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Editor: Ian Cushway ian.cushway@keypublishing.com
Contributors: Dave Hardway, David Fletcher, Geoffrey Fletcher, Scott Smith, Ian Stead, Andy Stead, Nigel Hay, Les Freathy, Diana Hawkins, Paul Hazell, Peter McNeil, Duncan Nicholson, John Norris, Jim Kinnear, Jon Hickman, Jon Burgess, James Taylor, John G Teasdale, David Gilbert, Alain Henry de Frahan, Ian Young, John Blackman, Carl Schulze, Tim Bolton, Dimmen B Van Herwaarden, Karl Ludvigsen
Designer: Sean Phillips, AT Graphics Ltd

ADVERTISEMENT SALES

Group Sales Manager: Brodie Baxter
 tel: +44 (0)1780 755131
brodie.baxter@keypublishing.com

PRODUCTION

Design and Colour Repro: AT Graphics Ltd
Production Manager: Janet Watkins
Advertisement Production: Louise Talbot

MARKETING

Group Marketing Manager: Martin Steele
Marketing Manager: Shaun Binnington

MANAGEMENT

Publisher and Managing Director: Adrian Cox
Executive Chairman: Richard Cox
Commercial Director: Ann Saundry

SUBSCRIPTIONS/MAIL ORDER

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POSTMASTER: Send address changes to:

CLASSIC MILITARY VEHICLE, Key Publishing Ltd, c/o MailRight International Inc., 1637 Stelton Road B4, Piscataway NJ 08854.

DISTRIBUTION

Seymour Distribution Ltd: +44 (0)20 7429 4000

PRINTING

Precision Colour Printing Ltd

ISSN: 1473-7779

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Key Publishing Ltd, PO Box 100, Stamford, Lincs, PE9 1XQ
 Tel: +44 (0)1780 755131
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OPENING SHOT

BROCKWAY B666 BRIDGE ERECTION TRUCK

This Brockway B666 (6-ton, six-wheel, six-wheel drive) is a rare survivor of the 1166 manufactured from 1942. They left the factory in chassis/cab form and had bridge erection bodies fitted by either the US Corps of Engineers or the body manufacturers, Heil and Daybrook. This particular truck has a Daybrook M-IIA truck body and hydraulic crane and was delivered in May 1944.

The lifting capacity of the crane boom was 8000lb (3632kg), every ounce of which was needed to handle the four steel treadways and spacer bars that were normally carried along with two deflated pontoons and associated equipment. Virtually identical trucks were also produced by Ward LaFrance and White from 1944 and by FWD from 1945.

Photograph by John Blackman





NEWS & REVIEW



A round-up of military-vehicle related news and products.
Send news items to ian.cushway@keypublishing.com



Despatches



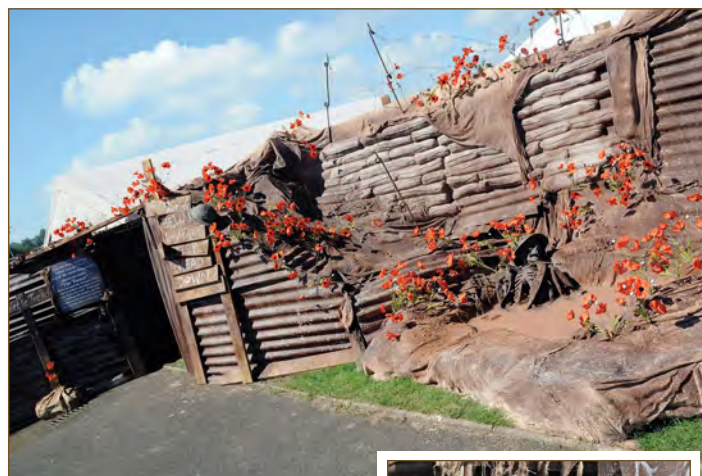
Just 20 miles off the French coast, Hitler saw the Channel Islands as a useful launch pad for a mainland invasion, and it was inevitable that sooner or later he would order their invasion – which is why a third of the population decided to leave before the first German troops landed in June 1940. Those that stayed lived under occupation until 9 May 1945 when the Islands were finally liberated, and Jersey's annual Freedom March with its parade of military vehicles is a fitting celebration of that fateful day. Regular contributor Scott Smith was there for *CMV* for the 75th anniversary commemorations this year, and it seems that the islanders' passion for remembering the past is as strong as ever – you can read his report on pages 18-25.

Of course it's not the only big anniversary this year; with it being 75 years since the evacuation of Dunkirk, 70 years since the end of WW2 and the 40th anniversary of the end of the conflict in Vietnam – we can expect to see a lot more classic vehicle related celebrations taking place – so watch this space!

Ian Cushway



TRENCH RETURNS TO W&P REVIVAL



Visitors to The War and Peace Revival this year will have a second chance to see the Great War that made its debut at last year's spectacle. Commissioned by show organiser Rex Cadman to mark the 100th anniversary of WW1, the above ground trench system gives a small taste of life as a WW1 Tommy.

The Great War trench was specially commissioned from the professional historical set designer team at Ancient Wisdom (www.awhistory.co.uk) and is built with both the classic corrugated iron and wood construction and the earlier designs, which were supported with anything Tommy could find. Featuring the twists and turns of a trench, so familiar from photos and films, it also has an officers' dug out and a shell crater by the front entrance.

Visitors to the show in July at Folkestone Racecourse can walk through this display on their way into the Great War Exhibition, which is near the Victory Marquee. Also featured in the exhibition will be original WW1 RFC and RNAS uniforms and the Brooklands full-sized replica WW1 SE5a biplane.



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MALTESE TREASURE

Regular contributor Simon Thomson unearthed a treasure trove of classic German military vehicles while on a visit to Malta. The collection belongs to Stephen Petroni, chairman of the Foundation for European Societies of Arms Collectors (FESAC) who is based in Silema, and the vehicles are stored in various parts of the island and are only shown on very rare occasions to invited guests. All of them are in 'as found' or restored condition.



VW Schwimmwagen (Porsche 128) – now incredibly rare.



Original German trailer with bridging equipment is in 'as found' condition.



VW (KdF) 82 Kubelwagen still has its canvas intact.



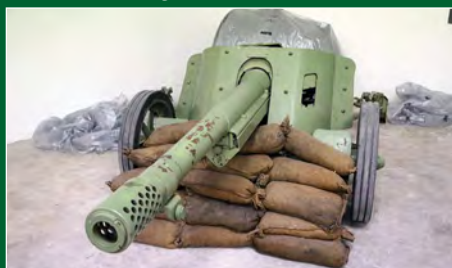
Another VW (KdF) 82 Kubelwagen, this time in desert camouflage.



Zundapp KS750 and BMW R75 both look to have been extensively restored.



German DKW motorbike.



This German field gun has obviously been modified by the Russians with the addition of a Russian barrel.



NSU Kettenkrad looks to be in excellent condition.

READ ALL ABOUT IT...

SURVIVING THE RIDE – A PICTORIAL HISTORY OF SOUTH AFRICAN MANUFACTURED ARMoured VEHICLES

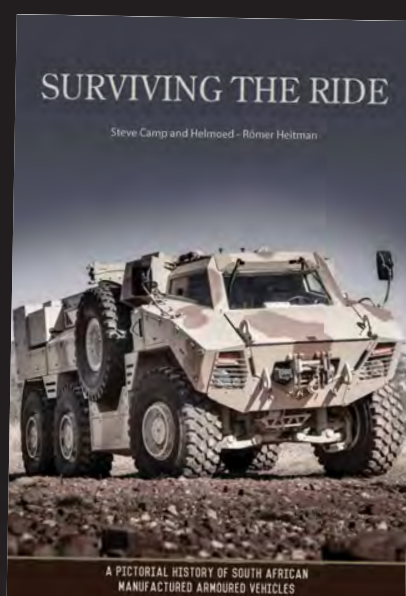
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The 240 page A4 book features around 450 colour images of the many vehicles produced, ranging from the first prototypes



in 1972, through to the current South African companies that have carved out international niche markets, exporting highly sophisticated MRAP vehicles that are in active service around the world.

CAPTURED KRUPPS?

Peter Little emailed a photo of his late father, Ronald Leonard Little from Sheerness in Kent, in the hope that *CMV* readers may be able to shed a little light on where it was taken, the regiment and the vehicle which has usefully provided a backdrop.

Ronald (standing fourth from the left in middle row) was involved in the D-Day landings and the photo is dated 14 September 1944, so Peter presumes that it was taken somewhere in France.

"I am trying to find out my father's regiment," he says. "I remember he drove lorries towing field guns, among other things, and that at one time he had to stand guard over some captured German officers. He found them very decent and enjoyed a cigarette with them."

Having attended a re-enactment event in Blyth, and showed the photograph to MV enthusiasts, Peter thinks the vehicle in the photo might be a captured German armoured gun, possibly a Krupps. "You can see that one of my father's fellow soldiers, second from the right on the top row, is wearing a German helmet – but that's really all I've got to go on and I would love to know a bit more about the identity of the vehicle."





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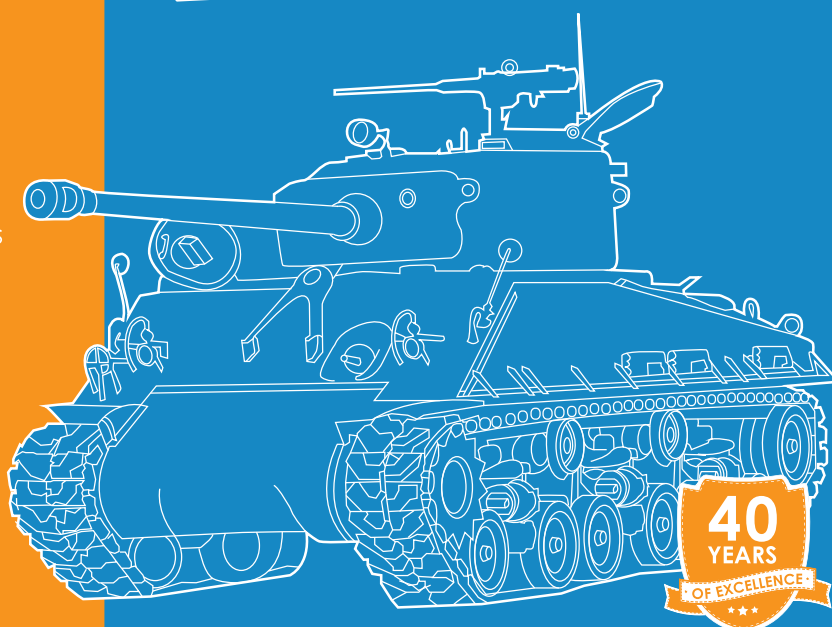
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WRITE TO REPLY!

AMBULANCE IDENTIFIED

Pete Gaine's Morris ambulance (Review, CMV June 2015) was not a one-off. There's a picture of the semi forward control CS 11/30 model (built 1936-39) on page 206 of the Tankograd book on WW2 British trucks. It's also shown in the pre-1940 vehicles Vanderveen directory (page 185). The body was subsequently adopted for Austin K2 and Bedford ML ambulances.

Simon King, via email

Regarding the Morris CSII/30F ambulance in June's issue, about 500 were supplied to the War Office by Nuffield between 1936-39 mounting the same Mann Egerton built body later used for the Austin K2Y and Bedford ML. However, as most of them were lost at Dunkirk in 1940, Mr Gaine's example must indeed be a very rare survivor!

If Green MBE (Col. RASC Retd), Andover, Hants

Reference the Morris ambulance on page 6 of CMV 169: unless I am mistaken, it is a Morris Commercial C11/30F with a Mann Egerton body. It is not shown in Bart Vanderveen's original Observer's Directory (1969), but appears on p150 of the revised edition (1972).

PT, via email

We were aware of what it was, but couldn't find documentation of that actual example. Either way, it's incredibly rare and we're looking forward to seeing it at shows when it's finished... Ed



I am surprised to find you have never come across the Morris ambulance before, despite Simon Thompson's checks in Bart Vanderveen's books. I found it in the first two I looked in: Observers Directory pre-1940 page 185 and Historic Military Vehicles Directory page 161. I, as a mere modeller, have pictures of this vehicle from at least 10 different sources. It is clear that quite a number were built and pictures of them with the BEF are not unusual. Some had sloping windscreens.

A picture of a captured ex-BEF one appeared in Military Machines International in June 2009. Of course you might well be right that the one you pictured is the sole survivor, but it is certainly not the only one produced.

Chris Grove, via email

PORTSMOUTH GMC

When reading your article Privates on Parade in issue 167 I remembered seeing a GMC truck while visiting Portsmouth last year. This example has a different hood number, a square mirror head, no pioneer set fitted above the front wing, no bridge plate and has no fuel cans behind the front bumper.

Leslie Jones, via email



WICKWAR INFO SOUGHT

I am looking for any information or photos concerning the 572nd and 767th Engineer Truck Companies who were billeted in Wickwar, Gloucestershire during WW2. They came to the village with Studebaker 6x6 trucks and Jeeps. We have the

date when the companies sailed back to Newport, America after the war and the name of the ship. Do your readers or contacts either in America or England have any information?

Mary Isaac, via email

MILITARY METAL IN CIRENCESTER

Over 100 military vehicles to attend south-west's largest festival of transport

South Cerney airfield, Cirencester will play host to over 100 military vehicles this July 31, August 1/2 for the Stroud Vintage Transport & Engine Club's (SVTEC) annual gathering.

Indeed, the military section represents one of the larger display areas of the show, with everything from messengers' motorcycles and paratrooper bicycles to front-line armoured divisions being included. Post-war military vehicles and modern army vehicles are also well represented with regular exhibits including a rare ex-RAF Scammell range of tank transporters and recovery vehicles, a 1943 AEC Matador 10-ton gun tractor, a Militant gun tractor and a 1992 Leyland DROPS (Demountable Rack Offload and Pickup System) some of which are still in service with the British Army. Also on display will be a 1965 Commer TS3, 4-ton 4x4, one of only 25 made for the British Army.

Other star attractions include a 1942 Swiss Saurer 6M signal van, a 1942 FWD, a 1944 GMC 2.5-ton 6x6 airborne tipper and a 1983 Bedford TM 10-ton 4x4, the last of the big Bedfords. For those interested in military machinery of the two-wheeled variety, a 1944 Harley-Davidson WLA and a 1940 Ariel 350cc WNG WW2 British dispatch rider's bike are just two of the many other motorbikes that are expected to be present.

As well as the vehicles themselves, there will be a static display in the form of a Y-station interceptor setup, representing the listening posts manned mostly by radio amateurs to listen in on enemy transmissions during WW2.

For further information or to purchase advance tickets please visit: www.glosvintageextravaganza.co.uk



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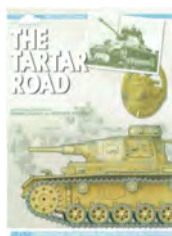
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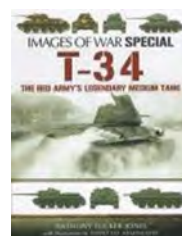
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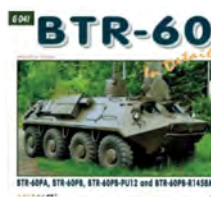
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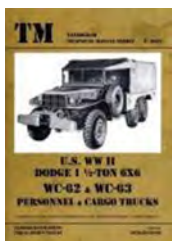
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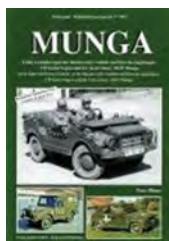
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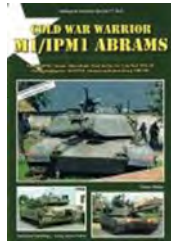
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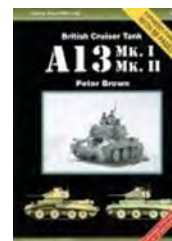
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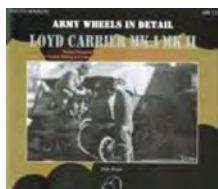
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READY TO ROLL?

After extremes of weather last year, it's time to grab the sun lotion and wellies for this year's War and Peace Revival extravaganza. Here's just a few of the many attractions in store this 22-26 July 2015...

In case you missed it, last year's gathering of military vehicles at RAF Westenhanger started with blazing sunshine and ended in a tropical thunderstorm with visitors having to negotiate fields of mud. Apparently, the event even featured on a TV programme about extreme weather!

Of course last year was all about the Great War, with the unveiling of a stunning statue of an advancing soldier, officially named 'Bertie' by local schoolchildren,

taking centre stage during the 100th anniversary commemorations. For 2015, with so many anniversaries to honour, the organisers have decided that there will be

commemorations of the 75th anniversaries of the Dunkirk Evacuation and the Battle of Britain, the latter being marked by a spectacular Battle of Britain Memorial Flight on the 25 and 26 July featuring a historic Spitfire, Hurricane and Dakota. This year's War and Peace Revival will also mark the 70th anniversary of the end of WW2 and the





200th anniversary of the Gurkha's service to the British Crown. Of course 2015 is particularly significant to Westenhanger itself, as in 1915 many British and Canadian troops arrived at the train station to be based in the area prior to heading out to the Western Front.

Proving highly popular in 2014, it's been decided to re-erect the Great War Exhibition marquee, as well as reinstate the intricate

trench system. Once again, the marquee will house collections of uniforms, personal equipment and lots more. A timeline will help visitors understand the course of the conflict, while trench maps and original official photos will bring to life the reality of the front line. Look out too for some stunning new artwork from artist Johanna Domke-Guyot who last year brought the stunning statues of the blinded Great War



Above: The weather changed dramatically from scorching hot to torrential rain in 2014. Let's hope the conditions at 2015 are a little kinder.



Above: There were amphibious vehicles aplenty at War and Peace Revival last year – wouldn't it be great if there was a muddy pond for them to 'play' in at this year's spectacle?





As always there's some interesting vehicles for sale, so don't forget to bring your chequebook!



Chris Till from Preston stole the show with his magnificent freshly restored M4A1. We can't wait to see what will be the highlight vehicle of 2015...

soldiers. The organisers have also booked the Great War Display Team to perform at War and Peace this year on Saturday 25 and Sunday 26 July which means you will be able to watch the fantastic WW1 replica aircraft performing and dogfighting (massed aerial battles) in the skies above.

MORE AND BETTER

An essential ingredient of July's military melting pot are the battle re-enactments, and together with the vintage entertainment, civilian and living history displays, and trade stalls – there's unlikely to be a dull moment. The Home Front section in the Vintage Village, behind the grandstands, is another very popular attraction. Once again re-enactors will be providing professional and informative displays and demonstrations on how British civilians coped with everyday life during WW2. The former horse boxes by the parade ring in the Vintage Village will house

a parade of wartime shops, while inside the Home Front Marquee, Jude Knight will give demonstrations on cooking with wartime rations as her colleagues from the wartime WI preserve a glut of fruit by jam making and canning. There will also be displays

"An essential ingredient of July's military melting pot are the battle re-enactments."

of wartime house interiors with a Dig for Victory and Anderson shelter display – and visitors can even learn how to wash and mend their clothes to make them last longer!

Highlights of last year's Living History area included the Black Hawk Down display,

complete with downed helicopter, and the Luftwaffe camp adjacent to the RAF camp by the replica aircraft in the Vintage Village.

And we haven't even got on to the vehicles themselves... Even visitors who spend a week at the show, probably don't get to see

every vehicle such is the overall scale of the site – and indeed, some of the most unusual

vehicles are often stumbled upon hiding away on the outer perimeters or in the vehicles for sale section.

NECESSARY RESPITE

Tired legs are par for the course at W&PR, but when it all gets too much you can



Below: As always, vehicle displays in the arena will be the show's real highlight.





always seek the sanctuary of the Victory Marquee, where you can once again enjoy a host of vintage entertainment – as well as a well-earned drink and a sit down. This year there will be all the usual music and dancing, as well as fashion shows and even a 'sassy' workshop courtesy of burlesque artistes, Miss Maybe. And if you're around for the evening entertainment, a vaudeville review will instantly transport you back to the Great War period. You can even dine with your favourite stars on an 'Allo 'Allo! hosted table at the John Miller Orchestra dinner and dance on Saturday 25 July.

So, what else do you need to know...

Gates are open from 9am-6pm each day and you can take advantage of a 10% discount on ticket prices if you buy them before 17 July in which case, adults will pay £17.55 (instead of £19.50) and senior citizens (65+) and children (5-16) will have to fork out just £15.75 (instead of £17.50).

