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EDITORIAL



Ian Young

Ian Young
Editor

I was going to open this month's issue with a comment on the weather, but after further thought decided this was too obvious a choice of topic, and besides which I think most people have had enough of the so-called 'summer' weather! Instead I was going to talk about a growing divide within the 'hobby' of military vehicle collecting. It strikes me that unless you already own a vehicle and have done for some years, the opportunities to get into the hobby are decreasing, especially for those on a limited budget. In the past smaller vehicles such as Jeeps and Land Rovers have traditionally been the first rung on the ladder of vehicle ownership, but with the prices of these vehicles rising steadily, especially Jeeps, it would seem that nowadays you need to have fairly deep pockets to buy, run and maintain military vehicle. At the other end of the scale are the serious collectors/investors who concentrate on

rare, wartime vehicles, often spending millions of pounds on their restoration into the bargain, and while it's a good thing to see these vehicles being preserved for future generations, it can sometimes be a little disconcerting for those at the bottom of the ownership ladder to see people spending more on a wartime dated ammunition box than we spend on a complete vehicle! True, there's probably a certain amount of jealousy involved, who wouldn't own the best vehicles if they could, but it does worry me that the collecting of military vehicles is moving away from enthusiastic amateurs and into the realms of the investment orientated collectors.

At the moment there's room for collectors at both ends of the spectrum, indeed the hobby needs both, but you have to wonder where it will all end, and if the hobby will continue to thrive if amateur collectors are priced out of the hobby? I guess it's something that only time will tell - Ed.



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Regulars

- 6 UP FRONT**
Our monthly round up of the latest news and views
- 42 MMI CENTREFOLD**
The latest of our centrefold photos for you to collect and keep
- 56 BULLETIN BOARD**
Shaun Connors brings us the latest defence industry news
- 70 INTO THE ARCHIVES**
James Payne delves into the photo album of a British soldier
- 72 ON THE SHELF**
The latest military-related books and DVDs reviewed
- 76 MISSION BRIEFING**
The latest military show dates for your diary
- 78 CLASSIFIED ADVERTS**
Pick up a bargain from our latest private classified adverts
- 81 QM STORES**
Check out this month's collection of specialist trade advertisers
- 82 COMING NEXT MONTH**
Find out what's coming up in the next great issue of MMI

36 Classic Vehicle **HAPPY BIRTHDAY CHAMP**



32 World War Two **PANZER 38T TANK**

EXCLUSIVE



14 Modern Equipment **DESERT FOX**



EXCLUSIVE

20 World War One **BRITISH MK IV TANKS**



EXCLUSIVE

CONTENTS

October 2012 Volume 12 Issue 5

Features

WARTIME

- 20 BRITISH MK IV TANKS**
Richard Pullen looks at the British MkIV tank during the First World War
- 32 PANZER 38T**
Profile of a rare World War Two German Panzer 38t tank in private hands
- 44 CONNECTICUT SPECIAL**
We take a closer look at the restoration of a WW2 M4 High Speed Tractor
- 52 PANTHER UPDATE**
MMI catches up with progress on the Wheatcroft Collection Panther tank

MODERN

- 14 DESERT FOX**
Eric Cunat takes a closer look at the German Spahwagen Fennek
- 26 EX-BAYONET STEEL**
Ralph Zwilling reports from the Full Spectrum Training Exercise in Germany
- 36 HAPPY BIRTHDAY CHAMP**
2012 sees the Austin Champ celebrating its 60th birthday!

SHOWS

- 58 VIVE LA FRANCE**
Shaun Connor's reports from Eurosatory 2012, France's premier defence show
- 64 TANKFEST 2012**
The best of the action from this year's show at the Tank Museum

26 Military Exercise
EX BAYONET STEEL



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40-41 for
details



NEWS and REVIEWS **UP FRONT**

WELLAND... DATE CHANGE...

WELLAND POSTPONED

The popular Welland Steam Rally, which includes a well-supported military vehicle section, was sadly postponed from the normal July date due to the poor summer weather, which left the site waterlogged. The new dates for Welland Steam Rally, organized by the Ross-on-Wye Steam Engine Society and held at Woodside Farm, Welland, Worcs, WR13 6LN, will be Friday 21st, Saturday 22nd and Sunday 23rd September 2012. For further details see: www.wellandsteamrally.co.uk



Ellison Electronics Ltd Relocate

After many months of planning and eight-weeks of logistical mayhem, Ellison Electronics Ltd. are pleased to have completed their move to larger premises. Larger premises were desperately needed as inventory levels have rocketed of late as organisations across the UK (& individuals!) have been cashing in on their stockpiles of electronic component spares.

The more parts that we have and the more visible they are (via a revamped website coming online mid-October at: www.ellison-electronics.com), the more able we are to play a small part in the servicing of these classic vehicles and do what we all want - keep them operational longer!

Check out the website for further details or call Neil at Ellison Electronics Ltd on:

Tel: +44 1277 626300

or Fax: +44 1277 62640

www.ellison-electronics.com

MVT and the Royal Logistics Corps Museum



On Saturday 30th June the Military Vehicle Trust's Treasurer Geoff Fletcher presented a cheque for £6000 to the Colonel RLC - Col J S Grinstead MBE on their Corps Day. The 30th was Armed Forces Day and a fitting day for the hand over.

The MVT is heavily involved in raising money for a project for the RLC Museum. The MVT has a long-standing relationship with them. The money will go towards a project to commercially scan approximately 200,000 vehicle record cards into an electronic format. The records cover soft skin vehicles produced between 1949 and 1989. The record cards were presented to the museum by Defence Equipment and Support and these cards are used for research and a source of income for the Museum.

The normal charge is £25 to a vehicle owner relating to their vehicle. The cards contain the information on the vehicle and the unit with which it served plus other important information. Scanning the cards will significantly reduce the amount of effort required in answering questions. Currently the archive is unmanned and some way from the Museum so staff have to search through indexed boxes of files to find the relative card. This would not be necessary once the card system has been electronically scanned and could be viewed by a member of museum staff from their desk. Eventually access could be on the web as is the case with other records. The automation will have great advantages to MVT members as it speeds up the Museums response to requests and also reduces the manpower in that area at time when such costs are growing. This donation represents the MVT's support for the RLC Museum. The project is estimated to cost £12,000. With the MVT donation plus a donation of £2,000 from a corporate sponsor the MVT has raised £8,000. A further £4,000 is still required to meet the target figure and sponsors are being sought.

Phil Palmer - MVT Publicity Officer

US Army Mini Jeepee



If you attended this year's War & Peace Show you may well have come across this miniature Jeep amongst the trade stands. Gill's Mini 'Jeepee' is a child's dream, being a scaled down replica of the famous wartime Jeep and featuring a 110cc air-cooled 4-stroke engine, automatic transmission, electric start, 12-volt electrics, disc brakes, headlights, indicators, horn, speedo, seat belts, wing mirrors, spare wheel and even a spare fuel can! The 'Jeepee' is available in plain US Army Green or camouflage and all for £1499. For further details contact Gill or Allan on Tel: 07583 076341



Cliff's Clear Out - New Date

As mentioned in the item on Universal Jeep Supplies on page 8 of the August 2012 issue of MMI, a new date has been set for 'Cliff's Clear Out' held at Universal Jeep Supplies, Marsh Farm, Station Lane, Milford, Surrey. GU8 5AE. Be sure to pencil in Sunday the 16th September 2012 into your diary and go along to the event where you can either buy or sell all sorts of items. For further details check out the website at: www.universaljeepsupplies.co.uk Or contact the team on: Tel: 01483 860 403 Or via: info@universaljeepsupplies.co.uk

Russian Oddity

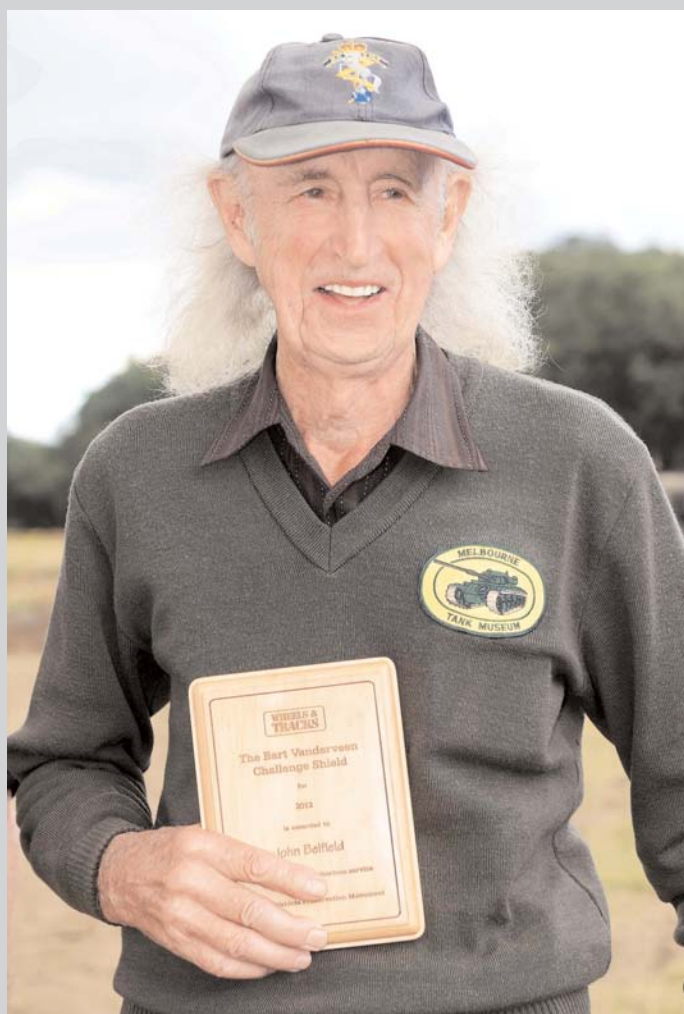


I was sent this photo by a reader who was fascinated by the unusual design, but didn't know what the vehicle was, other than looking to be of Russian origin.

After some trawling of the Internet I drew a blank, but MMI contributor Jim Kinnear and something of an expert on Russian military vehicles came to my rescue with an identification of this Russian Oddity. Jim tells us that it was a prototype developed for the testing of electro-hydraulic transmission systems. It was developed as a single prototype along with the SS-24 rail mounted ICBM system, but the vehicle was used to test the use of rail type transmissions for road vehicles. It was based on the MAZ-547 six-axle chassis and the principles have been resurrected for the current next-generation of such vehicles now under development, however, to this day the vehicle never 'officially' existed!

Our thanks to Keith for sending in the photo and to Jim for the information relating to the mystery vehicle – Ed.

Bart Vanderveen Challenge Shield



The annual War & Peace Show sees the announcement of the latest recipient of the Bart Vanderveen Challenge Shield, awarded annually to individuals, chosen by nominations, who have made significant contributions to the military vehicle preservation movement. The award was inaugurated and sponsored by After the Battle, publishers of Wheels & Tracks magazine, which was founded by Bart Vanderveen and was first awarded posthumously to Bart in 2002 following his tragic death in 2001. The Bart Vanderveen Challenge Shield is sponsored by After the Battle, but is now managed jointly by the Military Vehicle Trust and the Invicta Military Vehicle Preservation Society.

Over the years the award has been given to the likes of Peter Grey, Rex Cadman, Tony Budge, Preston Isaac, Mike Stallwood, David Fletcher, John Marchant and Nigel Hay, and for 2012 the award was presented to John Belfield, founder of the Melbourne Tank Museum, with a Special Lifetime Achievement Award being presented to Barbara Dixon for her work behind the scenes with the War & Peace Show.

John Belfield spent a lifetime collecting military vehicles in Victoria, Australia, eventually founding the Melbourne Tank Museum to show off the fruits of his labour. Early on in his life John was influenced by his mother when she bought him a toy tank and when he was given a ride in a Bren Gun Carrier a couple of years later the path for his career was set! John served with the Australian Army from the 60's to the 80's and then as a reservist, and in his spare time he searched the countryside for abandoned and derelict military vehicles, gathering an impressive collection of vehicles that he painstakingly restored over many years. In 1993 his hobby had grown to the point where, with the support of his



wife Pat, he founded and opened the Melbourne Tank Museum to display some of his collection. At its peak the collection housed over 50 military vehicles and 20 artillery pieces and countless examples of memorabilia. Sadly the museum had to close in 2006, but since then John has been enjoying his retirement by travelling the world in the pursuit of his hobby, including trips to the War & Peace Show in 2011 and 2012, where I had the pleasure of meeting him on several occasions.

For the first time this year, a Special Lifetime Achievement Award was presented to Barbara Dixon for her work with the War & Peace Show. Barbara, who works for Rex Cadman, was tasked with the job of organising the War & Peace Show in 1989 while Rex concentrated on other events and business, but Barbara's unstinting dedication to the show, during which she spent many hours in the office sorting paperwork and fielding phone calls, was key to the success of the show. Barbara has dealt with the processing of every vehicle entry for the past 24-years, and has taken charge of the booking-in centre for the duration of the show each year.

We here at Military Machines International would like to extend our congratulations to both John and Barbara for their well-deserved awards!



Armoured Car Identity



Dear Ian,

A friend in work was going through his grandfather's stuff and found a photo of his grandfather's unit, based in India in the 1920's/1930's and this photo of an old armoured car. I've checked and think it's a Crossley 1923 Indian Pattern armoured car. If my memory

is correct, I've read an article in MMI about Indian Pattern armoured cars, but have looked through all my copies and am unable to find it so any help locating info regarding this would be most gratefully received.

Rob Wilkinson

Well Rob, I've checked back and it would indeed appear to be a 1923 Indian Pattern Crossley armoured car. The article you mention was actually in the December 2007 issue of MMI and was written by Jochen Vollert, who also runs Tankograd Publishing, so it might be worth contacting him via his website to see if he has any more information on them? There is also a similar Indian

Pattern armoured car on display at the Tank Museum, which incorporates many of the features seen on the vehicle in the photograph, including the dome top turret as shown below.

Hope this is of help – Ed.



WW1 Tank Identification

Dear Ian,

I recently purchased three albums of photographs, which originally belonged to Major Isaac Vernon Longley MC, who served through the war in the Railway Operating Department of the Royal Engineers from the local flea market. Some of the images I recognised as the ruins of the Cloth Hall at Ypres, but the enclosed image puzzled me.

Some of these tanks appear to have German insignia so presumably were captured? The caption at the top is what is penciled on the back of the print. I should be pleased if you or any of the readers can throw any light on this. Sadly the collection of images has no other military vehicles.

Kind regards -

Pete Barber

Many thanks for getting in touch Pete. You're quite correct in saying that you think the tanks may be captured British tanks in German service, indeed the Germans used a great many captured British tanks

during WW1, and if you want to read more I would do more than direct you to two superb books by Tankograd Publishing called 'Beute Tanks' Volumes 1 & 2. It was common practice for intact or repairable British tanks to be taken over by the German forces during the war, but sadly I was unable to identify the location of the photo, however, I passed on your details to Richard Pullen, author of several books on WW1 Tanks and contributor to MMI and he has come up with a few more details. This is what Richard had to say.

Dear Ian,

It's a wonderful shot and one I've not seen before. The Germans captured a huge amount of British tanks in various states of repair during the Great War. They actually preferred the British Rhomboids to their own the top-heavy A7V and the repaired, repainted and rearmed British tanks became known as Beute Panzers. The tanks in the photo are all Mk IV machines and were probably some of the unfortunate tanks captured by the Germans after the Battle of Cambrai in late 1917. After their counter



attack, they ended up with almost 90 machines, which they sent back to their workshops at Charleroi in Belgium.

I think the writing says 'One of my station at Marcoing' - the village of Marcoing was right in the thick of the fighting during the Battle of Cambrai with the station itself being one of the British armies main objectives, but I can't tell you much more about it. I can only see one works production number, 4046,

but unfortunately I don't have any records for that particular tank except to say that it certainly wasn't built in Lincoln by William Foster and Co. Ltd, so must be from another manufacturer, probably Metropolitan in Birmingham. Sorry I can't be of more help -

Richard

My thanks to both Pete and Richard for getting in touch – Ed.

PROPOSED CHANGES TO OGEL for Military Vehicles

James Baxter, President of the Invicta Military-Vehicle Preservation Society emailed us to bring to our attention some changes to the OGEL (Open General Export Licence) system currently in use for military vehicles, who has asked us to filter out this information to as wide an audience as possible. Our thanks to James for bringing this to our attention and if you have any further questions you can contact either James or the Business Link website mentioned at the end of this item – Ed.

Dear Mr Young,

The Department for Business, Innovation and Skills (BIS) contacted me a couple of weeks ago about a proposed announcement they wished to make regarding a change in the rules for OGEL for ex-military vehicles. They approached me, in view of my previous involvement with the team (IMPS, MVT, War & Peace Show) that represented the Military Vehicle fraternity in discussions with the BIS at the time of the introduction of OGELs for MVs, just before the 2010 Normandy tours, as they wanted an MV owner's view on the draft announcement.

