	-
15 Inf Div	-	28	-	2	-	-	-	-	-	-	-
43 Inf Div	-	28	-	-	-	-	-	-	-	-	-
49 Inf Div	-	28	-	-	-	-	-	-	1	-	-
51 Inf Div	28	-	1	-	-	-	-	-	-	-	-
52 Inf Div	-	-	-	-	-	-	-	-	37	-	-
53 Inf Div	-	28	-	-	-	-	-	-	-	-	-
1 Cdn Army	3	-	-	-	-	-	-	-	-	-	-
2 Cdn Corps	-	-	3	-	-	-	-	-	-	-	-
4 Cdn AD	-	-	-	-	-	-	-	10	76	-	19
2 Cdn AB	-	-	-	-	-	-	-	-	37	-	2
2 Cdn Inf Div	28	11	-	-	-	-	-	-	-	-	-
3 Cdn Inf Div	27	7	2	-	-	-	-	-	-	-	-
1 Polish AD	-	-	-	3	-	-	-	4	75	-	19
Czech AB	-	-	-	-	-	-	-	-	50	-	4
Belgian Group	16	-	-	-	-	-	-	-	-	-	-
R Neth B	-	-	-	-	-	-	-	10	-	-	-
ARG	13	1	12	2	5	-	9	-	-	-	-
Total	324	140	163	14	23	8	9	299	968	51	105

Abbreviations used for tables Six and Seven AD - Armoured Division AB - Armoured Brigade Inf Div - Infantry Division Cdn - Canadian R Neth Bde - Royal Netherlands Brigade TB - Tank Brigade (independent brigade equipped with Churchill tanks for infantry support. The Czech armoured Brigade was also a Churchill equipped unit) 1 Assault Brigade (B), later known as 1 Armoured Engineer Brigade, used the Churchill AVRE engineer tank. 79th Armoured Division also had AVREs under its control, as well as specialised Sherman DD amphibious and Crab mine clearing tanks and Ram armoured personnel carriers. Post-war, the Guards Armoured Division lost its tracked armour and became known as Guards Division.

(TABLE SEVEN) 21 Army Group Wheeled Armoured Vehicle Holdings as at 30th June 1945

	Daimler 2pr	Humber 37mm	Staghound 37mm	Staghound 3 How	Staghound 75mm	Greyhound 37mm	AEC 6pr	AEC 75mm	Fox 37mm	Humber AA	Staghound AA	Daimler Scout	Humber Scout	Ford Scout	ACV HP	ACV LP
1 Corps	2	4	60	-	-	-	-	8	-	-	10	80	8	-	-	-
8 Corps	45	4	15	-	-	-	-	6	1	2	1	54	21	-	1	1
30 Corps	42	2	10	-	7	-	-	-	-	-	5	50	12	-	1	-
7 AD	46	-	6	-	-	-	-	-	-	-	-	94	93	-	3	12
11 AD	52	-	18	-	-	-	-	-	-	-	1	74	99	-	6	12
Guards Div	41	1	20	-	-	-	-	8	-	-	1	55	146	-	7	12
79AD	-	-	2	-	-	-	-	-	-	-	4	-	11	-	3	-
1 Armd Eng B	-	-	-	-	-	-	-	-	-	-	-	-	48	-	-	-
4 AB	-	-	-	-	-	-	-	-	-	-	-	-	59	-	1	2
8 AB	-	-	-	-	-	-	-	-	-	-	1	-	31	-	2	-
30 AB	2	-	-	-	-	-	-	-	-	-	3	1	41	-	-	-
31TB	-	-	-	-	-	-	-	-	-	-	2	1	28	-	-	-
33TB	-	-	-	-	-	-	-	-	-	-	-	5	47	-	-	-
34TB	-	-	-	-	-	-	-	-	-	-	-	1	64	-	-	2
3 Inf Div	28	-	-	-	-	-	-	-	-	-	1	21	7	-	-	-
5 Inf Div	22	4	-	-	-	1	-	-	-	-	-	17	5	-	-	-
15 Inf Div	-	-	-	-	-	-	-	-	-	-	-	22	21	-	-	1
43 Inf Div	23	6	-	-	-	-	-	-	-	-	1	15	1	-	1	-
49 Inf Div	-	-	28	-	-	-	-	-	-	-	-	-	4	-	-	-
51 Inf Div	26	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
53 Inf Div	1	28	-	-	-	-	-	-	-	-	-	18	1	-	-	1
1 Cdn Corps	-	-	54	5	-	1	-	-	-	-	5	27	1	37	-	-
4 Cdn AD	-	-	-	-	-	-	-	-	-	-	-	2	70	-	2	10
5 Cdn AD	-	-	64	-	7	2	-	-	7	-	-	2	76	57	3	13
1 Cdn Inf Div	-	-	-	-	-	-	-	-	-	-	-	1	2	1	-	-
2 Cdn Inf Div	26	-	-	-	-	-	-	-	5	-	-	14	6	-	-	-
3 Cdn Inf Div	-	-	-	-	-	-	-	-	1	-	-	7	3	-	-	-
1 Polish AD	-	-	3	-	-	-	-	-	5	-	-	4	75	-	6	12
Total Units	356	77	253	5	14	4	-	22	19	2	34	565	980	95	36	79
Base Depots	216	173	103	6	61	2	-	60	130	8	280	311	209	156	14	23
Others	77	27	37	-	-	-	-	10	7	12	34	50	209	36	4	6
Overall Total	649	277	393	11	75	6	67	92	156	22	348	926	1398	287	54	108

