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EDITORIAL



Ian Young

Ian Young
Editor

During my time as Editor of MMI I've been asked to attend a great military vehicle shows and events together with numerous collections and museums all over the country, and all of them have been fascinating and educational in their own right. I've been involved with military vehicles in one way or the other for well over thirty years, and I've been Editor of Military Machines International since 2001, and yet I'm still learning things all the time, such is the complexity of this fascinating hobby. I have very few regrets, but recently I did have to make a very tough decision and one that I regret.

A few months ago I was invited down to the Royal Marines training establishment at Instow to take a look at their DUKWs (as featured in this issue). Sadly the date of the visit fell on print day, our busiest day in the printing schedule and not one I could miss. Despite wrestling with my conscience, in the end I had to decline, and I have to say that having seen Shaun Connors' article, I'm really miffed that I missed out on what was obviously a great day out, and as a consequence it's one of my big regrets! All I can hope is that there will be another opportunity to see these classic vehicles at work at some point in the future - Ed.



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INTERNATIONAL

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**MILITARY
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NEWS and REVIEWS

UP FRONT

Rare DUKW Archive Photos

In this issue you'll find a feature on the DUKWs still serving with the Royal Marines at Instow in Devon (page 40) and while at Instow Shaun was fortunate enough to have been granted access to its photographic archives, and while freely admitting to knowing little about vintage military vehicles will, over a couple of future issues of the mag, bring us a selection of the images he found during his all too brief search. It is possible that some of these images will have never been published before, and these photos are just a taster of what's to come... Ed.



High Speed Tractor Surfaces

Just like buses, you wait for one to come along and then you get two! Well that's the case with the comparatively rare wartime Allis Chalmers M4 High Speed Tractor.

In our item on the Rauceby War Weekend in the November 2011 issue of MMI (page 7), Tony Dixon featured a newly restored Allis Chalmers High Speed Tractor, but since then we've been contacted by Steve Whitehouse of Bristol, who also owns an Allis Chalmers M4 High Speed Tractor that is nearing the end of a ground-up restoration.

The High Speed Tractor has been subjected to a complete and thorough restoration over several years, as is clearly evident from the photos featured here, with the correct and original engine for the



vehicle being stripped and rebuilt along with the transmission and running gear. While the vehicle has been up and running since early summer, it hasn't actually appeared at any shows yet because the body has yet to be refitted, which was left off to make the finishing of the restoration of the interior a little easier, but just as soon as the rest of body is on, which should be over the Christmas period, Steve plans to start taking it to shows.

We'll be bringing you a feature on the restoration of this remarkable vehicle in a forthcoming issue of MMI, so keep an eye out for it in the New Year – Ed.



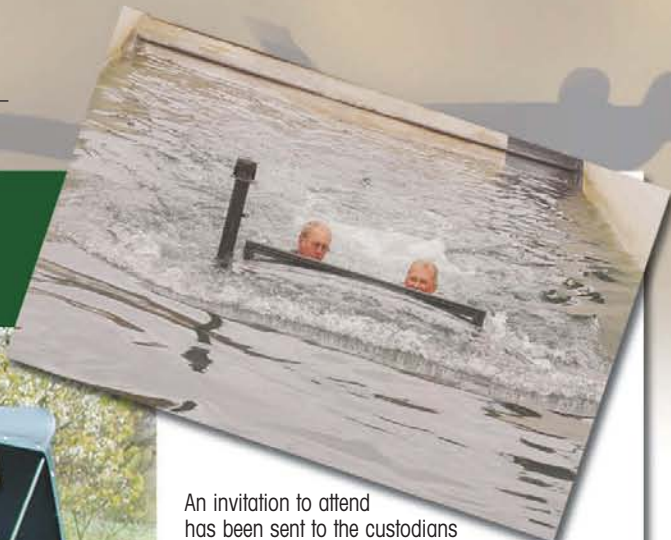
Austin Champ 60th Anniversary



To celebrate the 60th anniversary of the Austin Champ entering British Army service the ACOC is organizing a major event in 2012.

Following adoption of the Jeep as the standard Allied 1/4-ton vehicle during the war the War Department were well aware of the value of such a vehicle in the inventory. After trialling two previous test vehicles, the Nuffield Gully in 1947, of which 3 were made and the Wolseley Mudlark in 1948 with 33 prototypes, the Ministry of Supply placed an order for 15,000 vehicles with Austin. The contract

number began as FV1800 and evolved into FV1801 and the vehicle became known as the Champ. The 50th anniversary of the model was celebrated at the War & Peace Show in Kent in 2002. Approximately 80 Champs appeared, and 2012 sees a much bigger event being organized and over 100 Champs, including some very significant examples are expected to attend. Already vehicle entries have been received from Europe and additionally, Champ-owning club members from Australia, and Hawaii have booked to attend.



An invitation to attend has been sent to the custodians of the only Gully survivor and one of only 2 examples of the Mudlark known to exist is due to appear. (The only other Mudlark is in India!) The only roadworthy WN3 'civilian' Champ in the UK is due to attend as are a Fire Engine Champ, an ambulance Champ and two of only three known survivors of the REME sectional apprentice training Champs. A full display of Champs with working period radios is planned.

The venue for the event is set to be the South Midlands Area of the Military Vehicle Trust's 'Wartime in the Vale' military vehicle rally at Badsey, Worcestershire, UK held over the weekend of the 18th to the 24th of June 2012.

The major exhibits will be housed in a large marquee, sponsorship for which has been generously donated by Roy Elvis at Champ Spares UK. Entertainment will be organized, as will road runs and trips to places of interest. Check the website nearer the date for details. For more information contact Andrew Wardle at: checkleyand@aol.com or Tel: 01782 5502658 or 07970 750191

VHM All-Terrain Vehicle

The French Direction Générale de l'Armement (DGA) accepted its first VHM all-terrain vehicles on the 7th of November 2011. Ordered at the end of 2009, delivery of the 53 VHM's runs until the end of 2012. The supplying companies are Swedish Hägglunds AB (part of BAE Systems) and French Panhard. In particular, Panhard is in charge of all integration of equipment specific to the French army (armaments, radios, information systems, etc.).

The VHM is a 14-tonne, 7.60 m long, tracked, armoured vehicle. Between the vehicle's two modules, a special articulation device enables it to negotiate terrain that is inaccessible for wheeled vehicles. Consequently, it can avoid routes that may be booby-trapped with improvised explosive devices.

Provided in three versions (command post, logistic carrier and troop carrier), the VHM can carry up to 11 infantrymen and their personal and collective weapons. Depending on the version, each VHM has either a 12.7 mm support weapon or a 7.62 mm self-defence weapon. The VHM's also offer embarked crews protection against small-calibre munitions, rocket-propelled grenades (RPGs), mines and improvised explosive devices.

Qualified in September 2011 after 8 months of intensive trials, the VHM has been tested on all types of terrain and, in particular, ground with poor bearing capacity (e.g. snow, sand and marsh). On top of all this, the vehicle's amphibious capabilities (river and sea) make it an extremely mobile machine.



RAF 2012 Special

Key Publishing is pleased to announce the launch of an exciting new aviation special magazine.

Featuring articles written with and by RAF personnel, RAF 2012 is a 132-page publication that provides behind the scenes insight into the aircraft, equipment and people of one of the world's premier air forces. Covering the conflicts in Afghanistan and Libya as well as aircraft such as the C-17, Typhoon and Voyager, RAF 2012 is your official Royal Air Force Annual Review for the year ahead.

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London DUCK TOURS

The London Duck Tours are a tourist attraction in London that use old amphibious DUKW vehicles originally used in World War II to provide passengers with a unique experience, first taking them around the streets of the city before embarking on a voyage down the Thames.

The concept of using original DUKWs as a sightseeing vehicle originated from Boston Duck Tours and was transferred to London for the new Millennium. The old DUKW vehicles have been restored and revamped for this one-of-a-kind London tour to make them both road and sea worthy under modern-day regulations.

Starting on Chicheley Street behind the London Eye, passengers are taken on a tour past historic London landmarks on the road including Big Ben, Trafalgar Square, Downing Street and Buckingham Palace, with the lively and effervescent tour guides providing an in-depth and humorous account of London's history complete with quirky stories and fascinating facts. The DUKWs are then launched onto the River Thames, giving passengers a unique view of the Houses of Parliament from the water in addition to other iconic landmarks.

At London Duck Tours we think our amphibious craft are the only way to see the capital, taking in all the sights and sounds of a city! London Duck Tour offers so much more than just a sightseeing tour; it's an exciting road and river adventure.

Take your pick from a huge range of tours tailored for all interests:

The Classic Tour takes you around the beating heart of London where royalty mixes with parliament and pageantry, taking in some of London's most iconic



landmarks from the London Eye to Number 10.

The James Bond Tour will have you on the edge of your seat as you take in many of the central London locations used in the classic film series. Then never say never again as you launch into the river Bond-style alongside MI6!

The D-Day Duck is suitable for the whole family. Our professional character tour guide will take you around London's most important Second World War sights including St Paul's Cathedral, Cabinet War Rooms and Buckingham Palace. On top of that you'll also hear from the greatest Britain of them all, Winston Churchill.

And there are plenty of others to choose from too, check out our advert on page 39 of this issue for further details!



Revell 1/72 Type VIIC 'Wolf Pack' Submarine

While I appreciate that it's not a military vehicle, the German Type VIIC submarine is a 'Military Machine' and holds a certain fascination for many of us involved with military history and this kit is a superb representation of that most iconic of German U-Boats.

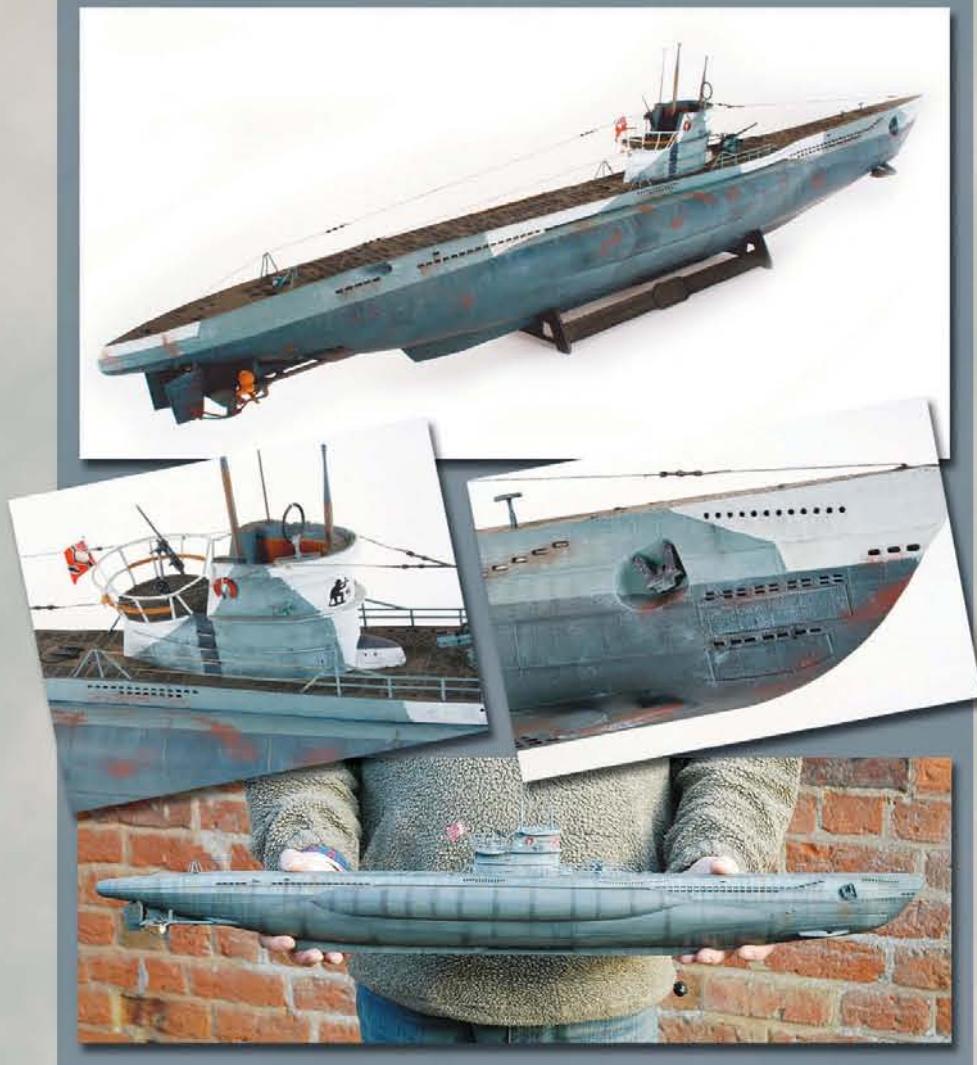
This is not a brand new kit, but a much requested and long anticipated re-release and for many years the Revell 1/72 Type VIIC submarine dating from the Second World War was a firm favourite with modellers around the world. It has been available in a number of guises, but the preferred variant with many modellers has always been the original Type VIIC 'Wolf Pack' version, representing a mid-war example of the archetypal German U-Boat.

Sadly the kit went out of production some years ago, but now, by popular demand, it's available once again and is bound to be snapped up by eager model makers everywhere. For those not familiar with the model it's a truly massive kit measuring more than 93cm in length (see the bottom photo of one I made earlier to give an indication of scale) and is constructed from beautifully detailed pale grey plastic with plenty of crisp surface detail that's just begging to be weathered. This time around the model has been released complete with a set of Revell's equally magnificent U-Boat crew included in the box!

Having built this model several times over I can confirm that it's a dream to build straight from the box, with all the parts fitting together well with an absolute bare minimum of filler required. Optional torpedo hatches are provided to allow the modeller to show them open or closed, and the conning tower and deck armament are nicely represented with parts options and decals included to enable the builder to construct one of six different boats. A display stand is also included.

While it may not suit absolute beginners, such is the quality of the construction and the well laid out instructions I see no reason why anyone with a modicum of modelling experience couldn't tackle this gorgeous model, the only problem might be finding somewhere to display it once complete!

The Revell 1/72 Type VIIC 'Wolf Pack' (item number 05015) retails at £59.95 in the UK and is available from all good model and hobby stores. For more information on Revell kits why not check out their website, which you will find at: www.revell.eu



Tamiya 1/35 BSA M20 Motorcycle



Tamiya have recently announced the release of an all-new 1/35 scale military vehicle kit, which should be available in the UK by the time you read this issue. The kit in question is a long awaited model of the World War Two BSA M20 motorcycle courier. The model depicts a late war M20 with the air filter on top of the fuel tank together with detailed engine and suspension.

Also included is the courier figure/rider wearing riding trousers and boots and a standing Military Policeman wearing a typical leather jerkin and the distinctive white traffic control sleeves. Alternative arms are also included to allow the modeller to adjust the pose.

Decals are included for the uniform and helmet insignia and the colour packaging includes illustrations of typical road signs that the builder can cut out and attach to the included signpost when the model is incorporated into a diorama.

All in all it's a great addition to the Tamiya 1/35 range that's been all too long coming. The set (item No. 35316) has a recommended retail price in the UK of £13.99 and will be available from all good model and hobby stores.



Rare Tank Photos Under The Hammer

A collection of press photographs showing the first tank being tested in Lincoln sold for £4,600 at auction in the city. The album of photographs, which documented the historic day when the first William Foster and Co. tank was tested during WW1, had been found in an attic by a local lady who had inherited the property from a relative.

Fierce bidding between a commission bid left on the books and a bidder in the room pushed the price up at the sale that took place on Wednesday November 16th at Golding Young & Thomas Mawer & Son auctioneers in Grantham. The rare album was finally bought by a local collector. Auctioneer John Leatt said: "There was strong interest in this lot before the sale mainly because the photographs were in very good condition and no-one had known of any coming onto the market before."

"We are really pleased with the price achieved for our vendor and that the album is staying in the county. Our vendor was delighted because she didn't expect the album to make that sort of money. But as interest grew before the sale, the

estimate of £2,000 to £3,000 at the time of the sale was easily outstripped."

The Lincoln engineering company, William Foster and Co. was well known for developing an armoured fighting vehicle, known as the 'tank', during the First World War. Before the war, the company specialized in agricultural machinery, such as tractors, threshing machines and steam engines, but with fighting in France reaching stalemate, the Admiralty Landship's Committee approached Fosters to put its engineering skills into developing a machine which could overcome the mud, cross trenches and barbed wire.

Managing director William Tritton, chief draughtsman William Rigby and engineer Walter Wilson, along with the loyal and highly skilled workforce, set to work to design and build what become known as the 'tank'.

After one failed attempt, a tank named 'Mother' was created in 141 days and in 1916, with the first tanks seeing action in France. The use of the tank had a huge effect on the war and is believed to have pushed it to its rightful conclusion.

CORRECTION

We received this email from reader Ralph Page regarding a couple of articles in the January 2012 issue of MMI, this is what Ralph had to say – Ed.

Dear Ian,

Just received latest MMI. Sorry to be a nag, but I have observations about the captions for two pictures. In the Witham's article - the T-62 on Page 48 is a T-54. Note particularly the gun and the roadwheel layout amongst other things.

In the Archives article - the Churchill tank on the Diamond T on page 70, the implication is that it is a gun tank, but is in fact a Churchill ARV Mark II. I do feel that an authoritative magazine like MMI should get things right. As ever I enjoy the magazine greatly.

Yours - Ralph Page

Ralph,

I don't think there was any particular implication regarding the Churchill, after all the article was about the Diamond T and not the Churchill, hence the reason for the description being left a little more vague than usual, so sorry for any confusion.

As for the T-62/54 mix up, I'll hold my hands up to that one, but in my defence it was listed in the catalogue as a T-62 and while I did suspect it was a T-54, my knowledge of Russian post-war tanks is comparatively limited, and there were no visible data plates on the vehicle that I could check on the day of my visit, hence the decision to stick with what was printed in the catalogue.

Sorry for the mistake, I'll try not to let it happen again - Ed.

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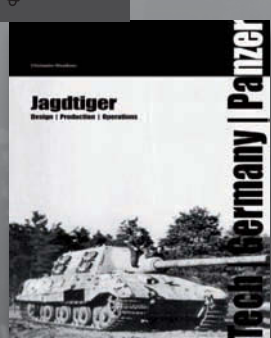


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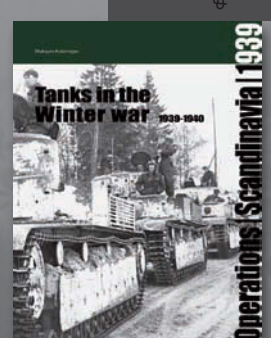
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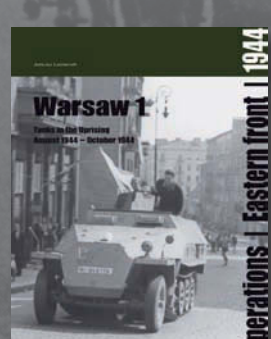
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Top left: the Sd.Kfz. 250/3 Neu is a rare vehicle in private hands and this fine example is fully restored and functional, attending various shows throughout the year. Here it is pictured at the Militracks event in Holland.

Above: the Sd.Kfz. 250/3 Neu was one of the most useful and indeed highly successful armoured half-tracks of the German Wehrmacht inventory during the Second World War.

MMI takes a closer look at the wartime German Sd.Kfz. 250/3 Neu half-track



German Battle Taxi



Despite the fact that the military half-track has all but disappeared from the modern military vehicle inventory, the half-track vehicle in its various forms enjoyed widespread use on all sides during World War Two. The American-designed half-tracks such as the M2, M3, M5 and M9 together with the many other variants were used extensively by the Allies, with the French, Soviet, Italian and Japanese armies fielding a number of 'home-grown' half-tracks, but it was the German Army that undoubtedly made the greatest use of the half-track throughout the war.

The German half-tracks were produced in all shapes and sizes, from the diminutive Kettenkrad to the mighty FAMO, but unlike the Allies, the Germans made far greater use of

softskin variants for the transportation of troops and equipment, something the Allies normally relied on to be carried out by conventional trucks, which were considered to be cheaper to produce and easier to maintain.

While the majority of the softskin half-tracks used by the Germans were purpose-designed vehicles, they also produced half-track trucks using existing medium trucks as the basis for the conversions that were known as 'Maultiers' (Mules). These curious vehicles were, like the other half-tracks, designed to cope with particularly treacherous conditions such as those experienced on the Russian Front, offering better traction than conventional wheeled trucks.

The German Army also relied heavily on armoured half-tracks and in our latest 'In Focus' feature we're





“...dating from 1944, the vehicle forms part of the Crompton Collection...”

Top left & right: the softskin Sd.Kfz. 10 half-track was the basis for the armoured Sd.Kfz. 250 series of half-tracks, with many of the components being the same on both vehicles.

Above left & right: since being restored the Crompton Military Vehicle Collection's Sd.Kfz. 250 has attended a number of military shows. Here we see it at the Militracks event held in Overloon, which involved the vehicles being driven around a purpose-built off-road course in the woods surrounding the Museum. Throughout the show the 250 performed faultlessly with the drivers reporting that it was getting better the more it was being driven.

going to be concentrating on one particular example produced during World War Two, namely the Sd.Kfz. 250/3 Neu half-track. As well as the basic historical information, we will be looking back at the restoration of one particular preserved example dating from 1944 that now forms part of the Crompton Military Vehicle Collection.

BACKGROUND

While many of the half-tracks used by the Allies during the Second World War were purpose-built armoured vehicles, the Germans chose to develop a mixture of softskin and armoured half-tracks, with the Sd.Kfz. 250 Neu featured here being just one of a family of armoured half-tracks produced during the war.