The change in the rules applies to owners of MVs who only ever take their vehicles to Belgium, France and/or Germany. They are now exempt from the necessity to hold an OGEL. They have subsequently sent me the formal notice announcing the exemption, and asked if I would help in ensuring as wide a circulation of the announcement as possible, hence my contacting you.

The formal announcement is attached. I would be grateful if Military Machines would be good enough to publish it, as it does have a bearing particularly on those who plan to take their vehicles to Normandy in 2014, for example. Having discussed this with the BIS I understand that the position can be summarised as follows:

- If you already have an OGEL, but only ever intend to visit Belgium, France and/or Germany, at any time in the future, then you are asked to de-register from your OGEL.
- If you already have an OGEL, but intend to visit other countries, as well as Belgium, France and/or Germany, in the future, then do nothing, as your OGEL still applies.
- If you don't have an OGEL, and are sure you will not visit any countries other than Belgium, France and Germany, at any time in the future, then you should not apply for an OGEL, i.e. do nothing.
- If you don't have an OGEL, and think you are likely to visit other countries, in addition to Belgium, France and Germany, then you must get an OGEL.

I can suggest three practical examples:

1. You only ever go to Normandy every 5 years for the D-Day commemorations. No OGEL required.

2. You go to Tanks in Town (assuming it is still being run) in Belgium, and then go on to Arnhem, in Holland, for the Market Garden commemorations, then you need an OGEL.

3. You go to Normandy in 2014 for D-Day, then go to Holland in 2015 for Liberation commemorations, you will not need an OGEL for 2014, but you will need one for 2015, so you might as well get one now and you won't have to worry.

For guidance, my contact at the BIS was unable to advise the reason for this amendment to the rules. Again, your assistance in publishing this announcement would be much appreciated. Contact can be made direct with the BIS, as per the advice on the announcement.

Yours sincerely - James Baxter – President, Invicta Military-Vehicle Preservation Society -
www.imps.org.uk

NOTICE TO EXPORTERS – 2012/36

Introduction of exemption from export licensing requirements for historic military vehicles to certain named destinations

TOPIC: Legislation amendments

AUDIENCE: Historic Military Vehicle owners

Background

The Export Control Organisation (ECO), part of the Department for Business, Innovation and Skills has amended the Export Control Order 2008.

The amendments appear in the Export Control (Amendment)(No.2) Order 2012 (S.I. 2012 No. 1910) which is published on the Legislation.gov.uk website and on the export control pages of the Businesslink website. The amending Order comes into force on 10 August 2012.

The amending Order makes a number of changes to the UK's export control legislation. In particular it introduces a licence exception allowing the temporary export of historic military vehicles where certain conditions are satisfied.

Details of the exemption

The exact wording of the exemption is detailed in a new article 14a inserted into the Export Control Order 2008 by the amending Order. The article specifies:

“14(A)

(1) The prohibition on the export of military goods in article 3 does not apply to the export of a vehicle or component falling within entry ML6 in Schedule 2 provided that the following conditions are met.

(2) The conditions are that –

(a) the vehicle or component was manufactured more than 50 years before the date of exportation.

(b) the exportation is to a destination in Belgium, France or Germany.

(c) the exportation is for the purpose of a military re-enactment, commemorative event or recreational activity, and -

(d) the vehicle or component is to be returned to the United Kingdom within 3 months of the date of exportation”.

What does this change mean?

Historic military vehicles are listed as controlled items on the UK Strategic Export Control Lists. In particular they are listed on the UK Military List (which forms one part of this legislative document) under the control entry heading or 'rating' – ML6.

As a result of the introduction of this exemption, individuals and owners of historic military vehicles will not need to apply for an export licence (whether for an Open General Export Licence or any other type of licence) if temporarily taking a relevant vehicle to either Belgium, France or Germany (provided you can meet the stated conditions).

You should, however, be aware that export licences issued by the ECO are still required if you take historic military vehicles to events, on tours or on holidays to other destinations both within the EU (such as Holland, Poland or Spain) or outside the EU (such as Switzerland, Norway, Turkey, Eastern European countries and to other continents).

What should I do next?

You should read the following scenarios carefully and take appropriate action if necessary:

If you are currently registered as a holder of the Open General Export Licence (Historic Military Vehicles and Artillery Pieces), and the exemption does apply, that is, you only ever intend to visit Belgium, France, and Germany, and no other country, at any time in the future, then you are advised to de-register from holding the licence.

To do this you need to log in to SPIRE, the ECO's export licensing database –

<https://www.spire.bis.gov.uk>

You then need to select the option to 'search licence applications' and then select the licence you want to de-register from, followed by the option to "surrender licence". Further guidance on how to de-register from holding an OGEL is published on the SPIRE website at:

<https://www.spire.bis.gov.uk/docs/RegisterOGELs.pdf>

If you are currently registered as a holder of the Open General Export Licence (Historic Military Vehicles and Artillery Pieces), and the exemption does apply, but you expect, at any time in the future, to visit other countries in addition to, Belgium,

France, and Germany, then you need take no action, and your existing OGEL remains valid.

If you are currently not registered as a holder of the Open General Export Licence (Historic Military Vehicles and Artillery Pieces), and the exemption does apply, that is, you only ever intend to visit Belgium, France, and Germany, and no other country, in the future, then you are not required to apply for an Open General Export Licence (Historic Military Vehicles and Artillery Pieces), and may travel to these countries without an Export Licence, but you still require any other vehicle and licensing requirements (eg DVLA requirements).

If you are currently not registered as a holder of the Open General Export Licence (Historic Military Vehicles and Artillery Pieces), and the exemption does apply, but you wish to visit other countries in addition to, Belgium, France, and Germany, in the future, then you will need to apply for an Open General Export Licence (Historic Military Vehicles and Artillery Pieces) from the ECO in addition to any other vehicle and licensing requirements (eg DVLA requirements).

If you are currently not registered as a holder of the Open General Export Licence (Historic Military Vehicles and Artillery Pieces), and the exemption

does not apply, you will need to apply for an Open General Export Licence (Historic Military Vehicles and Artillery Pieces) from the ECO in addition to any other vehicle and licensing requirements (eg DVLA requirements).

If you still require a licence and need more information about strategic export controls, please contact:

Export Control Organisation
Department for Business, Innovation & Skills
1 Victoria Street
London SW1H 0ET

Tel: 020 7215 4594 Fax 020 7215 2635
Email: eco.help@bis.gsi.gov.uk
Website: <http://www.businesslink.gov.uk/exportcontrol> and
<http://www.bis.gov.uk/exportcontrol>
SPIRE: <https://www.spire.bis.gov.uk>

This Notice is for information purposes only and has no force in law.

Please note that where legal advice is required UK end users and consignees should make their own arrangements.

If the Notice is relevant to your exports, you are recommended to take appropriate action as necessary. You are also advised to keep a copy of this notice for your compliance records.

8 August 2012 - Export Control Organisation
NTE2012/36

1. The UK Strategic Export Controls are important documents, which form part of the UK's export control legislation for military and dual-use goods. You need to check these lists to determine whether your export is controlled for export purposes (ie. by determining the control entry heading or 'rating' of the goods on the list). The Control Lists are at: <http://www.businesslink.gov.uk/exportcontrol/controllists>

2. The OGEL (Historic Military Vehicles and Artillery Pieces) permits exports (provided you can meet all stated terms and conditions) to the following destinations – Austria, Belgium, Bulgaria, Channel Islands, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Romania, Slovakia, Slovenia, Spain and Sweden.

Irish Rolls Royce

Shortly after we published our article on the Irish Rolls-Royce armoured car in the August 2012 issue of MMI, the custodians of the Rolls decided to repaint it! Colin Stone, the author of that article has sent in a couple of photos showing the new scheme that the Sliabh na mBan has been painted with and points out the 'ARR 2' on the turret and the "new" registration number. Our thanks to Colin for sending in the photos – Ed.



MUSEUM DEVELOPMENT PLANS

Boosted by £2.5 ml Lottery Result



The Tank Museum has learned that its £2.5m second round application to the Heritage Lottery Fund (HLF) for its Access All Areas project has been successful.

The multi-faceted project which will cost £5m to complete, includes a new 40,000 sq ft Vehicle Conservation Centre (VCC) and two major exhibitions which will all be delivered in stages between 2013 and 2015.

Tank Museum Director Richard Smith said; "This is a pivotal moment in the history of The Tank Museum. The support of the Heritage Lottery Fund will ensure that we can continue to thrive, so

we are naturally delighted and extremely grateful."

The VCC will be publicly accessible and capable of holding 120 vehicles. For the first time ever, The Tank Museum will have the space to ensure that every vehicle in its collection can be stored undercover in conditions suitable for their long-term conservation.

"This means that the museum can continue to collect historically significant armoured fighting vehicles and retain its status as the best collection of its kind in the world," said Richard. "We will also have the facilities to enable on-going volunteer-led conservation

projects and allow us to re-launch our award-winning engineering training programme for groups of young offenders."

Work on the VCC is expected to commence in September and should be complete before July 2013 at which point the second phase of the Access All Areas project will begin.

"With more space we will be able to put our plans for a rolling programme of new exhibitions into action," Richard explained.

To mark the centenary of the First World War in 2014, War Horse to Horse Power will be the first of two major new exhibitions at the Museum. With the Museum's Mark IV replica as a centrepiece, the role of the horse and cavalryman will be contrasted with the emergent tank and its crew as the mechanisation of the British Army is examined within the context of the conflict that saw the

birth of the tank. Following this, the Museum will broaden its narrative even further with an exhibition titled Making Tanks, which is set for completion in 2015. Making Tanks will tell the story of people who made tanks and the challenges they overcame in an industry where good design and production can be a matter of life and death.

"Both these exhibitions seek to improve the way The Tank Museum tells this broad and complex story, and will add a great deal to the visitors experience and comprehension of our subject matter," Richard added.

The grant follows the success of a major HLF funded redevelopment of The Tank Museum, which was completed in 2009.

Richard Bellamy, Head of the Heritage Lottery Fund South West, said "We are delighted to be supporting this fantastic project



which will totally transform the way visitors interact with the Tank Museum's impressive collection.

The VCC will provide vastly improved space for some of the museum's most 'at risk' vehicles and allow the public and volunteers to witness the conservation progress in action. This is a great opportunity for everyone to get involved and learn about these complex machines and their role in history over the years."

The Tank Museum must now raise a further £2.5m to match fund the HLF contribution to the project.



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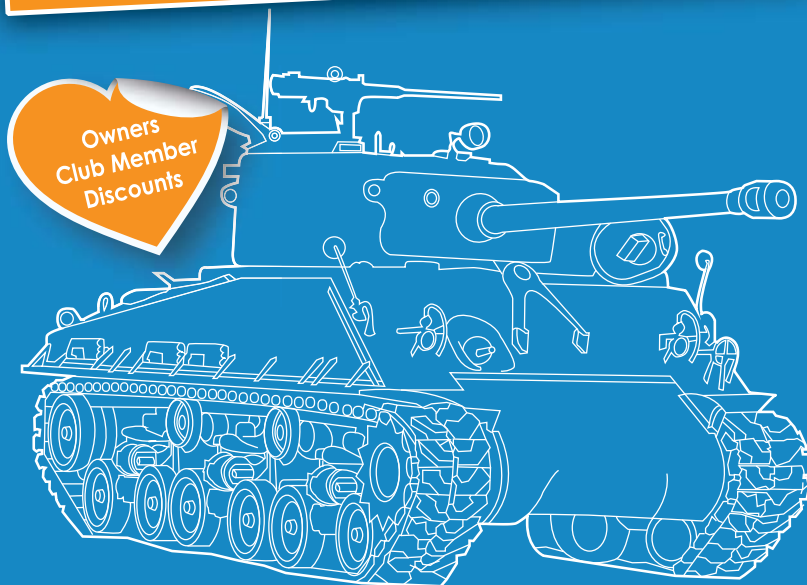
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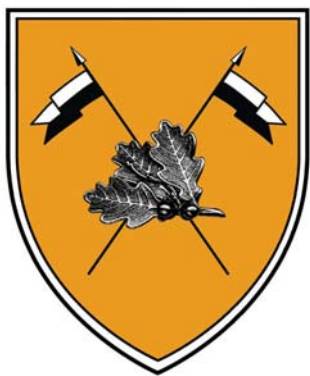
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Desert Fox



Eric Cunat takes a closer look at the German Spähwagen Fennek



The Fennek light armoured reconnaissance vehicle (named after the Fennek, a species of small desert fox), is a four wheeled armoured reconnaissance vehicle produced by the German company Krauss-Maffei Wegmann (KMV) and Dutch Defence Vehicle Systems (DDVS). It was developed for both the German Bundeswehr and Royal Netherlands Army to replace their current vehicles. Under the designations for German Army it is produced either as the Spähwagen – reconnaissance vehicle – or Spähpanzerwagen – armoured reconnaissance vehicle. The prototype vehicle completed field trials in April

2000 and in December 2001, a contract was signed for the combined procurement of 632 Fennek vehicles. 410 were ordered by the Royal Netherlands Army (202 reconnaissance, 130 medium-range anti-tank (MRAT) and 78 general purpose versions). 222 were ordered by the German Bundeswehr (178 reconnaissance, 24 combat engineer and 20 joint fire support teams (JFST) – artillery observer version for the German Army). However, deliveries of Fenneks continued until 2011 due to additional orders for the German Army from 2015 on, with the Bundeswehr planning an overall purchase of approximately 300 Fenneks.

On the 11th September 2009, Feyzabad, Afghanistan, German soldiers of the Provincial Reconstruction Team welcome back members of it's Operational Mentoring and Liaison Team and 106 Protection Company soldiers after completing operation ARAGON in Archi District, where they mentored the Afghan National Army. (Photo courtesy ISAF/Petty Officer 1st Class Ryan Tabios)



The first vehicles were delivered to the Netherlands in July 2003 and to Germany in December of the same year. The 100th vehicle for the Dutch Army was delivered in June 2006, with deliveries continuing to 2008. The vehicles will replace M113 vehicles in the Dutch Army and Luchs ARVs in the German Army.

SPECIFICATIONS

The Fennek has a crew of three and is powered by a 179kW Deutz diesel engine developing 240hp, with a range of 860km and a top speed of 115km/h. The vehicle has four wheels, an automatic transmission and transfer unit providing selectable two or four-wheel drive and a limited slip differential. The H-layout of the driveline allows a very low height, and the vehicle is able to negotiate 60% forward and 35% side slopes and has a



turning radius of 6.3m and a fording depth of 1m. A central tyre inflation system enables the driver to adjust tyre pressure on the move to suit terrain conditions.

The Fennek is also fitted with a winch that can pull 5-tonnes, however, the vehicle is not amphibious. The forward position of the driver's seat gives him a field of view greater than 180° through the windscreen and side windows, while a rear view camera mounted at the back of the vehicle with a monitor integrated into the driver's instrument panel allows rapid evasive

manoeuvres. The vehicle meets the NATO Standardization levels, and is protected all-round against 7.62mm rounds and additional armour can be added if the mission requires.

The air conditioning system provides protection for the crew against nuclear, biological and chemical threats and the crew compartment is protected against anti-personnel mines explosions. The engine compartment is also fitted with an automatic fire extinguishing system, plus the infrared signature is minimised through special exhaust ducting.

Top left: here a Fennek takes part in a ceremony for the return of soldiers of Jägerbataillon 291 from Afghanistan.

Top right: a Fennek very well camouflaged is prepared to go to the shooting range.

Above left: here we see the low silhouette and observation system on the mast which is at maximum elevation.

Above right: a Fennek returns from the shooting range. On the roof you can see the Heckler & Koch GMG 40mm AGL.



Right: a Fennek photographed in Illkirch-Graffenstaden, clearly showing the low silhouette of the vehicle and the observation system on the mast which is shown here at maximum extension.



Below right: the Beobachtungs-und Aufklärungsausstattung (BAA) observation system with sensors include a thermal imaging camera which can see up to 4km, a daylight camera which can see up to 8km, a laser rangefinder and a laser target designator.

Below left: the rear of the vehicle with the engine cooling grille and various equipment.

Bottom right: a Fennek showing the low silhouette and the observation system mast. You can also see the Heckler & Koch GMG 40mm automatic grenade launcher (AGL).



OBSERVATION SYSTEM

The primary mission equipment is a Rheinmetall Defence Electronics observation package mounted on an extendable mast. Sensors include a thermal imaging camera, which can see up to 4km, a daylight camera that can see up to 8km, a laser rangefinder and a laser target designator. The Fennek has also ground vibrations sensors capable of detecting movement up to 5km away.

Combined with the vehicle's GPS navigation device and inertial navigation system the operator can accurately mark targets or points of

interest and transmit that data to the digital battlefield network. The sensor head of the observation package can be controlled in azimuth and elevation and raised to a height of 3.29m above ground i.e. 1.5m above the vehicle roof. For observation from a concealed position, the sensor head can be disconnected and mounted on a tripod at an exposed location for remote operation up to 40m from the vehicle. The sensor head is operated with the control unit in the vehicle or via the remote control unit from the concealed position. Each Fennek patrol of the German Army is also equipped with





Aladin miniature UAV for the patrol leader, which can see the other side of the hill up to 5km.

