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# EDITORIAL

In this job I meet some remarkable people, some young, some old, some rich, some poor, but invariably they tend to be male. This month I met up with someone I've actually known for some time, but simply hadn't noticed just how involved they were in the hobby.

Nothing remarkable there you may think, but Bernie is a woman, a comparatively rare species within this hobby of ours, especially a woman who has her own WW2 truck. Don't

get me wrong, I've met and know lots of women involved in the hobby, but the vast majority are there in support of their husbands, boyfriends and partners, with very few actually owning and maintain their own vehicles, and I found it fascinating to see how much Bernie loves the hobby and for me at least is made me look at the hobby in a new way and if her article helps inspire more women to buy and own vehicles then we've done some good in the hobby - Ed.



*Ian Young*  
Ian Young  
Editor



**MILITARY  
MACHINES**  
INTERNATIONAL

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# NEWS and REVIEWS

# UP FRONT

## WW2 TERROR WEAPON LANDS AT THE ROYAL ENGINEERS MUSEUM



This fearsome 14-metre long weapon of terror dating from the Second World War is now on display in the Royal Engineers Museum. Representing the very beginnings of rocketry, the V2 rocket, once so feared by Londoners during the height of the Second World War, is now on display and is one of only five examples in the whole of the UK, and just twenty around the world. This year the Royal Engineers Museum celebrates the 200th Anniversary of the Royal School of Military Engineering in Brompton and you can read more about what you'll find at the museum in our feature in this issue.

For information on the events and activities at the museum or a downloadable brochure please visit: <http://www.re-museum.co.uk/events>

## Tiger 1 Leaves the U.K.



One of just six Tiger 1 tanks in the world left the UK from RAF Alconbury on September 10th. The Tiger 1 is destined to be put on display at the National Armor and Cavalry Museum at Fort Benning, Georgia having been at RAF Alconbury for around a year, being placed in secure storage while it was in litigation to go to the National Armor and

Cavalry Museum at Fort Benning. On this occasion it was the hull of the Tiger that was being transported, but the turret had been sent over to the US two months prior. The Tiger 1 will be returning home having previously been on display at the United States Army Ordnance Museum, and a museum in Germany. (US Air Force Photo by Master Sgt. John Barton)

## New From Key Publishing

Key Publishing is pleased to announce the launch of *Battles That Changed the World*. This 100-page magazine special sees Robert Kershaw, one of the UK's leading battle historians, take a unique look at three major battles from world history. Covering the Battle of Hastings (1066), Battle of Waterloo (1815) and the Battle of Stalingrad (1941/2) and featuring in-depth maps and exclusive 3D battlefield images, this special publication is a must-have for any military history enthusiast.

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# Military Vehicles Day at Brooklands Museum



A stunning display of vehicles from the field of conflict descends on Brooklands Museum on Sunday 18th November as Brooklands Museum takes on a camouflaged air as scores of assorted vehicles ranging from armoured cars to motorcycles from across the decades congregate for the Museum's 10th annual Military Vehicles Day, with many of them demonstrating their prowess in live activities. Over 100 assorted vehicles are expected to attend from an amphibious Jeep to a 'Green Goddess' fire engine and from armoured scout cars to troop carriers. It is an opportunity for both families and enthusiasts to get up close to the vehicles, and many of the owners will be on hand to answer that burning question you've always been afraid to ask.

A highlight of the day will be seeing some of the visiting vehicles being put through their paces on the Off-Road circuit at Mercedes-

Benz World at lunchtime. A double-decker shuttle bus will be provided to take spectators from the Museum to the viewing area by the Off-Road course. Later on, back at the Museum, some of the military vehicles will also be in action on Test Hill in the early afternoon.

The Museum is open from 10am – 4pm (last entry one hour before closing). Admission prices for Brooklands Museum (including the London Bus Museum) are: Adults £10, Seniors £9, Children (5-16 yrs) £5.50, Family ticket (2 adults and up to 3 children) £27. The 'Concorde Experience' is £4 for adults and £2 for children.

Visitor parking is in The Heights off Wellington Way for this event – follow event signage. For further details check out the website at:

**[www.brooklandsmuseum.com](http://www.brooklandsmuseum.com)**



## Witham Specialist Vehicle's MoD Tender



There were two Combat Engineer Tractors in the tender, for me this was the best of the two.



Amongst the small selection of armoured vehicle CVR(T) Shilder - now that's what I call a pick up

### Ex-Military Land Rovers



**Top left:** there was a wide selection of 90 and 110 Land Rovers available, including this rather nice 110 medic truck.

**Top right:** of the new variants of Land Rover on offer were a small number of 90 Wolf XDs, again in reasonable condition considering the use they've seen!

**Left:** another ex-Dutch Army Land Rover Lightweight turned up, and while it's left hand drive and powered by a diesel, will no doubt have been snapped up by a Land Rover collector.

Late August saw Witham Specialist Vehicles holding their latest MoD Tender Sale and I dropped in to see what was being offered for sale.

As usual there was a wide selection of Land Rovers, most of which were 90s and 110s, but included a number of Wolf XD 90s and even an ex-Dutch Lightweight. Close by was a single example of an ex-RAF Pinzgauer 6x6 ambulance, and across the yard were another group of Honda XR250 motorcycles.

Elsewhere I came across a couple of Combat Engineer Tractors and a pair of CVR(T) Stormers and a CVR(T) Shilder as well as a pair of Springer ATVs. The RAF are obviously having a bit of clearout as the yard was crammed with no less than twenty-four Massey Ferguson Hallam HE-11-H aircraft tugs, eight Douglas Super Taskmaster aircraft tugs and two massive Mercury MD 300M heavy wheeled tow tractors!







...s was this Alvis  
p truck!



In the medium vehicle class there was a selection of Reynolds Boughton RB44 trucks up for grabs, and of the larger vehicles in this month's tender there were a number of Foden DROPS and Leyland DAF DROPS trucks and the usual wide selection of Leyland DAF 4-tonners, most of which were right hand drive. There were also a number of specialist RAF vehicles that included an airfield sweeper and aircraft refueller.

Overall there wasn't as big a selection of vehicles as usual this time around, but it was still well worth the visit to see what was on offer in the sale, plus I managed to arrange a separate photo shoot - more on this in a future issue.

At the time of going to press the next tender had yet to be announced, but you can check out the Witham Specialist Vehicles' website for further updates. You can find the website at:

**[www.mod-sales.com](http://www.mod-sales.com)**



**Top right:** an interesting ex-RAF Pinzgauer 6x6 ambulance turned up in this month's sale.

**Right:** a pair of production EPS Springer all-terrain vehicles in very good condition with little wear.

**Below right:** it would appear that the RAF have been having a bit of a clear out recently!

**Bottom:** also in the sale was this pair of Honda XR250 motorcycles and a bar mine layer!





# Peopleton Autumn Show



Despite living just a few miles from the small village of Peopleton in the heart of rural Worcestershire, this year was the first time I had managed to attend the annual Autumn Show thanks to a rare weekend off. Although small as shows go, there were supposed to be a number of military vehicles in attendance and that combined with a gloriously sunny day was all that was needed to encourage me to pop along a take a look.

While the majority of vehicles in attendance were classic cars covering everything from pre-war Austins to modern classics, there were indeed a number of military vehicles to be found, including a rather nice Fordson WOT2, a lovely Austin Tilly, a rare 'Big Wheeled' Ferret scout car and a number of Jeeps and Land Rovers. It wasn't the biggest show in the world, but it was local, the weather was great and the food was good too!





# TAMIYA

## Recent Releases



Tamiya recently released a number of model kits that may be of interest to readers. The first kit is a 1/35 scale model of the Elefant heavy tank destroyer (Item No. 35325). The Elefant was based on the hull and running gear of what was one of the prototypes for the Tiger 1 produced by Ferdinand Porsche, converted into the Elefant heavy tank destroyer and seeing widespread use on the Russian front. The kit builds into a model 236mm in length having been based on one of the surviving examples preserved at Aberdeen Proving Grounds in the USA. Three torso figures are included along with three marking options.

Our second 1/35 kit from Tamiya is the 'British SAS Commando Vehicle 1944' (Item No. 25152). The limited edition kit is based on the much older Italeri kit, even carrying the Italeri logo on the box. The model is just 96mm long and features the appliqué armour, long-range fuel tanks and five Vickers K machine guns that are

such prominent features of the SAS Jeep as well as two figures and a selection of accessories such as canvas bags and jerry cans.

The final 1/35 scale offering is a model of the Finnish BT-42 Assault Gun (Item No. 35318), a vehicle created by pairing the hull from captured Russian BT-7 model 1937 light tank with a British 114mm howitzer and a redesigned BT-7 turret. The model itself is 157mm long and includes a driver figure and three sets of markings.

The last model is in the smaller, but increasingly popular 1/48 scale and represents the British Matilda Mk.III/IV Infantry Tank (Item No. 32572). The model is just 127mm in length but beautifully captured the rugged lines of the 'Queen of the Desert' down to the cast metal texture on the turret. A commander torso figure and three marking options are included.

Tamiya kits are widely available from all good model shops.





# FRITUUR ZORRO Volume 3



The latest volume of the highly acclaimed Frituur Zorro series of books produced by Theo Barten and Maarten Swarts has just been published and once again the book is packed with many fascinating photos of ex-military vehicles pressed into service in civilian life after the war. For those not familiar with the series, the book's name stems from a photograph featured in the first volume, which featured a derelict Austin K2 ambulance that had been converted into a mobile chip shop, and many of the vehicles featured in the book are equally obscure, but fascinating nonetheless.

The many large black and white images crammed within the A4 format 172-page hardback book are generally between a half a page and a full page in size, offering the reader a real chance to study the smaller details on the featured vehicles. The book is divided into six main chapters based on the country of origin of the vehicles, and within each chapter the vehicles are sub divided by vehicle manufacturer. This volume includes numerous entries from the USA, a small number from Czechoslovakia, Germany and Canada, and a strong collection from France and Great Britain with the vast majority of the vehicles featured being trucks and softskins in varying states of completeness and originality, but there are the odd couple of armoured and tracked vehicles to be found lurking in the background of a couple of the images, with each photo provided with a caption in both Dutch and English language.

Most people with an interest in the restoration and running of ex-military vehicles dreams of the perfect 'barn find', and while most of the vehicles featured within the book have long since been snapped up by collectors or worst still, scrapped, having been photographed in Europe in the 1970s, they do provide an fascinating look at the wealth of ex-military vehicles once available, and who knows, you may even spot your own vehicle in the book!

The price per book is 38,50 Euros or 107,50 Euros for all three books, for countries in the European Union

(EU). For orders outside the EU the price per book is 65 US dollars or 180 US dollars for all three books.

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## REVELL Wooden Tank



Model kit manufacturer Revell have released this fascinating model of what is widely regarded to be the very first 'tank' designed by Leonardo da Vinci, who is regarded as one of the most important men of the Renaissance. Leonardo's drawings as a military engineer at the Strozzi court in Milan showed not only influence from medieval tradition, but also representations of the nascent artillery. This mobile wooden vehicle of circular form with a conical superstructure (which nowadays we would refer to as a tank), featured four cartwheels and

a hand operated power system for mobility and a total of 18 cannon arranged around the perimeter and a raised cupola in the centre of the vehicle from which the vehicle 'commander' could observe and direct the crew, very much like a modern day tank!

The kit itself is actually produced in laser cut plywood to 1/24 scale rather than the more familiar plastic we have come to expect from Revell, and is just one of a range of kits representing some of Leonardo da Vinci's finest mechanical creations. The kit comes complete

with a fully illustrated construction guide, and includes an A4 size printed cloth canvas featuring Leonardo da Vinci and his drawings of the 'tank', which can be mounted and displayed by the builder.

The cannon are provided as metal castings and a tube of wood glue is also included in the kit. Although recommended for ages 10+, the kit is simple enough to construct, even if the medium is perhaps less familiar to plastic model makers and builds into a model approximately 200mm in diameter. All in all it's great kit of a

most unusual subject, and if you want to see a larger model of Leonardo da Vinci's tank why not visit the Tank Museum, Bovington, who have a large scale representation of the vehicle on display inside the museum.

Revell model kits are available from all good toy and model retailers. For further information visit the website at: [www.revell.eu](http://www.revell.eu)  
email: [ukbranch@revell.de](mailto:ukbranch@revell.de)





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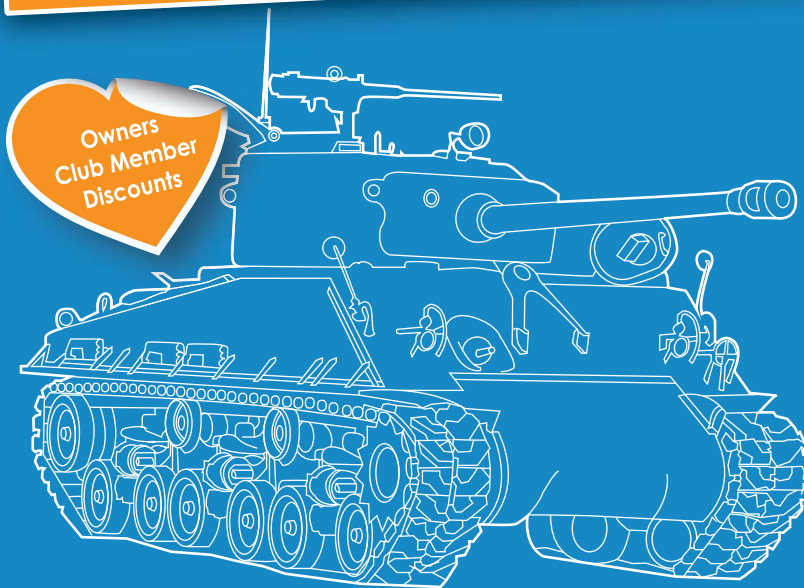
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# UP-ARMoured HMMWV

**Carl Schulze  
offers an  
overview of the  
Up-Armoured  
HMMWVs in  
military service**

**S**ince the High Mobility Multipurpose Wheeled Vehicle, or HMMWV entered service with the U.S. Armed Forces, AM General LLC, South Bend, Indiana have built more than 280,000 examples and worldwide HMMWVs are in service with the armed forces of more than 50 nations. When the HMMWV initially entered service in its basic variant as cargo and troop carrier it featured a payload of 1,134kg (including crew). Over the years the increasing payload requirements of the U.S. Armed Forces first led to the development of the Heavy Hummer Variant and culminated in the development of the M1113 Expanded Capacity Vehicle HMMWV with a payload of 2,411kg (including crew).







**Left:** this M1026A1 HMMWV Armament Carrier with Winch and Basic Armour belongs to the KFOR contingent of the U.S. Army and was seen during a patrol in Kosovo in 2000. The vehicle belongs to the Military Police Company assigned to the 101st Airborne Division "Air Assault."

**Main photo left:** April 2009, a pair of Truck Utility: Expanded Capacity, Enhanced, IAP/Armour Ready, M1151A1 provides cover for troops that conduct a search operation in a market. The first vehicle is fitted with the B1-Kit, the Objective Gunner Protection Kit (O-GPK) and the Rhino IR IED Defeat System.

In addition to the development of vehicles with higher payload the requirement of the U.S. Armed Forces for HMMWVs with a certain degree of armour protection triggered the development of the M1114 Up-armoured HMMWV and later the development of a whole series of new HMMWVs that included a range of vehicles featuring Integrated Armour Protection (IAP), namely the M1151A1, M1152A1, M1165A1 and M1167.

### INITIAL UP-ARMOURING

Vehicles used as armament carriers for 7.62mm x 51 M240B machine guns, 12.7mm x 99 M2HB heavy machine guns, 40mm Mk 19 MOD3 automatic grenade launchers and TOW anti-tank guided weapon systems already featured some kind of armour when they entered service, however, despite being called "basic armour" or "supplemental armour" it offered nearly no protection against small arms, mine blasts and splinters of ammunition of indirect fire.

In 1993 HMMWV losses during Operation Restore Hope and Operation Continue Hope in Somalia led to the development of the first Up-armoured HMMWV, the XM1109. The requirement statement for the vehicle asked for under-body protection for the crew compartment against mines and unexploded ordnance, ballistic protection for the crew from small arms fire, overhead protection from artillery fragments and a payload of at least 1,044kg.

Development work was carried out by O'Gara-Hess & Eisenhardt in Fairfield, Ohio, with the first prototype

## Early Variants



**Above:** the first HMMWV that featured a certain degree of armour protection was the Truck Utility Up-Armoured HMMWV M1109. 159 vehicles entered service from 1994 onwards. This vehicle was seen in Bosnia in 1996, it belongs to a unit of the 1st Armored Division.

**Below:** the Truck, Utility, Up-armoured Carrier 4x4 M1114 is based on the chassis of the M1113 Expanded Capacity Vehicle HMMWV. The first M1114 Up-armoured HMMWVs entered service in early 1996. This vehicle was pictured in Bosnia in 1996, as part of the U.S. IFOR contingent.





# Early Basic Armour Hummers

**Right:** from the beginning the armament carrier and TOW carrier variants of the HMMWV family featured some kind of armoured protection. Despite being called "basic armour" this offered nearly no protection from ballistic threats. Seen in 1996 in Fort Bragg this M966 HMMWV TOW Missile Carrier with Basic Armour belongs to a unit of the 82nd airborne Division "All American."



**Below:** the Truck Utility Up-Armoured HMMWV M1109 is based on the chassis of the M1097A1 Heavy Hummer Variant. This vehicle of the 1st Squadron, 1st Armored Cavalry Regiment was seen in Bosnia in 1996.



ready in June 1993. The new design was based on the M1097A1 Heavy Hummer Variant chassis and was later type classified as Truck Utility Up-Armoured HMMWV M1109. In January 1994 the series production of the M1109 was ordered and 159 vehicles were built the same year. Rushed into service the vehicles soon were used by U.S. forces deployed to Somalia and Haiti on peacekeeping

missions. Later they also saw service in Bosnia Herzegovina under IFOR and SFOR and U.S. forces deployed to Kosovo as part of KFOR, as well as U.S. forces deployed to Afghanistan under Operation Enduring Freedom.