These armoured half-tracks are often regarded as being purpose-designed armoured vehicles, and to a certain extent they were, but in reality they were often based on existing chassis and running gear.

Early in the war attempts were made to build an armoured body for the Sd.Kfz. 10, a light, softskin half-track, largely used for the transportation of troops and the towing of artillery up to a weight of 1-tonne. The aim of the armoured body

was to provide better protection for the occupants, but developments were soon abandoned in favour of a purpose-designed armoured half-track for the reconnaissance role.

Interestingly, later in the war a variety of add-on armoured bodies were developed for a number of half-tracks.

The Sd.Kfz. 250 was therefore based on a modified and shortened chassis and running gear from the Sd.Kfz. 10, with the first prototypes being built in 1939 and the first production vehicles rolling off the production line in June 1941.

In basing the Sd.Kfz. 250 on the chassis and running gear of the Sd.Kfz. 10 there was a greater commonality of parts, which helped to speed up the design and development process and improved battlefield survivability and routine maintenance.

TECHNICAL DESCRIPTION

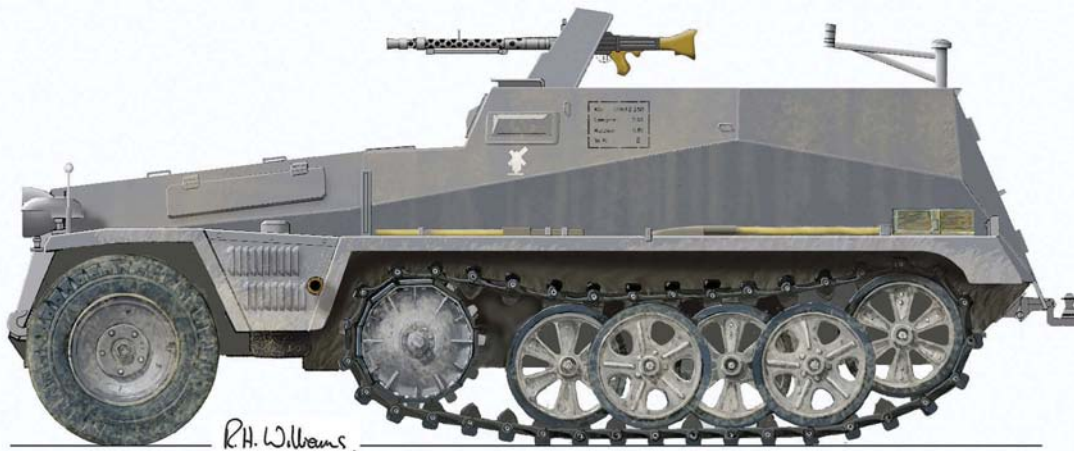
The armoured hull of the Sd.Kfz. 250 was fitted separately to the chassis that incorporated the engine and running gear, with the engine compartment at the front of the vehicle, the driver's position in the centre with the driver sat to the left of the vehicle, and the troop compartment at the rear. The rear compartment featured an open top (in most cases) and a single opening

rear door provided access for the crew. While the open top did leave the occupants vulnerable to overhead fire or shrapnel, it did allow the crew to fight from inside the vehicle if conditions dictated it. Some later variants incorporated roof top armour and a small revolving turret.

Various designs of bodywork were built throughout the war, with numerous variants produced to perform specific roles, but in the case of the Sd.Kfz. 250/3 Neu featured here, it was designed as a radio vehicle, and incorporated a simplified body that was designed to make it easier to build at a time when the tide of the war was turning against the Germans and manufacturing resources were being stretched to the limit. Earlier variants were subsequently referred to as 'Alte' or 'Old' to distinguish them from the 'Neu' or 'New' variants being produced.

The chassis itself utilized transverse torsion bar suspension at the rear with a series of interleaved rubber-tired road wheels encompassed by tracks. The front drive sprockets also incorporated the vehicle brakes, with the steering brakes being part of the Cletrac-type differential unit, which was part of the main vehicle transmission unit and with the turning of the steering wheel would brake one

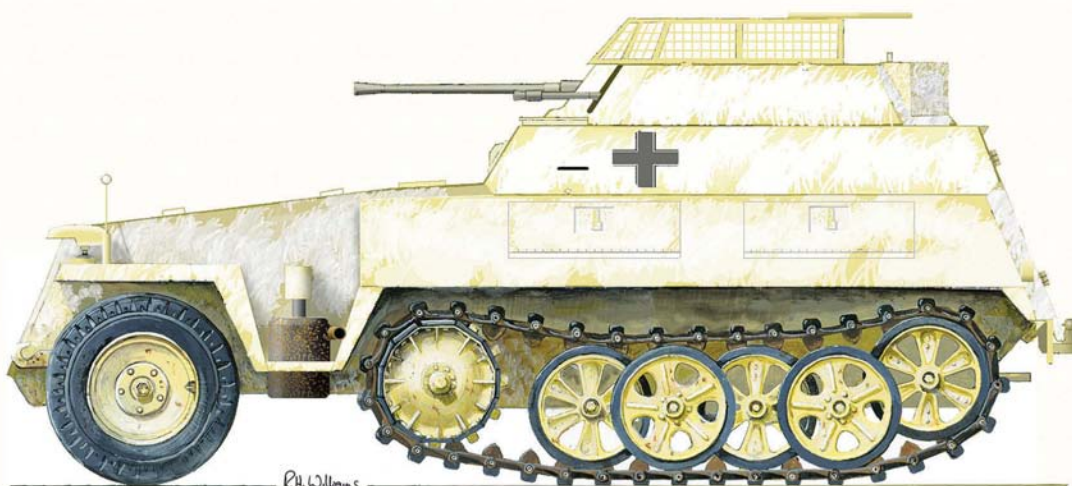
Sd.Kfz. 250 Variants



The Sdkfz 250 placed an armoured body on the (shortened) chassis of the Sd.Kfz. 10 1-tonne artillery tractor, providing a smaller, more economic alternative to the Sd.Kfz. 251 half-track. The basic version, Sd.Kfz. 250/1 as shown here, was an open-topped personnel carrier. This vehicle is shown in the Panzer Grey colour standard in the German Army until 1943, and carries the windmill insignia of the Reconnaissance Battalion of Motorised Infantry Division "Grossdeutschland".



Surely the most famous Sd.Kfz. 250 was this one, Rommel's personal command vehicle, an Sd.Kfz. 250/3 called "Greif" (German for "Gryphon"). The frame at the top is an aerial and the vehicle carries a powerful radio inside. It is painted in Africa Brown over the basic Panzer Grey, with some of the original colour allowed to show through to create a disruptive camouflage pattern. Rommel used this vehicle in 1942.



The Sd.Kfz. 250 was fitted with many types of armament. This variant, the Sd.Kfz. 250/9 Neu, has a turret similar to that fitted to armoured cars such as the Sd.Kfz. 222, sporting a 20mm cannon and a machine gun. It is painted in Dark Yellow and has been given a coat of white paint to camouflage it in the snow. This has been irregularly applied, or perhaps is wearing off... as it was designed to be removable in spring, it was not a very durable paint. No markings are visible in this side view except the "Balkankreutz" national insignia.

The featured vehicle is a 'Neu' style Sd.Kfz. 250/5 radio vehicle carrying the markings of SS Panzer Division "Das Reich". Also new in 1943 was a paint scheme in which the vehicle left the factory painted all-over Dark Yellow, and could be painted in the field with patches of Red Brown and Olive Green. Because this was left to local commanders and individual crews, the nature of the pattern could vary very considerably.



Above: much of the original sheet metalwork was either missing or beyond repair, but did prove useful for patterns.

Right: looking down into the stripped out and open lower hull the extent of the corrosion is very clear to see.

Above right: when the vehicle arrived many of the components were simply slung inside the open lower hull. Note that the fuel tank is still in place, albeit in a poor state.

Right: it takes a brave man to take on a restoration project as complex as this. It's little wonder that the restoration of the vehicle took several years!

Far right: the damaged armoured upper bodywork was separate from the rest of the vehicle and divided in two when it first arrived in the UK.



“...the Sd.Kfz. 250 was therefore based on a modified and shortened chassis and running gear from the Sd.Kfz. 10...”





1: the semi-complete lower chassis is painted in preparation for the installation of the mechanical components.

2: all of the internal fittings and mounting points had to be cleaned up and thoroughly restored before the re-assembly could commence.

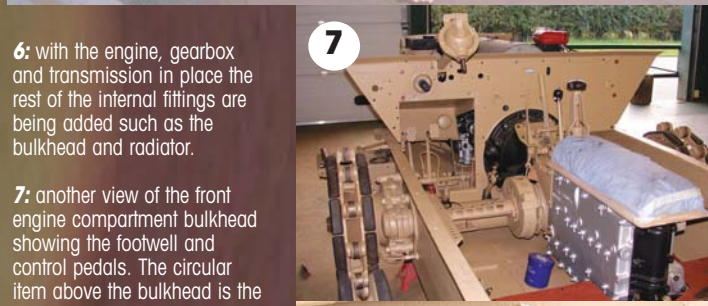


3: the completed gearbox and transmission is seen here in the workshop prior to being fitted back into the vehicle. The drums with the red shafts coming out of them are for the steering unit and are connected to the drive sprockets.



4: here we see the gearbox and transmission unit being carefully lowered into the hull. In comparison to some WW2 vehicles there's actually plenty of room to work on the vehicle. The top cover has yet to be fitted to the gearbox.

5: with the engine in place the rest of the running gear such as the road wheels and sprockets are being added to the chassis. The front suspension is also in place.



6: with the engine, gearbox and transmission in place the rest of the internal fittings are being added such as the bulkhead and radiator.

7: another view of the front engine compartment bulkhead showing the footwell and control pedals. The circular item above the bulkhead is the gearbox for the steering wheel.



8: close-up of the drum brake assembly that would normally be hidden away inside each of the drive sprockets. These brakes are for slowing the vehicle, no brakes are fitted to the front wheels.



9: the replacement tinwork is checked for fit and any adjustments made prior to the vehicle being finished and each of the items being painted. Much of the original sheet metal work was beyond repair.



10: view of the fuel tank that sits beneath the armoured cover to the rear of the troop compartment. Just visible is the circular filler neck that is visible in the rear compartment.



With the lower hull/chassis in the background, here we see the two main armoured components waiting to be fitted.



The main rear body/troop compartment is carefully lowered onto the chassis.



“...The vehicle was discovered in a barn hidden beneath piles of logs and firewood...”

track or the other to enable the vehicle to turn. The two steering front wheels used a single, upturned transverse leaf spring, but no front brakes or power steering were fitted, which made for heavy steering across rough terrain. Unlike the American half-tracks of WW2, the front axle was not powered.

The tracks themselves were very complex when compared to the simple ‘rubber band’ tracks of the American half-track, with cast metal track links mounting separate rubber tread blocks, in fact the majority of the German half-tracks used the same or a similar track design, albeit in differing sizes, from the tiny Kettenkrad to the 18-tonne FAMO. Unfortunately the track design was complex to build and required a great deal of maintenance to avoid bearing and track pin failure.

The six-cylinder, in-line Maybach HL42 TRKM petrol engine originated in the Sd.Kfz. 10, and in one form or another was used in all variants of the Sd.Kfz. 250 and was also used in modified form in the Sd.Kfz. 251 with a wet sump. The engine developed 100hp at 2,800rpm and was of the single overhead camshaft type and featured a dry sump lubrication system. A single Solex downdraught carburettor with four float chambers was used to ensure that the vehicle could operate satisfactorily on steep inclines without loss of power.

A Bosch impulse magneto ignition system was fitted and the engine was also fitted with a manifold heating cold-start system to ensure the vehicle would start and operate correctly in the harsh winter climate experienced on the Russian Front.

FASCINATING HISTORY

There are very few restored examples of the Sd.Kfz. 250/3 Neu in private hands and the example featured here belongs to the Crompton Military Vehicle Collection having been purchased in 2004 in a totally unrestored and semi-incomplete state.

The vehicle was discovered in a barn hidden beneath piles of logs and firewood, and the owner has since discovered that the 250 was used by members of the Twelfth Army under the command of ‘The Boy General’ Walther Wenck towards the end of the war following the unsuccessful attempt to reach and relieve Hitler in Berlin.

After being disabled on the battlefield the vehicle was apparently recovered to the barn and hidden to prevent it falling into the hands of the advancing Allies and there it lay until it was discovered many years after the end of the war making this a true ‘Barn Find’.

When the vehicle arrived it was in several main pieces, with the chassis separate from the upper armoured hull sections. All of the running gear was in poor condition with much of it removed from the vehicle and resting loose inside the lower hull together with the tracks and what remained of the other components.

After the vehicle returned to the UK it was assessed to see what was missing in readiness for the start of the long restoration process. During the strip down process numerous artefacts were discovered, which included spent and live MG rounds, maps, personal kit, fragments of uniforms and even some genuine wartime condoms!

The maps discovered wedged beneath the gearbox were particularly interesting because they suggested that the unit to which the vehicle was attached had fought their way through Czechoslovakia and Hungary before reaching Belzig in Brandenburg, about 43 miles to the southwest of Berlin and where the vehicle would eventually be discovered.



Sd.Kfz. 250/3 Neu

Crew:	4
Length:	4700mm
Width:	2100mm
Height:	1524mm
Ground Clearance:	285mm
Track Width:	240mm
Weight:	5350kg (Gross)
Fording:	70cm
Fuel Capacity:	140-litres
Engine:	Maybach HL42 TRKM 6-cylinder, 4171cc water-cooled petrol engine producing 100bhp @ 2,800rpm
Gearbox:	Maybach Variorex Manual VG 102128 H with 7-forward and 3-reverse gears
Steering:	Manual with brake assistance
Suspension:	Transverse leaf spring (Front) Transverse torsion bar (Rear)
Tyres (Front):	6.00 x 20
Electrical System:	12 volt
Top Speed:	65kph (on road)
Armour:	6mm to 14.5mm
Armament:	2 x 7.62mm MG42 machine guns



Top left: the Sd.Kfz. 250/3 was powered by a Maybach HL42 TRKM petrol engine that was also used in the 251, albeit with a wet sump rather than a dry sump as used in the 250 and Sd.Kfz. 10. The engine can be seen here with the engine covers open.

Top right: the Sd.Kfz. 250/3 was a radio vehicle and the vehicle in the Crompton Collection has been kitted out with all the appropriate period radio equipment.

Above left: looking down the left hand side of the crew compartment from the rear door we see the bench seat opposite the bank of radios, which was also used to store ammunition for the machine guns. The reverse angled steering wheel is also visible.

Left: close-up of the driver's position in the vehicle. It's surprisingly cramped and takes some agility to get into the driver's seat! Note the rest of vehicle instrumentation and the handles for the lift up visors for the front occupants.

Column far left: various close-ups of the finished vehicle showing from top to bottom the front wheel, what looks like a side step is believed to be a bracket to prevent the side locker doors from running into the tracks when open, the bracket itself would not be strong enough to act as a step, exhaust silencer to the left of the vehicle, standard Notek driving light as used on most wartime German vehicles, and the rear fuel filler cap positioned inside the rear compartment beneath an armoured cover.



This would tie in with the fact that as General of Panzer Troops, Wenck was given command of the Twelfth Army located to the west of Berlin and was involved in actions around the Elbe River, which had become a refugee camp of huge proportions for German civilians fleeing the advancing Soviet forces.

RESTORATION

The restoration of the Sd.Kfz. 250 began almost as soon as the vehicle arrived in the UK after it had been assessed to see what was missing and what needed replacing. In most cases new or replacement items were sourced, but much of the tinwork inside and outside of the vehicle had to be fabricated.

Having stood in the barn where it was discovered for many years, there was a considerable amount of corrosion to contend with and clean up before the rebuild proper could begin, but in comparison with some restoration projects the half-track was in remarkably good condition for its age.

The restoration process was long and arduous, but each component was meticulously restored and after several years of painstaking work the reassembly of the vehicle finally began in early 2007 in preparation for the roll out.

As the restoration neared completion attention turned towards the paint scheme for the vehicle and in keeping with the vehicle's known combat history it was decided to opt for a typical late war 3-colour camouflage scheme.

The Sd.Kfz. 250/3 Neu was finally finished in the summer of 2007 with the half-track making its debut at the War & Peace Show in July together with two other new acquisitions to the Crompton Military Vehicle Collection, namely the Büssing NAG crane truck (featured last month) and the Vidal Tempo G1200 (featured in the December 2011 issue). I first saw the Sd.Kfz. 250 at the show, indeed it was featured in our show coverage at the time, but it would be another two years before I would come across the half-track again during a visit to the Crompton Military Vehicle Collection in Suffolk.

Since then the half-track has attended (by invitation) the 2010 and 2011 Militracks events in the Netherlands, together with a number of other vehicles from the collection. During the show the half-track was driven around a purpose-built off-road track in the woodland surrounding the museum, giving visitors to the show a taste of German wartime engineering at its very best.

The Sd.Kfz. 250/3 Neu is undoubtedly a very rare vehicle in private hands and this fine example is all the better for being in running condition and remains an integral part of the growing Crompton Military Vehicle Collection, appearing at various shows and events throughout the year. If you should see it at a show it might be worth taking a closer look because you're unlikely to see too many of them!

My thanks as ever to Bruce Crompton, Phil Rutherford and Nick Rutherford for their help in producing this article.

Top left: the Sd.Kfz. 250/3 Neu forms part of the Crompton Military Vehicle Collection. The vehicle has attended a number of shows, including the War & Peace Show where it made its debut back in 2007, and the Militracks event staged in the Netherlands.

Above centre: the Sd.Kfz. 250 had a single door into the troop compartment, unlike the Sd.Kfz. 251, which featured two. Both vehicles used the modified versions of the Maybach petrol engine.

Above left: various weapons were fitted to the Sd.Kfz. 250 throughout its service life, here we see the rear MG42.

Right: the Crompton Military Vehicle Collection's Sd.Kfz. 250/3 Neu rests in between runs during the Militracks 2010 event.





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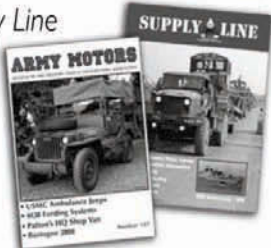
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Afghan Warrior

Carl Schulze takes a closer look at the latest variant of the Warrior to enter service with the British Army

Since 2006 British armed forces, as part of the International Security Assistance Force (ISAF), have fought a bloody guerrilla war against the Taliban and other insurgent groups in Helmand Province in the south of Afghanistan. In the summer of 2007 Task Force Helmand was reinforced by an armoured infantry company known as Armoured Infantry Group, equipped with Warrior and since early 2011 the Warrior TES(H) (Theatre Entry Standard (Helmand)) has been service in Afghanistan.

Since they first entered service the vehicles of the Warrior MCV-80 family has been through several combat capability improvement programmes. Today BAE Systems Land Systems provides life support and upgrade services for the Warrior MCV-80 family of vehicles. In a recent press release the company stated that over the years 70 major modifications were implemented into the vehicles of the fleet.

For the 1991 Gulf War the deployed vehicle were for example fitted with a Chobham appliqué armour package

developed by Vickers Defence Systems. The same armour was also fitted to the vehicles deployed to Bosnia Herzegovina, Kosovo and Iraq.

From 2004 onwards under the Battle Group Thermal Imaging (BGTI) project the vehicles were fitted with new sights and an inertial navigation system. The Pilkington PE Raven sight system was replaced by a STAG FC Gunner's sight with day channels, eye-safe laser range finder, 2nd generation thermal imager and stabilized sight head and the Commander's Crew Station with flat panel display,



magnified direct vision optic, colour camera and display. In 2004 the British Army began to field the Bowman tactical communication system and shortly after the first vehicles of the Warrior family were fitted with new command, control, communication, computer and intelligence equipment, including new radios.

The harsh environment and the threats encountered by the deployed British forces under Operation Telic in southern Iraq resulted in another series of modifications. From 2004 onwards vehicles of the Warrior MCV-80 family were fitted in addition to the Chobham appliqué armour package with

Enhanced Protection Bar Armour in order to protect them from RPG-7 warheads.

A Remote Controlled IED Electronic Counter Measure System (RCIED ECM) was also installed to protect the vehicles from attacks with remote controlled IEDs. For cooling of electronic components and in order to increase crew comfort an Environmental Control Unit (ECU) was also installed that provides air at 25 degrees below the ambient temperature to both the crew and driver compartment.

In order to enhance the vision of the vehicle driver the vehicles were fitted

with the new Improved Driver's Vision Hatch that features three Mk156 periscopes. When Explosive Formed Penetrator IEDs became more commonly used by insurgents in Iraq the deployed FV510 Warrior Infantry Section Vehicles and FV511 Warrior Infantry Command Vehicles again were fitted with an improved armour package between November 2007 and May 2008. The WRAP 2 included explosive reactive armour for the sides of the vehicles, a mine protection belly plate, transparent armour for the BGTI sight of the gunner and mesh wire protection for the sight of the vehicle commander.

Below: all variants of the British Army's Warrior were brought to TES(H) standard. Here a FV510 Warrior TES(H) Infantry Section Vehicle and a FV513 Warrior TES(H) Mechanized Recovery Vehicle (Repair) are seen operating together in Afghanistan.





The FV510 Warrior TES(H) is powered by a Perkins Rolls-Royce 17.4-litre V8 turbo-charged diesel engine that is connected to a Perkins X400-4B fully automatic hydrostatic gear shift and steering transmission in which the brakes are integrated.

Some 70 vehicles of the Warrior MCV-80 family of vehicles have been brought to TES(H) standard. The last one left the workshop in June 2011. Here two FV510 Warrior TES(H) Infantry Section Vehicle can be seen operating in Afghanistan in June 2011.