The Fennek has also a hybrid navigation system consisting of an inertial navigation system and a global positioning system navigation device that allows accurate determination of the vehicle position and the direction of the North. Determination of target coordinates is achieved using the system's laser rangefinder and azimuth and elevation measuring equipment, together with the navigation system. This armoured reconnaissance vehicle is integrated into the digital tactical command and control system of the German Bundeswehr. Collected intelligence is displayed on digital maps, while the tactical command and control system (TCCS) enables the reconnaissance vehicles to be integrated into the reconnaissance data information, command and control system. This is accomplished by means of digitized maps showing the position of the host vehicle, the target and the current battlefield

Above: the commander's position with instrument panel, note the G36 carbine on the left, the driver's post is behind the G36.

Top right: here you can see the 179kW Deutz diesel engine developing 240hp, with a range of 860km and giving it a top speed of 115 km/h of the Fennek.

Right: the forward position of the driver's seat gives him a field of view greater than 180° through the large armoured glass windscreen and side windows.

Bottom: the right front of the Fennek, the forward position of the driver's seat gives him a field of view greater than 180° through the windscreen and side windows.

environment. This data is updated through HF and VHF radio data transmissions between the vehicle and the command post.

EADS Radio Communications Systems of Ulm in Germany supplies the HRM 7000/7400 short-wave radio system. In October 2006, the first production Fennek with a new Führungsinformations- und



TECHNICAL DATA

Combat Weight:	10-tonnes
Length:	5.71m
Width:	2.49m
Height:	1.79m
Engine:	179kW Deutz diesel engine developing 240hp
Range:	850km
Cross-Country Range:	400km
Maximum Road Speed:	115km/h
Maximum Reverse Speed:	23km/h
Maximum Forward Slope:	60%
Maximum Side Slope:	35%
Fording:	1m
Winch:	5-tonnes

Communications:

VHF Radio (GE) SEM 80/90 HF Radio (GE) HRM 7000/7400
VHF Radio (NL) TRC 9500

Armament:

Weapon Station gun mount with periscope sight for Heckler & Koch GMG 40mm automatic grenade launcher, or 7.62 or .50-calibre machine gun
Basic load automatic grenade launcher: 32 rounds
Basic load 7.62 machine gun: 250 rounds

Right: front view of the Fennek at Stetten am kaltem Markt. On the roof you can see the Heckler & Koch GMG 40mm automatic grenade launcher on the left and on the right the BAA.



Below: here we see the Heckler & Koch GMG 40mm automatic grenade launcher of the Fennek firing, note the red flag that is fitted to the vehicle when shooting on the range.



Waffeneinsatzsysteme (command and fire control system) was delivered to the German Army. FuWES links the observation sensors to the vehicle and to other platforms enabling faster and more reliable transmissions. Fennek vehicles already delivered to Germany will be retrofitted with the new system.

ARMAMENT

German vehicles are armed with a Heckler & Koch GMG 40mm automatic grenade launcher and Rheinmetall MG3 7.62mm machine gun. The Dutch Fenneks have Rheinmetall MG3 7.62mm machine gun has primary weapon. The Dutch reconnaissance vehicles are armed with a 12.7mm machine gun. Weapons are mounted in remotely controlled weapons stations.

The Dutch medium-range antitank (MRAT) versions are fitted with the Rafael Spike MR (Gill) anti-tank missile. The gun mount is electrically controlled. The sighting system consists of a periscope derived from the PERI Z 17, which is currently in service. As an option the periscope can be upgraded with an image intensifier or other plug-in modules. In September 2005, the Royal Netherlands Army placed an order with Aselsan of Turkey for 18

launcher systems for the Raytheon Stinger surface-to-air missile system, to be fitted to Fennek, the vehicles will replace the Gepard self-propelled air defence guns. The launcher is the Stinger Weapon Platform (SWP), with four Stinger missiles intended for mid-range air defence. The launcher can be controlled from onboard the vehicle, or else remotely as part of a distributed air defense system and is based on the Aselsan Pedestal Mounted Air Defence System (PMADS) used by the Turkish armed forces. PMADS is a remotely controlled mount with a sensor package including infrared camera, TV camera and laser rangefinder. Fennek SWP was delivered in May 2007, with final deliveries in 2008.

IN SERVICE

The Fennek armoured reconnaissance vehicle replace the Luchs eight-wheel drive and 20mm gun. The Cold War doctrine was reconnaissance in force with Luchs light armoured vehicle and Leopard 2 main battle tanks, but current German doctrine is based on soft intelligence with electronic systems and the mission of reconnaissance units are to see without being seen and to detect further.

Both Germany and the Netherlands have deployed Fennek reconnaissance

UNMANNED ALADIN

Here we see the small unmanned aerial vehicle Aladin, there are three Aladin for each patrol, two fitted with a day camera and one with a night camera.



vehicles to Afghanistan in support of International Security Assistance Force (ISAF). In October 2006, Fennek vehicles of the Royal Netherlands Army were deployed to southern Afghanistan in support of the ISAF. On 3 November 2007 a Dutch Fennek was hit by an improvised explosive device, killing one and wounding two other occupants. The vehicle and its crew were taking part in an offensive operation targeting the Taliban in the province of Uruzgan, Afghanistan.

In another incident a German Fennek was hit by a rocket-propelled grenade. Its hollow charge jet penetrated the vehicle through the right front wheel rim, passed through the vehicle and blew the left door off the hinge. Thanks to the spall liner the crew sustained only negligible injuries.



Fennek on old Russian Airfield in Dharkat. Note the sand and green camouflage pattern. (Photo ISAF/©Bundeswehr/PizKunduz)



A reconnaissance patrol (Spähtrupp) with Fenneks seen here in action in Afghanistan. (Photo courtesy ISAF/©Bundeswehr/PizHeer)



Jägerbataillon 291

The Jägerbataillon 291 (Rifles battalion) is a light infantry and reconnaissance battalion. It was created in December 2010. It is the only Bundeswehr combat unit homed outside Germany, in Illkirch-Graffenstaden, suburb of Strasbourg, France, as part of the Franco-German Brigade. It is also the only German combined arms battalion, it have two light infantry companies with Transportpanzer 1 Fuchs (known as Fox in UK), who will be equipped with the new German wheeled armoured personnel carrier Boxer soon and one reconnaissance company on Fennek who takes the traditions of the Dragoner, the light cavalry units of German Army before World War II. The Jägerbataillon 291 is specialized in woodland warfare, urban warfare and middle mountain warfare. The 4th reconnaissance company (Aufklärungskompanie) on Fennek provide forward reconnaissance for the Franco-German Brigade. Soldiers of the battalion have been engaged in Afghanistan where German Bundeswehr lead the Northern Command and has the third contingent in number of soldiers on the ground after United States and United Kingdom.

Mk IV Tanks

Richard Pullen describes the First World War Mk IV tanks used by the British Army

On the 15th September 1916 a new form of warfare was unleashed on the world - tank warfare. Up until this point, various countries had experimented with armoured vehicles, mobile weapon systems, trench crossers and tracked vehicles, but Great Britain was the first country to put all the components together in a potentially battle worthy package. The first fighting tank was designated as the Mk I and everyone concerned had high hopes for the 'war winning wonder weapon'. In reality, the Mk I was little more than a prototype, rushed into service before it

was truly ready and it had several serious design flaws that resulted in a less than perfect first showing at the Battle of Flers in 1916.

There were many problems with the new machine, such as the placement of the fuel tanks, the inclusion of the steering gear at the back of the tank, the long 6-pounder cannons, the shape of the sponsons, the escape hatches and doors to name but a few. Once these and many other issues were addressed, the Allies may actually have had a war winner on their hands. The often overlooked Mk II and III machines were valuable test beds for the



Above: a brand new Mk IV Male tank paid for by the Federal Council of the Malay States in 1917.

Right: another Mk IV Male tank and Canadian Infantry pose for a wonderful and iconic photograph of the First World War in France 1917.





engineering and tactical development of the early tanks, but it is the Mk IV that should really deserve the title of the first true fighting tank. The machines that came before the Mk IV can be looked on as little more than prototypes, first attempts and design concepts. The Mk IV was far from perfect, but it encompassed all of the refinements created in response to the disappointments and ill-conceived battles at Flers, Thiepval, Bullecourt and Arras.

PRODUCTION

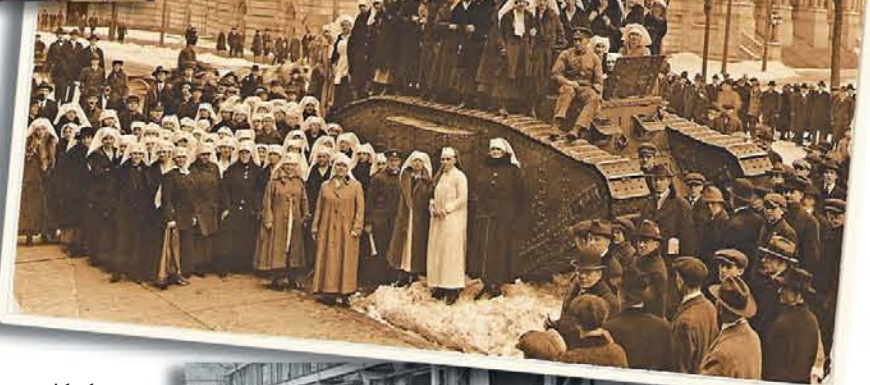
The Mk IV started to come off the production lines in early 1917 and was soon being delivered to the Tank Corps training sections at Bovington Camp in Dorset. Like the Mk II and III tanks before it, the Mk IV was tailless.

The cumbersome

steering gear had proved to be a liability in battle on the Mk I machines and there would be no going back. Early fears that steering using the tank's gearing and clutches would destroy the transmission had proved groundless, so the finished Mk IV was sent off without the steering gear.

One of the main problems with the early machines had been the location of the fuel tanks. The fuel was held in large tanks at the front of each track frame and was then gravity fed to the carburettor. The main problem with this was that the upper front of the track frames is exactly where the Germans would naturally be aiming their guns and by 1917 they knew exactly what was hidden behind the armour plate.

Luckily, another of the changes included on the Mk IV was a fuel pump, so the petrol tank was moved to a more sensible spot in an armoured box right at the back of the hull. The simple inclusion of a fuel pump instantly removed one of the Mk I tanks most dangerous characteristics. Unfortunately, the pumps seem to have been temperamental and there are many stories of them breaking down mid-battle. This would often mean that crews had to hand pump the fuel or even spoon feed the carburettor, but it was still much better than carrying the petrol right in the enemies line of fire.



Despite the change of location for the petrol tank, if things went wrong, the Mk IV was still a bomb on tracks, so the escape hatches and doors were redesigned. A better roof mounted hatch had been experimented with on the Mk II and proved to be such an improvement that it was taken for the new Mk IV. The doors on the back of the male tanks sponsons were improved and remounted so that they swung open outwards instead of inwards. In the event of a hasty escape, this small change gave a crew some protection whilst they eyed up the situation outside and also stopped enemy fire from coming straight into the tank whilst you had the door open.

Top left: one of many tanks captured by the Germans after their counter attack at Cambrai.

Top right: the Female Mk IV Britania was sent to America to drum up support for the war.

Top centre: presentation tanks were another strange part of the tanks' work on the Home Front.

Above centre: Mk IV tanks taking shape at William Foster and Co. Ltd. in Lincoln sometime in mid 1917.

Above: Queen Mary inspects a Mk IV when the King and Queen undertook a Royal inspection of the Tank Corps.



Above: the identity and location of this Mk IV are unknown. Note the amount of petrol tins, track extensions and general debris carried on top.



Left: a factory taken side view of the Malay States Mk IV. Note the replica Lewis guns, the real thing would not be held by the factory.

Below: a view showing Mk IV tanks lined up in a Tankdrome in France.

The female tanks also received some attention and their entire sponson was completely redesigned, so that the whole bottom half became a large and very useful escape hatch. These improvements didn't stop crews being burned to death inside their crippled tanks, but it did give them half a fighting chance of escape. The redesign of the sponsons also improved tank movements to and from the battlefield. Until now, a tank and sponsons was far too wide to travel on a standard railway, so the sponsons would need to be removed and travel separately. This was a heavy, difficult and time consuming job, so on the MK IV, the sponsons could be hinged or pushed into the tank instead of being removed.

MOTIVE POWER

One thing that really needed attention was the sleeve-valve Daimler 'Silent Knight' 105hp petrol engine. It was a terrific unit for its intended role in life, slow steady work on even ground, but it was no good for use on the uneven, shell torn ground of the Western Front. The oil system on the Daimler engine was of the old-fashioned oil bath type, where the big ends were bathed in oil held in the sump pan. This is fine on the flat, but if a tank is at a 45 degree angle trying to get out of a shell hole the oil would slosh up to the back end leaving the front end operating dry and getting hotter and hotter until the inevitable happened.





Left: the experimental Mk IV shown here was known as the 'Tadpole' and was made for crossing very wide trenches, but never saw action.

Below: in the centre of Cambrai, this unfortunate Mk IV finds itself captured intact by the Germans and displayed to the crowds.

Below centre right: over 80 tanks were captured by the Germans after Cambrai and shipped to their workshops in Belgium for repair.

Unfortunately, the Silent Knight was the biggest and best water-cooled commercial engine available for tank production and until Ricardo came along with his excellent and specially created 150hp engine in 1918, nothing could be done about the unsuitable Daimler unit. The designers may not have been able to change the Daimler engine, but they could give some attention to the exhaust system. The early tanks had a 'straight through' system that would usually belch clouds of smoke up into the air and also into the tank. The two main results of this were that the Germans could see you coming from miles away, but the crew of the tank couldn't see a great deal of anything and wouldn't be able to breathe either. There is an often quoted, and sometimes disputed, fact that the Tank Corps losses were 40% and more of these men were killed by carbon monoxide leaking from their

own tanks exhaust pipes than were actually killed by enemy fire. Whether this is true or not, the new Mk IV was given a proper exhaust system including a silencer and a long tail pipe that took the smoky exhaust gasses away from the crew compartment, out of the enemies line of sight and dispersed them at the back of the tank.

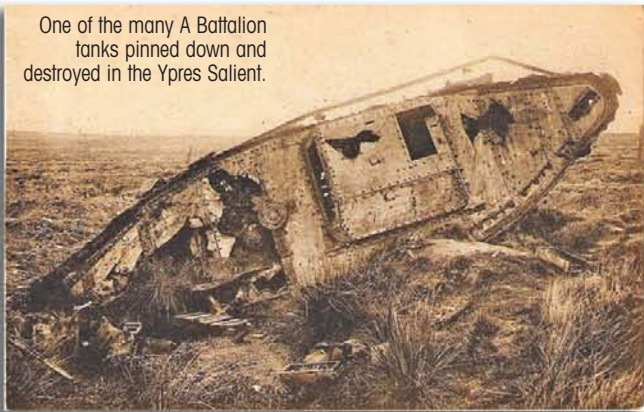
Another problem found with the Mk I tanks was that their Vickers machine guns were deployed through small armoured flaps in the hull and sponsons. This system left small gaps around the gun mounts that could easily be penetrated by a good sniper of a burst of prolonged, well-aimed machine gun fire. The Mk IV was improved by the inclusion of ball mountings, which swivelled to give a terrific field of fire and also cut down on the amount of gaps that could collect a stray bullet. The only



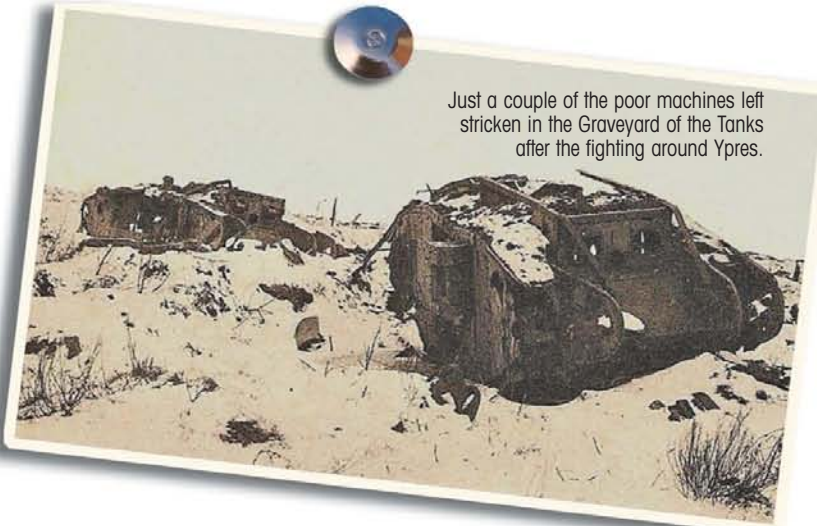
Below right: the Prime Minister of Newfoundland inspects Tank Corps men training to strip the shortened 6 Pounder cannon as used for the Mk IV onwards.



One of the many A Battalion tanks pinned down and destroyed in the Ypres Salient.



Just a couple of the poor machines left stricken in the Graveyard of the Tanks after the fighting around Ypres.



