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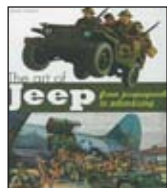


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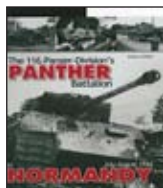
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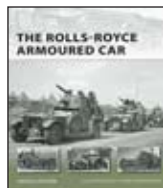
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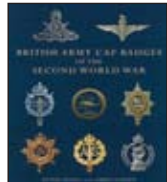
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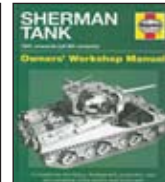
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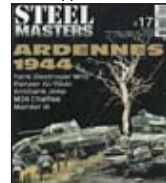
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# EDITORIAL

Welcome to this month's 100-page Armour Special. In this issue you'll find a collection of articles covering armoured vehicles from across the ages, together with a number of articles that mark the 30th Anniversary of the Falklands War. My job as editor of MMI sees me travelling the country seeking out stories for inclusion in the magazine, and while I am often privileged to visit collections not normally open

to the general public, my emotions are mixed. On the one hand I am always enthralled by the rare vehicles I encounter, but on the other hand I find it depressing to know that in most cases I will never be in a position to own such vehicles. I guess pleasure has to come with a little pain to even things out! We'll be back next month with more great articles, in the meantime please enjoy this month's Armour Special - Ed.



Ian Young  
Editor



## MILITARY MACHINES INTERNATIONAL

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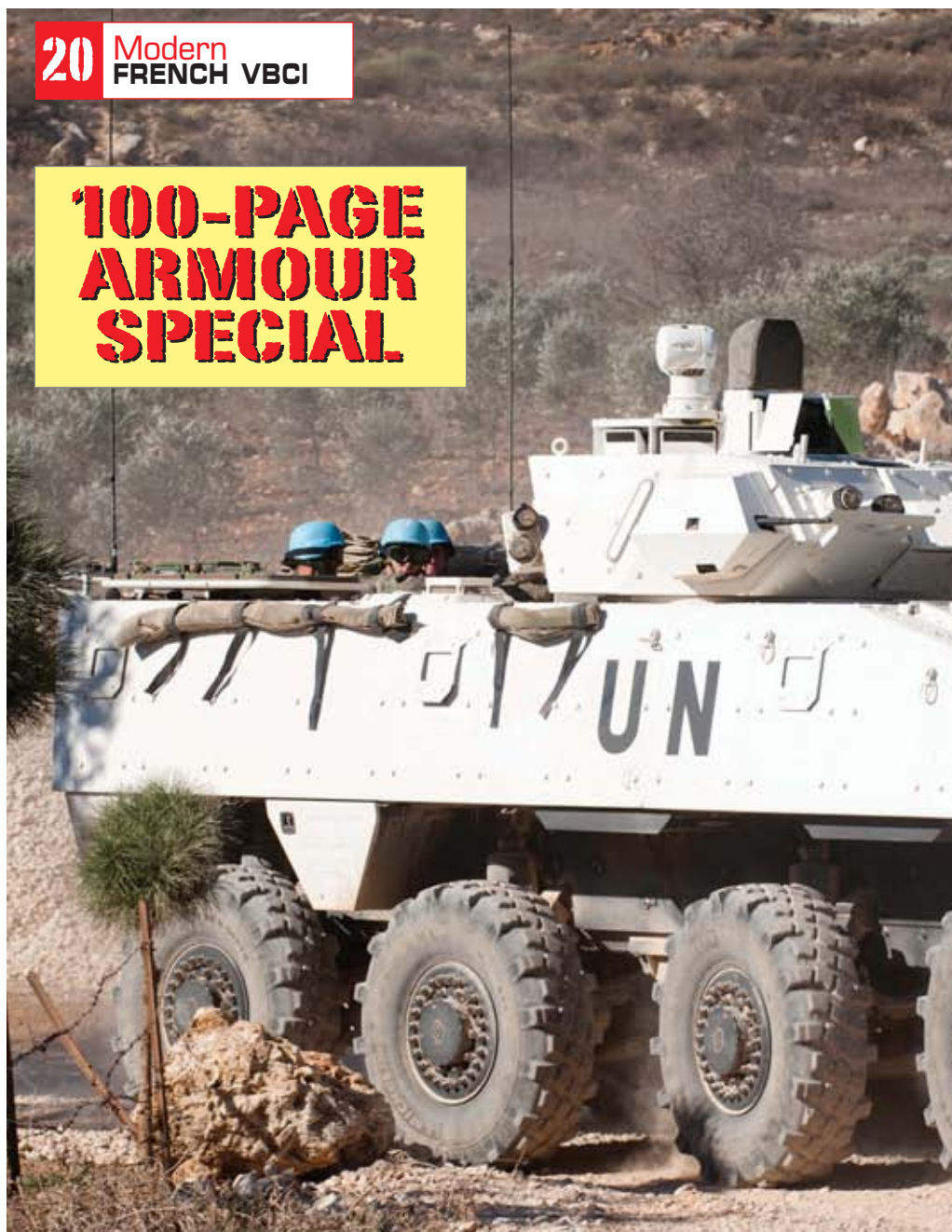


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# NEWS and REVIEWS **UP FRONT**



## ***Rare Trippel Amphibian Takes to the Water***



The rare 1942 Trippel SG-6 amphibious car belonging to the Wheatcroft Collection and first featured in our report from the new Wheatcroft Collection exhibit based at Donington Park (see page 62/63 in the June 2011 issue of MMI), took to the water for the first time in many decades.

After undergoing a thorough overhaul and check over prior to the event, owner Kevin Wheatcroft and his restoration team took the rare car to a local reservoir to test the amphibious capabilities of the Trippel. Watched by the local press, the Trippel took to the water without drama, sailing well and without taking on any water – always a good thing for an amphibious vehicle!



# Kettenkrad Record Attempt



The forthcoming Militracks event, held at Liberty Park, home of the largest military museum in the Netherlands, will see a collection of unique WW2 German Wehrmacht vehicles gathering from around Europe for the event. The event will also be holding a record attempt that aims to establish a record for having the most Kettenkrads in the same place and driving together around the purpose-built off-road course all at the same time. The organizers hope to attract around 15 Kettenkrads to the event, with three examples expected to attend from the UK.

The first record attempt is scheduled for Saturday 19th May, the first day of the show, when the vehicles will drive together for a minimum of 1 Kilometre, but should that attempt fail another attempt will be made on the Sunday of the show. For those not familiar with the Militracks event, MMI has covered it for the last two years, the most recent coverage being in the July and August 2011 issues, and it's a unique event not to be missed by those interested in wartime German military vehicles. For further details check out: [www.militracks.nl](http://www.militracks.nl)

## S-Boote S-130 Armoured Bridge



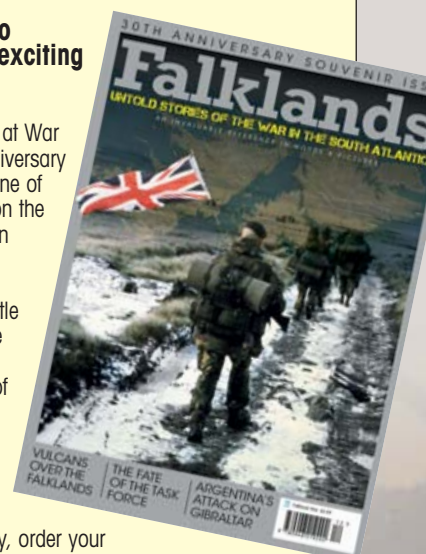
Some time ago we reported on the S-130 restoration project currently being undertaken in Cornwall for the Wheatcroft Collection. The S-130 is the sole surviving example of the notorious wartime German Schnellboote or 'S-Boote', and is currently in the process of being fully restored in what will be an

incredibly complex restoration project lasting several years. A recent visit to the Wheatcroft Collection (see report on pages 62- 65), revealed an unusual item sitting in the sun in the storage yard, namely the rusty armoured bridge for the boat. The original armoured bridge was removed after the when the S-130 underwent a number of changes after being handed over the British. Fortunately the restoration team managed to locate a surviving example off the coast of Denmark, which was retrieved by divers and is due to be restored and refitted to the S-130 later in the restoration process. For further details and the latest updates on the S-130 check out the S-130 website at: [www.s130.co.uk](http://www.s130.co.uk)

## Falklands Magazine New from Key Publishing

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

Created by the team behind Britain at War magazine, The Falklands 30th Anniversary Special provides a 132-page timeline of events - in the air, in the sea and on the ground - during the conflict between British and Argentinean forces. Complete with 'then and now' photographs of the most iconic battle sites, original paintings and unique images, The Falklands 30th Anniversary Special tells the story of the Falklands War as never before. The Falklands 30th Anniversary Special is available now for just **£6.99** exclusively from WHSmith in the UK and other leading newsagents worldwide. Alternatively, order your copy from [www.keypublishing.com/shop](http://www.keypublishing.com/shop) May magazine subscriber? Call **Tel: 01780 480404** to claim your £2 special discount.





# M18 'Hellcats' at War & Peace

The War and Peace Show celebrates its 30th anniversary this year and among other vehicles expected are five M18 Hellcat Tank Destroyers – an incredible turnout from a very desirable piece of armour.

Manufactured by Buick from 1943, the Hellcat M18 76mm gun motor carriage was the fastest tracked armoured fighting vehicle during WW2 with a top speed of between 55-60mph. This speed gave it a unique advantage over its enemy targets with the ability to "shoot and scoot" – getting out of the line of fire before a Panther or Tiger had the chance to turn its turret around to fire. 2,507 M18s were made between July 1943 and October 1944, although the first 1,000 were withdrawn to create the M39 Armoured Utility Vehicle, so the actual number of real Hellcats was only around 1,500! The Americans stopped making the Hellcat, as it was essentially a flawed concept. The thin armour, which gave it the incredible turn of speed, was also its downfall. Too thin to protect the crew, it was decided to withdraw the Hellcat after only 15-months.

The Hellcats came into the UK in around 1998 courtesy of Bob Fleming, who back in the early 1990s started a lengthy quest to find them. Used for training tank crews in America, after WW2 they were put into store before being refurbished by Brown and Root in the late 1940s/early 50s and sent primarily on to the then Yugoslavia. Handed over to the Army, they were kept in the store for around 40 years, but saw action in the Yugoslavian civil war in the early 1990s. Knowing these sought after tank destroyers were in Yugoslavia, Bob went to the Yugoslavian Embassy and from there was directed to a meeting with Military Sales in Belgrade. Unfortunately the people there weren't aware of these obsolete tanks, which while in the country, were not registered on their books so as a consequence didn't show up!

Disappointed Bob left, but a year later was contacted by a Yugoslavian modeller friend who had come across a Hellcat and wanted to put the owner and Bob together. So once again Bob went into Yugoslavia and was ecstatic when: "in the first town we went to there was an M18 by the side of the road,

knocked out, which didn't matter. It was like a brand new tank, having been in a store since the 1950s!" Bob was taken to an old football playing field full of old tanks – including Hellcats. When asked what he found so exciting about the Hellcat, Bob is enthusiastic in his response: "they are the best WW2 vehicle – anyone could drive them, they are fully automatic with a 17,000cc Continental Radial Engine – the same engine that powered a Sherman Tank, which was twice the weight of a Hellcat! Incredibly manoeuvrable they are just fun to drive!"

Bob is the only person to have gone into what is now Bosnia to bring out the Hellcats – and owners in countries including America, Belgium, Holland and the UK would not have had the pleasure of ownership without Bob's courage and tenacity. Proud Hellcat owners include Mike Phelps who bought his Hellcat around five years ago as a restoration project. After three-years of restoration, which included returning the engine to an original Radial diesel, Mike intends to keep this tank in his collection. He sold his Sherman before chancing on the Hellcat and was drawn to it because it's: "a little bit lighter, more manoeuvrable, more of a fun tank and much faster- they were fastest armoured vehicle in WW2!" Mike chuckled when questioned on the economy of the M18, which is: "1 mile to the gallon on a good day if you're lucky!" And we complain about the price of diesel for our ordinary cars!

Mike Davies has had his Hellcat for about six years and estimates he's done about 3,000 hours of restoration work. It was: "a very straightforward restoration, I think it had been shot at by a NATO plane as it was full of holes". Mike has returned his Hellcat back to American drab olive and it still has its original Continental engine. He likes the Hellcat as although it's an old tank it "still looks fairly modern and is very fast and sleek!"

Mike Phelps usually camps at The War and Peace Show next to another Hellcat belonging to Chris Till, who will also be at Beltring this year. Chris' Hellcat was one of the first to be imported and he has owned it for

over 12-years. It underwent a full restoration taking eight years on and off, during which time it was completely stripped and rebuilt. It has now been back on the road for around three years.

Chris has been restoring military vehicle for 30 years –starting with his father when he was at primary school. He bought his Hellcat from Bob as he was looking for something different and these were very rare. The Hellcat is as good fun as his favourite Chaffee, but just a bit quicker!

The five Hellcats will feature at The War and Peace Show in the 'Kelly's Heroes Burning Bridges' and 'Cauldron of Fire' battles on Wednesday afternoon and Saturday afternoon recreating the Hollywood depiction of the Private Ryan and Kelly's Heroes films. This will feature around 50 Germans with armoured vehicles including Panzer Tanks, plus the five Hellcats, a Sherman, Jeeps, Trucks and a half-track. A great spectacular not to be missed! This year each of the battles during the five days of The War and Peace Show will be staged in the central Arena in a specially built village diorama, giving a clear and uninterrupted view for everyone.

The 30th Anniversary War and Peace Show is on from 18-22 July 2012 at The Hop Farm in Paddock Wood, Kent. For more information see: [www.thewarandpeaceshow.com](http://www.thewarandpeaceshow.com) or call: **Tel: 01304 813945**





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## *Vehicle Dispersal Sale*



An Agricultural Machinery & Military Vehicle Dispersal Sale on behalf of C. D. Watts Estate following the tragic death of owner and entrepreneur Chris Watts, who was killed in a helicopter crash last summer. As a consequence the Farm is selling off some of the equipment and vehicles not required in taking the business forward for the future.

The catalogue, available from David James LLP, and has full details of each vehicles (i.e. Runner/ Non Runner) and includes a Daimler Ferret Scout Car, CVR(T) Scorpion FV101, Power packs x3 APC 3, Model 432, Bedford MJ truck, Abbot FV433 105mm SPG, Abbot Track vehicle, FV 102 Striker, Spartan, Chieftain Main Battle Tank, Mk I, FV4201, and Alvis Stalwart HMLC.

The sale is scheduled for Wednesday 16th May 2012, and the venue for the sale is Aldwick Court Farm, Redhill, Bristol, BS40 5RF.

For Further Details of the sale contact the Wroughton Office of David James LLP.

**Tel: 01934 864300**

**info@davidjames.org.uk**

**www.davidjames.org.uk**



# Northern Military Expo

The team from the Northern Military Expo held their first 'April' event on the 1st April 2012 and what a success it was too! The sun was shining, hundreds of military enthusiasts turned out, and traders 'in the main reported good sales, even with the current financial climate. Until now this show has always been held in November, and this was the first time it has been held in April. Due to this the event was staged in the smaller 'Lady Eastwood Hall', which ended up being packed full of traders, that full in fact, some ended up trading outside in the sunny weather, along with a few displayed vehicles too, but the event in November will be held in the much larger George Stevenson Hall, and in fact many traders have already pre-booked for the November's event already, so that event is looking great already! With the Newark Show Ground being just off the A1, people travelled far and wide, thanks to the fact that it is very easy to get to. Military enthusiasts were commenting on the large variety of military goods to be bought and the organizers commented that the show had a great feel and buzz to it and are already looking forward to the next one!

For further details check out the details in Mission Briefing in this issue or log onto the Northern Military Expo website at:  
[www.northernmilitaryexpo.co.uk](http://www.northernmilitaryexpo.co.uk)



## Tankhearse

While it may seem a slightly unusual conversion to undertake, the 'Tankhearse' recently completed by Nick Mead of Tanks-A-Lot has sadly already had its first customer. In these modern times there seems to be a growing market for unusual coffins and unusual methods of transport for the 'final journey', and while some may choose horse-drawn carriages or converted motorcycles as the method of making their final journey, ex-tank men may well choose to leave this world in a more familiar mode of transport.

The project started life when 50 something Nick mused on how he'd like to be conveyed to his final resting place, but sadly what started as a germ of an idea took on a new significance when a good friend was taken seriously ill. The first engagement for the newly built vehicle was actually built in double-quick time for Nick's good friends and work colleague, Graham, who sadly passed away earlier this year, and while it seemed fitting for someone involved with military vehicles in his working life to be transported to his funeral in a vehicle he had spent many hours on, Nick admitted some trepidation

as to what the reaction of the mourners attending the funeral might be, but was relieved to find that the Tankhearse was very well received, with congratulations being heaped on the creator of this unique hearse.

The 'Tankhearse' has been constructed from a much-modified FV432 APC, with the rear compartment side and rear panels cut away and glass panels replacing the armour to reveal the luxurious wood-paneled load compartment for the coffin. The familiar green paintwork has been changed for a more sombre black gloss black paint finish, making this a truly unique hearse and while it may not be to everyone's taste, let's face it there are those who want to go with a big splash and you're certainly going to be remembered if you make your final journey in a vehicle like this.

While I did turn down the kind offer of a free trip in the hearse, mainly as I'm not planning on popping my clogs just yet, the 'Tankhearse' is available for hire and you can find out more, and see details of the construction of this vehicle, by logging onto the Tanks-A-Lot website at:

[www.tanks-a-lot.co.uk](http://www.tanks-a-lot.co.uk)  
 Or call Tel: 01295 768400





## Revell New Releases

We have three new releases from Revell this month and the first is an interesting crossover between the subjects of classic cars and military vehicles, namely a 1/35 scale kit of the wartime German Admiral Cabriolet staff car. The kit is nicely moulded in tan coloured plastic, with a good level of detail, crisp mouldings and a pretty good level of detail. The kit has a skill level rating of 5, which according to the guide on the box makes it a 'difficult' model to build with over 150 parts and requiring a high level of skill, having said that, any seasoned modeller will have no problems assembling this kit. As with the Henschel 33 D1 mentioned last month, this kit too is a re-release of a former kit produced by ICM, the logo on the sprues being the giveaway!

The second kit this month is from the smaller 1/72 military vehicle range and represents the British Warrior Mechanized Combat Vehicle or MCV. The kit is moulded in sand coloured plastic and features plenty of raised and engraved surface detail. The main roadwheels are fitted to fixed spigots either side of the hull moulding, and aren't separated to allow suspension movement to be shown. The tracks are of the more familiar link & length type associated with this scale of model, and are well detailed. All in all a pleasing representation of the type, with bags of conversion potential for the adventurous model maker.

The final offering from Revell this month is again from the 1/72 military vehicle range and represents the Israeli Merkava III main battle tank. Moulded in sand coloured plastic, the model captures the bulk of this unusual tank design well with a good level of detail that includes various add-on armour panels and even the hanging ball and chain armour below the turret bustle! Even at 1/72 scale the finished model is 12.7cm in length, making this quite a chunky model for the scale and well worth adding to any collection.

Revell model kits are available from all good toy and model retailers.

For further information visit: [www.revell.eu](http://www.revell.eu)



Admiral Cabriolet



Merkava

Warrior



## AIRFIX Commemorates Falklands 30th Anniversary

Airfix, the UK's ultimate model making company, has recently launched a collection of commemorative aircraft models, providing something for every model enthusiast at all skill levels, to mark the 30th anniversary of the Falklands War of 1982.

The BAe Sea Harrier is the world famous naval jet fighter and attack aircraft. The FRS-1 (78-pieces, 304mm long) and GR3 (92-pieces, 299mm long) 1/48 scale models, which are best known for their successful campaign in the Falklands War and suffered no air-to-air losses against the Argentinean forces, are available in stores from April for RSP £15.99.

The Douglas A-4 Skyhawk 1/72 scale model is a carrier-capable ground attack aircraft designed for the United States Navy and Marine Corps. They were used by the Argentine Air Force during the Falklands War and are available from April for RSP £9.99.

The Airfix Club Pucara 1/72 scale kit is available to Club members only. It comes with a choice of two aircrafts as flown by the Argentine Air Force; FMA-IA58 A-558 Pucara 25th Anniversary Special and the FMA-IA58 A-515 Pucara, which was painted to replicate the Pucara's seen in the Falklands War. Available in April, the Pucara kit has an RSP of around £12.

The Douglas A-4 Skyhawk and the BAe Sea Harrier FRS-1 are also packaged together in a Dogfight Double pack, RSP £19.99.







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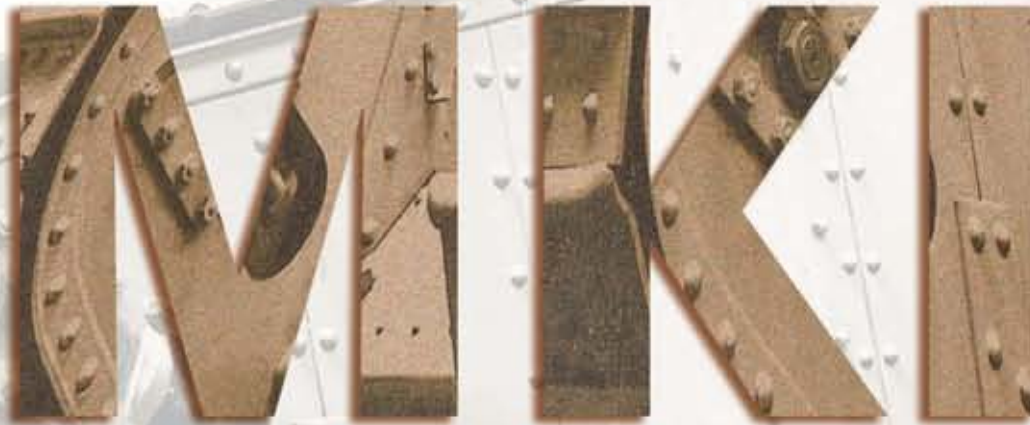
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# MOTHER TO



## Richard Pullen traces the introduction of the first tanks with the British Army during the Great War



**Above:** a very nice works shot of one of the first Mk I tanks to be built in the Lincoln factory. (Photo - Ray Hooley Collection)

**W**ho invented the Tank? It's a simple enough question that deserves a simple answer; unfortunately things are a bit more complicated than that. The road to the creation of the true armoured fighting tank is long and convoluted and is littered with fantastic, ill-conceived or unsuitable prototypes. There is also an apparently never-ending list of people who have claimed or it has been claimed were 'the Father of the tank'.