AFGHAN DEPLOYMENT

In 2007 when the first vehicles of the Warrior family were deployed to Afghanistan they featured the Chobham appliqué armour package, Enhanced Protection Bar Armour, the mine protection belly plate, the RCIED ECM, the Environmental Control Unit (ECU) and the Improved Driver's Vision Hatch.

Right from the beginning the Armoured Infantry Fighting Vehicle-equipped company plus a sizeable Armoured Infantry Group became one of the most requested assets within Task Force Helmand. It saw action in



the open deserts of Helmand Province as well as in the dense vegetated Green Zone along the banks of the Helmand River. Warriors were employed to dominate terrain, provide direct fire support to dismounted troops, as reinforcement for cordons, convoy escort and so on.

While the Warrior performed well, certain issues were discovered regarding their performance. In contrast to the original vehicles the upgraded ones lacked mobility and ground clearance due to their increased weight. Originally the Warrior Infantry Section Vehicle had a combat weight of 24-tonnes, those initially deployed to Afghanistan weighed in at just below 40-tonnes. The weight also had its negative impact on brake performance and resulted in increased wear of the suspension and components of the drive train. It was also discovered that the ECU was not powerful enough to sufficiently cool down the interior of the vehicle.

In 2009 an Urgent Operational Requirement (UOR) was issued that requested to restore the capabilities of the vehicles, solve the discovered issues and improve protection, mobility and habitability in response to the needs of those in theatre.

With the UOR issued the Platforms Team of the Combat Tracks Group of Defence Equipment & Support (DE&S) got to work. The original plan was to develop modification kits that could be delivered to theatre, but it soon became clear that the modifications intended (38 in total) were too complex to be integrated into the vehicles under field conditions. As a result the modifications became a full embodiment programme for some 70 vehicles.

It took the design and development team 18 months from the initial UOR being signed off to the fielding of the first modified vehicle in Afghanistan, now being designated as Warrior

Top left: like earlier variants the FV510 Warrior TES(H) Infantry Section Vehicles are fitted with the 30mm L21A1 RARDEN cannon and 7.62mm L94A1 Chain Gun. The Battle Group Thermal Imaging (BGTI) sight allows the vehicles to engage targets with a high degree of accuracy.

Top right: at last light a FV510 Warrior TES(H) Infantry Section Vehicle thunders through a village in the Helmand Province of Afghanistan. Clearly visible is the newly designed nose of the add-on armour package.

Left: a FV510 Warrior TES(H) Infantry Section Vehicle of B Company of the 3rd Battalion, The Mercian Regiment (Staffords) photographed in June 2011. Note the transparent armour on the turret roof, the improved Environmental Control Unit (ECU) at the right rear of the vehicle and the components of the RCIED ECM system.

Bottom left: together with dismounted troops a FV510 Warrior TES(H) Infantry Section Vehicle provides cover for troops conducting vehicle searches at a temporary checkpoint. Note the transparent armour as well as the Enhanced Protection Bar Armour installed on the turret.



FV510 Warrior TES(H) Infantry Section Vehicle seen here deployed on high ground to provide cover to dismounted troops conducting a cordon and search operation. The FV510 Warrior TES(H) Infantry Section Vehicle is the most powerful fighting vehicle within the inventory of Task Force Helmand.



Above: one of the major aims of the TES(H) UOR programme was to restore the mobility of the Warrior that had been reduced by the addition of earlier upgrade packages.

Above right: new seating has been added and cushioning improved to further enhance mine protection and comfort. The benches were also fitted with footrests.

Right: view of turret roof of a FV510 Warrior TES(H) Infantry Section Vehicle. Note the protection measures for the Gunner's and Commander's sight and the transparent armour along the turret sides.



Theatre Entry Standard (Helmand), or Warrior TES(H) for short. Within the time designing work was carried out, parts were manufactured and a trials programme executed by the Infantry Trials and Development Unit. BAE Systems was chosen as prime contractor for the project. Also involved in the program were Allen Vanguard, Astrum Holdings Limited, Caterpillar Defence Products, Dana Spicer Europe Limited, GKN Driveline Plc, MTL Group Limited, Thales UK, Thyssen Krupp, Tinsley Bridge Group and William A. Lewis Engineering Limited.

“In total the B Comp

The conversion work was jointly carried out by BAE Systems Global Combat Systems Vehicles Division at the Telford plant in Shropshire and the Defence Support Group (DSG) facility at Donnington. The last to TES(H) standard modified vehicle was delivered in June 2011. The total TES(H) UOR upgrade program had a value of £30m.

The deployed fleet includes in addition to FV510 Warrior TES(H) Infantry Section Vehicle also FV511 Warrior TES(H) Infantry Command Vehicles, FV512 Warrior TES(H) Mechanized Combat Repair Vehicles, FV513 Warrior TES(H) Mechanized Recovery Vehicles (Repair), FV514 Warrior TES(H) Mechanized Artillery Observation Vehicles and FV515 Warrior TES(H) Battery Command Vehicles.

The first unit to field the modified Warrior TES(H) vehicles with TES(H) standard was B Company of the 3rd Battalion, The Mercian Regiment (Staffords).



any could field 21 vehicles of the Warrior MCV-80 vehicle family.”



Since early 2011 FV510 Warrior TES(H) Infantry Section Vehicles have been employed by the Armoured Infantry Group of Task Force Helmand in southern Afghanistan.



Above: FV513 Warrior TES(H) Mechanized Recovery Vehicle (Repair) of B Company of the 3rd Battalion, The Mercian Regiment (Staffords) seen in early June 2011. Note the Enhanced Protection Bar Armour, the forward looking thermal imaging camera of the Driver's Night Vision System on the driver's hatch and the new nose with storage boxes.

Top right: rear view of a FV513 Warrior TES(H) MRV (Repair). Note the rearward looking thermal imaging camera of the Driver's Night Vision System above the Warrior's rear door.

Column far right top: here we see the front right corner of a FV510 Warrior TES(H) Infantry Section Vehicle. Note the armour plate on which the Enhanced Protection Bar Armour is installed. This can also function as a base for the WRAP 2 explosive reactive armour if it needs to be installed at a later date.

Column far right centre: the Enhanced Protection Bar Armour protects the Warrior TES(H) Infantry Section Vehicle from attack by RPG-7 shape charge warheads.

Column far right bottom: the manually operated one-man turret of the FV513 Warrior TES(H) Mechanized Recovery Vehicle (Repair) is fitted with a 7.62mm L94A1 Chain Gun. Note the transparent armour above the machine gun.

Right: The to TES(H) standard modified fleet of vehicles of the Warrior MCV-80 family includes the FV513 Warrior TES(H) Mechanized Recovery Vehicle (Repair) as seen here.

ARMoured INFANTRY GROUP

Between April and October 2011 under Operation Herrick 14 the Armoured Infantry Group of Task Force Helmand was provided by B Company of the 3rd Battalion, The Mercian Regiment (Staffords). The 3rd Battalion, The Mercian Regiment (Staffords) is one of the battalions of 7 Armoured Brigade "Desert Rats." It is based at Lumsden Barracks in Bad Fallingbostel.

In total B Company could field 21 vehicles of the Warrior family. Each platoon of the company is equipped with four Warrior FV510 TES(H) Infantry Section Vehicles, the remaining vehicles belong to the Company HQ and REME Light Aid Detachment and are attached for certain periods according to operational needs.

The fleet includes two FV511 Warrior TES(H) Infantry Command Vehicles, two FV512 Warrior TES(H) Mechanized Combat Repair Vehicles, two FV513 Warrior TES(H) Mechanized Recovery Vehicles (Repair), one FV514 Warrior TES(H) Mechanized Artillery Observation Vehicle and one FV515 Warrior TES(H) Battery Command Vehicle, the latter having been converted into an armoured ambulance.



The Armoured Infantry Company is a brigade asset and falls directly under command of the Headquarter of Task Force Helmand. The company can deploy all over Helmand Province in support of units or operations that require armoured infantry support.

The armoured infantry fighting vehicles provide the company with the capability to deploy at high speed even over rough terrain, deliver infantrymen to their objectives under the protection of armour and assist dismounted troops with a high rate of accurate fire.

COMBAT PROVEN

Despite the fact that the first vehicles fitted with TES(H) improvements only entered service in early 2011 they have already proved their value.

During a routine patrol in Afghanistan a Warrior TES(H) hit an IED, but thanks to the improved armour and mine protection of the TES(H) package the crew received only minor injuries.



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KEY

WAR MOTORS WEEKEND

Jim Kinnear reports on an embryonic Russian “War and Peace” style show

The collecting of military vehicles in the Russian Federation is clearly a recent phenomenon. In the years that followed the collapse of the Soviet Union in 1991 there were regular auctions of ex-military wheeled and tracked vehicles, but as in the West in decades past, the buyers were for the most part commercial companies, which had secondary uses for such relatively modern vehicles as all-terrain transport particularly for mounting heavy industrial equipment.

The collecting of military vehicles by enthusiasts has, however, expanded exponentially in Russia and in some other states of the former Soviet Union in the past decade. In Russia as in other countries, some collectors started with a single vehicle and within a short space of time found they had formed a substantial vehicle collection, whereupon the issue became one of where to display said vehicles, and more pressingly, where to store them, particularly considering the severe Russian winters.



Right: a German Horch 901- unique in Russia – taking a turn in the arena.

Opportunities for private collectors to publicly display military vehicles are relatively limited in the Russian Federation, with displays such as there are usually being held in conjunction with significant dates on the Russian calendar, such as 9th May (Victory Day) when small columns of historical vehicles and static displays are sometimes organized in conjunction with the state controlled parades and exhibitions.

A major departure from the past occurred in the summer of 2011, when a group of Russian military vehicle restoration enthusiasts, some as individuals and some already formed into companies working on their "hobby" as a full time occupation (sound familiar?) made the decision to emulate the "military gathering in a field" meetings that are now common in many parts of the world, and



Above: a Russian BA-64B armoured car captured at speed on a dirt track.



Above: the German Steyr 1500 A/02.



Above: American Dodge WC63 in Russian ownership!

Below: German horse-panzer Mk1 out for a trot.



Below: German Kettenkrad, American Dodge, Russian owner!

Right: an early GAZ-67 going through its paces at the show.

Below right: Russian BA-64B armoured car, one of very few surviving examples.

Below left: M3A1 White Scout Car out for a daytime run.

Bottom left: a Dodge WC57 Command Car dating from 1942.



particularly in Europe, and personified by the Beltrung "War and Peace" show.

Accordingly a date was set for such a "test" gathering, an hour's drive outside Moscow. Some vehicles were driven to the site, but the majority were delivered to the meet on low-loaders.

This has particular relevance in Russia where driving any vehicle on typical Russian roads is the equivalent of a starring role in a Mad Max movie and 360° vision is a prerequisite for daily survival in traffic where passing distances are measured in millimetres.

FIRST OUTING

Russian military vehicle collectors have the same issues to face as those involved in the "hobby" elsewhere, including day-job work and family commitments and a truly world financial crisis, which makes everyone seriously consider what they are spending their money on. Not least is the factor that the number of Russian military vehicle collectors and restorers remains a small, albeit steadily increasing band. In the summer of 2011 these collectors were able to have their first summer outing

“Those participating had known each other for many years, Russia and Moscow in particular being a “big village” within which people know each other...”

of which they had been dreaming through the long Russian winter nights - of which there are also many in Russia!

After much pre-planning and the usual “will they, won’t they” concerns as regards how the first meet would be attended by those who promised to support it, the show was finally held in the first week of August 2011 near Ruza in the Moscow suburbs. The first Russian “War Motors” gathering was held as scheduled, the meet at Ruza being effectively the first “War & Peace” type of show to be staged in the Russian Federation.

All was in the event as expected - military vehicles in the woods and travelling round the local dirt tracks, people in military uniform, and tens (rather than hundreds – not quite Beltrung yet!) of military vehicles and motorcycles. Those who participated have known each other for many years, Russia and Moscow in particular being a “big village” within which people know each other in tight circles according to their business or personal interests.

Other newcomers met for the first time at the exhibition, but nevertheless as in all countries, people with common enthusiasms can always find common ground, with discussions on technical minutiae, news of discoveries and restoration plans and the holy grail - of known but as yet unrecovered wrecks - going on long into the bright and sunny summer nights.

August is by tradition disaster month in Russia, and year after year, almost without fail, the country suffers a major tragedy during the month. The sinking of the “Kursk” submarine with all hands lost is perhaps the best known in the West, but everyone expects some bad news during the month as by tradition there is such news in most years. Those at the first Russian “War & Peace” show reminisced that in the same week back in 1943 the Soviet city of Orel was recaptured during the Red Army offensive in the Kursk salient. During the same week in 1945 the Red Army began offensive operations in the Far East against Japan.



The assembled collectors spent much time considering that despite them all being too young to have witnessed the Second World War in which most of the assembled vehicles had participated, the discovery, recovery and restoration of vehicles had given them all a better sense of history - though it should be said that in Russia a sense of history, knowledge of events and national pride is not just the preserve of military enthusiasts, but is deeply ingrained in every man, woman and child in the country - a sense of patriotism the general public at large of some countries simply would not understand.

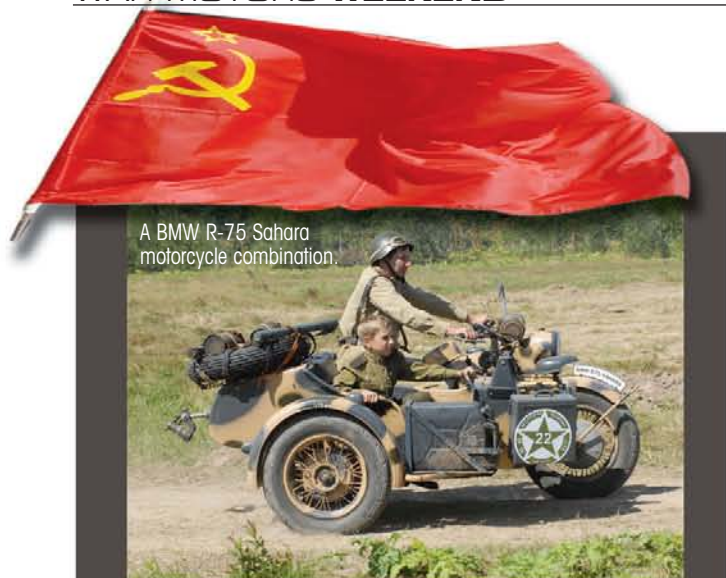
The military vehicles on display at Russia’s first “War Motors” week were an eclectic collection, with a number of relatively rare - particularly in Russia - foreign vehicles from Allied and Axis armies countries complementing the indigenous military vehicles, some of which were themselves particularly rare. As with all such gatherings, there was much

Top right: a Morris Commercial C4 as delivered by Lend-Lease via the Allied Arctic convoys to Arkhangel and Murmansk.

Above right: an ultra-rare ZIS-6 chassis and cab at the beginning of restoration.

Right: the French Laffly S20TL tops a rise.





A BMW R-75 Sahara motorcycle combination.



Several Russian and Allied motorcycles were on show during the week.



Harley Davidson WLA motorcycle, with Russian rider.



discussion as to the wartime service of these vehicles gathered in a field in 2011, and the differing fates which had brought them all together. Many of the vehicles had the usual post-war genealogy of civilian service, gradual abandonment after becoming uneconomical to maintain, merging with the vegetation of storage yards or distant farm fields, followed by miraculous discovery and restoration. Most of the vehicles on display had been restored in Russian workshops, however, several foreign vehicles had been restored abroad and then imported into Russia.

Some of the Russian restorations are quite literally from the chassis up. Such a working project at the show was the ZiS-6, displayed as a bare

chassis and rough cab, but which when restored will become the only standard ZiS-6 6x4 cargo truck in existence. The number of vehicles and wrecks being discovered and restored to better than new condition in the Russian Federation is now very significant.

That such a collection of mainly wartime military vehicles, the service life expectancy of which was very short, could be assembled in a field near Moscow in the summer of 2011 is a credit to all those who participated in what was Russia's first attempt at a "War and Peace" type show. As the saying goes, big trees from small acorns do grow....

Text by Jim Kinnear
Photographs by Andrey Aksenov



Top right: a restored Chevrolet C15TA artillery tractor dating from 1943, a rare vehicle in Europe and even rarer in Russia.

Above right: the perfectly restored German Horch 901 goes for a run round the arena during the show.

Right: the diminutive GAZ-67 has a distinctively utilitarian look when compared to the the German Horch 901.





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VINTAGE DUKW

Shaun Connors, not best known for his interest in things historical, brings the DUKW bang up to date for MMI...



Above & inset: in terms of service history, next to nothing is known about Instow's DUKWs although thanks to a S.N.E.C.M.A. (Société Nationale d'Étude et de Construction de Moteurs d'Aviation) data plate on the vehicle, 12 RN 29 (inset) can be assumed to have spent some time in French military service, having some form of refurbishment in December 1965.

Far right: Connors enjoying a perk of the job...The Navy must be brave letting him take charge of their DUKW!

It is without doubt one of the Royal Navy's best kept (albeit unintentionally...) secrets, but the Service continues to operate a small fleet of vintage DUKWs... Currently these WW2 veterans are touted to remain in active service for anything up to 30 more years, this ensuring they'll all be well-established octogenarians when any well-earned retirement finally comes their way...

The story of the DUKW (or duck as it is perhaps better known) traces back to early 1942, and when one Palmer C. Putnam of the United States Office of Scientific Research & Development (OSRD) was put in charge of a team tasked with developing an idea by

engineer Roger W. Hofheins into an amphibious truck. Already responsible for the Ford GPA amphibious Jeep (or Seep as it became known), this second and far larger project was potentially more of a challenge for OSRD, it calling for a vehicle capable of transporting cargo and troops directly from ship to shore, through rough sea swells and surf.

This new vehicle was also to be capable of negotiating reefs and sand bars, and was to have the same performance on land as the proven truck chassis on which it was to be based for reasons of production simplicity and spares commonality. It is fairly well known that production

DUKWs were based on the ubiquitous GMC CCKW 353-series 2.5-ton 6x6 'Deuce-and-a-Half', 562,750 of which would be built between 1939-1945. However, the initial DUKW pilot model was in fact built on a GMC AFKWX 353 cab-over-engine (COE) chassis, this retaining the standard 7.50 x 20 dual rear tyres that would early in development show themselves to perform very poorly in sand.

The DUKW hull was designed by Sparkman and Stephens of New York and the first examples were built by the Yellow Truck and Coach Division of General Motors Corporation (GMC). The first pilot model was completed in just 38 days, was displayed unofficially

"The DUKW's overall design would go on to become a near text book example of so



on June 2nd 1942, and on June 12th was demonstrated at GMC's proving grounds at Milford, Michigan.

According to the 1946-published (and Confidential/SECRET at the time...) Summary Technical Report Of The National Defense Research Committee (Div 12, Vol 1) Transportation Development an initial order for 2,000 DUKWs was received by GMC on July 1st 1942. Other sources suggest this order was placed in October, but no matter, at this point in time the DUKW had not received final acceptance and was considered little more than an expedient until something better came along... In essence, the Army had yet to

experience the problems associated with landing large numbers of men and supplies ashore and without the benefit of a harbour...

The DUKW's overall design would go on to become a near text book example of something that was right first time around, however, there remains a slim chance the DUKW may just not have arrived when it did, in the form it did, or even at all... Following a summer of modest demonstrations that did little to convince the military that the DUKW could make an important contribution to logistics or tactics, a 'worst possible conditions' demonstration had been arranged for December 6th and 7th 1942.



something that was just right first time around..."



“...ever decreasing numbers of DUKWs now survive, with around 600-700 estimated to be in existence worldwide.”

Above: Instow's DUKWs were a common sight on local roads until around two years ago, when voluntarily (and for health, safety and associated concerns) the decision was taken to take them off the road...

Right & below: 12 RN 27 (Affectionately known at Instow as 'Crispy DUKW'...) is currently undergoing an extensive restoration in-house programme. Here we see the hull in various states of repair (right & below) and the engine compartment (right).



Just days before the demonstration was due Putnam and his engineers were called upon to use two early DUKWs to save the lives of seven Coast Guardsmen grounded in a severe storm and unreachable by all conventional means. It is fanciful to think the Army's mind was changed completely by this single incident, an incident the details of which even found their way to the President... However, the Army's interest was certainly peaked and following the official highly successful demonstration, small batches were ordered...

DUKWs were first used operationally in March 1943 at Noumea in the Pacific, following which they received glowing reports and subsequently widespread acceptance. Production would increase from 4508 during 1943 (up from 325 in 1942), to a peak of 11,316 during 1944 as the DUKW established itself as a major contributor to landings in Africa, Asia, and following a July 1943 European theatre debut in Sicily, during the Normandy D-Day landings. During those landings over 40% of all beach-over supplies were delivered by DUKW...



ated survivors dotted around the world ...”

The number of DUKWs ultimately produced varies by source, but when production concluded in December 1945 chassis number 21234 had rolled off the production line.

Almost inevitably ever decreasing numbers of DUKWs now survive, with many of the 600-700 estimated survivors dotted around the world now aesthetically butchered and earning a living giving tourists sightseeing rides (and probably oblivious to the legacy of these amphibians), a practice that can actually be traced back to Milwaukee in 1946.

Fortunately smallish numbers are cherished by private owners and collectors, and while the DUKW is not as rare as something like the legendary German Tiger tank, a good solid all-original example will still set any prospective owner back >£50,000...

EVOLVING ACRONYMS...