Above: the road into Poelkapelle was littered with scrap tanks after the vicious fighting in mid 1917.



downside to this was that, whereas the old mountings had taken the Vickers or Hotchkiss machine guns, the new ball mountings were made for the American designed Lewis Gun. This light, well-engineered, air-cooled weapon was excellent when mounted on aircraft or for use at long distances by machine gun parties, but in a tank, things were a little different. The guns soon ran very hot and would jam up on their operators and the barrel, delicate cooling fins and jacket were easily destroyed by enemy fire at close quarters. The Tank Corps obviously wanted their reliable old water-cooled Vickers guns back, but the Lewis was here to stay and they just had to make the best of a bad job.

At last, the Tank Corps now had the makings of a good tank and all they needed now was some firm level ground on which to prove its worth, but the Tank corps would not get the chance they needed as their first engagement with the new tank was in the mud strewn hell on earth of the Ypres Salient. In places, the ground around Ypres wouldn't have supported the weight of a man, let alone a 28-ton tank and at the end of the battle there was a new landmark on the maps of the area around Hooze, the Graveyard of the Tanks.

A Great War heavy tank had a realistic off road speed of just 1 or 2mph, so the German guns had a field day. The tanks that got stuck in the mud were an even easier target and Ypres was another gift to those in Whitehall who saw the tanks as little more than an expensive and indulgent folly. The men of the Tank Corps still believed in their tanks and eventually the Mk IV would get the chance it deserved at Cambrai in November 1917. The flat, level, unbroken ground was exactly what they needed and for the first time, the British Army measured their advances in miles instead of yards.

Despite the advance of the tanks at Cambrai, the infantry and Cavalry didn't exploit the situation and the tanks were forced to withdraw, giving the Germans a chance to counter attack, leaving the battle as a virtual draw. Whatever the results of the battle or the politics of the tactical decisions, for the first time, the tanks had shown what they could do and were here to stay. Church bells were rung in England to mark the 'Triumph of the Tanks' and to this day, no matter where they are deployed, the men of the Royal Tank Regiment still drink a toast to their brave, pioneering brethren of almost 100 years ago.

Above left: the 'wonder weapon' caused quite a stir wherever it went as can be seen by this wonderful image. **Below:** these tanks are the rag tag force commanded by Major Nut during the Third Battle of Gaza, in the foreground is female Mk IV, Lady Wingate.





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Exercise

BAYONET STEEL



Above: Valuk 6x6 Command and Control Vehicle of the Slovenian 20th Motorized Bn.



Right: Valuk 6x6 APC with a cupola mounted 40mm H&K Automatic Grenade Launcher.

Ralph Zwilling brings us a report from the 'Sky Soldiers' Full Spectrum Training Exercise



During the FSTE Bayonet Steel the 173rd Airborne Brigade Combat Team were supported by the Slovenian 20th Motorized Battalion and their 6x6 Valuk Armoured Personnel Carrier Vehicles armed with cal.50 M2 HB machine guns.

Since the Global War on Terrorism started with the 11th September 2001 attacks on the World Trade Center in New York, the training rotations at the Joint Multinational Training Centre in Germany have increasingly changed from high intensity conflict to counter-insurgency rotations. In fact, the last force-on-force exercise was conducted six years ago by the 1st Squadron, 1st Cavalry Regiment in May 2006. Therefore, the 173rd Airborne Brigade Combat Team's 'Sky Soldiers' Full Spectrum Training Exercise (FSTE) Bayonet Steel was a significant training milestone for the United States Army Europe as it simultaneously incorporated the complexities of 21st



Top right: artillery Support during the exercise was provided by the 4th Battalion, 319th Airborne Field Artillery Regiment with their 105mm M119A1 Lightweight Howitzer towed by M1097 HMMWVs.



Left: the 173rd Brigade Support Battalion based in Germany, recently received the new M978A4 HEMTT Fuel Trucks with a gross vehicle weight rating of 32,885 kg with add-on LTAS B-kit.

Century threats such as adaptive hybrid elements, terrorists, criminals, and irregular and conventional forces into a single training event. Military Machines International was exclusively invited to observe the exercise and report our first-hand impressions of the new style of exercise conducted by the U.S. Armed Forces and their coalition partners.

The complex exercise took place from the 3rd to the 24th October 2011 at the German training areas at Hohenfels, Grafenwöhr and Amberg. It combined a conventional opposing force equipped with tanks, helicopters and unmanned aerial systems with conventional and unconventional threats and criminal elements. Planning for Operation Bayonet Steel required more than six months for staffs to regained proficiency in skills such as; airborne operations, serving as the opposing force and working with multinational forces in expanded roles.

The exercise used a wrap-around training environment, which combined the physical training area with computer-aided synthetic expansion of the battlefield to enhance exercise play.

Unique among the Army's Combined Training Centres, the Europe based Joint Multinational Training Center was able to conduct this FSTE exercise with participants from eleven partner nations along with U.S. Army forces including the 173rd Airborne Brigade Combat Team and the 12th Combat Aviation Brigade.



Below: the 1st Squadron, 91st Cavalry Regiment of the 173rd ABCT based in Schweinfurt, Germany, recently received a number of 4x4 M1200 Armoured Knight Fire Support Vehicles.



Right: the M1200 Armoured Knight is a precision targeting system consisting of a laser designator, laser rangefinder, day & night electro-optic sensor, digital command and control system, blended inertial/global positioning system navigation and targeting, and a self-defense weapon. Its mission is to provide precision far-target location and laser target designation for both artillery and air-delivered general purpose and precision guided munitions.



HUMMER VARIANTS



The Full Spectrum Training Exercise 'Bayonet Steel' saw a great deal of involvement of various American and Polish HMMWV variants, such as the M996A1 TOW-Carrier Vehicle (above left), M996 Ambulance Vehicle (below right) or the uparmoured M1025 (above right). The Polish 6th Airborne Brigade also used M1026A1 HMMWVs with supplemental armour doors and gunners protection kit (below left).



After the end of the Cold War, many NATO armies significantly reduced their troop strengths and number of weapon systems. After numerous reorganizations, V Corps is currently headquartered in Wiesbaden, Germany, and consists of the 12th Combat Aviation Brigade in Illesheim, Germany, 2nd Cavalry Regiment in Vilseck, Germany, 170th Infantry Brigade Combat Team in Baumholder, Germany, 172nd Infantry Brigade Combat Team in Grafenwöhr, Germany, and the 173rd Airborne Brigade Combat Team (ABCT) in Vicenza, Italy.

The 173rd ABCT is the only independent airborne brigade of the U.S. Army stationed outside the Continental United States (CONUS).

To perform its mission as USAREUR's quick response force, it is currently based in three garrisons in Germany and Italy and consists of:

Headquarters and Headquarters Company, 173rd ABCT – Vicenza
1st Battalion (Airborne), 503rd Infantry Regiment – Vicenza
2nd Battalion (Airborne), 503rd Infantry Regiment – Vicenza
1st Squadron, 91st Cavalry Regiment – Schweinfurt
4th Battalion, 319th Airborne Field Artillery Regiment – Bamberg
173rd Brigade Support Battalion – Bamberg
173rd Brigade Special Troops Battalion – Bamberg



Left: the 6x6 Valuk Armoured Personnel Carrier has a crew of 3 and space for additional six soldiers. This vehicle belonging to the Slovenian 20th Motorized Battalion is armed with the very reliable Heckler & Koch 40mm Automatic Grenade Launcher.

Below right: the Valuk is an improved, licensed version of the Pandur APC, built under license from the Austrian company, Steyr Daimler Puch Spezialfahrzeug AG & Co. KG, by Sistemska Tehnika of Slovenia for the Slovenian Army. The Ambulance vehicle has a crew of three consisting of the commander, driver and medical attendant.

Bottom right: the Valuk is powered by a 260hp Steyr WD 612.95 6-cylinder turbo diesel engine. The hull is constructed of welded steel armour providing all-round protection against penetration from 7.62 mm Armour Piercing projectiles.

JOINT EXERCISE

The FSTE brought together more than 7,500 U.S., Slovenian, Bulgarian, Slovakian and Polish Army Soldiers. The Soldiers all focused on a mix of offense, defense and stability operations similar to the high intensity conflict training exercises conducted prior to the attacks on 11 September 2001. The 1st Battalion, 4th Infantry Regiment "Men in Black" was augmented with a Slovakian battalion and Bulgarian Special Forces to fight in the role of the Opposing Forces. Never before have former eastern bloc and U.S. forces worked together as Opposing Forces in such numbers. Soldiers of the Slovenian 20th Motorized Battalion and the Polish 6th Airborne Brigade supported the Sky Soldiers, replicating host-nation forces. The Polish soldiers will be fighting alongside their Sky Soldier comrades in the summer of 2012 in Afghanistan.

Early FSTE training identified soldier and junior officer gaps in operational and tactical knowledge and skill due to the nature of the past wars in Iraq and Afghanistan. As a result, the U.S. Army has consequently changed its doctrine for Combined Arms Manoeuvre and Wide Area Security (CAM-WAS) operations. The exercise started with a bang at 11:30 CET on 5 October 2011, when 1,500 paratroopers of the 173rd Airborne Brigade Combat Team jumped into the Hohenfels drop zone. This marked the first brigade-sized airborne operation in Europe since the unit's combat jump

onto Bashur Airfield in Northern Iraq on 26 March 2003. In accordance with the training scenario, the 173rd jumped into a "host" country as part of a U.N.- and NATO-backed show of force in response to a neighbouring aggressor on its border. The countries of Atropia and Ariana are modelled on the Caucasus; they present problems including a mix of ethnic loyalties, weapons smuggling operation and endangered civilians. From the



FOREIGN TRUCKS



Top right: this M984A4 HEMTT Wrecker towing a M978A4 HEMTT Fuel Truck was seen at the Brigade Supply Area of the Joint Multinational Readiness Center Hohenfels.

Above: the Polish 6x6 Jelcz 662 is a purpose-built military vehicle with a payload capacity of 10-tonnes and simple in design and technology. It is fitted with a lightly armoured cab that provides ballistic protection up to 7.62mm rounds.



Above: the Polish Army has 650 4x4 Star 944 trucks in the inventory fielded beginning in autumn 2000. The trucks features a MAN D0824LF09 4-cylinder diesel engine developing 155hp coupled to a six-speed ZF manual gearbox and MAN two-speed transfer box.

Below & bottom right: the TAM-110 light utility truck was developed in the 1980s by Tovarna Avtomobilov Maribor (TAM) to meet the requirements of the former Yugoslavian army. This truck tows a canvas covered 120mm mortar.



9th to the 17th October 2011, the participants trained using real-world based scenarios during situational training exercises at company, troop and battery level, testing their knowledge, skills and abilities to fight conventional and non-conventional enemy forces.

For manoeuvre forces, the large scale exercise was a chance to practice basic infantry combat skills along with forced entry airborne operations including parachuting into a conflict area and securing objectives. For the civil affairs soldiers, the challenge was to engage the population, local government officials, International Organizations and Non-Governmental Organizations to ensure that successful stability operations could be conducted by leveraging wide-ranging assets in an economy of force.

On the 19th of December, the Opposing Forces (OPFOR) attacked the Blue Forces (BLUFOR) on a wide front and forced them to withdraw to a security line where they delayed the OPFOR and established defensive positions. In the following days, the soldiers performed Stabilization Operations in their respective Areas of Responsibility throughout the different training areas. The final event of the FTSE occurred in the evening of 23 October when elements of the 1st Battalion (Airborne), 503rd Infantry Regiment "First Rock" conducted a large scale air assault operation with more than 150 airborne troopers supported by nine helicopters from the 12th Combat Aviation Brigade and armoured vehicles and infantry soldiers from the Slovenian 20th

Motorized Battalion. After arriving at the helicopter landing zone at 22:00 CET on 23 October, the BLUFOR was assigned the mission to attack heavily fortified OPFOR positions in the training village of Kittensee by 04:00 CET on 24 October to kill and capture the enemy forces and secure the objective.

As the U.S. Army transitions from International Security Assistance Forces (ISAF) and Iraq missions, U.S. Brigade Combat Teams will have more opportunity to plan, prepare and execute FSTE rotations in the future. The U.S. Army in Europe is breaking the paradigm of counterinsurgency (COIN)-centric training by applying the Army's new CAM-WAS doctrine in current and future FSTE exercises. In the case of the United States Army Europe, these exercises will definitely include forces from current and future coalition partners. The next USAREUR FSTE rotation is scheduled for October 2012. U.S. Army Europe's Joint Multi-national Training Center will continue to use FSTE rotations to posture the Army to effectively respond to a broader range of contingency missions in today's and tomorrow's complex operating environments. FSTE exercises provide a more comprehensive approach, training Soldiers and units to fight in the most demanding and complex operating environments alongside their allies and partner nations preventing future conflict through strengthened allies and deterrence while preparing to prevail if called upon. Military Machines International will keep you updated!



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PANZER 38(t)

**MMI looks at the 'Cinderella'
tank of World War Two**





After a less than ideal start in the Great War, the Second World War saw the rapid development of tank warfare, ensuring the tank remained a key weapon in modern warfare. Both the British and Germans were at the forefront of tank design, as were the Americans, but we sometimes forget that other countries were responsible for some of the best designs of the war, and while the history books are littered with references to the likes of the Tiger, Panther, Churchill and Sherman, the Czechoslovakian-designed 38(t) was just as important a tank in terms of the war effort, seeing extensive service in the hands of the German Army.

The design of the 38(t) had begun in 1938, but before the new tanks could be produced and passed on to the Czech Army, the war broke out and the German Army marched into what was left of the Czech-Slovak Republic in March 1939. While CKD (Ceskomoravska-Kolben-Danek) had been the main developers of the tank, it had been anticipated that production would also be undertaken by the companies of Skoda, Tatra and several other companies, but the outbreak of war prevented the completion of their production facilities and the CKD production line was simply taken over by the Wehrmacht.

GERMAN USERS

Early on in the war the Germans, despite popular belief, were short of tanks, and the taking over of the CKD works provided the Wehrmacht with a new source of tanks. They were popular with their crews, and in essence were an excellent tank for the

time, but later in the war they would be outclassed and outgunned as the pace of tank development speeded up. However, this was not the end of the Panzer 38(t), because the redundant chassis were modified in numerous ways to accommodate bigger weapons and were converted into self-propelled guns that went on to serve for many more years.

Probably the best known of the conversions was the Hetzer tank destroyer, which was based on the chassis and running gear of the 38(t) with a new, sloped armoured superstructure and heavier gun mounted on top of the chassis. It was an excellent weapon of the time and served long into the war, but other conversions were equally successful, such as the Marder, Grille self-propelled guns, especially in North African campaign, where the open top superstructure made life more bearable for the crews in the scorching heat of the desert.

Above: the Panzer 38(t) rarely receives the recognition for the important role it played during the war, both as a tank and as the basis for a number of tank destroyers and self propelled guns.

Below: rear three-quarter view of the Panzer 38(t) tank that turned up for the 2012 Militracks even in Holland. Note the exhaust outlet is pointing horizontally and not vertically, probably to prevent it filling with water and causing the exhaust to rust!





Top left: close-up of the fire extinguisher mounted on the rear track guard.



Top centre: here we see the raised commander's sight on top of the turret.



Top right: close-up of one of the side vision blocks found in the hull side panels.

The hull and turret were constructed from rivetted and or bolted armoured steel plate, most of which were flat panels that simplified manufacture and production. The vehicle had a crew of four (originally three), with the driver seated to the right in the front, with the front machine gun operator beside him, who also doubled as the radio operator, and the commander/gunner located in the turret to the left of the main gun and

the loader seated to the right. The turret could be rotated through a full 360 degrees via a handwheel, but crews discovered that they could rotate the turret more quickly by disconnecting the gearing and swinging the turret around by hand!

The Panzer 38(t) or Pz.Kpfw 38(t) to give it its new designation for German service, was armed with a 37mm high-velocity main gun with a reputation for being hard hitting, and a pair of machine guns, one of which was co-axial to the main gun and mounted in the turret, the other in a ball mount in the front glacis plate beside the driver.

The Pz.Kpfw 38(t) was powered by a Praga EPA, in-line, six-cylinder, water-cooled petrol engine of 7,754cc

capacity that delivered 120hp at 2,500rpm and could propel the vehicle to a maximum road speed of around 26mph. The engine was subject to further development throughout the war, with power outputs progressively increased until the Praga EPA AC/2 engine was developing 160hp, as used in the final variant of the Hetzer tank destroyer.

The drivetrain was fairly traditional, in that the engine was at the rear of the vehicle, the gearbox was at the front driving front sprockets. Steering was via two levers, and the 11.7-inch wide tracks ran across four large single roadwheels, a large return idler at the rear and two small idler wheels above the main roadwheels.

Below: the vehicle jack, wooden jacking block and storage bin is shown here.



Right: the Panzer 38(t) made for an impressive sight when it was making its way around the off-road course during this year's Militracks event.



PRIVATE HANDS

There are very few examples of the Pz.Kpfw 38(t) in private hands, one example belonging to UK collector Steve Lamonby turned up at the War & Peace Show back in 2008, but this year's Militracks event in the Netherlands saw another example turning up for the event, which offered me the opportunity to take a closer look and to take photos for this feature. The Pz.Kpfw. 38(t) featured here was brought along to the show by

well-known European collector Karl Nefzer, who incidentally also owns the Henschel 33 G1 truck featured in our May 2012 issue. Although not quite finished, missing just a few detail parts such as the co-axial machine gun, rear box and spare track links, the tank was almost complete following an extensive restoration and ran beautifully throughout the event, tackling the off-road course at the museum with ease and attracting a great deal of attraction all weekend.