As in previous years, all pre-booked WW2 veterans will be allowed in free, and for 2015 this invitation will be extended to Gurkha veterans. Full details regarding ticket prices as well as information about evening tickets can be viewed at www.thewarandpeacerevival.co.uk. 



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JERSEY LIBERATION DAY 70 – 9 MAY 2015

Scott Smith reports for CMV on this year's 70th anniversary commemorations.



The famous raising of the Union Jack at the Pomme D'Or Hotel on Liberation Square takes place each year on the 9 May to mark the end of German rule on Jersey on that date in 1945.

Being the 70th anniversary, this year's commemorations were always going to be on a larger scale than usual, and the throngs of vehicle owners, military enthusiasts, Jersey residents and general public alike weren't to be disappointed. In previous years the marking of that momentous day in history has traditionally seen all events taking place in Liberation Square, St Helier where the first liberators arrived on 9 May 1945. This year, however, the famous Pomme D'Or Hotel, where the Union Jack was raised following

the surrender of German forces, was the focus of attention and played host to a service and re-enactment of that moment. Commemorations then moved on to People's Park – where a similar service took place in 1946 to mark the one-year anniversary.

As part of the commemorations a grand parade of military personnel, local groups and vintage vehicles was planned – supported by serving personnel from HMS Iron Duke which



A picture from that day in 1945 had been printed onto a large canvas sheet and hung off an adjoining building which was undergoing restoration.

had paid a visit to the island for its big day,

Although the Liberation Day was obviously a very poignant moment, it was the parade itself that we were most interested in – especially as it contained a good contingent of military vehicles thanks to arrangements made by the Jersey Military Vehicle Club and in particular Ricky Le Quesne.

ON PARADE

Led by classic and vintage motor vehicles after a quick tour of the south of the island, 90 or so military vehicles headed off to be part of



Right: These cadets helped play the role of the first liberating soldiers, Force 135, which freed the island of German control.



Flying the flag in their jeep were these re-enactors depicting British Airborne troops.



the grand parade through St Helier and onto People's Park, being cheered all the way by expectant crowds who turned out to celebrate the occasion.

As well as vehicles from the WW2 era, Jersey's commemoration events have regularly been open to machines from other eras and from all nations, both from the Island and the mainland.

The open age policy might not be to the liking of traditionalists, and their arguments are of course valid ones with history perhaps being somewhat distorted. But one thing's for sure, the sheer volume of vehicles helps generate



Below and left: The signs of occupation are still very much visible all around the island.





Above: The grand parade of vehicles works its way down into St Helier. **Below:** Military vehicle parade organiser, Ricky Le Quesne, has owned this 1943 WC51 for two years – he believes it took around six years to restore before he purchased it.



Above: Sadly I wasn't able to find out any further details on this motorbike as the owner took off for the parade soon afterwards. If it's you – we'd love to know more...



Above: Derrick Stead and family from Yorkshire travelled from Bradford to Jersey in their Dodge WC56. Built on the 11 June 1942 Derrick bought the vehicle just two years ago – it's undergone a full restoration with new tyres, engine and seating being sourced in that time.

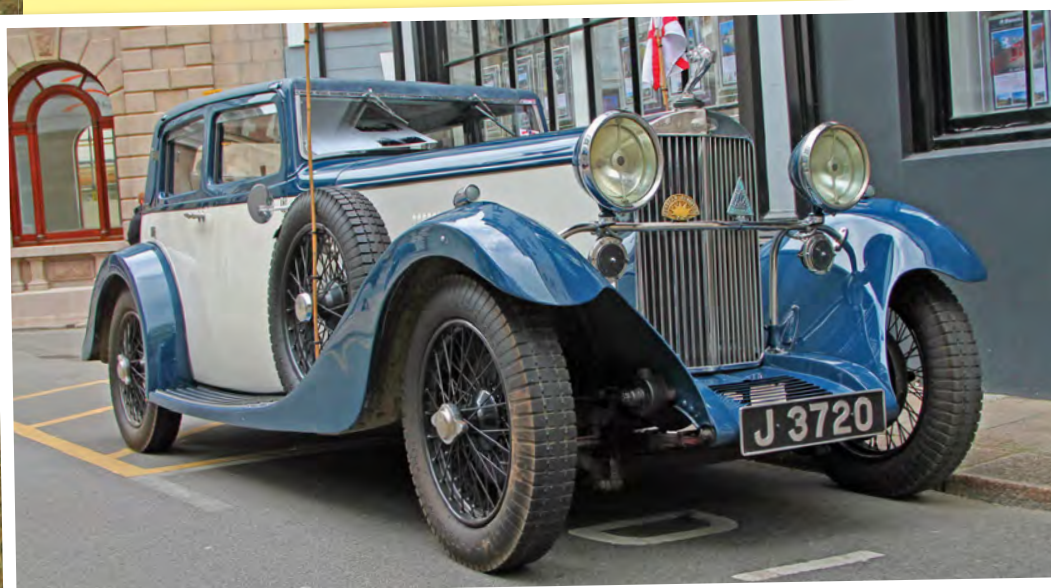
interest from members of the public and that can only be a good thing for the hobby as a whole.

As to be expected, there was a good contingent of vehicles from Jersey – including

two that were on the Channel Islands during the 1940s. Indeed, Damien Horn's Stoewer R200s radio car has remained in Jersey since it arrived in 1940. It was left over by the German occupying forces before being sold

for the princely sum of £50 six months after the liberation. Meanwhile, Graeme and Sandra Sty's 1943 Austin K2/Y ambulance arrived in Guernsey in May 1945 just a few short days after the occupiers had been forced out.

Below: This 1934 Sunbeam Speed 20 Monte Carlo pillarless saloon has an interesting wartime history. After being brought to Jersey in 1938 by antiques dealer John Berger it remained in St Helier throughout the occupation, being hidden from occupying forces. It emerged after the war but was then laid up in the 1960s and eventually restored in time to take part in the 1995 Liberation Day festivities.





Above: Two Bedford O type trucks formed part of the vintage vehicle display. Left: Leaving People's Park.

We were particularly impressed by the number of vehicles that made it over from the mainland, with a convoy of three AEC Matadors being a particular highlight. Other enthusiasts had made the trip from as far afield as Wales, Lancashire and Yorkshire.

Of course it's impossible to pick favourites, but as you can see from our selection of pictures, there was no shortage of interesting military classics to choose from over the course of the Liberation weekend of festivities.

Below: Military vehicles taking part in the Liberation Day parade start to make their way along the seafront to St Helier, being led by organiser Ricky Le Quesne in his 1942 Willys Jeep.





Above: Almost 30,000 Austin Light Utility's were built for use by the British and several other armies. There are believed to be around 150 survivors and this example, owned by Tom Cummins, is one of them. Tom travelled all the way to Jersey from Yorkshire.



Above: This beautiful, and fairly rare, 1940 Ariel 350 WNG is owned by Doug Pearce. **Right:** Gordon Fry purchased this 1943 AEC Matador in 2009. It carries the name of Bombardier Henry Phillips RVM who drove these vehicles during WW2. It is named in his honour and for those who fought during the conflict.



Below: Ken Chapman from Hampshire brought along his recently restored 1942 Dodge WC51. It's an ex-Norwegian Army example and he has owned it since the start of 2014. Despite being its first ever show outing, Ken stated that it performed well after taking part in a number of activities during the week.



Left: This GMC 353 owned by Dave Willetts dates from 1943.

Below: Phil Bennet and Gordon Fry make their way to the form up point for the grand parade through St Helier.



Left: Graeme and Sandra Sty's 1943 Austin K2/Y ambulance has spent most of its time on the Channel Islands. It originally landed with liberation forces on 12 May 1945 in Guernsey and was used by the RAF before being given to the Island authorities. It served at a police command post until 1975 when it was purchased by the couple.



Above: This slat grille Jeep was one of a number of smaller vehicles that made up the parade.

Right: One of the local vehicles that took part in the celebrations was Tony Coote's 1944 VW Kübelwagen Type 82. Below: Paul Tancock's Jeep has been made to look reminiscent of the vehicles used by Force 135 when they liberated the Channel Islands in May 1945.



Right: One vehicle which can claim to have been on Jersey since 1940 is this Stoewer R200s radio car owned by Damien Horn and known to be the last German vehicle left over from the occupation. Following the surrender it was sold at auction in November 1945 with the new owner totally de-militarising it before it was used as a runabout on a campsite for a number of years. It then became a recovery vehicle before being laid up until April 1990. It was given to Damien and restored over a five-year period ready for the 50th anniversary of the liberation.



Below: Phil Bennett's 1945 AEC Matador artillery gun tractor has been a regular in the pages of CMV over the years. It made the trip to the events from Dorset.



Right: Tony Banner owns this Dodge WC54 ambulance 'Katy' which carries the markings of the 350 Bombardment Group (Heavy) and has been a long-time resident of the Channel Islands.



Left: This Morris Commercial C8 General Service was built in 1944 and has been owned by Martin Ford since 2002. He undertook a general refurbishment of it and it has since been to Normandy twice as well as this trip to Jersey.

Below: The rebuild of this lovely 1941 AEC Matador was only finished at the start of 2014 following a two and a half year restoration. Having been employed hauling timber it was laid up in 2002, before Jeff Coles became its new custodian in 2010.





Above: Two long distance travellers were Pete Nissen and Jonathan Polijn who brought their Harley Davidson WLAs 800km from Belgium and Holland respectively. Pete bought his 1942 version some 20 years ago from Poland while Jonathan recently restored his 1940 example over a two-year period.

Right: It may not be visible straight away but this 1941 GMC owned by Colin Thompson is a rare short wheelbase variant. There are just a few subtle differences with the placement of the fuel tank and spare wheel being the main points. It is a film star in its own right having appeared in the 1979 film *Yanks*.

Below: Something a little different which had made its way across the English Channel for the event was this 1944 Kübelwagen. It was restored during a two and a half year period but still managed to retain its original engine and gearbox along with some of its panel work.



Left: Tony Boyle and Jack Ford from Yorkshire brought along this 1945 Standard Tilly which was portraying a Royal Navy Bomb Safety Team from Force135.



Right: Dave Leader travelled from his home in Teignmouth, Devon in his 1940 Bedford OY to take part in the Liberation Day events, ferrying troops from those re-enacting the Force135 around the island. It's the first rally that Dave had taken it to – and no doubt it made quite an impact, his father having driven a Bedford during WW2.

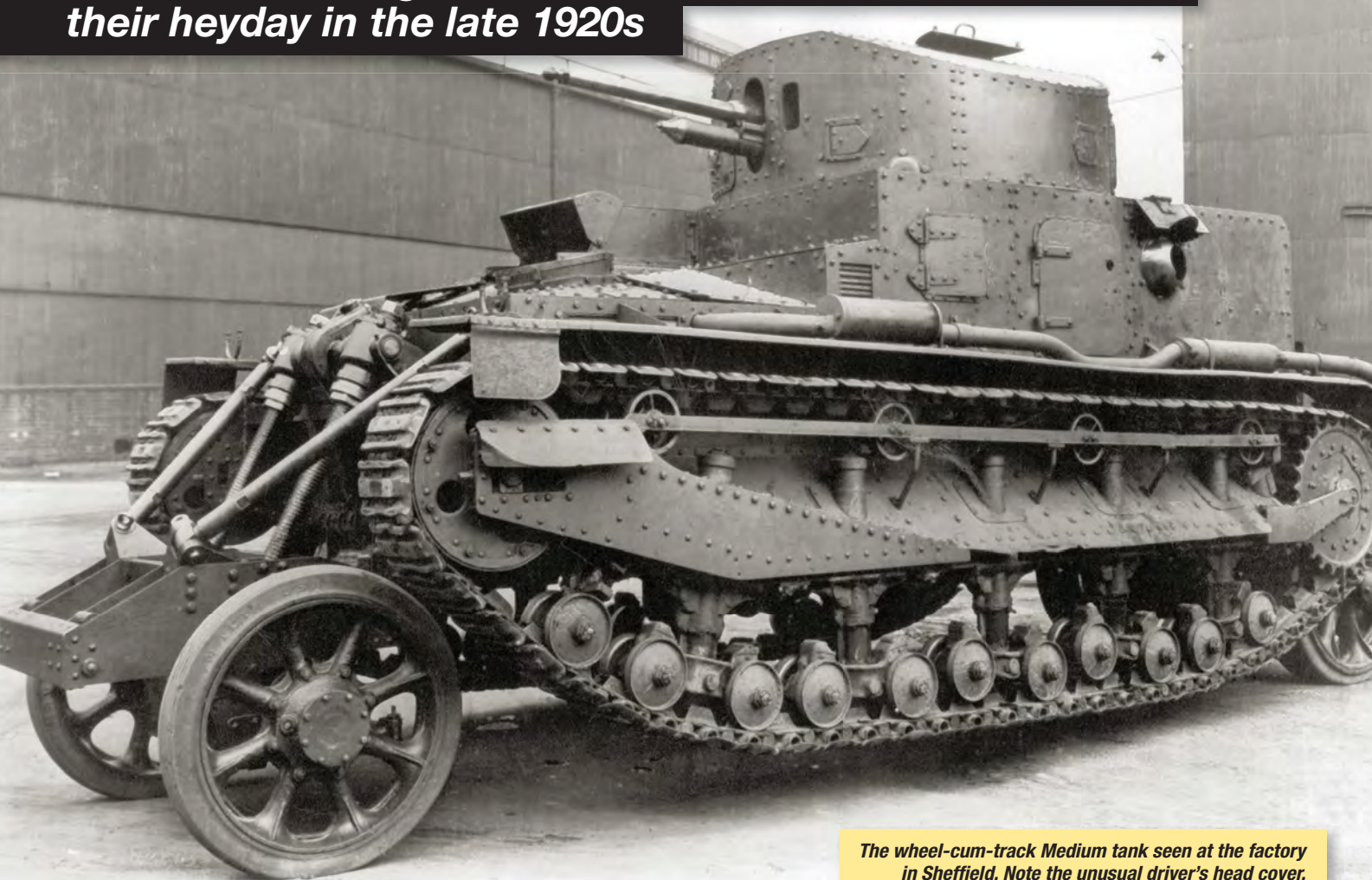


Left: Steve Curtis owns this very early International M5 which was manufactured in late December 1942. It was one of three half-tracks which arrived on the island. The design all came about when International Harvester adapted the M3 half-track to its own standards, starting production of the new M5 in December 1942.



BEAUTY OF THE BEAST

David Fletcher looks at the evolution of the weird and wonderful looking wheel-cum-track machines that had their heyday in the late 1920s



The wheel-cum-track Medium tank seen at the factory in Sheffield. Note the unusual driver's head cover.

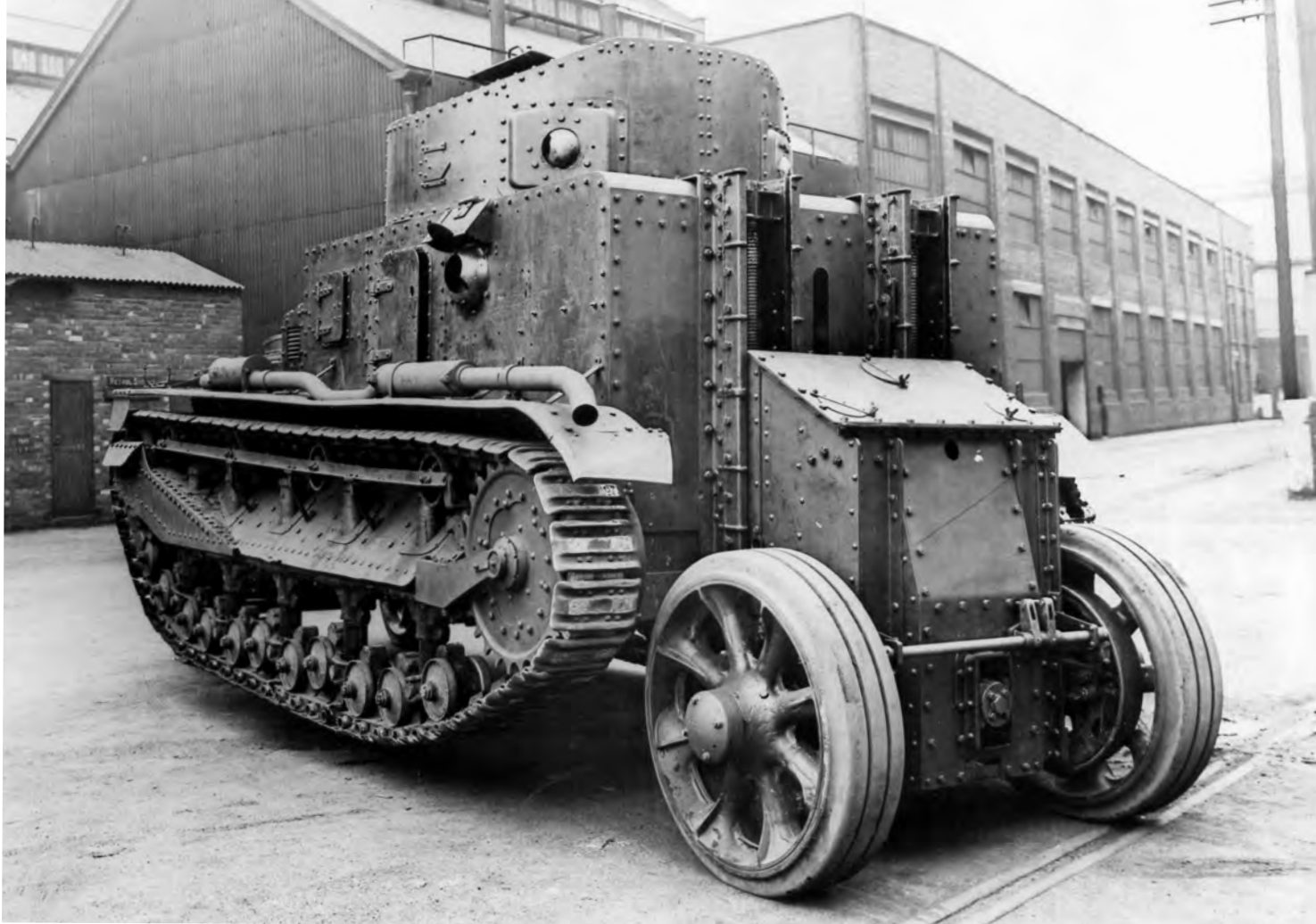
The wheel-cum-track concept first came about in the twenties and two factors kick-started its development. In the first place, before the days of tank transporters, it was seen as a means of reducing track wear. Remember, track technology was still relatively crude back then and speeding up the road movement of tanks was also an important consideration. Its other intended application was to wheeled vehicles to improve their off-road performance.

The first foray resulted in the creation of a very strange vehicle indeed, dating from 1926. On 25 October 1923 the Tank Testing Section at Farnborough took delivery of the first ever Vickers Medium, a Mark I with the WD number T15, also known by the designation A2E1. On 6 July 1926 it went back, presumably to Vickers, to be converted into a wheel-cum-track machine. By that time the Tank Testing Section had become the Tank and Tracked Transport Experimental Establishment (TTTEE), but it was the same organisation, in the same

place and commanded by the same officer, Captain HM Hordern MCRA. In this form it took part in a number of displays but most notably made an appearance for the Dominion Premiers in the rain on Camberley Common on 13 November 1926. It was described as "An experiment in converting a Light Tank Mark I (as Mediums were first known) to run either on tracks or wheels. The object is to provide increased road speed and to save wear of tracks on hard roads." The conversion involved fitting a pair of steerable wheels located between

the tracks at the front, raised or lowered on a subframe by powerful screw jacks, with linkages to the steering gear. These wheels, however, do not appear to have been braked, which must have added to the excitement of driving it. The rear wheels, which were apparently braked, were attached to a large box which moved up and down on rails fitted to the back of the tank. The box contained the final drive to the wheels, driven off the tank's own transmission and all of these features appear to have been mechanically driven, except for some of the final linkage.

Published figures, such as they are, claim that on wheels the tank had a top speed of 30mph (48km/h) but that it was dangerous to drive it above 25mph (40km/h). Which is probably why, in the Dominion Premier's



Above: Viewed from the rear, showing the final drive box for the rear wheels, lowered to its driving position, making the whole ensemble look dangerously top heavy.

catalogue, top speed on wheels is given as just 20mph (32km/h).