The Royal Navy's DUKWs are all used by 11 ATT Sqn. (11 Amphibious Trials and Training Squadron) Royal Marines located at Instow, north Devon. Perhaps best-known to MMI's readers by its previous acronym of ATTURM (Amphibious Trials and Training Unit Royal Marines), the current Instow facility has origins that trace back to 1942 when Arromanche Camp was established nearby as a

home for the Combined Ops Experimental Establishment (COXE) preparing for the D Day landings.

As COXE devolved, the current site became the home of the post-war created Royal Marines Amphibious Experimental Establishment (AXE) and Fording Trials Branch (FTB) REME. Combining the roles of the former AXE and FTB, on June 1st 1979 the base became ATTURM, a wholly RM command. In September 2005, ATTURM (for numerical sequence...) became the 11 (Amphibious Trials & Training) Squadron Royal Marines, one side-effect of which is an unpronounceable acronym. At the same time, the Squadron was placed under the command of 1 Assault Group Royal Marines who's HQ is in Devonport.

Carrying Royal Navy registrations 12 RN 27 through to 12 RN 30, there are currently four DUKWs at Instow, three in daily use and one under long-term restoration. Numbers in use have fluctuated over time, for example when ATTURM was established in 1979 there were ten DUKWs in use. By 1989 this had reduced to nine, two of those in 'care and preservation' and used only for parades and special events, the remaining seven (those in daily use) in assorted states of disrepair. Around this time the worst five examples were sold off following



reclassification to Group Z vehicles, meaning their up-keep costs became the responsibility of the user unit. To keep the fleet viable, over the next nine-or-so years a number of assorted refurbishments/overhauls would be undertaken by various Army facilities.

To help with an ever-increasing workload at Instow, between 1993-1996 the last two amphibiously capable Alvis Stalwarts were drafted in to assist. However, designed primarily for river crossings, these lacked the necessary seaworthiness and were not as successful as had been hoped. Some earlier consideration had also been given to replacing what by this stage was considered an aging and labour-intensive DUKW fleet with more modern equipment. One vehicle considered was the then under development M113 running gear based Glover (now BAE Systems) Aquatrack. However, at around £165,000 (in the mid-1990s) this proved too expensive an option.

Above & top: production DUKWs were 31 ft long, 8 ft 3 in wide and weighed 19,570 lbs. Power was provided by a GMC 270 cu in. (4.4-litre) six-cylinder in-line petrol engine developing 91.5 hp @ 2,750 rpm. Instow's DUKWs are now all diesel-powered, three by 5.9-litre Cummins units, one (12 RN 29) by a 5.24-litre Bedford unit.



To alleviate the continuing pressures of increasing workload, ultimately a 'new' fifth DUKW was purchased from Hewitt Marine, a now defunct civilian dealer in DUKWs. However, towards the end of the 1990s the fleet was verging on being classed as unserviceable, and with a diesellisation requirement pending to comply with NATO's single fuel policy, its future was in no way secure. Fortunately, it was around this time a request for the adoption of the DUKW fleet by the Royal Navy was accepted, and as technically no longer classed as vehicles but naval boats, their upkeep became the responsibility of the Navy.

With the value of the DUKW fleet perhaps clearer to the Navy than anybody else, sufficient funding was promptly made available for the most ambitious refurbishment/upgrade project yet undertaken. An approximate £150,000 (£225,000 including new diesel engine)

refurbishment contract was awarded to Vosper Thornycroft Marine Services of Dartmouth in 1999.

I visited ATTURM in September 1999 to write a feature on the DUKW fleet for Trucking, and just as that refurbished example had returned to service. At the time the remaining four DUKWs were all scheduled for similar restorations by April 2001, however, when it becomes known that at the time a solid second-hand DUKW would have cost around £25,000, such an approach doesn't appear to have been the most cost-effective...

I returned to the now 11 ATT Sqn. for a DUKW update on a wet and windy October day late in 2011, and while the Naval registration numbers were immediately familiar, none of the four DUKWs currently in service were even owned by the Navy in 1999...



Above: work began (in-house) on 12 RN 27's restoration in June 2007, and to date Instow's fabricator/welder Micky Niblett has spent an estimated 3000 hrs working on a project that essentially costs only materials. Around 75% of the original hull has been replaced as part of the restoration process, and all work should be complete by February/March 2012



Two of the current four were acquired from civilian DUKW dealer and restorer Rex Ward in 2002, the remaining two from Hewitt Marine.

12 RN 29 (from Rex Ward) is powered by a Bedford 330 5.24-litre 6-cylinder diesel coupled to a Bedford four-speed gearbox. The other three examples are all powered by Cummins B-series 5.9-litre 6-cylinder diesels, these coupled to ZF S 5-42 five speed gearboxes. All four retain original GMC two-speed transfer boxes and drive axles.

Keeping a >65 year old fleet of vehicles running is no easy task, but unusually for an organisation of such size and structure..., with its DUKWs the MoD (more specifically Royal Navy) is remarkably sensible.

It essentially allows the staff at Instow the freedom to look after these ageing assets in the best possible way, and without excess bureaucracy... An example here might be the ability to source rare and often made-to-order spare parts direct from specialists such as Rex Ward, and without defaulting to the ludicrous norm of an international competitive tender...

Strict daily and routine maintenance schedules are of course in place, and following every period of use each DUKW is pressure washed, fresh water dipped, has its bilges filled and flushed, all oils drained, and is sprayed with an MoD equivalent of the ever-useful WD-40. Every six months a service and full inspection takes place, and every 12 months a seven- to ten-day in-depth service and strip-down is carried out, however, no matter how rigorous any maintenance/service programme may be, regular immersion in salt water will ultimately take its toll, and as a result of corrosion issues 12 RN 27 is currently undergoing much-needed extensive restoration.

The restoration work is being undertaken in-house, with work beginning



in June 2007, and to date Instow's fabricator/welder Micky Niblett has spent an estimated 3000 hrs working (only when he has no work of higher priority) on what is now affectionately known as Crispy DUKW...

In a project that essentially costs only materials, to date around 75% of 'Crispy's' original hull has been replaced as part of the restoration process. Mechanically the Cummins ZF driveline will remain, as will the original GMC transfer box and axles.

All work on 12 RN 27 should be complete by February/March 2012, and following its return to service it is probable that (subject to an in-depth inspection to determine overall condition) 12 RN 29 will then be withdrawn for a similar restoration. At the completion of the restoration process there is no reason why these restored DUKWs should not be capable of another 30 years of Royal Navy service.

Above & bottom: following every period of use each DUKW is pressure washed, fresh water dipped, has its bilges filled and flushed, all oils drained, and is sprayed with an MoD equivalent of the ever-useful WD-40...

Above left: 12 RN 30 (shown), along with 12 RN 29 had at one time the distinctive cut-out in the superstructure sides that allowed for the transverse carriage of 105 mm guns.

Photography:
Shaun Connors &
Greg Barrott,
Squadron Photographer,
11 (Amphibious Trials
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1 Assault Group
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MARKET PLACE

Part One

We discuss how to get started in military vehicle ownership offering advice along the way

In this two-part article we will be offering some advice aimed at those thinking about getting involved in the hobby and taking a look at a variety of vehicles available to collectors, ranging from cheaper vehicles better suited to those just starting out, to those who maybe have a bigger budget and are looking for an investment opportunity.

Before we talk about the vehicles themselves, in this first part I wanted to discuss some of the practicalities of military vehicle ownership and the

various things you may want to consider before you go out and find your dream vehicle, some of which will be obvious whereas others may be things you hadn't even considered.

While it is true that a great many readers of MMI are already owners of one or more military vehicles and have been involved in the hobby for many years, there are just as many readers out there that don't own one but aspire to own one in the future and look towards MMI for ideas as to how to get started in the hobby and what the

current trends are. As a result I am often asked how to get started and all too often I have to start off by asking a question, namely: "why do you want a military vehicle and what do you want from it?"

It may seem like a simple enough question, but without knowing what someone actually wants from a military vehicle it's incredibly difficult to point them in the right direction and let's face it there's a lot of choice out there if you know where to look, the problem is that personal circumstances may eliminate a great many of them from right from the start!

For example, there are those who just like military vehicles for what they are and simply want what we lovingly refer to as a 'Big Boy's Toy', while others may dream of owning a particular type of vehicle in order to participate in living history and battle re-enactments, and there again there



Top: while a wartime American half-track may seem appealing, it's not really an ideal first vehicle (even if you could afford one in the first place) and there are numerous potential problems in the running of one of these vehicles, especially if you're on a limited budget.

Above: the wartime Jeep is undoubtedly still popular, and there are many to be found for sale and displayed at shows, but there are also many different ways to show your Jeep if you want to stand out from the crowd.

Far right: a Sherman tank is not a viable first vehicle for numerous reasons, and you'll need a hefty bank balance to even consider one!

Right: wartime vehicles in general fetch more money than post-war vehicles. A Bedford MW might cost £8,000 upwards in running, restored condition.

Right: the Daimler Ferret Scout Car is a good starting point if you want an armoured vehicle that's convenient to use and small enough to store, but even these popular vehicles are getting harder to find and prices are rising all the time.

Right: the GMC truck in its various forms is another favourite with collectors and is well supported with spares from a number of sources.

Below: wartime Jeeps are usually to be found at most military vehicle shows and they come in all sorts of colours and guises!



are those who just enjoy playing with the vehicles off-road, and a great many military vehicles are known for their excellent off-road performance.

Then again it may be something as simple as someone wanting to relive their time with the armed forces by owning the same type of vehicle they once worked with in the military, but it's not uncommon for someone to be looking for a military vehicle to perform a particular job such as vehicle recovery or haulage, indeed a

great many well-known firms such as the Newport-based heavy haulage company Wynns began by using ex-military vehicles in their fleets and a great many companies still use ex-military vehicles today.

BUDGET

Whatever the reason for wanting a military vehicle, there will be certain criteria that will ultimately determine what you buy and the available budget

"...a Jeep is no longer a cheap way of getting into the hobby!"



will probably be top of the list. Budget is of course a huge consideration, after all if you only have a couple of thousands of pounds, there's no point in wasting your time looking for a Sherman tank that's likely to fetch a six-figure sum! Likewise if you want to take part in WW2 battle re-enactments an old Land Rover probably won't cut the mustard, regardless of your budget.

Unless you're in the fortunate position of having an unlimited budget you will have to consider your options carefully. While it used to be the case that people started out with a cheap and cheerful Jeep, these days the prices have risen to such an extent that they are now well out of the reach of many first time collectors.

With basket case restoration projects fetching £3,000 plus and good restored wartime examples fetching upwards of £10,000, a Jeep is no longer a cheap way of getting into the hobby!

The much-maligned military Land Rover is often regarded as being the poor relation to the Jeep, but it's a good and relatively inexpensive starting point for those setting out in the hobby, and spares and accessories are plentiful, however, even they have their limitations according to your available budget and the particular choice of model.

True enough you can pick some Land Rovers up for as little as a few hundred pounds, but once you start looking at the later and more specialized models you could be talking about £15,000 or more!



Above: an alternative to the wartime American half-track, and one that is arguably easier to run, is the White Scout Car, however, they're hard to find and much sought after so the retail prices tend to reflect this!



Left: a Leyland DAF 4-tonne truck like these can cost considerably less than a restored Jeep, but they come with their own problems, not least their size so be sure to examine all the implications before buying one.



Left: larger vehicles have their advantages, such as having the ability to be turned into mobile homes for regular show attendance, but you do need somewhere to store larger vehicles, and if you don't have your own space, you may have to rent somewhere, which will impact on how much it costs you to run each year.

Right: although a relative of the WW2 American Dodge Weapons Carrier, the Dodge Command Car is considerably more expensive to buy.



Below left: the Jeep and the Land Rover are two of the most popular light vehicles to be found, but there are many alternatives if you spread your net a little wider, such as this post-war Volkswagen Iltis.

Bottom left: the Land Rover is available in all shapes and sizes and at budgets to suit most pockets, especially if you're willing to buy one that needs a little work doing to it.

“Jeeps, Dodges, Bedfords, Morris-Commercials, GMCs, Austins and the like

Right: the motorcycle combination or solo motorcycle could be a smaller vehicle to consider if storage space is at a premium, but some, like the wartime German motorcycles and motorcycle combinations can sell for far more than some of the larger vehicles!



One thing I have always noticed in the hobby is that as a general rule of thumb anything that is wartime dated will fetch far more than something built post-war, but of course there are always the odd exception.

Popular wartime vehicles like the Jeeps, Dodges, Bedfords, Morris-Commercials, GMCs, Austins and the like all command relatively high prices in the current market, although it has to be said that in comparison to the second hand car market they are quite reasonable, even so you realistically need to have a budget of around £5,000 upwards to even think about getting a wartime vehicle.

Post-war vehicles can be cheaper, but again it will down to vehicle choice but I will discuss this in greater detail next month, however, it can sometimes be the larger vehicles that offer better value for money, or at least on the face of it, but the size of vehicle can create a whole host of potential problems for those new to the hobby or with little experience of larger vehicles.

Maintenance can also be an issue and while some people are lucky enough to be mechanically minded and capable of carrying out the regular maintenance work these vehicles need themselves, others aren't that lucky, in which case you'll have to get someone else to do it, and that could mean you having to deal with a HGV specialist and that can be expensive.

Large vehicles, depending on the particular type, do sometimes have the advantage of being able to be converted into living accommodation should you wish to attend military vehicle shows on a regular basis and that can be an important consideration if you plan on attending lots of shows each year.

They also have the ability to work for a living, but if that's the case you will have to be careful when first registering the vehicle to ensure you have the right taxation class and take out the necessary insurance policy to ensure that you keep within the law when operating for hire or reward.

Your local DVLA office can usually be quite helpful when it comes to registering your vehicle and are usually happy to offer advice. Equally the various military vehicle clubs such as the Military Vehicle Trust (MVT) and Invicta Military Vehicle Preservation Society (IMPS) usually have members who are able to offer advice on these sorts of subjects, drawing on many years of experience.

While bigger vehicles are sometimes cheaper to purchase initially, costs further down the line associated with fuel consumption, routine maintenance, mechanical failures and even tyre (or track)



SIZE MATTERS

It is very tempting when starting out to go for a big vehicle, but a larger vehicle can bring with it a whole heap of problems if you're not suitably prepared. Assuming that you have the correct driving licence to allow you to drive a larger vehicle, or are prepared (and have the money) to invest several thousands of pounds in taking a HGV licence (assuming you want to drive on the road), there are other things to consider such as the necessary storage space, be that indoors or outdoors.

replacement may well be considerably higher than for a smaller, more manageable vehicle, not to mention potential storage costs to add into the equation if you haven't got anywhere to keep it at home.

Talking of tracks, tracked vehicles (also referred to as 'track laying vehicles') are often appealing to first time buyers and do have a certain kudos within the hobby. It's true that some are remarkably cheap to buy in comparison to some smaller vehicles, for instance you can buy an FV432 armoured personnel carrier for less than the cost of a restored Jeep, but there are a whole host of issues waiting to unleash themselves!

If the vehicle is to be used on the road there are implications regarding the appropriate 'track laying' license to allow you to drive on the road, plus the legality of the vehicle itself in terms of size and track type.

much simpler life for those new to the hobby. Even basic things like transporting them back home from wherever you bought them from can be cheaper, and generally driven home or transported using a normal car trailer.

If you're planning on working on the vehicle yourself, you will probably find that in the main your standard car-type tools and workshop equipment will do the job without the need to invest in bigger, heavier duty equipment and storage can be easier too, with most vehicles generally taking up no more room than a family car, with most fitting in a standard.

Smaller vehicles may not appeal to everyone, but sometimes it's a case of having to make do with what you can afford and handle, but that convenience can come at a price, with smaller vehicles often fetching higher prices because they're so sought after and easier to live with.

all command relatively high prices..."

If you have a breakdown or lose a track it could give you a real headache when trying to recover the vehicle, after all you can't just call a normal recovery firm to come and pick you up, it could involve heavy recovery, assuming of course they're able to cope with a tracked vehicle!

If you decide against driving a tracked vehicle on the road to reduce the risk of a breakdown but decide you still want to attend shows you will then have to consider haulage costs, and unless you have your own low-loader or transporter it could be prohibitively expensive to do that on a regular basis and these are all issues to consider if you're working to a tight budget.

Having discussed the pros and cons of larger vehicles, by comparison smaller vehicles potentially offer a

DECISIONS, DECISIONS

As you can see there are a great many things to consider when thinking about buying a military vehicle for the first time. Over the years I've owned all sorts of vehicles from ex-military Land Rovers to Jeeps and various armoured vehicles, including a tracked vehicle, and I have to say that at times the learning curve has been extremely steep! I've made lots of mistakes and will probably continue to make them, but in some ways that's half the fun of owning these vehicles.

If there's one thing I have noticed during the many years I've owned military vehicles, it's that there is always someone out there in the hobby that is prepared to help out when you hit a problem or have a breakdown.



On the whole people involved in the military vehicle fraternity are a friendly, helpful bunch who love nothing more than rolling up their sleeves and getting stuck in when things go wrong, and I've encountered this generosity on many occasions, so don't give up just yet!

If I haven't managed to put you off from buying your first military vehicle with this first feature on the current market place, please read on next month when I'll be taking a look at small selection of the type of vehicles available to today's collector.

I'll be looking at the cheaper end of the market, as well as touching on the higher end of the market for those with deeper pockets, and providing some details of where you might be able to find these vehicles.

Top right: there are many types of Jeeps to be found in the market, but not all of them are from WW2, such as this post-war Israeli Jeep.

Above centre right: the little post-war Auto Union Munga enjoys an enthusiastic following as an alternative to the more expensive Jeep.

Above: the Austin Champ could be an alternative to the Land Rover or Jeep, however, while they were once cheap, they're quickly rising in price.

Far left: if money's no object and you want a vehicle that's an investment as well as a toy, why not consider the WW2 German Kubelwagen?



Darrell Hazelton has just completed the restoration of one of the more unusual Supacat ATMP variants

Darrell, who runs Milbiz, had been looking to buy an example of the Supacat All Terrain Mobile Platform (ATMP) for some time, but the purchase of the vehicle shown here was something of a spur of the moment thing.

As is so often the way, Darrell had originally gone to look at a regular variant that was running and driving, but he was offered a WMIK (Weapon Mount Installation Kit) variant that was in need of some TLC, and the rest they say is history!

The Supacat wasn't running, which initially turned out to be due to the fact that the starter motor had been liberated at some point in the vehicle's life. Additionally the near side centre wheel station had been partially stripped and the wheel missing, which had presumably been done to find a transmission fault.

Further investigation revealed the problem to be the near side front CV joint, which had sheared, inspection of the off side front joint found this to also be damaged and was replaced as part of a complete overhaul of all the hubs. As these are standard Land Rover parts, this wasn't too expensive.

As Darrell and his team methodically worked through the vehicle, and having replaced the starter motor, they discovered that all the electrical relays had also been removed, along with the fuel system primer. These were soon replaced along with batteries and for the first time the Supacat ran, marking a key point in the vehicle's restoration.

Before proceeding further everything was removed from the outside, plus the front floor, radiator and seat box to give access to the front

axle assembly and steering. The rear floor was also removed along with the fuel tank, batteries etc. and the vehicle was thoroughly steam cleaned.

Darrell commented that it's amazing how much crud finds its way under things, especially when you consider these vehicles were not meant to have done much work! Inside it was very messy, partly due to the chain lubrication system, which applies oil constantly to the chain and then gets splattered everywhere, still at least the frame won't rust.

The new batteries we refitted, which on the Supacat are hidden under the rear floor and designed to skin knuckles when putting them in place according to Darrell! New bilge pumps were also fitted front and rear, and while designed for when the vehicle is going through water, are actually of more use when the Supacat fills up with rain water!

In went the fuel tank and the chain guards followed by a general inspection of everything in the area before moving on to the replacement of the steering brake pads, a simple enough job in normal circumstances, but not when the pins are seized. To get these out required the removal of the calipers, which are so tight to the hull a special tool was required to get to the bolts. As a consequence what should have been a 10 minute job turned into 3 hours worth of grief!

Moving to the front saw the replacement of brake lines, cylinders and reservoir, along with new throttle cables, which proved a pain to fit due to the restricted space around the steering column.

The throttle twist-grip required some tweaking to get it to work

SUPACAT WMIK

Right: the Supacat has been fitted with the correct .50 cal heavy machine gun for the overhead ring mount, and the 7.62mm GPMG machine gun for the front mount (far right).



correctly and then the brakes were bled, which (like everything else on the vehicle) wasn't straightforward due to the fact that the routing of the pipe to steering calipers resulted in an air bubble that could not be shifted without the caliper being rotated vertically, which required partial removal, and resulted in another two hours of fun and games!

EXTERIOR RENOVATION

The focus now shifted to the exterior, which saw the WMIK frame being sand blasted and repainted with 2-pack etch primer and a satin NATO Green. Once the paint was dry, replacement anti-slip tape was added across the top, and the reason for this anti-slip tape soon became clear when the vehicle was finished and it was realised that to get to the top gun you have to climb up and over the vehicle, which in wet, muddy boots could be fun!

Having stripped the exterior new seals were sourced for the tailgate aperture and the front and rear ramp doors, along with new lamp units. The exterior had a few 'battle scars', which were repaired and then the whole vehicle treated to several coats of paint.

The next phase was to refit the items that had been refurbished and the new items we had to fabricate, which included front and rear smoke discharger brackets, 7.62 ammo box brackets, spare wheel mounting and rear cage. A new floor and rear engine cover was purchased from Caple ATV, who also supplied most of the new parts and advice when we got stuck.