German Wehrmacht during WW2..."



Specification Pz.Kpfw. 38(t)

Crew:	4
Length:	4.61m
Width:	2.14m
Height:	2.40m
Weight:	9,400kg
Armour:	25mm maximum
Engine:	Praga EPA in-line, 6-cyl, water-cooled petrol, 7,754cc capacity developing 120hp at 2,500rpm
Armament:	37mm KwK L/47B and 2 x 7.92mm MGs
Max Road Speed:	26mph
Max Range (Road):	250km
Suspension:	Leaf springs on each of the four roadwheels



Top right: here we can see the Panzer 38(t) turret showing the main gun, but the co-axial MG is missing. Also visible below are the driver's visor (raised) and the central ball socket for the machine gun.

Left: on its arrival at the Marshall Museum, venue for the Militracks event, the Panzer 38(t) is reversed off the trailer before heading off for the holding area.



Happy Birthday Champ



It's hard to believe, but Austin Champ celebrates its 60th birthday this year!





Left: the 2012 Champ Camp attracted a huge variety of Austin Champs, including this Royal Navy utility variant.

Top left: just a small example of the Austin Champs that turned up for the 60th Anniversary celebrations at the Wartime in the Vale show.

Below left: superb example of a standard Austin Champ seen here with the hood raised but no side screens. The end of the folded snorkel tube can just be seen poking out from the far side of the bonnet.

This new specification of vehicle was to fit in with the new post-war thinking of using common parts across as many vehicles as possible, including engines, and equipped to cope with a range of tasks. The result was the Wolsley Mudlark, carrying the official designation 'FV1801, Light Car, 5 cwt, 4x4', and this time the style of the Champ was starting to take shape, with the familiar rounded bodywork and slotted grille. This new vehicle was significantly more complicated than the Guty, and much of the mechanical content eventually carried over to the production Austin Champ, albeit after



The year 2012 has been a memorable year for many reasons, we have seen Great Britain staging the Olympics, we have celebrated the 30th Anniversary of the Falklands War, and the War & Peace Show has also celebrated its 30th Anniversary too, but another lesser known, but equally important birthday was also celebrated in 2012, namely the 60th birthday of the well-known Austin Champ 4x4.

There's no doubt that over the years the Austin Champ has had its critics, and while in service the Champ was loved by many, and hated by others. Since it was pensioned off from the military in favour of the now familiar Land Rover, the Champ has enjoyed varying levels of interest in the private collectors market, but over the years interest in the Champ has grown to the point where it is now well regarded, very collectable and supports many thriving clubs dedicated to the Champ, including what is arguably the best known of them all, the Austin Champ Owners Club or ACOC.

To mark the 60th anniversary of the Austin Champ, the Austin Champ Owners Club staged their biggest ever

'Champ Camp' during the annual Wartime in the Vale military vehicle show on the outskirts of Evesham, and I went along to see what vehicles had turned up, but before I leave you to enjoy the photos celebrating the Champ, I'll offer those with little knowledge of the type a bit of background history.

BRIEF HISTORY

While the 60th anniversary of the Champ marks the entry into service with the British Army in 1952, the history of the Champ in terms of the prototypes that preceded it, goes back to as early as 1947 with the design and production of two or possibly three Nuffield Guty pilot models. While not the prettiest of vehicles, the Guty did at least establish a rough layout for the vehicle, being Jeep-like with an open top four-seater with canvas hood and 4x4 layout, but by the time testing of the Guty was complete, the military in the form of FVRDE had moved the goalposts somewhat and a new design specification had been laid down that rendered the Guty pretty well redundant.

Champ Prototypes



Above: an ultra rare surviving example of the Nuffield Guty prototype was also displayed at the show. The Guty was the first attempt at a light 4x4 vehicle to replace the wartime Jeep, but the specifications is was based on changed dramatically for the Wolsley Mudlark, which was closely related to the Champ.

Below: also on display for the Champ Camp was an equally rare example of the Wolsley Mudlark prototype. The similarity to the Champ is clear to see, the main differences being the wider front wings and the semi-enclosed rear wheel arch panels.





Above: the poor weather on the second day of the show gave me the opportunity to photograph a Champ with full weather gear in place.

Far right: from top to bottom we have a civilianised Champ, a rare civilian specification Champ, and a converted Champ that was actually for sale at the show.

Bottom right: a small number of Champs were converted to an armoured reconnaissance role, and this replica was on display at the show.

many modifications following extensive trials with the FVRDE. By the time the Austin Champ went into production the original Jeep-like nature of the design laid down by the Gutty had evaporated, with the Champ incorporating all manner of complicated engineering, and a far cry from the rudimentary wartime Jeep. This mechanical complexity would be the undoing of the Champ in service, but some of the blame for failures must be laid at the door of the end user, and after a less than auspicious military career, the Champ began to be pensioned off in the mid-sixties.

Initially the Champ was taken up by garages and businesses keen to use the vehicles for light recovery work, and some found their way into private collectors' hands, but it was to take many years before the venerable Austin Champ would be readily accepted by military vehicle collectors, with ownership limited to a stalwart group who recognized the vehicle for what it was - a classic piece of British military over engineering!

In recent years the Champ has gained popularity and whereas Champs in need of restoration once fetched a few hundred pounds, now they command figures well into the thousands! There's no doubt that the Austin Champ remains a 'Marmite' vehicle - you either love it or hate it, but there are a great many people who love the Champ and the fact that over 110 privately owned Champs from all over the world gathered for the 60th anniversary 'Champ Camp' during the annual Wartime in the Vale military vehicle, proves that it has a great following and is set to stay a firm favourite with many collectors for years to come and I wouldn't be surprised if the Champ goes on to celebrate its centenary In 2052, not that I would expect to be there!



Austin Champ Striptease!



Above: to offer visitors a better understanding of the mechanics of the Austin Champ, members of the Austin Champ Owners Club brought along this cutaway instructional model...

Below: ...and alongside it was this complete rolling chassis, minus the bodywork, which clearly showed the Champ's cruciform chassis, engine and running gear to good effect.



Happy 60th Birthday!



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The MATILDA II

The wartime Tank Infantry Mark II A12, better known as the Matilda II tank, was regarded as a superb tank when it was introduced during WW2. The Matilda II quickly gained the nickname the 'Queen of the Desert' having proved its worth in the deserts of North Africa. Even when fighting the might of the Afrika Korps the Matilda was found to be a formidable opponent, but the slow speed on the battlefield and introduction of the deadly accurate and heavy punching 88mm gun eventually proved to be the Matilda's undoing. This superbly restored example now resides at the world-famous Tank Museum, Bovington and was photographed during the 2012 Tankfest show, which was celebrating its 10th Anniversary.





Connecticut Special



Steve Whitehouse describes the four and half year restoration of his Allis Chalmers M4 High Speed Gun Tractor

If I'm honest, ownership of an Allis Chalmers M4 High Speed Gun Tractor was something I never expected, especially owning such a nice example! It all came about due to a set of not particularly nice circumstances when I found myself having to sell my beloved 1944 M24 Chaffee tank 'Cadillac Gal' (recently featured in the new Tankograd M24 publication), which I had owned since 2003, and all due to non-payment of a bill by one of my building 'customers'. This was a painful time for me because I had worked long and hard to get to tank ownership and I felt it slipping through my fingers.

As the tank sale became more inevitable, I became more determined not to slip off the heavy, tracked armour ladder, and knowing how

prices were starting to soar, I knew that if I did slip off, I would never get back on! Once my finances settled down I was determined to get something to replace the Chaffee and put the word out that I was looking for either an M5 Stuart or an M4 High Speed Tractor. A few leads came and went before my attention was brought to a really complete M4 HST for sale in Portsmouth. It had just arrived from the States and was complete, but in need of a full restoration. The vehicle was to be sold via an internet sealed bid auction, but I wanted to see her first, so off to Portsmouth I went with my ever suffering wife Dawn tagging along for support (or should I say ...approval!). When we got there, it was obvious the vehicle was a good solid example that was only missing a couple of wiper



Left: although relatively complete, the M4 High Speed Tractor was cosmetically poor, with a damaged engine and needed a lot of work to bring it back up to scratch.



Below: Jason Jefferies was responsible for most of the restoration work and his Diamond T has been used to transport the vehicle to shows.

Below & left: the first proper outing for the M4 High Speed Tractor, now bearing the name of 'Connecticut Special', was the War & Peace 30th Anniversary Show, where it attracted a great deal of attention.





Top right: the almost completed instrument panel looks like it's just left the factory!

Above left: with the bodywork removed there's plenty of room to work on the M4's interior.

Above right: the old engine was damaged beyond repair so a replacement was sourced.

Below: the torque converter was stripped and found to be like new inside!



Top left: the upper bodywork was removed from the M4's hull, which provided much better access for the long restoration process

Above left: once the lower hull had been completed the various internal components and running gear were installed in readiness for the bodywork.

motors and the dynamo generator. She looked rough though and I knew she would need a thorough going over. The Waukesha motor was split down both sides of the block, so it was obvious that it had been frozen at some point and while the prospect of restoring the vehicle was very daunting, I decided to go for it anyway, winning the auction and 'Slack Allis' (as we had dubbed her) was mine.

BRISTOL BOUND

Between winning the auction and taking delivery, I was lucky enough to have struck a deal with WW2 vehicle restoration expert Jason Jefferies from Bristol. He agreed to take on the task of bringing the HST back to life and between us we started pulling her apart. Luckily, one of the bits of info we had been given was that in 1953, whilst owned by the Austrian Army,

she had been 'zero hour re-built' and had only done 44 miles since! The odometer clock appeared to back that up and when we started to pull apart some of the mechanical items, it became more apparent that this was probably true.

The diff and gearbox was like new inside when we took off the 'lid'. On top of this, all of the road wheels are marked Goodyear and dated '53, as are the tracks, and having only done 44 miles, were like new. Although ex-Austrian Army, she had been re-built using all US parts that were obviously available in large quantities after WW2. The M4 HST was predominately designed to tow 'Long Tom' 155mm, 8-inch howitzers, and 90mm Anti-Aircraft guns. The difference in which weapon was towed is denoted by the rear ammunition box on the back of the vehicle. The type of box my HST has, denotes she used to tow the Long Tom howitzers.



1. the original engine had significant frost damage so a crated replacement was sourced from the United States.

2. as a precaution the new Waukesha engine was stripped and overhauled before being repainted to look like new.

3. once in place in the M4 High Speed Tractor's hull the pristine Waukesha 145GZ engine looks the part and is surprisingly visible when the engine cover is opened.

4. view looking to the rear of vehicle at the Waukesha engine after it had been installed in the completed hull, but before the upper bodywork had been added to the vehicle.

CONNECTICUT SPECIAL

1



2



3



1. the roof panel was repaired having corroded over the years it had been stood.
2. the front panel also required some repair, but the original bullet hole was left.
3. the circular mount for the roof gun ring was skillfully crafted in the workshop.

4. the M4 nears completion having had the new engine installed in the hull.
5. the protective headlight grilles were repaired and refurbished.
6. the rear door that had been cut in half was carefully repaired.

4



5



6



CONNECTICUT SPECIAL

3



4



Right: two large grilles cover the engine compartment at the rear of the M4, this is the right hand side cover in the open position revealing one of the massive cooling radiators.



Below: with the opposite cover open the pristine Waukesha 145GZ engine is revealed. The cooling fins on the cast exhaust manifold are a true work of art.



Bottom left: with the various floor covers removed we can clearly see the pristine transmission of the M4 High Speed Tractor buried deep inside the hull. The attention to detail in this restoration has been minute, with every last detail taken care of

Below: in addition to the tow hitch used to haul the massive 155mm Long Tom howitzer, the rear hull plate of the M4 High Speed Tractor features air linkages (Red & Yellow), electrical connectors (above the red air linkage) a fuel filler and drum winch.





Right: the majority of the M4 is in absolutely pristine condition, but in order to preserve some of the vehicle's history it was decided to leave the bullet hole in the front panel and not try and repair it.

Right: looking underneath the front of the M4 we see the pintle that can be used to manoeuvre the large guns towed by the HST once in place on the battlefield.

Right: all of the various data plates around the vehicle have been skillfully refurbished, this is the lubrication chart, an essential piece of information for the crews.

Below: looking up into the roof of the front cab we can see the canvas covered roof hatch that provides access to the roof mounted machine gun ring.



Below: the running gear was in remarkable condition having been refurbished while in service with the Austrian Army in 1953, and during that time it had undergone a full rebuild and only covered 44 miles since the rebuild!

Bottom right: view looking inside the front cab of 'Connecticut Special' from the driver's position whilst on display at the 2012 War & Peace Show. The interior of the cab on the M4 High Speed Tractor is spartan, but comparatively spacious for a military vehicle.





Eventually the M4 ended up at Jason's yard and we started to get down to the nitty gritty of a total strip down. The engine was, as expected, beyond repair, every single cylinder liner had exploded under the pressure of the freezing ice! As Jason started shot blasting and inspecting the rest of the mechanicals, I started looking for a replacement engine and it was at this point that I started to realise just how rare M4 HST and Waukesha 145GZ engine parts are. The parts proved very hard to find. I was given details of a company in the States that specialized in Waukesha engines, but their rebuilt units were out of my price range. Just as I began to lose hope, a friend of mine told me he had seen one for sale in the States again, but of all places, it was on eBay! I eventually won the auction and after a lot of mucking about with shipping companies, the engine arrived at the yard in a crate. After a bit of creative thinking, we ran the engine up on the pallet and it proved to be a good buy. Oil pressure was good and there were no knocks, but we wanted perfection with the restoration and to cut a long story short, the engine eventually received a full rebuild with parts supplied by Jobbers Inc. of Pennsylvania, USA. The worst part of this was the big end and main bearing shells, which cost £2,500 - not nice, but with the engine running sweet, all the ancillaries replaced, renewed or restored and expertly painted it was all worth it in the end.

Over a period of many months every single nut, bolt and panel was stripped down, cleaned, sand blasted and painted. There were some areas where the rust had perforated the

metal, and these were cut out and new metalwork fabricated and welded back into position. Some of this fabrication involved rolling and folding of panels, all expertly undertaken by Jason, and as things progressed I became more and more impressed by the quality and the results of his labour! All of the air tanks, fluid reservoirs and radiators were stripped, rebuilt and pressure tested leaving them like new. The torque convertor was also stripped, checked and found to be like new.

In the M4 HST there are three radiators in the cooling box beside the engine, so this was no cheap task, and I had a whole new exhaust box made in stainless steel. The fuel tank also had a lot of attention, and after a lot of work it was chemically lined and tested before being reinstated in the vehicle. A new wiring loom was clearly needed and Jason sourced one from a company in Nottingham that made an exact replica of the original, right down to the correct fabric coverings and zinc ends/numbers etc.

The hull itself was completely stripped and shot blasted and was found to be totally solid with no rust perforations whatsoever. Other areas of fabrication were where the powers that be had 'de-militarised' the vehicle putting a gas torch right up through the back ammo box door, cutting it in half! In the interest in originality we took off the existing door 'furniture', manufactured a new door from steel (thanks SP Engineering of Frome) and then welded all of the original hinges and strengtheners back onto the new door. Other areas cut were the lids of all the toolboxes, the gun ring and each side of the front mounting pintle, all of which were repaired or replaced.



Top left: Steve (left), Jason (front), and Jamie Meachin (out of sight) tie the M4 down in readiness to leave the War & Peace show.

Above left: the M4 High Speed Tractor took two awards at this year's W&P show, 'Best United States Vehicle' and runner up 'Best in Show' and in the process attracted a lot of attention whilst there.

Right: the only thing that might take the smile off Steve's face is paying the fuel bill for the M4 HST!



The gun ring needed a lot of care, to ensure the ring stayed perfectly in line.

The heat of the engine had warped the firewall, so Jason fabricated a new one and welded it to the cab frame and sections of the roof were also replaced. The rear wing sections of the rear ammo box were re-fabricated and within the complete wing sections the small turn cleats used to lock on the sand skirts had rotted away so Jason painstakingly re-manufactured each and every one.

Whilst re-painting everything, Jason used two undercoat primer layers and two topcoats in a nice light colour olive drab supplied by Allied Forces in Bristol. We got through at least eight 5-litre cans of red oxide and the same of semi-matt light olive - that's a lot of paint!

NEVER ENDING

There was so much done to this machine, that it is hard to convey in a single magazine article, and finding some parts was very difficult. For instance, the 12 volt wiper motors, American Bosch 6-volts - easy. 12-volts not so easy! The windscreens - had to make them, including the rubbers, the dynamo generator - near impossible to source, and one particularly troublesome part (or parts) to find - the numerous plumbing pipes for the water, auto fluids and oils that run all under the floors!