While the vehicles proved themselves, performance shortfalls were detected in Somalia and the heavy weight of the armoured body saw increased wear of the automotive

**Above:** the Armour Survivability Kit (ASK) was fielded in variants for two door and four door variants of the HMMWV. The four-door kit here fitted to a M1025 HMMWV Armament Carrier has a weight of around 600kg.



**Right:** this M1025 HMMWV Armament Carrier has been fitted with the Armour Survivability Kit (ASK) and the Long-Range Advance Scout Surveillance System (LRAS3). The vehicle was seen in the Green Zone in Baghdad in December 2004.

**Right:** the Truck Utility: Command & Control/General Purpose Vehicle, IAP/Armour Ready, M1165A1 features a four seater cab and cargo bed.

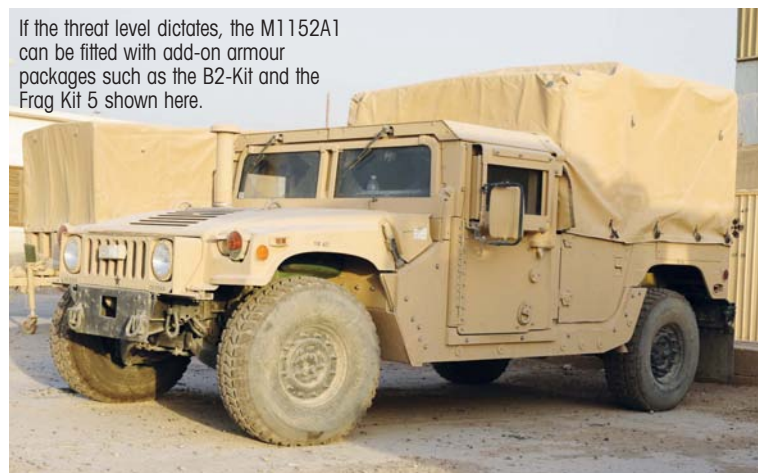


**Right:** seen in Baghdad in 2007, this Truck Utility: Command & Control/General Purpose Vehicle, IAP/Armour Ready, M1165A1 features the B3-Kit, which includes perimeter, overhead armour and a rear ballistic bulkhead.



This M1025 HMMWV Armament Carrier has been fitted with the Armour Survivability Kit (ASK) and was seen in Iraq in 2004.

If the threat level dictates, the M1152A1 can be fitted with add-on armour packages such as the B2-Kit and the Frag Kit 5 shown here.







Most M1114s deployed to Iraq were initially fitted with the Frag Kit 1, 2 and 3 as well as with the Gunner Shield Kit and the Gunner Protection Kit.

components and suspension. It also had an impact on acceleration, speed and cross-country mobility.

## M1114 HMMWV

In order to solve the problems and to fulfill its needs for a protected patrol and light reconnaissance vehicle the U.S. Army initiated the development of a new Up-armored HMMWV. This time the chassis of the M1113 Expanded Capacity Vehicle HMMWV was selected. The M1113 ECV HMMWV features a more powerful 6.5-litre turbocharged, liquid-cooled V8 diesel engine that develops 190hp at 3,400rpm connected to a Turbo-Hydra-Matic 4L80-E four-speed automatic transmission. Compared with earlier HMMWV models the M1113 ECV HMMWV was fitted with a reinforced frame and an improved suspension allowing it to transport a higher payload, which in turn helped the vehicle to better cope with the extra weight of the armoured body.

The first prototype XM1114s were ready for testing in 1995 and fielding of series production vehicles of what was later type-classified as Truck, Utility, Up-armored Carrier 4x4 M1114 began in early 1996.

Development and series production of the M1114 UAH was again jointly conducted by AM General and O'Gara-Hess & Eisenhardt, the latter again producing the armour.

The M1114 UAH provides seating for four soldiers, has a payload of 1,043kg including the crew and a gross vehicle weight of 5,493kg and is 4,990mm long, 1,930mm high and 2,300mm wide. It can climb road grades as steep as 40%, traverse a side slope of up to 30%, ford hard bottom water crossings up to 760mm deep, has a cruising range of 402km and reaches a top speed of 88km/h.

The armour of the M1114 UAH offers 360° perimeter protection at 100m stand-off range from small arms fire up to a calibre of 7.62mm x 51 NATO, using Armour Piercing (AP) ammunition, as well as overhead protection from 155mm artillery shell airbursts. The blast protection system of the vehicle provides protection for the crew compartment from contact detonations of 5.4kg anti-tank mines under the front of the vehicle and 1.8 kg anti-tank mines under its rear. The armoured roof assembly overlaps the perimeter armour and therefore provides protection from all possible angles. A fully rotatable ring mount in



This M1151A1 features the B1-Kit and additional armour components from a Frag Kit that protects the gap between the door and the roof.



the roof of the M1114 UAH can be fitted with a choice of weapons.

From 1996 onwards M1114 UAH saw action in Bosnia and later in Kosovo, where they proved themselves as reliable light armoured patrol vehicles. For the U.S. Air Force O'Gara-Hess & Eisenhardt developed a separate armour protected patrol vehicle with the M1116 Up-armoured HMMWV.

The M1116 UAH differs in many ways from the M1114 UAH, most obvious features are its extended cargo area and the armoured enclosure installed on the ring mount. The M1116 UAH features a modular armour system and can be fitted with five different armour kits that offer different levels of protection.

**Above centre:** here a Truck Utility: Expanded Capacity, Enhanced, IAP/Armour Ready, M1152A1 can be seen that has been fitted with the B2-Kit and the Frag Kit 5.

**Above:** this Truck Utility: Command & Control/General Purpose Vehicle, IAP/Armour Ready, M1165A1 was seen in a U.S. base in southern Baghdad in Iraq in 2008. The vehicle has been fitted with the B3-Kit armour package and the Frag Kit 5.

**Far left:** the M1152A1 serves as platform for a variety of shelters and other equipment. Here the vehicle has been configured as maintenance and repair vehicle.







## OP IRAQI FREEDOM

When the U.S. led invasion of Iraq was launched in March 2003 the U.S. Army could field some 1,800 M1114 UAHs, this number was thought to be sufficient, as it was estimated that only 1,000 of them would be required in Iraq. However, reality turned out to be different. From early 2004 onwards Operation Iraq Freedom more and more turned into a bloody guerrilla war during which patrols, bases and convoys of the U.S. led coalition forces were attacked daily by insurgents and terrorists.

To address the problem the Department of Defense launched the Vehicle Hardening Program. This included fitting armour kits to deployed vehicles as well as the procurement of new vehicles that already featured a certain degree of armour protection.

While under the program non-armoured versions of the HMMWV were fitted with add-on armour kits that were rushed to the field, such as the HMMWV Armoured Demountable Kit (HArD), the Marine Armour Kit or the Armour Survivability Kit (ASK), the program also included the procurement of a vast number of new M1114 UAH.



This Truck, Utility, Up-armoured Carrier 4x4 M1114 belongs to a unit of the USMC and was seen in Iraq in December 2007. The vehicle has been fitted with a version of the Marine Armour Kit (MAK).

## U.S. Military Transition Team



What on the first glance appears to be a couple of HMMWVs of the Iraqi Army are in fact vehicles of a U.S. Military Transition Team that is mentoring a battalion of the Iraqi Army. The Truck Utility: Expanded Capacity, Armament Carrier IAP/Armour Ready M1151A1s feature an Iraqi style appearance in order to not stand out during operations.





**Top left & top centre:** this M8 howitzer and superb Pacific M26A1 travelled to the show from France..

**Above & above left:** a great many exhibitors put in a lot of time and effort to make the best of the show, despite the unusually poor weather prior to the show.

**Left:** Pete Sanders (seen driving) brought along his Chevrolet WA, which has been rebuilt from its original form to reflect an LRDG vehicle armed with a Bofors - Pete was still painting the camouflage as the show opened, but still found the time to take to the arena.





**Above:** pictured in front of the Shaheed Monument in Baghdad that commemorates the soldiers killed during the Iran-Iraq War, here a Truck Utility: Expanded Capacity, Armament Carrier IAP/Armour Ready M1151A1 of the 5th Squadron, 73rd Cavalry Regiment can be seen. The vehicles features the B1-Kit, the Frag Kit 5, the Objective Gunner Protection Kit (O-GPK) and the Rhino IR IED Defeat System.

**Right:** the different sand colour used on the components of the Frag Kit 1, including the side and door perimeter protection and of the Frag Kit 1A including the armour overlay for the rocker panels allows to distinguish the parts nicely from the rest of this Truck, Utility, Up-armoured Carrier 4x4 M1114. The vehicle belongs to a Military Police unit and was seen in Baqubah in Iraq.



fielding process. The Frag Kit 1 included side and door perimeter protection. The Frag Kit 1A included an armour overlay for the rocker panels. The Frag Kit 2 included front cowl and wheel well protection while the Frag Kit 3 protects the fuel tank of the vehicle.

With the Frag Kit 4 additional protection was added to the floors of the vehicles. The Frag Kit 5 is also called Objective Frag Kit. It included replacement doors and new rocker panel assemblies as well as additional armour plating for key points. The doors were redesigned so that all window and latch parts were moved from the inside to the outside of the armour plating to prevent the parts from becoming a source of secondary fragmentation if the vehicle is hit. In addition the doors were fitted with large D-rings and a combat-lock bypass system. After an attack these modifications make it easier to open blast-damaged doors in order to rescue personnel trapped inside the vehicle. There were different Frag Kit 5 for the M1114 UAH and the Enhanced, IAP/Armour Ready HMMWVs. The Frag Kit 6 was introduced in answer to the increased use of Explosive Formed





Penetrator IEDs in Iraq and again improved the level of protection on the side around the front doors, and at the cowl and the wheel well. Again it included new doors with reinforced armour. Armoured enclosures were installed to protect the exposed gunners on the ring mounts of the vehicles.

A couple of different types went into service including the Gunner Shield Kit, the Gunner Protection Kit, the Marine Corps Transparent Armoured Gun Shield Reducible (MCTAGS-R), the Marine Corps Transparent Armoured Gun Shield (MCTAGS) and the Objective Gunner Protection Kit (O-GPK).

Remote Controlled IED Electronic Counter Measure (RCIED ECM) systems such as the Warlock and Duke systems as well as the Rhino IR IED Defeat System were also installed on the vehicles.

The modifications increased the curb weight of the vehicles by 68%. The additional weight and the rugged use of the vehicles in Iraq as well as in Afghanistan took their toll: worn out suspensions as well as cracks in the chassis became a common problem. In an operational theatre an M1114 UAH fitted with all the modifications therefore only had a life expectancy of three and a half years.

### IAP & B-Kit

Like the M1114 Up-armoured HMMWV the new series of HMMWVs is based on the M1113 HMMWV Enhanced Capacity Chassis. The vehicles feature new heavy duty variable rate springs, reinforced front body mounts, an improved steering geometry, heavy duty ball joints and an Automatic Fire Extinguishing System (AFES). For improved troop comfort the vehicles are fitted with a redesigned Heating, Ventilation and Air Conditioning (HVAC) system and the seats feature quick release seat belts. However, the major changes between the two is the modular armour system. IAP stands for Integrated Armour Protection (IAP), also known as A-Kit, this includes underbody armour, rocker armour, lower windscreen deflector armour and blast energy absorbing seats. Basically the vehicles are fitted during production with all parts of armour that are situated in areas that are difficult to access and that later on could be fitted only with difficulties. The vehicle feature special attachment points for fitting armour packages that later will make the lives of maintenance personnel and operators easier. When featuring only the IAP the vehicles offer a higher payload and the stress for the automotive components is

reduced, which benefits in-service life. In case the vehicles are operated in a threat area or if an operational deployment turns into a situation where armour protection is required the vehicles can be fitted with an add-on armour package known as B-Kit at short notice. The vehicle crew can install the armour themselves using only tools that are carried on the vehicle. No heavy equipment such as a crane or other lifting equipment is required to install the armour package.

The B-Kit includes perimeter armour, overhead armour and a rear ballistic bulkhead. The B-Kit can be tailored to the mission and it is possible to install only parts of it. The B-Kits for the different vehicles are designated differently, that for the M1151A1 HMMWV IAP/Armour Ready is called B1-Kit, the one for the M1152A1 HMMWV IAP/Armour Ready is called B2-Kit and that for the M1165A1 HMMWV IAP/Armour Ready is known as B3-Kit.

The way the new HMMWV IAP/Armour Ready variants are designed they offer growth potential. In case that new, more capable armour packages become available they can be installed instead of the original B-Kit. On operations the vehicles used the Frag Kit 5.

**Above:** this Truck, Utility, Up-armoured Carrier 4x4 M1114 of the U.S. Army is fitted with the Recon Optical Incorporated, Illinois manufactured XM101 Common Remotely Operated Weapon Station (CROWS). It has also been fitted with the Frag Kit 5 version designed for the M1114 UAH.



## Technical Data for Armoured HMMWVs according to U.S. Army TM 9-2320-387-10

<b>Model:</b>	Truck Utility: Expanded Capacity, Up-Armoured Carrier M1114	Truck Utility: Expanded Capacity, Armament Carrier IAP/ Armour Ready M1151A1	Truck Utility: Expanded Capacity, Enhanced, IAP/ Armour Ready, M1152A1	Truck Utility: Command and Control/General Purpose Vehicle, IAP/ Armour Ready, M1165A1	Truck Utility: Expanded Capacity, TOW ITAS Carrier M1167
<b>Engine:</b>	6.5-litre turbocharged liquid cooled diesel engine developing 190hp at 3,400rpm				
<b>Gearbox:</b>	Turbo Hydra-Matic 4L80-E four-speed automatic transmission				
<b>Transfer Case:</b>	Magna Powertrain, two-speed, locking, chain-driven				
<b>Top Speed:</b>	88 km/h				
<b>Length:</b>	4,990mm	4,930mm			
<b>Height:</b>	1,930mm	2,030mm	1,930mm	1,930mm	2,010mm
<b>Width:</b>	2,300mm	2,210mm	2,180mm		
<b>Ground Clearance:</b>	390mm	460mm			
<b>Gross Weight:</b>	5,493kg	5,942kg			
<b>Payload:</b>	1,043kg	1,792kg/816kg (with B-1 Kit)	2,268kg/1,515kg (with B-1 Kit)	2,209kg/1,012kg (with B-1 Kit)	1,043kg
<b>Curb Weight:</b>	4,449kg	3,697kg	3,221kg	3,279kg	4,899kg
<b>Crew:</b>	1 + 3	1 + 3	1 +1 or 1 + 3 or 1 + 1 + 6	1 + 3	1 + 3
<b>Range:</b>	402km				
<b>Fuel Tank:</b>	94.6 litres				
<b>Fording:</b>	760mm	760mm/1,520mm (with deep fording kit)			
<b>Gradient:</b>	40%	40%			
<b>Side Slope:</b>	30%	30%			
<b>Ring Mount:</b>	Yes	Yes	No	No	Yes
<b>Armament:</b>	One of the following: 40mm Mk19 MOD 3 automatic grenade launcher 12.7mm x 99 M2HB heavy machine gun 7.62mm x 51 M240B machine gun 5.56mm x 45 M249 Squad Assault Weapon (SAW)				Tube Launched Optically Tracked Wire Guided (TOW) anti-tank guided missile system with Improved Target Acquisition System (ITAS)
<b>Suspension:</b>	Independent coil springs				
<b>Electrics:</b>	24 Volt				
<b>Winch:</b>	Yes				

**Below:** the Interim Frag Kit 5 was developed as a stop-gap measure to counter the deadly Explosive Formed Penetrator (EFP) IEDs. Here it has been applied to a Truck, Utility, Up-armoured Carrier 4x4 M1114. Its main feature are stand-off armour plates mounted on the doors of the vehicle.



**Below:** this Truck, Utility, Up-armoured Carrier 4x4 M1114 was seen during a patrol in Baghdad. Note that it features the Frag Kit 5 version designed for the M1114 UAH and the Clear Gunner Protection Kit that is much higher than in initial fielded Gunner Protection Kit and features Transparent Armour.





## FRAG KIT 7

Therefore the development of new add-on armour packages did not end with the introduction of the M1151A1 HMMWV IAP/Armour Ready, the M1152A1 HMMWV IAP/Armour Ready, the M1165A1 HMMWV IAP/Armour Ready and the M1167 HMMWV TOW ITAS Carrier. In 2009 the U.S. Army began to field the Frag Kit 7. Designed under the cooperation of AM General and the Industrial Base Operations – Rock Island Arsenal the major components of the Frag Kit 7 are the Overhead Cover (OHC) for the gunner and add-on armour for the roof of the vehicle that provides the crew of the vehicle with protection from overhead threats. Transparent armour in the OHC allows the gunner to maintain situational awareness. Other components of the Frag Kit 7 are add-on armour for the edge of the doors, Long Range E Tires, new wheel assemblies, the Vehicle Emergency Egress (VEE) window, the new Armour Suspension Kit, a fuel filler door cover kit, a new brake line kit, a battery back-up for the Automatic Fire Extinguishing System (AFES) and a Manual “3rd Bottle” Fire Suppression System (MFES).