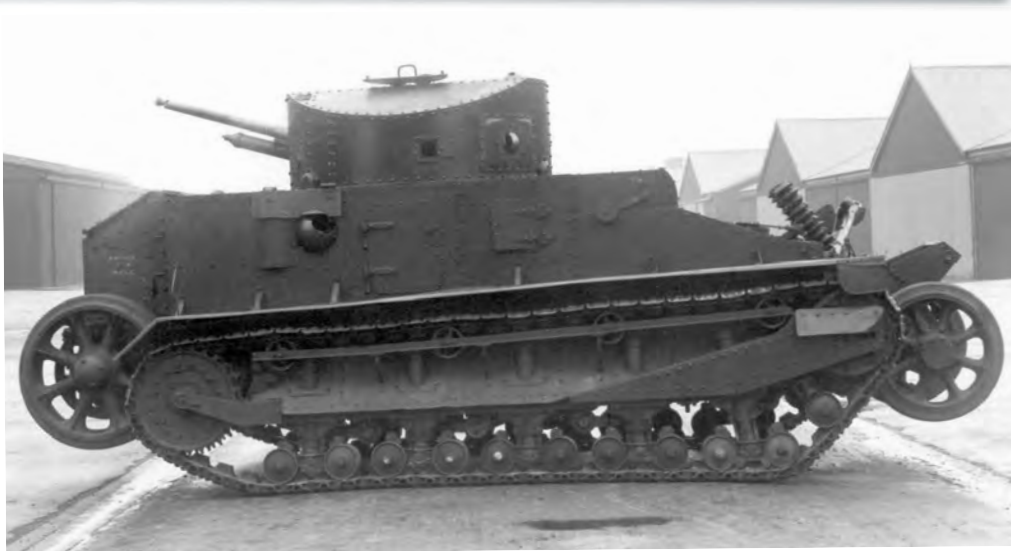
It is also said to have been rather unstable on wheels, which is hardly surprising since the wheels have a very narrow track. On tracks it was not so bad; the added weight fore and aft seem to have caused the tank to pitch more violently when driving across country but the additional weight of the appendages don't seem to have made any difference to its performance as a tracked vehicle.

It is not known when the wheeled fittings were removed, possibly in 1928 when it was sent back to Vickers for some unrecorded purpose, but the conversion must have been a fairly lengthy job.

Latterly the tank went to 3rd Battalion, Royal Tank Corps at Lydd, hopefully as a conventional tank. Near the end of its working life it was fitted with 'Japanese' suspension, as used on the Vickers tank supplied to Japan and in this form was sent to the Vulcan Foundry at Newton-le-Willows where they were designing at A12 Matilda which also had this type of suspension.

WOLSELEY OFF-ROADERS

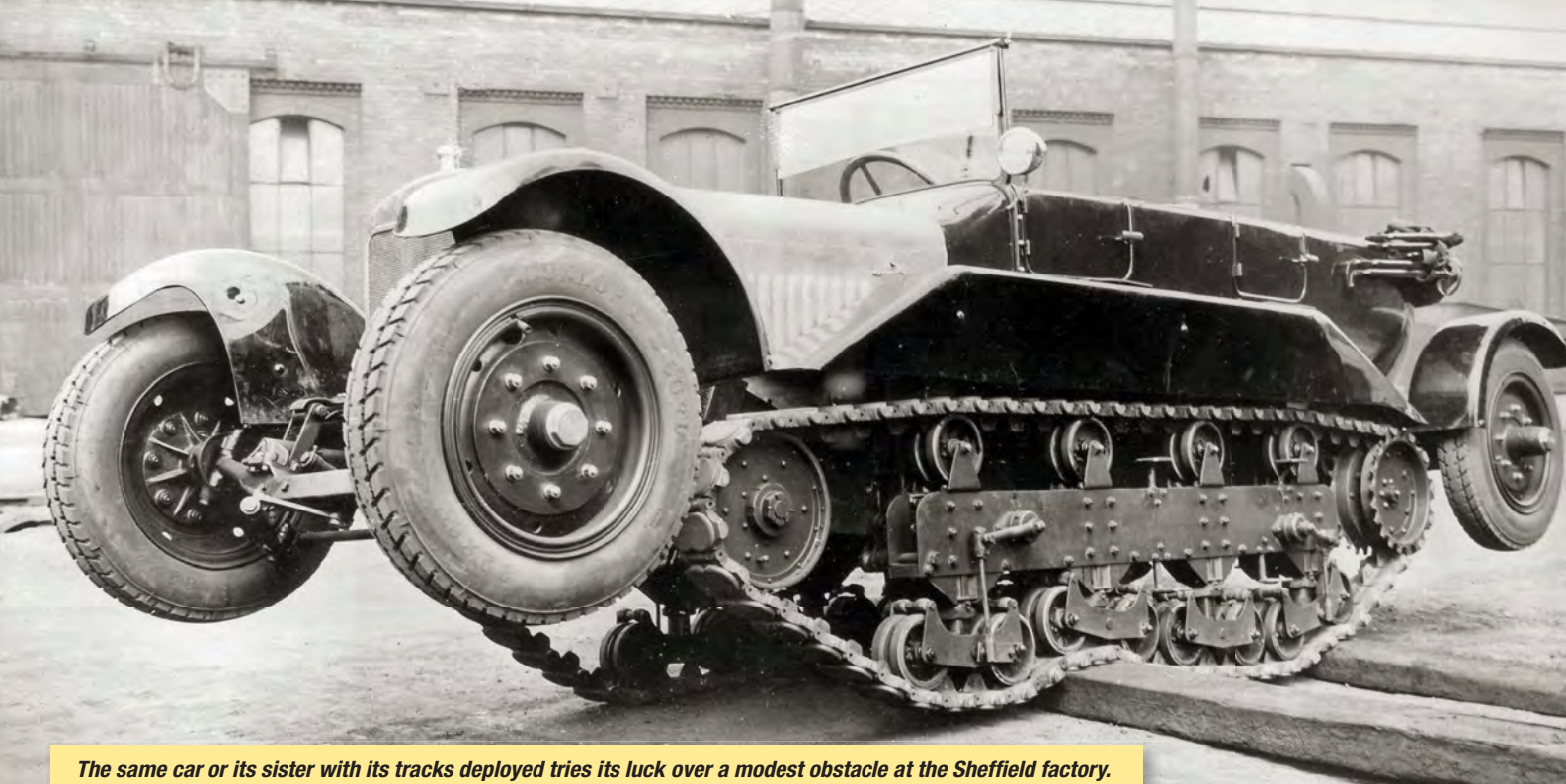
The next machine wasn't a tank at all but a glorified staff car and since it was completed in April 1926, it may predate the conversion of Medium Tank T15. It is a classic example of the other type of wheel-cum-track



The same tank, photographed at Farnborough and seen with its turret reversed, here standing on its tracks.

machine; one in which the addition of tracks to a wheeled vehicle was done to improve its cross-country performance. Two were produced, known by the General Staff specification numbers D4E1 and D4E2. They were built by Vickers Ltd at Sheffield but were based on Wolseley cars. Wolseley was then part of the Vickers Group, based at Adderley Park in Birmingham, but the wheel-cum-track cars, which appear to be based on the Wolseley 20hp model, were powered by Dorman JU six-cylinder engines rated at 72bhp. The cars appear to have had two drive trains from the same gearbox. One

drove the rear wheels in the normal way and steered on the front axle although this had been moved well forwards, making the car a very long wheelbase vehicle. The tracks were quite narrow for their time and moved up and down with their frames, reputedly through a power take-off. The suspension consisted of four bogies on each side, similar to those fitted to the medium tanks with the drive sprocket at the rear. Driven at a lower ratio from the gearbox through what must have been a separate differential, steering on tracks is said to have been by clutches, possibly Rackham. As the tracks



The same car or its sister with its tracks deployed tries its luck over a modest obstacle at the Sheffield factory.

went up, the wheels went down, and vice-versa, not very far but enough to permit one or the other to be in contact with the ground. The cars, which weighed 6 tons 16cwt, each had a top speed on wheels of 50mph (80km/h) and 25mph (40km/h) on tracks. They were photographed extensively,

mostly running on tracks, and were not disposed of until 1933 suggesting they performed fairly well.

PRIVATE ENTERPRISE

In 1927, Vickers Ltd built a similar vehicle, an armoured car, also on a Wolseley

chassis with a similar wheel-cum-track arrangement. This time it wasn't for the British Army but as a private venture. It was only ever photographed at Vickers' Sheffield Works as far as we know and never appears to have been sold. The wheels were the same as on the unarmoured vehicle although of wider track, as were the track units – although in this case there is a link between the two, a slim loop of chain between each rear wheel and a sprocket outboard of the normal track sprockets. Clearly this indicates some sort of drive transfer between the two but in which direction is not easy to determine. Why they could not have used a drive train similar to the car is not at all clear either. The vehicle is armoured all over, very thinly one imagines, but for some reason not around the radiator. It is surmounted by a dome shaped turret containing a single Vickers water-cooled machine gun but with no observation or sighting apertures that one can see; the whole vehicle looks alarmingly top heavy. The only other data we have on it, from a normally reliable source, mentions a Wolseley six-cylinder engine of unspecified power output, a weight of 7.5 tons and a top speed on wheels of 45mph (72km/h) and 15mph (24km/h) on tracks. Since it has never been seen except in Sheffield, one assumes it never went very far from there, if anywhere, and we do not know how long it lasted.

WEIRD AND WONDERFUL

Next were two vehicles that arrived at Farnborough in May 1928. Both came from Vickers-Armstrong's (as it was now known) Sheffield factory and were classified as armoured cars. One had an enclosed body (D3E1) and one an open body – the D3E2. It is D3E1 which still forms part of the Tank Museum collection. Don't worry that the General Staff specification numbers are not in order – this is often the case and may be because they were issued retrospectively.



The Vickers-Wolseley wheel-cum-track staff car in wheeled mode, referred to officially as a Reconnaissance Car.



The mysterious Vickers-Wolseley wheel-cum-track armoured car also photographed at the Vickers factory and seen here standing on tracks.

They were very strange vehicles and difficult to categorise. The wheels are attached to the hull and don't move up and down. They are disc wheels, fitted with Macintosh Natural Air Pressure tyres – solids to you and me – with triangular pockets cut into the outer surface to trap air and give a bit of cushioning, except when they fill up with mud. The double rear set, namely the driving wheels, are in recesses at the back. The front steering wheels are suspended from a leaf spring attached to the front plate of the hull. Brakes were a problem; they were only fitted to the driving wheels at the back and are reported as being very weak. It is the tracks and their frames which move up and down on rails attached to each side of the hull. The only things that remain in one place, as they have to, are the track drive sprockets. However, the tracks move far enough to clear the ground when running on wheels. There are eight track rollers on each side, and if they do have any sprung suspension it is difficult to detect.

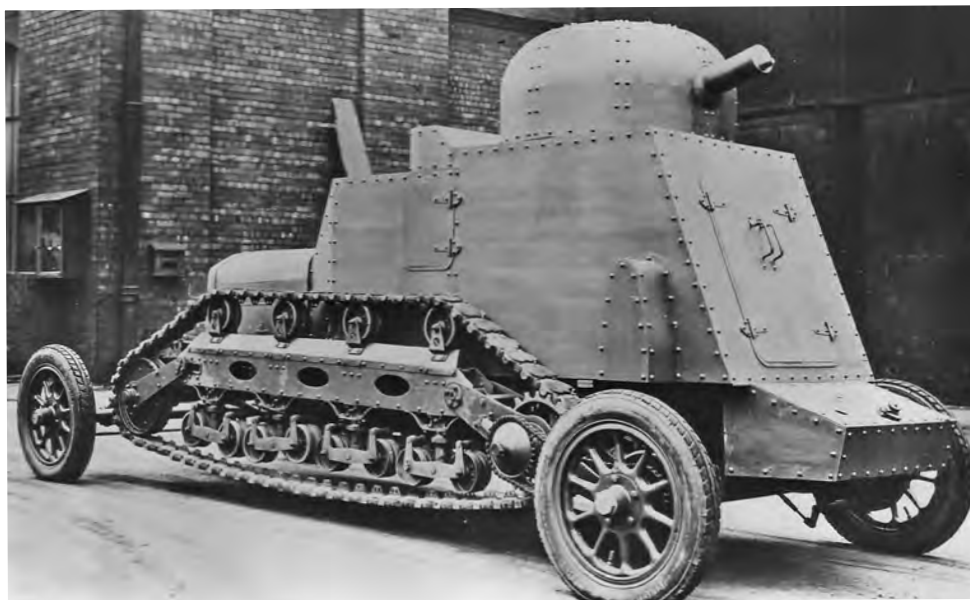
Each vehicle was powered by an Armstrong-Siddeley air-cooled V8 engine, rated at 90hp, as fitted to a contemporary tank. It drove through a four-speed transmission to steering epicyclics at the back. The driving controls inside appear to be a nightmare, with control rods running everywhere – including a system to make the tracks go up and down.

Neither vehicle is easy to fathom – and despite the fact that a set of drawings survive, D3E2 with the open body is most difficult of all. It was armoured to a maximum of 8mm but the open body at the back looks more like a supply carrier or gun tractor. Others must have had the same problem because it was disposed of in 1934. The turreted version, D3E1, is odd enough; it carries two turrets, neither of which was ever fitted with a gun, but looks more like a tank than an armoured car. It also carries armour to a maximum of 8mm and is recorded as weighing 9 tons 8cwt.

It is said to be capable of 35mph (56km/h) on its wheels and 15mph



The wheel-cum-track armoured car D3E1 seen here posed on its wheels. Although it still survives the interior is a hollow shell.



The same vehicle supported on its wheels, notice the final chain drive which is not seen on the staff car version. The turret has been turned to face aft but it is not clear how it was sighted or how the gunner had any idea what he was shooting at.

(24km/h) on tracks but it must have pitched violently on the latter. In 1933 it was sent to the Royal Tank Corps Schools

at Bovington, hence its current location in the Tank Museum.

A true armoured car of similar design but

A D3E2 is shown here on its tracks – although the body was totally open at the back it is not at all clear what its purpose was. The cut out which housed the driving wheels can clearly be seen.





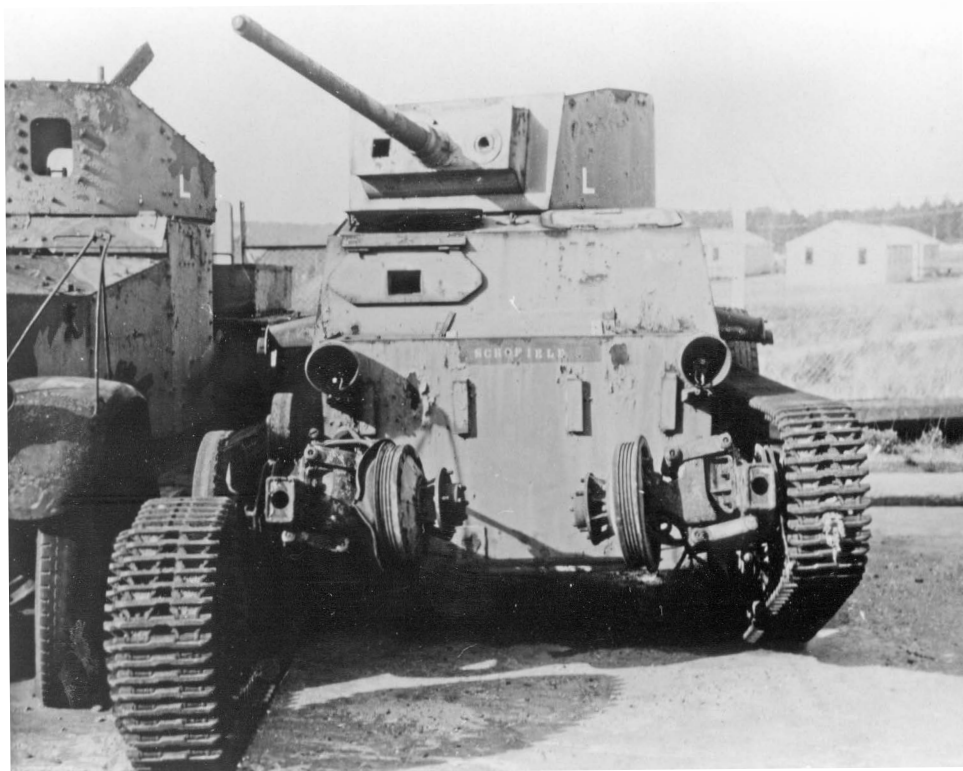
Above: With the D3E2 on its wheels, there seems to be very little ground clearance, even with the tracks fully retracted. But notice, by comparing this photo with the one on the previous page, how the track drive sprocket has to remain where it is.

with a large, domed turret was supplied to Hungary in 1928; it had an identical hull and wheel arrangement but without the tracks.

END OF AN ERA

The only other wheel-cum-track vehicles to serve with the British Army were some Carden-Loyd Carriers, two prototypes and eight production machines, designated Mark V and dating from 1927. Theirs is a different story for another time. A photograph of all eight, taken in 1928, shows them serving with 2nd Battalion the King's Royal Rifle Corps and already in the process of losing their wheeled attachments. A number of foreign armies, notably the Austrian, French, Swedish and Spanish also tried the wheel-cum-track idea at various times, but the last one to be seen in Britain was the New Zealand built Schofield light tank, the second prototype, which was shipped to London in 1941. It was essentially a tracked vehicle with four rubber tyred wheels attached to the sides which could be taken off and bolted in place as required.

It mounted a two-pounder gun in an open top turret, carried a crew of three and had a maximum armour thickness of 11mm. Powered by a six-cylinder Chrysler engine it had a top speed of 50mph (80km/h) on wheels and 30mph (48km/h) on its tracks. It was tested in England by the Fighting Vehicle Proving Establishment and was then passed on to the School of Tank



Above: The Schofield wheel-cum-track tank from New Zealand, seen at Chertsey in a derelict state after WW2. The front wheel stations are folded in-board but the wheels would be carried on the hull side, if they were still there.

Technology, at which point it disappeared. As far as Britain was concerned the wheel-cum-track idea had its heyday in

the 1920s but it was never very successful. Anything that came after that was like a throwback to the past. 

Below: The wheel-cum-track Carden-Loyd carriers, some with their wheels still in place but others without them. They were probably more trouble than they were worth.



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CLASSICAL GAZ

John Blackman profiles the BA-64 armoured car and takes a look at the only example in the UK



While Allied forces made use of armoured Jeeps during WW2, they were pretty ad hoc affairs, for the most part cobbled together in the field. It was the Soviets who, having whole-heartedly adopted and copied the Jeep 4x4 light utility concept, took it to its ultimate conclusion with their BA-64 series of armoured cars.

In the mid-thirties the Soviets had introduced the BA-20 armoured car based on the GAZ M-1 saloon but, being a 4x2, its off-road performance was extremely limited. Come 1941 and

with the emergence of the Jeep-like GAZ-64 there was at last an all-wheel drive chassis on which to base a new armoured car so, in July of that year, the GAZ design bureau began work on what

would become the BA-64. The defined aim was to produce a simple, rugged vehicle with a sloped hull, and while the BA-20 had looked exactly like a lightly armoured saloon with a turret plonked on top – which indeed it was – when it came to the BA-64's body, the Soviets looked to the German Sd.Kfz 221 and 222 armoured cars for inspiration.



The Soviets took the armoured Jeep to its ultimate conclusion with the GAZ BA-64. James Stewart and Nick Vaughan of Trapper Industries discovered an original chassis and fabricated a replacement body with the result that they now have the only BA-64B in the UK.

INTO SERVICE

Progress was relatively swift with the prototype hull ready by the end of November 1941 and the complete vehicle being rolled out on 9 January 1942. Following the rectification of suspension weaknesses, the BA-64 was in February exhibited to and approved by the Commissar for the tank industry, V A Malyshev, in Moscow and then

sent for weapons testing at the Sofrinsky artillery range. The following month the BA-64 was again demonstrated at the Kremlin, this time for Stalin and government officials, following which it was accepted for service on 14 March 1942.