The canvas seats were all rotted, as were the canvas doors. The frames

were all there though, but a lot of the canvas wasn't even present. Jim at Allied Forces sorted the problem having been given templates wherever possible. Luckily the seat bum pads for the crew of eleven are the same as half-track, even using the same part number. Other canvas covers were made using just photos as a reference, including the ammo box cover and the gun ring cover. Covers were also made for both the front lights and the rear flood lights, however, the canvas doors (over metal frames) are still on their way as this goes to press.

As the vehicle neared the end of the four and a half year restoration, we decided that we wanted to try and emulate an actual wartime vehicle for markings. After looking for a while our attention was drawn to a wartime photo of a 660th Field Artillery/First Army machine, 'Connecticut Special'. I just fell in love with the photo and we are proud to have now finished off the restoration of the M4 paying homage to this particular WW2 machine.

I am now looking into the actual history for the vehicle, and I shall be contacting the Smithsonian Institute and Museum, but I am not sure how far we will get and seeing as we didn't find any original markings under the coats of paint, it may prove fruitless, but I will keep trying.

Since the completion of the restoration I've taken her out to the Armour & Embarkation event, Weymouth Veterans Festival and more recently the War & Peace Show, where



I was pleased to find that 'Connecticut Special' had won two awards, one for 'Best United States Vehicle' and Runner Up 'Best of Show'! I am so pleased to have won these awards, not just for the beautiful restoration of the M4, but as thanks for all of the hard work that everyone has put into her, especially Jason Jefferies, without whom I couldn't have completed her.

Above: the M4 High Speed Tractor is a large and impressive vehicle and some would say it's more practical than a full blown tank. What's more there's plenty of room in the back for friends!

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Gosnays Engineering, Romford
Hyphose, Poole

Below: Steve enjoyed his time in the arena at the War & Peace Show, taking part in several events during the five-day show.



Panther Update

MMI recently checked on the progress of the Panther tank being restored at the Wheatcroft Collection

The restoration of any military vehicle can take many years, but some can take a lot longer than others, and one such restoration is that of the Panther Ausf A currently residing at the Wheatcroft Collection. I've been following the restoration of the Wheatcroft Collection's early, Demag-built Panther Ausf A since I first came across it early on in my term as editor of MMI, which even then had been under restoration for some years. That was back in 2002, and ten years on the project is nearing the end of a long and very thorough restoration that should soon see it joining a very select group of running and fully restored wartime German Panther tanks. Although the Panther has yet to be completed, we thought it was time to bring readers up to date with the progress so far, but once the Panther is

finished we will of course revisit the story in more depth.

As with any project as complex as this, the restoration has been long and at times frustrating, especially when you consider that numerous components have been completely remanufactured to original design specifications - no easy feat even in the 21st Century. When I first encountered the Panther in the workshops of the Wheatcroft Collection, the hull had been rebuilt and some suspension and running gear components were in the process of being added piece by piece. The mighty Maybach engine that will eventually sit in the engine compartment was in pieces having been thoroughly overhauled, with additional engines being built alongside in readiness for the other two Panthers awaiting restoration!

A couple of years later the hull had changed beyond all recognition, having been fitted with the suspension and roadwheels, and the newly manufactured tracks being readied for fitment to the running gear. Another obvious step forward was the application of a coat of Zimmerit anti-magnetic mine paste to the entire hull and while this is a difficult enough task on a scale model, on the real thing it's a long and time-consuming job. Many hours were spent researching the correct pattern for this type of Panther, and many more spent formulating the mixture for the paste itself, but the end result is an authentic Zimmerit finish that will give the finished Panther a distinctive appearance.

Fast forwarding to 2012 and the Panther's hull is very near completion, with the once empty hull now packed with most internal fittings, controls and, all completed with incredible attention to detail, and climbing down into the hull for a closer look I felt like I should have been wearing slippers not boots for fear of damaging the immaculate paintwork! The attention to detail extends to the interior stowage

Below: the wartime German Panther tank currently being restored at the Wheatcroft Collection has been the subject of a long and thorough restoration, but after more than ten years the Panther is nearing completion, with the team secretly hoping that 2013 will see the vehicle completed.



and one of the men responsible for this work of art showed me the first aid kit, complete with period contents that had been gathered together following painstaking research.

The radiators and fans are now in place, but in order to avoid any potential extra work, the Maybach engine has not yet to be dropped into the engine bay. Instead the team intends to run the engine up on the test bench prior to fitting into the Panther so that any potential last minute snags can be ironed out in the comfort of the

workshop rather than having to go through the time consuming process of extracting the engine from the hull. The Panther's engine has been completely rebuilt and overhauled, as have several other examples destined for the other Panthers awaiting restoration. Considering what the restoration team started with they've done an incredible job in creating these engines, which are beautiful pieces of engineering art in their own right, and very expensive pieces of art into the bargain.



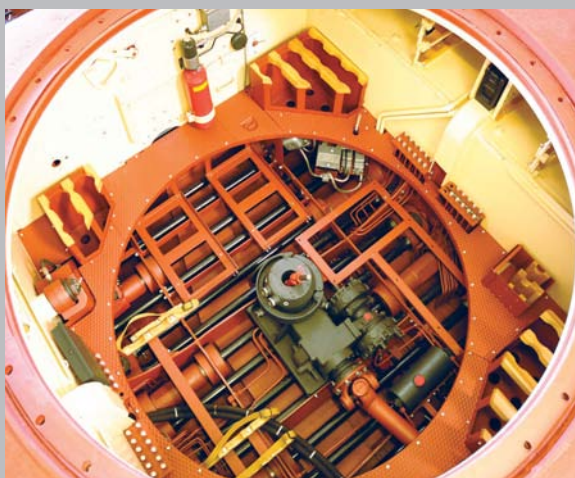
Above: three transmission units were rebuilt simultaneously, one for the Panther seen here, and two more in readiness for the other two Panthers the collection have.

BEFORE & AFTER



Left: the empty crew compartment of the hull is seen here early on in the restoration.

Below: seen here earlier in the year, the pristine hull is now packed with all manner of components, fixtures and fittings.



HULL & DETAILS



Top left: the complicated interlocking panels at the rear of the hull were dropped on later production Panthers.



Top centre: an authentic, wartime dated and complete first aid box has been sourced for the interior.

Top right: the track links for the Panther were too badly corroded to use, so new links were remanufactured to original specifications.



Left: the Zimmerit coating has been faithfully replicated on both the hull and turret following detailed research and remaining patches found on the vehicle.

Bottom left: a view of the hull early on in the restoration, with the running gear yet to be added.

Left: the external components are now being added in readiness for the engine being fitted.





Top three images: these photos show the swing arms and inside of the hull where the transmission unit would mate to the drive for the front drive sprocket.

Right: view inside the hull showing the driver's position. The inside of the Panther is truly immaculate, probably in better condition than it originally left the factory!

Below far right: view inside the fighting compartment looking forwards showing the ammunition storage racks. The semi-circular aperture is where the turret basket will eventually sit.

Right: the radiators and cooling components have now been added to the two compartments located either side of the rear.

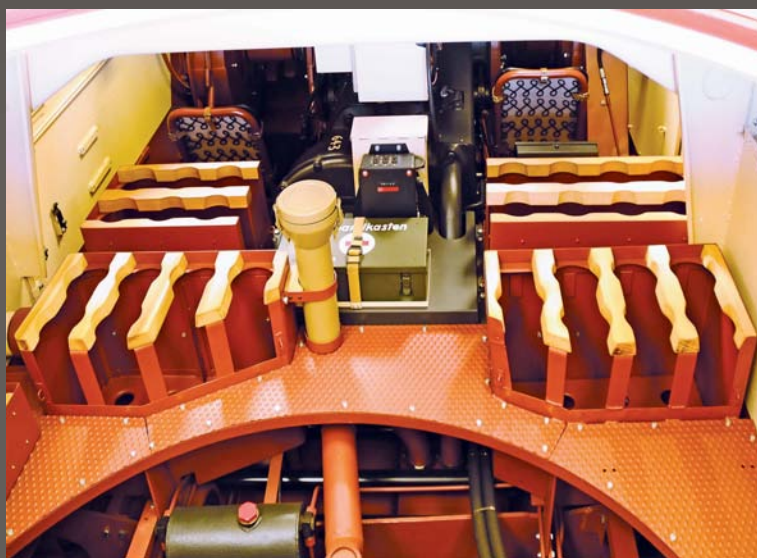
Below left: all of the internal components have been gathered together, including a full compliment of authentic wartime radios.

Below right: view inside the still empty engine compartment of the Panther, but the team will be adding it shortly, once it has been bench tested and checked.



END IN SIGHT

In addition to the fitting of the engine, one of the final stages in the restoration of the Panther will be to reunite the turret with the hull. Since the start of the restoration the turret has sat on a purpose-built frame beside the hull. After ten years of restoration the turret is also nearing completion, having received a matching coat of Zimmerit and many of the internal fittings have now been added. A new gun mantlet has been manufactured and fitted to the turret, and in front of the turret in the workshop is a second turret that has been remanufactured for one of the other Panther projects. The turret basket is in place, as is the traverse gear, the gun elevation gear



Far right top: here we see some of the cylinder heads from the Maybach engines awaiting refurb.

MAYBACH ENGINE

Far right bottom: a whole series of Maybach engines were rebuilt alongside each other in readiness for future projects being worked on at the Wheatcroft Collection.

Right: the original engines looked to be in a sorry state, but it's amazing what can be done when you have the expertise in place.

Centre right: the Panther's completed Maybach engine waiting to be reunited with the vehicle, which hopefully won't be too long now.



and the crew seating, but two items still missing are the gun and breech, although they are being worked on and will be fitted shortly.

Having worked closely with the Littlefield Collection in the USA during the restoration, which ultimately saw the Littlefield Panther returned to running condition a couple of years ago, the team at the Wheatcroft Collection are keen to see their Panther completed and running.

Additionally, the Wheatcroft Collection have worked closely with and would like to thank the Tank Museum at Bovington, without whose help the restoration would not have been possible.

Sadly other projects and new arrivals at the collection can have the effect of eating into valuable restoration time, and while they won't be drawn on an anticipated completion date for the Panther, it is secretly hoped that 2013 may see another running Panther entering the world but whenever the Panther is completed we hope to be there to cover the story.

Far left: the Panther's turret, (to rear of the photo) is almost complete and has had a coating of Zimmerit anti-magnetic mine past applied to match the hull. In front is a second turret being constructed for another of the collection's Panther tanks!

Bottom left: the breech to the 75mm main gun was on the workbench being freed up in readiness for mating to the main gun tube.

Bottom centre: work on the Panther's turret is nearing completion. The turret basket is in place, as are most of the internal components, seats, traverse and elevation gear.

Bottom right: view inside the turret looking forwards towards the inner face of the new gun mantlet. Here can also see the turret traverse mechanism to the left, and the gun elevation gear to the right.

"... it is secretly hoped that 2013 may see another running Panther entering the world ..."



BULLETIN BOARD

Shaun Connors takes a closer look at the latest developments in the defence equipment industry around the world



TEXTRON TAPV

Textron Systems Canada Inc., a Textron Inc. company, announced in June that it has been selected by the Canadian government for the Canadian Forces Tactical Armoured Patrol Vehicle (TAPV) program. The contract calls for the manufacture of 500 vehicles, with an option for up to 100 more, and has a value of C\$603.4 million. An additional five-year in-service support contract has a value of C\$105.4 million. The first vehicle is scheduled to be delivered to the Canadian Army in July 2014, with the last delivery scheduled for March 2016.

Textron Systems Canada, based in Ottawa, will be prime contractor, the Textron TAPV team including Textron Marine & Land Systems (TMLS), Rheinmetall Canada, Kongsberg Protech Systems Canada and Engineering Office Deisenroth Canada (EODC), the latter providing its Advanced Modular Armour Protection (AMAP) technologies.

When originally announced it was stated that TAPV would be a general utility combat vehicle that could fulfill a variety of roles on the battlefield such as (but not limited to) reconnaissance and surveillance, command and control, security, cargo, and armoured personnel carrier (APC). While perhaps a little clichéd, considering current global operating scenarios, the stated intent of the Department of National Defence (DND) was that TAPV was to provide a very high degree of protection to the crew while remaining highly mobile.



When announced, it was stated that, in addition to supplementing the Mercedes-Benz G-Wagen (acquired from 2003) on deployed operations, TAPV would replace the BAE Systems/General Dynamics Land Systems – Canada (GDLS-C) RG31 Mk3 (75 acquired 2005-2008) and the Coyote reconnaissance variant of the GDLS-C LAV-2 (200 acquired from 1996). In total 500 TAPVs were called for: 200 Reconnaissance (Recce) variants, and 300 (with an option for an additional 100) of the General Utility (Gen Util) variant.

By way of timeline, following an earlier Letter of Interest (LOI), a Solicitation Of Interest Qualification (SOIQ) for TAPV was released, the list of qualified bidders then announced in July 2010.

Sources have suggested that more than 20 responses were received to the SOIQ, and the following companies (listed alphabetically by company) are understood to have responded to the SOIQ, although in some cases these may not be the ultimate prime contractor:

BAE Systems – three separate responses including RG35 and a product from Sweden

Creation – Zephyr
Force Protection (partnership with SNC-Lavalin) – Cougar 4x4 and 6x6
Hatehof – Xtream
Krauss-Maffei Wegmann (KMW) – Dingo and Generic Platform
Fennek 2 Technology Demonstrator (GP F2T)
Navistar – MaxxPro
Nexter – Aravis
Oshkosh (with General Dynamics Land Systems-Canada) – M-ATV
Panhard – PVP XL (Petit Véhicule Protégé Xtra Large)
Textron Marine & Land Systems – Armored Security Vehicle (ASV) derivative
Thales (with DEW Engineering) – Bushmaster
Universal Engineering – Ranger

Those then down-selected to RFP pre-qualification status from the SOIQ were:

BAE Systems Hägglunds AB, Sweden – Aligator 6x6
BAE Systems Land Systems OMC, South Africa – RG31 Mk5 EM
BAE Systems Land Systems OMC, South Africa – RG35 RPU
Force Protection Industries, Inc, USA – Cougar 4x4
Force Protection Industries, Inc, USA – Cougar 6x6
Nexter Systems, France – Aravis
Oshkosh Corporation, USA – M-ATV
Textron Marine and Land Systems, USA – MSV (Mobile Survivable Vehicle)
Thales Australia (submitted through Thales Canada Inc.) – Bushmaster

Ultimately only four companies would compete for the TAPV requirement, namely: **BAE Systems partnered with Thales Canada and DEW Engineering & Development – RG35 Reconnaissance Patrol Utility (RPU) Force Protection partnered with Elbit, CAE Systems and Lockheed Martin – Timberwolf, a variant of the Cougar MRAP**
Oshkosh Defense and General Dynamics Land Systems-Canada (GDLS-C) – M-ATV derivative
Textron Systems Canada

Textron's TAPV solution is the continuing evolution of the M1117 Armored Security Vehicle (ASV), over 3,300 of which have been delivered to US, Afghan, Bulgarian and Colombian armed forces since 2000.

In the latest much-evolved TAPV configuration the vehicle has a GVW of around 38,000lb (17,237kg), and a curb weight of around 32,500lb (14,742kg). Overall dimensions are 6.81 x 2.69 x 2.29 m (l x w x h). Motive power is provided by a 365 hp Cummins QSL diesel, coupled to an Allison 6-speed automatic transmission.



JGMS – JEEP J8

Since its appointment in August 2009 by the Chrysler Group LLC as worldwide distributor (to government and military customers) of the Jeep J8, UK-based Jankel Group subsidiary Jeep Government & Military Systems (JGMS) has undertaken an extensive product development and marketing campaign. The latest results of what is a continuing programme are currently being displayed by the company.

The most basic of the vehicles currently being shown is a 5-door soft top in configuration identical to a batch of vehicles ordered by Ghana earlier this year. For UN mission use in Lebanon, the 30 vehicles involved were ordered following a company-funded trial in Ghana that ran from August-November 2011.

Ghanaian vehicles are similar in configuration to a small batch of vehicles supplied late-2010 to Uruguayan peace keeping troops through the US Army's TACOM for use in Haiti.

Also currently being displayed is a hardtop personnel/cargo carrier, this specified to meet a Swiss Army requirement for which trials are understood to be running at present.

It is believed the Swiss requirement, which will replace current fleets of Puch-branded G-Class and Pinzgauer light vehicles, calls for between 2200 and 3300 vehicles, with a contract award anticipated early-2013. JGMS would only confirm three other competitors for this requirement, however, sources suggest these are Austria's Achleitner offering a modified Volkswagen Amarok (the Geson), Mercedes-Benz offering the G-Class, and URO of Spain offering their new VAMTAC 3.5.

The most visual of the J8 trio currently being displayed is doubtless the Pegasus Special Operations Vehicle (SOV), this described by the company as an extreme evolution of the J8 product. Based on the Border Patrol Vehicle (BPV), the rear body and rollcage/ring-mount has been completely redesigned to maximise the internal envelope of the CH-47 Chinook helicopter.