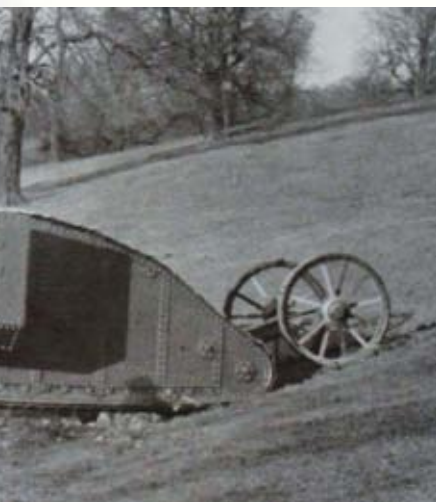
Eustace Tennyson D'enyncourt, Bertie Stern, J.F.C 'Boney' Fuller, Lancelot de Mole, H.G Wells, Thomas Hetherington, Murray Sueter and

Ernest Swinton are just a few examples of those who helped or sometimes hindered in the tank's difficult birth, but did not invent it. The facts are that the world's first workable tank was created in Lincoln, England by William Foster and Co. Ltd and the design work was mainly down to a team of just three men, William Ashby Tritton, Walter Gordon Wilson and William Rigby.

Tritton and Rigby were employed by Fosters and relished the huge problem of creating a 'Landship' for the Admiralty. Walter Wilson was a serving Lieutenant in the Royal Naval Air Service and he had been sent to Fosters to oversee their work and give a more military air to the proceedings. In actual fact, Wilson did much more than this and it is unlikely that the tank







## Mother/MkI Fact File ...

- Mother was built from boiler plate and not armour plate
- The Female MkI tank sponson was larger than the male sponson
- The rear steering wheels were discarded from November 1916

in its finished Rhomboidal form would have appeared in such a way or so quickly without his engineering prowess or design skill.

There were many problems with early tank designs, such as the armour, the powerplant, the weaponry, the transmission and so on, but the main stumbling block was simply the tracks themselves. No commercially produced track set was strong enough to take the weight of a fully crewed and armoured tank or punishment that a day on the Western Front would throw at it. After all sorts of failed attempts, including continuous rubber belting, William Tritton came up with a set of pressed steel tracks rivetted onto drop forged

individual shoes, which would run around the outside of the track frames guided by T shaped channels to stop the track coming lose.

Tritton's tracks were one of those rarely seen, incredibly simple, but very clever pieces of engineering that go straight from paper to finished product without a single alteration. The rhomboid shape of the first tanks is credited to Walter Wilson who simply drew a flattened wheel with a raised snout at the front which he hypothesised would be splendid at climbing in and out of trenches. So if

Tritton created the track and Wilson came up with the shape, what was William Rigby's contribution to the tank? He had perhaps the most difficult roll of the three, as it was his job to take their scribbled notes and doodles on the back of fag packets and redraw them, so that the men on the shop floor could actually create a tank from them. Rigby is rarely mentioned, but as the factories Chief Draughtsman was as important as the other, more famous names in the tank story.

**Top left:** Mother pictured at Burton park, note the amount of rivets, twice that found on a normal tank.

**Above left:** the first tests were hardly a military affair and were more akin to a Garden Party!

**Main photo below:** the famous tank D7 Dinnaken becomes an attraction after being ditched during the Battle of Flanders.







## Mother - First of Many

**Below:** certainly one of the best photographs of a Great War tank, Mother during her trials at Burton Park in January 1916.

**Bottom:** Mother pictured during trials coming towards the camera, up the hill in Burton Park in January 1916.



**Above:** this pair of Female Mk I tanks were lost at Flers and later broken up for scrap.

## FIRST TANKS

The first Tanks were a tool made for a specific job, they were created to get over barbed wire, cross trenches and get the stalemate of the Great War back on the move and in January 1916, the first of the line moved under its own power in the works yard in Lincoln. One of the main driving forces behind the Landship project was General Ernest Swinton and when he saw the full size wooden mock up at Fosters Works, he said that 'before me, although only in wood, was the culmination of all my ideas'. It is sometimes claimed that Swinton was the inventor of the tank and even he himself claims to have the idea for the tank whilst travelling across Northern France in 1914. Swinton was not an engineer and actually had no input whatsoever into the design of the tank, but he did do something just as valuable; he believed in the tank and pushed the idea as hard as he could at a time when just about everyone else thought the plan was an unworkable piece of science fiction.

The first true tank to emerge was rather grandly titled His Majesties Landship 'Centipede', but soon became known to everyone involved as Mother, for she was the first of the line and all being well, others would soon be created in her image. Mother went for trials at Burton Park near Lincoln and then at Hatfield House in

Hertfordshire. At both trials she was an absolute star and did everything that the Army, the Admiralty and her creators asked of her. Even King George V was present at the Hatfield trials and, like all others who witnessed her efforts, was duly impressed. Well, perhaps not quite all present were as impressed as Tritton, Wilson and Rigby would have liked. One man who refused to be swept along with the festive feel of the day was the Secretary of State for War, Lord Kitchener. He calmly watched Mother going through her paces, crossing streams, trenches and boggy ground and said 'it is a pretty mechanical toy, but will soon be knocked about by the enemy artillery'. This rather ungrateful sounding assessment of Mother was a bit of a blow to the designers of the tank to say the least, as Kitchener's opinion was obviously a very important one and having him on side would have been very good for their cause.

It may sound as though Kitchener didn't know a good thing when he saw one and that he was just being obtuse, but he had actually seen the new weapon through an experienced soldier's eyes and spotted the tanks Achilles heel at first glance. He was quite right that the machine was a sitting target for the German 77mm guns, it was slow and with a maximum plate thickness of just 8mm, the armour was woefully thin. Although he couldn't have known it then, the plate on the hull of a Great War tank would just about keep a .303 round out of the fighting compartment, anything bigger or even sustained machine gun





fire would tear through the sides and cut the crew to pieces. In the event, Kitcheners comments were duly noted and filed away in favour of the general feeling that this was, at last, the war winning weapon everyone had been waiting for.

Mother and the design team from Lincoln had now proved themselves and Haig's urgent order for 1000 tanks soon followed, he could see the new weapons potential value and he wanted them ready for his new Summer offensive on the Somme. Unfortunately, there was no way on Earth that 1000 tanks, fully trained crews, spares dumps, ammunition and all the paraphernalia that goes with them could be organised in just a couple of months, so the debut of the tanks was postponed until September 1916. William Foster and Co. Ltd were a small agricultural concern and the fact that they had created so much in so little time is nothing short of miraculous, but 1000 tanks was impossible when even 100 would be pushing it.

Other factories were approached to see if they could help by building even just a few tanks and The Metropolitan Wagon and Finance Co in Birmingham said that it would have no trouble in building tanks for Haig. It is at about this time that the Mk I tank starts to get a real identity by becoming Male and Female. Simply put, the Male Tanks would have the big six-pound cannons in their side sponsons for use against pillboxes and other 'hard targets' and the Females would have redesigned sponsons that would carry machine guns only, for anti-personnel

# Tank Munitions

**Right:** the first 6 pound shell ever fired by a tank. It was fired by Mother at tests in Lincoln, but where is it now? Answers on a postcard please!

**Below:** in this atmospheric factory shot we see groups of 'munitionettes' busy planing piles of Track Shoes at the Fosters factory in 1916.



**Below:** newly arrived Mk I Male tank C15 practices for the Battle of Flers.







**Top:** a famous shot showing a line up of Mk I tanks, apparently in Chimpanzee Valley prior to the tanks first outing at Flers.

**Above:** this photograph shows, Mother, Triton, Rigby, Wilson and others at Burton Park in January 1916.

**Below:** a Mk I seen on the battlefield after the war, note the toothed front sprockets, seen only on the Mk I.

work. The odd thing is that by this new ruling Mother would actually be a male tank as she was fitted with cannon, but there was never any call to rename her Father.

Mother's children finally got their first taste of battle at Flers Courcellette on the 15th September 1916 and a disappointing first showing it was too. Those commanding the tanks had been

lead to believe that that they were unstoppable and consequently put them into conditions and against defences they could not hope to breach. The engine and transmission had been 'borrowed' from the 105hp Foster Daimler tractor and were not really up to propelling 30 tons of tank through mud and barbed wire, so mechanical troubles were rife. Also, Kitchener's words from the Hatfield tests must have been ringing in the design team's ears as the Germans guns tore several tanks apart with ease.

Despite the best efforts of the manufacturers, only 48 finished tanks were ready for the battle and so, worse than the loss of the crews and tanks, the British had now lost the tanks most valuable asset, the element of surprise. The tanks did good work in their first battle, but if the Generals had waited for more machines, more crews and better ground, the Battle of Somme could have been their finest hour instead of a disappointing debut.



**Above from top to bottom:** this C Battalion Female Mk I came to grief when it lost a track during the Battle of Flers; a new Mk I boarding a train at Fosters factory, the Russian script on the side is supposed to fool the Germans into thinking that they were water carriers destined for Russia; a damaged Mk I after Flers, note the missing rear wheel from the steering gear.





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# FRENCH VBCI



**T**he VBCI (Véhicule Blindé de Combat d'Infanterie – Armoured Infantry Fighting Vehicle) is the new heavy fighting vehicle of the French infantry, designed and manufactured in France by Nexter Systems and Renault Trucks Defense. With 8-wheel drive suspension, it is the successor of the tracked AMX-10 P, but has far superior performance, can accommodate 11 soldiers, and is equipped with state-of-the-art communication systems. 630 vehicles have been ordered for the French army.

After three years of intensive tests with five prototypes between 2005 and 2008 (with the school regiment: the 1er Régiment de Chasseurs d'Afrique), the VBCI is now in use with four regiments (35e Régiment d'Infanterie, 92e Régiment d'Infanterie, 1er Régiment de Tirailleurs, Régiment de Marche du Tchad) and will be used by four more regiments (152e Régiment d'Infanterie, 16e Bataillon de Chasseurs, 2e Régiment d'Infanterie de

Marine, 2e Régiment Étranger d'Infanterie) who are due to be equipped between 2012 to 2015.

The VBCI follows a new doctrine for the French infantry, being more mobile, able to detect and fire on targets from long distances and is a digitalized vehicle, providing more fluidity and speed in combat operations.

The VBCI features an all-welded aluminium hull with an additional layer of modular passive armour in steel and titanium, and internal spill liners. It is armed with a 25mm gun in fully rotating turret and uses an 8x8 drive system with the four front wheels steered. The VBCI is 7,860mm long, 2,980mm wide and 3,220mm high and has a combat weight of 28-tonne (18-tonne empty, 28-tonne loaded, 32-tonne with add-on armour).

**Eric Cunat takes a closer look at the French VBCI**





VBCI of the Régiment de Marche du Tchad in Meyenheim, Alsace, France. Note the state-of-the-art equipment for the driver and gunner.



## ch Army's newest IFV



There are two main versions for the French army: the combat version (VCI – infantry fighting vehicle) with “Tarask” turret, which carries a crew with driver and gunner (who becomes commander when he is alone with the driver), a commander and a combat team of eight troops; and the command version (VPC – command post version) with a crew like the VCI version, a commander and a staff of six personnel with SIR computer system.

### MOBILITY

Renault Trucks Defense is responsible for the mobility of the VBCI. The VBCI is propelled by a Renault-Volvo engine with a ZF gearbox. The in-line six-cylinder 550hp diesel engine and automatic gearbox are installed in the front right of the vehicle. The transmission uses four central axles

**Top right:** the VBCI “Tarask” turret features electrical aiming systems provided by EADS, in the foreground you can see the box for the co-axial 7.62mm machine gun, which is not mounted here, above you can see the bowl of the MOP to the left, which is provided by Sagem, and to the right the gunner's sight provided by Thales.

**Above:** a VBCI in a maintenance area of the 1er Régiment de Tirailleurs in Epinal. A mechanic is servicing the engine. Note that the armour has been removed down the right hand side.

**Below:** a VBCI photographed on exercise, as it turns note that the four front wheels are all steered.





INTERIOR  
DETAILS

**Above:** a VBCI photographed at the Mourmelon Training Area. Note the gunner's sight above the 25mm gun.

**Right:** In this rear three-quarter view note the driver and the commander of the vehicle on the roof with the state-of-the-art equipment of motorized troops. The rear ramp has been lowered.

**Below:** rear view of a VBCI seen here with the ramp open, you can see the emergency door and the observation hatch on the ramp.



protected by armoured housings and the exhaust gases are diluted to reduce the infrared signature of the vehicle.

The vehicle can reach speeds over 100km/h on roads and has a range of 750km. The 50cm ground clearance, mixed oleo pneumatic/mechanical with long travel suspension and wheels with Michelin 395/90 R22 tyres fitted with a driver-controlled variable pressure system provide mobility on all types of terrain. The front two pairs of wheels are guided and with a turning radius of 17m the vehicle can manoeuvre in confined spaces. The vehicle has demonstrated manoeuvrability in rough terrain over obstacles such as 60% max grade, 30% side slope, 2m trench and 0.8m steps. The vehicle can be driven with seven wheels if a wheel is lost by

**Top right:** the driver's position with the steering wheel and the gear lever to the right. Note the red button on the right that commands the brake system of the wheels of the same side to turn more quickly.

**Right:** view looking down inside the vehicle at the gunner's position with the crosshairs of the sight visible to the top of the photo.

**Right:** the rear compartment of the VBCI showing the seating capable of transporting eight infantrymen. Note that the seats are very light to avoid being hazardous in case of an explosion. In the background you can see the turret basket and at to the left is the corridor leading to the position of the driver.

**Bottom right:** here we see a combat team seated in the rear of a VBCI. Note the top the hatches above the men and the air conditioning system in the centre, the VBCI is completely closed and protected against the NBC risks.

“...the VBCI has a co

mine explosion, and is fitted with flat tyres. Forging is possible to a depth of 1.2m without preparation and 1.5m with preparation. As currently configured, the VBCI has a combat weight of 28-tonnes, but with the potential to increase this to 32-tonnes. The vehicle is road and railway gauge compatible and is air transportable on an Airbus A400M.

The VBCI features STANAG 4569 level 4 protection, offering protection to 14.5mm calibre in direct fire. The armour of the VBCI is one of the best available today, with the hull, roof and floor having a good protection. The crew and troops are protected from a range of threats, including 155mm shell shrapnel and small and medium calibre shells. The hull is fitted with spall liners and add-on titanium armour plate to protect against anti-tank weapons, while the box structure floor and running gear provide protection against exploding mines. Add-on kits will be provided to protect the VBCI against overhead-attack bomblets and light anti-tank weapons over the frontal arc. The baseline VBCI has a high level of protection against a variety of threats but a number of further survivability enhancements kits are now being studied.





combat weight of 28-tonnes with the potential to increase to 32-tonnes.”

The Galix grenade system (the same as the Leclerc MBT), is fitted as standard to further improve battlefield survivability. On the VBCI, Galix will be installed on the 25mm turret (four launchers either side) and at the rear of the hull (three launchers either side).

### “TARASK” TURRET

The TMC-25 “Tarask” turret is manned by a gunner who becomes the commander when other soldiers are operating outside of the vehicle. This electrical power-operated turret is equipped with a 25mm gun and a 7.62mm coaxial machine gun as well as fire control system and sights for the gunner and the commander.

The commander is positioned out of the turret, to the left behind the driver. He is virtually in the turret and can take the priority on all the gunnery systems to see and fire, but he can leave with the dismounted team and the turret can continue to operate without having to turn to allow the commander to leave.

The TMC-25 has a welded aluminium shell, which can accept different levels of add-on armour protection. With a total equipped weight of 1,600kg (up to 2,000kg at the maximum protection level).

The gunner has a sight provided by Thales that allows, on one hand, observing and aiming to 2,000m under a direct optical sight, a day camera and a cooled thermal camera with the possibility of telemetry and on the other hand, the fire control. The gunner also has a set of periscopes for a direct observation of 360 °.

The commander has an independent sight beside his hatch and a panoramic observation system on the turret (MOP) which features a thermal camera. The MOP is a bowl mounted on top of the turret, and enables the commander to see the surrounding area as if he were standing outside of the turret. It's stabilized in two-axis and can be made available to the gunner. It is used for panoramic viewing and designating targets from the commander to the gunner.

The VBCI has a fire control system COTAC (automatic fire control for tank with laser rangefinder) manufactured by Nexter and Thales. The GIAT M811 dual-feed, externally powered automatic cannon fire NATO-standard 25x137 ammunition; the gunner can select armour-piercing or explosive ammunition. The armour-piercing shell has effective range between 1,500m and 2,000m and explosive shell has effective range

between 1,000m and 1,500m. The gun has a firing rate of 125 or 400 rounds per minute with 400 shots ready. There is a 7.62mm coaxial machine gun, with 2,000 shots ready, at the right of the turret.

### PERSONNEL CAPACITY

The VBCI provides 13 m<sup>3</sup> of internal space and up 10,000kg in cargo weight, and is therefore able to pick up men or material. General features include suspension, air conditioning, storage space, NBC protection, and noise and vibration protection, offering real comfort for the crew. The VBCI has a crew of two (commander/gunner and driver) plus a squad leader who is the commander of the vehicle when he is onboard and eight fully equipped infantry men, who can rapidly enter and leave the vehicle. There are two hatches on the roof of the infantry compartment, which open outwards. The troops can rapidly embark or disembark from the power operated ramp door at the rear of the vehicle.

The command post version has a remote weapon station with a 12.7mm machine gun and Galix grenade launchers. The VPC is fitted for command posts using SIR, the operational information system of





**Top right:** the VPC variant of the VBCI in training at the base, we can see the posts with command equipment in the rear of the vehicle.

**Top left:** the VBCI Command Post version. Note the two rear doors with a small ladder. The remote weapon station is manufactured by FN Herstal with a 12.7mm machine gun and Galix grenade launchers.

**Below:** a VBCI photographed on patrol in Afghanistan. Note the anti-RPG netting and the anti-IED ECM devices (electronic countermeasures) on the turret roof.

French Army developed by EADS. It can carry a crew of two and a staff of seven soldiers. It has two doors in the rear like the VAB rather than the drop down ramp of the standard infantry variant of the VBCI.

## LESSONS LEARNED

For more protection against rocket-propelled grenades, vehicles have now been equipped with RPG-net protection kit in Afghanistan, which is lighter than conventional bar armour. Field conversions have included two brackets to attach "Minimi" machine guns on the roof for use when soldiers are standing in the hatches for escort missions. The VBCI can continue to drive with flat tyres, and in Afghanistan two VBCI had a wheel torn off by IEDs, but managed to return to their FOB without further damage. When the VBCI has been engaged it has proved its superiority.

## RÉGIMENT DE MARCHE DU TCHAD

The Régiment de Marche du Tchad (Ad hoc Regiment of Chad) is a famous French Army unit, created in 1943 in Morocco from French colonial soldiers of Chad who followed General Leclerc in Koufra (south of Libya) in 1941. It was the mechanized regiment of the 2e DB. The name of the unit is "the Regiment of the Oath", because in Koufra Leclerc made an oath: "don't lay down weapons before our colours, our beautiful colours, float on the Strasbourg Cathedral".

It was carried in Great Britain and landed in Normandy in Utah Beach the 1st of August 1944. The Régiment de Marche du Tchad liberate Alençon, Paris and Strasbourg participated in heavy fighting in Vosges Mountains and Alsace, and then the regiment ended the world war in Berchtesgaden, first allied unit to occupy the Hitler's residence.

After, the RMT went to Indochina, Saigon and Hanoi in 1946 under Colonel Massu to follow General Leclerc. Between 1955 and 1959 it fought in Morocco.

Today the RMT is one heavy regiment of the French infantry, and most frequently deployed because it is a "Marines" regiment. The Régiment de Marche du Tchad participated in the Gulf War in 1991 and was one of the first units to enter in Kosovo in 1999. Additionally they served in Chad, Senegal and Lebanon and today the regiment has made several deployments to Afghanistan and its soldiers provide OMLTs to mentor the Afghan National Army.

**Acknowledgements - Lieutenant-Colonel Bazy of STAT (Section Technique de l'armée de Terre – French Army Technical Section) who is responsible for infantry vehicles.**





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# MOSCOW REMEMBERED

Jim Kinnear reports from Moscow's

In recent years the re-instated annual Red Square military parades have been held in Moscow on 9th May, in celebration of Victory in Europe, or "VE" Day, commemorated in Russia on the 9th rather than the 8th as in Europe due to the time difference with Moscow when the surrender was signed in Europe on the 8th May 1945.

From the beginning of the Soviet state until its end, the annual military parade was however, traditionally held on 7th November in celebration of the Russian Revolution. The vast parades of Soviet military might were an annual event from the 1920s until the break-up of the Soviet Union in 1991. And it was on 7th November annually that foreign military attaches and the world's press got to see what the Soviet State wanted them to be made aware of during the Cold War years.

The only break in these military parades was during the Second World War, when the Soviet Union was fighting for its very survival. The last wartime, and most poignant parade was held on 7th November 1941, when the enemy was quite literally at the gates, during the early weeks of the winter 1941-42 Battle for Moscow. That year, Red Army and naval infantry, including elements of the famous "Siberian Divisions" paraded through Red Square accompanied by tanks and artillery, from which many were deployed directly to the front line.

The staging of a military parade in the early winter of 1941 was the subject of great concern, as the dangers of holding a parade within bomber range of the enemy were balanced with the psychological effect of such an act of defiance. Moscow had been under regular bomber attack since late July, and the danger of the parade being targeted was very real. After consideration, Stalin ordered that the parade be held despite the dangers, and the parade was duly held, starting at 0800, earlier than by tradition, in order that tanks could be assembled under cover of darkness and dispersed again

immediately afterward. As fate would have it, the winter snows had closed in early that year, and on the day of the parade heavy cloud formations protected the city centre and its military parade from air attack.

As the parade got underway, with the infantry fuelled with a standard 100g shot of Vodka each to fend off the cold, or thoughts of it, over 120 Red Air Force fighter aircraft patrolled the skies around Moscow, with a reported 34 enemy aircraft downed over or near Moscow that day. Some 160 tanks passed through Red Square during the 1941 parade, including T-60s, T-34s and KV-1s, the majority of which were despatched back to the all-too-close front immediately afterwards. Many souls who passed through Red Square that morning would never return. German and Axis forces continued their advance on Moscow, such that by 30th November advance units were at Khimki to the north west, literally a few kilometres from the Kremlin. And that was the point at which "Operation Barbarossa", launched on 22nd June 1941 ground to a halt.

The snow would continue relentlessly that winter, and the temperatures would drop to near record levels of frost, such that in the months ahead many of the Axis forces, still clothed in their summer campaign uniforms, would literally freeze to death at the gates of Moscow. Hitler's forces were ultimately destroyed by the same combination of mistakes that had destroyed Napoleon's armies in the same location more than a century before - underestimation of the distances and logistics involved in attacking the largest country by land-mass in the world, the assumption of quick victory and early capitulation and a lack of understanding of just how long and bitterly cold Russian winters can be. Some today argue that the study of history is irrelevant; however not studying it can prove fatal, as it did to many carrying out Hitler's orders to take Moscow.