## YEARS TO GO

The procurement of more than 20,000 much better protected Mine Resistance Ambush Protected (MRAP) vehicles since 2007 resulted in a limited use of HMMWVs in threat areas. Even the armoured variants were only used in areas where MRAPs could not go, such as built-up areas with extreme narrow streets or mountainous countryside. According to information provided by the Project Manager Tactical Vehicles (PM TV) of the Program Executive Office Combat Support & Combat Service Support the production of new HMMWVs for the U.S. Army ended in January 2011 and for the United States Marine Corps already in 2010, while HMMWV production for other services and foreign military sales customers continues into 2012. In the future the HMMWV will be replaced by the Joint Light Tactical Vehicle (JLTV) for which the development was launched in 2006. In January the Tank-automotive and Armaments Command (TACOM) announced that the JTLV programme has entered into Engineering and Manufacturing Development (EMD). It is planned that series production of the vehicles will begin in 2015. However, due to the large number of light tactical vehicles required by the U.S. Army, United Marine Corps and other formations of

the United States Armed Forces as well as to the fact that only parts of the fleet of HMMWVs in service will be replaced by the JLTV it is most likely that HMMWVs will remain in service well beyond 2020.

In order to keep armoured HMMWVs returning from a deployment on the road in recent years, they were put through a depot recapitalization program that reset them to zero mileage/as new conditions. On the 24th of January 2012 it was announced that in order to save funds for the development of the JLTV the depot recapitalization program was terminated, by then

almost 50,000 vehicles had been pushed through it. In early 2012 the vehicle inventory of the U.S. Army included some 141,000 HMMWV of which more than 30,000 were armoured variants, additional vehicles served with the United States Marine Corps.

In April 2012 the U.S. Army announced its decision to begin to phase out its soft skinned HMMWV variants and keep in service the MRAPs and armoured HMMV variants. The decision was made in anticipation that in any future deployment the deployed forces most certainly will again encounter IEDs.

**Below:** U.S. forces patrol in Baghdad in April 2009. The patrol is lead by a Truck Utility: Expanded Capacity, Armament Carrier IAP/Armour Ready M1151A1. The vehicle has been fitted with the B1-Kit and the Frag Kit 5, as well as with the Objective Gunner Protection Kit (O-GPK).







# “Smells Like Mot

**Tim Gosling looks at British tanker lorries of WW1 and explains why drinking water always tasted like motor spirit!**

**T**o the British Tommy, the supply of hot, strong and sweet tea was as important (if not more so) than the supply of food or ammunition. A mug of hot tea was a great morale booster and would help sustain the tired, cold and wet troops on the front line. Although we don't think of the trenches as being a dry location, getting fresh water to the front line was logistical nightmare. Certainly there was plenty of water in the trenches, but this was usually heavily contaminated by human waste, poison gas, dead bodies and drinking this water would not be recommended.

The water that was brought up to the trenches always had a strong taste of chemicals and motor spirit, but if the tea was strong and sweet enough the strange taste could be masked. The production and distribution of potable drinking water was the responsibility of the Royal Engineers. They would establish bore holes, treatment facilities and a network of pipes to bring the water up to refilling points behind the front lines. This was ideal in a static war, but with plans being readied for a

major attack on the Somme, a new flexible method of moving water up to the advancing troops had to be developed. This method would have to enable the quick movement of water to wherever it was needed without having to rely on the laying of pipes or using captured German sources as it was considered highly likely that the retreating Germans would poison any water sources as they withdrew.

Although small horse drawn water tanks had been used since 1891 these were not considered adequate to meet the requirements of a major assault so in January 1916 the 1st Water Tank Company was formed with the 2nd Water Tank Company formed just five Months later and the 3rd and 4th Water Tank Companies formed in September and October 1917.

**Below:** the 500-gallons of water carried in this tank will weigh 4150 pounds and yet it is only secured by two narrow straps to the Locomobile chassis!







## WATER TANK COMPANIES

The water tank Companies would have to operate as distinct units (being in control of their own organisation, operation and maintenance), usually having up to four sections each but would split these off to supply water to different units where necessary (in some instances operating up to 350km away from the Headquarters). Flexibility was crucial.

The number of vehicles held in each section would fluctuate but as an example when the First section and Headquarters section of the 2nd Water tank Company arrived in France it comprised 24 Garford tankers (each carrying 150 gallons), three Locomobile tankers (each carrying 500 gallons), four sterilisers, two depoiseners (on Locomobile chassis), two workshop lorries, two stores vans,

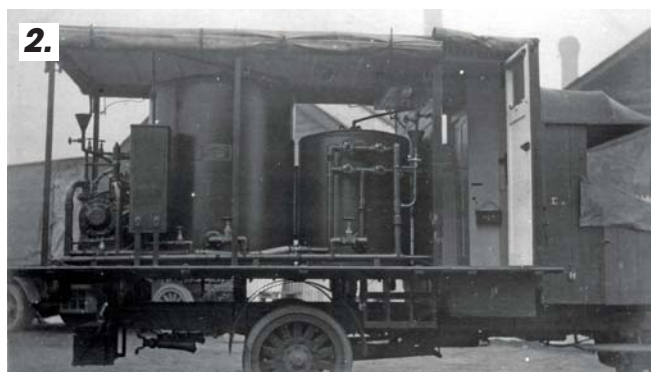
**Above:** an incredibly cosmopolitan selection of water tankers. From left to right can be seen Garfords, Austins, a Saurer, a Mack, a Peerless, Studebakers and a Lancia.

**Right:** this Garford is receiving a new coat of paint. Interesting to see that both rear wheels have been chocked with stones.

**Below:** these Garford water tankers have stopped in a French town's market place.







one 30 cwt lorry, one 3 ton lorry, two cars and five motorcycles. Although they attempted to use as few as possible of different chassis types to maintain a commonality of parts this did not last long as when trucks broke down the bodies were usually moved onto other available trucks, usually of a different make altogether.

### DEPOISONERS & STERILISERS

During the Boer War more British soldiers died from typhus and dysentery than were actually killed in combat. In order to ensure that this would not happen again the War Department purchased water depoisoning and sterilising equipment from the American Company of Wallace and Tiernan. This complicated equipment was mounted in the backs of Locomobile lorries and operated by members of the Royal Army Medical Corps. These Locomobiles would look much like any other until the sides were folded down revealing the equipment within.

The lorry would carry lengths of canvas hose and using a pump powered by a 27 hp stationary engine would take up the water to be sterilised and pump it through a sand filter located in a round tank at the front of the body. After this the water would be passed through a stream of chlorine gas (hopefully killing all bacteria) into a large tank in the middle of the lorry. Finally, any excess chlorine would be removed and the water pumped out into either a folding canvas storage tank or directly into a waiting water tanker. Behind the cab

of the lorry was a small laboratory to which the water was plumbed from every step of the process so that it could be tested to ensure that it would be fit for human consumption.

A variation of the sterilising lorry was the "depoisoning" lorry, which relied upon filtration and the addition of chemicals instead of chlorination by gas. The War Diaries indicate that the depoisoner and steriliser lorries regularly worked together so it is likely that where the water was heavily contaminated it would be run through both systems. By the end of the war Wallace and Tiernan had supplied approximately 600 of these sterilisation plants to the allies with probably somewhere in the region of 200 of them going to the British.

The British sterilisation equipment was mounted on American built Locomobile chassis. As the Locomobile was built in Bridgeport Connecticut just 60 miles away from the Wallace and Tiernan factory in New York it would seem likely that the equipment was fitted directly onto the new chassis by Wallace and Tiernan. The Company of Locomobile had an enviable

**Photo 1:** an AEC Y Type tanker lorry photographed at Valenciennes in France. (Photo courtesy USNA).

**Photo 2:** a clear view of the workings of a Wallace and Tiernan water steriliser mounted on a Locomobile chassis.

**Photo 3:** a Garford lorry fitted with a small (150-gallon?) water tank.

**Photo 4:** a small number of Locomobile mounted mobile laboratories were used on the Western Front to test water quality (Photo courtesy USNA).





reputation for reliability and high quality and was considered to be the American "Rolls Royce". More used to making cars they started making trucks in 1912 and by the end of the war 1,200 Locomobile lorries were in service with the British.

### WATER TANKERS

The water tankers initially came in two sizes. A 500-gallon cylindrical tank, which was fitted to a three-ton chassis and a box-like 150-gallon tank, which was fitted to a 1½-ton American Garford chassis. These were manufactured in Lima Ohio from 1916, but were not purchased in great numbers by the British and (if the War Diaries are anything to go by) they had a large number of reliability problems.

As a replacement in April 1918 the first of what would become 265 American built 30cwt Autocar truck arrived for testing with the 1st Water tank Company. These were fitted with a 250-gallon square water tank and in order to take the weight the pneumatic

tyres were replaced with solid ones on just the back axle. The water tankers were not restricted to just these three makes alone. If a lorry was to be sent away for repairs the water tanks were regularly moved to any available chassis and as a result a wide variety of different types was used.

### IN SERVICE

The sterilisers would clean the water and pump it into large canvas holding tanks ready to be collected by the tanker lorries. Carrying it up as close as to the front as possible the water would be decanted in to large metal tanks or "water points" and from here the water would be collected in two gallon tins for delivery to the trenches. These tins had previously been used for carrying petrol and no matter how they were cleaned the taste of petrol always tainted the water. Some soldiers even claimed they could identify the type of petrol that had been in the tin by the taste of the water.



**Top left:** a small convoy of Locomobile 500-gallon water tankers on the move.

**Top right:** this Garford has been fitted with a 250-gallon tank. The "H2O" symbol of the 4th Water Tank Company is on the back. (Photo courtesy USNA)

**Above:** a Locomobile and a Garford water tanker. The Garford has been fitted with a pump directly over the water tank.







**Above:** this Locomobile is fitted with the less common rectangular water tank.

**Right:** seen just after being returned from France in the 1980's, this Autocar was once a water tanker.

**Top right:** photographs of the Autocar are quite rare. The two German POW's appear to be slightly disconcerted by the man with the bayonet.

**Main photo below:** a water "depoisoner" body mounted on a Locomobile chassis.



Although not immediately used for their intended purpose of supplying water in territory recaptured from the Germans the water trucks were separated into small groups and assigned to provide water for drinking, bathing and horses wherever it was required. Sometimes the water trucks got very close to the front. Four out of the five Garfords sent to Messines had their water tanks pierced by shrapnel. During its twenty-one months on the Western front, the 2nd Water tank Co, lost six Garfords and five



Locomobiles to enemy action and one Garford in a collision with a train. Another Garford received a near miss which blew the whole tank off the back of the lorry which must have given the driver a nasty shock.

## SURVIVORS

At the end of the conflict the War Department sent lorries back to the UK for disposal. A small number of water tankers remained in France during the clean up and a few more joined the army of occupation in Germany but the rest soon found new civilian owners who finding water tanks of little use removed them from the chassis.

There is perhaps just the one survivor of the Water Tank Companies. Imported into the UK in the 1980's came an Autocar UF21 from the sale of a French estate. From its date of build, solid rear tyres and other clues this one was almost certainly one of the 265 Autocars employed as water tankers on the Western Front.

Purchased after the war by a French coal merchant it was used in Cambrai up until the 1950's. It has now been fully restored but as a general service lorry as used in East Africa, the restorers thinking the metal tank would be as impractical as the coal merchant had done when he took it off over 90 years previously.







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# DVD 2012

## What A Difference A Day Makes

**Overnight DVD went from mirroring a Nevada dust bowl to something resembling the car park at this year's Isle of Wight Festival...**



**T**he most interesting vehicle displayed at DVD 2012 was probably BAE Systems Terrier Combat Engineer Vehicle (CEV), this being the long overdue replacement for the British Army's retired Combat Engineer Tractor (CET). DVD was Terrier's first public appearance, and when deliveries to the British Army conclude late-2013, BAE's Newcastle-upon-Tyne facility will close, this the company's last major AFV manufacturing facility in the UK.

Attracting the most mainstream media interest at DVD was the Foxhound Light Protected Patrol

Vehicle (LPPV), its already high profile raised even further by pre-show confirmation that a small quantity of vehicles had recently been deployed to Afghanistan, and that 'active service' was imminent.

Developed by Force Protection Europe, Foxhound is marketed globally by General Dynamics Land Systems (GDLS) as Ocelot; GDLS acquired Force Protection in November 2011 for \$360 million. Alongside Foxhound, GDLS also displayed Ocelot's utility variant.

From an anticipated three competitors, for the LPPV requirement Foxhound would ultimately only compete against Supacat's SPV 400, Babcock and NP Aerospace withdrawing from the competition before trials commenced.

In the lead up to DVD it became known that the UK MoD had, earlier this year, carried out pre-feasibility

**Above:** around eight Terrier CEVs had been completed by June 2012, training on the vehicles is underway at Bovington, with all vehicles due to be delivered by the end of 2013.

**Right:** Lockheed Martin's JLTV vehicle remained in the UK for DVD post-MRV-P trials, and for what will probably be its only UK public appearance in this form.





## FOXHOUND LPPV

**Top right:** showing in Europe for the first time, Ocelot's utility (ute) configuration was developed for Phase 4 of Australia's ongoing Land 121 competition.

**Below:** just prior to DVD it was announced that the first of 300 Foxhound Light Protected Patrol Vehicles (LPPVs) ordered had been delivered to Afghanistan. Foxhound will replace the last of the vulnerable Scatch Vixen Plus Land Rovers in use on deployed operations.



trials on four vehicles for the British Army's projected Multi Role Vehicle – Protected (MRV-P) requirement. MRV-P is a follow-on to the now defunct Operational Utility Vehicle System (OUVS), this intended to replace the current Land Rover and Pinzgauer vehicles. The four vehicles trialled were Supacat's SPV 400, Creation's Zephyr, Oshkosh's M-ATV and Lockheed Martin's Joint Light Tactical Vehicle (JLTV).

JLTV is the US Army/Marines ongoing programme to find a replacement for the AM General HMMWV. Lockheed Martin (LM) was one of three teams competitively selected to participate in JLTV's Technology Demonstration (TD) phase, and shown at DVD was a TD phase prototype.

JLTV recently entered the competitive Engineering and Manufacturing Development (EMD) phase, for which Lockheed Martin has confirmed it will offer a further development of this vehicle.

At least six contractors have bid for JLTV's EMD phase, with next phase contracts currently scheduled to be awarded to up to three selected bidders around the time this issue hits the shelves.

Also targeted at JLTV's EMD phase is Navistar's Saratoga, this first displayed publicly at AUSA late-2011. Navistar has confirmed that a smaller more refined variant of Saratoga will be offered for JLTV's EMD phase; for the earlier TD phase Navistar had teamed with BAE Systems to offer the Valanx.

### HUSKY TSV (MEDIUM)

The UK MoD's Husky was prominent at DVD, 351 of these ordered as UORs (in two batches) since 2009 to meet the Tactical Support Vehicle (TSV) Medium requirement. Three Husky variants were initially ordered, ambulance, utility and command post, but quietly displayed at DVD was a new Husky variant - recovery.

This latest variant has been developed in answer to an in-theatre need for a vehicle capable of winch recovering light and medium-weight vehicles in areas not readily accessible to heavier recovery assets such as the Support Vehicle wrecker. As a UOR,

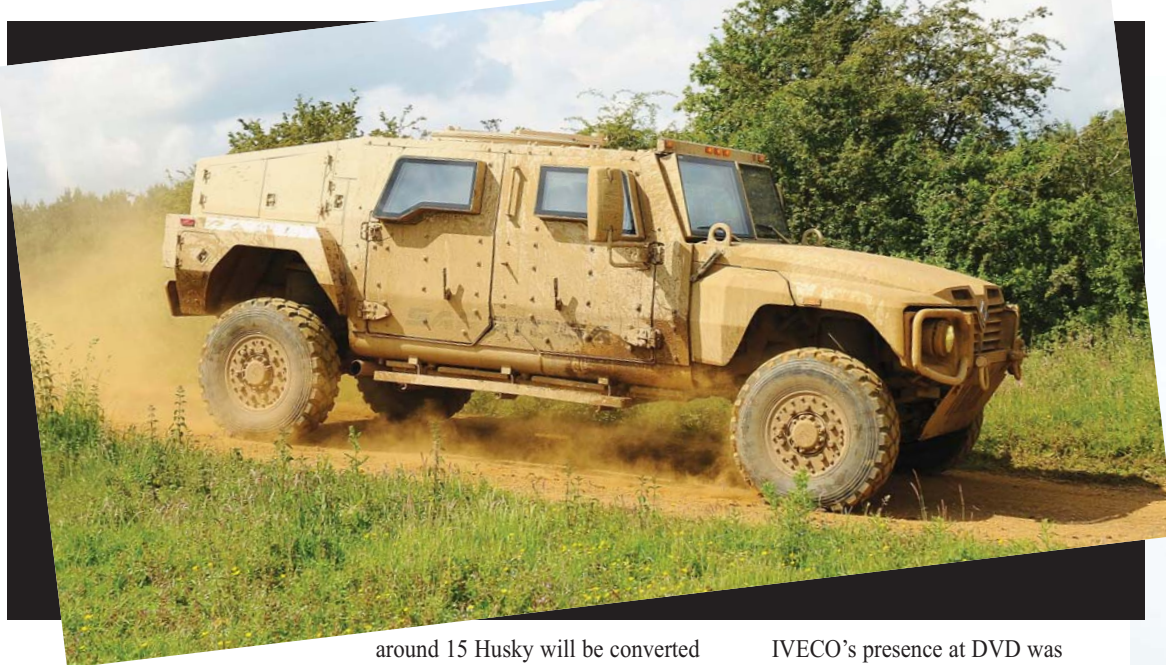


**Left:** Supacat's SPV 400, displayed at DVD in its latest refined configuration.

**Below:** Creation's Zephyr was an intended LPPV competitor and was recently one of four vehicles to carry out pre-feasibility trials for the British Army's projected Multi Role Vehicle – Protected requirement.







**Above:** Navistar's Saratoga. A smaller more refined version has been proposed for JLTV's EMD phase.

**Far right:** overnight DVD went from mirroring a Nevada dust bowl to something resembling the car park at this year's Isle of Wight Festival...

around 15 Husky will be converted into LRIK (Light Recovery Installation Kit) configuration, these fitted with a rear-mounted winch and spade.