The body consisted of rolled steel armour plates, 4-12mm (later 15mm) in thickness, placed at an angle of not less than 30

degrees and welded together. The result offered reasonable protection against small arms fire from the front where the plate armour was thickest and limited protection from other aspects. The driver sat centrally in the hull with a vision port inset into an armoured flap in front of him. That one extremely restricted view of the outside world was later augmented by



Above: James Stewart occupying the BA-64B's turret. In service it would have had a 7.62mm machine gun mounted in the slot in the turret front.

vision ports/flaps in the front side plates.

It seems that while some were open-topped and armed with a pintle-mounted DT-29 for the second crew member to use, most BA-64s (and all subsequent BA-64Bs) had an octagonal open-topped turret which could be manually revolved through 360 degrees. The 7.62mm machine gun was mounted in a slot slightly offset to the right in the turret front and rigged so that it could be elevated over the top of the turret and used for air defence. It could also be dismounted and the vehicle was supplied with a detachable bipod for such occasions. Despite the cramped conditions, 1260 rounds of 7.62mm ammunition plus six fragmentation grenades and the crew's PPSH submachine guns were also carried.

IFFY RELIABILITY

The BA-64's engine was the GAZ MM, the company's take on the Ford Model B

engine, an in-line, four-cylinder, 3285cc unit as used in the GAZ-64 and modified to work with low-grade petrol and oil. It drove the rear or all wheels via a four-speed gearbox and single-speed transfer box. GAZ commenced production in April 1942 but almost immediately minor modifications were made to address niggles that became evident as the BA-64 entered service. Unfortunately the type exhibited a general lack of reliability, with many breaking down after only a few thousand miles. Chief culprit was apparently rear axle failure, probably due to overloading. By November 1942 a non-disconnectable front axle had been prescribed and over the following months various modifications were introduced with the aim of strengthening and improving the chassis and suspension.

By June 1943, when the GAZ plant was damaged by German air raids, 3901 BA-64s had been manufactured. However,





Above: The BA-64's driver sat centrally, astride the transmission.

Right: With armour plate up to 15mm thick, the BA-64 was noticeably top heavy, so Nick and James used 3mm mild steel when they fabricated the new body. With only a small vision flap to his front and small vision ports either side, the driver's view is limited.

any number of modifications couldn't fix what was the type's inherent problem: a lack of stability caused by a combination of narrow track and a high centre of gravity. That Achilles' heel was addressed when the BA-64B appeared in September 1943 based on the GAZ-67B which had a track of 1446mm, some 200mm more than its predecessor. Production of the BA-64B continued until 1946, by which time some 5209 had been manufactured, bringing total BA-64 series output up to 9110 – although sources do differ slightly. Many vehicles ended up being passed on to Soviet allies such as East Germany, North Korea, China and Yugoslavia, but there

“Compared to Jeeps, the GAZ is very industrial but much tougher...”

were a number of experimental prototypes produced. Among these was the BA-64Zhd, fitted with additional railway wheels allowing it to run on tracks, and the very much more ambitious BA-64SKh on which

the front wheels were replaced by skis and the rear wheels by tracks so turning it into a snow-going half-track. Neither design progressed to production.

RARE UK EXAMPLE

Although there are a number of BA-64s in ex-Eastern Bloc collections and museums – some genuine, some reconstructions – and one in the United States where it used to be

held in the Aberdeen Proving Ground collection, there were none in the UK... until recently. The

example you see illustrating this feature is owned by James Stewart and Nick Vaughan who jointly run Trapper Industries (www.trapperindustries.com), a company

Right: A BA-64 with its narrow track photographed in February 1944.

Below: A May 1942 photo of an early BA-64. There are no driver's side vision ports.





Right: Perhaps the most original BA-64B is that presented by Stalin to Roosevelt. Here it is shown at the Aberdeen Proving Ground some years ago.

specialising in Russian and Eastern Bloc military vehicles and equipment.

The duo set up the company, which is based not far from Gatwick, almost 10 years ago and currently have workshop facilities including fabrication and sandblasting areas, and a storage barn for vehicles held in stock. The three vehicles in the accompanying group photo, the GAZ 67, GAZ-67B and BA-64, all came from the regular – at least twice a year – trips Nick and Stewart make out to the old Eastern Bloc searching for interesting projects and following up leads provided by their local contacts. But of course they don't look so straight when found; the GAZ-67B owned by James was a true barn find.

"We were in the Baltic on the Russian border when we came across it," James explains. "It hadn't been used for some time and was in very poor condition. The chassis was complete and the engine block and head were there, but the body was very rusty. We dug it out of a barn and stored it there for six-months before bringing it back with a couple of other vehicles in 2012. It's a 1945-built GAZ-67B. The early GAZ-67s didn't do well so they modified them with a wider track and extra fuel capacity resulting in the 67B which was quite successful. People suggest it's basically a Russian Willys but in actual fact the Willys and the GAZ came out of the Bantam, so they are like cousins that took a different evolutionary path.

"Compared to Jeeps, the GAZ is very industrial but much tougher; more difficult to break. I think that overall they beat the pants off Jeeps and they are far more



capable off road. However, the engines don't run as well."

FORD POWER

The GAZ uses a Ford Model B-type engine along with Model AA truck axles because in the thirties the Soviets entered into an agreement with Ford America under the terms of which they agreed to purchase \$13 million worth of vehicles and parts in return for Ford providing technical assistance to facilitate the setting up of a manufacturing plant at Nizhny Novgorod. Known as Nizhegorodsky Avtomobilny

A-like. The grille is very similar, and even the GAZ badge looks like a Ford badge."

CLOSE TO ORIGINAL

When a contact of theirs reported locating a BA-64 chassis, James and Stewart didn't really believe him but trudged out to the Russian border anyway, fully expecting to find the remains of another GAZ-67B. "We took a close look and soon realised it actually was a BA-64," admits Nick. "There are several identifying features that you wouldn't find on anything else and it had a BA-type engine in it which was still the

Model B but with an earlier water pump. There was also a special

gearstick. Unfortunately the body had been scrapped many years before. The owner had obviously weighed it in for its scrap value to make a bit of money."

The lack of a body wasn't going to prevent Nick and James from buying such a rarity. "We brought it back to the UK and then spent about six-months fabricating a replacement body using original drawings that we found via Russian internet forums," Nick says. "Although the original used

"We used as much second-hand steel as we could because it's old and pitted."

Zavod, or NAZ, the plant commenced production on 1 January 1932 with versions of the Ford Model A car and Model AA truck which were sold as the NAZ-A and NAZ-AA respectively. In 1933, when Nizhny Novgorod was renamed after Maxim Gorky, the factory's name changed to Gorkovsky Avtomobilny Zavod, or GAZ. "Hence you find lots of Model A and B parts and similarities in GAZs," continues James. "The front of the vehicle is very Model

Above: The slogan on the front of this BA-64B photographed during a Berlin parade in May 1945 reads 'Glory to Stalin'. On the side is written 'Caucasus Berlin'.

Left: This early turretless BA-64 photographed in Stalino in November 1943 has a PTRD anti-tank rifle installed on top of the hull.



While early BA-64s were based on the GAZ-64, the BA-64B used GAZ-67 underpinnings and benefitted from a wider track.

armour plate up to 15mm thick, we used 3mm mild steel plate. BA-64s were very top-heavy and had a tendency to fall over, which we didn't want, obviously. And the cost of steel is horrendous. But we used as much second-hand steel as we could because it's old and pitted. We get a lot of our metal from railway restorers.

"The result is up to 60% original and is one of only two in Western Europe that we know of. The other is in a German museum. There are quite a few replicas in Eastern Europe but they are usually built on Willys or Land Rover chassis. There are plenty in Russian museums but they are all modified to some degree. The most

complete one we know of was in Maryland, and was given by Stalin to Roosevelt during WW2."

FINISHING TOUCH

The BA-64 has been finished in the markings of the 10th Guards Army which was formed after the Soviets were pushed back to Moscow. It subsequently thrust back via the Baltic, through Poland and to Berlin and is also the unit in which James's grandfather-in-law served as a KGB Captain during WW2 and which James and Nick re-enact at events.

So far so good. But I just know that there are readers out there wondering how

to pigeonhole this vehicle... restoration, recreation or even, heaven forbid, replica. Well, I'm going to firmly reject the latter. With a claimed 60% originality it certainly can't be considered a replica. As for the other two – restoration or recreation – it's a bit of both if you want to be nit-picky about it, but I don't. Nick and James rescued the remains of a rare and interesting vehicle and, with compromises made for good practical reasons, got it up and running for us all to enjoy and, it has to be said, perhaps spark our interest in a fascinating little vehicle the likes of which the Western Allies didn't have. And that's good enough for me.

From right to left: James Stewart with a GAZ-67B, Nick Vaughan with the BA-64B and, for comparison's sake (note the narrower track), Derek Foreman with a GAZ-67.





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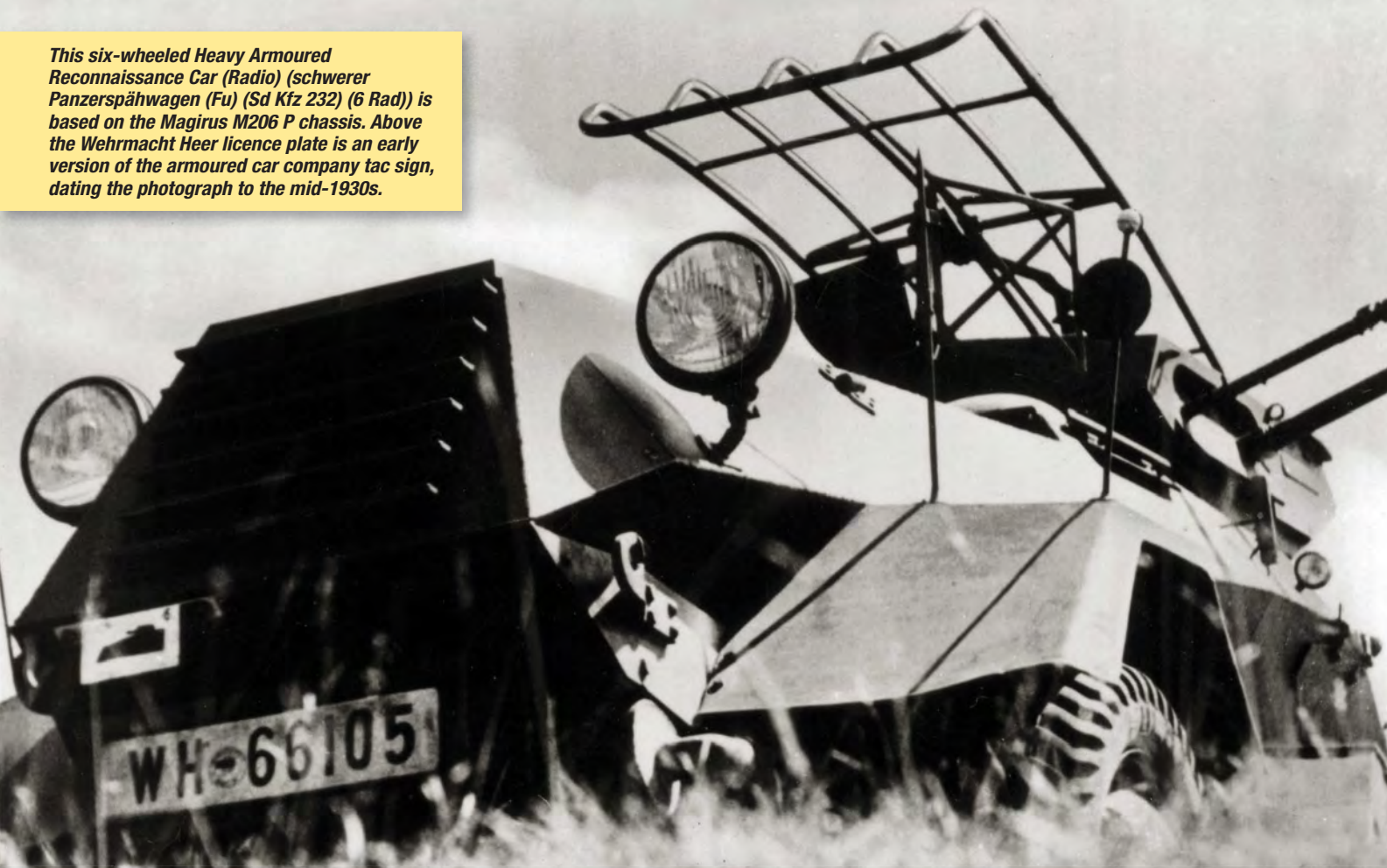


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This six-wheeled Heavy Armoured Reconnaissance Car (Radio) (schwerer Panzerspähwagen (Fu) (Sd Kfz 232) (6 Rad)) is based on the Magirus M206 P chassis. Above the Wehrmacht Heer licence plate is an early version of the armoured car company tac sign, dating the photograph to the mid-1930s.



GERMAN ARMoured RECONNAISSANCE

John G Teasdale reports on the German armoured cars produced in readiness for WW2 and beyond...

If anything is going to give a field commander a sleepless night, it is not knowing where his enemy is. In the February 2015 issue of *CMV* we saw how the German Army (Heer) used motorcyclists for scouting duties during WW2. Members of an infantry division's motorcycle scout platoon typically operated in the immediate front of their unit. For long-range reconnaissance, the Heer deployed armoured cars.

The first armoured cars suitable for reconnaissance were built (for the Reichsheer) from 1932. To keep costs low, they were based on commercially available chassis. A simple machine gun car with an armoured passenger compartment was initially based on the chassis of the Adler Standard 6 and subsequently of the Mercedes-Benz Stuttgart 260. The machine gun was a MG 13 fitted with a small armoured shield, later replaced by an MG 34. This car, whether the Adler or the Mercedes-Benz, was given the military designation Kraftfahrzeug 13 (abbreviated to Kfz 13), or motor vehicle 13, the designation indicating the vehicle's role, not its design

or manufacturer. Cross-country ability was modest, as the car was rear-wheel drive only. An unarmed version, designated Kfz 14, was fitted with a radio and aerial. Militarily speaking, Kfz 13 and 14 weren't much use. However, like the Panzerkampfwagen I they were useful for training and due to a shortage of suitable vehicles they did see active service in Poland in 1939 and in the West in 1940.

SIX IS BETTER

Much more useful were the six-wheeled armoured cars also built for the Reichsheer from 1933. These were initially based on the commercially available Büssing-NAG G 31 P and Mercedes-Benz G 3 a/P six-wheeled lorry

chassis (dual tyres on the rear axles); cars were subsequently built on the Magirus M206 P chassis. Cross-country mobility was modest as the front wheels were undriven, but unlike Kfz 13 and 14 the six-wheeled armoured cars had full armoured hulls offering protection not just for the crew but the engine also. The version armed with turret-mounted 2cm autocannon and MG 13 machine gun was designated Sonderkraftfahrzeug 231 (abbreviated to Sd Kfz 231, special motor vehicle 231). Crew comprised four men: two drivers, one commander and one gunner. The second driver sat at a driving position installed at the rear of the car. When undertaking a recce patrol, if enemy troops were encountered the second driver would instantly take over the controls and drive the vehicle backwards into cover. The patrol commander would then assess the situation; ideally, having reported by radio the enemy's



A Kfz 13 Machinegun Car (Maschinengewehrkraftwagen) brings up the rear of this armoured column. Based initially on the Adler Standard 6, it is a later version with the wheels of the Adler 12N 3G. In front of the Kfz 13 is a six-wheeled radio-equipped Sd Kfz 232 with its typical frame aerial. All of the vehicles are painted in the three-colour yellow/brown/green camouflage of the Reichsheer; this scheme remained in use until 1937 when two-thirds dark grey/one-third dark brown was adopted.

location, the cars comprising the patrol would find another route in order to continue their mission.

A modified version of the car fitted with medium and short-range radios and a large frame aerial was designated Sd Kfz 232. The aerial curved down at the front and rear, presumably so that low branches would be deflected over the top of the aerial instead of catching underneath and ripping it off the vehicle. A swivel joint was fitted between aerial and turret to allow the latter to rotate.

ROOM FOR IMPROVEMENT

The Nazi seizure of power in January 1933 brought with it a determination to increase the strength of the armed forces. Money was

“Both front- and rear-engined cars had their pros and cons.”

allocated for the purchase of new weapons, and an obvious candidate for the spending of it was in the form of a new four-wheeled light armoured car.

At the same time as a new light armoured

car was under consideration, so too was a range of standardised chassis for light, medium and heavy field cars (Kübelwagen). Rather than design a new armoured car chassis from scratch, it was decided to use the one that had been newly designed for the heavy Kübelwagen. This chassis had the engine at the front. If used for the armoured car, however, the hull would inevitably be wide and high in profile at the front in order to accommodate engine and radiator. This disadvantage was mitigated by the fact that any projectile that pierced the armour would likely be stopped by the engine before it reached the crew compartment. If the engine was destroyed though, the crew would have to abandon the car while under fire. On the other hand, if the engine was at the rear of the car, the front hull profile could be made smaller and better shaped to resist enemy fire. But if (or more likely, when) a round did penetrate the hull, the driver would be very vulnerable. If he survived, however, he would be able to drive the vehicle back into a safe place where first aid could be administered. Thus both front- and rear-engined cars had their pros and cons. After considerable thought, no doubt, a version of the standard chassis with the engine at the rear was chosen for the armoured car.

OVER COMPLICATED

Whereas the chassis of the machine gun car

was too basic to provide a basis for a good all-terrain armoured car, the standard chassis chosen for the new four-wheeled armoured car was excessively complicated. It had four-wheel drive, which was a necessity,

Below: This barracks is in Nürnberg, home to an unidentified Reconnaissance Battalion (Aufklärungs-Abteilung). In the foreground are six- and eight-wheeled armoured cars. Behind are two rows of four-wheeled armoured cars. Behind them are motorcycles (most with sidecars) and Kübelwagen. Driving on to the parade ground are 6x4 gun tractors towing 3.7cm anti-tank guns and 7.5cm infantry guns.





This is Sd Kfz 232 WH 66105 again, evidently used in a series of propaganda photographs.

but also four-wheel steering which was not. The addition of this latter feature increased cost (which decreased the number of cars that could be built for a given allocation of money) and increased the maintenance requirements for no obvious benefit on the battlefield. (In normal use, steering was via the front wheels only. If required, the driver could select four-wheel steering by means of a lever. Four-wheel drive was also selected

manually.) Instead of simple beam axles, it featured independent suspension – which again increased cost and maintenance. The chassis was built by Horch, and thus was fitted with one of that company's engines: a water-cooled V8 3.5-litre petrol engine.

The rear-mounted engine allowed the hull of the armoured car to be carefully shaped at the front; its profile was low, with plates sloped to deflect incoming projectiles. The fact that the plates were sloped also effectively increased their thickness when faced with a projectile impacting horizontally.

The front plates were 14mm thick, and the side and rear plates 6mm. The top of the hull and of the turret (if fitted) were open. To protect against hand grenade attack, the top of the hull was covered by a grille and the top of the turret by a mesh screen. All or part of such a screen could be hinged open to allow a crewman to stand up or to climb in or out. The car could also be accessed via a hatch in the lower part of the hull each side.

PRE-WAR PRODUCTION

Series production of the Sd Kfz 221, armed



This is a Light Armoured Reconnaissance Car (Machinegun) (leichter Panzerspähwagen (MG) (Sd Kfz 221)) photographed from the rear. The exposed radiator grille shows this to be an early version; later versions had an armoured cover, open at the bottom, over the grille. The car is painted two-thirds dark grey/one-third dark brown. Fixed armament is a turret-mounted MG 34. A sub-machine gun also formed part of the car's equipment. The two crewmen were each armed with a pistol.

with a turret-mounted MG 34, began in April 1935. As with all the armoured cars of the Heer, each was also equipped with a sub-machine gun for use by the crew for close defence. (The weapon issued individually to each member of a car's crew was a pistol.) Crew comprised two men: a driver and a commander/gunner. Production ceased in early 1940. By this time war had broken out and Sd Kfz 221 had seen active service. In action, the MG 34 was soon deemed inadequate. An unknown number of cars were up-armed initially with the 7.92mm PzB 39 anti-tank rifle and later with the

2.8cm sPzB 41 anti-tank rifle.

Circa 1936, series production began of the Sd Kfz 222. This car was armed with a turret-mounted 2cm autocannon and a co-axial MG 34. Crew comprised three men: a driver, a commander and a gunner. To accommodate the larger turret required by the 2cm cannon, the chassis and hull were made longer than that of the Sd Kfz 221.