Note - 'Others' figures for Daimler Armoured Car included 4 cars listed against 'Training'. As no other vehicles are listed as such I have included them there.

numbers, and GM Canada Fox as well, mostly in Base Depots with only a handful with units. The Fox is listed as "37mm Fox" which may be a typing error, as the Fox carried a .5" Browning as its main weapon, as far as I know no 37mm armed cars were series produced.

Some Close Support Staghounds were then around, a few seem to be those with the 37mm replaced with a 3" Howitzer and others described as 75mm are presumably the Mk III version with the Crusader tank type turret. For some reason, AEC Mk IIs with 6pdr guns were shipped to base depots, although none were in service with units.

Armoured Command Vehicles are now listed under their two types, LP for the Low Power radio fit, and HP for the High Power version.

### The Final Reckoning

A set of figures in the June 1945 report lists Total Cumulative Losses to 30th June 1945 of various armored vehicles in all theaters of war. For 21 Army Group, 645 of all types of armored car are recorded as lost (for the record, total losses of 'Current Operational Types' to that date was 1871). This figure will include some lost in road accidents - for comparison, 312 were recorded lost in the UK, which would include losses due to bombing - or even just plain worn out. But the greater part of them will have been damaged and destroyed in action. No figures for crew casualties are listed with them - they may be included elsewhere in the Report - but they will have been high enough. Some would say, too high.

Whether or not, this account and the figures are only part of the story of British Armoured Cars at war in Europe in 1944 and 1945. The main, human story, of those who died in action, and the human cost then and since in wounds both physical and mental, is something we should never forget. It may not be as easy to list in mere numbers, but it is far more important.

### Bibliographic Notes

"Datafile 8 - 21st Army

Group Order of Battle" and "Datafile 9 - 21st Army Group Organisation and Markings" by Malcolm A Bellis are both privately printed, and are recommended for anyone interested in the nuts and bolts of British units and markings of the period. Contact Malcolm at 10 White Hart Lane, Wistaston, Crewe CW2 8EX, Great Britain with IRC or SAE for details of availability.

For other organizational details and markings, see "British Military Markings 1939-1945" by Peter Hodges and Michael D Taylor. The old edition by Peter Hodges published by Almark in 1971 is long out of print, the new edition expanded by Michael Taylor is available from Athena Books, 34 Imperial Crescent, Town Moor, Doncaster, DN2 5BU, Great Britain.

Also mentioned was "Orders of Battle - United Kingdom and Colonial Formations and Units in the Second World War 1939-1945", Prepared for the Historical Section of the Cabinet Office by Lieut-Colonel H F Joslen, Rtd (late DCLI) published by HMSO London in 1960. It was reprinted by a company called the London Stamp Exchange fairly recently, some of the specialist UK book sellers have copies.

Of the Regimental Histories, there are often many of these for each British regiment, some covering a short period such as the Second World War and others the whole history of a unit going back to the 17th Century. Their style, content and usefulness to those interested in AFVs varies, and as they are often printed in fairly limited quantities their availability is often low and price high in due proportion. As the

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British Army - or more correctly, the British Government - amalgamates and even disbands regiments at regular intervals, just knowing which regimental title a unit had at a particular time, and what it has now, is an art and the subject of many books in itself.