Husky is based on Navistar's MXT, the company also displaying an MXT in armoured pick-up and Police SWAT configurations. Navistar could not confirm this for contractual reasons, however, it is believed the SWAT vehicle was destined for the Royal Canadian Mounted Police.

IVECO's presence at DVD was sizeable, vehicles displayed ranging from heavy trucks with armoured cabs through to a mildly militarised Daily light van, and including two LMVs. IVECO's LMV has been sold to ten countries (including Russia and the UK), with order totals currently standing at over 3000. Displayed at DVD was a vehicle to the very latest build standard, this one of 150 vehicles ordered by Austria.

At the heavier end of the scale, IVECO has recently completed deliveries of 182 Trakker AD380T45W 6x6 trucks to ALC, these delivered as part of ALC's 2005-awarded £600 million 16-year PFI undertaking for the UK MoD's C-vehicle fleet. Outside of this PFI procurement, in April IVECO delivered the last of 25 specialist Trakker AT410T45P 8x8 Self-Loading Dump Trucks (Protected) (SLDT(P)) to the MoD direct, these fitted with an all-steel armoured cab developed in conjunction with Krauss-Maffei Wegmann (KMW).



## HUSKY TSV (MEDIUM)

**Right:** Navistar couldn't confirm this, but this is almost certainly one of the MXT vehicles ordered by the Royal Canadian Mounted Police.



**Below right:** as a UOR around 15 Husky will be converted into LRIK (Light Recovery Installation Kit) configuration, these fitted with a rear-mounted winch and spade.



**Below:** Navistar's MXT, on which the UK's Husky is based, makes light work of a sideslope.



# “...DVD often attracts a m



Oshkosh's M-ATV participated in the British Army's projected Multi Role Vehicle – Protected (MRV-P) requirement pre-feasibility trials.





**Below:** three of these EOD-bodied HX60 have been ordered, however, the end user (which is not the UK) has not been disclosed.

**Bottom right:** included in a selection of vehicles, IVECO displayed an ALC MDT (r), and fresh from evaluation for a joint Norwegian/Swedish Army requirement, a Trakker EPLS (Enhanced Palletised Load System) (l).

## number of 'First Timers'...'

The UK MoD's £1.3 billion Support Vehicle (SV) fleet contract was awarded to the then MAN ERF Ltd in March 2005, with the vast majority of the 7,479 SVs and derivatives currently on order scheduled for delivery by June 2013.

Among a selection of vehicles, many of which were offering rides around Millbrook's off-round track, what is now technically Rheinmetall MAN Military Vehicles (RMMV) displayed an interesting HX60 and the latest HX2. The HX60 is UK-spec that in addition to an armoured cab mounts a protected EOD container, this supplied by Marshall Land Systems. The HX2 is a further development of the HX range, it having a reinforced chassis, larger 1600R 20 tyres, uprated springs/dampers and a new 11-tonne

rated front axle. The vehicle displayed was also fitted with a new Rheinmetall Integrated Armoured Cab (IAC), this featuring Rheinmetall's classified Active Defense System (ADS).

### FIRST TIMERS

DVD often attracts a selection of 'first timers' and while some return again, others do not... First timers this year included...

The Nimr was developed as a local (Middle Eastern) alternative to the HMMWV. The project traces back to around 2000 and as a joint venture between the UAE's Bin Jaber Group (BJG) and Jordan's King Abdullah II Design and Development Bureau (KADDB), although the latter subsequently dropped out during a





**Top right:** Streit's latest development is the Jaguar, this and Typhoon staying at Millbrook post-DVD for additional testing.



**Top left:** the latest build standard LMV is fully digitised, has a redesigned cab, the driveline features IVECO's ADM, IED protection is enhanced, GVW is 7500 kg, allowing a payload of >1500 kg.



**Right:** RMMV's new HX2 has a new armoured cab fitted with Rheinmetall's highly classified ADS, the sensor system of which detects incoming projectiles, and neutralizes it in microseconds by means of directed energy...



**Right:** if it looks wrong then it probably is wrong, and this Re-capitalised Pinzgauer proposal from Ricardo just looks wrong...

**Below left:** the ZZ-3 is actually the Russian GAZ-3409 Bobr (Beaver), produced GAZ Group company ZZGT (Zavolzhsky Crawler Vehicle Plant).



**Below right:** Nimir (tiger) is available in (4x4) and (6x6) configurations, customers for the approx 2300 examples ordered thought to include Libya, Tunisia and the UAE.

**Bottom right:** Streit's Typhoon MRAP-class vehicle is priced at around \$300,000, initial sales have been made to the UN and undisclosed African countries...



long, troubled and cloudy gestation period. Most recently, in 2009 BJC announced that Tawazun (a strategic investment organisation tasked with developing Abu Dhabi's defence industry) had taken a 60 per cent stake in the project, disclosing orders for around 1,000 vehicles at the same time. Further orders have followed, with around 2,300 NIMR thought to have been ordered to date.

is looking to boost its military market presence with a selection of new products.

### AND FINALLY...

Traditionally I end my DVD reports with something odd, unusual, quirky/interesting or something that just looks wrong... This year I'm spoilt for choice...

Meeting the quirky criteria would be the amphibious tracked ZZ-3, this offered by SV Trading (with backing from Terex) and meeting the just looks wrong criteria would be the Pinzgauer Re-capitalisation vehicle shown by Ricardo.



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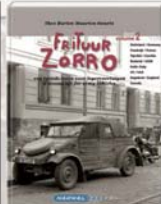
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# DAFT about DAFs

**Siete Meeter met up with members of the DAF YA-126 Club in the Netherlands**







**Top:** although a large number of the vehicles belonging to club members are finished in military paintwork and markings, it's not a requirement of the club.

**Above:** this weapon carrier has been converted into a camper and incorporates a rear door from the hard top radio wagon.



**Above:** the central set of wheels on the DAF YA-126 are an aid to crossing rough terrain and aren't actually powered by the drivetrain.

**Below:** the looks of the DAF YA-126 are an acquired taste and not to everyone's liking, but there's no doubting it has military heritage!



**T**he DAF YA-126 Club is quick to point out that they are not a military group as such and therefore the vehicles can be any colour of the rainbow or be modified. The 126 Club is an association of YA-126 owners founded in 1997, with the history, design, layout and handling of this vehicle being the common denominator of the club. Members are more interested in the technical ingenuity, than in the military status of this vehicle, despite the fact that it was designed for military use. So far as the club goes, it doesn't matter whether the YA-126 is red, green, purple or modified, just as long as it is, or will be, in a good condition. The association has 126 members, donors, members of special merit and honorary members and most own a YA-126 and keep it in a good condition. Members of the club get the club magazine, a technical manual, access to parts from the club's stock, are entitled to vote at the AGM and may of course participate in all club activities.

While the club is a real DAF YA-126 type club, and to be a member, you need to have such a vehicle, there are numerous members who also have another vehicle, such as the DAF YA-328 6x6 or Nekaf-Jeep, the feeling being that the YA-328 and Nekaf belong here too, fitting in with the late 50's early 60's era.

### DAF YA-126

The DAF YA-126 was developed in the early 50's along with its bigger brothers the DAF YA-328 and YA-314. From 1955 to 1960 about 3500 vehicles were built in various types, including a weapon carrier, weapons carrier with winch, radio car and ambulance. In addition Local Defence Units also built other local versions such as fire or expedition versions.





**Below:** built in 1957, the weapon carrier was designed for six persons and equipment.

The Hercules 4.6-litre petrol engine used 1 litre every 3 to 4 kilometres. This vehicle now drives on LPG!

**Bottom:** this weapon carrier has had a gun rack, and a back door from a radio truck added as part of a change to camper, it also runs on LPG.

This particular truck is regarded as one of the best DAFs in the club.

YA-126 stands for Y = defence vehicle, A = general, 1 = payload, 2 = second series, 6 = number of wheels. The nickname 1-tonner is related to the carrying capacity and WEP comes from the English 'Weapon Carrier'. The Weapon Carrier is, like the YA-328, equipped with an H-drive where the power of the engine is divided first to the left and right and then to the front and rear wheels via drive shafts, with just one, central differential. The YA-126 has completely independent suspension and in order to protect the drive, the YA-126 has two, rotating spare wheels, one on either side of the vehicle, which are able to serve as a support and aid the vehicle when going across rough terrain. The weapon carrier could carry eight people and the ambulance could take the crew plus four wounded.

## DISPOSAL

The YA-126 was discharged from the military in the mid-80's, but there was no real successor, with the tasks once performed by the YA-126 divided between the Land Rover 109 and DAF YA-4440 truck. Featured here is an original weapon carrier version of the DAF YA126, which still has the original Hercules JXC in-line 6-cylinder engine of 4.6-litre capacity. The vehicle was built in 1955 and came on to the private market in 1986. It was subsequently restored, and was bought by the present owner in January 2011 from a beach bar owner who used it for his work. Since then it has been refurbished and undergone a complete overhaul of the engine and braking system.

In addition to the standard weapon carrier, YA-126 radio trucks are especially popular on the circuit. These vehicles are essentially the same format as WEP's, using the same engine and mechanical components, but instead of the canvas roof they have a steel box on the back. These were generally built later in the 1970s using the existing WEP's. These vehicles tended to be driven less, and as they were built in the '70s, had done less work when released from military service. In private hands they are popular because they are easy to use as a camper. The example shown here (BE-24-61) is rare in that it has a roof rack mounted above the roof, but it has also been converted to take a DAF 615 turbo diesel engine and a tilt nose, whereas on standard vehicles only their bonnet hinges up.

The weapon carrier (BE-12-09) has had a gun rack, and back door from a radio truck added as part of a change to a camper, it also runs on LPG with the tank built into the rear flat bed and has a passage between the rear tray and cab. This particular truck is regarded as one of the best in the club.

While the club is dedicated to the DAF YA-126, some members have additional vehicles, including some examples of the larger 6x6 DAF YA-328. The DAF YA-328 was the first tactical vehicle developed after the war and saw widespread use when it went into production. Nearly 4500 were built between 1952 and 1958 and is often known as the "Big DAF" because of the impressive appearance, but perhaps even more impressive is the sound of the Hercules JXLD, 6-cylinder petrol engine. The DAF YA-328 has a H-drive transmission layout. There are three basic types, the tractor truck, truck with winch, and truck without winch. The DAF YA-328 was replaced by the DAF YA-4440 4-ton truck in the early 80's.

### DAF YA-126 Technical data:

Weight: 3500 kg  
Payload: 1000 kg  
Height: 4.55 m  
Width: 2.11 m  
Height: 2.15 m (1.82 m knockdown)  
Engine: Hercules JXC, 6-cylinder petrol developing 102 hp at 2800 rpm







**Above:** the radio bodied version of the YA-126 is well liked by club members because it can easily be converted into living accommodation for shows. This example is unusual in that it has a roof rack, providing additional storage.

### Acknowledgements

My visit to Kornwerderzand to meet members of the DAF YA-126 Club and seeing a whole row of weapon carriers, took me back to my time with the Army when I used to drive the YA-126. I would like to thank members of the club for their help with the photos and the information for the article, and if you want to find out more you can check out their website, which you will find at: [www.ya126.nl](http://www.ya126.nl)

### NEKAF JEEP

Although it's not a DAF, some owners have more than one vehicle, and this Nekaf Jeep fits within the same period of military service.



### DAF YA-328 Technical data:

Weight: 6200 kg  
Payload: 3000 kg  
Height: 6.13 m  
Width: 2.40 m  
Height: 2.65 m (1.94 m knockdown)  
Engine: Hercules JXLD, 6-cylinder petrol engine

**Below right:** DAF YA-328 pictured here at the Willem-3 Barracks Amersfoort in August 1973. This was the type I used when I was in the Army and meeting the members of the club brought back many memories.

**Below:** although the club is primarily aimed at owners of the YA-126, some members also own the larger YA-328.





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# The **FOXHOUND**

The British Army's very latest armoured vehicle, the Foxhound LPPV (Light Protected Patrol Vehicle), is destined to fulfil the role once performed by the much older Snatch Land Rover. Foxhound has been designed to meet specific requirements encountered in Afghanistan, with much better ballistic protection for the crew, but Foxhound would be equally at home on the conventional battlefield or indeed in an urban environment. The latest Theatre Entry Standard Foxhound put in an appearance at this year's Defence Vehicle Dynamics show, which is where this photograph was taken.





# WHITE SCOUT CAR

## M3A1

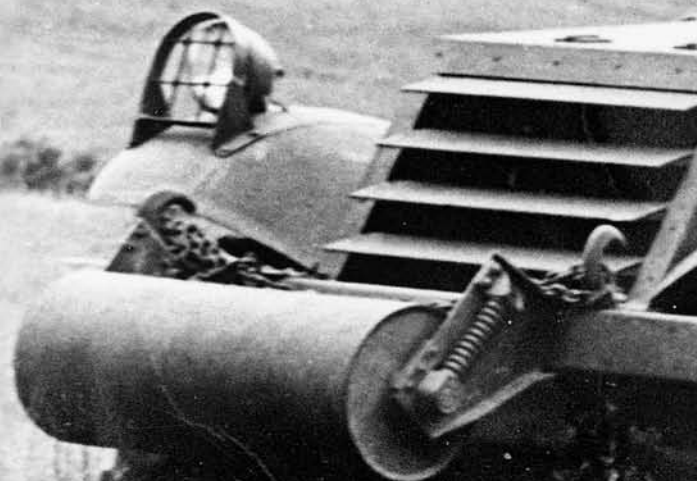
**Ludovic Fortin  
describes the  
World War Two  
American Scout Car**

**Main photo right:** photographed in training in the USA, this M3A1 at the start of production already has searchlights and side rear-view mirrors. It also has a .30 cal M1917 water-cooled machine gun, which was out of place in an armoured vehicle, and was soon replaced by the traditional air-cooled M1919A4.

**Below left:** a slightly clichéd 'advert' for an M3A1 during production, without a doubt extracted from a manual listing types of vehicles, revealing the lack of search lights and rear-view mirrors. Also notice the change from six openings in the rims, instead of eight. (Tank Museum)

**Below right:** this aerial shot reveals the central pillar being used as an antenna base, the latter being held curved by a simple string. Note the large step across the back, which allows better access to the combat compartment.

The principle of the Scout Car is simple: a fast wheeled, lightly armoured vehicle with great independence, for effective reconnaissance far behind enemy lines. The majority of European armies before the war preferred slightly heavier machines, with turrets and automatic machine guns, but the British and Americans developed their own Scout Car along very different lines. The origins of the American Scout Car date from 1933, when the White Motor Company in Cleveland – specialising in the construction of lorries and cars – proposed to the American Army their T7 model, modelled on the commercial chassis of the White Indiana 4x4. Powered by a 75 horsepower Hercules, the vehicle had a rudimentary appearance, because while the armour and crew compartment were well equipped to protect its occupants, the fighting compartment was a simple armoured box. Predicted to carry four to five men, it nevertheless possessed a powerful armoury: two .50 calibre (12.7mm) machine guns and two .30 calibre (7.62mm).







**Left:** as late as the beginning of April 1945, when the 1st French Army crossed the Rhine at the height of Germersheim, the M3A1 was in service with the reconnaissance units of the armed forces of Free France, as witnessed by this Scout Car US of the 3rd Squadron of the 3rd Regiment Moroccan belonging to the 2nd Division of Moroccan Infantry. It is followed by an M20 of the 4th Squadron of the 2nd Regiment of the Dragoons. (ECPAD)





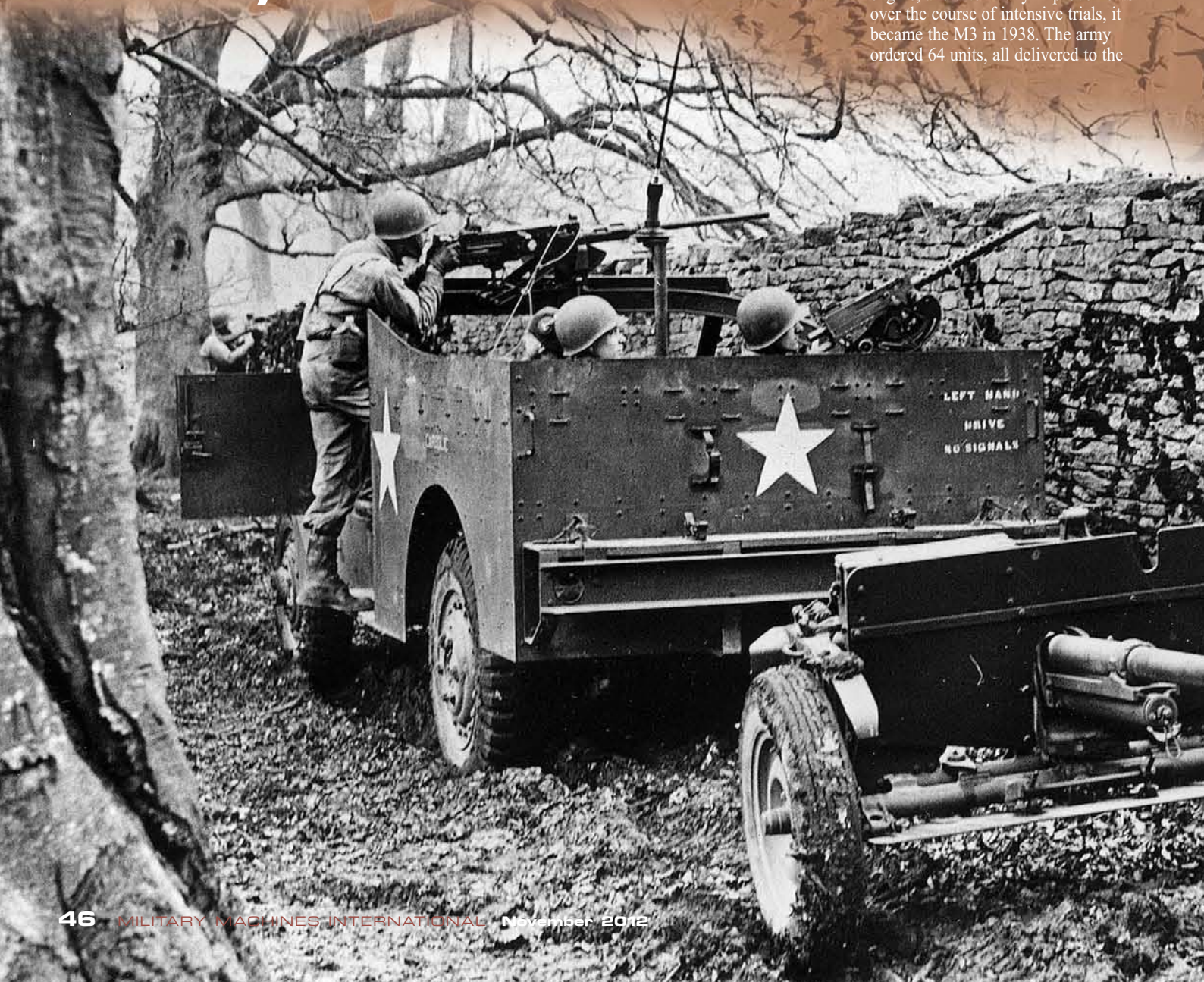
**Above:** bearing typical British two-colour camouflage, this M3A1 Scout Car is devoid of its clearance roller and has storage racks at the rear, modifications often carried out for the M3A1 in British service. (Tank Museum)

**Below:** lovely photo showing the training of an M3A1 trailing an anti-tank M3 gun, a role rarely attributed to the vehicle. The 'in action' pose highlights the use of machine guns, using the 12.7mm in front by opening the driver's door to aim the gun at a lateral target. (Tank Museum)

**“...the M3A1 Scout Car had relatively weak armour...”**

Standardised under the name ‘M1’, only 76 units were ordered. Its successor was Corbitt’s Scout Car T9 (labelled ‘M2’), with a 95 horsepower engine. Longer and lower, with better-designed bodywork, the vehicle carried between five and seven men, with an armory of just two 7.62mm machine guns. The M2A1 was equipped with a fixed rail around the entire fighting compartment, receiving sliding gun mounts, which replaced the previous fixed gun mounts: this feature would be repeated on the definitive versions of the Scout Car and is referred to as the ‘skate ring’. Marmon-Herrington also proposed their model A7SCA in 1935, but it was never produced for export, and their T13 would be reserved for the National Guard.