Later versions of the car, production of which ceased in 1943, were built on a stronger chassis fitted with a 3.8-litre engine; from 1940, four-wheel steering was no longer fitted. Hydraulic brakes replaced

the original cable-operated ones and frontal armour was increased in thickness to 30mm.

Based on the chassis and hull of the Sd Kfz 222 was the Sd Kfz 223. This car was armed with a turret-mounted MG 34, but its main function was to serve in the communications role. It was therefore fitted with a radio and a foldable frame aerial. Crew comprised three men: a driver, a commander and a radio operator. The car was in production up to 1944.

On active service in Poland and the West, where the quality of the road networks ranged from adequate to excellent, the

Below: This column comprises Light Armoured Reconnaissance Cars, some fitted with the frame aerial that indicates radio-equipped Sd Kfz 223. The aerials are erected here, rather than being folded flat. The date is circa 1941. Note that although it is a warm day – the soldier standing to the right of the second car from the camera is wearing a greatcoat – the car's engine bay doors are both open to let in a cooling draught.



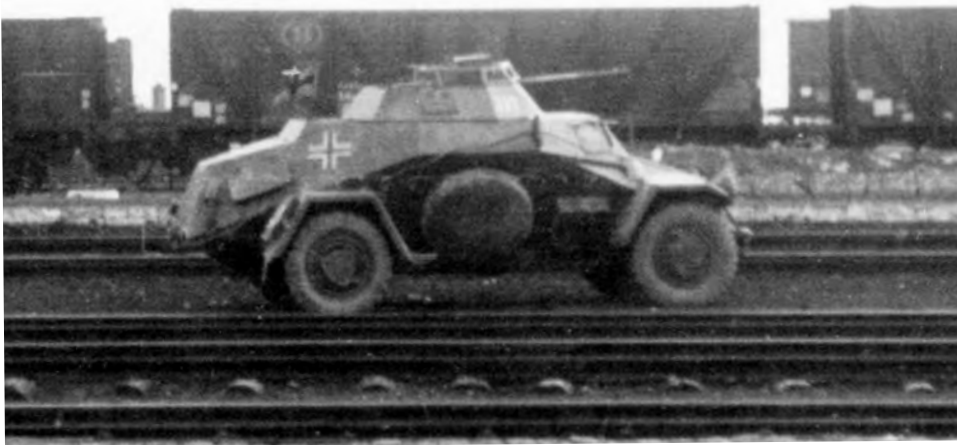
Right: An armoured car crew takes a break during the campaign in the West, 1940. They are in southern Belgium, close to the French border. The men are wearing the black uniform of the Panzerwaffe – the man standing left appears to be wearing the standard issue reed-green denims over his. Arm of service piping colour is the cavalryman's yellow rather than the tank man's pink. Despite the slip hazard of steel hobnails on steel armoured car hulls, the man wearing the steel helmet has studded boots. The man to his left has plain leather-soled boots lacking the infantryman's hobnails.

new armoured cars performed very well. On good roads they could travel at up to 50mph(80km/h), which was a prime requirement. Armament and armour protection were not so satisfactory, and casualties amongst the reconnaissance troops were high. In the North African desert and in the Soviet Union, however, there were few roads. Even with four-wheel drive mobility was much reduced. Fuel consumption was high, but capacity was low. The complexity of the chassis also badly affected reliability. As the war progressed, the cars would be replaced to a large extent by Sd Kfz 250 half-tracks.

FIGURE OF EIGHT

As we have already seen, the six-wheeled armoured car built from 1932 suffered from poor off-road performance. Based on an ordinary lorry chassis, the wheels on the front axle were undriven, dual wheels were fitted to the rear axles (which tended to trap large stones between the tyres thus damaging the sidewalls) and all the tyres were narrow-section. When money was allocated for the design of an improved heavy armoured car, wheels and tyres were a natural focus of attention. A prototype tested in 1935 featured wheels fitted with wide-section tyres offering good flotation on muddy terrain. The wheels were single all round, and there were eight of them. This use of eight wheels revisited an idea that was dropped in the late 1920s due to cost – the six-wheeled lorry chassis having to be adopted instead. After the Nazi seizure of power, of course, cost was no longer such an issue.

All eight of the new heavy armoured car's wheels could be steered which, given the car's length, was a worthwhile complication. The steering mechanism was indeed complicated though, especially as there was an additional driving position at the rear. Suspension of each wheel was independent, and each wheel was driven. Each of the four pairs of wheels was connected via a limited slip differential. The chassis was built by



Photographed during the campaign in the West in 1940, this is a Light Armoured Reconnaissance Car (2cm) (leichter Panzerspähwagen (2cm) (Sd Kfz 222)). This car was armed with a 2cm autocannon and a co-axial MG 34; a sub-machine gun also formed part of the car's equipment.

Büssing-NAG, which installed its own water-cooled V8 7.9-litre petrol engine at the rear.

The hull was shaped similarly to that of the light armoured car. Thickness at the front was 18mm, and between 8-10mm at the sides. If a turret was fitted, frontal armour was 15mm thick. Active service would lead to a stand-off 18mm armour plate being fitted to the front of the hull from July 1940. As well as giving increased protection from enemy fire, the plate could be used to brush aside makeshift roadblocks. A similar

the designation was changed from Sd Kfz 233 to Sd Kfz 231 (8 Rad). From 1941, the car was fitted with a short-range radio in the turret. Crew comprised four men: two drivers (one in the rear position, who served also as radio operator if a radio was fitted), one commander and one gunner. Production ceased in May 1941.

Sd Kfz 234 (from the summer of 1940, Sd Kfz 232 – 8 Rad) was the long-range radio-equipped version of the heavy armoured car, built from 1937 to 1943. It carried a

large frame aerial of the same type as fitted to the six-wheeled car. The frame aerial

“Instead of simple beam axles, it featured independent suspension – which again increased cost and maintenance.”

modification would sometimes be made unofficially to the light armoured cars.

Series production of chassis began in 1936 and the first completed examples of the Sd Kfz 233 were issued to units in 1937. This heavy armoured car was armed with a turret-mounted 2cm autocannon and a co-axial MG 34. In the summer of 1940, apparently when the six-wheeled Sd Kfz 231 was withdrawn from front line service,

rendered the car very visible, however, and later versions were fitted with a mast instead. From 1941, this car too was fitted with a short-range radio in the turret.

Sd Kfz 263 (8 Rad), built from 1937 to 1943, had an armoured superstructure instead of a turret. This gave space for a suite of radios. As with the Sd Kfz 232 (8 Rad), the cumbersome frame aerial would be replaced by a mast on later versions. A MG 34 was located in a socket mount in the front wall of the superstructure, and the usual sub-machine gun was clipped to an inside wall.

EIGHT MADE BETTER

On active service, the eight-wheeled armoured cars proved very successful. They were fast, and had good mobility across rough country. However, if they had a vice – apart from that of mechanical over-complexity, of course – it was that they were very tall. This was a decided disadvantage for vehicles whose survival depended to a significant degree upon being discrete. In the summer of 1940, therefore, orders were given that a revised design be produced. Again, it was Büssing-NAG whose design was chosen for production. Manufacture was delayed by problems with the proposed engine: the Tatra air-cooled V12 14.8-litre diesel engine was inordinately noisy. An air-cooled diesel was never going to be particularly quiet,



however, and Sd Kfz 234/2 went into series production in December 1943. Apart from the engine, the design of the new eight-wheeled armoured car was significant in that there was no separate chassis, the suspension being attached directly to the hull. This allowed a lower profile than the previous series of eight-wheelers. Larger diameter tyres allowed an increase in ground clearance. As before, the new cars featured all-wheel drive and steering, independent suspension and single wheels all round. From the outset, frontal armour of the hull was 30mm thick.

Sd Kfz 234/2, built from December 1943 to June 1944, was armed with a turret-mounted 5 cm gun and a co-axial MG 42. Sd Kfz 234/1, built from April 1944 to March 1945, was armed with a turret-mounted 2cm autocannon and a co-axial MG 42.

Sd Kfz 234/3, built from June to December 1944, was armed with a hull-mounted 7.5cm gun and an MG 42.

Sd Kfz 234/4, built from December 1944 to March 1945 (and possibly lasting right up to the end of the war), was armed with a hull-mounted 7.5cm anti-tank gun and an MG 42.

RECONNAISSANCE BATTALION

The Reconnaissance Battalion (Aufklärungs-Abteilung) of a motorised division included support troops as well as those who would undertake the unit's main task. These included pioneers with bridging equipment, motorcycle troops and artillerymen equipped with towed 7.5cm guns and 3.7cm anti-tank

guns. If it proved necessary to do so, the motorcycle troops and artillerymen would be used to destroy enemy positions in order to allow the armoured cars to pass through and to undertake long-range reconnaissance. During the invasion of the Soviet Union, the lack of mobility of the towed guns as compared with that of the armoured cars quickly became apparent. To remedy this deficiency the eight-wheeled Sd Kfz 233, in production from July 1942 to October 1943, was armed with a 7.5cm hull-mounted gun; the barrel of the gun protruded through a slot next to the driver's visor. In this position, traverse was limited to a few degrees right and left, but the profile of the vehicle was very low.

The battalion included two armoured

four-wheeled Sd Kfz 223 and one eight-wheeled Sd Kfz 263). 1 (Heavy) Platoon was allocated three six-wheeled Sd Kfz 231 and three eight-wheeled radio-equipped Sd Kfz 232. 2 (Light) Platoon was allocated six four-wheeled Sd Kfz 221. 3 (Light) Platoon was allocated four four-wheeled Sd Kfz 221 and four four-wheeled Sd Kfz 222 (the version with the turret-mounted 2 cm autocannon). Two more motorcycles, a Kübelwagen and eight light lorries were allocated to the company's supply train.

The version of KStN 1162 dated 1 November 1943 shows how the allocations changed during the war years. The Headquarters Troop had lost most of its motorcycles; it now only had two, though it also had two tracked motorcycles

(Kettenkrad). It had also lost its armoured personnel carrier, being allocated two Kübelwagen.

“All eight of the new heavy armoured car’s wheels could be steered which, given the car’s length, was a worthwhile complication.”

reconnaissance companies: the War Strength Establishment Tables give the details (Kriegsstärkenachweisungen, abbreviated to KStN). KStN 1162 dated 1 October 1938 listed the planned allocation of personnel, weapons and vehicles to an Armoured Reconnaissance Company (Panzerspähkompanie). The Headquarters Troop was allocated a Kübelwagen, a small armoured personnel carrier (based on essentially the same standard chassis as the four-wheeled armoured car Sd Kfz 221, but with the engine at the front) and 12 motorcycles. The Communications Troop was allocated a radio-equipped Kübelwagen and five radio-equipped armoured cars (four

The Communication Troop had been abolished completely. 1 (Heavy) Platoon had lost its six-wheeled armoured cars, but these had been replaced by the eight-wheeled equivalents; total strength remained six cars. There were now three Light Platoons, each allocated four four-wheeled Sd Kfz 222 and two four-wheeled radio-equipped Sd Kfz 223. The supply train had half the number of lorries, though they were now three tonners instead of the light lorries previously allocated. By now the company had a vehicle maintenance platoon, allocated one 2t lorry, two three ton lorries and a three ton half-track (Sd Kfz 11) for the recovery of damaged/broken down armoured cars.

Below: In the centreground, an eight-wheeled armoured car takes part in a general advance deep into the Soviet Union. The photographer is in another armoured car – the left-hand half of the anti-grenade screen protecting the open-top turret can be seen propped open.





Above: This Heavy Armoured Reconnaissance Car (schwerer Panzerspähwagen (Sd Kfz 231) (8 Rad)) belonged to 1 Kompanie of Panzer Aufklärungs-Abteilung 18, the reconnaissance arm of 18 Panzer Division. It was knocked out during the campaign in the Soviet Union; an artillery round has punched a hole in the lower left side of the turret, and there appears to have been an internal fire. The wreck has been pushed to the side of the road and everything useable, such as wheels and tyres, has been removed.

KStN 1162c, also dated 1 November 1943, did not include any armoured cars at all; they had been replaced by Sd Kfz 250 half-tracks. When a Reconnaissance Battalion included Armoured Reconnaissance Companies to KStN 1162c, it still included armoured cars. These formed part of the battalion's Staff Company and still performed a useful role; that role no longer included long-range reconnaissance.

IN ACTION

A major role of the recce companies' armoured car crews was to gain intelligence of the enemy's locations and intentions. Reconnaissance by the Luftwaffe would provide a broad picture; it was up to the armoured cars to provide the details. As

noted above, a Reconnaissance Battalion's motorcyclists and artillerymen would pierce the enemy front line if necessary; ideally, of course, the armoured cars would slip through gaps in the line without drawing attention to themselves. Once through the front line, they would range up to 60 miles (96km) beyond. Of particular interest were anti-tank defences and tank leaguers. Detailed information on river crossings etc was also important. Minor bridges and fords attracted the most attention; it was assumed that major bridges would be strongly defended. Using Morse, the information gleaned would be radioed back to the battalion commander and his staff; patrols comprised a minimum of two cars, one of which had to be radio-equipped.

Ideally, the cars would not engage the enemy at all; firefights might result in lost cars and would certainly attract unwelcome attention. In the campaigns in Poland and the West, this proved easier to achieve than it would in the Soviet Union and in France after the Allied invasion. Hence the introduction of the Sd Kfz 233 and its 7.5cm gun, and the well-armed cars of the Sd Kfz 234 series. Even in the campaigns of 1939 and 1940, however, the task allotted to the recce troops was a very dangerous one. They were at the head of mechanised army that could, if unopposed, travel around 100 miles (160km) per day. If the armoured cars were to obtain information that would prove to be actually useful, they had to move fast. Naturally, the crews took precautions. Inhabited areas would be observed from a distance. If the population was going about its daily business, it was likely that there were no enemy troops nearby; if the area was defended, the locals tended to lie low in the expectation of trouble. However, there was simply not the time to investigate every hedgerow and barn. An advance of the German Army would typically be littered with the burned out hulks of armoured cars that had been ambushed. Service in a recce company was eventful and, all too often, short.



Left: Another knocked out Sd Kfz 231 (8 Rad); this one has burned out completely, right down to its eight tyres. It was lost in the Soviet Union in 1941.



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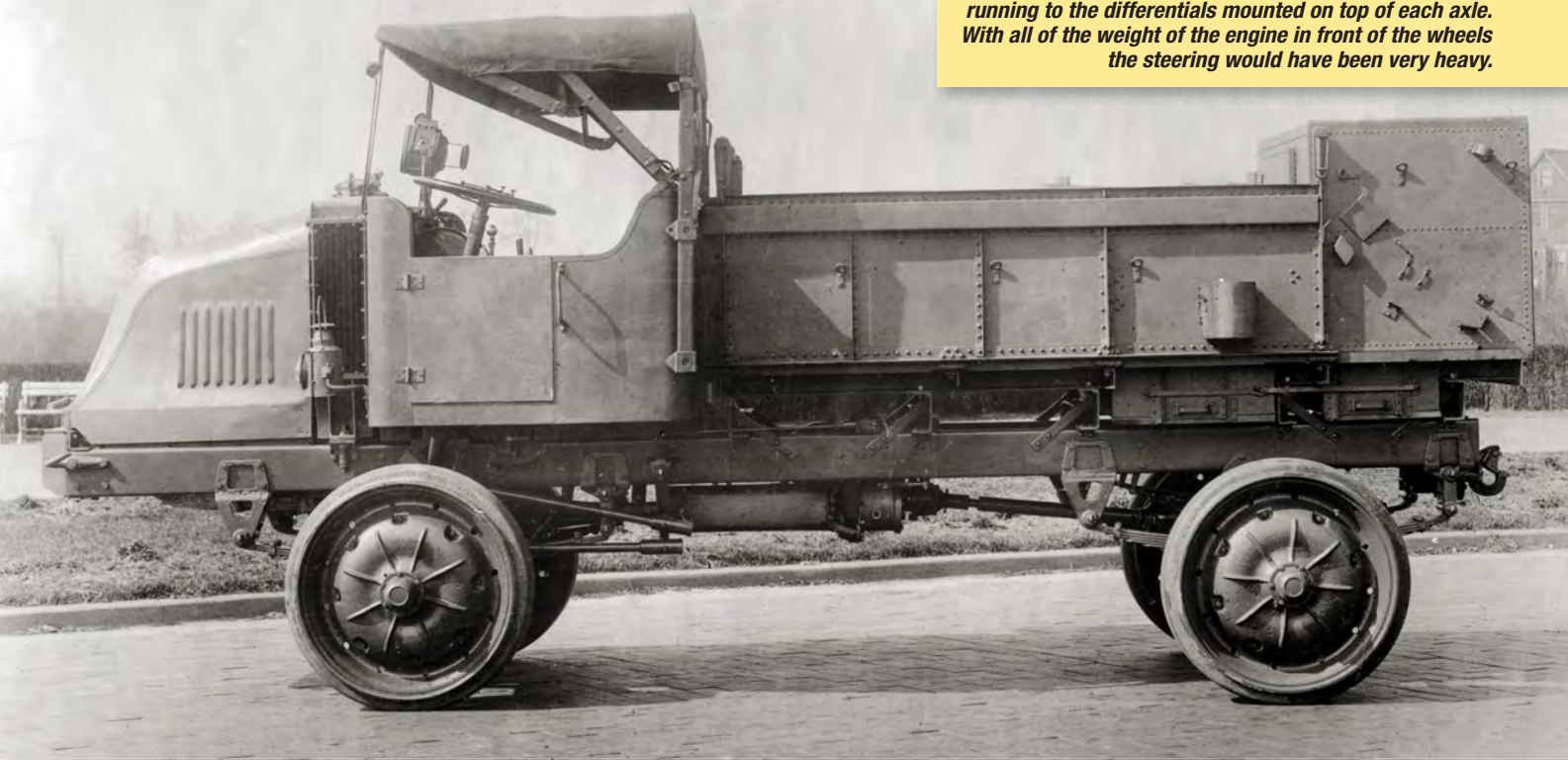


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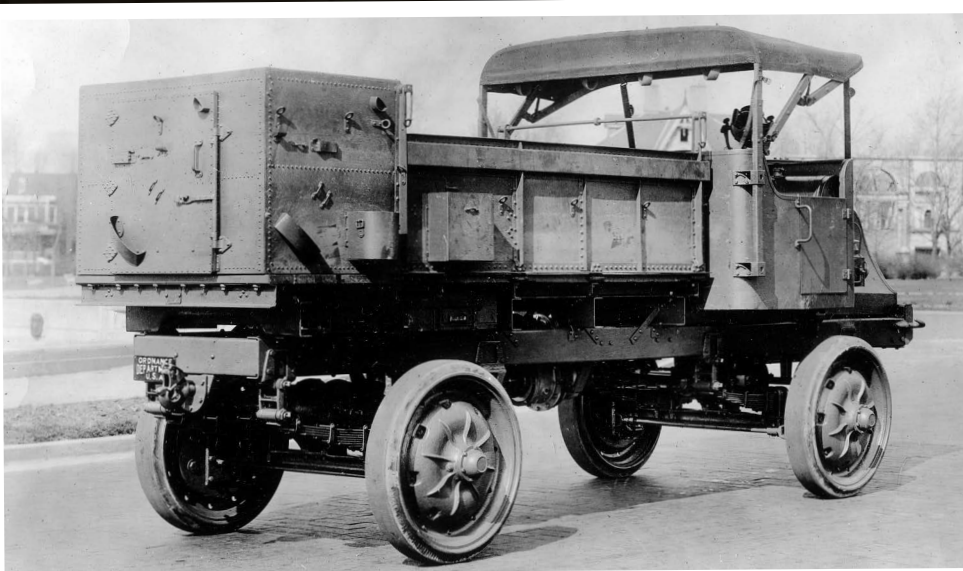
The Militor had excellent ground clearance. From the gearbox visible in the middle can be seen driveshafts running to the differentials mounted on top of each axle. With all of the weight of the engine in front of the wheels the steering would have been very heavy.