For this article I consulted the following, which are out of print unless stated -

• "The Eleventh at War" by Brigadier Dudley Clarke CB CBE is the story of XIth Hussars (Prince Albert's Own) through the years 1934-1945. It was published by Michael Joseph in London in 1952.

• "The Devil's Own" by Major D M Hatton is the complete history of the Inns of Court Regiment. Published by J A Allen and Co of London in 1992, it should still be available.

• "The Royal Dragoons" by R J T Hills, one of the Famous Regiments series published by Leo Cooper Ltd of London in 1972, covers the 1st Dragoons up to its amalgamation to become part of The Blues and Royals (Royal Horse Guards and 1st Dragoons) in 1969.

• "The Second Derbyshire Yeomanry" by Capt A J Jones MBE (White Swan Press, Bristol, 1949) is the basic 'official' history of the unit. Thanks to my local library, I have also read the book, "The Mad Recce" by Frank Knappett (Merlin Books Ltd, Braunton, Devon, 1984) which is the author's experiences serving in them during the war year.

• "La Dernière Galop des Hussards" is the Historique du 1st Belgian Armoured Car Regiment, Regiment Blinde 'Cavalerie'. Compiled by a group including former serving soldiers, it was published by editions J Dieu-Brichart in Belgium in 1995. I obtained a copy recently via the Brussels Tank Museum, and when I can I will read it, although as it is in French it will be slow going... Luckily, any fellow Anglophones interested in the unit can read of them in -

• "The 1st Belgian Armored Car Squadron in World War II" by Raymond Surlémont, Armored Car #16 March 1993 and #17 May 1993.

### ARMORED/WHEELED FIGHTING VEHICLE DATA

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ARMORED CAR, ISSN 1086-5977,  
Number 35, June 1996.

- David R. Haugh, Editor-Publisher
- Bryce P. Haugh, Circulation

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**Brussels Tank Museum.** First, the collection of the Brussels Tank Museum houses a rare Humber Light Reconnaissance Car (LRC). A few Humber LRC MkIII were used by the Belgian Army after 1945. For instance by the Belgian Air Force and by the Cavalry School, in the latter case this was principally for radio training. Indeed our own museum vehicle is equipped with a more powerful generator than usual. What intrigues us is that there is a plate dated 1945 on this generator showing that the vehicle is a MkIII/IV. We have never seen any reference to such a model in the literature. Could you help?

Second, regarding technical information. As you probably know, we hold a technical documentation center concerning military vehicles, and AFVs in particular. We have over 7500 TMs, SPLs, HBs and other technical manuals plus some original drawings. In addition we have over 10,000 photos on this subject alone. We help researchers as well as scale model hobbyists and provide photocopies at cost.

We are always interested in increasing our collection in view to offer a better service to fellow researchers and members. Thus is any readers own original documents that they want to exchange or sell, we would appreciate getting in contact with them.

For instance, amongst the many in the armored car area, we are looking for the manuals concerning the above Humber MkIII/IV and the one concerning specifically the radio equipment of the MkIII. This will help later in a full renovation of our vehicle.

Third, concerning the Staghound Anti-aircraft (T17E2): this vehicle was used in operation by the 1st Belgian Armoured Car Squadron and, after the war, by our 1st Armoured Car Regiment and the Gendarmerie. Although we have several Staghounds, none of the anti-aircraft type survives in Belgium. So, if any readers should know a surviving "AA" Staghound turret, we would appreciate getting information on where it, or they, stands today.  
**Georges E. Mazy, Musée royal de l'armée, Section "Blindés", Parc du Cinquantenaire 3, 1040 - Bruxelles, BELGIUM.**

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THE NETHERLANDS

789 produced and delivered to Britain by April 1944

radio aerial in folded position

all tools have been omitted from the plan and front and rear views

Used by A.A. Regt of British Armoured Divisions.  
Also used by 1st Independent Free Belgian Armoured Brigade Group

cross section

**T17E2 STAGHOUND A.A. 4 x 4 ANTI-AIRCRAFT ARMoured CAR**  
Scale:—4 m.m. to 1'-0"

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