White Motors returned to the forefront of the scene in 1937 with their Scout Car M2, which really prefigured the final model. It was already equipped with a six-cylinder 110 horsepower Hercules JXD petrol engine, and after many improvements over the course of intensive trials, it became the M3 in 1938. The army ordered 64 units, all delivered to the





7th Cavalry Brigade, before the arrival of the M3A1 in 1939, which was characterised by a larger frame and a roller added to the front to aid trench crossing. With the end of small-scale production and in its definitive form, more than 20,000 units of the M3A1 would be produced between 1939 and 1944 (up to 29,918 according to certain sources) in eight successive batches: an impressive number which appears to prove the success of the conception and manufacture of the vehicle, even though it still had faults.

Carrying seven passengers and a driver, the M3A1 Scout Car had relatively weak armour of just 6.35mm, which only protected occupants from light weapons fire and shrapnel. The windscreen armour was only 12.7mm thick, and the underside of the fuel tanks under the front seats, were covered by a simple steel plate. There was no armour at all on the underside of the driving and combat compartments, and considering the size of the vehicle, presented a real danger. It was also criticised by users for being extremely vulnerable to artillery air bursts, hand grenades and overhead shots - for example in an urban environment, but later trials for an armoured roof led to nothing. Access was through the front doors,

which was hardly practical, or the rear, over the armour, with the aid of a step ladder which ran the width of the vehicle above the headlights, another poorly designed situation that left men exposed when getting in or out of the vehicle. At the front the radiator was protected by four, pivoting armoured slats that could be closed from inside the driving compartment if required.

The initial weapons fit of the M3A1 consisted of one .50 calibre M2 machine gun, and one water-cooled .30 calibre M1917. The latter would be replaced in combat by the air-cooled M1919A4 model. The guns were fixed onto sliding mounts, which followed a rail around the inside of the vehicle. Two tripods stowed within the vehicle were available for using the weapons on the ground.

The M3A1 Scout Car was bulky, being 5.63m long, 2.03m wide and 1.99m high, especially when compared to its British contemporaries that were supposed to fulfil the same role, but carried only two or three passengers. The working weight of 5.92-tonnes is also high, thus it was bigger and heavier than its predecessors. The JXD Hercules engine and its four-speed gearbox allowed it to reach a maximum speed on the road of 80 to 90 km/h and the fuel tanks had a total capacity of 114-litres, which gave it an average range of 410km. While the speed and range were respectable, the weight of the vehicle and the weakness of the engine meant that the M3A1 was not comfortable on all terrain. It was equipped with an SCR 506, 508 or 510 radio set, and the antenna was fixed on a central pillar in the combat compartment.

The M3A1 underwent light modifications over the course of its production. The first units (just under 300) were characterised by less pronounced headlights on the front

fender, the presence of a searchlight, and a rear-view mirror on each side of the driving compartment, wheel rims with eight openings, the lack of black out lights, and the rear armour in two parts instead of one. Several M3A1 were powered by two different diesel engines, which would all be delivered to the USSR, while the US Army preferred the petrol version. However, there were many improvements during WWII, the addition of guns, layout changes inside and storage space on the exterior for different items, and armoured shields added to the guns. The period after the war would see even more radical changes, such as improvised armoured roofs, the transformation into an armoured car by installing various turrets onto a modified superstructure, or replacing the wheels to use the vehicle as a railcar.

## IN SERVICE

First used in 1940 as reconnaissance units in armoured divisions of the US Army, the M3A1 Scout Car was also used in 1942 by the mechanised cavalry regiments, with around 13 per platoon. It served for the first time in

**Above:** photographed in England just before the D-Day landings, this British M3A1 of the 1st Motor Battalion Grenadier Guards of the Guards Armoured Division (see the Arm of Service 54 sign on a red background and the insignia of the division on the left wing) also wears the phrase OC on the right wing and the flank, probably for Officer in Command. At this time, the Scout Car US was used for specialist roles. (IWM)

**Below:** converted to an armoured ambulance by the British, this M3A1 could probably welcome two stretcher patients, and four seated crew (one of which is in the driving compartment) as well as a driver and a stretcher-bearer. The tarpaulin bows are still in place to protect the wounded as quickly as possible from inclement weather. (Tank Museum)





# "...the M3A1 served for the first time in the Philippines in 1941..."

**Top right:** the Soviets were the principal users of the M3A1 in the Lend-Lease, however, photographs of the vehicle in the service of the Red Army are rare. Here one is used as an artillery tractor for the ZIS-3 76.2mm gun, and you can see how the crew has to climb over the sides to get off the vehicle. (Tank Museum)

**Below:** after the War, the M3A1 remained in service with many Allied armies, notably in France, where it saw use in colonial operations. This Scout Car has received modified rims (and a roof which protects from the strong sun) to be used as an armoured railcar in Algeria, in the 1950s. (Tank Museum)

the Philippines in 1941-42, and then in North Africa and Sicily in its initial role as a reconnaissance vehicle. The losses incurred, its intrinsic limitations and the arrival of better-performing machines such as the armoured cars M8 and M20 relegated it little by little to secondary roles from 1943, such as command vehicles, by adding partial roofs, a folding table and additional radio posts.

The M3A1 was already out of use by the US Army at the time of the Normandy landings, with the larger, heavier and better armoured M8 and M20 vehicles being preferred. In fact, it is in the setting of the Lend-Lease agreement that the M3A1 would see its longest and most varied use and was delivered in large quantities to Great Britain (or rather the Commonwealth), and also the Soviet Union, who received 3340 units, making the Soviet Union the largest user of M3A1s during WWII. Many other armies were also equipped by the Americans or the British during the liberation, including France,



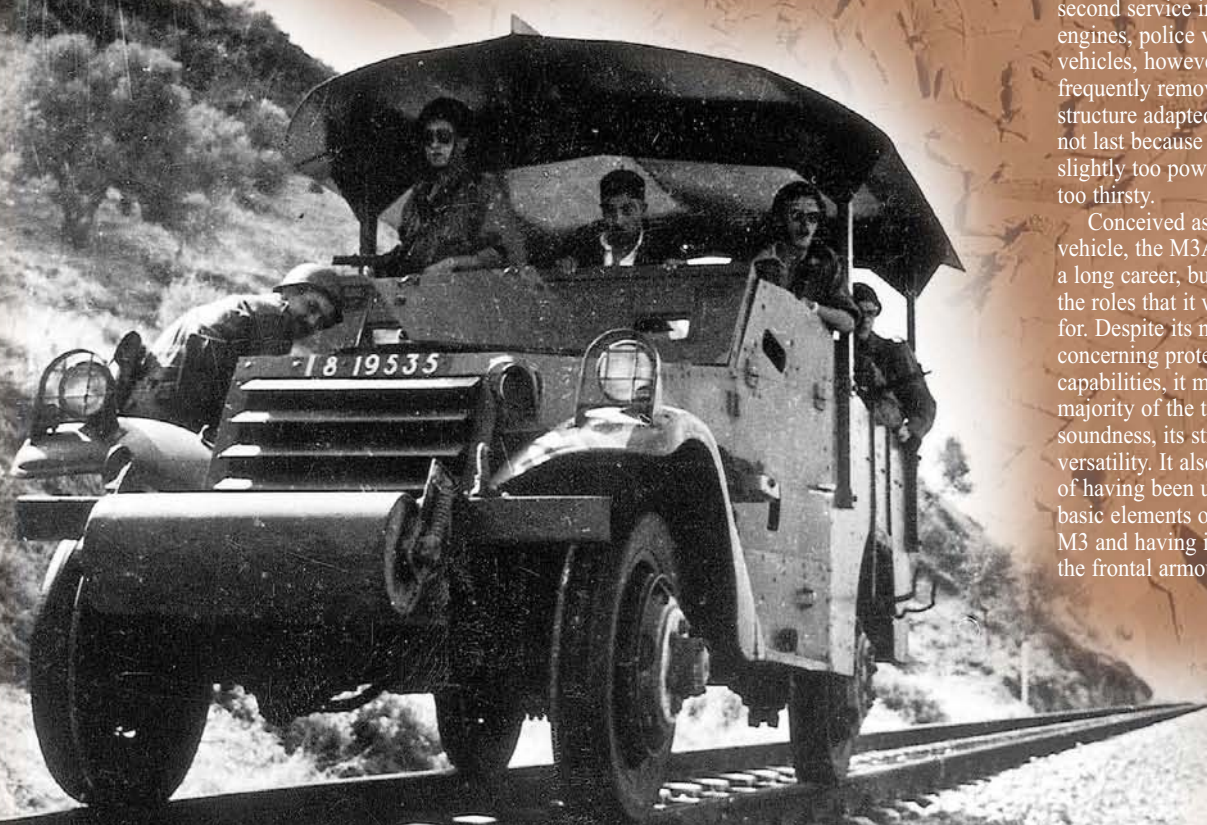
Poland, Belgium and Czechoslovakia.

The British Army, already using their own Scout Cars for reconnaissance roles, used it especially as a command and radio vehicle, armoured ambulances, artillery observation vehicle and for engineering. In 1943, the M3A1 was therefore present in armoured divisions, for officers of regiments and brigades, and in the command platoon of regiments or the squadron. It was equally employed as an APC within the mechanised infantry, before gradually being replaced by the semi-tracked M5 or M9 half-tracks, like the Americans. Thus, the many Scout Car M3A1s available within the 2nd British Army and the 1st Canadian Army were requisitioned for Operation Totalize in August 1944 in Normandy, to serve as APCs. Despite the growing arrival of the Humber and Daimler Scout Cars within the Commonwealth,

the M3A1 would be conserved for its practical assets, notably its spacious combat compartment. Although they heavily criticised the vehicle (as they criticised, with some justification, much of what they received under Lend-Lease), the Red Army used it as a reconnaissance vehicle and a field artillery tractor for the ZIS-3 76mm, but mainly as an APC.

After the War, the M3A1 remained in service in the majority of armies of liberated countries in Northern Europe, particularly for colonial conflicts: for example, France used it in Indochina and in Algeria. The Scout Car was also sold to many countries in Asia (Laos, Vietnam, Cambodia,...) and Latin America (Chile, the Dominican Republic...). Israel also received many units, directly from the US or via Europe, which were used with important modifications during the War of 1948. Many machines saw a second service in civilian life, as fire engines, police vehicles, and rescue vehicles, however, the armour was frequently removed and a specific structure adapted, but this practice did not last because the vehicle was slightly too powerful and the engine too thirsty.

Conceived as a reconnaissance vehicle, the M3A1 Scout Car enjoyed a long career, but paradoxically not in the roles that it was originally intended for. Despite its notable shortcomings concerning protection and all-terrain capabilities, it met its needs the majority of the time, thanks to its soundness, its strength and its versatility. It also retains the privilege of having been used as one of the basic elements of the half-tracks M2-M3 and having inspired the shape of the frontal armour.





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# GMC BRIDE

**Bernie Pitt discusses the Trials and Tribulations of Being a Female GMC Owner**





**W**ell, where do I begin? I suppose that my experiences may be applicable to any military vehicle, but I just happen to own a GMC and I'd like to say from the outset that I love my truck. GMC's melt my heart, they're such great looking trucks, with a smiling puppy dog face that I just can't resist! I was born into the Army so being surrounded by green machines was the norm, however, re-kindling the passion many years later was a chance encounter, but that's a whole other story!

The first time I clapped eyes on a real live 'Jimmy' was at the MVT show at Berkeley Castle and from that day I knew wanted one. My poor husband at the time was nagged for years before he finally gave in, and at last I had my dream vehicle! There was quite a lot of work involved in getting her roadworthy, and post divorce (nothing to do with the truck!) there has been so much more work done since, but even so I've still got much more to do to get her show ready again for next year.

After many months of work October 2007 was set to be my first ever solo show. I sat in the cab absolutely petrified, it was a do or die moment, and if I'm truthful I felt like climbing back out, getting in my car and going home! It was dark & drizzly, but if I wanted to get to the show I had no option but to bite the bullet, so I started the engine, put my foot on the clutch, slid her into 2nd gear and pulled away. Feeling sick with nerves I hit the M5 on my way to Toddington railway on the other side of Cheltenham, but the soothing rumble of the tyres on the road and the comforting rattle of the Jerry cans made me feel so at home, it was like I knew this was where I was meant to be and I haven't looked back since!

That first journey made me realise I had nothing to be scared of. A welcoming beer tent awaited me on arrival along with a bunch of familiar faces eager to laugh at any mistakes I made while reversing into a cosy spot, which I did perfectly I hasten to add, mind you, if they'd seen me five minutes earlier it would have been a different story. The brakes weren't the best and as the gateway was narrow and on a slope so I found myself having to shunt a couple of times in a small lane to get through and nearly wiped out the gate post in the process! Thankfully the hand brake worked and disaster was averted, however, this was my first wake up call that all was probably not as it should be and the consequences could have been so different in any other situation, but in truth it had nothing to do with my gender and could have happened to anyone, but the Jimmy is a big machine and in all seriousness the mechanics need to be in A1 condition.





**Right:** the non-standard seat cushion is more practical than cosmetic, and helps me to see out of the windscreen and reach the foot pedals.

**Below:** I love nothing more than tinkering with the truck and I'm becoming quite a dab hand at working from the official maintenance manuals I have.

**Bottom left:** even when the editor arrived to take the photos for this article I had my head under the bonnet while changing a fuel pipe, the attire, and especially the footwear seemed to confuse him!



Thankfully I managed to get home safe and sound, park the Jimmy up for the winter and plan what work needed doing before she came out again for the next season. A 'temporary mechanic' was introduced into the hobby for a season or two and with an Army engineer background he helped me set about sorting out the niggles. The brakes were sorted and she drove like a dream down to Beaulieu, my first show of the new season. Unfortunately she wasn't so good on the way home and had to be towed the last two miles back to base! It turned out the fuel wasn't getting through properly and the manifold was starting to blow. It took over two hours to undo all the bolts on the manifold as some were seized, but after sending the manifold off to be skimmed it was all hunky dory again.

The fuel system was a different matter, the tank had been stood for ten years with old fuel in it, which had turned into about three inches of sludge in the bottom of the tank so it was removed and given a good clean out. The pipes were blown through and the fuel filter cleaned, and once the fuel tank was back in place she ran like a dream, rewarding me with another eighteen months of carefree driving until a mini disaster on the way home from Beltring in 2009. It turned out the diaphragm in the fuel pump had gone and was leaking like a sieve on the M25. A kindly Reo (cheers John), towed me to Rex Ward's premises near Reading where a 'team' of mechanics were waiting in

the dark to fit a new one. She still coughed and spluttered, but after an overnight camp, followed by a carb rebuild and a new fuel pipe in the morning she drove like the wind back to Gloucestershire.

The fuel system woes have been a bit of a problem, and she's since had another carb rebuild, a second fuel pipe, as well as all the brakes serviced, a new headlight, the rear lights rewired and thanks to Mick Wilson and the 504th Red Ball chaps, a new hub seal on the middle axle.

I've lost 5th gear, somewhere down Blunsdon hill near Swindon (very careless of me), so the project for the winter is a gearbox rebuild and the clutch will also be looked at and possibly replaced at the same time, and the hydrovac seal and diaphragm will also be replaced while I have the truck in bits.