**Main photo:** the T-34 medium tank made its Red Square parade debut on 7th November 1941, from where they were returned to the front a few kilometres away. It was only upon invading the Soviet Union less than six months earlier that Germany uncovered the existence of the T-34. (Wartime photographer - O. Baronov)







## 7th November 2011 Military Parade



**Top right:** two T-34/85s traversing Red Square accompanied by troops with the red, white and blue flags representing the colours of the Russian Federation.

**Above centre:** hen's teeth rarities – ZiS-42M (front) and ZiS-33 half-tracks.

**Above:** two restored T-37A amphibious light tanks. Nearly all of these reconnaissance tanks were destroyed in the opening weeks of WW2.







**"A substantial military parade was staged on Red Square in commemoration of**



A BA-64B armoured car, the only known example to have been restored to running condition.



A rare Studebaker US6 mounted "Katyusha" rocket launcher. During the later years of WW2 the Lend-Lease Studebaker US6 became the standard mounting for the "Katyusha".

## Rare Half-tracks



**Left:** the ZIS-33 half-track was developed as a half-track conversion for the standard ZIS-5 truck. The system was cumbersome in use and was not adopted in quantity.

**Below:** produced in relatively small quantities, and with tank-like fuel consumption, the ZIS-42 series half-track was used by the Red Army as an artillery tractor.



## NEW BEGINNING

The 7th November military parades ended with the collapse of the Soviet Union itself, the last one being in 1990, and although some marching parades with troops in period uniforms have been undertaken in the intervening years, and the occasional T-34/85 has trundled through Red Square on the day, no major parade had been undertaken on Red Square on 7th November for over two decades. Until, on 7th November 2011 a substantial military parade was staged on Red Square in commemoration of the 70th anniversary of the poignant 7th November 1941 military parade.

At 10.00 precisely, the commemorative parade began on Moscow's Red Square, with soldiers, internal security troops, officer cadets and members of history re-enactment clubs dressed in period military uniforms and weaponry dating from 1941 representing the troops that paraded through Red Square that fateful year.

Preparation for the parade had been perhaps even more onerous than for the re-instated annual 9th May Victory Parades involving current serving modern military vehicles. To re-stage the parade of 1941 required the assembly of a considerable number of





**Far left:** a T-60 moving off. The small petrol engined T-60s and T-37s sound entirely different to their heavier diesel engined wartime compatriots.

**Centre left:** the T-60 also made its debut, and only, Red Square appearance on 7th November 1941. These particular T-60 tanks have the rare cylindrical turret as used on the earlier T-40. In the background a Voroshilovets heavy tractor is on stand-by for any breakdowns. (War-time photographer O. Baronov)

**Left:** two restored T-60s await marching orders. These tanks have differing exhaust arrangements, reflecting differing periods of production.

## f the 70th anniversary of the poignant 7th November 1941 military parade..."



Not one, but two examples of the Studebaker US6 mounted BM-13N "Katyusha" multiple rocket launchers take to Red Square for the Anniversary Parade.

wartime softskin and armoured vehicles, and the restoration of three T-60 light tanks and three T-37 amphibious light tanks, which were restored from recovered wrecks at the Technical Museum at Krasnogorsk near Moscow. Four T-34/85s led the parade, accompanied by a number of M-72 motorcycle combinations, four GAZ-67B light vehicles, a BA-64B armoured car, GAZ-MM and ZiS-5 transport trucks towing 57mm ZiS-2 anti-tank, 76.2mm ZiS-3 field and 37mm M-1939 anti-aircraft artillery, and even two BM-13N "Katyusha" rocket launchers mounted on US6 Studebaker chassis. The parade also featured two extremely rare (i.e. until a

few months ago entirely extinct!) wartime Red Army half-tracks, a ZiS-42M and a ZiS-33, restored by the Shamansky company.

Practice for the parade was also as exacting as for the annual parades of new military hardware, as the veteran tanks, though smaller in number, were all of wartime vintage with their own peculiarities with regard to being driven in formation in public areas. After several practice runs held at the Khodinka airfield in late October several more training parades were held on Red Square itself in the days leading up to 7th November. Uncannily, it started to snow literally as the tanks started their engines for



A GAZ-MM 1.5-tonne truck towing a 45mm M-1937 anti-tank gun across Red Square.

T-37As and T-60s parked on the entrance ramp to Red Square.





# Restoration



**Above left:** restored T-60 turrets await mating to their hulls. These turrets have been in water for many years as is evident looking at the corrosion damage close-up.

**Above centre & right:** the tanks used in the parade were restored from the parts of several wrecks discovered in marshes, and after undergoing a painstaking restoration and rebuild using a large percentage of new manufactured parts, have been once again returned to a running condition.

the first practice parade, though the snow lasted only a few minutes - it had snowed at the time of the parade in 1941. And also on cue, on 6th November 2011, the day before the parade, the temperature dropped overnight from +10°C to -8°C.

The 70th Anniversary Red Square parade was a significant historical event, with the guests of honour being 67 surviving veterans of the original 7th November 1941 parade. All things considered the parade was also quite a technical achievement, with a significant gathering of wartime era military vehicles restored to immaculate condition. Such a

collection of wartime era military vehicles is unlikely to be seen again on Red Square until the 80th Anniversary of the 1941 parade in 2021.

A smaller anniversary parade was also held in Samara, well to the east of Moscow, which had also held a major military parade on 7th November 1941 when the city, then known as Kuibyshev, was being prepared as the alternative capital city of the Soviet Union should Moscow fall to the advancing Axis forces, which in November 1941 was a distinct possibility. The 2011 remembrance parade included a flypast by two IL-2

“Sturmovik” armoured ground attack aircraft, in honour of the claimed 600 aircraft that participated in the original 1941 parade.

Meantime back in Moscow, perhaps the most curious aspect of the Moscow parade was watching rebuilt recovered tanks of the exact type (as in the case of the T-60) that had paraded across the very same cobble-stoned square in the dark days of 1941, in a historical setting almost unchanged since those days - which brought the black and white photographs dating from 7th November 1941 which accompany this article very much to life.



## T-37 Amphibious Light Tank



**Top left:** three T-37As and three T-60s, all remanufactured from recovered wrecks for the historic 2011 70th anniversary parade.

**Left:** a column of three T-37s moving towards Red Square. The middle tank is an earlier T-37, the other are later T-37As with the side panniers providing additional flotation capability.

**Below:** T-37As parked on Manezh Square, awaiting starters orders. The tank in the foreground is fitted with a frame radio antenna around the hull.





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# TIGER DAY



## Simon Thomson reports on a rare outing for the Tank Museum's Tiger 1

**Above & right:** after several years absence from the annual Tankfest show, the Tiger 1 once again roared into life and took to the arena to thrill the watching crowds.

At the end of March the panic buying of petrol began and the early warm summer-like weather petered away, however, one event that was still attended by a large number of people in the cold, using plenty of petrol into the bargain was 'Tiger Day' at the Tank Museum.

The Tank Museum had planned for some time to reintroduce Tiger 131 to the public with a wide range of events on the same day, which included the showing of the filmed story of Tiger 131's history. A limited number of "Tiger" enthusiasts prepared to pay a premium by booking special tickets, were entertained by the Museum's staff during a special presentation, which included meeting the Tiger's Crew and briefings on the tank and other aspects of tank warfare. Meanwhile the rest of the paying public feasted on a range of exhibits on display and from MMI's perspective it was good to see the next generation taking a serious interest in the tanks and vehicles on display.

The highlight of the event saw the Tiger being displayed to the crowds in the "Kuwaiti Arena", which included some interesting tanks from World War Two and a couple from the post-war era. The Matilda I and Matilda II, both interesting in their concept, showed

how the British thinking was in the era leading up to WW2, namely slow, "agricultural" in their design and layout and armed with a small gun.

The Soviet T-34 brought the military world a mass-produced tank with a basic diesel engine that worked in all climates and to this day remains in service in small numbers. It redefined the word "agricultural" but became the basis of a family of tanks that are still in production in several countries.

The Sherman in its many versions has fought in conflicts worldwide. Again mass-produced for WW2, it gave the Allies a family of tanks that became the backbone of Allied armour for years. The Sherman was essentially reliable and capable, but possessed the finesse that the T-34 lacked.

The Centurion is a tank that again operated worldwide and is still in service; in fact it is now being remanufactured in Jordan as an armoured personnel carrier. Capable, with a good gun, good performance and well liked by crews, the Centurion remains a well-respected tank.

The museum's Leopard is one of the most used western designed tanks in the world today. With a combination of a good hull, engine, gun and



Sherman ...



### Tiger 1 Fact File ...

- The Tiger was first shown to Adolf Hitler on April 20th 1942
- The designation Tiger 1 was never officially given to the tank
- Only the first 495 Tigers were fitted with a snorkel system





**Panzer III ...**



**Matilda II ...**







**“... the Tiger was a giant leap forward in the history of Tank warfare.”**



electronics the Leopard family is on many armies shopping lists either new or second hand. In the UK it forms the basis of the MoD's in-service beach armoured recovery vehicle that replaced the earlier Centurion-based BARV. Its spirited display of speed and controllability a stark contrast the performance of the Matilda family.

And for the finale, Tiger 131, unique in that it is currently the only Tiger moving under its own power anywhere in the world, took the arena in front expectant crowds. Now “rejuvenated” and represented to the public in running condition following several years away from the limelight, it drove around the arena with an arrogance that tells you it is special.

Apart from the vehicle's history and a never-ending public fascination in this remarkable machine, the Tiger was a giant leap forward in the history of Tank warfare. Whenever it was fielded it took command of the battlefield until technological advances on both sides eventually replaced it, but the name Tiger had forever found

a place in the hearts of tank enthusiasts, be it as a fearsome enemy or seemingly unstoppable battlefield weapon. The Tiger truly pointed the way for German Tank designers in WW2 and today the current tanks built in Germany can trace their parentage to the Tiger. The restoration of Tiger 131 (described in the July 2011 issue of MMI) is a testament to the ability, commitment and reputation that the Tank Museum has worldwide and to see it running once again was a great thrill for everyone there.

The day was a great success for the Museum and MMI looks forward to seeing the Tiger at Tankfest held over the weekend of the 30th June 1st July together many other tanks from the world-class collection. A second ‘Tiger Day’ event is also planned for September 22nd, however, all ‘Premium Tickets’ have now been sold. For further details check out the museum's website at:

**[www.tankmuseum.org](http://www.tankmuseum.org)**  
or check out the entry for Tankfest in Mission Briefing.



**Top left:** the Tiger 1 still draws a big crowd, due in part to the fact that it's the only running Tiger in the world

**Top right:** the modern contemporary of the Tiger is probably the Leopard tank.

**Above centre:** the exhaust heat shields are looking more an more like in-service Tigers with their burnt paint.

**Above:** a confident thumbs up from the crew as everything goes to plan and without any technical problems.





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# BELGIAN

**Daniel Nowak & Tim Mätzold  
take a look at the Piranha  
IIIC Armoured Infantry  
Vehicle in its various forms,  
as currently used by  
Belgian Armed Forces**

**T**he global security environment and the policy context in which the Belgian Armed Forces operate, has undergone substantial changes since the end of the Cold War. The former threat of the Warsaw Pact no longer exists, but in its place more and complex challenges have developed. This significant strategic shift has been recognised, requiring flexible, expeditionary Armed Forces being able to undertake a wide range of





The automatic tyre inflation system enables the Piranha IIIC to negotiate even soft ground. The vehicle weighs 14.6-tonne.



**Above:** the Piranha IIIC AIV is fitted with an additional armour similar to the British BAR-Armour as part of a troop trial. The vehicle belongs to the C-Coy Bataillon Chasseurs Ardennais.

**Below:** the DF30 is fitted with an Elbit OWS armed with a 30 mm ATK Gun Systems Company Type MK44. The crew is also equipped with the MILAN anti-tank weapon for dismount use.



# PIRANHA

tasks. This has driven a continuous change in the roles, doctrines, shape and size of the Belgian Armed Forces and a substantial reduction of manpower.

In the early 1990s, the Belgian Armed Forces had a personnel strength of 31,000 soldiers with 300 main battle tanks and some 1,000 tracked vehicles including self-propelled artillery. Facing these new and complex challenges, Belgium began to

reconfigure and modernize the army regarding men and material to face the demands of the 21st Century.

The role, size and shape of the armed forces have changed. Focusing on a total of 12,560 soldiers it is intended to withdraw all main battle tanks and tracked vehicles, with only the engineers keeping some Leopard 1-based Leguan AVLBs (Armoured Vehicle Launched Bridges) and engineer tanks.

In January 2006, the Belgian government procured a number of Piranha IIIC Armoured Infantry Vehicles to replace current weapon systems. The Swiss company Mowag (part of Dynamics European Land Systems) signed the contract to deliver a total of 242 vehicles in 7 different versions with the decision to go for the Piranha IIIC prompted by the experience of other NATO-partners and Australia and Switzerland.



**Top right:** a total of 96 AIV vehicles finds this variant in greatest use and replaces the previously used AIFV, a derivative of the M113, which when in service with the Dutch Army was known as YPR765.

**Below:** the Armoured Recovery Vehicle is the recovery variant of the Piranha IIIC. It is fitted with a dozerblade and a winch. Each company is equipped with one ARV.

Delivery of vehicles was divided into three stages, beginning at the end of 2007 with the final vehicles due to be delivered in 2015. The very first 20 vehicles of all variants were manufactured directly by Mowag in Switzerland. The final assembly took place in Belgium with parts and components having been delivered by Mowag. All vehicle hulls are produced by the Belgian Jonckheere enterprise and the final assembly is provided by CMI.



## VEHICLE CONFIGURATION

Standard equipment includes CBRN system, engageable all-wheel drive, power steering, central tyre-pressure regulation system and ABS. An advanced modular armour system will be fitted including a double-layered floor for higher survivability against mines. The whole electronic system will be fitted from Thales and according to Thales this will provide an enhanced networking capability both inside and between the vehicles, which will play a key role in the armed forces transformation and battlefield digitalization.

All variants of the Piranha IIIC are fitted with a conventional suspension system and powered by a Caterpillar C9 diesel engine coupled to a ZF



The gun system on the DF 90 Direct Fire variant is a 90mm CMI Defence Mk 8 gun. The Medium Brigade's four battalions will be equipped with some 40 vehicles.



seven-speed automatic transmission. The variants include an AIV FUS (Armoured Infantry Vehicle Fusilier) with an FN Herstal Arrows Overhead Weapon System (OWS), armed with a .50 (12.7mm) M2 HB machine gun and a crew of 10, (Driver, Commander, Gunner and seven infantry men), 96 Vehicles are ordered.

Also ordered is the DF 30 (Direct Fire 30mm) with an Elbit OWS armed with an ATK gun Systems Company 30mm Mk 44 cannon. The OWS is also equipped with a 7.62 mm medium machine gun as a coaxial armament, CCD TV camera, and a second-generation-thermal imager night sight. The crew is 6 (Driver, Commander, Gunner and three Soldiers for the AFAB (Anti-Fortification Anti-Tank) missile Team). 32 Vehicles are ordered.

The DF 90 (Direct Fire 90mm) version will be fitted with an CMI Defence LCTS 90mm two-person turret, which has been built in large quantities for the export market. Main armament is the CMI Defence 90mm Mk8 gun, with a range up to 2,000m in direct fire and up to 6,000m in indirect fire for using in artillery mode. There is a crew of 3 (Driver, Commander, Gunner) and 40 vehicles are ordered.

26 CP (Command Post) have also been ordered and is similar to the AIV, with Anti SADLS (Small Arms Detection and Locating System) and with the possibility to mount extendible antenna (PO-8). The crew of 6 includes Driver, Commander, Gunner and three Officers. The CP is equipped with Small Arms Detection and localisation System (SADLS).



Old and new together. In the transition period the Leopard 1A5 BE is still in service with the 1/3 Battalion de Lanciers. The withdrawal is planned until 2014.

Finally, an ARV (Armoured Recovery Vehicle) basic version of the AIV, additional equipped with a Pearson Dozer Blade and a heavy recovery winch with 22-ton capability. The vehicle has a crew of 3 (Driver, Commander and mechanic). 18 Vehicles have been ordered.

All these variants are the backbone of the Medium Brigade, located in Leopoldsburg. The Medium Brigade consists of a staff and four Batalions, including Hoofdkwartier Medium Brigade (Leopoldsburg); Bataljon Bevrijding-5 Linie (Leopoldsburg); Bataljon Carabiniers Prins Boudewijn Grenadiers (Leopoldsburg); 1/3 Bataillon de Lanciers (Marche en-Famenne); Bataillon de Chasseurs Ardennais (Marche en-Famenne). The Bataljon Bevrijding -5 Linie was the first unit to be operational with Piranha IIIC and trained with the new vehicles in Germany in Nov 2009.



Soldiers dismount from the vehicle via the hydraulically operated rear door.



## Technical Data

|                   |   |                          |  |
|-------------------|---|--------------------------|--|
| Weight:           | 14-tonne                                      | Front:                   | Coil springs & control arms  |
| Payload:          | up to 8-tonne                                 | Rear:                    | Torsion bars   |
| Gross weight:     | 22-tonne                                      | Brakes:                  | Dual circuit air actuated, ABS   |
| Overall length:   | 7.30 m  | Protection:              | Modular, ballistic/Mine/IED & PRG protection   |
| Height over hull: | 2.20 m  | Armament (example):      | FNNH Arrows RWS with .50cal M2HB MG  |
| Overall width:    | 2.72 m  | Amphibious kit (option): | Seawater cooling system, closable engine louvres, twin propellers, twin rudders, trim vane & snorkel system, bilge pumps |
| Max road speed:   | 105 km/h                                      | Equipment:               | Combined NBC/Air conditioning system, fire extinguishing system for engine & crew compartment                            |
| Speed in water:   | up to 10 km/h                                 |                          |  |
| Fording depth:    | 1.50 m  |                          |  |
| Trench crossing:  | 2 m   |                          |  |
| Turning circle:   | 18 m  |                          |  |
| Engine Type:      | Caterpillar C9 6-cylinder inline turbo diesel |                          |  |
| Transmission:     | ZF automatic, 7 forward + 1 rev               |                          |  |
| Transfer case:    | single speed                                  |                          |  |
| Drive modes:      | 8x4 and 8x8                                   |                          |  |
| Wheels and tyres: | 12.00 R 20 or 365/80 R20 with CTIS            |                          |  |
| Suspension:       | Independent for each wheel                    |                          |  |





Two further variants have been ordered, namely the GN (Genie) Engineer variant, essentially the same as the AIV, but equipped with a surface mine plough or dozer blade, and the AMB (Ambulance), again based on the AIV without OWS and with a higher roof. Inside medical equipment is from BINZ. It has a crew of 4 (Driver, Commander and two medics) and capability to transport up to six patients. 12 are ordered.

The decision of the Belgium Government to withdraw all tracked fighting vehicles is not indisputable, only the future will show if this decision was the right way, but it should be mentioned, that the modernisation and transformation of the Armed Forces will influence the process positively.

## M&N Pictures

The authors of this article have been running the M&N Pictures website, which trades in military videos featuring all manner of modern military armoured vehicles and includes numerous titles covering a variety of military exercises taken in Europe.

Visiting the website you'll find more than 1,200 images of various modern military vehicles used and in use with a number of nations.

For further details see the news item on page 8 of Up Front in the May 2012 issue of MMI, or check out the website at:

[www.mn-pictures.de](http://www.mn-pictures.de)

**Top left:** due to its configuration, the DF 90 is better suited to the support of the destruction of enemy weapon positions.

**Top right:** here we see the ambulance variant with the higher hull roof.

**Above:** the Full Efficient Driveline System (FEDS) allows the vehicle either to drive with a 8x4 or a 8x8 configuration.

**Right:** the AIV FUS is fitted with an FN Herstal Arrows Overhead Weapon Station (OWS) with a M2 HB MG.

The authors would like to thank Adjutant-Majoor Vandeweyer and Lt. Vandenhende Bvr/5Li for their kind support during the preparation of this article.





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# VIMOUTIERS TIGER

**Any trip to Normandy has to involve a trip to see this iconic landmark**

## ENGINE BAY

The rear hull plate of the Tiger is totally devoid of any external parts, but does have two open holes from where the exhaust pipes once exited, through which it is possible to view the engine compartment, offering a tantalizing view of what remains of the engine and various mechanical components that are still housed within the engine compartment!



**N**ormandy is littered with relics from the Second World War, be they displayed at the side of a road as a memorial or preserved in one of the many museums to be found in the region, but the Tiger tank displayed at the side of the Route Nationale 179 near Vimoutiers has to be one of the most visited sites and what's more it's free!

The fact that it is the sole remaining example of the much-feared German Tiger tank in the area no doubt contributes to its attraction, but it's far from a pristine example. The Tiger is widely believed to have been part of the schwere Panzer Abteilung 503 and the story goes that it was heading

**Left:** all of the fixtures and fittings, including the exhaust system have been removed from the Tiger, however, the open exhaust apertures do at least provide a way of viewing the inside of the engine compartment, which still has the engine in place.





**1**

There's a huge crack running down the length of the Tiger's turret roof plate.

**2**

The turret roof does still have most of the fittings in place, including the Commander's cupola shown here.

**3**

Further cracks are to be found around the vehicle, here we see a crack to the side of the turret behind the mantlet.

**4**

Close-up of the huge gun mantlet on the Tiger, the Tiger was one of the last WW2 German tanks to feature this vertical slab type armour.

**5**

The driver's and gunner's roof hatches have been removed or lost and are now plated over to prevent entry.

**6**

Close-up of the front glacis plate showing the massive thickness of armour, a key feature of the Tiger tank.

**7**

Here we see the ball mount for the front gunner's position.

**8**

Shot showing the large crack running down the length of the vehicle's hull roof.

**9**

This number/writing is visible on the top of the gun mantlet.

**10**

The mounting brackets for the spare track links are still on the side of the turret.

**11**

The Tiger is a late model with the typical late style steel rimmed road wheels.