MISSED APPOINTMENT

Tim Gosling looks at the development of the ill-fated, over budget but supremely versatile Militor – a truck which despite the best intentions arrived too late to see service in the Great War

The history of the Militor TT (or to give it its correct title the Ordnance 4 Wheel drive truck and tractor Model 1918) is not well-known. What makes this truck special was that it was the first US built military truck which had been designed in war time to meet a specific urgent requirement as opposed to a commercially built truck which had been adapted by the military to suit its needs. Although the Militor was mechanically ideal for the job it was built for, politics, bad timing and funding delayed its construction resulting in it arriving too late to be involved in the war it had been designed for. Even when it did arrive it was in much reduced numbers and at a significantly increased cost resulting in the whole project and those who had been involved in it being scrutinised by the War Expenditures Board who searched for any impropriety.



The rather unusual body fitted on this Militor is an artillery supply body. It was designed to carry a variety of equipment and replacement parts for heavy artillery.



Many trucks of this period were vulnerable to collision damage. With the radiator behind the engine, the starting handle folded away and with a significant front chassis cross member it would take a very serious crash to damage this machine.

A NEW GUN TRACTOR

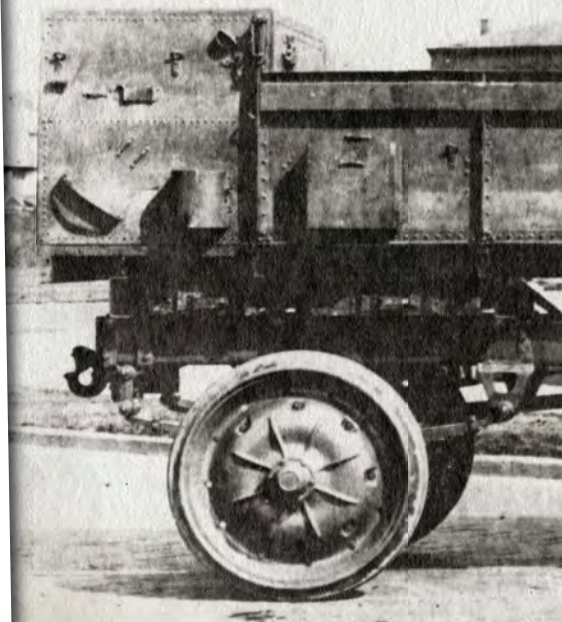
When the US Army landed in France in 1917 it was short of heavy artillery. This was remedied by the French Army which provided its superb 155mm GPF gun. To tow the gun the Americans employed the 10 ton artillery tractor which, despite being very capable, was slow, noisy and for

approximately every two hours of operation it required one hour of maintenance. These tractors were not available in large enough

“Although the Militor was mechanically ideal for the job it was built for, politics, bad timing and funding delayed its construction.”

numbers to tow all of the guns supplied so the French also provided four-wheel drive artillery tractors made by Renault and Latil.

Below: Militor drivers had plenty of room in the cab which was just as well because they had to brace themselves against the cab walls in order to turn a sharp bend.



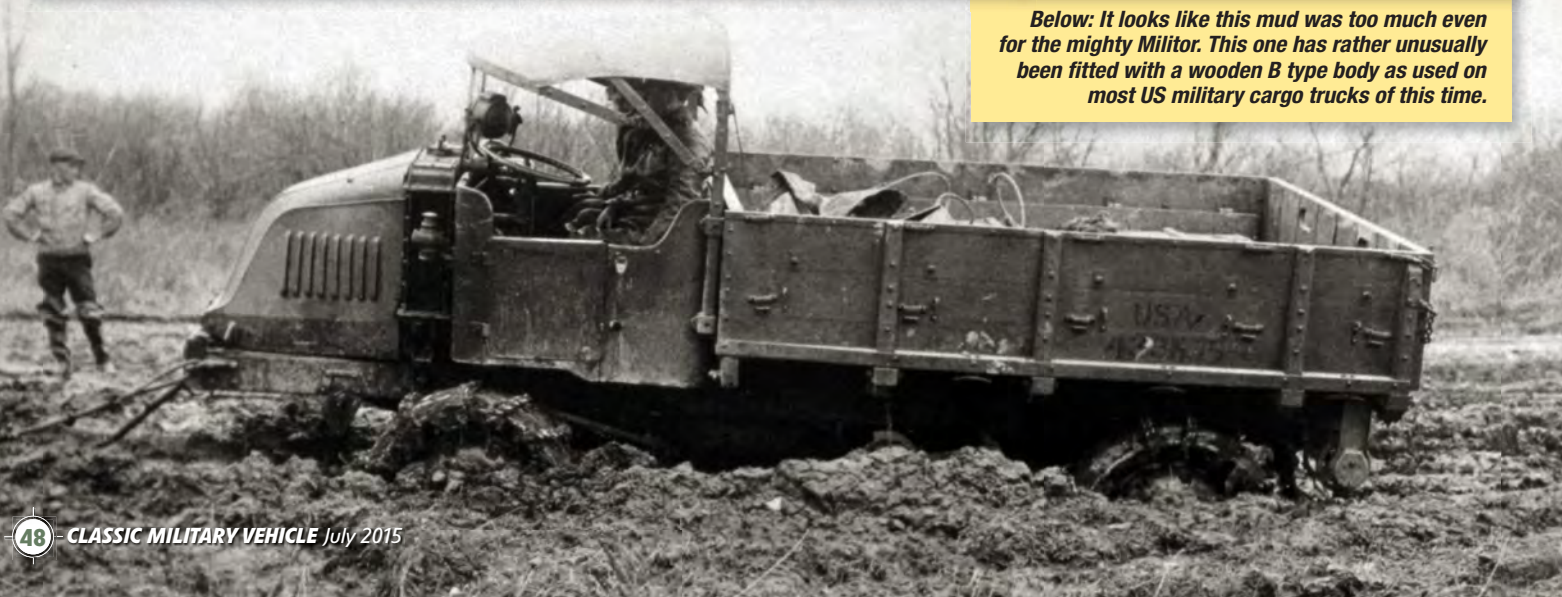
The Renault was found to be an excellent gun tractor and in September 1917 the Commander of the American Expeditionary Force, General Pershing, sent a request to Washington for the development of a standardised artillery tractor which was comparable to it. Colonel L Moody of the tank, truck and trailer division of the Quartermaster Corps was tasked with the development of this new truck and he approached George Dunham (who had previously been involved in the committee for the motorisation of field artillery and who was now the vice president of the Militor Corporation) for assistance. George Dunham was pleased to help Colonel Moody

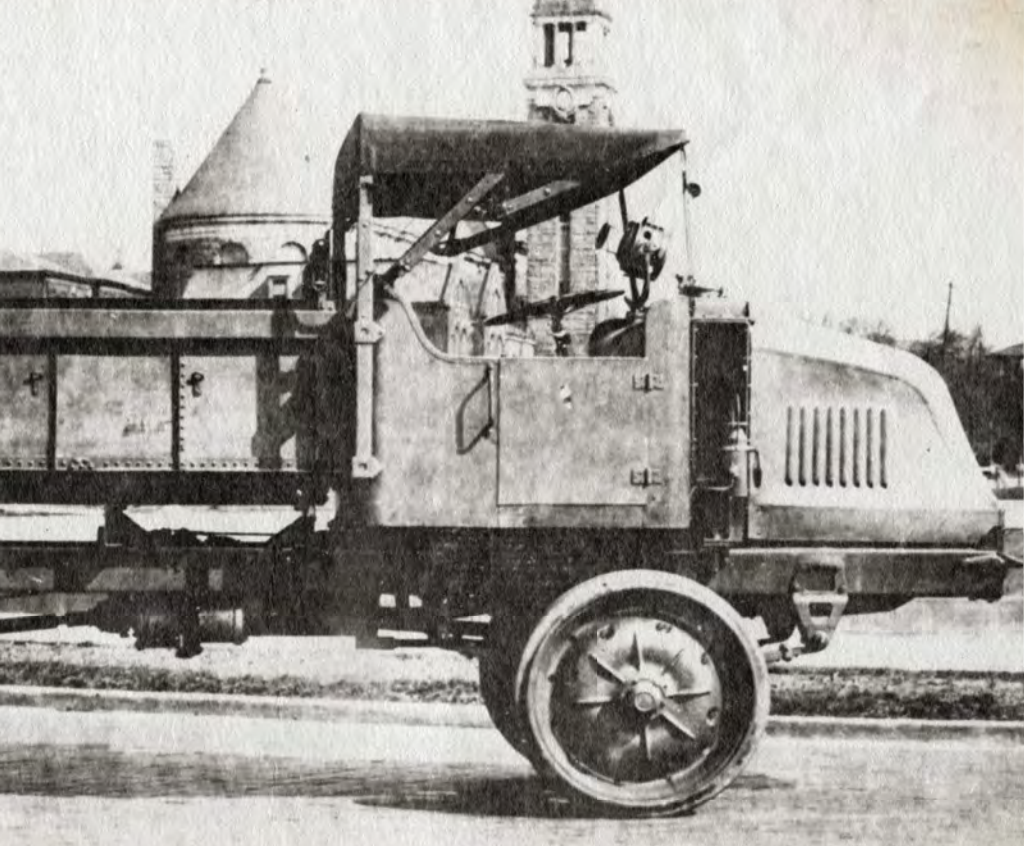
who obtained approval for the Militor Corporation to be involved in the

construction and design of the new truck.

The Militor Corporation had been set up by the successful New York banker

Below: It looks like this mud was too much even for the mighty Militor. This one has rather unusually been fitted with a wooden B type body as used on most US military cargo trucks of this time.





Above: Fitted with a steel ammunition body this Militor is to be used for carrying ammunition for heavy artillery. Drilled into the side of the cab can be seen the letters AS (Air Service) confirming that the cab had been taken from a Heavy Aviation truck which was primarily used by the Air Service.

NR Sinclair just before the war to develop a four-cylinder water-cooled shaft drive motorcycle known as the Militaire which it hoped to sell to the Army. The design of the Militaire was particularly radical having stabilising wheels each side of the back wheel and a steering wheel instead of handlebars. The US Ordnance Department tested the bike but no orders were forthcoming. Sinclair was no doubt delighted to be involved in the design of the new gun tractor. He set up an engineering works at Elizabeth (near New York), recruited a team of engineers and obtained seven other four-wheel drive trucks (including those built by Nash, FWD, Latil and Renault) to study. On 15 March

1918 the first of six Militor trucks left the Elizabeth factory.

THE MILITOR TRUCK

The Quartermaster Corps had provided the specifications of the truck and requested that the design incorporated as many tried

and trusted proprietary parts from other manufacturers as possible. The finished product featured an engine manufactured by Wisconsin Motors (the same engine that was in the FWD Model B). The Transmission was made by Merchant and Evans, the radiator by Rome Turney Radiator Co, the



This shows how the differential is located above the rather spindly back axle. Running above the axle you can make out the half shafts which run to ring gears located within the rear wheels.



The bonnet of the Militor was copied from the Renault style. The fan located behind the radiator would draw air in through the numerous vents in the bonnet and blow it out into the cab which was good in cold weather and would have been not so pleasant when hot.



With a heavy winch powered by the Wisconsin engine and the back wheels chocked into place this Militor is hauling out other trucks stuck in gelatinous mud.

axles came from the Clark Equipment Company, and the carburettor and magneto were off-the-shelf items from Carter and Eisemann respectively. It was just up to Militor to put the truck together and make it work. The correct designation of the truck, Ordnance 4 Wheel drive truck and tractor Model 1918, was dropped in favour of Militor.

Two different models were produced, both of which were four-wheel drive. The truck was fitted with the steel ammunition type body and could carry five tons on the road and three off road. The tractor had

a shortened steel ammunition body but was fitted with a winch and a sprag (to prevent it from being pulled backwards when winching a heavy load). It also had

“There is no shell crater which will stop the Militor.”

four-wheel steering which was thought necessary when manoeuvring a gun into position. The Wisconsin engine completely overhung the front axle which must have given it a tight turning circle but at the expense of very heavy steering. In fact, it

was recommended that the driver should brace his feet on each side of the cab to give him enough leverage when turning. The cab was the same one which was used on the Heavy Aviation truck and on some photographs you can see the letters AS (Air Service) on the side showing its origin. The bonnet was of the Renault style with the radiator located behind the engine through which air was blown by a fan. Power was transmitted to the wheels in much the same way as was used by the Nash Quad. From a central transmission propshafts ran to differentials mounted on top of the front and rear axles and from which shafts ran to ring gears on the inside of each wheel. The advantage of this was that it gave the truck an improved ground clearance. The 36in diameter wheels (which were increased to 40in just before production commenced) gave it a ground clearance of 14in which was higher than any other truck then in service with the Army.

On 24 May 1918 in front of a panel from the Army motorisation board two Militors were tested against other four-wheel drive trucks at Hook Mountain just 45 miles (72km) away from the factory. The tests were very rigorous but a great success for the Militor. One officer stated that “there is nothing better than the Militor which

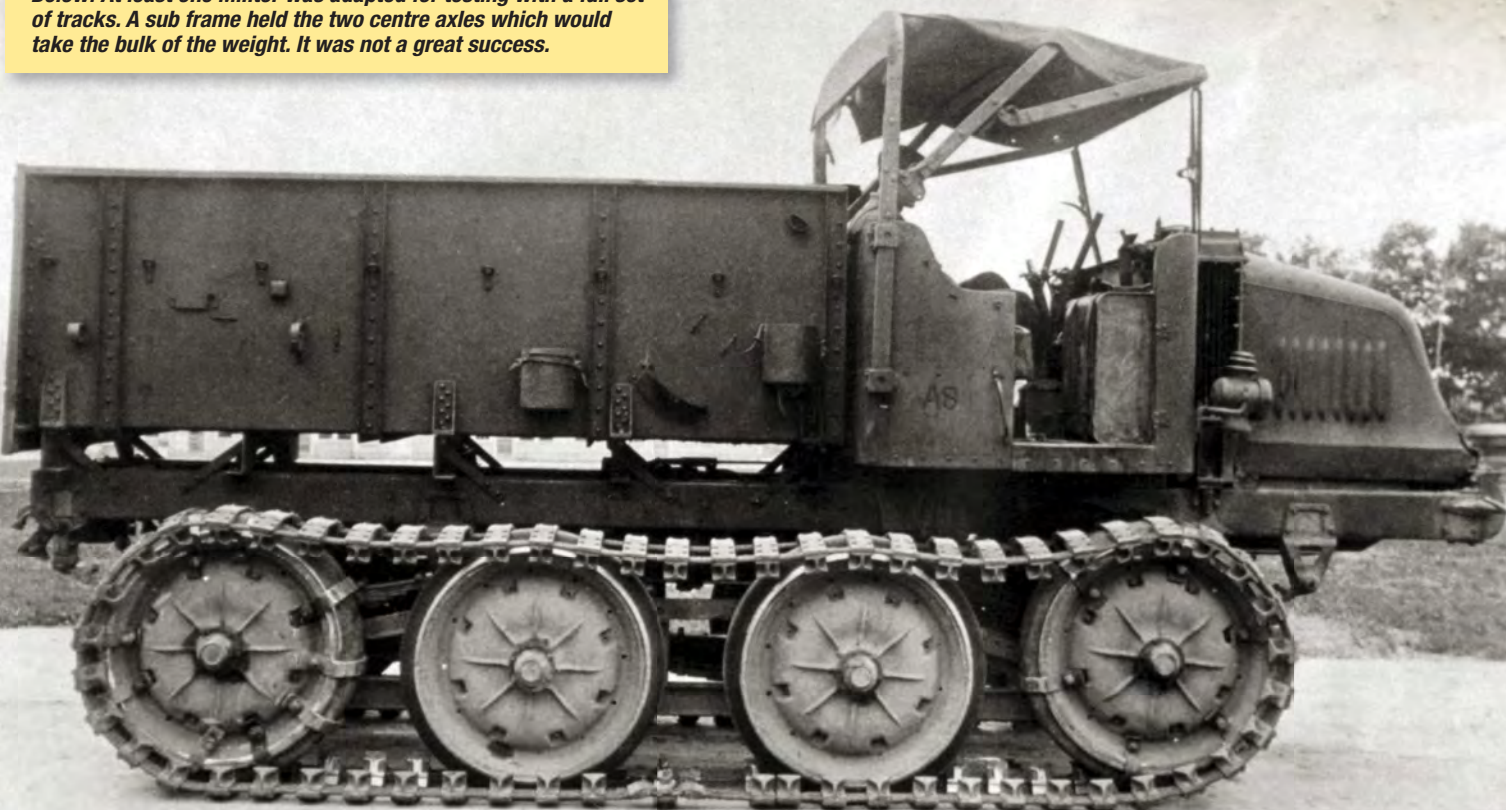
has ever been made,” and “there is no shell crater which will stop the Militor.” Just one week later the Militor was adopted as the

standard US Army four-wheel drive truck – but this good news would not last.

PRODUCTION

Up until this date Militor had only been involved in design work and had not

Below: At least one Militor was adapted for testing with a full set of tracks. A sub frame held the two centre axles which would take the bulk of the weight. It was not a great success.





Above: One of the trucks used as an inspiration for the Militor was the French Latil TAR. This truck had been designed in 1913, had the capacity to tow 12 tons and like this one was used by the French army for hauling heavy artillery.

Right: Amongst the 59 vehicles which undertook the 3251 mile transcontinental expedition of 1919 was one Militor which astonished the participants with its pulling power. Here it is hauling four Liberty trucks up a sandy embankment.

undertaken any series production of vehicles. Despite its claim that it would be able to produce 20 trucks a day, this figure was in doubt. Militor sought an established truck manufacturer to partner in the production. Other manufacturers were approached but without success. Nash, who produced the well-known Quad truck, was very outspoken against Militor and made its feelings felt to the War Industries Board which had some effect as the control of the Militor project changed hands three times causing delay in the contract being issued.

Eventually Packard who had spare manufacturing capacity tendered itself for the contract. The Packard engineers examined an example of the Militor and allegedly described it as the "best designed vehicle which they had examined." It recommended changes to the design of the transfer case due to the fact that the chain within would occasionally jump a sprocket causing it to jam. In August 1918 the Motor Transport Corps estimated a need for between 15,000 and 25,000 Militors for the coming year (and even more in 1919) and sought ten manufacturers to build them. That month Militor received a contract for 1000 trucks and Packard for 4000. Both companies started purchasing material



and tooling. However, before any were completed the Great War came to an end and the contract was cancelled. Under the cancellation clause in the contract Militor received compensation of \$554,213 and Packard of \$748,770 to cover their costs. For the payment of an additional one million Militor offered to build 500 trucks, a course of action which the Chief of the Motor Transport Corps recommended but he was over ruled.

THE END?

Of the six Militors built one had been sent to France for testing, two had been tested to destruction and dismantled, one was at the Aberdeen Proving grounds, one had gone to

the Ordnance Depot in Detroit and one had gone to Packard. One of these survivors was used on a transcontinental motor expedition in July 1919 where its performance was considered to be exceptional and it spent most of the journey recovering other trucks which had broken down or become stuck.

In September 1919 the Motor transport Corps requested the purchase of an additional 150 Militor trucks. This was considered by the Quartermaster General who, due to the number of surplus trucks from the war still on hand, agreed to just 75 being purchased. Sixteen truck manufacturers were asked to tender for the work of which only one (Militor) responded. In December 1919 the contract



Left: During the war the preferred gun tractor for the US artillery was the French built Renault EG. Faster than the Holt gun tractors they required less maintenance and were nearly as unstoppable. This one has just been handed over by the French to the Americans.

Below: The 10 ton Holt tractor was the vehicle the Militor was ultimately designed to replace. The Holt had 1/4in thick armour to protect it, but the driver was left completely exposed. The 75hp engine allowed it to tow 12,000lb and it could climb incredibly steep slopes. By the end of the war 628 of these machines had arrived in France.



for 75 trucks costing \$7702.91 each was signed (in comparison a Liberty B truck cost approximately \$3000). Militor had now merged with the well-known auto manufacturer of Knox forming the Sinclair Motor Corporation and the production was moved to its Springfield, Massachusetts factory. Unfortunately this company was in financial difficulties and when it was realised that Sinclair would not be able to complete it the contract was ultimately passed to the Winther motor truck corporation of Wisconsin.

Throughout the early 1920s the Army experimented with the Militor and found it to be a superb truck but with some mechanical defects. It had arrived too late however, and technological advances had made this expensive truck redundant. From 1925 the Army purchased a number of trucks built to a commercial design by Coleman as the new artillery tractor. Sadly, there are no known survivors of the Militor, the truck which came too late and way over budget. Sound familiar? 