The dynamo also needs sorting so she charges the battery instead of draining it, and if I still have time to spare I may well treat the Jimmy to a full rub down and respray. Sadly these could be seen as pretty big tasks for a female to undertake, especially when you don't know what you are doing, and this is where I let myself down. I'm an independent person, too independent most of the time, and it goes against the grain to ask for help and being a woman I find it even harder to ask for assistance. This may seem like a daft statement to make because if I were a man asking for help it would be treated as an excuse for a few lads to get together for a few





beers over spanners, however, being female I sometimes become the target for mickey taking and while I know this is only done in jest, and I don't take it too serious, I also don't like 'putting' on people who have enough vehicle maintenance of their own to do. Close friends have told me off for this over the past few years and told me it's okay to ask for help, in fact it's expected and I have to say it's such a comforting thought to know that even though there are hobby friends, there are also hobby friends willing to put themselves out purely from kindness.

## GIRL POWER

Ultimately this hobby world is quite a close-knit community with acquaintances being made around the world and from all walks of life. It's where I feel the most relaxed and accepted for who I am instead of being stared at for being slightly odd when I turn up in a WW2 truck! All too often it's hard for people, especially men, to accept that the truck is mine, that I drive it, I enjoy it and I don't have the help of a man. It can be frustrating trying to convince people of this fact, and sometimes it takes all my diplomatic skills not to say or do something I might regret!

I'm slowly accepting the fact that I get stared at a lot, I've even had two coaches full of people applaud me! I was on my way to an Army families day up at South Cerney when I stopped for a comfort break. I pulled into a Greasy Joes as you do, jumped out the

cab and was half walking, half dancing across the car park due to my urgent needs when I got the feeling I was being stared at. Admittedly I was wearing sparkly sandals with a brown zebra striped floor length strapless maxi dress and matching handbag placed over my arm daintily skipping to the loo, and had just jumped down from a camo green WW2 truck, but on looking at my surroundings there were two coach loads of people mingling on one side, a football team on the other, and around 150 bikers in the corner, all with eyes on me!

At this point I was past caring as there was only one thing on my mind, however, the return walk was even more daunting, but I needn't have worried because as I got back in the Jimmy and started her up to drive off the two coaches blasted their horns and everybody clapped and cheered me off. I didn't know whether to be embarrassed or proud so I plumped for gleaming bright red cheeks with a beaming smile.

Ultimately I get laughed at - a lot, but I also laugh at myself too and it's something I have come to accept as part of being involved with this wonderful hobby. I think I'd cry if I didn't see the funny side of life as a military vehicle owner, after all we are a unique breed, but being a female GMC owner is a challenge, but it's a challenge I weirdly enjoy, so raise your beers, or cup of tea, and give a toast to every female owner and driver for partaking in one of the best hobbies there is!



**Above:** I've always liked the GMC with its puppy dog face! I also like to tinker and do as much of the maintenance myself and I once discovered when trying fix a light that the bulbs, which were still working, were wartime dated.



**Left:** okay, so I don't always dress up in combats, but I feel just as much at home driving the GMC in a dress and flip flops, although I do tend to wear warmer clothing in the winter time!

**Bottom:** I've owned my GMC for many years now, gone through all sorts of trials and tribulations, but I would never get rid of it, or swap if for anything else.







## We take a look at a rare German-built variant of the classic Series I Land Rover

**Below:** most people would walk past the Tempo Land Rover not realising how rare it was, due in part to the familiar Series I style, but the 'Tempo' badge on the front grille gives the game away. Being something of an 'anorak' I spotted this rarity a mile off.

**Below right:** unlike most UK-built Land Rovers, the fuel filler for the Tempo is positioned at the rear of the German designed and built bodywork, and unlike UK Land Rovers, the body panels of the Tempo Land Rover were produced in steel, not aluminium.

**G**o to any military vehicle show and you're pretty much guaranteed to find a wide selection of ex-military Land Rovers, but given the fact that less than 200 examples of the Tempo Land Rover were built (and even fewer of the early 80-inch wheelbase version) you're unlikely to find many examples, however, during this year's War &

Peace Show I happened across the example shown here, and to my surprise it was owned by a collector in the UK, Mike Rivett, who had bought the 1953 dated, 80-inch wheelbase Tempo Land Rover as a restoration project and subsequently spent many hours restoring it to its current condition.

Admittedly there are a few more small jobs to do to finish off the restoration, and a few more parts to locate (which is easier said than done), but Mike was keen to bring it along to the show, despite the fact that it's only 98% complete, and I for one am glad that he did!







## HISTORY

The Tempo Land Rover is a slightly unusual vehicle in that it was built for use by the German Federal Bundesgrenzschutz (BGS) or border guard to patrol the border with East Germany. An invitation to tender for the contract was issued in 1952, however, the local manufacturers showed little interest in the project, possibly due to the low production numbers involved. Although under a certain amount of pressure to purchase a locally-produced vehicle, it was felt that the Land Rover, which was trialled alongside examples of the Mercedes-Benz Unimog, was the more suitable of the vehicles and in order to get around the 'locally-produced' requirement, German manufacturer Vidal, who had a proven track record of producing 4x4 vehicles, approached Land Rover with a view to building a licence-built version of the Series I.

By late 1952 Vidal had been granted a licence to assemble Land Rovers using a combination of parts supplied by Land Rover and locally-produced parts. The result was a



vehicle based on the 80-inch Series I chassis and running gear, which included the 1,997cc 4-cylinder petrol engine coupled to a standard Rover 4-speed box, with bodywork that closely followed that found on UK-built Land Rovers, but with modifications to suit the requirements of the BGS and manufactured in steel rather than aluminium.

The key differences were in the height of the driver and passenger doors, which were deeper than UK vehicles, but still incorporated removable side windows (albeit smaller than the production Series I Land Rover), small stowage lockers built into the front wings, a rear mounted spare wheel on the tailgate, and a large, flat stowage bin on the bonnet to store the side windows.

Later vehicles built after 1954 saw the introduction of a number of changes brought about by changes at Land Rover, these included the increasing of the wheelbase to 86-inches, the removal of the bonnet stowage bin, which was replaced by a conventional bonnet-mounted spare wheel, and a jerry can was mounted on the tailgate in place of the spare wheel. From the start the Tempo Land Rover featured a full-length canvas soft top, however, it was very different in design to those found on UK Land Rovers.

The actual number of Tempo Land Rovers built at the Hamburg-Harburg factory has been debated for many years, but current thinking puts it at between 100 and 189. When the Series II Land Rover was introduced, Vidal had hoped to produce an updated version of the Tempo to fulfil future orders for the BGS, but despite purchasing two examples to build prototypes, it was decided that all future vehicles would be built to a military specification by Land Rover in the UK and then exported to Germany. The Tempo Land Rovers continued to see service until the mid 60's.



My thanks to Mike Rivett for giving me access to the Land Rover for the photos at the War & Peace show.

**Top:** from some angles the Tempo looks very different to the Series I Land Rover on which it was based.

**Above centre:** the interior is also different to the UK Series I Land Rovers of the day.

**Above right:** early examples were fitted with this stowage box for the side windows.

**Far left:** the deeper side doors are an easy way of recognising the Tempo.

**Left:** the Tempo's front wings had small storage lockers incorporated into the design.







# The ROYAL ENGINEERS MUSEUM

**Patrick Boniface  
visits the home to  
the British Army's  
'Innovators'**



**T**he year 2012 proved to be a remarkable year for the Royal Engineers Museum at Brompton in the Medway Towns, as it marks the 200th anniversary of the regiment moving into the barracks and 100 years since the Museum opened to the public. Royal Engineers have had a much bigger impact on society than many believe, after all, even London's Royal Albert Hall was built with engineers from the Corps.

The Corps' history dates back to the time of King William the Conqueror and has played a crucial role in virtually every war, conflict or peacetime operations during the following 900 years. The Royal School of Military Engineering is located on the site, whilst the barracks are also home to the impressive display of specialist military vehicles used by the Royal Engineers. Inside the museum

visitors can trace the illustrious history of the Corps from its inception building forts and castle defences to two World Wars, the Falklands, two Gulf Wars and Iraq and Afghanistan. The Corps first came to prominence, however, during the siege of Gibraltar and the Peninsular War when in 1812 the original barracks were first established at Brompton as the Engineering Establishment. This provided the first standardised training for engineers in the British Army. Now known as the Royal School of Military Engineering, it celebrated its 200th anniversary in 2012.

Driving into the museum visitors are confronted with some of the biggest machines the Army has used including two Churchill tanks, one is displayed as an AVLB with two No.3 Tank Bridges whilst the other is a Churchill 6.5 AVRE; the latter example being a later AVRE on a converted Mk VII Churchill and armed with a 6.5-inch long barrel demolition gun. Nearby is a Mk 5 AVRE designed to fire HESH projectiles to destroy enemy obstacles and used in the First Gulf War. The second Centurion on display is an AVLB complete with a No.6 Tank Bridge with a span of 45 feet.





**Above:** one of the newest exhibits on display is the British Army's Challenger-based Trojan armoured engineer vehicle.



The museum's Centurion AVLB with No.6 tank bridge makes for an impressive sight.

The largest exhibit on display in the museum's car park is the Titan AVLB. Introduced in 2008 to replace the venerable Chieftain AVLB it was the first armoured Royal Engineer vehicle specifically designed for its role and not adapted from a main battle tank. It also took the honour of being the biggest and heaviest armoured vehicle in the world. The Titan was produced alongside the Trojan, an example of which is displayed alongside its stable mate. The example at Brompton is, in fact, one of the prototype vehicles that were subjected to a sustained regime of

trials and testing, and visitors can still see the scars inflicted on the machine during its testing days. The final vehicle at Brompton is a Chieftain AVLB, used in the First Gulf War and has been given the nickname of 'Hackett VC's.'

Under cover inside the museum the collection has a number of vehicles including a Scout armoured personnel carrier, tractors, trucks and a Harrier Jump Jet. Visitors should also be aware that not all of the museum's vast collection is at the Brompton site. Part of the collection is now housed in

**Below left:** Churchill AVLB complete with No.3 tank bridge displayed outside the main museum buildings.

**Bottom left:** Churchill 6.5 AVRE based on a converted Mk VII Churchill armed with a 6.5-inch demolition gun.

**Below right:** Michigan 175 DS Tractor on display inside the 'Big Store' at Chatham.

**Bottom right:** the Centurion AVLB gave way for the Chieftain AVLB seen here.





**Right:** a number of the collection's exhibits are now housed in the 'Big Store' at Chatham, and make for an impressive sight.



## “...the Royal School of Military Engineering celebrated its 200th Anniversary in 2012...”



**Above:** one of the older 'vehicles' within the collection is the historic Kitchener's railway carriage.

**Right:** the Royal Engineers have always been innovative, as proven by the unusual Killifer plough seen here.



**Bottom right:** some exhibits have been displayed in dioramas, such as this Northern Ireland street scene.

'The Big Store' at Chatham Historic Dockyard, a short two miles away, in the world. The collection at Chatham contains many of the largest items that simply could not be accommodated in the relatively small space available at Brompton.

As visitors pass into the high vaulted building, that once was used to build battleships, cruisers and submarines for the Royal Navy, one side of the massive structure is given over to Royal Engineers equipment. Near to the entrance is one of only four surviving Chieftain (Willich) AVRE's converted from a main battle tank by 21 Engineer Base Workshop

in Willich in Germany. The AVRE served with 32 Armoured Engineer Regiment and 23 Engineer Regiment in Germany and also saw active service in the First Gulf War.

A large section of M2D amphibious bridging and ferrying system is also on display to the public as well as a Tank Bridge 30ft No.2 that originally came into service in 1942 and was used with either the Mk III or Mk IV Churchill Bridgelaying tank.


The two oldest exhibits in the collection are also housed at Chatham Dockyard. The first is a 1917 Killifer Plough that was used to dig shallow trenches during the First World War. The second is perhaps the most historically significant part of the whole collection, Lord Kitchener's Carriage. This railway coach was built by the Metropolitan Carriage and

Wagon Company for foreign-service in the 1880's and was used on railways built by the Royal Engineers in Sudan. It is reputed to have been used by the famous Royal Engineer Lord Kitchener when Sirdar or Commander-in-Chief of the Egyptian Army during the Sudan War of 1896-1898. In the 20th Century the carriage was returned to the United Kingdom and saw service at Shoeburyness Military Tramway. It was also used, just once, by King George V to visit the firing ranges there during World War One.

Chatham Dockyard is well worth a visit all on its own, but with the added attraction of some Army heavy-duty vehicles doubly so. Across the two sites the museum houses a vast collection of artefacts and treasures including no fewer than 25 Victoria Crosses and Lord Wellington's map of the battlefield at Waterloo.








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# WAR & PEACE 2012

## Mud, Mud, Glorious Mud!

**T**his year's War & Peace Show celebrated the 30th Anniversary of what is undoubtedly the UK's largest military vehicle show, however, the great British summer weather decided to rain on the parade, quite literally, creating all manner of problems for the organisers and those attending the show. Early on access to parts of the massive Hop Farm site was tricky, with some vehicles getting bogged down in the mire, and wellies were definitely the order of the day for the first few days of the event for anyone venturing around the showground on foot.

Thankfully the sun eventually decided to show its face, just in time to dry the ground out so that people could go home, and with the help of the 'Blitz Spirit' the show seemed to be enjoyed by most, albeit with a slightly different atmosphere to past shows. Looking on the bright side, the one thing the rain was good for was doing away with the traditional clouds of Beltring dust, and on the whole people managed to muddle through and make the best of a bad job, which after all was hardly the fault of the organisers.

If there was one noticeable effect of the weather it was the reduction in the numbers of vehicles, with some people deciding to stay at home, and while the War & Peace Show normally attracts a great many vehicles, with a fair smattering of rare types amongst them, this year was perhaps a little flatter than we had anticipated, especially with it being the 30th Anniversary of the show.

Now I must emphasise that I'm not complaining, yes I got muddy walking round the show, after all who didn't, and yes I probably took fewer photos than normal due to fewer new vehicles, but the 2012 show was different, with a different atmosphere to past shows and over the next couple of issues we'll be bringing you a taste of the 2012, 30th Anniversary War & Peace Show.







**Top left & top centre:** this M8 howitzer and superb Pacific M26A1 travelled to the show from France..

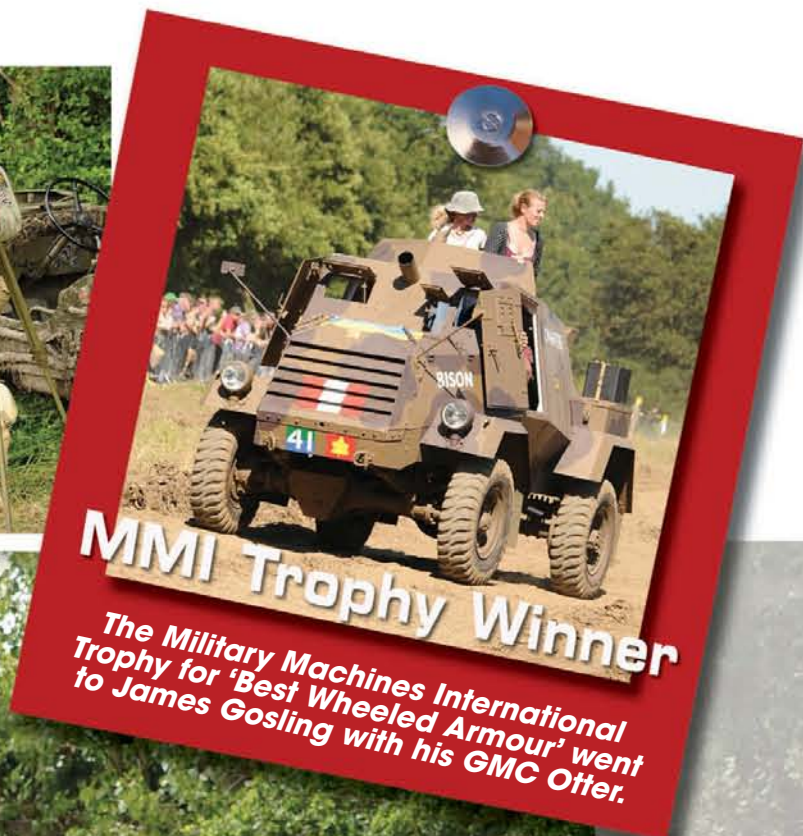
**Above & above left:** a great many exhibitors put in a lot of time and effort to make the best of the show, despite the unusually poor weather prior to the show.

**Left:** Pete Sanders (seen driving) brought along his Chevrolet WA, which has been rebuilt from its original form to reflect an LRDG vehicle armed with a Bofors - Pete was still painting the camouflage as the show opened, but still found the time to take to the arena.









## MMI Trophy Winner

The Military Machines International Trophy for 'Best Wheeled Armour' went to James Gosling with his GMC Otter.

**Top strip:** re-enactors are just as much a part of the War & Peace Show as the military vehicles, in fact they go hand in hand, and as usual there were many re-enactors representing a great many aspects of the hobby, from German tank commanders to GI's tinkering with their vehicles, to dashing pilots chatting up the girls!

**Far left top:** for part of the show at least, the best way to get around the muddy site was using a tracked vehicle, and this pair of crawlers took their turn in the arena. The one of the left is a rare German Stock, the other is an American Caterpillar D4.