**12**

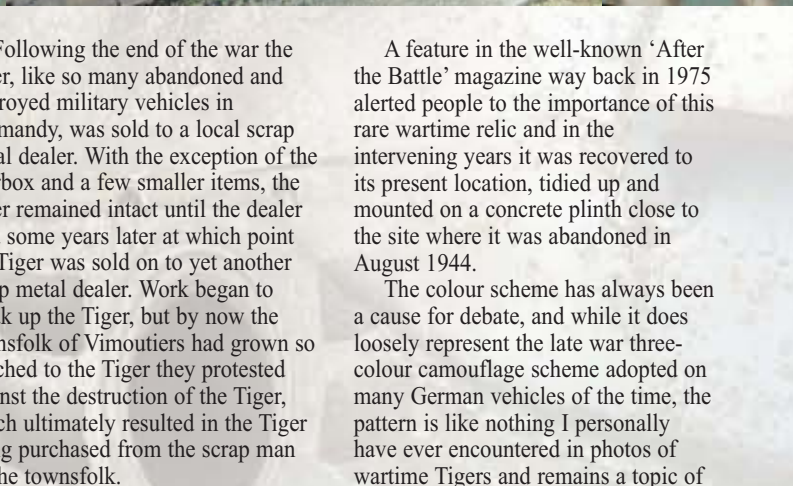
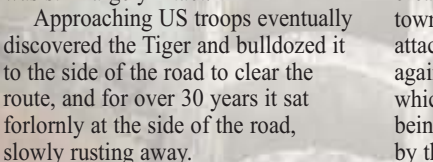
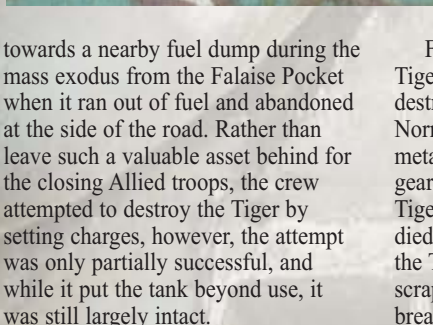
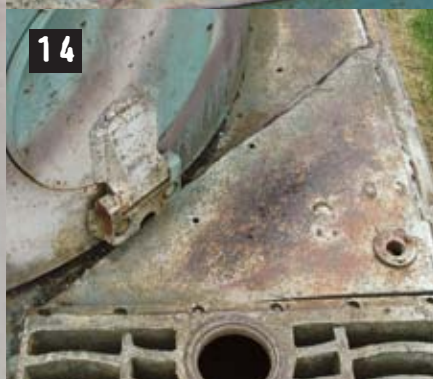
View of the loading hatch on the side of the turret.

**13**

The heavy radiator grilles are still in place on the Tiger.

**14**

Another of the many cracks in the armour on the Tiger.



VIMOUTIERS TIGER

towards a nearby fuel dump during the mass exodus from the Falaise Pocket when it ran out of fuel and abandoned at the side of the road. Rather than leave such a valuable asset behind for the closing Allied troops, the crew attempted to destroy the Tiger by setting charges, however, the attempt was only partially successful, and while it put the tank beyond use, it was still largely intact.

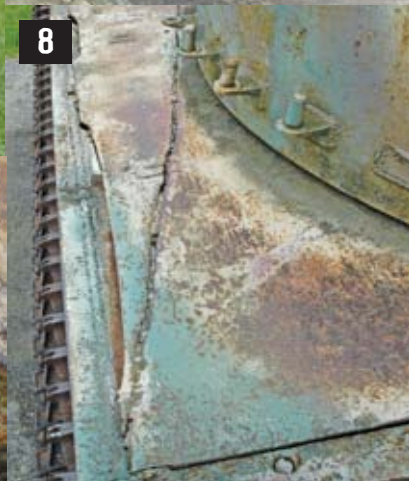
Approaching US troops eventually discovered the Tiger and bulldozed it to the side of the road to clear the route, and for over 30 years it sat forlornly at the side of the road, slowly rusting away.

Following the end of the war the Tiger, like so many abandoned and destroyed military vehicles in Normandy, was sold to a local scrap metal dealer. With the exception of the gearbox and a few smaller items, the Tiger remained intact until the dealer died some years later at which point the Tiger was sold on to yet another scrap metal dealer. Work began to break up the Tiger, but by now the townsfolk of Vimoutiers had grown so attached to the Tiger they protested against the destruction of the Tiger, which ultimately resulted in the Tiger being purchased from the scrap man by the townsfolk.

A feature in the well-known 'After the Battle' magazine way back in 1975 alerted people to the importance of this rare wartime relic and in the intervening years it was recovered to its present location, tidied up and mounted on a concrete plinth close to the site where it was abandoned in August 1944.

The colour scheme has always been a cause for debate, and while it does loosely represent the late war three-colour camouflage scheme adopted on many German vehicles of the time, the pattern is like nothing I personally have ever encountered in photos of wartime Tigers and remains a topic of





debate. The Tiger is very visible by the side of the road and alongside the main road there is a lay-by with plenty of parking, so it's an ideal place to stop off for a picnic during a visit to see the Tiger. The vehicle itself is a late model Tiger 1, with the iconic 88mm gun pointing menacingly down the hill towards Vimoutiers!

The tank has a full set of late pattern steel roadwheels and tracks. Some of the smaller items are missing having been removed by the scrap men before the Tiger was rescued by the townspeople, but it does have most of the rear decking, some hatches and the commander's cupola.

The signs of the destruction wreaked by the demolition charges are clear to see on the Tiger. The turret has several large cracks running up the sides and on the roof panel, while the upper hull decking also has several cracks and distorted plates, all of which is pretty impressive given the thickness of the armour on the Tiger! The replacement patches are also evident where the missing engine deck panels and hatches have been covered up with makeshift replacements.

The Tiger is an iconic tank, feared by those who came up against them during the war, loved by those who used them and admired by those who

wished they had a similar weapon at their disposal. Even now, after many years the Tiger continues to attract interest from enthusiasts and model makers and the Tiger on the outskirts of Vimoutiers in Normandy is one of the few places where you can see a genuine preserved Tiger tank outside of the UK, and what's more it's available to view 24/7 and free!

There's plenty of parking in the layby beside the tank, and an information board provides information about the Tiger and its history, and in these days of health & safety conscious bureaucrats, it's nice to find a tank that's not fenced off.





# Tempest M

**We take a closer look at the Tempest Mine Protected Vehicle as it leaves active service**

**Above:** the Tempest Mine Protected Vehicle was demonstrated by Supacat Ltd. at the Defence Vehicle Dynamics trade show held at Millbrook Proving Ground on several occasions.

In the face of the ever-present mine and Improvised Explosive Device (IED) threat in recent and current operational theatres such as Iraq and Afghanistan, the past decade has seen, and indeed continues to see, an enormous amount of expenditure being dedicated to the design and development of mine protected vehicles by defence equipment manufacturers from around the world. The urgent nature of the requirement saw a great many vehicles being brought into service in double-quick time, with conventional long-winded purchase processes being stripped of red tape in order to introduce these badly needed Mine Protected Vehicles (MPVs) and one such vehicle, which was procured in small numbers to fulfil

a specific need within the British Army, was the Supacat Tempest MPV.

Under a UOR (Urgent Operational Requirement) for eight Mine Protected Vehicles destined for use by British EOD (Explosive Ordnance Disposal) search teams, British manufacturer Supacat Ltd. made the successful bid, offering the Tempest MPV. Rather than being a totally new vehicle, the Tempest was in fact a much-modified early variant of the Force Protection Inc Cougar MPV.

The base vehicle was supplied to Supacat Ltd. in the UK in US trim where it was fitted with additional armour, but in addition to the up-armouring of the vehicle a substantial amount of work was involved in the modification of the axles, suspension, braking system, and numerous other areas of the vehicle in order that the vehicle conformed to UK road legal specifications.

The Tempest is what we would now consider to be a fairly standard layout for a Mine Protected Vehicle, being of 4x4 configuration with a bonneted front engine layout, 'V' shape hull for







increased mine/ballistic protection and internal space capable of being laid out in a variety of configurations. The Tempest is powered by a Caterpillar 3126 diesel engine coupled to an Allison automatic gearbox and Peterbilt 4x4 running gear.

Access to the driver/passenger cab is via conventional opening doors either side of the vehicle, with hydraulic ram assistance due to the heavy weight of the doors. The driver incidentally sits to the left of the vehicle. A third door at the rear, also ram assisted, provides access to the rear compartment and escape/access hatches are located in the roof. Armoured glass panels to the front, side and rear of the vehicle offer good all-round vision, but no pistol ports or external armament was fitted due to the

**Above:** photographed at Defence Vehicle Dynamics in 2006 on the Supacat stand, the Tempest MPV appeared with bomb disposal markings, as seen here with the 'bomb' logo to the left of the rear door.

**Below:** the water splash on the off-road course at Millbrook Proving Ground is a favourite location for photographers, myself included, and I caught the Tempest MPV showing off it's wading abilities in 2007. Hidden from view on the other side of the vehicle is the raised air intake, as seen in the photo above.







“More recently the role of the Tempest was taken over by other vehicles.”

**Above:** photographed at DVD in 2006, Supacat Tempest MPV registration VT 80 AA is wearing a standard NATO Green colour scheme. This was later changed to a standard desert sand.

nature of the work they were involved in and therefore was not a requirement.

A heavy-duty winch is mounted on a moveable mounting at the front of the vehicle, which enables the winch to be lowered down to provide access to the swing out armoured grille covering the radiator. Twin diesel tanks are fitted either side of the vehicle to the rear, with protected filler caps on each rear corner. Various stowage lockers are also positioned down either side of the vehicle, with additional stowage within the vehicle. Full Bowman comms were also fitted by Supacat Ltd.

Of the eight vehicles procured two were normally kept back as reserve stocks, with the remainder being rotated in service as operational requirements dictated. More recently the role of the Tempest was effectively taken over by other vehicles, including the similar sized Ridgback and larger Mastiff and Wolfhound TSVs (Tactical Supply Vehicle).

Since being taken out of theatre the surplus vehicles have been released via the UK Sales and Marketing Agents for MoD vehicles, plant and equipment, Witham Specialist, which is where I had the opportunity to take a closer look at them.

At the time of writing the fate of the redundant vehicles was unknown, but it is unlikely that they will end up in private hands and are more likely to be purchased by security companies specialising in where a mine protected vehicle for close protection work in trouble spots is required.

Amongst the eight vehicles found at Withams were the two demonstrator vehicles that I had previously photographed at Defence Vehicle Dynamics events in 2006 and 2007, together with those that had clearly been used in theatre, as witnessed by the partially removed paint and markings.





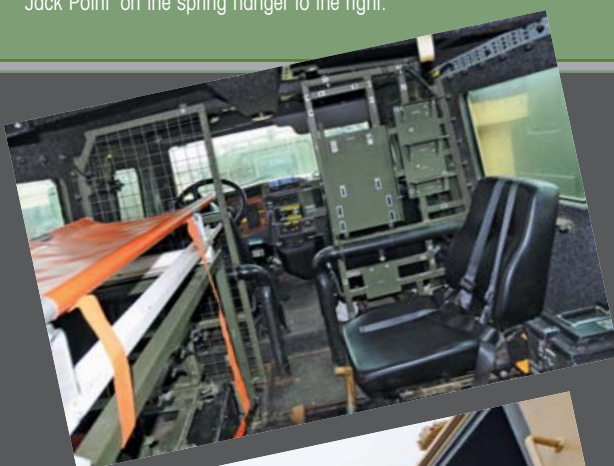
**Left:** Supacat Tempest MPV registration VT 80 AA now wearing an overall desert sand paint scheme and pictured here in the yard of Witham Specialist Vehicles following disposal. Both these vehicles were used as demonstrators by Supacat.

**Below:** looking at the front of two of the Tempest MPVs at Withams, we can see the front mounted winch in the raised (far vehicle) and lowered (nearest the camera) positions, which provides access to the engine compartment and radiator.



**Above:** some of the vehicles now sitting in the Witham Specialist Vehicles' yard have obviously come from theatre given the partly removed desert sand colour scheme.

**Far right below:** view of the heavy duty front axle assembly on the Tempest. Note the words 'Jack Point' on the spring hanger to the right.



**Top left:** various interior configurations were used, here we see the interior of one of the demonstrators with seating to the right and a stretcher to the left of the rear compartment.

**Above:** the driver of the Tempest is seated to the left. Note the wood veneer on the dashboard, perhaps a touch extravagant for a military vehicle!

**Left:** the heavily armoured front doors complete with armoured glass panel are assisted by gas struts due to their weight to prevent accidents when closing the doors.



# The **CVR(T) Scorpion**

The Combat Vehicle Reconnaissance (Tracked) Scorpion was the first of the light tracked Reconnaissance vehicles to be introduced by the British Army, but since then numerous variants have been built, with new variants still being produced today. The CVR(T) family was also exported to various countries around the world. The CVR(T) Scorpion served in the Falklands War, where four Scorpions and four Scimitars gave British forces an extra edge in the harsh, boggy terrain. The CVR(T) family went on to serve with the British Army in the Gulf, Bosnia, Iraq and more recently continues to serve in Afghanistan, albeit in a much modified form. The example shown here is the CVR(T) Scorpion, armed with the 76mm main gun, and is owned by Andrew Baker of the Alvis Fighting Vehicle Society. The vehicle has appeared at many military vehicle shows.









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**Above:** Bruce Crompton, director of Lanes Group PLC, poses outside the offices with the newly completed Kettenkrad that was restored for the Tank Museum.

**Phil and Nick Rutherford describe the restoration of the Tank Museum's Sd.Kfz. 2 Kettenkrad**



# Kettenkrad Restoration





**Main photo left:** the Kettenkrad has regularly appeared at the Tank Museum's Tankfest event since being restored.

**Below right:** when not participating in events the Kettenkrad is normally on display to the public in the museum.

**A**lthough the Tank Museum restores most of its vehicles in its own workshop facilities, when the opportunity arises, usually with the awarding of grant money or a generous benefactor stepping forward, restorations also take place outside the Museum. A good example of this co-operation is the Museum's Kettenkrad, which was restored in 2008/9 by Phil and Nick Rutherford, the full time restoration team from The Crompton Military Vehicle Collection, with the total cost of the project kindly met by Lanes Group Plc.

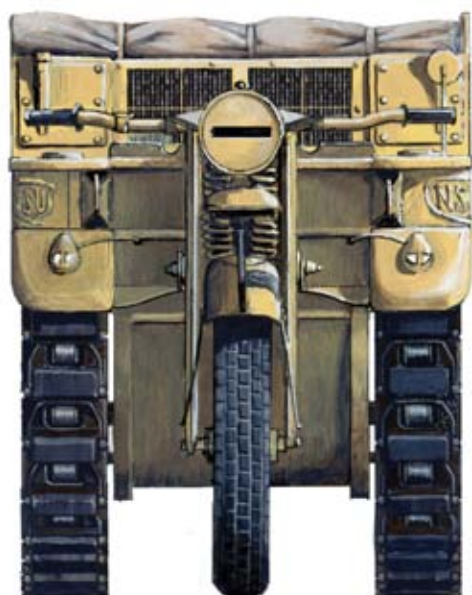
The first task in the restoration of this Kettenkrad was to make an extensive photographic survey of the complete vehicle before any dismantling took place. Looking around, it became apparent that it was

a fairly sound vehicle with no rust to speak of, but in the years since the war, the Kettenkrad had undergone many changes, including several paint schemes, panel work removed and a number of parts changed for British items, possibly to keep it running and displayable. Unfortunately this included a number of the nuts and bolts being changed for English UNF sizes, which made the dismantling process frustrating at times.

Apart from the obvious damage to the rear arm rests (these were completely cut off) the bodywork was in good condition with only dents on most panels. The plan was to pick a point in time in the history of the Kettenkrad on which to base the restoration. We had two excellent photographs taken just after capture in







## “...The museum required a sympathetic restoration for the Kettenkrad...”

**Top right:** the Kettenkrad was displayed outside at Tankfest together with a number of other tanks and vehicles from the museum. Needless to say the Kettenkrad attracted a great deal of attention from both young and old.

**Bottom right:** the Kettenkrad is pictured here in the early days of the museum following evaluation by the army and represents the point in the vehicle's history that the restoration aims to reproduce.

**Opposite bottom left:** the historic value of the exhibits wasn't always truly recognised. This old photo taken during an early display at the museum shows the way the rear hand rails had been removed and a spurious gun mount and markings added...

**Opposite bottom right:**

... contrast this with the authentic presentation of the newly restored Kettenkrad at Tankfest many years later, with re-enactors dressed in correct style uniform and a typical diorama in which to show off the vehicle.

1943 when it was brought back to England for evaluation. The Museum also required a sympathetic restoration; for example any dents evident at this point should remain if possible. Another Museum request was that if it did not mean replacing major components, the Museum would like the finished vehicle to be driven on special occasions.

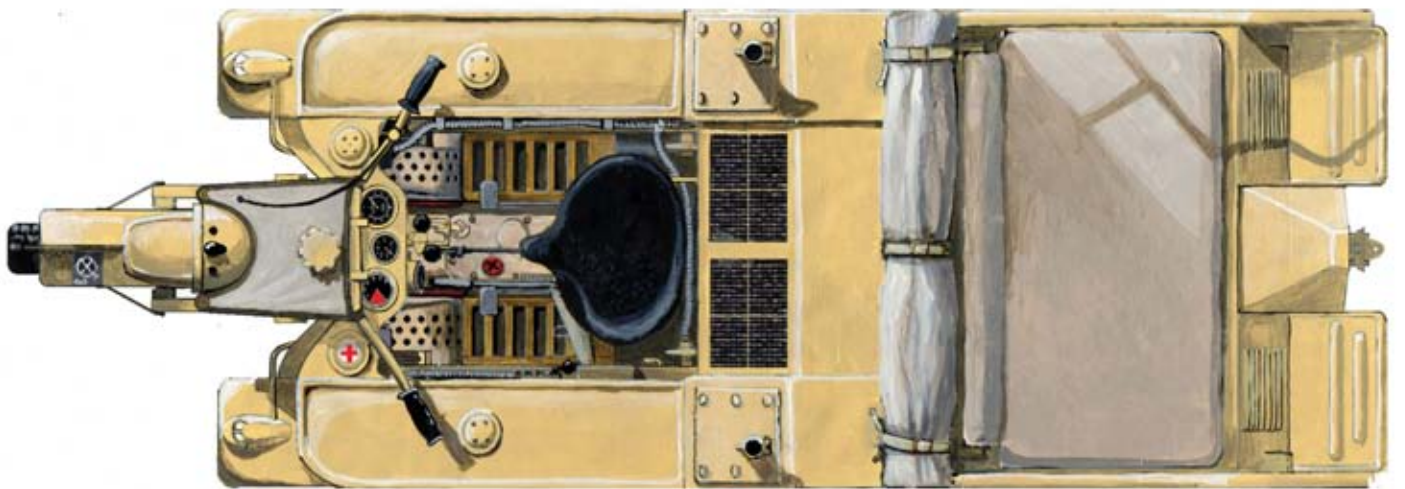
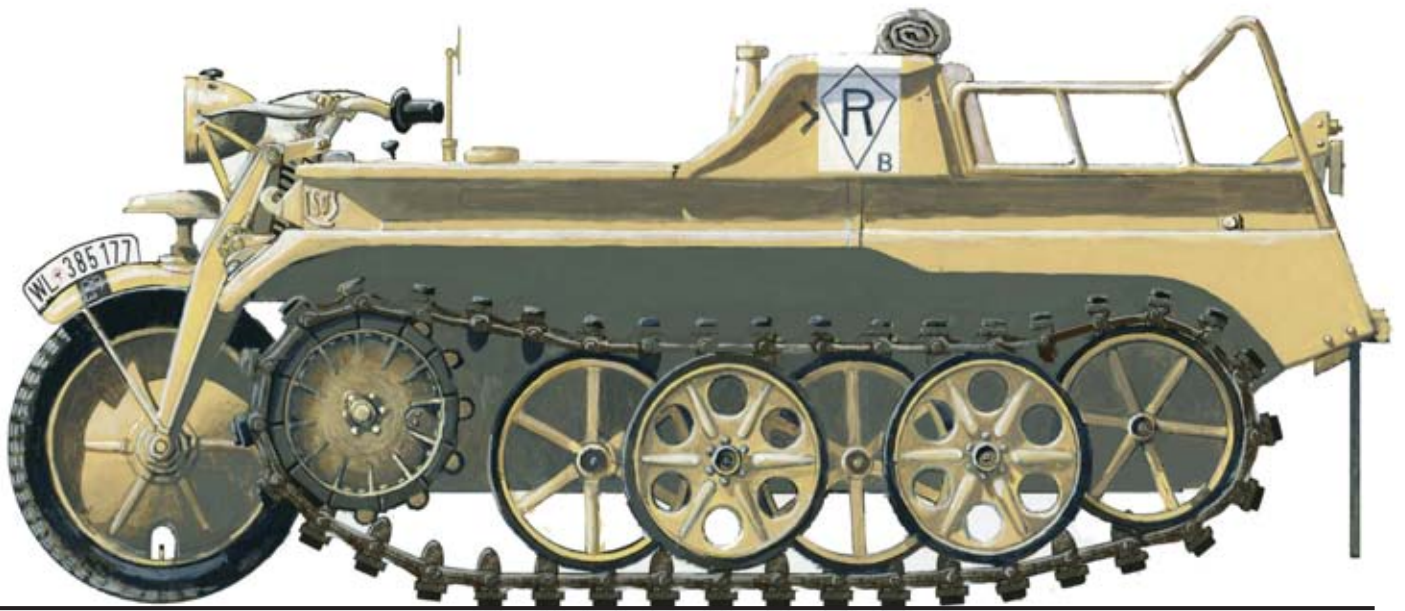
### STARTING POINT

The whole vehicle was dismantled into large pieces prior to sand blasting. After the main body was degreased it was shipped off the blasters along with most of the larger components such as body panels, wheels etc., where the many coats of paint were removed. Some five different colours were cleaned off which, because of the sheer amount of paint (much of which was applied over the years in the Museum), took five hours to strip the body alone.

While these parts were away we concentrated on the other smaller components, a list of parts required was made, which included new track blocks, a front tyre and tube, some new road wheel tyres; 8 in all as many of them were perished and even burnt in some cases. Original parts were sourced where possible, but in most cases repro parts were used and a record made so future historians know











## Bodywork

**1:** one of the first jobs was to strip down the vehicle completely into its component parts. Most dents and damage were to be retained as part of a 'sympathetic' restoration. the rear hand rails were fabricated and attached.

**2:** the hardest work was reinstating the missing rear hand rails, which required careful research and fabrication.

**3:** the extent of the work involved in replacing the hand rails can be seen in this view of the stripped body.

**4:** here we can see the tunnels for each of the torsion bars for the suspension system, a system typical of many WW2 German half-tracks.

**5:** with the grey undercoat applied it was time to start assembling some of the components. Here we see the suspension arms and torsion bars being replaced.

**6:** it was decided to undercoat the entire vehicle in German Grey to represent the colour as it would have left the factory, this way if the vehicle sustained any scuffs or scratches the correct grey colour would show.