A new winch was also purchased along with a replacement frame for the front, because these had also been liberated prior to arrival. By this stage the Supacat was still short of two road wheels and these proved difficult to find, which ultimately resulted in a call to Supacat themselves. Supacat turned



Above & below: once the Supacat had been fully restored it was kitted out with the appropriate weapons and various other items of equipment. (Photos courtesy - Joe Cowley)





Far left: various views of the Supacat starting with a photo of it when it first arrived at the Milbiz premises. It's clear to see that Darrell has done a very thorough job of the restoration, with the vehicle being completely stripped down, refurbished and then reassembled. Also shown below are two views of the finished Supacat in all its glory.

out to be very helpful and having parted with a fortune, a pair of new wheels duly arrived, which would enable the restoration to be completed. The now complete set of wheels were blasted, painted and fitted with brand new tyres in readiness for being refitted to the vehicle.

FINISHING TOUCHES

With the frame, racks and wheels now fitted, the Supacat was looking pretty good, but was still lacking firepower. The WMIK variant of the Supacat packed quite a punch and Darrell set about acquiring dummy smoke dischargers, the soft mount and arm for the front GMPG and the .50 cal soft mount for the ring mount on top of the frame.



Early Days

Having sourced and duly purchased a deact .50 cal the time came to fit it, which is when Darrell realised just how heavy they are, especially when you're trying to lift it up to a mount that is 7-foot in the air!

Having fitted the .50 cal, it stood about 15 inches from the top of the ring mount, all of which Darrell commented must have a big impact on the centre of gravity, especially if crossing rough terrain.

A GPMG was now added to the front to complete the main armaments for this gun-toting variant of the Supacat ATMP, but Darrell notes that a couple of M4's as personal weapons are required to finish off the vehicle, which will be fitted either side.

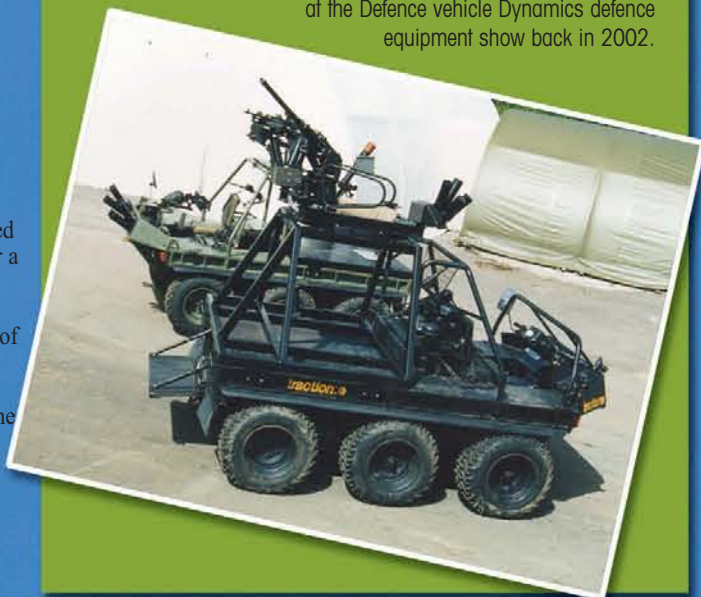
Having added a few more bits of kit it was time for the Supacat's first outing and for that Darrell chose to take it to a local show at the Swindon & Cricklade Railway, who were holding their annual 'War on the Line' weekend in mid September.

The Supacat took pride of place at the entrance to the show and received a lot of interest, and with only a small number of these vehicles around, it was probably the rarest vehicle to be seen by visitors to the show.

According to Darrell the driving experience is certainly different, and once you get use to the sensitive steering, making sure you make smooth inputs to prevent it lurching from side to side, it's actually quite good fun to drive. He also commented that the lack of suspension makes for a bumpy ride at slower speeds and results in a resonance building up to around 20mph, saying that for those of a portly nature, it can result in body parts bouncing that weren't intended to! Having spent around £9,000 on the refurbishment it wasn't cheap, but it was worth it.

For further details you can give Darrell a call on Tel: 01793 879831 or check out the Milbiz website at: www.milbiz.co.uk

Supacat had clearly been working on a WMIK-style weapon mount for their All Terrain Mobile Platform for some time. This early prototype, which sports a comparatively rudimentary roll cage/weapon mount was photographed on the Supacat stand at the Defence vehicle Dynamics defence equipment show back in 2002.



History & Private Ownership

Not much is known of the history of the WMIK Supacat ATMP, and although Darrell has enquired with Supacat and Ricardo (who it's believed did the conversion work for the weapon mount/roll cage), as to who may have used the vehicle, sadly neither could help.

Anecdotal evidence would suggest these were trial vehicles for a contract that never happened, and while they were certainly used by various units within the British Army, albeit in small numbers, we can only surmise who they might have been, with my guess being the Royal Marines and Air Mobile Units.

Given the high centre of gravity, especially with a .50 cal HMG mounted on the ring mount, it's fairly safe to assume that these Supacats weren't the most stable vehicles when operating off-road over rough terrain and interestingly, one of the early examples of the WMIK Supacat that came through Witham Specialist Vehicles, sported what looked to be weights bolted to the two centre wheels, which may have been an attempt to lower the centre of gravity without affecting the steering ability of the vehicle.

Of course if you can help out with further information on the use of these Supacat's we would love to hear from you via the usual channels.

Bottom left: I first encountered the Supacat ATMP WMIK at Witham Specialist Vehicles a couple of years ago. Note the unusual 'wheel weights' on the centre wheel, possibly an effort to counter the weight of the top hamper?

Below: a small number of the WMIK variant of the Supacat ATMP have passed through Witham Specialist Vehicles over the last twelve months, including a few in their regular MoD Tender Sales.



Exercise PASHTUN DAW

Geoff Fletcher recently visited troops exercising on Salisbury Plain in advance of deployment to Afghanistan



WN

Jackal MWMIK is now a familiar sight around Salisbury Plain. The latest versions incorporate an improved cab that offers greater protection to the driver.



Husky is the Medium Protected Tactical Support Vehicle. 260 of these have now been delivered to the British Army and a further contract for 89 has recently been placed. (Courtesy Andy Brend)

Exercise Pashtun Dawn was the final pre-deployment exercise for nearly 4,000 British troops who had honed their skills over the previous four weeks to prepare them to become Task Force Helmand for Operation "Herrick 15" in Afghanistan.

The soldiers, led by 20th Armoured Brigade, practiced operations to support and train the Afghan army and police, to which transition of responsibility for the provision of security in parts of Helmand province began in July.

Headquarters 20th Armoured Brigade is based in Paderborn, Germany, and is supported for Operation Herrick 15 by elements of 1 UK Armoured Division, 19 Light Brigade, the Royal Navy, and the Royal Air Force. It is now working in Afghanistan with stabilization experts from the Foreign and Commonwealth Office and the Department for International Development. As Task Force Helmand, it will operate as part of the NATO-led International Security Assistance Force (ISAF).

Exercise Pashtun Dawn was the culmination of more than a year of preparation for their role as Task Force Helmand taking over from 3 Commando Brigade in October 2011. The exercising troops were supported by more than 2000 "enabling troops" and civilian role players, around 350 training fleet vehicles represented those they used in Helmand including helicopter and fast air assets from the three services. In addition, a number of "Afghan Villages" and training complexes, purpose-built on Salisbury Plain to enhance realism, were being used for the first time. This included the "Afghan Village" complex



Above: Warthog is the British Army's new All-Terrain Tracked Carrier and will be operated by the Queen's Royal Hussars who are normally based in Athlone Barracks, Sennelager. It was developed by Singapore Technologies Kinetics Ltd and modified by Thales to meet British Army requirements.

Below: Warrior in TES (H) form arrives in a cloud of dust at the outskirts of the simulated Afghan village. The new Minister of Defence recently announced an award of a £1Bn contract to Lockheed for an upgrade of Warrior.



Right: both British and simulated Afghan National Army (ANA) Troops deploy from a Chinook on their way to the Afghan village. The gentleman in white robes is a civilian interpreter. (Courtesy Andy Brend)

Below: Ridgback 2 Medium Protected Urban Patrol Vehicle with a remotely controlled weapon station. It is more agile than Mastiff and better for moving around the tight lanes within Afghan villages. (Courtesy Andy Brend)

Barden's Clump, the venue for the Press Demonstration, completed recently at a cost of £600,000.

The Press Demonstration consisted of a number of phases to simulate some of the operations carried out on Operation Herrick. The first phase was a deployment of a number of reconnaissance assets including

CVR (T) Scimitar and Warrior in full Theatre Entry Standard (Herrick) (TES (H)) form (see full article elsewhere in this issue).

It is worth noting that in theatre the reconnaissance regiment will be using the recently acquired Scimitar 2 family of vehicles. Acquired as an Urgent Operational Requirement (UOR) at a

cost of £30M the Scimitar 2 vehicles build on a number of upgrades that have previously been made to the CVR(T), which addressed the problems experienced while operating in the harsh Afghan environment. These previous upgrades included improved power output, new gearboxes and transmissions, air conditioning, improved communications, air filters and night vision systems. Additionally the Scimitar 2 vehicles have been re-hulled with a version of the Spartan hull to give better mine-blast protection for troops, improved armour for enhanced resistance to blasts and ballistics, as well as new mine-blast protection seating in every position in every variant. Other enhancements include repositioned foot controls and a revamped fuel system.

After the village and its surroundings had been checked, a patrol was deployed by Chinook helicopter consisting of troops from both the British and Afghan National Army (ANA) – simulated by Gurkhas accompanied by a civilian interpreter. The patrol approached the village and secured the entrance track and checked it for Improvised Explosive Devices (IED)s. Next an officer, a member of the ANA and an interpreter discussed with a member of the Afghan civil



A Mastiff 2 Medium Protected Transport Vehicle stands outside the Afghan village. Mastiff 3 is now in service in Afghanistan.



Wolfhound is now used in various support roles including carrying Military Working Dogs, EOD support and towing the 105mm Light Gun. (Courtesy Andy Brend)





police the possibility of entering the village for a 'shura', or consultation, between the security forces and the village elders. As is normal in such situations hospitality was on offer and food was served.

Another phase demonstrated the ability of an Explosive Ordnance Disposal team to deploy a small

remotely controlled vehicle (Dragon Runner) to detonate safely an IED inside the village.

Other vehicles on display included Warthog – the Army's new all-terrain vehicle, which has replaced the Viking in Afghanistan. This will be the second full tour carried out using the Warthog Personnel Carrier, which is supported

by Repair & Recovery, Command and Ambulance variants. The Warthogs will be operated by the Queen's Royal Hussars, who are normally based in Athlone Barracks, Sennelager.

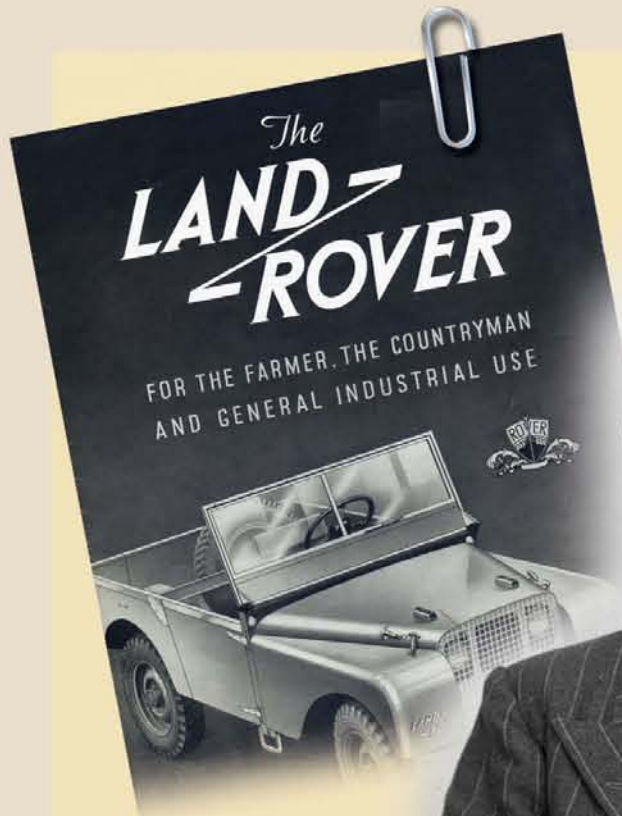
We all hope that 20 Armoured Brigade and 19 Light Brigade will have a successful and safe tour of duty in Afghanistan.

Below: Scimitar 2 has now entered service in Afghanistan. The new vehicle is so similar to its predecessor that no special crew training was thought necessary. (Courtesy BAE Systems)

Scimitar '1', as it might now be called, on watch near a simulated Afghan village on Salisbury Plain.

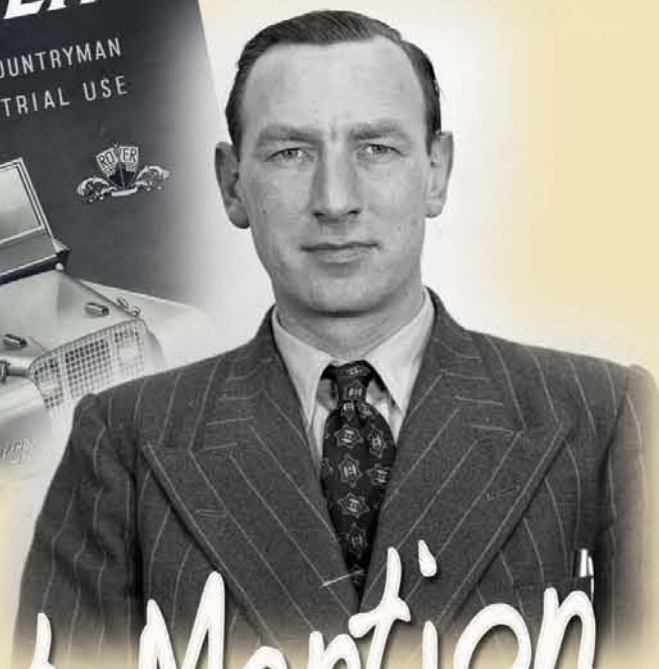


An Oshkosh 1070F Tractor pulling a Broshuis 45 Tonne Improved Mobility Trailer carrying a Warrior Armoured Repair and Recovery Vehicle in Theatre Entry Standard (TES) form. (Courtesy Andy Brend)



Left: the first sales brochure in 1948 claimed that the Land Rover was "for the farmer, the countryman, and general industrial use".

Below: Arthur Goddard, c1953 Recollections from Arthur Goddard are changing our perception of the Land Rover's early days. (BMIHT)



Don't Mention the War

James Taylor examines the early history of the Land Rover in military service

Below: this was one of the first 80-inch Land Rovers to be delivered to the Royal Air Force, back in 1950. (Garth Teagle)



You'd have been hard-pressed to discover that the Land Rover was anything other than a civilian vehicle in its early days, but recent evidence confirms that its military potential was always in Rover's minds.

For the first eight years or so of the Land Rover's existence, you could have been forgiven for assuming that the vehicle was used only in agriculture and light industry unless you'd actually seen one in military colours. Its military applications were simply not mentioned in sales catalogues and promotional material before the middle of the 1950s, when a somewhat selective list of military users first appeared.

The date may be no coincidence – the Land Rover became the standard light 4x4 in the British Army during 1956 – but there was no mention whatsoever of military applications before then. Old habits of not mentioning military contracts, learned during the Second World War, seem to have died hard.

All this has contributed to the traditional and rather cosy belief that the Land Rover was intended as a purely civilian vehicle, and only became a military vehicle when its virtues became apparent during the delays in the Champ project, but it's simply inconceivable that Rover would have been blind to the Land Rover's military potential when it announced its new product in 1948.

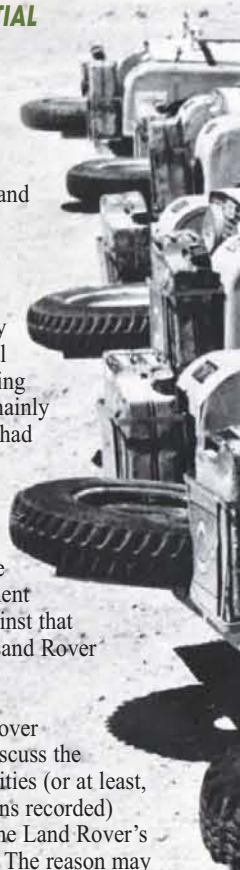
Arthur Goddard, who was appointed engineer in charge of the Land Rover project in 1947, was absolutely convinced that military sales were in the mind of the vehicle's creator, Maurice Wilks, from the very beginning and the first military contract for Land Rovers helped pay for the development costs!

Arthur left Rover in 1956, by which time he had become Assistant Chief Engineer, and after a career with Lucas emigrated to Australia and disappeared off the radar. It was only when an Australian enthusiast discovered who he was that Arthur was able to make his valuable input to our understanding of Land Rover history.

MILITARY POTENTIAL

By the time Maurice Wilks had his bright idea of building a simple Jeep-like vehicle with Rover mechanical elements and selling it to farmers, Rover already had a strong relationship with the British military. The company had worked on several military contracts during the 1939-1945 war (mainly for the Air Ministry), had been responsible for development of the Meteor tank engine since 1943, and was put in charge of future tank engine development in 1946, so it was against that background that the Land Rover was conceived.

Even so, it's quite remarkable that the Rover Board did not even discuss the military sales possibilities (or at least, had no such discussions recorded) during the period of the Land Rover's development in 1947. The reason may be that Rover believed they had no chance of selling any to the British military. Through their close links with the Ministry of Supply, they would have known of the plans for a "British Jeep". Their motor industry contacts would have revealed that Nuffield were developing it, and they would certainly have seen no point in trying to produce





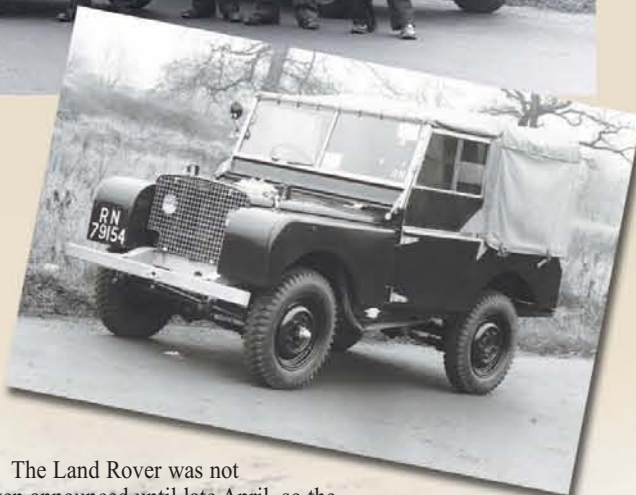
The Ministry of Supply took its first batch of 20 Land Rovers in December 1948. Here they are about to leave the Solihull factory. (BMIHT)

a competitor vehicle – not least because Nuffield's resources far exceeded those of Rover. As a result, they made their plans around the civilian sales of the Land Rover.

However, if British military sales were off-limits, overseas military sales were not. The Land Rover had been specifically designed to attract overseas sales and, as a result, to qualify Rover for allocations of the sheet steel that

the government threatened to withhold from manufacturers who did not build for export. So even though the Land Rover's military potential was played down in the early days to such an extent that it seemed not to exist, it was always there in the background.

The records of the Rover Board meetings confirm it, if indirectly. In March 1948, when the Land Rover was still secret and before any production-standard vehicles had been completed, Rover received an enquiry about it from the Indian Army.



The Land Rover was not even announced until late April, so the only way the Indian Army could have known about it was if somebody at Rover had briefed them! As India was newly independent and was looking to equip its own armed forces, the chance was too good to miss. Quite clearly, then, military Land Rover sales were in the mind of somebody senior at Rover.

Above: this was one of the earliest deliveries to the Royal Navy, and was pictured in February 1949. (BMIHT)

Below: a contract that nobody talks about is the one for Iraq dating from around 1952. (BMIHT)





Above: the Land Rovers for the German BGS again had steel bodies, this time distinguished by their high sides and the map box on the bonnet.



Left: the Land Rovers built under licence by Minerva for the Belgian armed forces had steel bodies with a unique front wing design.



Above: although the Rolls-Royce-engined "81-inch" models were built for test purposes, two of them were put to further use as review vehicles. (Dunsfold Collection)

For whatever reason, no Indian Army contract materialised, and when the Land Rover was launched at Amsterdam, the display vehicle was equipped as a mobile welder, which was entirely in line with its civilian role. Over the next couple of months, promotional activities in the UK saw it at agricultural shows where its advantages were demonstrated to the farming community. But out of the limelight, the military possibilities were being pursued.

FVRDE INTEREST

That June, line production was just about to begin when two pre-production examples found their way to FVRDE at Chertsey. Were they requested, or did Rover invite FVRDE to take a look? We don't really know, but we do know from an FVRDE bulletin of the time that there was "the

possibility of a number of these vehicles being used by the Services as an interim measure." It would be interim because they were expecting deliveries of Champs – the Nuffield "British Jeep" – but there were already delays and the first Champs would not arrive until 1952.

It looks as if FVRDE also evaluated a third model during 1948 – one of the Tickford-bodied Station Wagons that entered production in October. Meanwhile, those two pre-production models had impressed the military enough to produce an order for 20 more, for delivery at the end of the year. The MoS wanted them painted Deep Bronze Green, which was the standard colour for home-based army vehicles at the time. Rover complied, replacing the light green that was then their only offering.

In May 1949, a further MoS contract called for 1878 Land Rovers, and deliveries quickly followed. The monthly deliveries equated to 25% of Land Rover production at that stage, enough for its makers to standardise the military's favoured Deep Bronze





Green for all civilian models as well. Soon afterwards, 33 Land Rovers from that large batch were earmarked as test vehicles for the 2.8-litre Rolls-Royce B40 engine intended for the Champ. When the vehicles were converted, the MoS order was extended again to replace them.