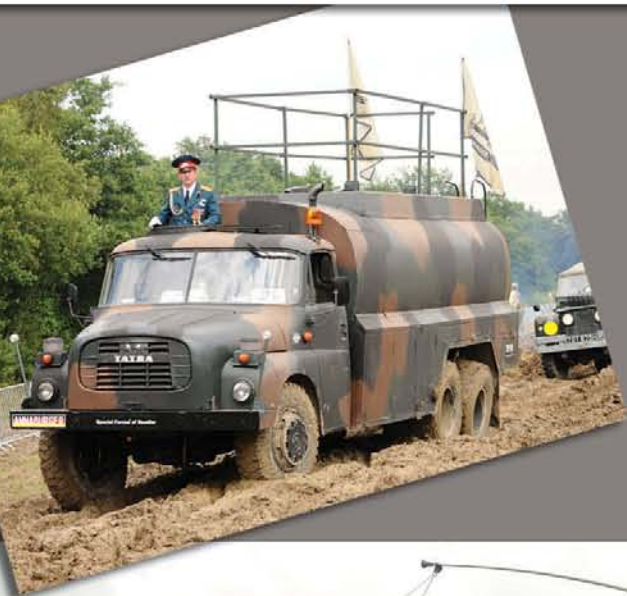
**Far left centre:** scenes like this were replicated across much of the show site, but for many drivers it was a great opportunity to test out the off-road capabilities of their vehicles, and no this Jeep isn't stuck, he's just parked in the road having a chat rather than getting his boots muddy!

**Far left bottom:** an Alvis Saracen Mk6 APC makes light work of the mud in the arena, in fact many of the drivers seemed to be deliberately aiming for the muddiest holes they could find!





# Mud Fever!



The muddy conditions at this year's show may have been disappointing for some, but others seemed to relish in the conditions. The driver of this East German Tatra seemed to be enjoying the conditions in the arena, while the Anglo-German crew of this Hummer (which included an AA patrolman) don't seem to be phased by the mud either. And finally, the Great War re-enactors got more than they first bargained for when the trenches in their living history display took on an uncanny likeness to the conditions endured in the Great War!



## Future Projects



Although most of the vehicles found at the War & Peace Show have undergone many hours of loving restoration, resulting in many thousands of pristine vehicles, there are usually a small number of newly found vehicles or vehicles for sale that are awaiting a new owner and restoration to their former glory. This year was no exception and dotted around the massive show site I came across a number of vehicles, including this chopped around Dodge on a trailer, a Bedford CA van, which I must admit I walked past at first before discovering that it was actually ex-Royal Navy, an as yet restored example of the once popular Gamma Goat amongst the trade stalls, and a Sexton SPG, which is sure to take many years to restore!





## Jeeps

Jeeps were very much in evidence at the War & Peace Show as usual, and while a great many must have looked to be the same to the casual onlooker, there were some Jeeps amongst the hoards that stood out from the crowd. Of those examples I came across this year was this colourful British Bomb Disposal Jeep (above), a fully restored Jeep Woody on the Universal Jeeps stand (centre), and this very unusual 6x6 Jeep in one of the far flung fields of the Hop Farm site (right).



## Airborne Jeeps



Of the Airborne Jeeps spotted at the show was this fine example seen here leaving the arena after performing a firing demonstration, and the diminutive Nuffield Airborne Jeep paddling through the mud during the show!



## RUSSIAN RARITY

The War & Peace Show attracts vehicles from around the world, and one vehicle travelling all the way from Moscow, was this stunning example of the World War Two GAZ-AA Truck.







# OSHAWA MUSEUM

## Tim Royall visited the Ontario Regiment RCAC Regimental Museum Oshawa

**Main photo above:** if you ever find yourself in the area you would do well to arrange a visit to the Ontario Royal Canadian Armoured Corps Regimental Museum, it's packed with fascinating exhibits and well worth a visit.

In early January 2012, I was visiting my son who was studying in Toronto, Canada. Now as well as visiting all the usual wonderful tourist attractions such as Niagara Falls and the CN Tower, I had also heard about a large collection of vehicles near the town of Oshawa, some 50 km east of Toronto. Following a quick bit of searching on the Internet and one very comfortable train ride later, I was there and what a treat was in store for me!

The museum tells the story of the Ontario Regiment from their formation in 1837, when an infantry company was formed in nearby Whitby in what was then New France, through to present day Canada. It is located near Oshawa Airport, which was used to

train pilots during the Second World War. This was also the site of Camp X, an intelligence training facility set up during the war and which has had many distinguished graduates including the creator of James Bond, Ian Fleming, and the author Roald Dahl.

Another good reason for visiting was because I'd heard that the museum also had an Abbot self-propelled gun in its collection. This was one that had been donated by the British Government after many years service at BATUS, the British Army Training Unit Suffield. BATUS was a large military training area in the west of Canada near to Calgary, although "near" in Canadian means some four hours away! Back in October 1982

I had been the GPO (Gun Position Officer) for 28 Field Battery, Royal Artillery, and in charge of eight Abbots during a four week live firing exercise in some of the coldest weather I'd ever experienced!

The Ontario Regiment Museum began about 25 years ago as a club for Ferret owners when a number of them were released "into the wild" after being retired from the military and needed looking after. A small group of enthusiasts then came together and began to restore them to "parade-ready, operational condition". Since, the collection has grown to include an array of some 80 vehicles used by the Royal Canadian Armoured Corps, the Canadian Forces, and other allied





**Above:** the Lynx is based on the running gear of the American M113 APC.

**Left:** the museum has many exhibits, including this cutaway Meteor engine.

**Below left:** the Cougar and Coyote saw widespread use with the Canadians.

**Below right:** the museum's Sherman is a later model M4A3E8.



**Above left:** one of the older exhibits within the collection is this World War Two dated Universal Carrier in lovely condition.

**Below:** the Sheridan was a curious tank, being similar to the CVR(T) in that it was constructed from aluminium armour and had an amphibious capability.

forces, including Jeeps, APCs and tanks. Now Canada's largest collection of operational military vehicles, in fact the museum has become so well known in the region that new vehicles are often donated completely "out of the blue" and of course gratefully received!

The museum consists of a number of rooms with many excellent displays. These include an array of regiment-related artefacts and dioramas including uniforms, medals and weaponry from conflicts ranging from the Fenian raids from America into Canada in 1866, through the Boer War, World Wars One and Two, up to present day operations in Afghanistan. I had booked a tour in advance and so

was met by the museum's tour coordinator, Maj (Retd) Pat Dooley CD. He was an amazing fount of knowledge of all things connected to the Regiment and the museum and gave us an absolutely fascinating tour. From artilleryman's point of view, one of the more interesting exhibits was the 25 millionth 25-pdr artillery shell that was produced in Oshawa during the Second World War. Oshawa also produced Valentine tanks and trucks and this shell represents a real tribute to all the work done by people and factories on the Home Front in Canada to support the war effort.

Adjoining the main museum building is a large hanger and yard containing the Historic Vehicle





**Right:** from an artilleryman's point of view, one of the more interesting exhibits was the 25 millionth 25-pounder shell to be produced at Oshawa during World War Two!



**Top right:** you will find a number of examples of the M13 armoured personnel carrier, including this one finished in UN colours.



**Right:** hidden away in one corner of the museum was this Canadian lovely example of a CMP wireless truck.



**Below right:** the museum also has some artillery pieces, including this rather sad looking 150mm howitzer.



**Below left:** outside the museum you'll find a number of exhibits and gate guardians, including this Centurion.

**Bottom left:** keeping up the British theme and you'll also find this Mk1 Ferret outside...

**Bottom right:** ...but this ex-British Abbot self-propelled gun was brought outside the museum especially for me!



Collection. Armoured vehicles here included a M551 Sheridan, an M4A3E8 Sherman, a Chaffee, an M113 based M901 TOW vehicle, an early Universal Carrier, and a Canadian built Coyote Reconnaissance Vehicle and Cougar AVGP. There was also a cutaway Rolls Royce Meteor engine from a Centurion tank that had been used as a training aid. Softskins included a very nice Chevrolet truck, Dodge WC52, and a number of motorcycles and Jeeps including a very special M38A1 CDN3, which had been converted for ceremonial use and used by Queen Elizabeth during a review of troops in Canada in 1984.

Outside were even more vehicles, some such as two M60 A3s had only recently arrived, and my Abbot, which had been brought outside especially for me! The Abbot was in good condition and I was pleased to be able to donate a complete set of User Manuals for it to the museum that I hope will help keep it running for a few more years yet. Looking around the yard I also saw a number of M113 variants in various camouflage schemes and a second Centurion awaiting restoration. One interesting vehicle was a Lynx reconnaissance vehicle carrying three parachute stencils on its side indicating that it had survived three airborne drops during its service with the Canadian

Army. Finally there were a number of "gate guardians" spread around the local area. These included a Centurion, Sheridan, Sherman, Ferret, and a rather sad looking 150mm howitzer.

Overall, this is a fantastic museum and an amazing collection of operational vehicles, which the museum is not afraid to show off. If you get the chance, it's well worth a visit and you will certainly need a few hours, as there is so much to see!

The museum season is from May to November each year, during which time it is open between 1 and 4 pm. Fridays, Saturdays, Sundays and holiday Mondays, but tours can be arranged outside of the regular season. During the summer months the museum also arranges special weekends when featured vehicles such as the Sherman, Chaffee, Sheridan, M60, M113 and Lynx are driven and demonstrated to the public.

For more information contact Maj (Retd) Patrick Dooley CD:  
[info@ontrmuseum.ca](mailto:info@ontrmuseum.ca)

The Ontario Regiment RCAC  
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A hot day judging by the lack of shirts being worn by this trio at the controls of a Caterpillar dozer. I'm not 100% sure on the model, but it looks to be the D4.

# Into the Archives

YOSHIMURA - KURE ROAD

## James Payne delves into a photo album belonging to an ex-serviceman

**Below:** an interesting shot showing a Canadian Dodge, possibly a T222/D15, in use with the Military Police. Note that various features that have been picked out in white, was this standard practice?

**Below right:** a pair of likely lads pose for the camera whilst sitting in their Jeep. I'm guessing it must have been a hot day and that they were off duty given their attire!



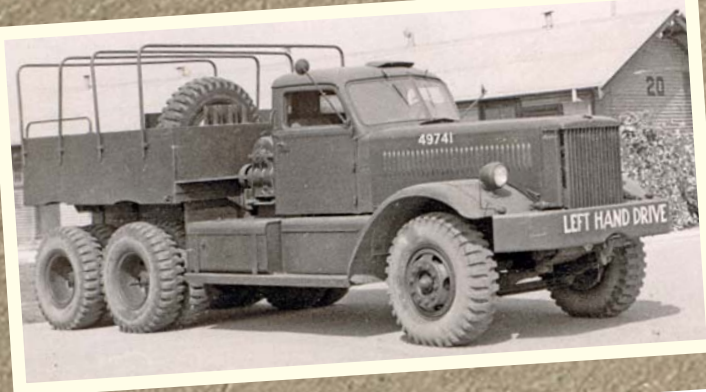
Once again the photographs featured in this article come from a photo album that once belonged to a British ex-serviceman. Little is known about the former owner other than the photos featured are from the late war period, and immediate post-war period and that the owner was once a Military Policeman who was stationed at various locations around the world.

We've included what information we have on each image, and I've tried to include a little additional information where possible. The vehicles featured are typical of those in service at the time, but if you can fill in the gaps then we would love to hear from you via the usual editorial channels.

The collection is just a small selection of images from the album, one of an extensive military photo archive available from 'Through Their Eyes', which covers subjects from the First and Second World Wars. 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](http://www.throughtheireyes2.co.uk)







**Above:** with the exception of an inscription on the photograph stating 'Dia-T Tank Transporter' nothing more is known about this Diamond T 980 12-ton prime mover.

**Below:** Military Police Jeep, fitted with a hard top enclosure and doors. It would seem that many MP vehicles feature white painted highlights, and here the Jeep has white painted wheel rims.

**Main photo left:** we know this photo was taken on the Yoshura/Kure road from the inscription on the photo, but what's interesting is the Humber Heavy Utility 4x4 parked at the side of the road.



**Top right:** nothing is known of the date or location of this accident involving a Diamond T tank transporter. The soldiers on the vehicle look to be British and the snow on the ground might suggest why it ended up in this canal?

**Above:** yet another Jeep, this time with an inscription – 'Joe Pitman & escort' and a very cute 'bonnet mascot'.

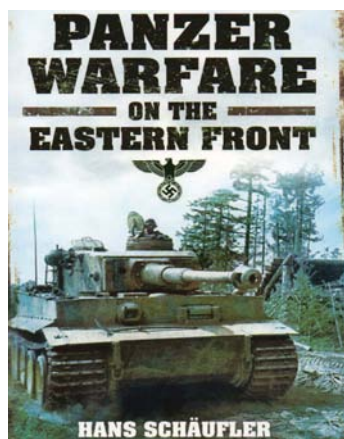
**Below:** a group of three Military Police Jeeps and a Bedford MW parked up in a compound (location and date unknown). It's interesting to see that the centre Jeep has had the grab handles painted white.



This is believed to be a Bedford OY fuel tanker, pictured at the filling station at a RAASC Petrol Depot, possibly at Kure in Japan in the mid 50's.







## **Panzer Crewmen's Recollections of the War**

This new title from Pen & Sword looks at Panzer Warfare on the Eastern Front from the point of view of the German Panzer crews facing the might of the Soviet Army on the harsh Eastern Front. Using the words and accounts from the panzer crews themselves, the author offers an intimate portrait of what it was like to be participating in tank warfare at the height of World War Two.

All of the major operations are covered within the book, from Operation Barbarossa to the assault on Stalingrad, and the epic battle of Kursk to Kurland,

with numerous tales of desperation, compassion and joy, following encounters with the enemy and locals. The book offers a fascinating insight into the world of the panzer crew during the war, which will no doubt seem to be a popular subject with historians and is sure to appeal to those with a general interest in German tank warfare too.

Although mainly text, a small number of black and white photos are also included within the book, which is widely available from many specialist booksellers.

**Title:** Panzer Warfare on the Eastern Front

**By:** Hans Schäufler

**ISBN:** 9781781590058

**Price:** £25.00

**Format:** Hardback

**Available From:**  
Pen & Sword Books Ltd.  
[www.pen-and-sword.co.uk](http://www.pen-and-sword.co.uk)

## **Tracing the history behind the American Gun Truck**

**Title:** Vietnam Gun Truck

**By:** Gordon L. Rottman

**ISBN:** 978184903553

**Price:** £9.99

**Format:** Softback

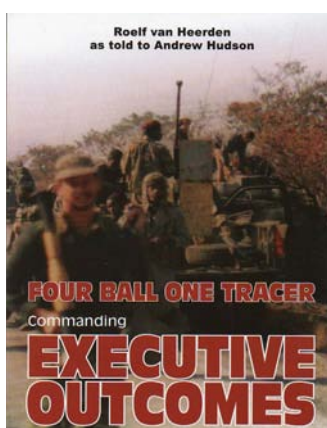
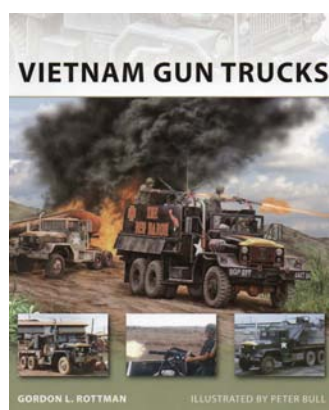
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A recent addition to the highly popular Osprey Publishing New Vanguard series is this book by Gordon L. Rottman on Vietnam Gun Trucks with illustrations by Peter Bull.

Following the familiar New Vanguard format of including detailed written descriptions and specifications of the various vehicles coupled with a numerous colour and black and white photos and illustrations, the book offers a good insight into this popular subject. The Vietnam Gun Truck was of course a

subject born out of necessity as troops baffled to protect themselves from their attackers and shares uneasy parallels with the current operations in Afghanistan.

Some of the photos contained within the book will have been seen before, but there are many that I personally had not seen before, and these combined with the superb colour illustrations offer the reader a compact and concise account of the Vietnam Gun Truck. Available from all good book stores.



## **Gritty tales from Angola and Sierra Leone**

This new book from Casemate is described as an unapologetic, unassuming and forthright account of the combat exploits of Executive Outcomes in Angola and Sierra Leone by a battlefield commander who was on the ground during all their major combat operations.

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Leone to capture the Kono diamond fields and the palace coup, which ousted Captain Valentine Strasser, author Roelf van Heerden was at the forefront. He tells of the tragedy of child soldiers, illegal diamond mining and the curse of government soldiers who turn on their own people, describing RUF atrocities and the harrowing attempt to rescue a downed pilot and the efforts to recover the remains of a soldier killed in action. The book is available from all good book stores.

**Title:** Four Ball One Tracer

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[www.casematepublishing.co.uk](http://www.casematepublishing.co.uk)

## **Stunning illustrated reference work**

**Title:** German Naval Camouflage Volume 1

**By:** John Asmussen & Eric Leon

**ISBN:** 9781848321427

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Seaforth Publishing Ltd.  
[www.seaforthpublishing.com](http://www.seaforthpublishing.com)

New from Seaforth Publishing is this beautifully produced book on German Naval Camouflage Volume One, 1939-1941 by John Asmussen and illustrated by Eric Leon. Using numerous archive photographs and 300 detailed colour illustrations showing the various camouflage schemes utilised on the ships in question.