**7:** the original markings on the bodywork were carefully masked and retained for complete authenticity.

**8:** the top coat of North African Honey Colour paint is applied over the grey undercoat for historical accuracy.

**9:** the hull nears completion having been painted in the finished North African Honey Colour and the components are starting to be added.

**10:** with engine and transmission in place the Kettenkrad is just missing the front wheel, tracks, engine covers, rear seating and various sundry items.







## Mechanicals

**1:** the engine and transmission was found to be in fairly good condition, requiring only a good check over and overhaul of the ancillary items.

**2:** view of the completed and repainted engine and transmission (nearest the camera) awaiting fitting into the Kettenkrad's hull.

**3:** the engine in the Kettenkrad is a fairly snug fit inside the hull, but access is surprisingly good even when all the covers and seating in place.

**4:** here we see one of the drive units. Note the rollers used to engage with the tracks instead of more conventional teeth. One of the drive units was found to require a new gear.

**5:** with the brake drums stripped down it's plain to see that the layout and design of the braking system on the Kettenkrad is very similar to those on Allied vehicles.

**6:** the Kettenkrad's radiator was in need of some attention before being replaced in the vehicle, after it was found to be blocked and leaking.

**7:** the radiator was repaired to ensure that the newly restored engine didn't suffer with any damage from overheating, especially as it was to be driven.

**8:** the running gear was generally in reasonable shape, but some of the rubber tyres on the roadwheels needed to be replaced as they were damaged.

**9:** thankfully the original tracks were in good order with very little play in the bearings. Here we see the tracks coiled up prior to being refurbished and ultimately refitted to the vehicle.

**10:** in this view of the completed vehicle we see the refurbished tracks laid out in readiness for the refitting of the tracks so that it can be tested prior to delivery back to the Tank Museum.





**Right:** since being restored the Kettenkrad has been placed on display in the Tank Museum, itself the subject of a multi-million pound refurbishment.



what was original to the date of manufacture and what was 'new'. Thankfully the tracks were in good order with very little play in the bearings. Mechanically the Kettenkrad was pretty good, one drive unit required a new gear, the gearbox was fine and the engine just needed all the auxiliaries checked over or rebuilt as necessary. The radiator was rebuilt as the original was blocked and leaking and the water header tank (after sand blasting) was found to be peppered with rust holes, so this was welded and leaded over and, to be sure of no leaks, was sealed from the inside.

All the brake linings were replaced as they were contaminated with oil, and all oil seals in the drive units and transmission were replaced along with any suspect bearings. On the whole most of the work mechanically was just checking and tidying up years of enthusiastic and well meaning tinkering by others.

When the body returned from the blasters we were very surprised to find how good it was, most of the work required centred on reinstating the arm rests at the back, removing the makeshift tow hitch (added later in the UK) and filling holes that shouldn't have been there, some added when a cover was placed on the vehicle for display. All the panels apart from the rear seat and radiator cover carried the number 305 stamped in them, which is assumed to be the original panel set for this vehicle.

**Right:** proud office staff from Lanes Group PLC pose for the camera on the newly restored Kettenkrad outside the offices prior to it being delivered back to the Tank Museum.



**Column far right:** various views of the Kettenkrad on display at the Tank Museum.

## Service History

The vehicle was transferred from a unit in Europe, dating from early 1941 and would have been dark grey when first manufactured, traces of Dunkle Gelb (dark yellow) were found under the final coat of Afrika Yellow or honey colour when found in North Africa where it formed part of the Ramcke unit put together in mid/late 1942. Prior to the museum obtaining the Kettenkrad a British evaluation unit had possession of it, there is a 'MEE' pendent painted on the side box.

The front fender marking is for a Kradschutzen Kompanie and the '3' alongside would have made it the third Kp. There was also the remains of a black cross on one of the sides box partly over painted by the Ramcke unit marking, which identifies it as being attached to the 5th Panzer Division at some time.

Being the 3rd Kp of a Kradschutz unit means it was part of a three-company Kradschutz Battalion, in the early part of the war most divisions had Kradschutz Battalions, which were motorcycle mounted fast moving infantry, and part of the Blitzkrieg concept of warfare. In late 42 and early 43 most were being disbanded as they had become obsolete and their motorcycles/Kettenkrads were issued elsewhere.

The 2nd Para Brigade aka the Ramcke Para Brigade (hence the R on the insignia) was quickly put together from various existing paratrooper sub-units and training units and shipped to Africa, participating in the battle of El Alamein where this Kettenkrad was captured. One of the Brigade's many sub-units were called the Fallschirmjager Lehr Abteilung and were commanded by Burckhardt, (hence the B on the insignia). It's a particular oddity of Luftwaffe paratrooper units to use their commanders surname initial as part of their unit markings. Overall they were part of the then newly forming 2nd Fallschirmjager Division in France but urgently sent to Africa as reinforcements for Rommel. Our thanks to Paul Hocking for his help with sourcing the information relating to the Kettenkrad.





## PAINT & MARKINGS

After closer inspection the 'Ramcka' insignia on the side boxes were found to be totally new on one side and a badly over painted original on the other. The Museum wished to retain these so they were left and recreated over a layer of new paint. Further inspection of the photos revealed that the vehicle originally carried insignia and tactical markings of the 5th Panzer Division. These had been painted around or over when it was sent to North Africa, a practice that was quite common and was seen on other Kettenkrads found in North Africa. We re-applied these markings as shown in the early photos.

In total we found three original colours, starting with the factory dark grey (RAL 7021), then small traces of the standard beige on the floor, used in Europe (no RAL number was ever officially given to this) followed lastly by the North African honey colour (RAL 8000), the photo's showed no camouflage was applied over this. Two other subsequent colours applied post-war were a bright yellow and finishing up with an attempt at a North African honey colour, both having been applied by brush.

To try and keep the new paint as authentic as possible it was decided to mainly paint the vehicle in the dark grey as a primer and then apply the honey colour over the top. This was

done because often the honey colour gets chipped or rubbed revealing the grey, and it was felt that if the usual red oxide primer was used it would look wrong should the top coat become chipped or rubbed.

The front forks were not good and new bushes and shafts were made and fitted along with new friction discs in the shock absorbers and steering damper. It was also discovered that at some time the Kettenkrad had quite a hard impact in the fork area, which had smashed the top yoke and had also bent it out of alignment, which required cutting and welding to straighten it for the new shafts and bushes to line up properly.

Although the engine was thought to be in reasonable condition it had sat for a very long time so the sump was removed to check it inside and discovered about 20mm of congealed oil and muck lying in the bottom! This was so bad it stopped the oil draining out of the drain tap and was completely blocking the oil pump pick up. This was all cleaned out and the pump stripped found to be in good condition; all this was done before any attempt was made to start the engine.

When the engine was eventually started, after a few adjustments, it ran very well, with excellent oil pressure, but the oil was drained and changed after running to be on the safe side. Final assembly was just a matter of

painting, detailing and adjustment, trying to get it to resemble the vehicle in the photos with new number plates, the tank towing eye replacing the conventional tow hook and the early type front and rear lights, the rear ones just being the covers with no fittings as per the original photos. Over the years the rear seat pads had been replaced and were not right, so they were completely remade and covered in an authentic material.

A unique feature of this Kettenkrad is the upright tube posts on the side boxes, however, we have found no record of this style of post although they are clearly original fitments, which were designed for some purpose. Old photo's show that in the 1970's they had been utilised as mountings points for a grab bar for a re-enactor to hang on to when pretending to operate a machine gun fixed to the tow hitch! In all the restoration took a total time of about four months to complete, but spread over about eighteen months due to other work we had in progress and availability of parts.

Since the completion of the restoration the Kettenkrad has been returned to the Tank Museum and is driven at special events, such as the Museum's premier event – Tankfest, which is where some of the photos used in this article were taken. Ordinarily the Kettenkrad is displayed within the museum for visitors to see.

**Restoration By  
Phil and Nick  
Rutherford of  
The Crompton  
Military Vehicle  
Collection**

**Sponsored By:  
Lanes Group Plc.**

## Saving Private Ryan

Part of the reason for the restoration of the Tank Museum's Kettenkrad being undertaken outside of the museum workshops was down to the fact that full-time restorers for The Crompton Military Vehicle Collection, Phil and Nick Rutherford, both have a huge amount of experience in the restoration of wartime German military vehicles of all types, which make up the majority of the collection, but they also have special expertise in the restoration of the Kettenkrad having already restored two examples belonging to the Crompton Military Vehicle Collection. One of the vehicles, which is shown here below before (to the left) and after (right) restoration may well be familiar to readers, having appeared in the Hollywood blockbuster 'Saving Private Ryan' being driven at high speed by one of the film's stars in one of the many action-packed scenes.





# The Wheatorcroft Collection

**MMI paid a visit to the headquarters of the Wheatorcroft Collection, which for many collectors is true 'Heavy Metal Heaven'**





The picturesque Leicestershire countryside is home to the headquarters, restoration workshops and storage area for much of the Wheatcroft Collection. While a selection of the fully restored vehicles from the collection have now been transferred to Donington Park where they're on display to the public, it is only a small percentage of the vehicles belonging to the collection and while the vast majority have yet to be restored, they're nonetheless of huge interest to vehicle enthusiasts, especially as they're kept behind closed doors and not normally accessible by the general public.

It was during a recent visit to the Wheatcroft Collection to check on the progress of the Collection's Panther tank, which nearing the end of a long restoration (more on this in a coming issue), I took the opportunity to take a look around the storage yard, which contains many fascinating and rare vehicles. The yard was packed tight with a wide range of vehicles, virtually all of which were of World War Two vintage, with most being tracked

armoured vehicles, which included a number of complete examples.

While it's fairly safe to say that WW2 German vehicles are Kevin Wheatcroft's main area of interest, I was surprised to find a large collection of Sherman tanks. I don't think I have ever seen so many Shermans in one place at the same time with at least six nearly complete examples (including a rare composite hull variant) and numerous other parts dotted around the site. Also lined up was a pair of Grant tanks recently imported from Australia, a pair of Priest self-propelled guns, and a line of M10/Achilles Gun Motor Carriages. Elsewhere there was an almost complete example of the Stuart, but just a few yards away was a pair Archer self-propelled guns, a Valentine, Cromwell and an A30 Challenger awaiting their turn in the workshops.

Of the wartime German vehicles in the yard there were several more examples of the Panther tank in varying states of repair, several variants of the Stug assault gun, again in varying states of completeness and

## American



## British



including one with a Saukopf mantlet, and a Hetzer tank destroyer. Perhaps of more interest was a semi-complete Panzer IV tank, which looked to be missed some of the bodywork, the rear exhaust system and the left hand track, but other than that looked to be surprisingly intact, especially compared to some of the other 'projects' in the yard, and talking of projects, I managed to get a sneaky peak at a component for a future restoration project, namely a piece of the frontal armour from a Tiger I! The project is many years away from even starting, let alone being completed, but parts are being gathered together in readiness for what may well be the second running Tiger tank in the world.

**Top right:** amongst the many Sherman variants found in the yard was this dozer, which features a rare composite hull, with a cast front section and welded rear section.

**Above:** although the Cromwell and A30 Challenger have been in the collection for a while, having been recovered from firing ranges, they may soon be restored.

**Below:** there's no doubting that wartime German vehicles are the speciality of the Wheatcroft Collection, and in the yard I found several examples of the Stug assault gun in various states of repair.

## German





# American Armour

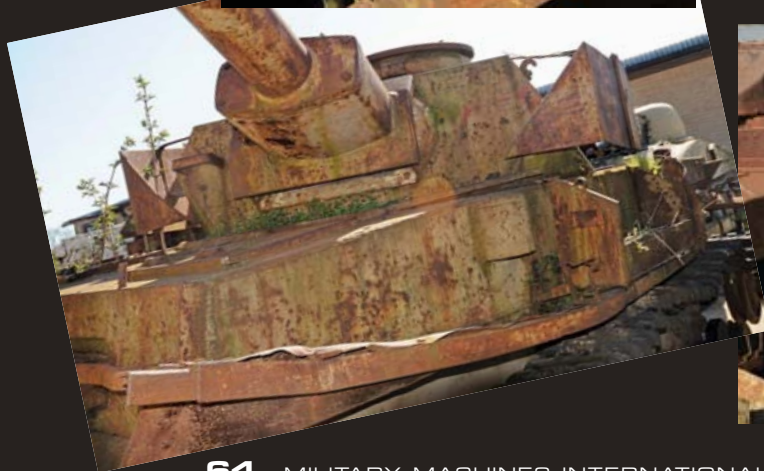


# German Armour

**Left:** another of assault guns, this Jagdpanzer IV has a 'Saukopf' (pig's head) mantlet.

**Bottom left:** the vehicles are tightly packed making photography difficult at times.

**Below:** this Panzer IV was relatively complete and I for one look forward to its restoration.





# British Armour



**Top left:** a pair of M7B Priest, differing to earlier variants in that the gun sits higher up in the superstructure.

**Above:** M3 Stuart tank. The welded turret would seem to suggest that it was supplied to Britain during the war.

**Far left:** looking inside a Sherman through the missing front casing. The restoration of rusty hulks like always amazes me.

**Left:** this pair of Grant tanks looked to be in pretty good shape, apparently they were imported from Australia.



**Left:** amongst the more complete vehicles currently stored within the expansive yard was this British Valentine tank. Plans are afoot to try and build new storage facilities to get most of these vehicle out of the open and under cover to protect them from the elements and the untold damage it can do.



**Left:** based on the Valentine tank chassis, the Archer self-propelled gun mounted a 17-pounder gun in an open topped superstructure. The collection has two examples of the Archer currently stored in their yard, both of which seemed to be fairly complete apart from the lack of tracks, but unusually the one had the superstructure roof plated over.



**Right:** front section of armour from a Tiger 1, a future restoration project?

**Bottom right:** another of the Panther tanks in the collection, they have three in total!

**Below:** this Hetzer looks fairly complete but there is some damage to the road wheels.





# Part 2 BRONNITSY

## Jim Kinnear & Alexander Koshavtsev report from Russia's Closed Military Exhibition

A closed exhibition is held every year in Russia, at the military vehicle proving grounds of the NII-21 institute at Bronnitsy near Moscow, where new military vehicle prototypes are demonstrated for the Russian Defence Ministry and the Russian press. The 2011 exhibition was of greater significance than in recent years however in that, with the Russian Federation now cranking up defence budgets and spending, or at least promising to spend, significant amounts of money on new military equipment, the industry is correspondingly providing numerous new prototypes and limited series production vehicles for evaluation in frenzied vying for state contracts.

The GM-5970.05 is the latest iteration of the GM series medium tracked transporters currently used to mount SAM missile systems such as the "Buk" and "Tor". The 25 tonne armoured GM-5970.05 can mount equipment weighing up to 12-tonnes. The vehicle is powered by a D-617 diesel engine developing 840hp, giving a maximum speed of 70km/hour and a range of 600km.

The DT-10P and DT-30P dual section amphibious tracked transporters have been around for many years now and were again on display at the Bronnitsy show as regular attendees. They were joined this year by several new and smaller models however including the smaller DT-2P and DT-3P and the larger DT-7P and DT-8P. The manufacturer, OAO "Vityaz" machine building company has many suggestions for these versatile dual-section transporters with their load capacity in the range of 10-32-tonnes, including trailer sections mounting the "BUK" SAM system, "Pantyr-S1" SPADS, "Smerch" and "Grad" MRS,

radar vehicles, etc. The 29-tonne DT-30P, the largest amphibious vehicle in the series, is powered by a 710hp diesel engine and can transport a five-man crew and a 30-tonne load at 37km/hour to a range of 500km. The vehicle is also amphibious at 4km/hour.

Several other smaller personnel and cargo dual section transporters were displayed at Bronnitsy this year, including the GAZ-3344 developed by the ZZGT company; part of the GAZ group. GAZ has considerable

experience in the development of tracked over-snow and all-terrain vehicles, dating back to the GAZ-47 (GT-S) and GAZ-71 (GT-SM) tracked transporters. The GAZ-3344 dual-section transporter is similar in design and concept to the Bv202/206, with fully enclosed front and rear sections.

Other specialised dual-section transporters include the "Uzhgur", a tracked vehicle combining ZZGT track components and an UAZ van body, the result looking like a van mounted on a light tank chassis; and the similar and

**Main photo right:** the DT-3P is a new smaller variant of the "Vityaz" series of dual-section transporters.





equally strangely named "Unzha", a dual section tracked vehicle, with identical front and rear running gear, with a tandem cab front section and an open rear cargo trailer with an integral hydraulic crane. Another similar dual-section transporter at the exhibition was the TM-130, with both front and rear sections mounting van bodies from the UAZ-452 series.

## ARMoured VEHICLES

Several new armoured cars were demonstrated at Bronnitsy, some for the first time, with the vehicle nomenclature heavily featuring hunter wildlife such as the "Volk" (Wolf), "Medved" (Bear), "Tigr" (Tiger) and "Skorpion" (Scorpion).

The Zashita company presented several vehicles at Bronnitsy, all generically designated "Skorpion". The Skorpion LShA, LShA-B and LTA are all intended for transporting personnel,



cargo and towing trailers across terrain, with varying degrees of armour protection. All vehicles in the series are air transportable in the An-124, An-22 and IL-76 transport aircraft. The Skorpion LShA is based on the UAZ-3152 series. Intended for general personnel and load transportation, the 2485kg combat weight vehicle has a maximum load capacity of 1,000kg. The vehicle is powered by an Andoria 0501 diesel engine developing 136hp, giving the vehicle an impressive 130km/h maximum speed and a range of 1000km.

The Skorpion LShA-B (Bronnirovaniya – armoured) has a similar role to the base model but has a longer wheelbase in addition to its increased armour protection. Powered by the same engine and with similar performance to the Skorpion LShA, the armoured Skorpion LShA-B has a combat weight of 3600kg and a reduced cargo capacity of 600kg.

The Skorpion LTA is an altogether larger vehicle, described as a "special transport means". Despite its larger size and 4,300kg combat weight; the installation of a 380hp diesel engine

**Top right:** the DT-10P dual-section transporter can transport 10-tonnes of cargo on land and is fully amphibious.

**Above:** the "Unzha" is another dual-section tracked transporter, with a cargo trailer and crane.





**Top left:** the GAZ (ZZGT)-3344 is a new development; but the GAZ plant has been building all-terrain tracked vehicles for many years.

**Top right:** the TM-130 dual section all-terrain transporter started life as two UAZ-452 vans, the shape of the bodies being quite recognisable.

**Above:** the "Uzhgur" tracked all-terrain vehicle also started life as an UAZ-352 derived van. The vehicle is specifically intended for operation in snow and marsh.

**Right:** the DT-30P is the largest of the DT series of amphibious dual-section transporters, with a load capacity of 30-tonnes.



provides the vehicle with identical performance to its smaller and lighter siblings.

The GAZ-2330 "Tigr" series of armoured vehicles has been around for a few years now. In recent years the Russian MoD has, however, expressed a desire to purchase imported vehicles in preference to the GAZ built "Tigr" series and other vehicles offered by domestic manufacturers, but as the old saying goes "it's only over when it's over", and the Tigr series represents a thoroughly modern and fit for purpose solution to the need for armoured vehicles in limited military and para-military operations engagements which are standard fare worldwide today.

The "Tigr-6a" is described as a "high-protection transport means", or special armoured transporter. The designation "Tigr-6a" designation refers to the armour - Class 6a armour protection will stop a 7.62mm round from an SVD rifle at any range and 14.5mm rounds at 200m. The 7,100kg combat weight vehicle can transport a 700kg and tow 2,500kg. Power is provided by a 205hp diesel giving the five-seat vehicle a maximum speed of 125km/h and a range of 1000km.

The modernised GAZ-233114 "Tigr-M" modification of the standard "Tigr" was developed partly in response to Russian MoD opposition to the standard model, in order to match the perceived requirements for





## MT-LB Variants

**Top:** the MT-LBMB is armed with a 30mm 2A72 cannon and 7.62mm co-axial armament.

**Centre:** the modified MT-LBMA mounts a BTR-60 turret at the rear of the vehicle, armed with a 14.5mm KPVT and 7.62mm PKT.

**Bottom:** the MT-LB VMK mounts a new turret with 12.7mm "Kord" heavy machine gun armament and has wider than standard tracks.



the vehicle class where foreign imports are now in direct competition with locally produced vehicles. The GAZ-233114 "Tigr-M" is powered by a YaMZ-5347-10 diesel engine developing 215hp. With a combat weight of 6,600kg and a crew of 1 + 8, the vehicle is actually lighter than the standard version, with a greater load (1,200kg) and towing (3,500kg) capacity, but with identical performance. The "Tigr-M" can be distinguished by its enlarged engine compartment.

### DOMESTIC MANUFACTURERS

The Volk-3927 range of armoured vehicles has been developed as an alternative to the GAZ-2330 series in a

modular armoured vehicle class that now faces competition from foreign designs; with the Russian government not guaranteeing that future vehicle orders will go to domestic manufacturers. The vehicle range includes armoured and semi-armoured vehicles, all powered by a 4.4-litre YaMZ-5347-20 diesel engine developing 240hp, and with a load capacity of 1500-2500kg.

The base vehicle in the series is the VPK-3927, a 4x4, 7500kg combat weight APC with an armoured cab and enclosed rear module for infantry with a crew of driver + 9. The 7,500kg combat weight vehicle has variable (0.25-0.55m) ground clearance, can wade to 1.5m and has a maximum speed of 120km/h and a range of 1000km. The VPK-39272 is a 4x4 7200kg vehicle with an un-armoured cab and stake body rear, 1,500kg load and 2,500kg towing capacity, with the same road performance as the VPK-3927. The VPK-39273 is a larger 6x6 APC, with an armoured cab and enclosed rear module for infantry.

The VPK-3924 Medved has been developed by the NII "Stahli" institute in Moscow in combination with UralAZ and KamAZ as an "armoured vehicle with strengthened anti-mine armour" for use by MVD internal security forces. The large and boxy vehicle with its crew of 1+8 is powered by a YaMZ-7Eh536-20 diesel engine developing 312hp, with independent suspension taken from the BTR-90 wheeled APC. The 10,500kg combat weight vehicle can transport a 2000kg load internally and tow 2500kg, with a maximum speed of 100km/hour and range of 1000km.

The KamAZ-43269 "Vistrel" (shot) is a scout vehicle and wheeled APC in the tradition of the BTR-40, to which the vehicle bears a striking resemblance. The latest version of the vehicle is powered by a KamAZ-740.11 diesel engine developing 240hp, giving the 9790kg combat weight vehicle a maximum road speed of 90km/h and road range of 900km.



The vehicle has a crew of 2 + 8 in APC configuration. The main distinguishing feature of the most recent model is the single piece armoured glass windshield replacing the double screens of the earlier models.