So, civilian vehicle or not, Rover had lost no time in gaining the attention of potential military customers for their lightweight 4x4. Military sales became important from a very early stage, and so it was feedback from military users, which played a large part in driving development. The chances are that the switch to a bigger 2-litre engine in 1951 was prompted by military demands for extra torque.

Contacts with the British military remained strong, and Rover demonstrated every intention of maintaining them. In May or June 1950, the MoS asked Rover to tender for construction of the planned 15,000 Champs. Rover did so willingly, although the contract was awarded elsewhere.

OVERSEAS INTEREST

Just a few months after the start of that major delivery to the MoS, Rover fielded another overseas enquiry about Land Rovers. By November 1949, negotiations were under way with Automobiles Talbot about licence-building Land Rovers in France for the French military. The French wanted to call the resulting vehicle a Land-Talbot, but negotiations came to nothing and the French contract eventually went to Hotchkiss, who built a lightly modified Willys Jeep.

By May 1951, it was the Belgians who were interested in licence-building Land Rovers for their military and gendarmerie, and during 1952 assembly began at the Minerva factory in Mortsel. These vehicles were very different from their British equivalents, with bodies made of steel rather than aluminium alloy, differently shaped front wings, and their own electrical system. Arthur Goddard was impressed by the simplified Belgian wing design, but his thoughts of standardising it on British-built vehicles were swiftly suppressed.

It was also in 1952 that the paramilitary Bundesgrenzschutz (Federal Border Guard) in West Germany invited tenders for a 4x4 border patrol vehicle. Tempo of Hamburg secured the contract by offering modified Land Rovers. These, too, had special locally-made steel bodies, although they were very different from the Belgian vehicles. Deliveries began early in 1953. Round about the same time, Land Rovers were also delivered to the military forces of Iraq, although information about this is scarce beyond a well-known picture.

The British military clearly liked what they were getting and orders continued with another 400 for the Army in 1950, 200 more with the new 2-litre engine, and several smaller orders for the RAF and Royal Navy. We know that Land Rovers also demonstrated their worth in Korea after 1950, but by then, the most important piece of feedback that had reached Rover from the military was that the vehicle was too small.

They could not get enough soldiers into it, and the only way forward was to make it bigger. Rover added six

inches to the wheelbase and as early as July 1951 built a special Army Staff Car prototype on this longer chassis to see if they could widen the Land Rover's military appeal.

Even with those extra six inches, the Army Staff Car was incredibly cramped inside, and it remained a one-off. The longer 86-inch wheelbase did go into production, however, in mid-1953. With an extra nine inches of body length and three more inches of rear overhang, the military could cram in two more soldiers, somewhat uncomfortably. Military Land Rover sales went on increasing, and the civilian customers certainly didn't complain about the extra 25% load capacity in the new 86-inch models.

By now, the Land Rover's military appeal was assured and although Rover still saw themselves as car manufacturers, the fact was that the Land Rover was now their primary product.

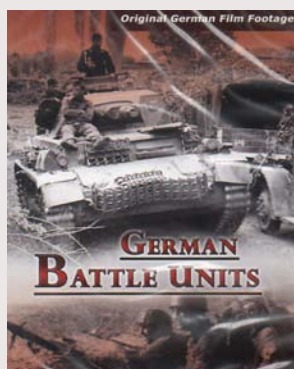
Above: an illustration showing the extra loadspace in the 86-inch wheelbase Series 1. The extra space gained was nine inches, which allowed the military to somehow squeeze two more soldiers in!

Opposite bottom left: as soon as there was a chance of six more inches of chassis length to play with, the Land Rover engineers built a prototype Army Staff Car, but it was still too small. (BMIHT)

Below: there are a number of early Series 1 Land Rovers in preservation, but surprisingly few of them are ex-military! Here we see a Military Police soft top on display at the annual Duxford Show.



German Battle Units



This new DVD from Pen & Sword looks at the various German Battle Units of the Second World War. The 55 minute duration black & white documentary film has an English commentary and features a variety of German vehicles and equipment filmed in various theatres of operation throughout the war, with various bonus features and photo galleries included. The DVD is available through Pen & Sword and retails at £14.99 for further details check out the website below: www.pen-and-sword.co.uk

German Tank Wars



With over 60 minutes of rare footage of various WW2 German tanks, including the famous Panther, Tiger and King Tiger, this new film from Pen & Sword is bound to appeal to those with a fascination for wartime German armour. The film includes a number of bonus films and galleries, making this film essential viewing. The DVD is available through Pen & Sword and retails at £14.99 for further details check out the website below: www.pen-and-sword.co.uk



More Topical Military Vehicle Features

Once again the latest issue of Militar Fahrzeug is crammed with an interesting series of articles. In this issue you'll find items on the newly restored Panzer IV that appeared at the 2011 War & Peace Show, the 104th Panzerbataillon Leopard MBTs, the new ambulance variant of the Mowag Eagle IV, British mobile bridging systems, the Soviet T-27 Tankette, a farewell to Dutch armour and US Armour in Vietnam. An assortment of equally fascinating shorter items rounds off yet another great issue that maintains the superb quality of Tankograd's Militar Fahrzeug title.

Title: Militar Fahrzeug issue number 1/2012

By: Jochen Vollert

ISBN: N/A

Price: £9.99

Format: A4 Softback

Available From:
Bookworld Wholesale Ltd.
www.bookworldws.co.uk

Modern Danish Battle Group

Title: Missions & Manoeuvres No.7024 - DANCON - ISAF

By: Carl Schulze

ISBN: N/A

Price: £13.99

Format: A4 Softback

Available From:
Bookworld Wholesale Ltd.
www.bookworldws.co.uk

The latest title in the Tankograd Missions & Manoeuvres series, is this superb 64-page book looking at various military vehicles serving with the Danish ISAF contingent in Afghanistan. A wide variety of vehicles are covered in the book, from light softskin vehicles such as the G-Wagen, through the various up-armoured trucks and the armoured vehicles up to the MBTs, all of which have been captured with excellent photographs. As usual German and English text is provided, which includes extensive captions. All in all another great book from Tankograd.



American Cold War Camouflage Schemes

Title: Tankograd American Special No.3017

By: Hans Bernd Glanz & Markus Bach

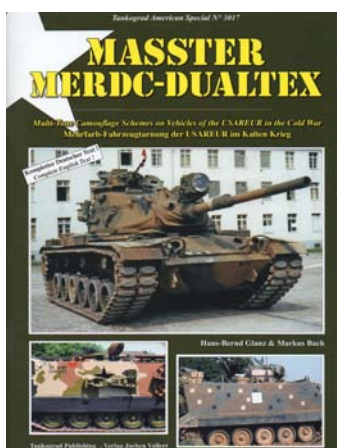
ISBN: N/A

Price: £13.99

Format: A4 Softback

Available From:
Bookworld Wholesale Ltd.
www.bookworldws.co.uk

This new title in the American Special series looks at the colours and camouflage schemes used on American vehicles serving with the USAREUR in the Cold War period. A great many vehicles are covered within the book, from softskin light utility vehicles and trucks to armoured personnel carriers and main battle tanks, with some unusual and interesting camouflage schemes covered. Colour references are provided as a further aid to the reader and all in all the combination of a fascinating subject and superb photos make this book well worth a look.



East German Weapons & Equipment

Title: Tankograd Publishing NVA issue 04

By: Various Authors

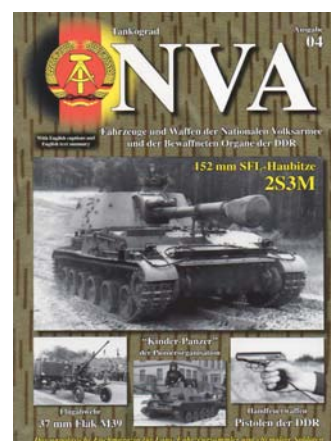
ISBN: N/A

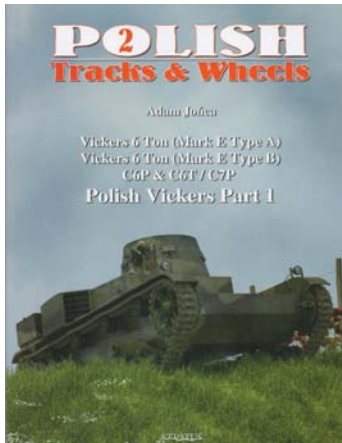
Price: £9.99

Format: A4 Softback

Available From:
Bookworld Wholesale Ltd.
www.bookworldws.co.uk

This new issue in Tankograd's NVA series of books of the weapons and equipment of the East German Army contains another interesting collection of items. In this 32-page issue there are items on the 2S3M 152mm self-propelled howitzer, the 37mm M39 Flak gun, East German hand pistols, the ATS 59 tracked prime mover, the M 20 Pobeda passenger car, and a remarkable item on 'Kinderpanzers' or Children's Tanks, 1/3 scale models used by the young cadets of the NVA. Another fascinating issue.





Rare Wartime Polish Military Vehicles

I think it's fair to say that Polish vehicles get scant coverage compared to some subjects, but this superb 88-page book from MMP, the second in a series on Polish vehicles, seeks to redress that imbalance. The book brings together a stunning collection of period black & white photos, 1/72 and 1/35 scale line drawings and superb colour illustrations throughout that will excite the model maker especially. The Vickers 6-ton Mark E types A&B, C6P, C6T and C7P are covered in the book. Overall a terrific, beautifully-produced, value-for-money publication.

Title: Polish Tracks & Wheels

By: Adam Jonca

ISBN: 9788389450777

Price: £13.99

Format: A4 Softback

Available From:
Mushroom Model Pubs.
www.mmpbooks.biz

Wartime German Maultier Trucks

Title: Nuts & Bolts Volume 28 - Gleisketten-LWS "Maultier"

By: Joachim Baschin

ISBN: N/A

Price: £20.75

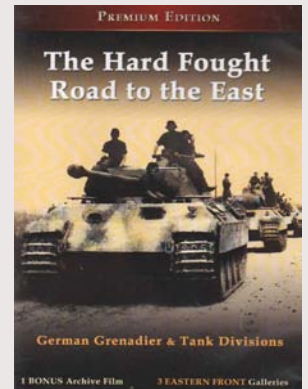
Format: A4 Softback

Available From:
Nuts & Bolts Verlag GbR.
www.nuts-bolts.de

The latest book in the Nuts & Bolts series looks at the WW2 German 'Maultier' truck. Essentially a half-track truck using a number of different trucks as the basis for the vehicles, the Maultier was conceived to combat poor ground conditions on the battlefield. As usual there's a superb blend of archive photos, scale line drawings, colour illustrations and detailed colour photos of preserved examples, all of which combine to give an in-depth insight into these fascinating and curious vehicles. The books are also available in the UK through Historex Agents.



The Hard Fought Road



This 60 minute black & white DVD from Pen & Sword looks at the German Grenadier and Tank Divisions during their preparations for the forthcoming actions during the Second World War. The film features a cross section of the units of the Wehrmacht during the 1939 and 1945 period and includes a number of bonus features and galleries. The DVD retails at £14.99 in the UK, for further details check out the website below:
www.pen-and-sword.co.uk



Fascinating wartime Technical Manual

The latest book in the Technical Manual series from Tankograd covers the well-known American M8 Greyhound Light Armoured Car and the similar M20 Armoured Utility Car. The book follows the familiar format for the series of taking various excerpts from the official technical manuals produced for the vehicles to show various elements of the design, and then supplementing them with a selection of black & white archive photos and a small selection of colour photos of preserved examples. The end result is that you get a good overview of the vehicles in question.

Title: Tankograd Technical Manual Series No. 6021

By: Michael Franz

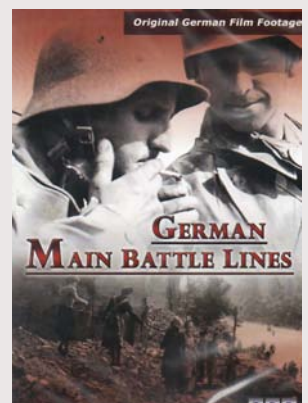
ISBN: N/A

Price: £9.99

Format: A4 Softback

Available From:
Bookworld Wholesale Ltd.
www.bookworldws.co.uk

German Main Battle Lines



Our final DVD offering from Pen & Sword this month is a documentary featuring archive black & white footage that traces some of the highlights of the war from the German military perspective, looking at the Allied bombing of the German mainland and the various attacks. As with the other titles various bonus galleries are included on the DVD. The DVD retails at £14.99 for further details check out the website below:
www.pen-and-sword.co.uk

European Military Capabilities

Title: Tankograd Technical Manual Series No. 6022

By: Michael Franz

ISBN: N/A

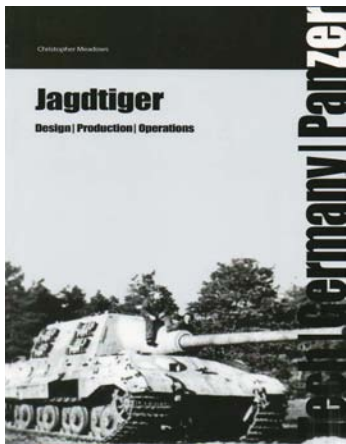
Price: £9.99

Format: A4 Softback

Available From:
Bookworld Wholesale Ltd.
www.bookworldws.co.uk

The second book in the Technical Manual series from Tankograd this month covers the slightly unusual, but nevertheless welcome subject of the American WW2 Caterpillar D7 dozer. The D7 saw widespread use during the Second World War on all battle fronts and in various guises, most of which are covered in this fascinating book, including the armoured cab variant developed to protect the operators who were vulnerable to enemy fire. It's a slightly unusual subject, but fascinating all the same and at just £9.99 it's great value-for-money.





Detailed reference work on the German Jagdtiger

This stunning book from Crecy covers the design, development and subsequent operational use of the mighty German wartime Jagdtiger tank destroyer. Containing a huge number of black & white archive photographs together with a collection of maps, black & white line drawings and a number of superb colour illustrations that show a number of the camouflage schemes to be adopted on the Jagdtiger throughout the war, the book has been produced as a 386-page, hardback book with slip cover, slightly smaller than standard A4 format. Some of the wartime images contained within the book may

well have been seen before, and some of them are a little grainy, but given that they're wartime photos it's hardly surprising and does nothing to diminish the impact of this superb reference work. The first third of the book is dedicated to the design and development of the Jagdtiger, describing numerous aspects of the vehicle, including the engine and transmission and armament. The remainder of the book deals with the operational use of the vehicle and if the Jagdtiger is of particular interest to you then you really need to check out this title from Crecy Publishing.

Title: Jagdtiger

By: Christopher Meadows

ISBN: 978 91 85657 01 8

Price: £49.00

Format: Hardback

Available From:
Crecy Publishing Ltd.
www.crecy.co.uk

World War Two Tanks of the Finnish Winter War

Title: Tanks In The Winter War

By: Maksym Kolomyjec

ISBN: 978 91 975895 2 9

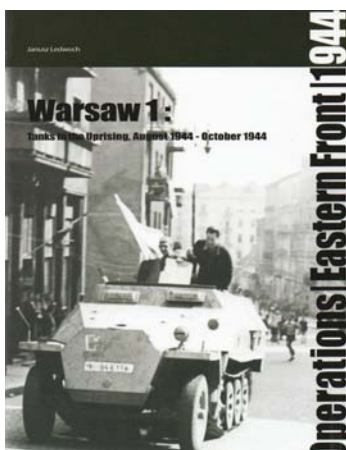
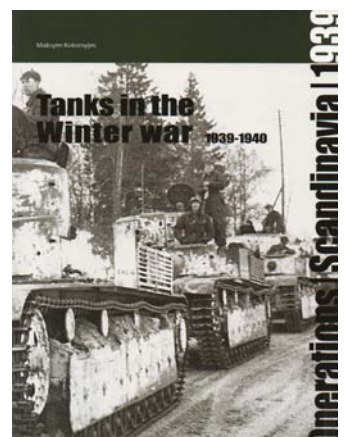
Price: £25.99

Format: Hardback

Available From:
Crecy Publishing Ltd.
www.crecy.co.uk

Unlike many previous books covering the Finnish Winter War, this second book from Crecy Publishing deals specifically with the various armoured vehicles and units involved. A large proportion of the book is devoted to the Soviet tanks, with over 150 period black & white photographs and more than 40 superb colour illustrations used to describe the many tanks and vehicles involved. In addition to coverage of the major types used during the war, the book also includes additional details of some of the lesser known vehicles such

as the radio-controlled flamethrower tanks, mine rollers and even ambulance tanks, with additional black & white line drawings backing up the written and photographic information on each. For anyone with an interest in this period of history, be it from a historic perspective or as a military model maker, this book offers a relatively concise, but detailed account of the operations, with a high degree of visual imagery that will no doubt benefit the model maker in particular. Overall an excellent book.



Eastern Front Operations - 1944 Warsaw Uprising

This is the first of two books from Crecy Publishing this month that cover the Warsaw Uprising of 1944. The book is produced in the familiar hardback format, slightly smaller than A4 in size with a separate slip cover. The beautifully produced 300-page book is packed with a huge number of black & white archive photographs, together with maps and a number of colour illustrations depicting a selection of the German vehicles involved in the uprising, together with a number of the makeshift vehicles constructed by the defending Polish forces. Additional sections

cover a number of key vehicles, providing specifications and a brief history of each, and various tables detailing the units involved. As a book it covers a number of bases, appealing as it does to the historian seeking to learn more about the Warsaw Uprising, while at the same time the vehicle content in the book make it of interest to vehicle enthusiasts. Likewise it will no doubt appeal to model makers who may wish to replicate some of the actions in miniature, and therefore I would expect this to be a very popular book, regardless of the reader's particular interest.

Title: Warsaw I

By: Janusz Ledwoch

ISBN: 978 91 975895 3 6

Price: £29.00

Format: Hardback

Available From:
Crecy Publishing Ltd.
www.crecy.co.uk

4th SS Panzer Corps versus the 1st Belorussian Front

Title: Warsaw II

By: Norbert Bacyk

ISBN: 978 91 975895 4 3

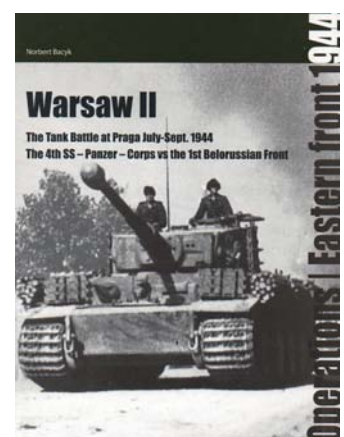
Price: £25.99

Format: Hardback

Available From:
Crecy Publishing Ltd.
www.crecy.co.uk

The epic tank battle that took place at Praga on the Belorussian Front on the outskirts of Warsaw between the Soviet and German forces is one that is still talked about today and this latest book from Crecy takes a detailed look at the units, tanks and equipment involved in this historical action. The 256-page book features numerous black & white archive photographs taken during the fighting, covering a great many of the tanks and vehicles involved as well as some more unusual items such as the German

armoured trains used to such good effect during the fighting. The colour maps, separate appendix on the various tanks and vehicles involved on both sides, plus the excellent colour illustrations all combine to give a detailed and highly visual account of the events at Praga in 1944. This is a quality book, well printed and produced, with masses of information packed between the covers and as such will appeal to the historian, vehicle enthusiast and military model maker. The book's available through Crecy Publishing.





Armoured Reconnaissance Units of Waffen SS on the Eastern Front

Our final offering from Crecy Publishing this month is this title looking at the SS Panzer Aufklärungs Abteilung 11 Division "Nordland" armoured reconnaissance unit during World War Two. The 368-page hardback book is less of a reference work than the other titles featured this month, and while it does include sections that provide detailed information on a number of the vehicles used by the unit, including a section of colour illustrations, this title is more of a written account of the Waffen SS Panzer Aufklärungs Abteilung 11 "Nordland" and their engagements on the

Eastern Front during the late part of the war. The book is actually based on a number of diary extracts and records with portions of original manuscripts written by the men serving on the Eastern Front. While there are fewer archive photographs contained within the book, those that are there feature a number of vehicles, as well as the men themselves and various key figures from the unit. There's an awful lot of information packed between the covers of this book that, like the rest of the Crecy titles, is well-produced and laid out. All in all a great book on the subject.

Title: SS Panzer 'Nordland'

By: Herbert Poller

ISBN: 978 91 975895 5 0

Price: £38.99

Format: Hardback

Available From:
Crecy Publishing Ltd.
www.crecy.co.uk

The M113 in Bundeswehr Service Part 3

Title: Tankograd M113 Pt.3

By: Clemens Niesner
& Peter Blume

ISBN: N/A

Price: £13.99

Format: A4 Softback

Available From:
Bookworld Wholesale Ltd.
www.bookworldws.co.uk

Continuing the epic tale of the M113 Armoured Personnel Carrier and its many derivatives in service with the modern German Bundeswehr with a third volume, authors Clemens Niesner and Peter Blume look at a number of specialist variants based around the M113 APC. The 64-page book follows the familiar format of using colour and black & white photographs, line drawings and extensive captions to describe the various vehicles. The text is, as usual for Tankograd publications, provided in both German and English and while these books are clearly aimed at the vehicle enthusiast,

they also hold a great appeal to military model makers that may be seeking detailed reference material for their model making projects. Included in this issue are details of the Green Archer Mortar & Artillery Location Radar Vehicle, the Artillery Observation Post vehicle, M113 ABRA/RATAC Radar Carrier, Artillery Fire Control Vehicle, Artillery Computer Network Carrier and finally the M113 Flash Ranging Vehicle. It's a pretty eclectic mix of vehicles, but will no doubt prove fascinating to the reader, and at £13.99 these books are great value-for-money.