Mechanically the base automobiles remain standard J8, however, new uprated axles and variable ride-height air suspension are fitted. The chassis is uprated to around a 4.5-tonnes GVW, with payload dependant on configuration but estimated at around 1.5-tonnes for most applications. In base configuration some crew protection is provided, this capable of

RMMV - AMAROK



enhancement with tailored-to-role zoned protection kits. It is believed a key target of the Pegasus SOV is the current Dutch Air Transportable Tactical Vehicle (ATTV) requirement, this calling for around 50 CH-47 transportable vehicles. Other potential targets could be pending requirements for a vehicle of the Pegasus type in Austria, Belgium, Luxembourg and Italy.

Prior to the current arrangement with JGMS, and with the exception of an Egyptian CKD venture that supplied around 5000 Wrangler-based TJ-L models to Egypt from 2003, Chrysler had not actively pursued military sales of the Jeep product since the mid-1990s. Following interest shown in the Egyptian TJ-L, the company began to re-examine the potential market for military specific Jeep models and TJ-L models were subsequently supplied to a number of African, European and Middle Eastern countries for evaluation from 2004. While suitable for some requirements, general feedback indicated the need for air-conditioning, enhanced safety features including airbags and rollover protection, the potential for emissions and other legislative compliance, plus an increase in payload allowance.

Following the unveiling of a concept vehicle during 2006 that was based on the 2007 model-year four-door Wrangler Unlimited, the Jeep J8 (which is based on the current long wheelbase Wrangler Unlimited) was unveiled.

The Jeep J8 became available for production in Egypt late-2008, however, from August 2009 all responsibility for military and governmental sales shifted to JGMS, JGMS' business model for the J8 being to maximise local content and production.

In addition to those requirements previously mentioned, it is understood that over the past 12 months the J8 has undertaken 20 credible trials globally, many of those continuing, and with the more interesting of these including Austria, Brazil and the Czech Republic.

RMMV - AMAROK

Rheinmetall MAN Military Vehicles (RMMV) has recently displayed the latest addition to the company's wheeled vehicle portfolio, the Amarok M Light Multi-Purpose Vehicle (LMPV). Based on a standard COTS (Commercial Off-The-Shelf) Volkswagen

pick-up platform that can be modified/upgraded to meet a variety of user requirements ranging from basic homeland runabouts to up-spec'd long range patrol-type products, the Amarok M is, according to the company, targeted at an increasing worldwide demand for this type of vehicle.

With an anticipated unit price that is little more than that of the COTS product on which it is based, the standard Amarok M is seen as a cost-effective alternative to the more traditional military-specific light utility vehicle (LUV), this around twice the price of an Amarok M-type product.

With well-protected 4x4 vehicles costing anything up to ten times that of the traditional LUV, the roles of which they now perform on deployed operations, equipment budgets need to be balanced. One possible way of achieving this balance would be to replace/part-replace military-specific LUV fleets with an Amarok M-type product for homeland and/or non-tactical type roles, possibly retaining smaller numbers of military-specific LUVs to support protected light vehicles where appropriate.

Enabling it to meet a variety of user requirements that can include homeland runabouts, RMMV's Amarok M can be supplied in a variety of configurations. A key difference, however, is that unlike many of its contemporaries wherever possible any modifications to increase the performance and/or capability of the base design will use either Volkswagen or RMMV approved components, minimising any possible impact on the vehicles' standard commercial warranty.

Amarok M examples currently being shown include one in basic crewcab configuration, the rear tray of which is covered by a tarpaulin and bows. A more modified example is based on a standard four-door crewcab model, but is configured as a basic-specification long range patrol-type vehicle. The rear tray is fitted with a dimensionally adjusted roll-cage/ring-

mount arrangement as fitted to the RMMV Serval LIV SO (Light Infantry Vehicle Special Operations), this in service with German and Swiss special forces.

Other modifications to the displayed Amarok M include non-standard wheels and tyres, military-type seats with integral seatbelts, a 60 mm ride-height increase and a new front bumper package that features an integral self-recovery winch and recovery eyes, these all Volkswagen approved options.

The display vehicle is powered by Volkswagen's 2-litre BiTDI engine that develops 161 hp, this coupled to a six-speed manual gearbox and two-speed transfer box. Four-wheel drive is selectable, and the transfer box and rear axle are fitted with differential locks. Driveline options include a range of Volkswagen diesel engines developing up to 177 hp, a fully automatic gearbox, Volkswagen's 4-motion full-time four-wheel drive system, and a range of electronic traction and stability controls that include off-road specific ABS. Current payload options allow for up to 1.37-tonnes of cargo, and a towed load of up to 2.8-tonnes.

RMMV's range of configuration and performance enhancements for the Amarok M include basic modifications such as rifle racks, in-cab seating/storage revisions, a matt paint finish, blackout lighting, a NATO tow hitch, and various wheel/tyre options. More in depth enhancements based around mission kits could include a full 24V fitted for radio (FFR) conversion, ride-height increase kits, runflat inserts for tyres, and a replacement front bumper with bulbar and integral recovery aids that include a winch.

More extension modifications could include an external tyre inflation system, a variety of extreme climate and terrain modifications, various role-specific bodywork and rear body configurations, while options for realistic levels of ballistic and blast protection are being explored.



Vive la France.

Shaun Connors reports from Eurosatory 2012 in Paris

Opposite top right: with an anticipated unit price that is little more than that of the COTS product on which it is based, the standard RMMV Amarok M is seen as a cost-effective alternative to the more traditional military-specific light utility vehicle (LUV), this around twice the price of an Amarok M-type product.

Below: I am a firm believer in if it looks right then it probably is right, and to my eyes BAE's RG35 achieves that looking right criteria in full...

Possibly the most visually stunning vehicle at this year's show, and one that attracted considerable attention on its European debut, was BAE's RG35 (4x4). Arguably a new class of vehicle, RG35 was designed by BAE in South Africa to fit between and combine the best aspects of conventional armoured combat vehicles of the Piranha/Stryker types, and the less-mobile but better protected Mine Resistant Ambush Protected-type (MRAP) vehicles of the Cougar/RG-31 types.

Another vehicle attracting considerable attention was RMMV's Amarok M, a militarised version of Volkswagen's Amarok pick-up. As defence budgets continue contracting and savings need to be made more and more armed forces are looking towards cost-effective vehicles like the Amarok for homeland and low-intensity roles.

Two vehicles that perhaps didn't attract the attention they should have were displayed in a far flung corner of the outside display area by Portugal's Pinhol. Both vehicles have a strong





Land Rover connection, although this is clearer in the Special Ops vehicle than in the smaller Airborne Multipurpose Platform.

It's also possible that AM General's M1097A2R HMMWV didn't attract the attention it should have, possibly because it looks just like a standard M1097A2. The vehicle displayed was in fact the first M1097A2R OEM Certified Remanufactured HMMWVVV, this being a cost-effective rebuild/life extension option now offered to export customers.



Other light vehicles of interest displayed at the show included the VAMTAC 3.5, a new 3.5-tonne GVW light vehicle developed by Spain's URO, and three variants of the Jeep J8 on the Jankel Group's Jeep Government and Military Systems (JGMS) stand. It is believed that in addition to the J8, an Amarok (militarised by Austria's Achleitner), a VAMTAC 3.5, and a Mercedes-Benz G-Glass are currently competing for a Swiss Army requirement that calls for between 2200 and 3300 vehicles.

Mercedes-Benz did not display a G-Class suited to the Swiss requirement, but did display two previously unseen models, a LHD G300 CDI (6x6) crewcab and the protected Light Armoured Patrol Vehicle (LAPV) 6.1. A further light vehicle of interest was Navistar's offer for the US Army's SOCOM (Special Operations Command) Ground Mobility Vehicle (GMV) 1.1

requirement. To meet GMV 1.1 Navistar (teamed with Indigen and SAIC) has offered a development of Indigen's purpose-designed Non-Standard Tactical Truck (NSTT). Bids were due for submission during Eurosatory, with an award expected to follow later this year. The first of the up to 1,297 vehicles required will be delivered in 2013, with deliveries to run over seven years. Users will include Army Green Berets, Army Rangers and Navy Seals.

Below: Pinhol's Special Ops vehicle (Right) is in service with Portugal's armed forces and is based on an uprated Land Rover Defender 130 chassis; the Airborne Multipurpose Platform (Left) is competing for a Portuguese Army requirement and is based on an uprated Defender 90 chassis.

Bottom right: the JGMS display included the specification-enhanced Pegasus Special Operations Vehicle (SOV).





Above left: URO's 3.5-tonne GVW VAMTAC 3.5 replaces the earlier VAM-TL in the company's product range, the first prototype having commenced company trials in November 2011.



Top right: Navistar's offer for the US Army's SOCOM GMV 1.1 requirement is a development of Indigen's Non-Standard Tactical Truck (NSTT).



Right: to help ensure HMMWVs are around for even longer, AM General displayed its first M1097A2R OEM Certified Remanufactured HMMWV.

Below left: the LAPV 6.1 combines G-Class automotive commonality with Unimog-style portal axles, uprated suspension and the armoured body (with increased protection) of the lighter LAPV 5.4.



Above: Eurosatory was the public debut of the LHD variant of the (6x6) G-Class, this currently on order for Sweden. Over 800 RHD variants have been ordered by Australia as part of the ongoing Land 121 project.

Military Trucks

Below: in addition to a mildly militarised Granite commercial model that has been ordered by Jordan, Mack displayed slightly style-revised versions of Renault's Sherpa Light and Medium ranges.



Left: as part of the DAF/TATRA commercial deal, Paccar engines and DAF's CF cab will be supplied to TATRA, and DAF dealers will sell TATRA heavy commercial trucks based on TATRA's backbone tube-type design.

Below: this cab retains external panels of the MAN TGS original for a benign appearance, but features an interior from the dimensionally smaller, earlier generation MAN TGA cab, allowing space for armour to be fitted internally.





DOUBLE CZECH...

Most likely to catch the eye of any truck driver at this year's show would have been the lead exhibit on the TATRA stand, for making its public debut was TATRA's T 158-8P5R33.391 6x6.2 truck. This truck, which mates a DAF commercial cab and Paccar engine with TATRA's unique tubular backbone-type chassis, is a direct result of the late-2011 announcement that DAF had acquired 19 per cent of TATRA.

Also of interest might be the RAT displayed by Austria's Ressenig. RAT is in fact a commercial specification MAN TGS (8x8) fitted with a Ressenig-produced armoured cab. Ressenig has previously supplied armour kits to MAN (supplying the 1,098 appliqué kits for the British Army's MAN HX fleet), but the RAT project was developed so clandestinely that not even MAN were aware of it until Eurosatory opened its doors...

The continuing conflict in Afghanistan ensures crew protection remains topical, with all NATO grade truck manufacturers now offering at least one cab armouring option. Italy's IVECO currently offers three in-production armouring options for its military truck ranges, and examples of all three were displayed.

A Trakker (6x6) tractor truck destined for the German Army who will use it as a fuel tanker was shown fitted with an all-steel swap cab supplied by Krauss-Maffei Wegmann (KMW). This was joined by two ASTRA-produced (8x8) tactical trucks, these both fitted with load handling systems (LHS).

The example fitted with a Marrel LHS featured an appliqué armour kit developed by Germany's IBD, while the example fitted with a Multilift LHS (of the type fitted to the British Army's Leyland and Foden DROPS fleet) is an Italian Army vehicle, this featuring an appliqué armour kit developed by Plasan of Israel.

Sweden's Scania displayed an

example of its latest armoured cab, this a benign-in-appearance swap cab developed in conjunction with Akers Krutbruk. Scania also displayed three trucks, a Luxembourg Army (8x8) LHS (Luxembourg the first customer for the new armoured cab), a Finnish Army (6x6) decontamination vehicle, and a 730 hp (8x8) tank transporter tractor that probably forms part of a package of vehicles currently being offered to Norway and Sweden.

Mercedes-Benz also currently prefers a swap cab solution (as opposed to appliqué) to meet armouring requirements. Manufactured by Indikar, current Mercedes-Benz armoured cabs are not as benign in appearance as a commercial cab with an internal appliqué; however, they have less aggressive styling than some other swap cab solutions that are available.

Renault clearly prefers the more aggressive look for its Kerax range armoured cabs, this demonstrated by the latest design, which was unveiled

Military Trucks



Top left: Renault's Kerax was displayed with a new armoured cab and mounting, via ISO twistlocks, a standalone 15,200-litre ISO-dimensioned refuelling station featuring optional add-on ballistic and RPG protection.



Left: Mercedes-Benz has just received a German Army order for 110 Zetros 1833A GLF (4x4) 5-tonne trucks, these fitted with an armoured swap-cab manufactured by Indikar as shown here.



Left: Scania's R730 (8x8) HET is powered by a Scania V8 diesel developing 730 hp, this coupled to a Scania 12-speed (+ 2 crawler) Opticruise automated gearbox and 2-speed transfer box.



Below: (L to R) German Army IVECO Trakker AT720TWTM (6x6) tractor truck with a KMW all-steel swap cab; French Army ASTRA-produced M320.45WM PPT LHS truck prototype with an IBD appliqué armour kit; Italian Army ASTRA-produced SM88.45BAD LHS truck with a Plasan appliqué armour kit.



Top right: the BTR-4 was developed by the Kharkiv Morozov Design Bureau with production being undertaken by the Malyshev Plant; export marketing is carried out by Ukrspesexport.

Right: there has been a clear trend towards (8x8) wheeled combat vehicles in recent years and this Centauro chassis, which is fitted with a mock-up of a new turret armed with 155 mm/39 calibre barrel, is intended to provide fire support to these.



at the show.

Renault used Eurosatory to in effect refresh its defence sector footprint, emphasising the Volvo Group and particularly the recent creation of Volvo Defense and Mack Defense, neither of these Volvo Group companies having shown much interest in the defence sector in recent years.

Renault acquired ACMAT in 2006 and since then the company's product range has gone from strength to strength. Among a selection of new models displayed by the company this year was the first (6x6) example of the VLRA 2 (fitted with EKA recovery equipment), and Extreme Mobility variants of the ALTV and Bastion APC.

to commence in 2013.

IVECO's extensive display of armoured vehicles also included a Centauro (8x8) chassis fitted with a mock-up of a new turret armed with 155 mm/39 calibre barrel, and a Centauro ARV variant, four of which have been supplied to the Spanish Army

Not every military vehicle at Eurosatory was painted in standard camouflage patterns, and one vehicle that was not, and as a result stood out prominently, was the Ukrainian BTR-4. Designed by the Kharkiv Morozov Machine Building Design Bureau as a private venture, the BTR-4 bears more than a passing front-end resemblance to RMMV's Fuchs...

Equally as stand-out was a bright orange Unimog U300 airfield tractor on the Mercedes-Benz stand. As you'd expect from a vehicle as versatile as the Unimog, when not used in the aircraft tug role these wheeled Swiss Army Knives can operate with towed runway sweepers/blowers and de-icing units, plus front-mounted implements such as snowploughs, sweepers and weed brushes.

Right: to support its 84 Centauros the Spanish Army ordered 4 Centauro ARVs, these fitted with a full range of recovery equipment including winches, 9-tonne telescopic crane and front stabiliser.



Below right: over 5000 of the original VAB have been sold to 15 countries since 1975. Renault launched the VAB Mk2 at Eurosatory 2010, but as a result of customer feedback development of this ceased in favour of the new VAB Mk3.



Bottom left: deliveries of these Unimog U300 airfield tractors to the German Air Force began during 2011. They are leased PFI-style via BW-Fuhrparkservice.

Bottom right: IVECO's VBTP has been ordered in quantity (est. 2044) by Brazil's armed forces, with production to commence in 2013.





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TANKFEST 20



For the Dorset-based Tank Museum, their 'Tankfest' show is the biggest event of the year, taking many months of planning and preparation and attracting many thousands of visitors over the weekend. In what has been an unpredictable show season weather wise, Tankfest was blessed with good weather, even if it was a bit windy at times for the assembled press photographers perched on the mound to the far side of the arena, but the sun shone for much of the display, making for an enjoyable spectacle for those watching all the action in the arena.

2012 has seen the celebration of a great many key anniversaries, and this year the Tank Museum celebrated the 10th Anniversary of Tankfest, with a number of new attractions scheduled to appear during the show. Sadly one of the main attractions, the A43 Infantry Tank Black Prince, was sidelined due to mechanical problems just hours before the show opened, but unfortunately mechanical problems such as these are a fact of life given the great age of many of these machines. Other key attractions did put in an appearance, including the ever-popular Tiger tank and the Mk IV WW1 tank replica that featured in the Steven Spielberg film 'War Horse'.

ARENA DISPLAYS

The morning arena displays kicked off with a pair of Canadian Leopard 1 tanks being put through their paces for the crowd, followed by a collection of FV432s and a selection of recovery vehicles. The morning display was wrapped up with the museum's new arrivals being shown off to the crowd, which this year included a Brazilian Urutu APC captured during the first Gulf War. Other newly acquired vehicles were on static display in the vehicle park, but unfortunately the ex-Shrivenham King Tiger remained inside the museum. A collection of modern British vehicles brought along to the show by the local ATDU (Armoured Trials and Development Unit) rounded off the morning's action before taking a lunch break in readiness for the afternoon's action.