The largest wheeled APC demonstrated at Bronnitsy was the Ural-532341-1010, a prototype 8x8 wheeled APC developed by the Medved design bureau, for personnel and cargo transportation in combat zones. The vehicle has an armoured cab and large armoured rear module for transporting personnel, with a total crew complement of 2+12 infantry, or

**Top left:** the GM-5970-05 tracked chassis is a development of the chassis used for Russian SAM systems still currently on active service.







up to 24 infantry in less comfortable surroundings. The rear mounted armoured pod, which is shaped to deflect mine blast, has twin front, twin rear and roof exit hatches. The 18,470kg vehicle has a significant 24,180kg combat weight, but its YaMZ-238-B2-28 300hp diesel engine nevertheless delivers 85km/h and a range of 1000km.

Secreted away off-site during the "press" part of the exhibition was another contender for future armoured vehicle production, the "Taifun" (typhoon) "secret future armoured vehicle" series, consisting of a prototype 6x6 wheeled APC on a KamAZ chassis and two Ural chassis based APC vehicles. The Taifun project as announced by the Russian MoD is to be undertaken over the period 2011-2014, with the development and production of armoured vehicles in 4x4, 6x6 and 8x8 formats; with production being undertaken by the KamAZ and Ural plants. At the Bronnitsy show it was revealed that the vehicle would have a "new generation" engine, hydro-mechanical (i.e. automatic) transmission, bullet proof tyres with CTPRS and an on board computer system. The armoured glass on the Taifun is 130mm thick. In firing trials using the 14.5mm KPV heavy machine gun, it was shown that Class 6a armour 67mm thick (158kg/cm<sup>2</sup>) also provides protection against

14.5mm rounds fired from 200m.

As of June 2011, three prototypes have been built, two Ural vehicles with a conventional front mounted engine compartment and a KamAZ prototype with cab over (actually in front of) engine configuration and reversed axle arrangement. All three prototypes were demonstrated at the NII-21 show at Bronnitsy.

In comparison with all previous Russian military vehicles, the KamAZ built 6x6 Taifun prototype as revealed at Bronnitsy is based on a reversed chassis, with two forward axles and a trailing third axle, as used by German FAUN and MAN 6x6 vehicles, to which the new Russian vehicle bears a remarkable resemblance. The KamAZ Taifun has large bolted-on armour plates on all aspects of the vehicle. There are no windows in the rear passenger compartment, but there are three firing ports on each side. Access to the passenger compartment is by a rear door. The vehicle is provided with night vision cameras for night driving.

All-in, the development and pending service introduction of many new Russian military vehicle and light wheeled AFV designs is in a state of play not seen in the Russian Federation for many years, as the country looks to re-militarise its way out of a financial recession which countries around the world have reacted to in significantly different ways.

**Top left:** the 4x4 VPK-3927 is the base model in the "Volk" (wolf) series of wheeled armoured and semi-armoured transport vehicles.

**Above:** the largest of the Skorpion family is the armoured LTA, which features additional bolt-on armour panels.

**Right:** the GAZ-2330 "Tigr" is now a well established series of armoured vehicles. Seen here is the Tigr-6a which can withstand 14.5mm machine gun fire at 200m.







Situated in the South East of England, in Eton Wick, close to Eton College and within sight of Windsor Castle, History on Wheels is *more than just a motor museum*.

The Museum was first opened to the public in 1980, and as the name implies, within this Museum can be found a truly unique collection of **Motors**, both military and civilian, **Militaria**, from 1900 to the 1950's from all conflicting Nations, and **Memories**, illustrating artefacts of all types from both the civilian and wartime home fronts.

Originally constructed as an indoor riding school, the principal building was converted in the late 1970's to house the Tony Oliver private collection of Vehicles and Militaria.




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

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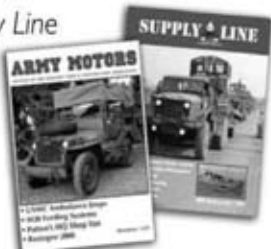
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# Archives

## Falklands Remembered

**Geoff Fletcher delves into the archives to bring us a special Falklands feature that marks the 30th Anniversary of the conflict**

The images featured here come from two sets of photographs taken during and shortly after the operation to recover the islands (Operation Corporate) that took place between April and June 1982, and mark the 30th Anniversary of the Falklands War. One set comes from John Martin, a merchant seaman and the Mate of MV Elk. He 'went to war' with his fellow crewmates after MV Elk became a 'Ship Taken Up From Trade'

(STUFT), just one of 46 merchant vessels to be requisitioned. The Elk was a Ro-Ro (roll-on – roll-off) ferry and was chartered to P&O Ferrymasters and traded between Teesport and Gothenburg prior to the conflict. His images offer a glimpse into the incredible efforts made to transport men and machines to the Falklands during the conflict, providing an insight into the operation to get the equipment ashore. The second set is drawn from the

photographic archives of the Royal Logistic Corps Museum, Deepcut, and while some of the images may already be familiar to you, they do provide an accurate depiction of events at the time and in some cases those images have become iconic, forever associated with the Falklands War.

Our thanks must go to both John Martin and the RLC Museum for their permission to use the photographs within this special feature.







**Far left:** 02 GF 18 negotiates the ramps of both vessels as it drives aboard MV Elk towing its cargo trailer. At this stage of the build-up no one was sure how the conflict would proceed.  
(Photo – John Martin)

**Left:** a Land Rover 109 FFR hard top struggles to cope with the boggy conditions near Port Stanley. This vehicle is believed to belong to the CO 29 Commando Regiment, Royal Artillery, Lieutenant-Colonel Mike Holroyd-Smith.  
(Photo – John Martin)



**Above:** the Volvo BV202E was used for transporting men, supplies and heavy equipment over the boggy terrain. Here one is seen leading a long column of troops 'yomping' across East Falkland as they make their way forward to another battle. Most of these BV202Es of the batch 67 HF 19 to 67 HF 88 were used to equip the Commando Logistic Regiment.  
(Photo - RLC Museum)

**Left:** a number of BV202Es are parked up during the push on Stanley. They are heavily laden with personal kit and stores. Two airdrops have been erected to provide communications both forward to the front line troops and rearwards to headquarters on HMS Fearless stationed in San Carlos water.  
(Photo - RLC Museum)



# Battle for the Falklands

**Below left:** pair of BV202Es moves from the hold of MV Elk on to a MEXEflote in San Carlos water. The BV202E proved the only troop carrying vehicle capable of negotiating the boggy terrain of the Falkland Islands. Intended for use on the Northern Flank of NATO by the ACE Mobile Force and the Commando Brigade, in the Falklands the vehicle demonstrated its usefulness in the conflict. (Photo – John Martin)

**Below right:** Above left: The front car of a BV202E on a quay in Port Stanley with Royal Fleet Auxiliary (RFA) Sir Percival (L3036) in the background. Sir Percival was the LSL, which pioneered the supply runs to Teal Inlet and was the first Task Force vessel to enter Stanley Harbour. She emerged unscathed from the conflict unlike the other vessels of her class – Sir Galahad (sunk), Sir Tristram (badly damaged) and Sir Lancelot (hit by 1000 bomb). (Photo – John Martin)

MV Elk made three overnight runs into San Carlos Water to land stores, vehicles and ammunition. Here a view from a MEXEflote shows an Eager Beaver Rough Terrain Forklift truck carrying a load of bridging components whilst HMS Fearless lies nearby. HMS Fearless provided a home for the headquarters staff who commanded the amphibious assault. (Photo – John Martin)



**Above:** a MEXEflote raft is seen astern a Landing Ship Logistic (LSL) and MV Elk. The raft is being used as a way of moving stores with an Eager Beaver Rough Terrain Forklift Truck from MV Elk to the LSL. The ships offshore operated as large floating supply dumps for the forces ashore and operations such as this were necessary to provide support to the front-line troops. (Photo – John Martin)

**Right:** the main deck of MV Elk during the period in Ascension. Shown from centre top moving clockwise are – eight Bofors gun mountings for fitting to ships of the Task Force, a troop of three CVR (T) Scorpion and three Scimitar from the Blues & Royals, a pair of Eager Beaver Rough Terrain Fork Lift Trucks, two Bedford MK UBRE trucks, an Aveling Barford Grader behind them and a pair of Lightweight Land Rovers. (Photo – John Martin)







**Top right:** CVR(T) Scimitar of The Blues and Royals positioned in a scrape to provide firepower support to troops dug in around one of the many farmsteads on East Falkland. Whilst the CVR(T) was light with wide tracks and therefore had low ground pressure it would have been very vulnerable to any Argentine shaped charge weapon such as the HEAT round of the 90mm recoilless rifle. (Photo - RLC Museum)

**Right:** a CVR(T) Scorpion of The Blues and Royals is test run on the deck of MV Elk during its period at Ascension Island. The vehicle is marked "1/2" indicating that was part of 1 Infantry Brigade although attached to 3 Commando Brigade. 1 Infantry Brigade reformed in January 1982 after the UK's brief period with "Field Forces". (Photo - John Martin)

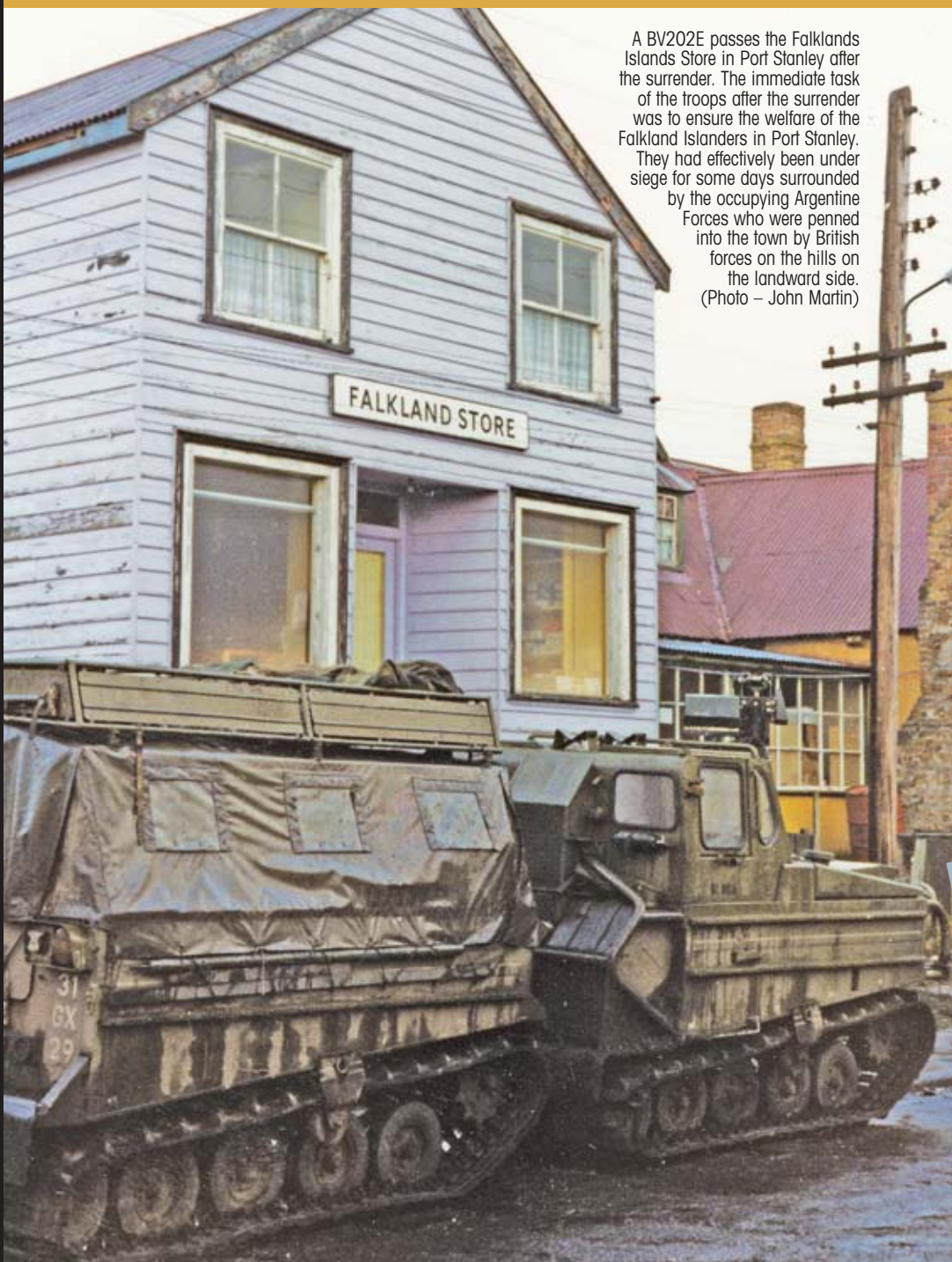
**Below:** This gives some idea of the conditions on the central part of East Falkland. A civilian tractor is bogged almost up to its axles and a BV202E leads a long column of troops. In the background is a civilian Land Rover and to its left an Argentine Unimog. (Photo - RLC Museum)







## Falklands..... After the Battle ... the calm after the storm



A BV202E passes the Falklands Islands Store in Port Stanley after the surrender. The immediate task of the troops after the surrender was to ensure the welfare of the Falkland Islanders in Port Stanley. They had effectively been under siege for some days surrounded by the occupying Argentine Forces who were penned into the town by British forces on the hills on the landward side. (Photo – John Martin)

**Top left:** Bravo-November – the Task Force's only surviving Chinook – is seen hovering over two Mercedes-Benz Gelandewagen of the Argentine forces after the surrender. This photograph was taken at Port Stanley airfield where Argentine Forces were taken to lay down their arms prior to repatriation. (Photo – John Martin)

**Top centre:** some time after the conflict was over a convoy of Bedford MK 4-ton Cargo trucks is seen winding its way from Port Stanley towards the site of the new airfield and barracks complex at Mount Pleasant. The hospital in Port Stanley (left centre) is clearly marked with red crosses and a number of Portakabins have been added to provide additional facilities. (Photo - RLC Museum)

**Top right:** one of the Blues and Royals CVR (T) Scorpions hit a mine whilst supporting 2nd Battalion The Scots Guards in a night action on Mount Tumbledown. The Scorpion is seen here near Stanley after recovery from Tumbledown by a Chinook. It has had much of its stowage removed and has lost the front sprockets. It is said that it was repaired by the Royal Electrical and Mechanical Engineers on the island and was returned to service quickly. (Photo – John Martin)

### Falklands Fact File ...

- The Falklands were invaded by Argentine forces on April 2nd 1982, 30 years ago
- Each CVR(T) attached to the Task Force covered nearly 400 miles during the war
- 46 requisitioned or chartered merchant ships were in the Falklands Task Force





After the ceasefire a column of Argentine troops make their way through Port Stanley carrying their personal kit. They pass ten parked Panhard AML90s probably of Escuadron de Exploracion Caballeria Blindada 181 (181st Armoured Cavalry Reconnaissance Squadron). At least one was brought back to the UK and is held by The Tank Museum, Bovington. (Photo - RLC Museum)



# WAR BOOTY



**Far left:** the G-Wagen was given a British Army registration, the 'CV' standing for 'Captured Vehicle'.

**Centre left:** the original Argentine military serial number is showing through the flaking paint on the door.

**Left:** Argentine tactical markings are also visible on the rear door behind the spare wheel carrier.

**North Devon is home to an ex-Argentine Mercedes G-Wagen captured during the Falklands War**





The battle for the Falklands is an epic tale that has gone down in British military history as one of the great military feats of the 20th Century, and 2012 sees the 30th anniversary of this conflict, but did you know that a number of captured vehicles were returned to the UK and still survive today? One such vehicle is the Mercedes 230 G-Wagen featured here, which was brought back to the UK in May 1985 and after passing through various private hands and appearing on the UK show circuit, was purchased by the Cobbaton Combat Collection where it now forms part of their extensive vehicle collection. I travelled down to Chittlehampton in

North Devon, home of the Cobbaton Combat Collection on a cold and misty morning in the middle of March to take a closer look at this piece of military history.

The Mercedes 230 G-Wagen was originally found its way back to the UK having been sold by tender in Port Stanley and subsequently shipped back to Marchwood in the UK aboard the Royal Fleet Auxiliary Sir Percival following its capture on the island. After being captured the G-Wagen served the British forces for some years and had been assigned a new British Army military registration number '00 CV 14' during its time in the Falklands, 'CV' standing for 'Captured Vehicle number 14', which it carries to this day.

Despite being attributed to General Menendes on official MoD paperwork, with the phrase 'Menendes Command

The image shows two pieces of official paperwork. The top document is a 'REMOVAL NOTE' from the Ministry of Defence, dated 24-5-85, with handwritten details including 'L14 SIR PERCIVAL', 'MARCHWOOD MIL PORT', and 'MERCEDES 230 G JEEP'. The bottom document is a pink 'PART 1: EXPORT' form, dated 25/6/85, with handwritten details including 'Mercedes 230 G Jeep', 'EX REG. 00CV14 - 507 TOP', and 'EX REGISTRATION ALLEGEDLY VEHICLE'. Both documents are signed and stamped with official seals.

Above: official paperwork relating to the export of the vehicle to the UK after the war remains with it to this day.

## G-Wagen Fact File ...

- The first driving prototype was produced in 1974
- G-Wagen is short for 'Geländewagen'
- The G-Wagen has three fully locking differentials



Captured Argentine G-Wagens photographed Port Stanley in the Falklands shortly after the war had ended in 1982.





"...it's good to see that relics from the conflict are being preserved for fu



**Top left:** the interior of the left hand drive vehicle retains the original 'lived in' appearance and has not been restored.

**Top right:** view under the bonnet, it is unclear as to whether this is the original engine for the vehicle.

**Above:** in this view of the rear compartment we see the seat with the bullet hole visible to the right.

**Below:** a captured Argentine Mercedes G-Wagen is seen here on display after the war had ended.

Vehicle' clearly written on the release note, there is a certain amount of doubt as to the authenticity of the statement in much the way that many wartime Jeeps are attributed to having been used by General Patton or the like, however, there is no doubting the fact that the vehicle was captured in the Falklands War thirty years ago, and as such is an important piece of modern military history even if the true history behind the vehicle's capture remains a mystery.

Over the years the vehicle was with the British Army there had been a few changes to the original vehicle, not least the

paintwork, which covers the original Argentine Army brown and green camouflage scheme it wore when in the Falklands. It's not known for sure when the green and white paintwork was applied, but it may have been whilst it was still serving in the Falklands with the British Army, but could equally have been applied by one of the civilian owners when it was sold off by the Army. Thirty years on and the paint is starting to flake and wear away in places, revealing the original paintwork beneath together with military reference/unit numbers on the right hand front door and the rear door and if any readers can help shed any more light on the unit that originally used the vehicle Preston and Tim would love to hear from you.

Talking with Preston and Tim Isaac who run the Cobbaton Combat Collection and well-known figures within the military collecting world, it would seem that the interior of the vehicle has seen one or two modifications too. A bullet hole in the rear seat was said to be from when the radio operator sat in the rear of the vehicle was shot during the conflict, but Preston is unconvinced and believes the rear seat may well be a replacement from another vehicle that was fitted when the vehicle was being used by the British on the island due to the fact that it doesn't really fit properly and could even be from a different variant.

To compliment the G-Wagen the Cobbaton Combat Collection also has an ex-Argentine 105mm recoilless rifle that was also captured during the Falklands War in 1982 and subsequently shipped back to the UK. These versatile weapons have been used by armies around the world for many years and in that time have been adapted for use on a variety of armoured and softskin vehicles as well as being used as towed artillery in their own right.

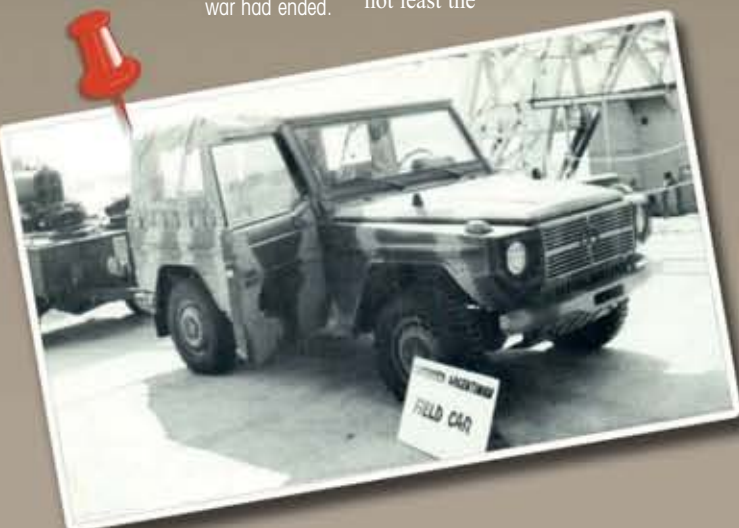
The museum's example is of the towed artillery type and retains the original Argentine brown and green camouflage paint scheme, but in the case of the recoilless rifle it had not been over painted. The barrel also

## Argentine 1



### ORIGINALITY

It's nice (from my point of view at least) to see that the vehicle hasn't been over restored, and apart from servicing the engine and ensuring it's mechanically sound, the Mercedes retains the flaking paintwork and original dents and rips in the roof canvas. For me to remove the original paintwork and renovate the vehicle would remove some of the history of the vehicle, and for now at least, while the vehicle isn't suffering in terms of corrosion, I hope that it's left alone.





carries an original engraved Argentine crest close to the breech, further evidence of the original owners of the gun. At the time of my visit Preston and Tim arranged for the recoilless rifle to be brought out with the G-Wagen so that they could be photographed together, but the lack of an original towing eye for the barrel prevented it from being coupled up to the vehicle, however, a replica is currently being constructed so that the two can be displayed together in time

future generations..."

for the Museum's annual show in August as part of a Falklands war display to mark the 30th Anniversary of the war.

It's hard to believe that it has been 30-years since the epic battle for the Falklands Islands, but is heartening to see that the sacrifices made by those who fought in the conflict are being marked by a number of ceremonies in 2012, and it's good to see that relics from the conflict are being preserved for future generations.

My thanks to Preston and Tim for their help with the production of this article, and if you would like to find out more about the Cobbaton Combat Collection check out their website at: [www.cobbatoncombat.co.uk](http://www.cobbatoncombat.co.uk)

## 105mm Recoilless Rifle

The museum's ex-Argentine 105mm recoilless rifle is of the towed artillery type and retains the original Argentine brown and green camouflage paint scheme. The barrel of the rifle has engraved markings relating to its Argentine pedigree (shown above right).



The 105mm recoilless rifle is missing the towing eye for the end of the barrel, but a replica is being manufactured. Below we can see the open breech.