The company of Coleman would ultimately replace the Militor with its four-wheel drive gun tractor. This is a 6X6 version of the same truck which was developed as an aircraft refueling tanker. Much like the Militor the engine is in front of the axle and must have made the steering very heavy.



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LAST OF THE LINE?

Ian Young looks at the Land Rover R-WMIK+, the current variant of this well-known British Army 'Gunship'



The R-WMIK+ Land Rover could be the last of the line and is a far cry from the original WMIK introduced nearly twenty years ago.

The Land Rover is widely regarded as a world-beating 4x4, thanks in no small part to its ability to be reconfigured to suit different roles. The British Army was quick to recognise its potential and has been using Land Rovers since the late forties after purchasing the Series I. Since then it has gone on to use just about every type of Land Rover product ever built, which includes purpose-built military variants such as the half-ton Lightweight and 101 Forward Control as well as those models normally regarded as being for the civilian market, including the Range Rover and Discovery, which have been favoured by the higher ranks and the UK Special Forces for many years. Since its introduction armies all over the world have taken up the Land Rover in one form or other, but it is the British Army's latest version of its Weapons Mount Installation Kit or WMIK (usually pronounced 'Wimmick') that we're looking at here.

LAND ROVER GUNSHIPS

Ever since the British Army adopted the Land Rover it has been the basis for specialist, heavily armed variants, many of which saw

service with the Special Air Service (SAS). The Series I was the first to be used by the SAS, following closely in the footsteps of the wartime Jeeps, and was modified to

THE HISTORY OF SAS GUNSHIPS



The first in a long line of Land Rovers to be used by the Special Air Service was the Series I and followed the same principle of the wartime SAS Jeeps.



After replacing their Series Is with the long wheelbase Series IIA the SAS initially created unit modified vehicles, this being a replica of such a vehicle.



Above: The R-WMIK+ is playing a similar role to the larger Supacat Jackal seen here in the background.

carry vehicle mounted weapons, additional ammunition and stores after being stripped of all unnecessary weight such as the windscreen, roof and doors; these 'Gunships' adopted a distinct stripped down appearance. Following the success of the early Series I the SAS went on to use the Series IIA in long wheelbase format, firstly as unit modified vehicles and later as purpose-built variants built by Marshalls of Cambridge and universally known as the Pink Panther.

The V8 powered (though diesels were used later in life) 110 high capacity variant of the Land Rover Defender was the next vehicle to be adopted by the regiment, and once again Marshalls of Cambridge was responsible for the construction of the vehicles that were now known as the Desert Patrol Vehicle. The type went on to see action in the first Gulf War, gaining notoriety for their well-documented 'Scud Hunting' missions and later during Operations Palliser and Barras in Sierra Leone. In service they underwent a number of updates and modifications. The 110 DPV would be the last gunship-type Land Rover to be used by the SAS, with the role now played by the bigger and heavier Supacat Jackal. However, by then a number of other units, such as the Airborne and Air



Rear three-quarter view of a brand new R-WMIK+ Land Rover fresh from stores that turned up at a Help For Heroes fundraising event near Worcester in 2011. The central armour panel raises up for better crew access.

Assault units like the Pathfinders and Paras had identified a requirement for a heavily armed reconnaissance type Land Rover and the hunt was on to find a suitable platform.

Over the years these units have used a variety of modified Land Rovers, including the Lightweight, 90 and 110 wheelbase

Defenders. With the exception of the vehicles used by the Special Forces, most of the vehicles used by the Airborne units were unit modified, built in workshops to designs created by the units themselves. The introduction in the mid-'90s of the then new Land Rover Truck Utility Medium, now



An improved version of the unit modified Land Rover was developed by Marshalls of Cambridge and is universally known as the Pink Panther for obvious reasons!



The Scud Hunting missions of the SAS in the first Gulf War have gone down in military history along with the 110 DPVs that replaced the older Pink Panthers.



Like the WMIK, the 110 DPV underwent a number of upgrades and changes with this late version of the DPV looking not too dissimilar to the WMIK with the full length roll cage come gun mount.



Left: When it turned up at a Help For Heroes fundraising event this R-WMIK+ still had the factory applied plastic covers on the seats and less than 50 miles on the clock and most of those were added during the drive up from the MoD's Ashchurch storage depot!

better known as the Wolf, brought with it the more powerful 300TDi diesel engine, and that in turn allowed the vehicle to better cope with the additional weight of the new Weapons Mount Installation Kit being developed by Ricardo Special Vehicles.

The new WMIK was purpose-designed as a kit to be bolted straight onto a standard long wheelbase Wolf and comprised a number of bolt-on additions that replaced or supplemented the existing vehicle and allowed it to carry two vehicle-mounted

weapons and the associated ammunition and additional equipment needed by the crews. The roof, windscreen and doors were stripped off and a full length modular

"It could be that this will be the final variant of the Land Rover WMIK as we know it."

roll cage that doubled as a weapon mount was bolted in its place along with a forward firing machine gun mount on the bulkhead in front of the front passenger. The upper gun position was equipped with a ring mount to allow a full 360 degree field of fire and was

capable of mounting a variety of weapons, including the 12.5mm M2 Heavy Machine Gun (often referred to as the .50cal HMG), the GPMG (General Purpose Machine Gun) and (when in service) the Milan anti-tank missile system.

Additional stowage for ammunition, fuel and the crews' kit was provided inside the vehicle as well outside in the form of a rear stowage basket on the tailgate and a shallow basket frame with net cover on the bonnet, the spare wheel having been moved to the side of the

THE HISTORY OF WMIK



Left: Over the years the Airborne units have modified a number of Land Rovers before getting the WMIK. This is known as a Piggy Back 90, used by the Pathfinders and capable of being double stacked on a palette for air dropping. The modifications were essentially carried out by the unit workshops rather than a manufacturer, but the similarity to the SAS vehicles is clear to see. Middle: The WMIK was upgraded and improved throughout its service life; this is an R-WMIK fitted with the MAPIK soft armour panels to the side of the roll cage. Right: Unusually the WMIK was supplied with a wet weather kit that provided the crew with some protection from the elements, but in reality they were rarely fitted. However, one very famous photo shows a white WMIK fitted with the hood and doors while operating in Afghanistan under the command of the SBS during the hunt for Osama Bin Laden.



The addition of the add-on armour, radio equipment and ECM suite meant there was a desperate need to increase the power of the WMIK's engine and the R-WMIK+ saw the introduction of a new 2.8-litre turbo-diesel engine.

upper frame following the introduction of the Wolf. Interestingly, for the first time for a vehicle of this type, weather protection was provided in the form of a soft cover that offered the crew a modicum of comfort in poor weather.

NEW VARIANT

Since being introduced just over 20 years ago the WMIK has undergone a number of updates and improvements aimed at enhancing its capabilities, capacity and protection, usually based on experience in the field. Initially the WMIK saw little use in hostile environments spending much of its time on exercises, but the war in Iraq and latterly Afghanistan has seen the WMIK being used more widely and in those situations it was clear that greater protection was needed for the exposed crews.

This experience on the battlefield led to the development of a number of add-on armour packages, most of which were designed to be fitted in the field rather than back at the factory. However, the latest generation of the WMIK was purpose-built from the word go and addressed the need for greater protection for the crew as well as greater performance following the addition of yet more weight to a vehicle already at the very limits of capacity. The new R-WMIK+ also brought with it an increase in stowage capacity to cope with the newer Bowman radio equipment and the many pieces of ECM



Rear three-quarter view of a production R-WMIK+ that was displayed at the Protected Mobility defence show in 2011. Note the raised rear armour panel.



Later variants of the WMIK have seen the fitting of aluminium alloy wheels, initially as a 12-spoke design and latterly as a 15-spoke design, though these are the earlier variant.



Much of the dashboard area will be familiar to anyone who drives a Defender but a great many more controls and switches have been added to the R-WMIK+.

(Electronic Counter Measures) equipment being fitted to vehicles in an effort to counter the greater use of IEDs (Improvised Explosive Devices) by insurgents.

As the current variant, the R-WMIK+ features numerous upgrades, all of which were brought about by experiences in Afghanistan and the particular threats faced there. As such it's more advanced, better protected, more powerful and heavier than any other WMIK variant, and yet the withdrawal of troops from Afghanistan could spell the end for this charismatic variant of the Land Rover if the powers that be decide that no further developments of the WMIK are needed in the current political climate.

THE SAME BUT BETTER

A prototype of the new WMIK variant was first seen at the Defence Vehicle Dynamics event in June 2009 and since then has appeared at several more DVD shows and has taken part in numerous military exercises both here and abroad. It's worth clarifying that while essentially a brand new model, some of the R-WMIK+ are in fact reworked vehicles based on the heavy-duty chassis of the CAV-100 armoured Land Rovers due to a lack of suitable chassis at the time of build, the carry over registration numbers being a giveaway.

Despite carrying older registrations the vehicles are as good as new and have been fully rebuilt and fitted with new running gear, equipment and even bodywork as well as the new composite armour panels. Like previous variants of the WMIK, which were subject to a number of in-service improvements and updates, the R-WMIK+ is following a similar pattern, albeit a little more wide ranging in terms of the amount of work done to the vehicles than earlier incarnations.

One of the more obvious changes introduced with the R-WMIK+ was the replacement of the MAPIK 'soft' armour panels (first seen on the E-WMIK) with hard composite armour panels that protect the front and rear compartment. These panels are similar in appearance if not construction (which is classified), to that seen on other vehicles that served in Afghanistan such as the Supacat Jackal and EPS Springer. A 'V' shaped underbelly plate is fitted to provide additional ballistic protection in the event of a mine blast.

Though outwardly similar, the rear body is new with additional width in comparison to the original Wolf body, which utilised the base vehicle bodywork, and accommodates a wide range of radio and ECM equipment along with the crew and ammunition



The prototype of the R-WMIK+ appeared at the Defence Vehicle Dynamics event in June 2009 on the Ricardo Special Vehicles stand.



Looking inside the rear compartment we see some of the many stowage areas (though no radio equipment is fitted) and one of the new rear seats.



The fact that the rear compartment is now so cramped means that a pair of fold away stretcher carriers is fitted to the right hand side armour panel to enable the crew to quickly evacuate an injured crew member.



Apart from some late variants of the CAV-100 Snatch, the R-WMIK+ is the first of the type to be fitted with an automatic gearbox.



View inside the front driver compartment showing the four point seat harness.



Here we can see one of the crew seats with full harness and head protection designed to offer better protection for the crew from a mine or IED blast.

stowage both inside and outside the vehicle, although the bonnet-mounted basket has now been deleted.

The rear body also incorporates two new crew seats with full harness and head protection designed to offer better protection for the crew from a mine or IED blast. Additional equipment includes a sand ladder, side-mounted spare wheel and overhead mounting panel for yet more electronic equipment above the driver, who remains on the right hand side.

With the overall weight having reached 4.7-tonnes (gross vehicle weight), a need for more power was paramount and a new 2.8-litre turbo-diesel engine coupled to an automatic gearbox replaced the original 300TDi engine. The heavier duty aluminium

alloy wheels fitted with larger tyres first seen on earlier variants of the WMIK have been carried over, with just a slight change to the design, which now incorporates 15 spokes instead of the earlier 12.

The range of weapons capable of being fitted to the vehicle includes the 12.7mm HMG and 40mm Lightweight Automatic Grenade Launcher for the upper ring mount, and the standard GPMG for the front passenger, though no doubt the GPMG could also be fitted to the ring mount if required.

END OF THE LINE?

Given the amount of changes made to the R-WMIK+ over the original WMIK concept,

it does make me wonder if the move away from a completely open vehicle to a more enclosed vehicle is an indication of a move away from this type of Land Rover 'Gunship' to a light protected vehicle but with heavier armament. With troops having been pulled out of Afghanistan it could be that this will be the final variant of the Land Rover WMIK as we know it. At the 2013 DVD a WMIK-style variant of the then newly introduced Foxhound (which itself was the long awaited replacement for the CAV-100 Snatch Land Rover) was shown; could it be that any future WMIK-style vehicles will be based around much larger, more heavily protected vehicles to minimise the amount of changes needed to bring them up to a suitable level of protection? Unfortunately the latest variant is now poles apart from the one thing that the WMIK originally offered, namely a heavily armed, highly mobile platform that was capable of being air lifted to hot spots for use by Airborne units. So it may be that some form of Land Rover-based WMIK will survive in this role, but only time will tell – and in the meantime perhaps we should appreciate the R-WMIK+ as the potential last of the WMIK line? 



Could it be that this will be the last WMIK variant based on the Land Rover platform? This Foxhound Protected Patrol Vehicle-based WMIK prototype was exhibited at the Defence Vehicle Dynamics show and could be an indication of the direction for future WMIK-style vehicles?



The addition of the fixed, hard armour panels has drastically changed the appearance of the R-WMIK+ over the original WMIK.

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- CLASSIFIEDS -

MELKSHAM

Ian Young dropped in on the tender sale held in Melksham in early May that saw the disposal of an eclectic collection of military vehicles



DISPOSAL

Right: This odd-looking vehicle is a true rarity being the only one ever built and all the more remarkable for still being around. It's an Alvis Runway Surface Friction Test vehicle based on an Alvis Salamander and you'll find a photo of it in Pat Ware's book In National Service.

Left: The wartime American Federal 94X 43A is a rare truck indeed and on the day attracted a lot of attention. This example had been fitted with a Bedford engine, which though not original, made it a more reliable and usable vehicle for everyday use.

This year will see the end of an era when Neil Mitchell finally shuts up shop. Mitchell's Land Rovers, and owner Neil Mitchell in particular, have been a part of the military vehicle scene in Wiltshire for more years than I care to remember with Neil attending military vehicle shows and events with his vehicles on a regular basis. The closing of the premises in Melksham was marked by the disposal of many of the vehicles amassed by Neil over the years. Among those being sold off at the tender sale in early May were some genuine rarities and classic vehicles that were anticipated to spark a bidding war amongst the prospective purchasers.

Sadly much of collection was stored outdoors and as such had suffered the ravages of the weather and despite a pre-sale clearance, viewers on the day still needed to negotiate the brambles and vegetation that had begun to consume some of the longer standing vehicles in the far flung corners of the yard. For me that added to the excitement of the day, being far more enjoyable than walking around a yard where the exhibits had been clinically displayed in formal lines – this was proper bargain hunting military style and I'll wager that had the brambles been left in place it wouldn't have deterred the determined enthusiast!

Arguably the most enquired about item in the sale was the part-restored Land Rover Pink Panther, but the wartime trucks such as the Diamond Ts, Federal, International K series and Matador attracted a lot of the attention during my visit. Other rarities that perhaps weren't immediately obvious to the casual observer included the chassis from a Dorchester ACV, a one-off Alvis Runway Surface Friction Test vehicle and a pair of half scale AEC Matadors originally built for Duxford. With so many vehicles crammed into the yard it would have been easy to miss something!



A Diamond T ballast bodied hardtop, one of two Diamond Ts in the sale. This truck is fitted with a Hercules diesel engine and though you wouldn't know it now, once travelled to Normandy!



Above: Judging by the tyres fitted to this long wheelbase Jimmy it's an ex-Norwegian Army vehicle. **Below:** This extremely rare International K Series dating from WW2 apparently once featured in *Wheels & Tracks* magazine. It looked to be in surprisingly good condition considering how long it's been stood outside.

Speaking to Richard Beddall, president of the MVT, who had been helping Neil with the organisation of the sale, the aim was to clear the yard of as many of the vehicles as possible and then to hold an auction at a later date to dispose of the

remainder of the stock, which will no doubt be announced in the not too distant future. We here at *CMV* hope you will join us in wishing Neil all the best for the future and would like to thank him for his contribution to the hobby over the years. 

Below: Though not easy to access and photograph this AEC Matador is an ex-RAF example with just 3000 miles on the clock. In its current state it is part refurbished but was once a generator lorry.





Above: Instantly recognisable as being AEC Matador related, this rolling chassis is actually from a Dorchester Armoured Command Vehicle making it a very rare beast indeed.



Above: Appearances can be deceptive and this AEC Matador isn't what it first appears to be; it is in fact a half scale model built for use at Duxford. It was one of a pair in the sale.



Left: This ex-Swiss Army Mowag Armoured Dummy Tank is based on Dodge running gear and was driven around the firing ranges for trainees to shoot at, which begs the question was the driver up on a charge or was he volunteered!

Below: Once common and often hated by enthusiasts, the Humber Pig is undoubtedly an imposing vehicle and one that I've always loved. In fact I've owned two of them! This example is a rare Flying Pig, although the side screens have been removed and the mesh guards are a late service addition.





Above: Scammell Explorer with original Meadows petrol engine, which is very rare now with most having been swapped for less thirsty diesel units.
Below: Despite Land Rovers being his bread and butter, Neil Mitchell had a particular penchant for wreckers and this Foden is one of the more recent additions to the collection.





Left: This Scammell Crusader Recovery has been seen at many shows over the years and won best heavy vehicle at Thruxton MVT show.



Above: 'Big Bertha' is a Leyland Martian Recovery fitted with a Cummins diesel and while it once formed part of Neil's wrecker fleet it clearly hasn't seen much action in recent years. Left: The Rogers Trailer, often used behind the Diamond T, is becoming increasingly rare. This lovely example apparently comes with no less than 17 new tyres!



"Despite a pre-sale clearance, viewers on the day still needed to negotiate the brambles and vegetation that had begun to consume some of the longer standing vehicles."



Above: Amongst the rarer but not necessarily desirable Land Rovers in the sale was this HVVPK Piglet that is clearly in need of some TLC. Left: To the untrained eye this is just another Land Rover chassis, but to Land Rover enthusiasts it is pretty close to the Holy Grail being a Series IIA Pink Panther chassis, one of just 72 built. The vehicle was recovered from Botswana before being meticulously rebuilt by Neil. The remaining parts were also included in the sale.

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COMING IN NEXT MONTH'S ISSUE...



Watch out for these exciting features in next month's issue, on sale 17 July 2015

DUNKIRK EVACUATION SPECIAL

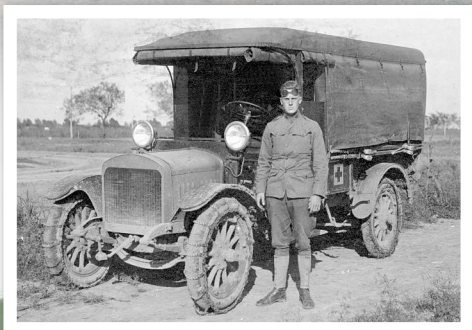
We went to France for the 75th anniversary commemorations and plundered the archives to profile some of the military vehicles that played an integral role in getting troops back to the coast during May 1940...

DUNKIRK TANKS

David Fletcher tells the story of the Dunkirk evacuation from a tank and armoured car perspective. It is not a happy story, but an inspiring one none the less...

CARRY ON SCOUTING

Carrier's played a key role in the early part of the war and at Dunkirk, so John Blackman visited Ben Hawkins to find out about his restoration of the sole surviving Scout Carrier.



REGULAR FEATURES

And don't miss our regular features, including product reviews, forthcoming events, pages and pages of classifieds, the very best in military-vehicle photography... and, as regular readers will be only too well aware, far more than we can list here!

These are just some of the features planned for the next issue, but circumstances outside our control may force last-minute changes. If this happens we will substitute items of equal or greater interest.

IT'S SHOWTIME!

The major military-vehicle and militaria events in the UK and around the world...

There are many military-vehicle rallies held in the UK and elsewhere; only the larger events are listed here but more appear in the major club magazines – or look at www.milweb.net, www.mvpa.org, or www.mvt.org. It is always wise to ensure an event is still on before setting out on a long journey. CMV can

accept no liability for errors or omissions in this list.

Show organisers, please send details of your event to ian.cushway@keypublishing.com or to the editorial address at least eight weeks in advance. Unfortunately we have space only for shows with significant military-vehicle content.

WARTIME IN THE VALE – SAT/SUN 20-21 JUNE

Don't miss out on the fireworks at Worcestershire's premier military vehicle spectacular...