The M113 in Bundeswehr Service Part 4

The final Tankograd book this month also covers the M113 Armoured Personnel Carrier in service with the modern German Bundeswehr, however, this fourth volume strays slightly further away from the pure M113 vehicles, looking as it does at a number of M113-based variants, such as the Lance Surface to Surface Artillery Rocket System. Also covered in the book are the M113 120mm Mortar Carrier, Mortar Fire Control Vehicle, Skorpion Vehicle-Based Scatterable Mine-Laying System, M113-based Prototypes and a look at the future of the M113.

Once again the 64-page book features numerous black & white and colour photographs to describe the different variants, together with a single 1/35 scale 5-view line drawing of the M113 Skorpion Vehicle-Based Scatterable Mine-Laying System that will no doubt be appreciated by model makers. This would appear to be the final volume in the series on the M113 in Bundeswehr service and all in all it has built into an impressive and highly detailed account of this most versatile of tracked armoured vehicles that is now more than fifty years old!

Title: Tankograd M113 Pt.4

By: Clemens Niesner
& Peter Blume

ISBN: N/A

Price: £13.99

Format: A4 Softback

Available From:
Bookworld Wholesale Ltd.
www.bookworldws.co.uk

Early French Tanks of the Great War Period

Title: French Tanks of WW1

By: Steven J. Zaloga illustrated
by Tony Bryan

ISBN: 978 1 84603 513 5

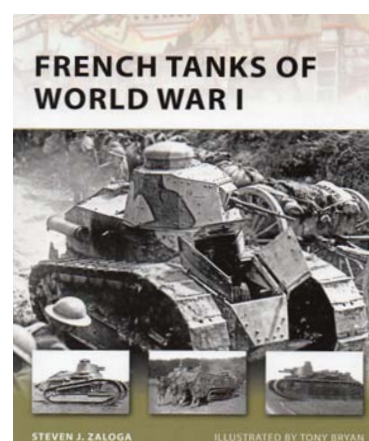
Price: £9.99

Format: Softback

Available From:
Osprey Publishing
www.ospreypublishing.com

The final book this month comes from the Osprey Publishing New Vanguard series. New Vanguard 173 looks at the various early tanks of the Great War period used by the French Army. By gathering together a number of wartime black & white photos, colour illustrations and a small selection of line drawings, well-known author Steven Zaloga describes the three principal tanks used by the French, namely the Schneider CA, St Chamond and Renault FT17. It's fair to say that nearly half of the 48-page book is dedicated to the Renault FT-17,

which was widely regarded as the most successful of the French tanks of the period, largely due to the fact that it introduced the rotating turret. The New Vanguard series from Osprey is one of the more established reference book formats, covering hundreds of vehicles from countries around the world and this latest offering is another fine addition to the ever-growing series that is sure to be well received by enthusiasts and model makers around the world. The New Vanguard series are widely available from all good book shops.





Armoured Trains

Jim Grant looks at Finnish Army armoured trains

Above right: the front end of the first armoured wagon showing the gun platform and one of the anti-aircraft turrets. This is the best designed, and protected wagon, in the display. Note the fitted armour around the wheels including the hinged plates at the front to allow access to the wheels and the side plates to protect the buffers and coupling gear.

From first to last the Finnish Army used armoured trains for just twenty-seven years, between 1918 to 1945, and while they could not be classified as war winners, they proved most useful in giving direct artillery support to frontline troops, and in defending air attacks on conventional trains moving troops and supplies around the country.

In 1918 both the Communist Red Guards, who wanted to incorporate Finland into the Soviet Union, and the Finnish White Army, which was fighting for the independence of the Duchy of Finland, used Russian armoured trains. The Finns had a good working relationship, and a high degree of autonomy, with Tsarist Russia, but Communism, as a political system, did not appeal to them. The Red Guards were defeated and withdrew from Finnish territory, abandoning large amounts of military equipment, including a number of often poorly armoured locomotives and freight cars.

While the White Army had only one armoured train in service, the "Antrea", which was commonly known as the "The Saviour of Karelia" for its contribution in defeating the Red Guards in the province nearest to the Finnish/Russian border. About a dozen armoured trains had been used in the Civil War by the Red Guards and when the war ended the Finns selected the best of what was available and made up two good sets of armoured trains - Panssarijuna No.1 and No.2, which would be capable of carrying out such tasks as travelling through dangerous areas and defending the rail network.

PRELUDE TO WAR

These were progressively modernised throughout the 1920s and 1930s as Finland is a long, narrow, country which, in the first half of the 20th century, relied on its extensive railway network for moving passengers and freight. In the 1930s there was also the No.2 Railway Artillery Battery coded "Askel", a common Finnish Christian name, equipped with two 152 mm 152/45C Raut cannon mounted on flatbed wagons. By 1942 there was a shortage of ammunition for these weapons and they saw little further action.

When the Winter War began, with the Soviet invasion of Finland on November 30, 1939, the trains were at that time armed with 76 mm short-barrelled artillery pieces and up to a dozen machine-guns. Their first actions were as mobile artillery batteries in the Karelian Front and the fighting around Lake Ladoga until the Winter War ceased on March 13, 1940.

Following the Soviet Union's attack on Finland Panssarijuna No.1 (Ps.Juna 1) was placed under control of the 12th Division on December 1 and went to Mustakallio where it was camouflaged, before carrying out its first operation of the war, while Panssarijuna No.2 (Ps.Juna 2) went to nearby Loimola Station. The purpose of this move was to prevent both trains being knocked out in the same air raid. Almost immediately they were in action against the advancing Soviet troops.

An action on December 3, 1939 gives a good idea of a typical day in the life of an armoured train. Early in





ain

trains

the morning of the 3rd Ps.Juna 2 took on fuel and water at Loimola Station and as the Finnish Army's General Headquarters felt that the Finnish troops had fallen back too quickly on the previous day and a counter attack was ordered to recapture the villages of Suvilahti and Liettée. The train was scheduled to give fire support to No.8 Company of Infantry Regiment 36, but it was in fact not required when the final attack took place.

The Finns fought like fanatics in defence of the Karelian Isthmus as this was the original heartland of the Finnish people, however, they were

gradually forced back until the middle of March 1940 when the Finns were compelled to accept a capitulation or lose all of their country. During WW2 Finland was fighting as an ally to the Germans, which was to cause them a lot of political problems after the end of the war when they were classified as a Fascist regime.

The trains were pulled well back from the frontline to Roikonkosti before the Moscow Peace Treaty was signed, and the terms obtained by the Finns could have been much worse. However, both sides knew that this was but a temporary peace as the Finns wanted the Karelian Isthmus back and the Soviets wanted Finland as part of their empire, so both sides used the time to build up their forces and supplies of war material.

Top left: view of the artillery and machine-gun wagon showing the various machine gun ports along the side.

Top right: the front of the steam locomotive at the museum. The Locomotive is only there as a representative item and is not typical of the armoured locomotives that once pulled the heavily armoured train.

Main photo below: the rear of the last, open topped wagon clearly showing the drop down panels around the sides of the artillery platform.





Top right: the left side of the first armoured wagon showing the anti-aircraft turrets and sliding hatches on the side for machine guns. The rear couplings on this wagon are protected in the same way as those at the front.

Above: here we see a close-up of the gun ports on wagon number 2.

Below: this is the last of the armoured wagons and it has a gun platform at each end, an observation "tower" on the roof and two machine ports on each side.

Bottom left: the first armoured wagon behind the locomotive is described as a combined kitchen and accommodation unit.

The Winter War showed that while the Panssarijuni were useful in the support role they lacked the firepower to be really effective either as artillery or anti-aircraft batteries and the Finns set about remedying this.

After the interlude of peace the Germans launched Operation Barbarossa on June 22, 1941 the Soviets bombed Finland on June 25 and the Continuation War between the Finns and the Soviets broke out on June 28, 1941. The armoured trains supported the Finnish Army's advance, to the country's original border, where the Army took up a defensive position until almost the end of the war, however by the end of 1942 the trains had been re-equipped as anti-aircraft batteries to protect normal trains carrying war supplies to the frontline.



MODIFICATIONS

During the lull in the fighting Ps.Juna 1 and 2 underwent major modifications to give them an enhanced anti-aircraft role and their operational use in the Continuation War was normally restricted to giving protection to conventional trains carrying supplies to the army as it advanced towards the original Finnish border. They proved most effective and could fight off Soviet aircraft on most occasions, although damage was accumulative and at one stage Ps.Juna 1 came close to being withdrawn from service.

So effective had the Panssarijuni become that the Soviets made a point of trying to destroy the railway track on both sides of a Finnish armoured train whenever possible. As the war continued the trains were progressively fitted with heavier armour and additional 7.62mm ItKk machine guns designed specifically for anti-aircraft work, and the 76mm short barrelled cannon were replaced by the excellent 40mm Bofors ILK/39B cannon.

Another significant modification was the change from a single machine gun turret to at least two turrets on the armoured wagons. A new armoured locomotive was built using a K5 series locomotive and this allowed the withdrawal of the old G5 number 191 and a G10 number 336, both of which

had reached the end of their working lives. All of the modifications to the Panssarijuni were carried out at the State Artillery Factory.

By 1942 the composition of the two Panssarijuni was one or two flat cars, loaded with bags of gravel, at the front of the train, which would be the first part to run over mines or wrecked track, then an artillery wagon, followed by the anti-aircraft wagon, the armoured locomotive, a combined kitchen and accommodation wagon, an artillery wagon and a further two flatbed wagons.

The Soviets used armoured trains against the Finns in the early stages of the war and one of these was captured on August 22, 1941 by No.2 Company, 29th Infantry Regiment.

Another train was captured on October 28, 1941 and the only Soviet wagon at Parola came from this train. It was originally armed with two 76mm field guns and six machine guns.

The two trains served until the end of the Continuation War after which there was little military requirement for them and they were soon withdrawn from service and most of the wagons were eventually broken up.

IN PRESERVATION

While the exterior of the "typical" armoured train at the Panssarimuseo Museum Parola is in reasonable condition the interiors have been stripped bare and most present a rather dismal appearance.

The first piece of the armoured train, a single wagon, was delivered to the museum back in the early 1960s and the rest of the train, with the exception of the locomotive, arrived on June 20, 1984.

The steam locomotive on display is a Tk-3 Number 144 (1106) which was built at the Tampere factory in 1943. The locomotive arrived at the Parola Museum early in 1995. As it is not, and never was, armoured it is there only to give it the appearance of an armoured train.



Into the Archives

A Light Dragon Mk IIC seen here towing a 3.7cm howitzer wading through a shallow river crossing.

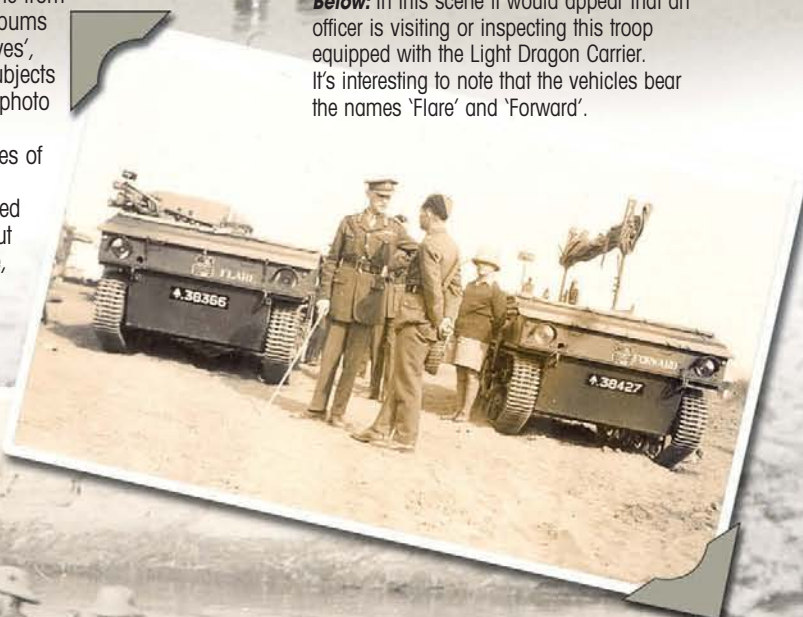
James Payne takes a look at the Light Dragon Carrier Mk II in British Army service

This month the images featured on these pages have come from a photo album belonging to a serving officer with the Royal Horse Artillery during his time in India in the 1930s. The photos show the Royal Artillery's Light Dragons shortly after they were introduced in the 1930s. In its day the Light Dragon was a radical departure from the larger, heavier artillery tractors of the 1920s, and the basic design would form the basis of the light carriers that would serve for many years to come. The photos shown here in this article are interesting in that they were taken in the pre-war years

and show the vehicles in a variety of settings and towing a variety of artillery pieces and limbers.

The collection of images come from just one of many photograph albums available from 'Through Their Eyes', which cover a wide variety of subjects and offers an extensive military photo archive. A huge range of CDs containing high-resolution images of military-related subjects is available, including those featured here. For further details check out the 'Through Their Eyes' website, which you can find at: www.throughtheireyes2.co.uk

Below: in this scene it would appear that an officer is visiting or inspecting this troop equipped with the Light Dragon Carrier. It's interesting to note that the vehicles bear the names 'Flare' and 'Forward'.



A Light Dragon, possibly a Mk IIC, towing a 3.7cm howitzer and a crew of seven men climbs up the bank having crossed a river.



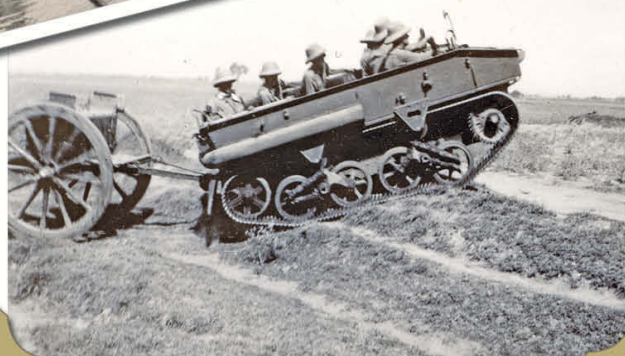
A Light Dragon carrier is loaded onto pontoons for a river crossing. The method of transportation looks to be a little precarious!



As the pontoon carrying the Light Dragon leaves the safety of the shore the crew are probably thankful the river looks to be fairly calm!

Below right: this Mk IIC Light Dragon has just negotiated a steep rise. The limber for the 3.7cm howitzer it's towing is visible, with the howitzer largely hidden by the bank. Note that there are eight crewmembers in the vehicle.

Right: Mk IIC Light Dragon negotiates some rough terrain, with what looks to be a limber of the type used with the 4.5 in howitzer in tow, although the gun, if fitted, is out of view.



Below: crews rest at the side of the road with their Light Dragon Mk II (either IIB or IIC) parked on the road. The carriers appear to be towing 4.5 in Howitzers with their limbers, which are interesting in that they are fitted with traditional wooden artillery wheels.





Above: an interesting photograph showing a pair of Mk IIC Light Dragon with limbers and 3.7cm howitzers. The crew closest to the camera are hitching (or unhitching) the gun. Also of note are the two Austin 7 cars.

Right: the crewmen man handle the limber and gun as the driver positions the carrier for the two to be hitched up. The crew looks to be made up of seven men.



Right: a group of Light Dragon carriers seen here at rest. Looking at the style of exhaust pipe on the right hand side of the vehicles, they look to be the Mk IIC variant. Note the folded canvas roof and framework fitted to some.



Taken in Chota Lahore in November 1937, this looks to be a Light Dragon Mk IIC with limber and a crew of eight, however, the dust cloud prevents the identification of any gun behind.



BULLETIN BOARD

Shaun Connors looks at the Mercedes-Benz Actros range of trucks, focusing on a specialized heavy recovery version currently entering service with the German Army



The Mercedes-Benz Actros range of trucks for military applications are based on the most recent range of Mercedes-Benz Actros civilian trucks, but militarised to varying degrees to suit specific operator requirements. Layout and design are entirely conventional and the range utilises only commercially available and proven driveline components.

Power is provided by Mercedes-Benz V6 or V8 EURO 4 emissions compliant diesel engines with power outputs ranging from 320 to 510 hp. Engines meeting EURO 2, 3 or 5 emissions requirements are available for certain territories. Throughout the range gearbox options include the Telligent gearshift system with clutch (electronic selection, pneumatic shifting) or the Telligent fully automatic gearshift system without clutch. Two, three or four-axle chassis are available and in a variety of drive configurations and with single or dual wheels on the rear axles. Payload ratings range from 6,000 to 18,000 kg.

With the exception of the Actros (8x8), which is available with hydro-pneumatic or air suspension as an option, all axles are leaf-sprung with driven axles featuring planetary hub reduction gearing and driver-controlled differential locks. An Anti-lock Braking System (ABS), a Central Tyre Inflation (CTI) system and a self-recovery winch are options.

Wheelbase options currently range between 3.6 m on (4x4) and (6x6) chassis to 4.8 m on (8x8) chassis. The standard C-section/ladder frame chassis can be fitted with a variety of bodies including drop side, box-body, tanker, dump, recovery hamper and DROPS/PLS load handling system. Tractor truck versions are also available.

The two-door forward-control all-steel tilt-cab can be specified based around either a civilian two/three-person day-



cab or the larger sleeper-cab, which can be supplied with or without bunks. Options can include enhanced heating and air-conditioning systems, an observation hatch in the roof, or a high-roof version of the sleeper cab. Armoured cabs are also available.

The Actros (4x4) range currently consists of 11 vehicles with wheelbases of 3.6, 3.9 or 4.5 m and payload options of 6,000 or 7,000 kg. Power outputs range from 320 to 510 hp.

Models 1832A, 1836A, 1841A, 1844A and 1846A are available with a 3.6 or 3.9 m wheelbase and are powered by a V6 engine developing 320 hp (1832A), 360 hp (1836A), 408 hp (1841A), 435 hp (1844A) or 456 hp (1846A). Model 1851A is available with a 3.9 m wheelbase and is powered by a V8 diesel developing 510 hp. All of these models have a 6,000 kg payload.

Models 2032A, 2036A, 2041A, 2044A and 2048A are available with a 3.9 m wheelbase, models 2032A and 2036A also available with a 4.5 m wheelbase. All are powered by a V6 engine developing 320 hp (2032A),

360 hp (2036A), 408 hp (2041A), 435 hp (2044A) or 476 hp (2048A). All of these models have a 7,000 kg payload.

Actros two-axle models are also available in a (4x2) drive configuration, and with single or dual tyres on the rear axle. Tractor truck variants are also available.

From 2001, and in order to cover the specific 5,000 - to 7,000 kg payload/GVW segment with a truck better suited to the requirements of some users (including the German Army), Mercedes-Benz introduced militarised variants of the mid-weight Axor commercial model to supplement the lightest Actros (4x4) models and the heaviest Atego models.

The Actros (6x6) range currently consists of seven vehicles with wheelbases ranging from 3.6 to 4.5 m. Engine power outputs range from 320 to 510 hp. All seven models have a payload of up to 12,000 kg. Models 3332A (320 hp), 3336A (360 hp), 3341A (408 hp), 3344A (435 hp), 3346A (456 hp) and 3348A (476 hp) have wheelbase options of 3.6, 3.9, 4.2





and 4.5 m and are powered by a V6 engine. Model 3351A (510 hp) has a 3.6 m wheelbase and is powered by a V8 engine. Engines of higher power output are available on request.

Actros three-axle models are also available in (6x4) and (6x2) drive configurations, and with single or dual tyres on the rear axles. Tractor truck variants are also available.

The Actros (8x8) range currently consists of five vehicles with a 4.8 m wheelbase and payload capacity of up to 18,000 kg. Models 4141A (408 hp), 4144A (435 hp), 4146A (456 hp) and 4148A (476 hp) are powered by a V6 engine, while model 4151 (510 hp) is powered by a V8 diesel. Higher output engines are available on request.

Actros models are also available in an (8x4) drive configuration, and with single or dual tyres on the rear axles. A model with hydro-pneumatic suspension that allows the transport of an 8 ft 6 in ISO container on a vehicle fitted with a load handling system, without exceeding 4 m overall height, is available. Air suspension is also an option on the rear bogie. Tractor trucks are also available.

Under a competitively awarded contract worth in excess of 10 million Euro, Mercedes-Benz is currently delivering a batch of 12 Actros heavy recovery vehicles to the German Army for use on deployed operations.

This requirement has origins that trace back to 2008 and an earlier attempt at procuring a crane-based recovery system, this abandoned during 2009 following no anywhere near-compliant response from industry. It is understood the overall requirement was then re-evaluated during 2010, to reappear calling for a conventionally configured recovery vehicle, and one that was in service 'and proven' with another NATO Army.

Following a Request For Offer (RFO) that is believed to have included IVECO and RMMV, the production contract was awarded to Mercedes-Benz in February 2011. Categorised a fast track project by the German Army, the first vehicle was delivered in September, with all 12 examples to be delivered by the end of December 2011.

In terms of technical specification, to meet the stipulation of being in service



with another NATO Army, the trucks supplied by Mercedes-Benz are, excluding a small number of changes specified by the German Army, identical to those previously supplied to Canada.

For use in Afghanistan, Canada received a total of 97 vehicles under a contract awarded in 2007, deliveries including five dedicated recovery vehicles. Based on a Mercedes-Benz Actros chassis and designated model 4151AK by Mercedes-Benz, in service these vehicles are designated Armoured Heavy Support Vehicle System (AHSVS) by Canada.

The detail differences between Canadian and German Army vehicles are cab stowage and specific recovery equipment, the base vehicle and recovery hamper, all being identical.