# Argentine Panhards at war

**Santiago Rivas looks back at the role of the Argentine Panhard AML H 90 B1 during the Falklands War**

**S**ixty examples of the Panhard AML H 90 B1 armoured vehicles were purchased by the Argentine Army in 1977, arriving in the country the following year. The speedy purchase was made in the middle of a border crisis with Chile, which almost led to open war by the end of 1978. Built by the French company Panhard, the vehicles were very manoeuvrable and light in weight at just 5.5 tons. The Panhard had a range of 600km, a maximum speed of 100km/h and a crew of three men. The AML H 90 B1 was armed with a 90mm gun and two AA-52 7.62mm machine guns.

When Argentina occupied the Malvinas/Falklands Islands, many units began their preparation for war before being ordered to deploy south. On 2nd April 1982, the men of the Destacamento de Exploración de Caballería a Blindada 181 (Dest Exp C





BL 181, Armoured Cavalry Exploration Detachment), based at Esquel, Chubut province, met to hear the commander of the unit, Lt. Colonel Jorge Raúl Spinetta, who informed of the success of the operation and ordered the preparation of the unit to be deployed to Puerto Argentino/Stanley, to defend the town.

The sections of Panhards of the Exploration Squadrons were selected to form a reduced element of two sections with a total of nine vehicles and a group for support, without their vehicles. On the 3rd and 4th April the vehicles were taken to the training fields before being sent to Comodoro Rivadavia, on the Atlantic coast, where they were loaded onto C-130 Hercules transport aircraft (two vehicles in each aircraft), and taken to the islands during the 9th and 10th April. Eight vehicles were deployed, with just 28 men in the whole detachment.



**Left:** Panhard of the Argentine Army pictured here during training on the Patagonia.

**Below:** Panhard crew pictured in the turret of their vehicle on a street in Puerto Argentino/Port Stanley, they're well wrapped up against the cold weather experienced on the islands.



**Main photo left:** the vehicle of Sub Lieutenant Gustavo Tamaño on the streets of Puerto Argentino/Port Stanley on 13th June 1982. (Photo - Coronel Gustavo Tamaño)

**Below:** Panhard with crew pictured prior to being deployed to the islands.







**Top left:** the vehicle of Sub Lieutenant Gustavo Tamaño pictured here on the streets of Puerto Argentina/Port Stanley. (Photo courtesy - E. Rotondo)

**Above:** a Panhard seen here abandoned following the announcement of the ceasefire.

The unit went under the command of the Brigada de Infantería Motorizada IX and some days later, two Panhards of the Escuadrón de Exploración de Caballería Blindada 9 arrived with six crew members and joined one of the sections, which was under the command of Sub Lieutenant Gustavo Adolfo Tamaño, the other being under the command of Sub Lieutenant Chercoles.

A further detachment of 216 men from the Escuadrón de Exploración de Caballería Blindada 10 with two vehicles also arrived to complete the Escuadrón Panhard. In total, the unit had twelve H-90 and 250 men on the islands. The unit was assigned to the

defence of the town, and were dedicated to patrolling the surrounding area, but much of the time was spent in the town. They operated together with the Regimiento de Infantería 25, deployed around the airport, and the Batallón de Infantería de Marina N° 5, deployed to the southwest of the town, while two groups, of two vehicles each, were sent to reinforce the Regimiento de Infantería Mecanizado 3 and 6, which were deployed on the coast to the south of the town.

The first action in which the unit took part was on 1st May when British Sea Harriers attacked the airport and the Panhards opened fire against them with their machine guns, albeit without success. The soft ground on the islands proved a big limitation to the operation of the wheeled vehicles outside the town, and they had difficulties operating on the roads outside the town, something that didn't trouble the tracked British Scorpion CVR(T)s. On the only time that a Panhard was tested on the soft peat terrain it was necessary to use a Chinook helicopter to remove it. Because of this, their role was converted to mobile artillery pieces, rather than exploratory missions.

The wet and cold weather and salty air also caused many technical problems, creating plenty of work for the mechanics trying keep them running, but despite the conditions they managed to keep them all serviceable until the end of the war. The vehicles remained camouflaged near Sapper Hill until the 11th June, escaping British air attacks, but when

the final assault on the Argentine positions began, the unit started to support the movements of the Batallón de Infantería de Marina 5 on Sapper Hill, including when they were attacked by the British forces on the night of the 13th June. On the afternoon of 12th May they opened fire at short range against the forces of 3 Para who had been fighting against the troops of the Regimiento de Infantería Mecanizado 7 since the previous night.

Immediately after they opened fire, British ships opened fire against the Panhards and two were slightly damaged and some crew members were wounded, but the vehicles continued to provide supporting fire for the retreating troops. Each section fired between 60 to 70 shots against the British troops, leaving 6 dead and 70 wounded.

On the morning of 14th June, the ceasefire found the unit in excellent condition and could have continued to fight, however, to disable the guns of the vehicles, the firing pins were removed and buried before they were captured. Following their capture, some of the Panhards were used as targets on a firing range on the islands, while others were taken to the UK and two were preserved on the islands.

Of the remaining 48 examples of the Argentine Army, most of them are still in service, five of them received new Maxxion engines in the early 2000's and now they share their task with the Hummer armed with MAG machine guns, 40mm Mk19 grenade launchers or TOW missiles.

Author wishes to thank Colonel Gustavo Adolfo Tamaño for his help with this article

After the  
WAR



**Left:** an Argentine Panhard armoured car pictured on the coast of Puerto Argentina/Port Stanley during the war.



**Left:** a British soldier takes time out for a snapshot in front of one of the captured Panhards after the war.



**Below:** soldiers pass by the Panhards of the Argentine forces parked in the streets after the ceasefire.



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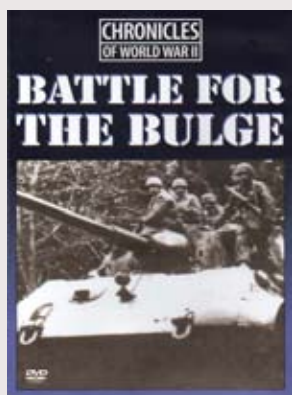
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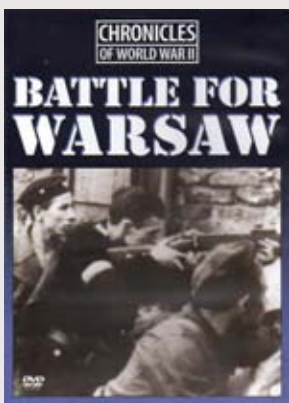


## Battle For The Bulge

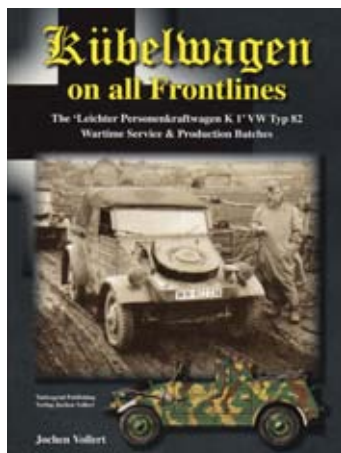


The Battle For The Bulge, fought in the Ardennes forests will be well known by many and the film footage within this documentary was taken by German cameramen at the time in the belief that it would be a decisive victory for the Germans. In the event the plan failed and the rare footage was never used and until now has lain undiscovered in library vaults before being used to create this superb film. The 52-minute long DVD retails at £12.99 and is available through selected dealers.

## Battle For Warsaw



This documentary traces the story of the 1944 Warsaw uprising in which nearly a quarter of a million Polish people lost their lives. Using a great deal of rare archive material that has only recently come to light, the documentary from Wienerworld tells the harrowing tale of the destruction of Warsaw at the hands of the advancing Germans. It's a hard hitting account of events that make for fascinating viewing. The 52-minute long DVD retails at £12.99 and is available through selected dealers.



## Wartime German Frontline Favourite

Jochen Vollert has excelled himself with his latest book that looks at the German Kübelwagen. This sumptuous book is crammed with hundreds of wartime images, colour illustrations and close-up detail photos showing the Kübelwagen in minute detail. There's far too much in this book to cover here, suffice to say it covers Wehrmacht, Luftwaffe and other service use on all fronts, as well as brief details of the development of the type and captured vehicles in use with British and American units. This is a stunning book that is worth every penny and one that is sure to be popular with vehicle enthusiasts and model makers alike.

**Title:** Kübelwagen VW Typ 82 on all Frontlines

**By:** Jochen Vollert

**ISBN:** 9783936519280

**Price:** £34.99

**Format:** A4 Hardback

**Available From:**  
Bookworld Wholesale Ltd.  
[www.bookworldws.co.uk](http://www.bookworldws.co.uk)

## Modern Argentine Battle Tank

**Title:** International Special No.8006 - TAM

**By:** Juan Carlos Cicalesi & Santiago Rivas

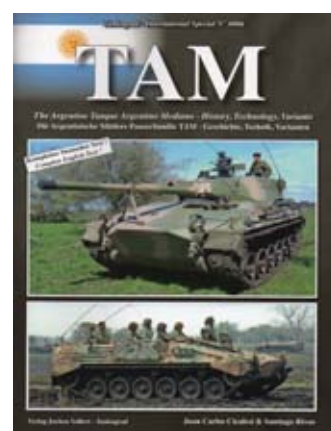
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The Argentine TAM family has seen little coverage, but this new title in the Tankograd International Series seeks to redress the balance. The 64-page book features predominantly colour images of the TAM and its variants in use with the Argentine Army. The different vehicles are covered in some detail, which includes in-service vehicles providing plenty of variation. As usual the body text and captions are provided in both German and English language. The TAM medium tank may not be one of the more popular subjects, but it's interesting nonetheless and this book is bound to be of interest to many.



## Modern Polish Armoured Cavalry

The vehicles of the modern Polish Army's 10th Armoured Cavalry Brigade go under the spotlight in this new addition to the Tankograd Missions & manoeuvres series. The 64-page book is packed with colour photos showing a wide variety of military vehicles, from the various softskin support vehicles to the heavy main battle tanks and even covers some of the mine protected vehicles currently used in Afghanistan. There's a fascinating collection of vehicles featured in the book, including home-grown Polish vehicles so there's plenty to keep the reader busy.

**Title:** Tankograd Missions & Manoeuvres No.7025

**By:** Daniel Nowak & Tim Matzold

**ISBN:** N/A

**Price:** £13.99

**Format:** A4 Softback

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## Modern Bundeswehr Armoured Vehicle

**Title:** Militärfahrzeug Special No.5036 - Dingo 1

**By:** Ralph Zwilling

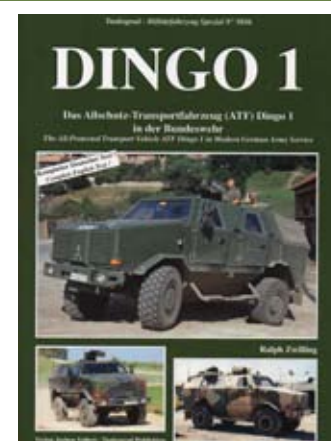
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This book looks at the Modern German Army's Dingo All-Protected Transport Vehicle (ATF) currently seeing service in Europe and Afghanistan. Author Ralph Zwilling has done a great job of gathering together a fine collection of colour images of the Dingo 1, showing it in use in all theatres of operation, with plenty of close-up detail photos contained within a 'Walkaround' section, which is sure to please model makers building one of the available kits of the Dingo. Five variants are covered in total, including some of the lesser-known types such as the ATF Dingo 1 Loudspeaker Vehicle TOG.







## Another Interesting Collection Of Articles

The latest issue of Militär Fahrzeug features another varied collection of articles, which includes an item on the Soviet Stalinetz tractor and T-26 tank, M1 Abrams MBT, the Enok II armoured vehicle, the M48A2 bridgelay, the JCB Light Wheeled Tractor, and a great photo of an Austrian Leopard tank painted in a most unorthodox camouflage scheme that represents a real life Leopard! A series of short features and news items round up another well balanced. As usual the book is produced in German, with an English summary at the back and dual language captions.

**Title:** Militär Fahrzeug issue number 2/2012

**By:** Jochen Vollert

**ISBN:** N/A

**Price:** £9.99

**Format:** A4 Softback

**Available From:**  
Bookworld Wholesale Ltd.  
[www.bookworldws.co.uk](http://www.bookworldws.co.uk)

## An Interesting Period of Modern History

**Title:** Tankograd British Special issue 9018

**By:** Geoff Fletcher & Robert Swan

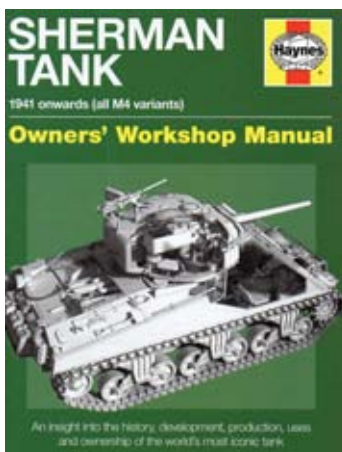
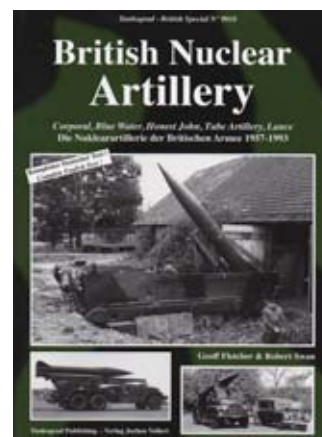
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The period between 1957 and 1993 is covered in this book looking at the British Nuclear Artillery capabilities of the time. As such it covers a variety of weapons systems, including the likes of Corporal, Blue Water, Honest Jones and Lance. The majority of the images contained within the 64-page book are in black & white, which is typical of the period, but there are some great photos showing an aspect of warfare in the Cold War period seldom covered, and includes some images of vehicles you wouldn't associate with the time, such as an AEC Matador truck! All in all a great book on a fascinating subject.



## The Sherman Under The Spotlight

Continuing their series of military-related subjects, Haynes Publishing has produced this title on the Sherman Tank. Written and compiled by Pat Ware, the book's title is slightly misleading in saying it's an Owners' Workshop Manual, and is in fact more of a detailed study of the Sherman tank in its many and varied forms. The 168-page book is crammed with black & white and colour images showing every detail of the Sherman, including the interior and engine, and also includes wartime shots and photos of vehicles under restoration. The book's well worth the price, offering a fascinating insight into this iconic tank.

**Title:** Haynes Sherman Tank Owner's Workshop Manual

**By:** Pat Ware

**ISBN:** 9780857331014

**Price:** £21.99

**Format:** Hardback

**Available From:**  
Haynes Publishing  
[www.haynes.co.uk](http://www.haynes.co.uk)

## Accounts of Bravery on the Battlefield

**Title:** Deeds of Heroes - The Distinguished Conduct Medal

**By:** Matthew Richardson

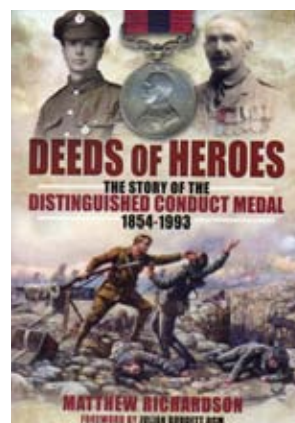
**ISBN:** 9781848843745

**Price:** £19.99

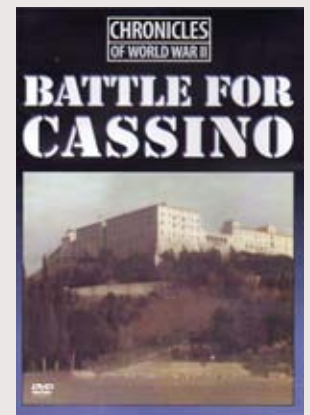
**Format:** Hardback

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

Second only to the Victoria Cross, the Distinguished Conduct Medal is awarded for acts of the utmost bravery. Those awarded the DCM are often overlooked in favour of those awarded the better known Victoria Cross and yet the acts of bravery and heroism of those recipients are none the less important and deserved of recognition. Unlike many of those to receive the VC, those awarded the DCM frequently survived their ordeals, and many of their accounts of the actions that led to their awards, from the Crimea to the Gulf War are featured in this book.

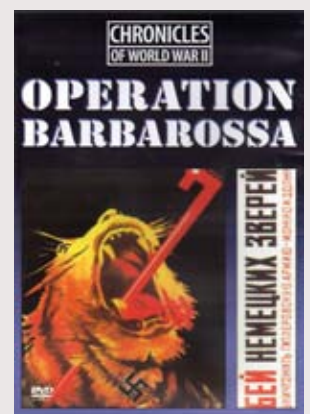


## Battle For Cassino



The next DVD this month also comes from Wienerworld and covers one of the most gruelling, harrowing and tragic battles to be fought in Europe during WW2. Unique archive material of the battle from both sides has been utilised together with newly filmed sequences of the rebuilt town and monastery, as well as eye-witness accounts from many of the surviving participants. The DVD is 52-minutes long and retails at £12.99 and is available through selected dealers.

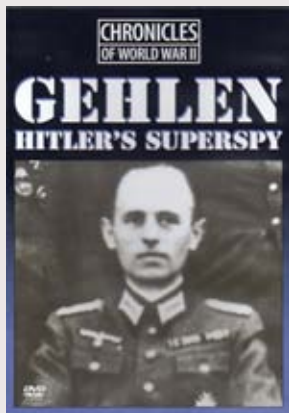
## Operation Barbarossa



The German invasion of Russia is widely regarded as being the biggest, bloodiest and most bitter battle ever fought, costing the lives of an estimated 20 million people. Archive footage from both sides has been incorporated in this film about Operation Barbarossa, which looks at the build up to, and including the opening attack on Russia in 1941. It's gripping stuff. The DVD is 52-minutes long and retails at £12.99 and is available through selected dealers.

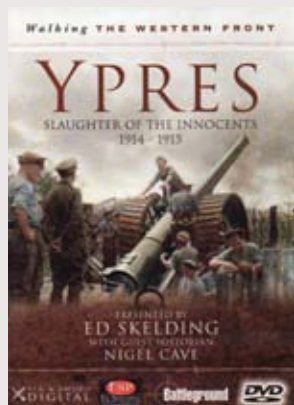


## Gehlen Hitler's Superspy



This final DVD from Wienerworld looks at the remarkable story of Reinhard Gehlen, former head of the West German Secret Service who helped found the CIA and Hitler's Chief of Intelligence on the Russian Front during WW2. It is said that during the Cold War Gehlen recruited, trained and infiltrated behind the Iron Curtain more than 5,000 secret agents! The 52-minute long DVD retails at £12.99 and is available through selected dealers.

## Ypres - Slaughter of the Innocents



Most military enthusiasts will recognise the name of Ypres and the epic battles of WW1, and this new 70-minute long DVD from Pen & Sword looks at the actions in some detail, returning to the battlefields to recount those dark days of WW1. It's a well produced film with modern colour footage intertwined with black and white imagery from the time and offers a fascinating insight into the battles of Ypres. The DVD retails at £16.99 and is available through Pen & Sword: [www.pen-and-sword.co.uk](http://www.pen-and-sword.co.uk)



## Plenty of Food For Thought

As an intriguing tale of how the Germans might have ruled Britain had they won WW2 and invaded Britain, this book makes for chilling reading, and while some details are fictionalised, surmising how an invasion might have affected the rule of British people, there are also accounts describing the German plans following a successful invasion that make for uncomfortable reading. Although primarily a written account, several short sections featuring black and white photos are also included for illustrative purposes.

**Title:** If Britain Had Fallen - The Real Nazi Occupation Plans

**By:** Norman Longmate

**ISBN:** 9781848326477

**Price:** £14.99

**Format:** Paperback

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

## The Man Behind the Luftwaffe

**Title:** Kesselring - The Making of the Luftwaffe

**By:** Kenneth Macksey

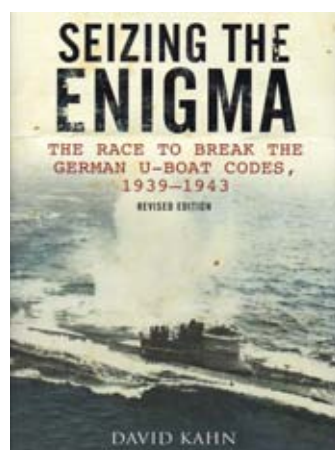
**ISBN:** 9781848326491

**Price:** £15.99

**Format:** Paperback

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

Albert Kesselring was the only senior German officer to start and finish the war holding a High Command position. He fought and commanded both in the air and on the ground in almost every major campaign of WW2 and was shot down a staggering five times, and yet he is often remembered for the key role he played in the formation and development of the Luftwaffe during the war. This book is the first complete biography of this complex, fascinating personality whose organisational skills, charm and sheer determination carried him through testing times in the war.



## Race to break German U-Boat Codes

The breaking of the German Enigma code was a pivotal point in WW2 and the tale of how the Allies broke the code has been told many times, but this well-researched book describes the incredible efforts the intelligence agencies went to in order to break the code, and retrieve key elements of the system. There are times when it would be easy to believe that you were reading a fictional spy novel, such as the twists and turns in the story, but this was real, very real and one that had it not succeeded could have seen the German U-Boats ending our war efforts and putting a strangle hold on Britain. Well worth the read.

**Title:** Seizing The Enigma - Race to Break U-Boat Codes

**By:** David Kahn

**ISBN:** 9781848326361

**Price:** £19.99

**Format:** Hardback

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

## Gritty Account of the Eastern Front

**Title:** Fighting in Hell - The German Ordeal on Eastern Front

**By:** Peter Tsouras

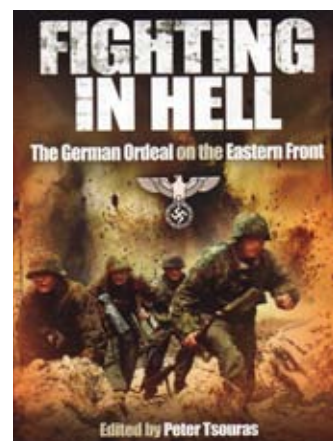
**ISBN:** 9781848326514

**Price:** £14.99

**Format:** Paperback

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

This book is essentially an account of the German campaign on the Eastern Front during WW2, which is compiled from four reports on the Russian Campaign that were produced by the US Army in the late 40s/early 50s in an effort to record German military strategies and tactics of the time. Much of the book relies on eyewitness accounts, providing powerful testimony to the German's lack of preparation for the harsh climactic conditions of the Russian winter. This is essentially a written account, apart from a few maps, but one that will fascinate those interested in this period of history.