MILITARY-VEHICLE EVENTS 2015

June

WARTIME IN THE VALE

Date: Sat/Sun 20-21 June 2015

Location: Ashdown WW2 Camp, Evesham, Worcestershire

Contact: Paul Valiadis 0779 1591528, www.ashdowncamp.webs.com

TANKFEST

Date: Sat/Sun 27-28 June 2015

Location: The Tank Museum, Bovington, Dorset

Contact: 01929 405096, www.tankmuseum.org

July

THE CAPEL MILITARY VEHICLE SHOW

Date: Sat/Sun 4-5 July 2015

Location: Aldhurst Farm, Capel, Surrey RH5 5HJ

Contact: Mike Sheehan 07870 231060, www.capel-military-vehicle-show.com

THE YORKSHIRE WARTIME EXPERIENCE SHOW

Date: Fri/Sun 3-5 July 2015

Location: Cockleshaw Beck Farm Hunsworth Lane, Hunsworth BD4 6RN

Contact: www.ywe-event.info

ROXBY HERITAGE WEEKEND

Date: Sat/Sun 11-12 July 2015

Location: Fox Inn, Roxby, nr Staithes, N Yorks TS13 5EB

Contact: Colin Bentley 01947 841313

WOODHALL SPA 40s FESTIVAL

Date: Sat/Sun 18-19 July 2015

Location: Jubilee Park, Stixwold Road, Woodhall Spa LN10 6QH

Contact: Stuart 01526 353215, www.woodhall-spa-40s-festival.com

THE GARDENS OF EASTERN LODGE WW2 OPEN DAY

Date: Sun 19 June 2015

Location: Dunmow, Essex CM6 2BB

Contact: Chris Warne 07887 545908, www.eastonlodge.co.uk

THE WAR AND PEACE REVIVAL

Date: Wed/Sun 22-26 July 2015

Location: Folkstone Racecourse, near Hythe, Kent

Contact: Rex Cadman, 01304 813337; www.thewarandpeacerevival.co.uk

August

THE MILITARY & FLYING MACHINES SHOW

Date: Sat/Sun 8-9 Aug 2015

Location: Damyns Hall Aerodrome, Upminster, Essex RM14 2TN

Contact: Colin Tebb 07901 810383, <http://militaryandflyingmachines.org.uk>

COMBINED OPS SHOW

Date: Sat/Sun 15-16 Aug 2015

Location: Headcorn Aerodrome, nr Maidstone, Kent

Contact: Malcolm Dunlop 01303 267271, www.combinedops.co.uk

ATTINGHAM CLASSIC CAR RALLY

Date: Sun 16 Aug 2015

Location: Attingham Park National Trust, Shrewsbury, Shropshire

Contact: David Sear
davids@severnospice.org.uk,
www.severnospice.org.uk

FORCES DAY

Date: Sat 22 Aug 2015

Location: Saint Mary's church field, Watton, Norfolk

Contact: Paul Weatherill 01953 884213,
07930565026

SUMMER VEHICLE FEST

Date: Sun 23 Aug 2015

Location: RAF Coltishall, Norfolk

Contact: 01603 626 668 or email
events@str.gb.com

MILITARY ODYSSEY

Date: Sat/Mon 29-31 Aug 2015

Location: Kent Showground, Detling, Maidstone

Contact: James Aslett 07595 511981,
www.military-odyssey.com

CORNWALL AREA MVT MOUNT EDGCUMBE AT WAR

Date: Sat/Mon 29-31 Aug 2015

Location: Edgcumbe Country Park, nr Plymouth

Contact: Gwen Jenkins 01872 561653,
www.cornwallmvt.co.uk

TANKS, TRUCKS & FIREPOWER SHOW

Date: Sat/Mon 29-31 Aug 2015

Location: Dunchurch, Rugby CC22 6NR

Contact: Sally Baker, 07885 115341/
sallybaker@hotmail.com

September

JEEP & CHEERFUL DAY

Date: Sun 13 Sept 2015

Location: South Yorkshire Aircraft Museum

Contact: 01302 739000,
www.aeroventure.org.uk

WHEELS OF WAR

Date: Sat/Sun 26-27 Sept 2015

Location: Crewe Heritage Centre, Cheshire

Contact: Phil Podmore 01270 256880,
www.facebook.com/Wheelsofwar

MILITARIA EVENTS, AUCTIONS, ETC

Government surplus sales
Witham Specialist Vehicles
Regular auctions of military vehicles and equipment are held by Witham Specialist Vehicles throughout the year at its Colsterworth, Lincolnshire site. Visit www.mod-sales.com, or call 01476 861361 for more details.

Ramco UK

Ramco UK is one of the largest outlets for the sale of miscellaneous and government surplus. The company holds tender sales each month from its premises in Croft and Burgh – both in Lincolnshire. Visit www.ramco.co.uk, or call 01754 880880 for more details.

FORTHCOMING MILITARIA EVENTS 2015

June

HILDENBOROUGH MILITARIA FAIR

Date: Sun 28 June 2015

Location: Hildenborough Village Hall, Riding Lane, Tonbridge Rd, Hildenborough, Kent

Contact: 01322 523531,
www.bexleymedalsandmilitaria.co.uk

July

SOUTH OF ENGLAND MILITARIA ARMS & ARMOUR FAIRS

Date: Sun 12 July 2015

Location: Chatham Dockyard, Kent

Contact: 07595 511981,
www.chathammilitariafairs.co.uk

HILDENBOROUGH MILITARIA FAIR

Date: Sun 19 July 2015

Location: Hildenborough Village Hall, Riding Lane, Tonbridge Rd, Hildenborough, Kent

Contact: 01322 523531,
www.bexleymedalsandmilitaria.co.uk

August

DALLAS DIG OUT

Date: Sun 9 Aug 2015

Location: Dallas Autos, Cold Ash Farm, Long Lane, Hermitage, Newbury RG18 9LT

Contact: 01635 201124

SOUTH OF ENGLAND MILITARIA ARMS & ARMOUR FAIRS

Date: Sun 9 Aug 2015

Location: Chatham Dockyard, Kent

Contact: 07595 511981,
www.chathammilitariafairs.co.uk

HILDENBOROUGH MILITARIA FAIR

Date: Sun 23 Aug 2015

Location: Hildenborough Village Hall, Riding Lane, Tonbridge Rd, Hildenborough, Kent

Contact: 01322 523531,
www.bexleymedalsandmilitaria.co.uk

MILITARY ODYSSEY

Date: Sat/Mon 29-31 Aug 2015

Location: Kent Show Ground, Detling, Maidstone

Contact: 07595 511981,
www.military-odyssey.com

September

SOUTH OF ENGLAND MILITARIA ARMS & ARMOUR FAIRS

Date: Sun 13 Sept 2015

Location: Chatham Dockyard, Kent

Contact: 07595 511981,
www.chathammilitariafairs.co.uk

CHELMSFORD MILITARIA FAIRS

Date: Sun 20 Sept 2015

Location: Marconi Social Club, Beehive Lane, Chelmsford

Contact: 07595 511981,
www.chelmsfordmilitaria.com

HILDENBOROUGH MILITARIA FAIR

Date: Sun 27 Sept 2015

Location: Hildenborough Village Hall, Riding Lane, Tonbridge Rd, Hildenborough, Kent

Contact: 01322 523531,
www.bexleymedalsandmilitaria.co.uk

October

SOUTH OF ENGLAND MILITARIA ARMS & ARMOUR FAIRS

Date: Sun 11 Oct 2015

Location: Chatham Dockyard, Kent

Contact: 07595 511981,
www.chathammilitariafairs.co.uk

CHELMSFORD MILITARIA FAIRS

Date: Sun 18 Oct 2015

Location: Marconi Social Club, Beehive Lane, Chelmsford

Contact: 07595 511981,
www.chelmsfordmilitaria.com

HILDENBOROUGH MILITARIA FAIR

Date: Sun 18 Oct 2015

Location: Hildenborough Village Hall, Riding Lane, Tonbridge Rd, Hildenborough, Kent

Contact: 01322 523531,
www.bexleymedalsandmilitaria.co.uk

DALLAS DIG OUT

Date: Sun 25 Oct 2015

Location: Dallas Autos, Cold Ash Farm, Long Lane, Hermitage, Newbury RG18 9LT

Contact: 01635 201124

November

NORTHERN MILITARY EXPO

Date: Sun 1 Nov 2015

Location: Newark County Showground NG24 2NY

Contact: 01302 739000,
www.northernmilitaryexpo.co.uk

SOUTH OF ENGLAND MILITARIA ARMS & ARMOUR FAIRS

Date: Sun 8 Nov 2015

Location: Chatham Dockyard, Kent

Contact: 07595 511981,
www.chathammilitariafairs.co.uk

HILDENBOROUGH MILITARIA FAIR

Date: Sun 15 Nov 2015

Location: Hildenborough Village Hall, Riding Lane, Tonbridge Rd, Hildenborough, Kent

Contact: 01322 523531,
www.bexleymedalsandmilitaria.co.uk

MALVERN MILITARIA FAIR

Date: Sun 22 Nov 2015

Location: The Three Counties Showground, Wye Hall (Brown Gate), Malvern, Worcestershire SY4 4UG

Contact: 01743 762266,
www.militaryconvention.com

CHELMSFORD MILITARIA FAIRS

Date: Sun 29 Nov 2015

Location: Marconi Social Club, Beehive Lane, Chelmsford

Contact: 07595 511981,
www.chelmsfordmilitaria.com

December

HILDENBOROUGH MILITARIA FAIR

Date: Sun 6 Dec 2015

Location: Hildenborough Village Hall, Riding Lane, Tonbridge Rd, Hildenborough, Kent

Contact: 01322 523531,
www.bexleymedalsandmilitaria.co.uk

SOUTH OF ENGLAND MILITARIA ARMS & ARMOUR FAIRS

Date: Sun 13 Dec 2015

Location: Chatham Dockyard, Kent

Contact: 07595 511981,
www.chathammilitariafairs.co.uk

The military vehicle season has already kicked off, with many of our vehicles taking part in May's 70th VE day anniversary events and those for the liberation of Holland, Jersey and Guernsey. Founder of the MCVG (now MVT) Peter Gray was himself a prisoner of the Nazis on Jersey, having been a resistant to the occupation. At 17 he was known to the Germans as 'Der Junger' (the youth). So it was fitting that at 87, he returned to Jersey and was seen at events busily judging the military vehicles. Indeed, our hobby owes Peter a huge debt – he was the person who really started it all off in the early 1970s – so we have him to blame for all the fun we have with our MVs! A contingent of carefully selected British vehicles also took part

in the 75th anniversary of Dunkirk and again, this resulted in additional good press coverage for our hobby.

MARKET MOVEMENT

Thankfully May has seen the market really swing into action, with a tangible increase in the number of vehicles coming onto the market.

There are currently more GMCs for sale than there have been for several years, as well as plenty of Jeeps – both Hotchkiss and wartime. And importantly they are selling, and selling quickly. One of the more interesting vehicles for sale this month included a hybrid – a MB Jeep on an M38 chassis – which must have been a challenge to build. In 16 years of Milweb, it is the first we have ever seen. At £16,995 a very nice Wolf with 21,000 miles from

a private collection also seemed a nice buy. A rare FWD HAR-1, although not necessarily a mainstream collector's choice, sold very quickly at £8000.

Series 1 Land Rovers come up for sale less often these days so it was a delight to see a beautifully restored 1949 Land Rover Series 1 80in offered by a Maltese collector for around £18,000. That's not expensive while the Euro is at its current weak level. And remember, in just a few years, Land Rover will have its 70th anniversary.

Located next door to the excellent Normandy Tank Museum, near Carentan, is well known restoration company Military Classic Vehicles. It has put a restoration project M4A4 Sherman up for sale at €45,000 (about £34,000).

It is a viable project but needs a fair amount of money invested in a turret (allow £12k), tracks (£20k), engine (£15k) and transmission (£15k). The internals also need sorting (£15k) – plus, of course, depending on your skill set and motivation, you would also need to factor in the cost of specialist labour. But if you want to do a ground up restoration on a piecemeal basis this is one to consider. It seems like a solid investment as 'done' Shermans fetch between £180,000-£250,000 these days.

Wisely, Military Classic Vehicles has started offering newly manufactured Sherman parts such as fuel and oil tanks, hatches and the most complicated parts to make the complete turret basket for around £7250.

AUCTION NEWS

There have been several important auctions this month, although without achieving exceptional prices – high or low. They have released a wide variety of both collectors' military vehicles into the community and also ex-MoD vehicles that have already seen commercial service. Meanwhile, in Holland, Troostwijk's May auction of US Army vehicles included some Land Rovers alongside the more common (in Europe anyway) Mercedes G-Wagens and some good looking Reo M923/M925 5-ton trucks. Though some will go to collectors, most will go to the trade and will be destined for commercial end of life use.

With US giant disposal managers Iron Planet planning a major one day sale of surplus military vehicles in Germany in July, it could be that we see a resurgence in the interest in the modern US tactical trucks.



Matador-cum-Militant with Bedford body is being auctioned by Witham.



Lack of storage forces the sale of this nice hard cab CCKW at £6500.



M923 to be auctioned in Holland will probably fetch around £8000.



1949 Land Rover Series 1 at £18,000 seems a bargain while the Euro is at a low.

Through its online auction, Witham is offering a truly unique vehicle – a wartime AEC Matador gun tractor, retro fitted with a steel AEC Militant Mk1 cab and a latter model Bedford rear cargo body. Designed to tow the 5.5in howitzer and various anti-aircraft guns and artillery, it had been fitted at some time with an Army reconditioned AEC 7.6-litre diesel. As I write it was nearly up to £4000 with a week to run before it goes to its new owner. It will certainly cause some interest if it turns up at War and Peace Revival.

BIKE BUSINESS

An established military motorcycle dealer was bemoaning the fluctuating numbers of motorcycles that come up for sale. And



If you need a tank engine, C and C Military offered this used C1 radial for £9750 – expect to pay a lot more for a new or reconditioned one.

it does seem to be feast or famine. Like buses, one Zundapp KS750 comes along and is followed by several others – and this also seems true with Harley WLAs and British wartime motorbikes. Across the board there are normally between 50-60

“There are currently more GMCs for sale than there have been for several years.”

military bikes advertised on Milweb; at this time of year, they seem to sell quickly if they are ready to rally, whereas out of season it's the restoration projects that are hoovered up.



This rare and unusual FDW Har-1 sold quickly at £8000.



New manufacture Sherman turret baskets from Matthieu Dumias at Military Classic Vehicles at £7250.

We've already started the countdown to War and Peace Revival which, without doubt, is very important to the market because it gives our dealers a chance to shop window their services to the thousands of vehicle enthusiasts who flock to the show. The organiser tells us bookings are already at a high level – so be sure not to miss it. 



Entry level M4A4 Sherman for £34,000, but it needs a ground up restoration.

VEHICLE	COUNTRY OF ORIGIN	YEAR OF ORIGIN	ENGINE: CAPACITY; CYLINDERS; FUEL	APPROX PRODUCTION	ASKING PRICES:			TREND
					LOW	HIGH	AVERAGE	
SOFT-SKIN VEHICLES								
AM General HMMWV	USA	1984	6200cc; V8; diesel	(on-going)	£29,000	£45,000	£37,000	▲
Austin Champ, FV1801	UK	1952	2838cc; 4; petrol	12,150	£2300	£6750	£4933	–
Bedford MK/MJ, FV13800	UK	1970	5420cc; 6; diesel	50,000	£2250	£3250	£2783	▼
Bedford RL, FV13100	UK	1952	4927cc; 6; petrol	73,150	£8000	£8000	£8000	▲
Dodge WC51, WC52	USA	1942	3770cc; 6; petrol	141,075	£6000	£10,000	£8750	▼
Dodge WC54 ambulance	USA	1942	3770cc; 6; petrol	26,000	£8400	£12,750	£10,905	–
Dodge WC55-WC58 command	USA	1942	3770cc; 6; petrol	37,000	£6925	£18,750	£12,543	▼
Dodge WC62, WC63, WC64	USA	1942	3770cc; 6; petrol	43,000	£6925	£18,750	£11,895	–
GMC CCKW	USA	1941	4416cc; 6; petrol	562,750	£6500	£10,500	£8583	▲
Hotchkiss Jeep M201	France	1957	2199cc; 4; petrol	14,500	£8000	£13,300	£10,150	–
Jeep M151	USA	1960	2319cc; 4; petrol	175,500	£9500	£12,995	£11,311	▼
Jeep M38, M38A1	USA	1952	2199cc; 4; petrol	100,000	£7450	£18,500	£12,975	–
Jeep MB/GPW	USA	1941	2199cc; 4; petrol	627,000	£6500	£19,000	£15,830	▲
Land Rover Defender 90/110	UK	1983	2506cc; 4; diesel; and others	(on-going)	£4200	£6750	£5385	▲
Land Rover 101 forward-control	UK	1971	3500cc; V8; petrol	2675	£4500	£6000	£5498	–
Land Rover Lightweight	UK	1966	2286cc; 4; petrol	14,000	£3150	£7100	£4585	▼
Land Rover Wolf (incl replicas)	UK	1996	2506cc; 4; diesel	–	£16,995	£18,000	£17,495	▲
Land Rover Series II/IIA	UK	1958	2286cc; 4; petrol; and others	858,051**	£3495	£5500	£4630	▲
Land Rover Series III	UK	1971	2286cc; 4; petrol; and others	510,276**	£1850	£3750	£2300	–
M35 (etc) 2½-ton 6x6, G742	USA	1951	5425cc; 6; diesel	15,000	£6000	£10,000	£8685	▲
WHEELED ARMoured VEHICLES								
Daimler Ferret, FV700	UK	1952	4255cc; 6; petrol	4500	£5500	£12,500	£9666	▼
TRACKED ARMoured VEHICLES								
Alvis CVR(T) series, FV100	UK	1971	4200cc; 6; petrol*	3500	£14,500	£17,500	£15,650	▲
GKN FV432 (Mk 2), FV434	UK	1962	6570cc; 6; diesel	3000	£10,000	£15,000	£12,585	▲
Vickers Abbott (Mk 2), FV433	UK	1966	6570cc; 6; diesel	500	£10,000	£26,000	£18,000	▲
AMPHIBIOUS VEHICLES								
Alvis Stalwart, FV620 (etc)	UK	1959	6522cc; 8; petrol	1575	£6750	£9500	£7975	–
MOTORCYCLES								
Harley-Davidson WLA, WLC	USA	1939	740cc; V2; petrol	78,000	£10,300	£11,750	£10,625	▲
TRAILERS								
¼-ton (for WW2 Jeep)	–	–	–	–	£500	£950	£800	▼
¾-ton British (for Land Rover)	–	–	–	–	£150	£500	£345	▼

* Engine capacity figure refers to vehicle as introduced; other engine capacities used during production run.

** Includes civilian production.

Note

This guide is not intended to be comprehensive – at present it covers only the most popular collectors' vehicles. Similarly, the figures given are not valuations and do not necessarily reflect condition – they have been derived from the asking prices for vehicles recently advertised in Classic Military Vehicle magazine and on MILWEB. But remember that the price at which a vehicle was advertised is no guarantee that it sold at this price... or that it sold at all.

The effect of VAT on prices has been excluded so if you are buying from a dealer you must ensure that you understand what you will pay in total.

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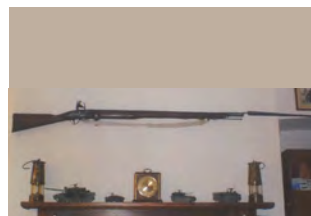
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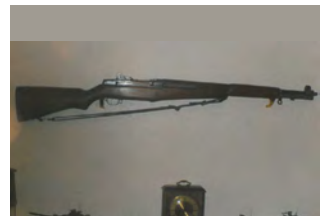
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Echoes of war...

CARRIER CATASTROPHE

Despite rigorous precautions, accidents do still happen and this image from 1939 provides a chilling reminder of this fact. It captures an incident involving the 51st Light Training Regiment during learner driver training at Catterick. Judging by the broken fence, the Carrier has come off the road and landed upside down as it's toppled down the banking. The caption on the reverse of the picture mysteriously blames 'reverse steering' as the cause. A crowd of onlookers, comprising an officer, instructor and a local civilian (with the cap) by the looks of it, are supervising the rescue. Tragically, one soldier was killed. Photo: The Tank Museum (3282-A6-1)



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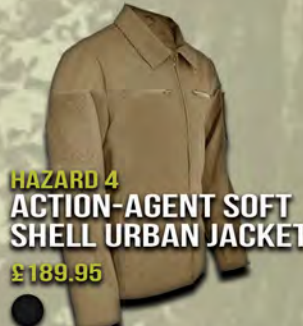
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