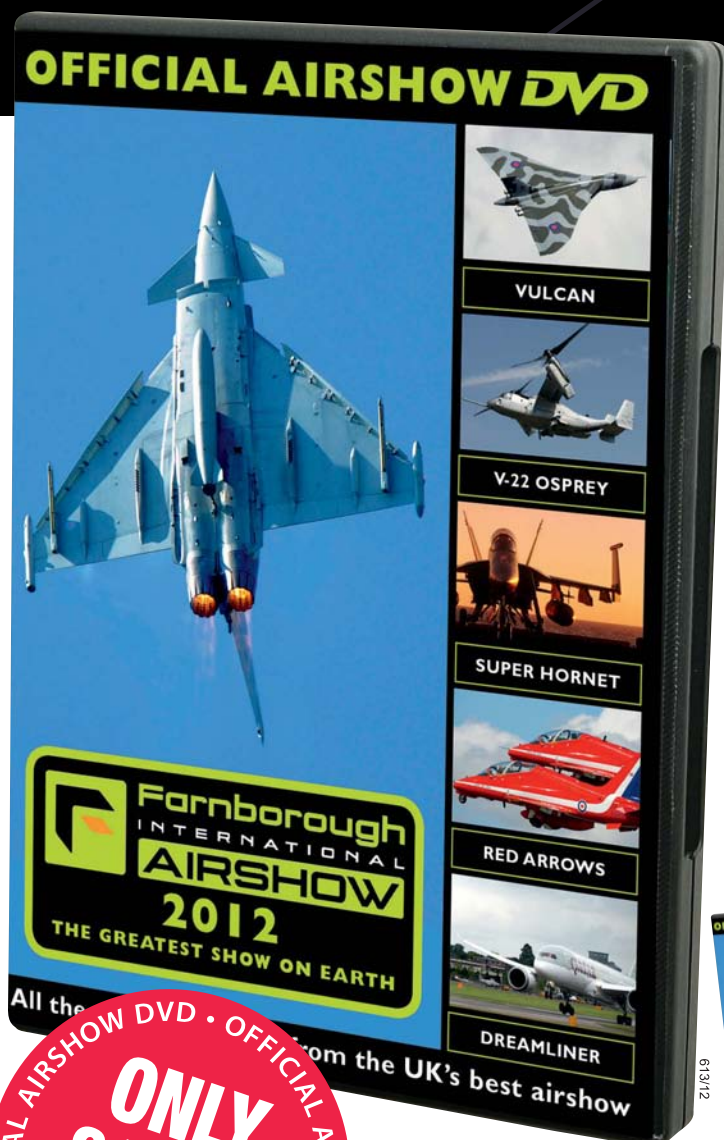
Within the book you'll find details covering all the major ships of the German Navy of the time, including the likes of the Bismark, Tirpitz, Gneisau, Admiral Graf Spee, Admiral Hipper, Prinz Eugen and numerous other famous ships of the war. For anyone interesting in the German Navy of World War Two this book is a must and will appeal to historians and model makers alike.





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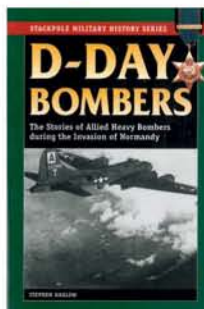


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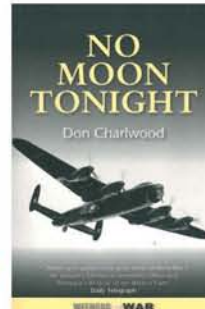


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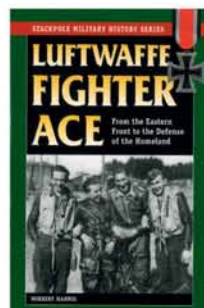


The "88" proved to be an excellent anti-tank gun in France in 1940. By the time it arrived in North Africa it was a feared tank killer, which could knock any Allied tank at distances well over 1000 metres. It again proved its reputation in Russia, where it was the only gun capable of dealing with Soviet T-34/76 medium tanks and KW-1 heavy tanks. The Sd Kfz7 could carry gun crews of up to 12 men in theatre-type seats. 1:76 Scale Model

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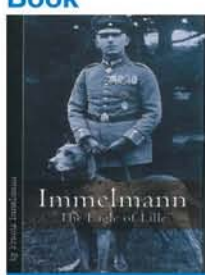


In this action-packed memoir of aerial combat in World War II, Norbert Hannig remembers what it was like to fly with the German Luftwaffe on the Eastern Front: the high-altitude drama of closing in on a Soviet bomber, the thrill of watching his rounds hit home and burst the enemy into flames, the excitement of landing unscathed. 224 pages, softback.

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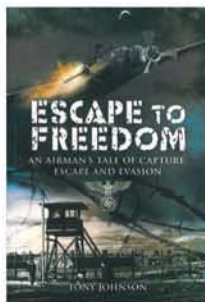


The Matador was the workhorse of the British Military throughout the war. The first units were equipped in UK in the summer of 1941 and in North Africa a year later, 20 guns equipped British and Free French batteries at El Alamein. 1:76 Scale Airfix Model.

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631/12



# MISSION BRIEFING

## DATES FOR YOUR DIARY

### OCTOBER 2012

**Sunday 21 October 2012:** **Militaria & Medal Fair:** held at Stratford Leisure Centre, Bridgefoot, Stratford on Avon, Warks, CV37 6YY. Call: Tel: 01753 534777

**Saturday 27 October 2012:** **Help For Heroes Model Show:** held at West Meads Community Hall, Bognor Regis, West Sussex, PO21 5SB. Open between 10.00am and 4.00pm. For more information please contact Nick Sandford at: [nick\\_sandford@hotmail.com](mailto:nick_sandford@hotmail.com)

**Sunday 28 October 2012:** **Dallas Dig Out:** famous Dallas Dig Out held at Dallas Autos, Cold Ash Farm, Long Lane, Hermitage, Newbury, RG18 9LT. For details call: Tel: 01635 201124 [admin@dallasautoparts.com](mailto:admin@dallasautoparts.com) [www.dallasautoparts.com](http://www.dallasautoparts.com)

**Sunday 28 October 2012:** **Militaria Fair:** held at the Breckland Leisure Centre, Croxton Road, Thetford, Norfolk, IP24 1JD. Open 9.30 am till 3.00pm, admission £2. For further details contact: Tel: 07596 436260 [norfolkairs@aol.com](mailto:norfolkairs@aol.com)

**Sunday 28 October 2012:** **History on Wheels Motor Museum:** Open Day, located at Longclose House, Common Road, Eton Wick, nr. Windsor, Berks, SL4 6QY. For details: Tel: 01753 862637/833833 [info@historyonwheels.co.uk](mailto:info@historyonwheels.co.uk) [www.historyonwheels.co.uk](http://www.historyonwheels.co.uk)

### NOVEMBER 2012

**Saturday 3 November 2012:** **1940s Big Band Blitz:** annual 1940s event held at York House, Twickenham featuring the Jon Bennett Big Band plus a host of showbiz guest performers, plus 1940s vehicles and re-enactors. Doors open 6.30pm, finishes at 11.00pm. Tickets £22 available in advance plus concessions. For details call Warren Walters: Tel: 020 89733605

### NOVEMBER 2012

**Sunday 4 November 2012:** **Northern Military Expo:** popular indoor show held at the Newark Country Show Ground, Notts, 2 minutes off the A1M (NG24 2NY). For details call: Tel: 01302 739000 or check out the website at: [www.northernmilitaryexpo.co.uk](http://www.northernmilitaryexpo.co.uk)

**Sunday 4 November 2012:** **Militaria & Medal Fair:** held at The Princes Hall, Princes Way, Aldershot, Hampshire, GU11 1NX. For details contact: Tel: 01753 534777

**Sunday 18 November 2012:** **Military Vehicle Day at Brooklands Museum:** held at the Brooklands Museum, Brooklands Road, Weybridge, Surrey, KT13 0ON. Open from 10.00am. For details see the website at: [www.brooklandsmuseum.com](http://www.brooklandsmuseum.com)

**Sunday 18 November 2012:** **Malvern Militaria Fair:** large, indoor militaria event held at the Three Counties Showground, Wye Hall, Malvern, Worcs, WR13 6NW. Contact Amanda on: Tel: 01743 762266 [amanda@jeeparts.co.uk](mailto:amanda@jeeparts.co.uk) [www.militaryconvention.com](http://www.militaryconvention.com)

**Sunday 25 November 2012:** **History on Wheels Motor Museum:** Open Day, located at Longclose House, Common Road, Eton Wick, nr. Windsor, Berks, SL4 6QY. For details: Tel: 01753 862637/833833 [www.historyonwheels.co.uk](http://www.historyonwheels.co.uk)

**Sunday 25 November 2012:** **Militaria & Medal Fair:** held at Yate Leisure Centre, Kennedy Way, Yate, nr Chipping Sodbury, Bristol, BS37 4DQ. For further details contact: Tel: 01753 534777

### DECEMBER 2012

**Sunday 16 December 2012:** **History on Wheels Motor Museum:** Open Day, located at Longclose House, nr. Windsor, Berks, SL4 6QY. For details: Tel: 01753 862637/833833

### JANUARY 2013

**Sunday 6 January 2013:** **Aviation & Military Collectors Fair:** held at Croydon Airport Hotel, A23, Purley Way, Croydon, Surrey. Doors open at 10.30am, for details please call: Tel: 01737 822200 Mob: 07860 762277 [acebellaviation@aol.com](mailto:acebellaviation@aol.com) [www.redhillairshow.co.uk](http://www.redhillairshow.co.uk)

**Sunday 27 January 2013:** **Militaria 2013:** large, indoor militaria event held at the The Exhibition Centre, Stoneleigh Park, Coventry, Warwickshire. For details contact Amanda on: Tel: 01743 762266 [amanda@jeeparts.co.uk](mailto:amanda@jeeparts.co.uk) [www.militaryconvention.com](http://www.militaryconvention.com)

### MARCH 2013

**Sunday 10 March 2013:** **Hack Green Secret Nuclear Bunker Rally:** French Lane, Nantwich, Cheshire, CW5 8BL. For details call Rod on: Tel: 01270 623353 [coldwar@hackgreen.co.uk](mailto:coldwar@hackgreen.co.uk)

**Sunday 17 March 2013:** **Malvern Militaria Fair:** large, indoor militaria event held at the Three Counties Showground, Wye Hall, Malvern, Worcs, WR13 6NW. Contact Amanda: Tel: 01743 762266 [www.militaryconvention.com](http://www.militaryconvention.com)

### APRIL 2013

**Saturday 6 April 2013:** **Shoreham Airport Aerojumble:** aviation and military collectors fair, held at Shoreham Airport, A27, Shoreham, West Sussex, doors open 10.30am. For more details contact: [SNZ2338@aol.com](mailto:SNZ2338@aol.com)

**Sunday 28 April 2013:** **Northern Military Expo:** popular indoor show held at the Newark Country Show Ground, Notts, 2 minutes off the A1M (NG24 2NY). For further details contact: Tel: 01302 739000 or check out the website at: [www.northernmilitaryexpo.co.uk](http://www.northernmilitaryexpo.co.uk)

If travelling long distances to events we would advise people to check for cancellations before leaving home, MMI cannot be held responsible for any errors, omissions or cancellations. Submissions for Mission Briefing should be sent at least two months prior to the event and we would also ask that event organisers notify us of any changes as soon as possible.

### JULY 2013

**Wednesday 17 to Sunday 21 July 2013:** **The War & Peace Show:** The Hop Farm, Paddock Wood, Kent. The world's largest military vehicle show. For details call: Tel: 01304 813945 [www.thewarandpeaceshow.com](http://www.thewarandpeaceshow.com) Tel: 01622 872068 [www.thehopfarm.co.uk](http://www.thehopfarm.co.uk)

### SEPTEMBER 2013

**Sunday 29 September 2013:** **Manchester Militaria Fair:** held at Event City, Phoenix Way, Urmston, Manchester, M41 7TB. Located next door to the Trafford centre. For further details or to book in for the event please contact Amanda at: Tel: 01743 762266 [amanda@jeeparts.co.uk](mailto:amanda@jeeparts.co.uk) [www.militaryconvention.com](http://www.militaryconvention.com)

### OCTOBER 2013

**Sunday 6 October 2013:** **Hack Green Secret Nuclear Bunker Rally:** French Lane, Nantwich, Cheshire, CW5 8BL. For details call Rod on: Tel: 01270 623353 [coldwar@hackgreen.co.uk](mailto:coldwar@hackgreen.co.uk)

### NOVEMBER 2013

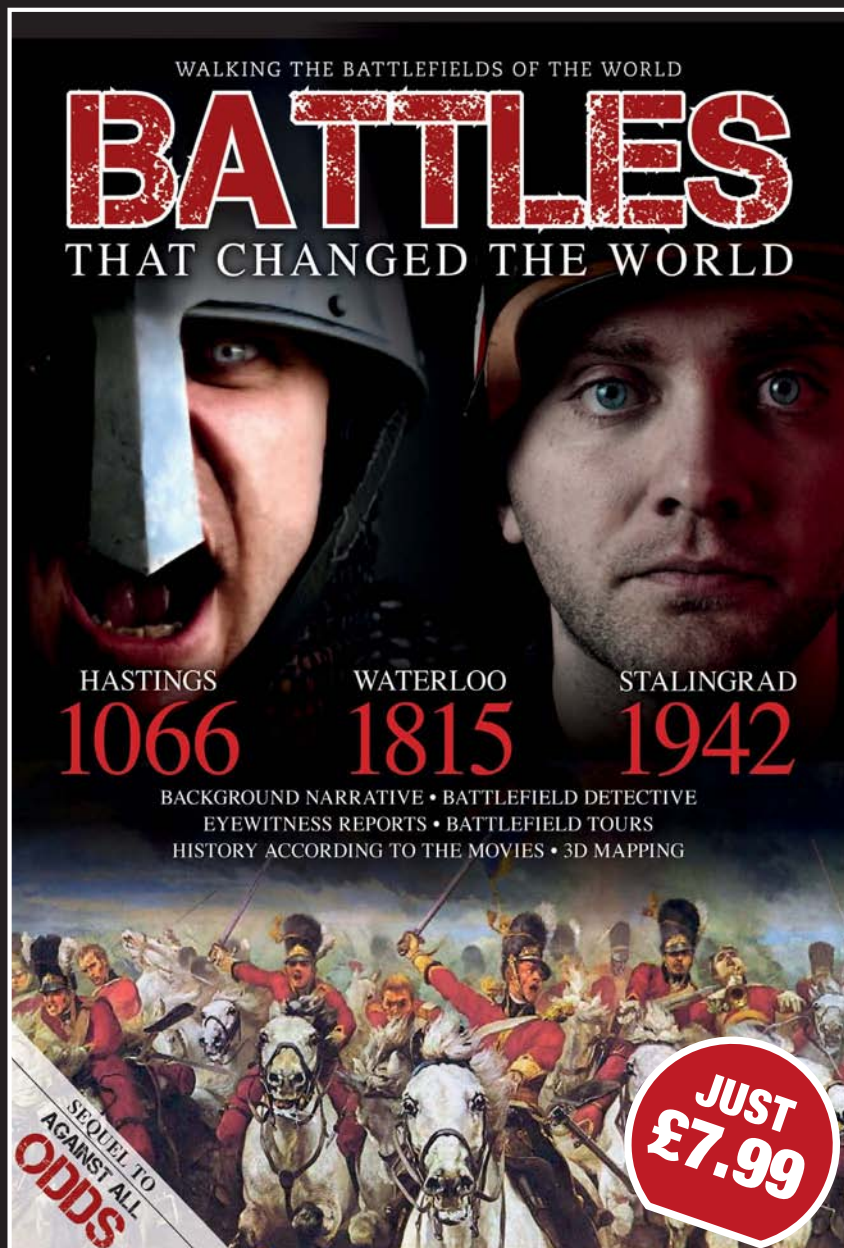
**Sunday 3 November 2013:** **Northern Military Expo:** popular indoor show held at the Newark Country Show Ground, Notts, 2 minutes off the A1M (NG24 2NY). For further details contact Mark Askew on: Tel: 01302 739000 or check out the website at: [www.northernmilitaryexpo.co.uk](http://www.northernmilitaryexpo.co.uk)

**Sunday 24 November 2013:** **Malvern Militaria Fair:** large, indoor militaria event held at the Three Counties Showground, Wye Hall, Malvern, Worcs, WR13 6NW. For further details please contact Amanda at: Tel: 01743 762266 [amanda@jeeparts.co.uk](mailto:amanda@jeeparts.co.uk) [www.militaryconvention.com](http://www.militaryconvention.com)



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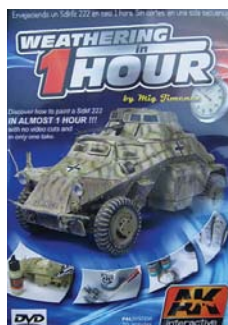
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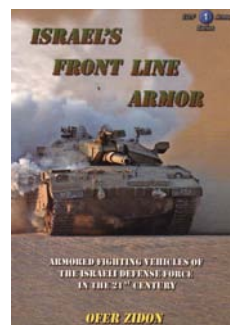
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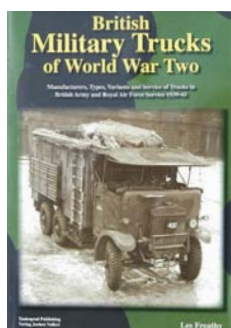
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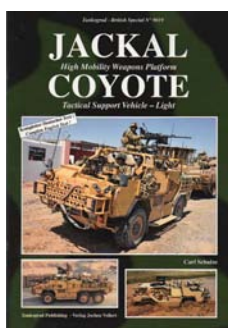
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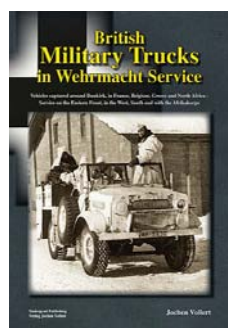
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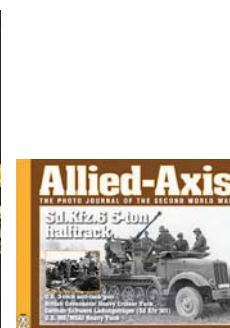
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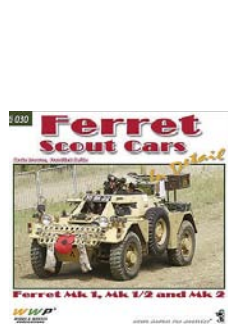
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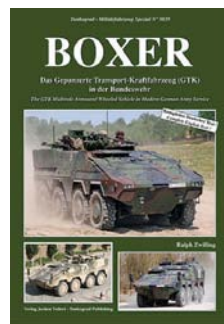
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