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or call +44 1780 755131

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## DATES FOR YOUR DIARY

### Government Surplus Sales:

**Witham Specialist Vehicles:** Regular auctions of ex-military vehicles, equipment and spares. Contact Witham Specialist Vehicles, Honeypot Lane, Colsterworth, Lincs for details of the latest sales or visit: [www.mod-sales.com](http://www.mod-sales.com)

### MAY 2012

#### Saturday 5 Sunday 6 Monday 7 May 2012:

**Llandudno Transport Festival:** held at Bodafon Fields, Llandudno, North Wales, LL30 1BW.

For further information call:  
Tel/Fax: 01492 545053 (to 6pm)  
[www.llantransfest.co.uk](http://www.llantransfest.co.uk)

#### Sunday 6 May 2012: Cobbaton

**Clearout:** Cobbaton Combat Collection, Chittlehampton, Umberleigh, N.Devon, EX37 9RZ. For details contact Tim Isaac on:  
Tel: 01769 540740

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

#### Saturday 5 Sunday 6 Monday 7 May 2012:

**Steaming Thro The Forties:** held at Bodmin & Wenford Railway, Bodmin, Cornwall. Live steam trains, military vehicles, etc. For further details contact:  
Tel: 01872 863233  
[les@sweal.plus.com](mailto:les@sweal.plus.com)

#### Monday 7 May: Preston

**Arms Fair:** held at Mercure Dunkenhalgh Hotel, Blackburn Road, Clayton Le Moors, Lancashire, BB5 5JP, Accrington. For details call:  
Tel: 01254 263260  
[info@prestonarmsfair.co.uk](mailto:info@prestonarmsfair.co.uk)  
[www.prestonarmsfair.co.uk](http://www.prestonarmsfair.co.uk)

#### Friday 11 Saturday 12 Sunday 13 May 2012:

**Parachute Regiment Reunion:** held at Hardwick Hall. Saturday public day, Sunday main day. For further details call Eric Harris on:  
Tel: 07904 388890

#### Saturday 19 Sunday 20 May 2012:

**1940's Weekend:** held at Halfpenny Green Airport, Bobbington, Stourbridge, W. Midlands DY7 5DY. Traders contact Steve Roberts:  
Tel: 01733 246440 or [airmiller@hotmail.com](mailto:airmiller@hotmail.com)  
Re-enactors contact Mark Anthony Craig on: Tel: 0774 607 3914 or [northernforties@gmail.com](mailto:northernforties@gmail.com)  
[www.northernforties.org.uk](http://www.northernforties.org.uk)

#### Saturday 19 May 2012:

**The 1940s Relived:** held at Brooklands Museum, Brooklands Road, Weybridge, Surrey KT13 0ON. For details see:  
[www.brooklandsmuseum.com](http://www.brooklandsmuseum.com)

#### Saturday 19 Sunday 20 May 2012: Bunker Bash

**2012:** held at the Kelvedon Hatch Secret Nuclear Bunker, A128 Ongar Road, Brentwood, Essex, CM15 0LA. Tel: 07971052195  
[bunkerbash@hotmail.co.uk](mailto:bunkerbash@hotmail.co.uk)  
[www.bunkerbash.co.uk](http://www.bunkerbash.co.uk)

#### Saturday 19 Sunday 20 May 2012: Quainton 1940's

**Weekend:** Buckinghamshire Railway Centre, Quainton Road Station, Quainton, Aylesbury, HP224BY. For details:  
Tel: 01296655720 Trade contact: [gm@bucksrailcentre.org](mailto:gm@bucksrailcentre.org)

#### Saturday 19 Sunday 20 May 2012: Militracks 2012:

Held at Liberty Park, Overloon, The Netherlands, Museumpark 1, 5825AM. Contact Museum Director Erik van den Dungen:  
[info@militracks.nl](mailto:info@militracks.nl)  
[www.militracks.nl](http://www.militracks.nl)

#### Saturday 19 Sunday 20 May 2012: Belvoir Castle Steam & Country Festival:

Belvoir Castle, near Grantham, Lincs, NG32 1PE. Tel: 07860 758872  
[www.steamfestival.co.uk](http://www.steamfestival.co.uk)

#### Saturday 26 Sunday 27 May 2012: Classic

**Commercial & Military Vehicle Show:** held at the Royal Gunpowder Mills, Beaulieu Drive, Waltham Abbey, Essex, EN9 1JY. For further details call:  
Tel: 01902 707370  
[info@royalgunpowdermills.com](mailto:info@royalgunpowdermills.com)

#### Saturday 26 Sunday 27 May 2012: Little Easton on

**the Home Front:** presented by North Thames MVT. Held in the village of Little Easton, near Great Dunmow, Essex, will be time-warped back to 1944 for the weekend. Free public entry, with donations to Royal British Legion and H4H appreciated on the day. For more information contact Chris Warne on:  
Tel: 07887 545908  
[cwarne@arrowuk.com](mailto:cwarne@arrowuk.com)



#### Saturday 26 Sunday 27 May 2012: Trucks & Troops:

held at Beaulieu National Motor Museum. For further details call:  
Tel: 07544 570911  
[www.trucksandtroops.com](http://www.trucksandtroops.com)

#### Saturday 26 Sunday 27 May 2012: Chipping Steam

**Fair:** held at the Green Lane Showground, Chipping, Preston, Lancs, PR3 2TS. Attractions include steam engines, classic vehicles and a military vehicle section. For further information call the show secretary on:  
Tel: 01995 61866  
[www.chippingsteamfair.co.uk](http://www.chippingsteamfair.co.uk)

#### Saturday 26 Sunday 27 May 2012: AEC Centenary

**Rally:** held at Newark Showground, incorporating the 'Bomber County Road Run'. For entry please contact Jim Read: Tel: 01406 424769 (between 6pm & 9pm)  
[rally@aecsociety.co.uk](mailto:rally@aecsociety.co.uk)  
[www.aecsociety.com](http://www.aecsociety.com)

#### Saturday 26 Sunday 27 May 2012: Battlegroup North

**"Jubilee" Military Wheels & Wings Show:** held at the Yorkshire Air Museum, Elvington, York, YO41 4AU. Opening times 10am – 5pm. For further details contact:  
Tel: 01904 608595  
[museum@yorkshireairmuseum.org](mailto:museum@yorkshireairmuseum.org)

#### Saturday 26 Sunday 27 May 2012: Little Easton on

**the Home Front:** held at the village of Little Easton, near Great Dunmow, Essex. Open 10am – 5pm both days. Participant camping available from Friday 25th May. For further details contact Chris Warne on:  
Tel: 07887 545908  
[cwarne@arrowuk.com](mailto:cwarne@arrowuk.com)

### JUNE 2012

#### Friday 1 to Monday 4 June 2012: Overlord 2012:

held at The Lawns, Denmead, Waterlooville, PO7 6TZ. For details call: Myrddin Evans (General & Trade)  
Tel: 01243 375695  
Trevor Bush (Vehicle Entry)  
Tel: 07774 988015 or visit:  
[www.solentoverlord.co.uk](http://www.solentoverlord.co.uk)

#### Saturday 2 to Saturday 9 June 2012: D-Day

**Anniversary Jeep Tour:** organized by Flatdog 4x4 Adventure Tours. Limited places available. For details contact:  
Tel: 07773 110101  
[dday.tours@btinternet.com](mailto:dday.tours@btinternet.com)

#### Friday 8 Saturday 9 Sunday 10 June 2012:

**Southport Funfest:** Victoria Park, Southport. For further details or to book in contact Jimmy Vasco:  
[mgl966uk@hotmail.com](mailto:mgl966uk@hotmail.com)  
[www.westlancsmvt.com](http://www.westlancsmvt.com)

#### Saturday 9 Sunday 10 June 2012: Home Farm

**Heroines:** held at Tyntesfield Estate, Wraxall, North Somerset, BS481NX. For further details contact James Shopland on:  
Tel: 07968 274480  
[james@shoplandsawmills.co.uk](mailto:james@shoplandsawmills.co.uk)  
[www.imps.org.uk](http://www.imps.org.uk)

#### Saturday 9 Sunday 10 June 2012: Severnside Area

**MVT Annual Military Vehicle Show:** held at the Vintage Showfield, Cambridge, Gloucestershire, GL2 7AB. Show opens to public between 9.30am and 6.00pm. For further details contact John Keedwell on:  
Tel: 01453 890920  
[www.mvt.org](http://www.mvt.org)



## JUNE 2012

**Saturday 9 Sunday 10 June 2012: Wicksteed at War:** held at Wicksteed Leisure Park, Barton Road, Kettering, Northamptonshire, NN15 6NJ. Contact Tim Hawkes on: Tel: 07990 574 338 [tim@letsrushit.com](mailto:tim@letsrushit.com)

**Friday 15 to Sunday 17 June 2012: Cholmondeley Pageant of Power:** held on the Cholmondeley Estate in Cheshire. For further details see: [www.cpop.co.uk](http://www.cpop.co.uk)

**Saturday 16 Sunday June 17 2012: Lister Tynedale Steam & Country Show:** held at Nibley House Farm, North Nibley, Dursley, Glos, GL11 6DL. Contact John Keedwell: Tel: 01453 890920

**Sunday June 17 2012: Duxford Military Vehicle Show:** held at the Imperial War Museum, Duxford, Cambs. Vehicle entry enquiries should be addressed to: V. Chiverton, 51 Collingwood Road, Eaton Socon, Cambs, PE19 8JQ.

**Friday 22 Saturday 23 Sunday 24 June 2012: The Yorkshire Wartime Experience:** held off Hunsworth Land, Hunsworth, Bradford, BD4 6RN. Vehicle & re-enactor bookings call Stuart Wright on: Tel: 07748 604461 [Stuart.wright@hotmail.co.uk](mailto:Stuart.wright@hotmail.co.uk) Stall holders contact Paul on: Tel: 07709 052501 [Pdt3945@hotmail.com](mailto:Pdt3945@hotmail.com) [www.ywe-event.info](http://www.ywe-event.info)

## JUNE 2012

**Saturday 23 Sunday 24 June 2012: Muckleburgh Collection Military Display Weekend:** Held at The Muckleburgh Collection, Weybourne Camp (off B149) North Norfolk, NR25 7EG. Call: Tel: 01263 588284 [events@muckleburgh.co.uk](mailto:events@muckleburgh.co.uk) [www.muckleburgh.co.uk](http://www.muckleburgh.co.uk)

**Saturday 23 Sunday 24 June 2012: Wartime in the Vale:** National MVT Show, held at Ashdown Camp, Badsey near Evesham, Worcs. For more information visit the website at: [www.ashdowncamp.webs.com](http://www.ashdowncamp.webs.com)

**Saturday 23 Sunday 24 June 2012: Step Back to the 1940's:** held at The Severn Valley Railway, Bewdley, Worcestershire, DY12 1BG. Pre-1945 vehicle displays at most stations. For details call David J. Mee on: Tel: 01299 404269 [www.svr.co.uk](http://www.svr.co.uk)

**Saturday 23 Sunday 24 June 2012: Banbury Rally at Bloxham:** showground at Milton Road, Sat Nav users - OX15 4HD. For further details contact: Tel: 01295 320100 [banburysteam@hotmail.com](mailto:banburysteam@hotmail.com) [www.banburyrally.com](http://www.banburyrally.com)

**Sunday 24 June 2012: Militaria & Medal Fair:** held at Stratford Leisure Centre, Bridgefoot, Stratford on Avon, Warks, CV37 6YY. For further details contact: Tel: 01753 534777

## JUNE 2012

**Saturday 30 June Sunday 1 July 2012: Tankfest 10th Anniversary:** held at the Tank Museum, Bovington, Dorset. For further details or to order tickets see the website at: [www.tankmuseum.org](http://www.tankmuseum.org) or call Tel: 01929 462359

**Saturday 30 June Sunday 1 July 2012: 40th Sheffield Steam & Vintage Rally:** held at Rackford Road, North Anston, Nr Sheffield, S25 4DF. For further details contact: Tel: 01709 545047.

**30 June 1 July 2012: The 1940s Experience:** held at the Isle of Wight Steam Railway, The Railway Station, Havenstreet, Isle of Wight, PO33 4DS, open 10.00am to 5.00pm each day. Contact: Tel: 01983 882204 [info@iwsteamrailway.co.uk](mailto:info@iwsteamrailway.co.uk) [www.iwsteamrailway.co.uk](http://www.iwsteamrailway.co.uk)

**Saturday 30 June Sunday 1 July 2012: Military Wings & Wheel Armed Forces Weekend 2012:** held at White Waltham Airfield, Maidenhead, Berks, SL6 3NJ. For further details call: Tel: 01235 538134 [info@statelystolutions.co.uk](mailto:info@statelystolutions.co.uk)

## JULY 2012

**Sunday 1 July: Preston Arms Fair:** held at Mercure Dunkenhalgh Hotel, Blackburn Road, Clayton Le Moors, Lancashire, BB5 5JP, Accrington. For details call: Tel: 01254 263260 [www.prestonarmsfair.co.uk](http://www.prestonarmsfair.co.uk)

**Saturday 2 Sunday 3 July 2012: Military Manoeuvres Show:** held at Conwy Touring Park, North Wales. Historic military vehicles, plus battle re-enactments & tracked vehicle rides. Contact Norman Easton on: Tel: 01492 592856 [sales@conwytouringpark.co.uk](mailto:sales@conwytouringpark.co.uk)

**Friday 6 Saturday 7 Sunday 8 July 2012: Military Vehicle Trust Show, Caple, Surrey:** East Surrey & West Kent Area Show, Temple Lane, Caple, Surrey, RH5 5HJ. For details contact Yvonne on: Tel: 01306 711 907 [yvonne@g-j-anstee.demon.co.uk](mailto:yvonne@g-j-anstee.demon.co.uk)

## JULY 2012

**Friday 6 Saturday 7 Sunday 8 July 2012: Operation Home Guard:** Contact John & Elaine Ward on: Tel: 01524241024 [www.ingletonhomeguard.co.uk](http://www.ingletonhomeguard.co.uk)

**Friday 13 Saturday 14 July 2012: Meltham Memories:** Meltham, West Yorkshire, HD9 4AE, living history, vehicles etc. Vehicle bookings call Steve Aldred: Tel: 07542331945 Stalls/Tickets call Pam Cox: Tel: 07841426945

**Saturday 14 Sunday 15 July 2012: Dunkeswell Aero Rally:** held by the South West Airfield Heritage Trust at Dunkeswell Airfield, Honiton, Devon. For more details call: Tel: 07776075996

**Saturday 14 Sunday 15 July 2012: Manchester Airport Aviation & Transport Fair:** in association with Ace Mobile Living History Group & H4H at the Runway Visitor Park. Tel: 07952 176134 [www.tasmanchester.com/TAS\\_Fair.html](http://www.tasmanchester.com/TAS_Fair.html)

**Wednesday 18 to Sunday 22 July 2012: The War & Peace Show:** The Hop Farm, Paddock Wood, Kent. The world's largest military vehicle show. For details: Tel: 01304 813945 [www.thewarandpeaceshow.com](http://www.thewarandpeaceshow.com) Tel: 01622 872068 [www.thehopfarm.co.uk](http://www.thehopfarm.co.uk)

**Saturday 21 Sunday 22 July 2012: Woodhall Spa 1940's Festival:** Held at Jubilee Park, Stixwold Road, Woodhall Spa, Lincs, LN10 6QH. Contact Stuart Holmes on: Tel: 01526 353215 (after 6.00pm) [stupot667@talktalk.net](mailto:stupot667@talktalk.net)

**Saturday 21 Sunday 22 July 2012: Much Marcle Steam Rally:** Rye Meadows, Much Marcle, Ledbury, Herefordshire, HR8 2LX. [www.muchmarclesteamrally.com](http://www.muchmarclesteamrally.com)

**Friday 27 Saturday 28 Sunday 29 July 2012: Welland Steam and Country Rally:** held at Woodside Far, Welland, Worcs, between Upton-on-Severn & Malvern, WR13 6LN. For details: Tel: 01531 890762 [www.wellandsteamrally.co.uk](http://www.wellandsteamrally.co.uk)





# MISSION BRIEFING

## DATES FOR YOUR DIARY

### JULY 2012

**Saturday 28 Sunday 29 July 2012: Erewash Steam & 40's Show:** held at West Park Leisure Centre, Wiltsthorpe Road, NG10 4AA. For further details call: Tel: 01159 135823 [dave.hoyles@ntlworld.com](mailto:dave.hoyles@ntlworld.com) [www.midlandeentsclub.co.uk](http://www.midlandeentsclub.co.uk)

**Saturday 28 Sunday 29 July 2012: War Machines at Davidstow:** Davidstow Airfield & Cornwall at War Museum, Davidstow, Camelford, Cornwall, PL32 9YF. For details call: Mob: 07799 194918 [www.cornwallatwarmuseum.co.uk](http://www.cornwallatwarmuseum.co.uk)

### AUGUST 2012

**Friday 3 Saturday 4 Sunday 5 August 2012: Woodvale International Rally:** Southport, Merseyside. See the website for more information and entry forms or contact Jimmy Vasco at: [mg1966uk@hotmail.com](mailto:mg1966uk@hotmail.com) [www.westlancsmvt.com](http://www.westlancsmvt.com)

**Friday 3 Saturday 4 Sunday 5 August 2012: Gloucestershire Steam & Vintage Extravaganza:** held at South Cerney Airfield, Cirencester. For details about the event visit the website at: [www.steamextravaganza.com](http://www.steamextravaganza.com)

**Saturday August 4 2012: MVPA 2012 Alaska Highway Convoy:** MVPA 70th Anniversary Convoy on the famous Alaska Highway. For details contact: [hq@mvpa.org](mailto:hq@mvpa.org) [www.mvpa.org](http://www.mvpa.org)

**Saturday 4 Sunday 5 August 2012: Croft Nostalgia Weekend:** For further details check out the website at: [www.croftmilitary.co.uk](http://www.croftmilitary.co.uk)

**Saturday 11 Sunday 12 August 2012: Cobbaton Combat VJ Weekend:** Cobbaton Combat Collection, Chittlehampton, Umberleigh, N. Devon, EX37 9RZ. For details contact Tim Isaac on: Tel: 01769 540740 [info@cobbatoncombat.co.uk](mailto:info@cobbatoncombat.co.uk) [www.cobbatoncombat.co.uk](http://www.cobbatoncombat.co.uk)

### AUGUST 2012

**Saturday 11 Sunday 12 August 2012: Combined Ops 2012:** IMPS Military show & Classic Aircraft weekend, held at Headcorn Aerodrome, Near Maidstone, Kent. For details contact Malcolm Dunlop: Tel: 01303 267271 [mgdunlop@aol.com](mailto:mgdunlop@aol.com) [www.imps.org.uk](http://www.imps.org.uk)

**Sunday 12 August: Preston Arms Fair:** held at Mercure Dunkenhall Hotel, Blackburn Road, Clayton Le Moors, Lancashire, BB5 5JP, Accrington. For details call: Tel: 01254 263260 [info@prestonarmsfair.co.uk](mailto:info@prestonarmsfair.co.uk) [www.prestonarmsfair.co.uk](http://www.prestonarmsfair.co.uk)

**Sunday 19 August 2012: Panshanger Revival Day:** held at Panshanger Aerodrome, organised by the North London Flying School. Open from 10.00am. For details call: Tel: 01707 391791 [www.northlondonflying.school.com](http://www.northlondonflying.school.com)

**Sunday 19 August 2012: Militaria & Medal Fair:** held at Yate Leisure Centre, Kennedy Way, Yate, nr Chipping Sodbury, Bristol, BS37 4DQ. Doors open from 10.30am till 2.30pm. Tel: 01753 534777

**Saturday 25 Sunday 26 Monday 27 August 2012: Rauceby Forties Weekend:** For further details contact: Tel: 01529 488354 [www.raucebywarweekend@hotmail.co.uk](mailto:www.raucebywarweekend@hotmail.co.uk)

**Saturday 25 Sunday 26 August 2012: Eastnor Castle Land Rover Show:** The Deer Park, Eastnor, Nr Ledbury, Herefordshire, HR8 1RL. Contact Mark Woodward: Tel: 016974 51882 [www.4x4sparesday.co.uk](http://www.4x4sparesday.co.uk)

**Saturday 25 Sunday 26 Monday 27 August 2012: Tanks, Trucks and Firepower Show:** Situated just 1 mile from Dunchurch in Works on the A426 Southam Road, 5 miles from Rugby with access off the A45 and M45. For details call: Tel: 0780 3080028 [www.tankstrucksandfirepower.co.uk](http://www.tankstrucksandfirepower.co.uk)

### AUGUST 2012

**Sunday 26 Monday 27 August 2012: Northeast Military Vehicle Show:** held at the Durham Light Infantry Museum, Durham City. For further details contact: [nemvc@hotmail.com](mailto:nemvc@hotmail.com)

### SEPTEMBER 2012

**Sunday 2 September 2012: Militaria & Medal Fair:** held at The Princes Hall, Princes Way, Aldershot, Hampshire, GU11 1NX. Tel: 01753 534777

**Friday 21 Saturday 22 Sunday 23 September 2012: Middlewich Wartime Weekend:** held in Middlewich Town Centre, Civic Hall & Royal British Legion Club. For further details contact Dave Thompson: Tel: 01606 833434 Mob: 07765 025596 [www.middlewich.org.uk](http://www.middlewich.org.uk)

**Sunday 30 September 2012: Newbury 4x4 and Vintage Spares Day:** Newbury Showground, Chieveley, Berkshire, RG18 9QZ. Call Mark Woodward for details. Tel: 016974 51882 [www.4x4sparesday.co.uk](http://www.4x4sparesday.co.uk)

**Sunday 30 September 2012: Manchester Militaria Fair:** held at Event City, Phoenix Way, Urmston, Manchester, M41 7TB. Located next door to the Trafford centre. For further details contact Amanda on: Tel: 01743 762266

### OCTOBER 2012

**Sunday 7 October 2012: Hack Green Secret Nuclear Bunker Rally:** French Lane, Nantwich, Cheshire, CW5 8BL. For details call Rod on: Tel: 01270 623353 [www.hackgreen.co.uk](http://www.hackgreen.co.uk)

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

### OCTOBER 2012

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

### NOVEMBER 2012

**Sunday 4 November 2012: Northern Military Expo:** Newark Country Show Ground, Notts, 2 minutes off the A1M (NG24 2NY). For further details contact Mark Askew on: Tel: 01302 739000 [jeep.promotions@btconnect.com](mailto:jeep.promotions@btconnect.com) [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:** Brooklands Museum, Brooklands Road, Weybridge, Surrey, KT13 0ON. For details call: Tel: 01743 762266

**Sunday 18 November 2012: Malvern Militaria Fair:** Three Counties Showground, Wye Hall, Malvern, Worcester, WR13 6NW. For further details contact Amanda on: Tel: 01743 762266

**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

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 ask event organisers to notify us of any changes as soon as possible.

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