The armoured cabs fitted are supplied by LMT Technologies of South Africa and one further small, but potentially significant specified difference, is that while delivered to offer identical protection levels to Canadian vehicles, cabs fitted to German Army vehicles feature an ability to upgrade protection levels still further if required.



Motive power is provided by a Mercedes-Benz OM 502 LA 15.93-litre V8 EURO 3 emissions compliant diesel engine, which develops 496 hp (370 kW) and 2,400 Nm torque. The EURO 3 OM 502 LA engine option was retained as while not complying with current emissions requirements, this configuration is far more tolerant of military and low grade fuels, plus there is no logistic burden for the fuel system additive that the EURO 5 compliant version requires.

All four Mercedes-Benz axles are driven via a Mercedes-Benz Telligent automated gearbox and two-speed transfer box. Tyres are 1400R 20 Michelin XZL, these twinned on the rear drive axles to deliver the required combination of mobility and load rating. The unladen vehicle weighs 34-tonnes, GVW rating is 48-tonnes, and maximum GCW when recovering a casualty is 71-tonnes.

The recovery hamper is provided by EMPL of Austria, the full package consisting of a Hiab materials handling crane rated at 6.7-tonnes @ 3.4 m, three Rotzler winches (main, auxiliary and self-recovery), the main winch rated at a maximum single line pull of 25-tonnes, and an EMPL EH/W 200 Bison underlift, this having a payload capacity of 16.5-tonnes.

Photography: Mercedes-Benz



MISSION BRIEFING

DATES FOR YOUR DIARY

JANUARY 2012

Sunday 22 January 2012:
Militaria & Medal Fair: held at Yate Leisure Centre, Kennedy Way, Yate, nr Chipping Sodbury, Bristol, BS37 4DQ. Doors open 10.30am till 2.30pm. For further details contact: Tel: 01753 534777

Sunday 29 January 2012:
Militaria 2012: held at the Exhibition Centre, Stoneleigh Park, Coventry, Warwickshire, CV8 2LZ. Doors open at 9.00am. Advance tickets available. For further details contact the organiser Roy Elvis. Tel: 01283 820050
info@militariashows.com
www.militariashows.com

FEBRUARY 2012

Saturday 25 February 2012:
On Track: Military Modelling Show, held at Leas Cliff Hall, Folkestone, Kent, CT20 2DZ. Admission Adults £5, accompanied children under 16 Free. Show opens between 10am to 5pm.
on.track@live.co.uk
www.ontrackshow.co.uk

Sunday 26 February 2012:
Gent Militaria: International arms and militaria fair held at Flanders Expo Hall 2, Maaltekouter, BE-9051, Ghent, Belgium. Open between 9.00am and 4.00pm. For more info call Pascal Ginneberge or Sophie De Meyer on: Tel: +32 9 328 0346
info@gentmilitaria.be
www.gentmilitaria.be

MARCH 2012

Sunday 11 March 2012:
Militaria & Medal Fair: held at Stratford Leisure Centre, Bridgefoot, Stratford on Avon, Warks, CV37 6YY. Doors open 10.30am till 2.30pm. For further details contact: Tel: 01753 534777

Sunday 4 March 2012:
Bournemouth Aviation Museum Annual Vintage Transport Day: on the B3073 Bournemouth International Airport perimeter road, follow signs for the Airport, or for Sat Nav enter post code BH23 6BA. Show opens to public between 10.00 and 16.00.

Sunday 25 March 2012:
Hack Green Secret Nuclear Bunker Rally: French Lane, Nantwich, Cheshire, CW5 8BL. Sale of amateur, PMR, ex-Government radio equipment. Gates open at 10am. Call Rod on: Tel: 01270 623353
www.hackgreen.co.uk

APRIL 2012

Sunday 1 April 2012:
Northern Military Expo: Newark Country Show Ground, Notts, 2 minutes off the A1M (NG24 2NY). Event opens between 9.00am and 4.00pm. Tel: 01302 739000
jeep.promotions@btconnect.com
www.northernmilitaryexpo.co.uk

Sunday 22 April 2012:
Militaria & Medal Fair: held at Yate Leisure Centre, Kennedy Way, Yate, nr Chipping Sodbury, Bristol, BS37 4DQ. Doors open 10.30am till 2.30pm. For further details contact: Tel: 01753 534777

Sunday 29 April 2012:
Militaria & Medal Fair: held at The Princes Hall, Princes Way, Aldershot, Hampshire, GU11 1NX. Doors open 10.30am till 2.30pm. For further details contact: Tel: 01753 534777

MAY 2012

Sunday 6 May 2012:
Cobbaton Clearout: Cobbaton Combat Collection, Chittlehampton, Umberleigh, North Devon, EX37 9RZ. For details contact Tim Isaac on: Tel: 01769 540740
info@cobbatoncombat.co.uk
www.cobbatoncombat.co.uk

Saturday 19 Sunday 20 May 2012: Quainton 1940's Weekend: Buckinghamshire Railway Centre, Quainton Road Station, Quainton, Aylesbury, HP224BY. In conjunction with the South East Midlands Area MVT. The weekend will include re-enactment groups and over 60 military vehicles on display, trade stands and wartime music on both days. For further details contact: Tel: 01296655720
Trade please contact: gm@bucksrailcentre.org

Saturday 19 Sunday 20 May 2012: Militracks 2012: Held at Liberty Park, Overloon, The Netherlands, Museumpark 1, 5825AM. A presentation of mainly German WWII vehicles in the surroundings of Liberty Park. The weekend includes a military market and battlefield museum. For further details contact Museum Director Erik van den Dungen: info@militracks.nl
www.militracks.nl

JUNE 2012

Friday 1 to Monday 4 June 2012: Overlord 2012: held at The Lawns, Denmead, Waterlooville, PO7 6TZ. Organised by the Solent Overlord Executive. Facilities include free vehicle entry, camping, hot showers and evening entertainment. For further details contact: Myrddin Evans (General & Trade) Tel: 01243 375695
Trevor Bush (Vehicle Entry) Tel: 07774 988015
or visit: www.solentoverlord.co.uk

Friday 15 to Sunday 17 June 2012: Cholmondeley Pageant of Power: held on the Cholmondeley Estate in Cheshire, the motorsport event celebrates power and performance in its many forms. For further information visit: www.cpop.co.uk

Saturday 23 Sunday 24 June 2012: Muckleburgh Collection Military Display Weekend: Held at The Muckleburgh Collection, Weybourne Camp (off the B149) Norfolk, NR25 7EG. Open between 10.00am and 5.00pm daily. Tel: 01263 588284
info@muckleburgh.co.uk
www.muckleburgh.co.uk

Sunday 24 June 2012:
Militaria & Medal Fair: held at Stratford Leisure Centre, Bridgefoot, Stratford on Avon, Warks, CV37 6YY. Doors open 10.30am till 2.30pm. For further details contact: Tel: 01753 534777

Saturday 30 June Sunday 1 July 2012: Tankfest 10th Anniversary: held at the Tank Museum, Bovington, Dorset. The world's best display of moving armour returns to the Tank Museum. Witness the thrill of tanks and armoured vehicles performing in the arena, plus living history and static vehicle displays, traders and of course entry to the world famous Tank Museum. For further details or to order your tickets online see: www.tankmuseum.org or call the Ticket line on: Tel: 01929 462359

JULY 2012

Friday 6 Saturday 7 Sunday 8 July 2012: Military Vehicle Trust Show, Caple, Surrey: East Surrey & West Kent Area Show, Temple Lane, Caple, Surrey, RH5 5HJ. Brand new Show. Free entry for military or 1930/40s vehicles, with free modern and military camping for participants right up to the 11th July, the day Beltring War & Peace Show starts. (we are just 42 miles from Beltring). Discounts for trade early bookers. Re-enactors welcome. For further details contact Yvonne, MVT Librarian & Area Sec: Tel: 0845 475 1941 or Tel: 01306 711 907
yvonne@g-j-anstee.demon.co.uk

Friday 6 Saturday 7 Sunday 8 July 2012: Operation Home Guard: Step back into the German occupied French market town of La Chapell-De-Maraix and see it liberated each day. Military Vehicles, Trade Stalls, Displays. Auster spotter plane display. Tea dance, Cenotaph & Sunday Parade with the City of Bradford Pipe Band. Battle of Britain fly past (TBC), camping available. For further details contact John & Elaine Ward on: Tel: 01524241024
www.ingletonhomeguard.co.uk





Friday 6 Saturday 7 Sunday 8 July 2012 **NEW DATES...**

Ponderosa War Weekend: held at Ponderosa's Rare Breeds Farm, off Smithies Lane, Heckmondwike, WF16 0PN (between Leeds & Bradford) Junction 26 off the M62. General enquires/stalls call Debbie: Tel: 01924 235276 or email info@ponderosa-centre.co.uk Living history group's contact Brian: Tel: 07885 479473 or email brianleathley1957@hotmail.co.uk www.ponderosa-centre.co.uk

Wednesday 18 to Sunday 22 July 2012: **The War & Peace Show:**

held at The Hop Farm, Paddock Wood, Kent. The world's largest military vehicle show. For further details contact: Tel: 01304 813945 www.thewarandpeaceshow.com Tel: 01622 872068 www.thehopfarm.co.uk

Saturday 21 Sunday 22 July 2012: **Woodhall Spa 1940's Festival:**

Held at Jubilee Park, Stixwold Road, Woodhall Spa, Lincs, LN10 6QH. Show opens between 10.00am and 5.00pm. New event with military/classic vehicles, traders, living history etc. Contact Stuart Holmes Tel: 01526 353215 (after 6.00pm) Mob: 07910 018193 (anytime) stupot667@talktalk.net

Saturday 28 Sunday 29 July 2012: **Erewash Steam & 40's Show:**

held at West Park Leisure Centre, Wilsthorpe Road, NG10 4AA. Military re-enactments & displays, steam engines, vintage & classic cars & vehicles of all kinds. Open 10.00am till 4.30pm. Free Parking. For further details contact: Tel: 01159 135823 Mob: 07901 984627 dave.hoyles@ntlworld.com www.midlandeventsclub.co.uk

Saturday 28 Sunday 29 July 2012: **War Machines at Davidstow:**

held at the Davidstow Airfield & Cornwall at War Museum, Davidstow, Camelford, Cornwall, PL32 9YF. Military vehicles & Living History Groups. Camping from Fri to Mon. Road run Saturday PM. Mob: 07799 194918 warmachines@cornwallatwarmuseum.co.uk www.cornwallatwarmuseum.co.uk



AUGUST 2012

Saturday 4 Sunday 5 August 2012: **Croft Nostalgia Weekend:**

Military vehicle displays with living history, Re-enactors, classic cars and motorcycles, Historic Sports Car racing, BBMF display, M24 Chaffee tank in action, trade stalls and much more. www.croftmilitary.co.uk

Saturday 11 Sunday 12 August 2012: **Cobbaton Combat VJ Weekend:**

Cobbaton Combat Collection, Chittlehampton, Umberleigh, N. Devon, EX37 9RZ. For details contact Tim Isaac on: Tel: 01769 540740 info@cobbatoncombat.co.uk www.cobbatoncombat.co.uk

Saturday 11 Sunday 12 August 2012: **Combined Ops**

IMPS Military show & Classic Aircraft weekend, held at Headcorn Aerodrome, Nr Maidstone, Kent. Gathering of military vehicles and classic aircraft, with traders etc. For further details about the show please contact Malcolm Dunlop: Tel: 01303 267271 mugdunlop@aol.com www.imps.org.uk

Sunday 19 August 2012: **Militaria & Medal Fair:**

held at Yate Leisure Centre, Kennedy Way, Yate, nr Chipping Sodbury, Bristol, BS37 4DQ. Doors open 10.30am till 2.30pm. For further details contact: Tel: 01753 534777

SEPTEMBER 2012

Sunday 2 September 2012: **Militaria & Medal Fair:**

held at The Princes Hall, Princes Way, Aldershot, Hampshire, GU11 1NX. Doors open 10.30am till 2.30pm. For further details contact the organisers on: Tel: 01753 534777

OCTOBER 2012

Sunday 7 October 2012: **Hack Green Secret Nuclear Bunker Rally:**

French Lane, Nantwich, Cheshire, CW5 8BL. Sale of amateur, PMR, ex-Government radio equipment and stores. Gates open at 10am. For details call Rod on: Tel: 01270 623353 www.hackgreen.co.uk

Sunday 21 October 2012: **Militaria & Medal Fair:**

held at Stratford Leisure Centre, Bridgefoot, Stratford on Avon, Warks, CV37 6YY. Doors open 10.30am till 2.30pm. For further details contact: Tel: 01753 534777

NOVEMBER 2012

Sunday 4 November 2012: **Northern Military Expo:**

Newark Country Show Ground, Notts, 2 minutes off the A1M (NG24 2NY). Open between 9.00am and 4.00pm For further details contact Mark Askew on Tel: 01302 739000 jeep.promotions@btconnect.com www.northernmilitaryexpo.co.uk

Sunday 4 November 2012: **Militaria & Medal Fair:**

held at The Princes Hall, Princes Way, Aldershot, Hampshire, GU11 1NX. Doors open 10.30am till 2.30pm. For further details contact: Tel: 01753 534777

Sunday 25 November 2012: **Militaria & Medal Fair:**

held at Yate Leisure Centre, Kennedy Way, Yate, nr Chipping Sodbury, Bristol, BS37 4DQ. Doors open 10.30am till 2.30pm. For further details contact the organisers on: Tel: 01753 534777



Email your show details to: ian.young@keypublishing.com or post them to the Editorial Office, details are on page 3

VEHICLES FOR SALE



WW1 US ARMY NASH QUAD. Runs well. Has the correct original steel ammunition body (not fitted) with replica doors. Good tires. Has original seat to be fitted. Very rare truck. Only two others in the UK. £19,500.

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MISCELLANEOUS FOR SALE

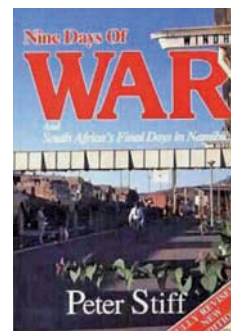
FILMS £5 EACH. Bofors Gun, Albert R.N., The Hill, Light up the Sky, Long & The Short & The Tall, Cruel Sea, All Quiet on the Western Front, Sea of Sand, San De Metro London, Sole Survivor, Yangste Incident, Private Potter, No Time to Die.

Tel: 07784 373469



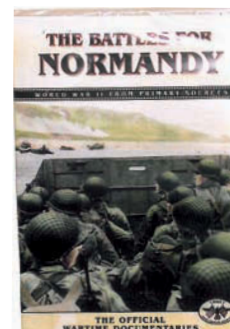
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Tel: 07971 223707 (Rotherham)



NINE DAYS OF WAR by Peter Stiff, Lemur publishing. Excellent paperback book covering the final days of South Africa's war in Namibia. Copy has slight indents on front cover but otherwise in good condition. Appears to be signed by author. £100 + £5 P&P in the UK, P&P as appropriate for secure international shipment. Contact Keith.

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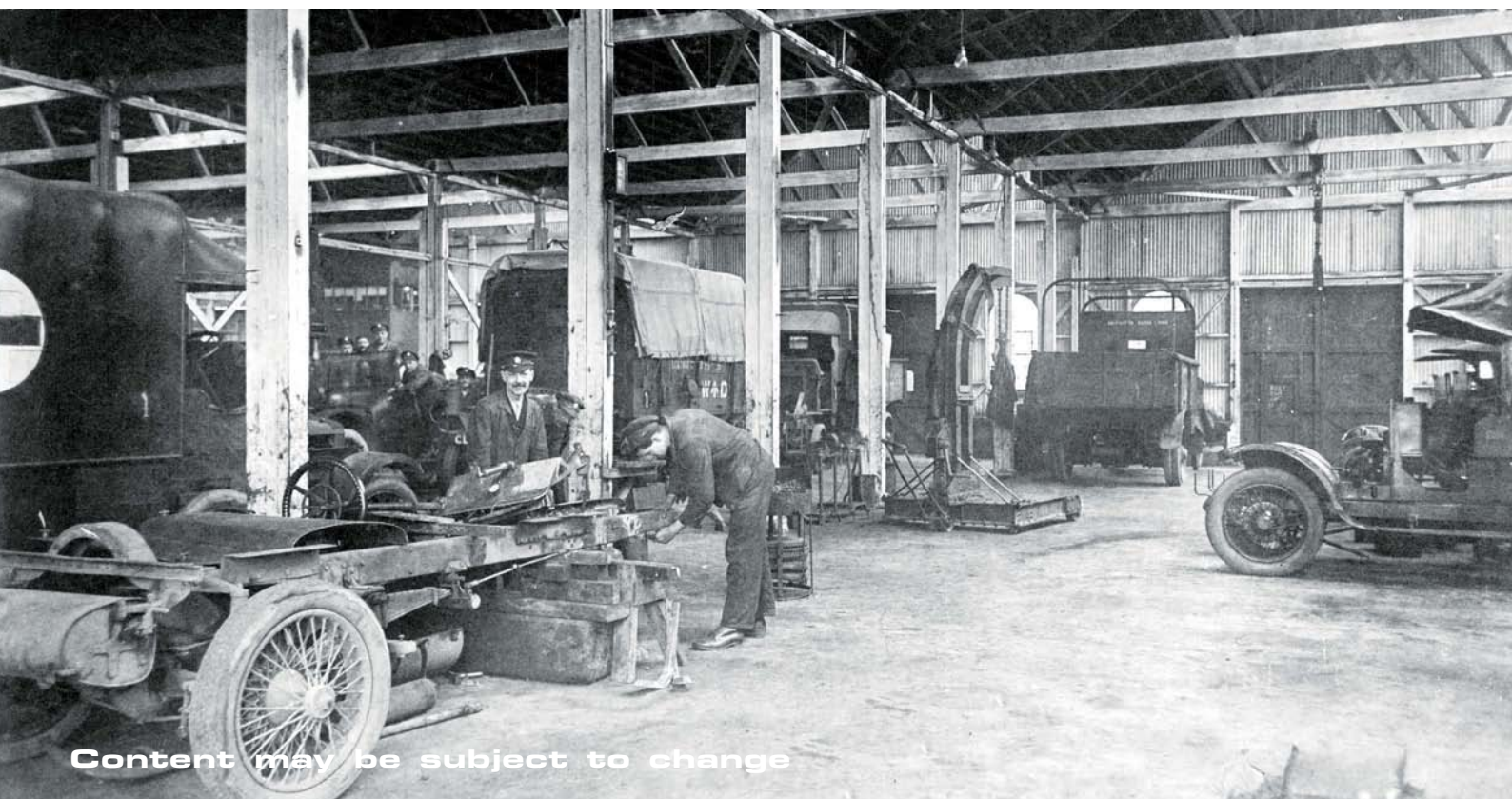
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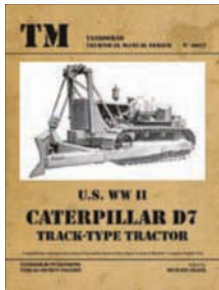
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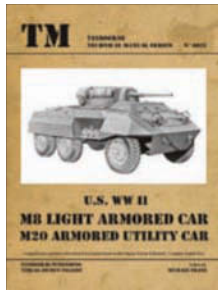
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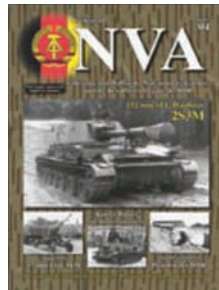
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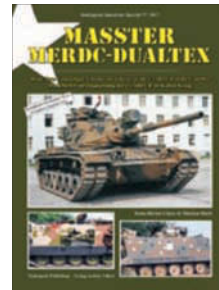
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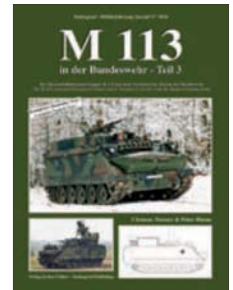
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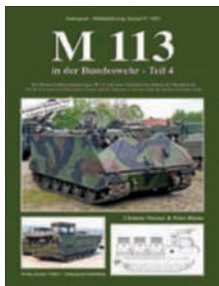
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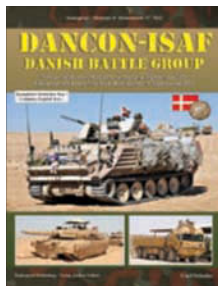
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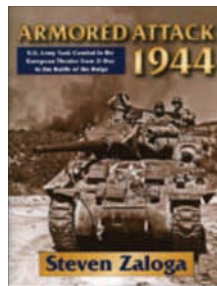
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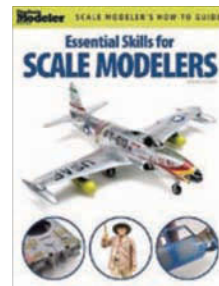
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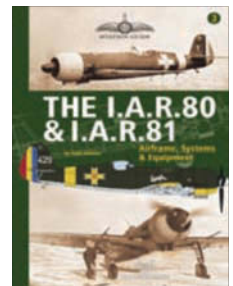
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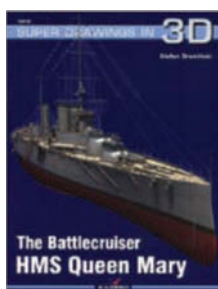
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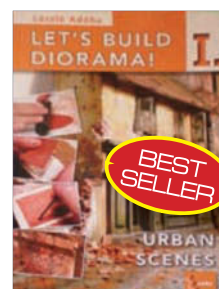
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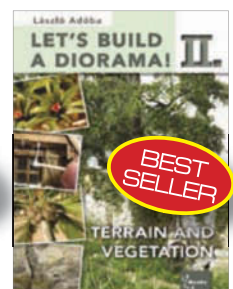
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