Top left: the biggest of the tanks fielded by the Bovington-based ATDU (Armoured Training & Development Unit) was 'Magatron' a Challenger 2 MBT with a full compliment of add-on armour packages.

Top right: the re-enactment side of Tankfest seems to be getting bigger each year, here we see the museum's T-34/85 with Russian re-enactors.



Above: one of the tanks new to Tankfest was this M60A3 MBT, which has been the subject of a restoration project at the Tank Museum.



Above: one of the firm favourites with visitors is the mighty Challenger 1 Main Battle Tank, as used during the first Gulf War...

Below: ...although for many the star of the show was the Tank Museum's unique, running Tiger 1 tank, which ran beautifully this year.



2012



Above: the afternoon's arena displays kicked off with a 'Salute to the Chieftain' and of all the variants on display, this had to be the strangest looking! Looking like a little like tank wearing a hula skirt, it's actually a prototype known as SID or Signature Integration Demonstrator, and was used to research methods of reducing the tank's signature on the battlefield, essentially a 'Stealth' tank!

BRITISH CLASSICS

Below: tanks and military vehicles aren't known for being colourful, but the museum's Tank Infantry Mk II A12, or Matilda II, wears a rather fetching 'Caunter' scheme, as developed for desert warfare during World War Two.

Bottom: another classic British wartime tank was the Churchill, and this privately owned and beautifully restored MkIV was at the show, making for a great comparison with the museum's own Tiger 1 tank.



The lunch break gave me the opportunity to check out the rest of the exhibits both inside and outside the museum, which included a superb selection of living history displays and a number of privately owned military vehicles. As is usual for Tankfest, there were a good number of traders selling all manner of goods, from army surplus to books and even radio controlled tanks!

During my lunch break I also bumped into John Belfield, owner and founder of the Melbourne Tank Museum was the recipient of the coveted Bart Vanderveen Challenge Shield, although at the time of our first meeting that was still a secret. John, an ex-REME man in the Australian Army, is enjoying his retirement and was over in the UK to check out a number of shows, including Tankfest, travelling all the way from Australia to be there! After a short chat it was time

ATDU at



for me to let John continue on his way and for me to head back to the arena for the afternoon arena events, which was due to kick off with a salute to the Chieftain.

The big noisy tanks, such as the Chieftain, are always a favourite with the crowds, and for the 'Salute to the Chieftain' section, a series of Chieftain variants took to the arena, including the odd-looking Signature Integration Demonstrator or 'Stealth' tank that came to the museum from Shrivenham some years ago. The Chieftain demonstration morphed seamlessly into the post-war British tanks, which included the likes of the Comet, Centurion and Challenger 1 before moving on to the World War Two armour.

For many this section was the highlight of the show, and should have included the Black Prince, but did include the museum's Tiger 1. The

Tiger 1 is always a firm favourite with the crowds, drawing visitors from all over the world to see the only running Tiger 1 in the world and for Tankfest 2012 they weren't disappointed. The Tiger was running particularly sweetly, with distinctive exhaust note of the mighty Maybach engine echoing around the arena. After several tours of the arena the Tiger was shepherded back to its spot in the vehicle park, but certainly from a spectators point of view it seemed to be running beautifully.

FINAL FLING

A final couple of themed demonstrations concluded the arena vehicle demonstrations before the 'War Horse' Mk IV replica took to the stage for the battle re-enactment. The battle itself was well choreographed, with some spectacular pyrotechnics

Below: there wasn't a great deal in terms of new vehicles for Tankfest 2012, but one new addition was this Urutu Armoured Personnel Carrier, which was apparently captured during the first Gulf War, but was originally built by the Brazilian defence company Engesa. The Tank Museum also has the armoured car variant known as the Cascavel.



TANKFEST 2012



Left: having the Armoured Training & Development Unit on hand close-by, the Tank Museum always attracts a selection of vehicles currently undergoing trials, for 2012 ATDU brought along this Warrior MRRV TES (H) wearing a full compliment of add-on armour, as seen in Afghanistan.



Right: one tank that has been regularly appearing at Tankfest is the CVR(T) Scimitar, and for a couple of years now the Scimitar brought along by ATDU has been covered in all manner of add-on goodies, including the stand off bar armour developed for use in Iraq and Afghanistan, as seen here.



Left: the biggest vehicle that ATDU brought along was the Challenger 2 Main Battle Tank. Like the other vehicles it was sporting a variety of add-on armour packages and various ECM equipment, all of which keeps the model makers happy for hours and hours!



Right: the Warhog all-terrain vehicle was introduced some time ago now, fulfilling the role previously held by the Hagglunds. As with the other vehicles from ATDU, it was wearing bar armour and was in typical TES (Theatre Entry Standard) guise for vehicles currently serving in Afghanistan.

Right: lovely little 1933 Austin 7 Van brought along to the show by Dale Johnson.



Top right & below: the stunning replica Mk IV tank that featured in the Steven Spielberg film 'War Horse' was at Tankfest, taking part in a WW1 battle re-enactment.



Right: I know it's not a tank, but I had to include a photo of this superb, and very rare WW1 dated Matchless motorcycle combination.



Bottom: and the final word has to go to Tiger 131, the tank everyone had come to see and this year it ran beautifully, completing several laps of the arena.



making for a realistic scene, but the long preamble before the action began seemed to drag on, not helped by the fact that on the far side of the arena we couldn't hear the commentary. The end of the battle signalled the end of the arena displays and began the run down for the day's events.

Overall it was a highly enjoyable day for those in attendance and for once the weather didn't affect proceedings, however, if I had a small criticism it would be the fact that a great many of the tanks and vehicles taking part were the same ones we've seen for many years now, and while I appreciate that some of them are favourites of show goers, and I understand that the show is probably geared more towards the 'day trippers' holidaying in the area, I couldn't help feeling that there wasn't that much

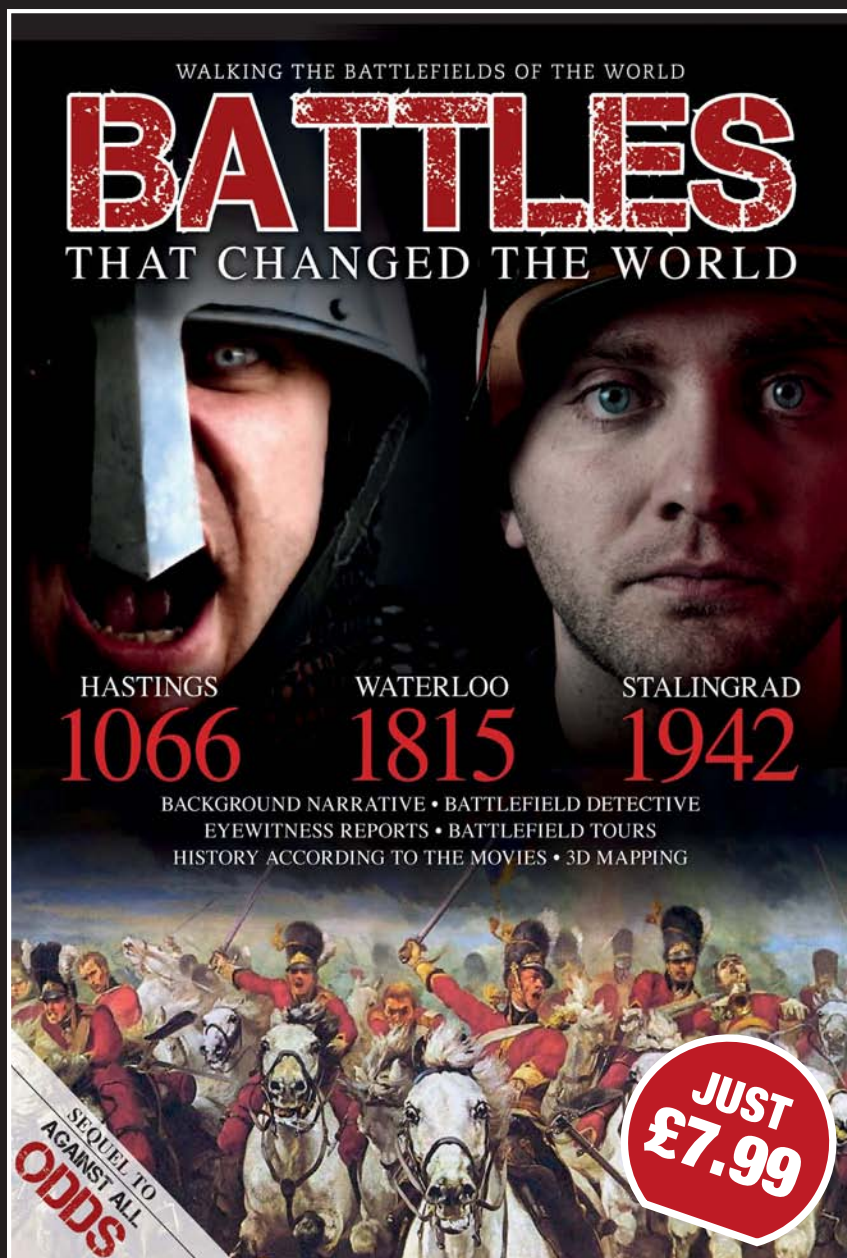
there for the true vehicle enthusiast, especially if they've been in previous years.

Of course things weren't helped by the Black Prince failing to show and I do appreciate that the upkeep and running of these vehicles is a big undertaking, with much of it being undertaken by the museum volunteers, but even if vehicles are unable to run, it would be nice to see a selection of different vehicles displayed outside the museum so that enthusiasts can get a better look at them because inside many of the exhibits are hemmed in by traders. There's no doubt that Tankfest was and will continue to be a huge success, and it still comes highly recommended as a day out for vehicle enthusiasts, but with a few small changes it could be so much better.



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Into the Archives

James Payne delves into a British ex-serviceman's photo album



The photographs featured in this article come from a photo album that once belonged to Lt. Barry Biemans of the East Surrey Regiment, who captured these images whilst serving in the Canal Zone between 1952-1954. Additional information within the album tells us that the Third Division were taking part in an M.T. Rally and the vehicles formed part of the team from Headquarters 19 Brigade who brought back two firsts and three seconds! We've included what information we have on each image, and I've tried to include a little additional information where possible. Suffice to say the vehicles featured are typical of those in use at the time, but if you can fill in the gaps then we would love to hear from you via the usual editorial channels.

The collection is just a small selection of images from the album, one of an extensive military photo archive available from 'Through Their Eyes', which cover subjects from the First and Second World Wars. For further details check out the 'Through Their Eyes' website, which you can find at: www.throughtheireyes2.co.uk

Bottom far left: according to a poem found with a note with the photo, this Jeep was being driven by Biemans and ended up in the Jeep getting stuck in



Main photo left: pair of trucks photographed at the Brigade Headquarters, both finished in typical overall sand colour scheme for desert deployment. On the left is a Bedford QLT with officer's bodywork conversion, and on the right is a standard Austin K5.

Top right: line up of vehicles parked at what is believed to be the Regimental Headquarters for 19th Infantry Brigade. From left to right we have a Series 1 Land Rover, Fordson WOT2E, Bedford QLT, Austin K5, Morris-Commercial C8 and finally a Jeep.

Right: Nice shot of a Series 1 Land Rover parked beside a pair of wartime Jeeps. I'm not sure what the letters 'BTO' refer to on the windscreen panel of the centre Jeep, and all three vehicles carry circular bridging plates, but marked up with the words 'Serial No.' and what could either be a number '11' below, or possibly a regimental flash?

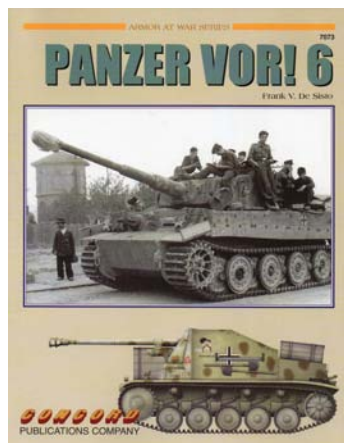
Below right: another pair of trucks, this time in the 15cwt class, the one being a Fordson WOT2E (left), with a Morris-Commercial C8 beside it. Note the sand pattern tyres on the Morris, and the more standard bar grips on the Fordson. No doubt these vehicles were left over from the war, but went on to give many years of useful service with the army.



within the album and
by Lt.-Barry
in the sand!



Crews stand beside their vehicles on the parade ground for a photo. Note that they all carry post-war style military registrations.



German Armoured Vehicle Design in WW2

This new title from the well-liked Concord Publications 'Armor at War Series' is the sixth in the 'Panzer Vor! Series' and looks at a variety of wartime German tanks and half-tracks, with the emphasis clearly on armoured vehicles. The A4 softback 72-page book is packed with a wide selection of black and white wartime images featuring a wide variety of German tanks and military vehicles, which include the likes of the Panzer I, II, III, IV, Tiger, Panther, 38(t) as well as a variety of self-propelled guns and tank destroyers such as the Marder, Hetzer, Hummel,

Wespe, as well as a selection of German half-tracks, including some armoured cab flak variants. Some of the images will probably have been seen before, but they're all well presented with detailed, informative captions for each one. In the centre of the book is an 8-page colour section featuring a total of sixteen superb side view illustrations of various tanks that depict a selection of camouflage schemes and markings. The book is widely available from many specialist booksellers. The review copy was supplied by Casemate UK Ltd.

Title: Panzer Vor! 6

By: Frank V. De Sisto

ISBN: 9789623611770

Price: £12.99

Format: A4 Softback

Available From:
Casemate UK Ltd.
www.casematepublishing.co.uk

Special Forces Vehicles from around the World

Title: Special Forces Vehicles

By: Pat Ware

ISBN: 9781848846425

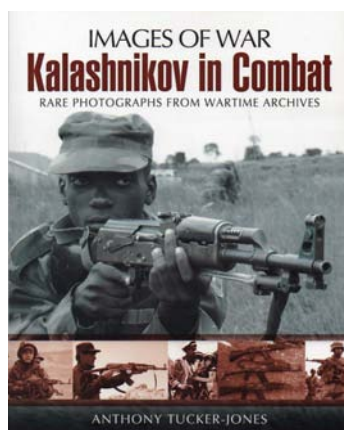
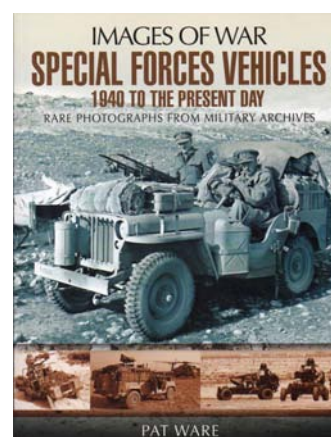
Price: £12.99

Format: Softback

Available From:
Pen & Sword Books Ltd.
www.pen-and-sword.co.uk

This new addition to the Pen & Sword 'Images of War' series follows a familiar format of providing numerous photographic images with extended captions and some background information. This latest title covers a well-liked subject, namely Special Forces Vehicles, and covers a multitude of units from around the world, however, the book is dominated by British and American vehicles. The book covers WW2 and post-war subjects, with the latter being in the majority and most of the wartime images will be familiar to anyone with an interest

in the subject. While the book is well priced at just £12.99, and is packed with photographs (all black & white) it will probably appeal to those with less previous knowledge of the subject because many of the images featured within the book will be familiar to those who have been following the subject for some time. Sadly the book is spoilt by a number of incorrect captions, which could mislead the unwary, and many of the images featured within the book show replica or privately owned vehicles rather than in-service vehicles.



Classic Infantry Weapon in Rare Photos

Another new addition to the Pen & Sword 'Images of War' series is this 160-page book that deals with the legendary Kalashnikov assault rifle. Still in widespread use, the AK-47 has become a byword as the weapon of choice for all manner of third world countries and indeed terrorists and insurgents, but as a weapon it is as effective as any similar western product, and the robust design has ensured continued production for many decades. This 134-page book takes a look at the use of the Kalashnikov assault rifle

around the world and is packed with many photographs showing the weapon in use with armies right across the globe. While the book starts with production and use in the Soviet Union, which is of course where it was first developed, it moves on to the various African and Middle East Wars where it saw widespread use, before finishing off with the more recent conflicts in Iraq and Afghanistan, where the AK-47 remains in use on all sides. If modern weapons are your bag then it's worth taking a look at this new offering.

Title: Kalashnikov in Combat

By: Anthony Tucker-Jones

ISBN: 9781848845794

Price: £14.99

Format: Softback

Available From:
Pen & Sword Books Ltd.
www.pen-and-sword.co.uk

Images of War Featuring the U-Boat Crewman's Snapshots

Title: U-108 at War

By: Alistair Smith

ISBN: 9781848846673

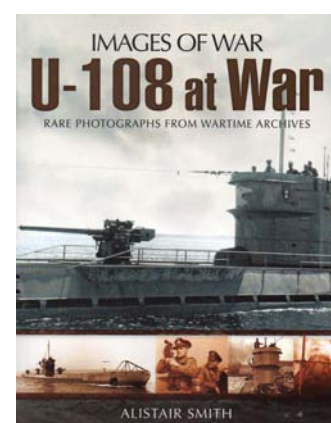
Price: £12.99

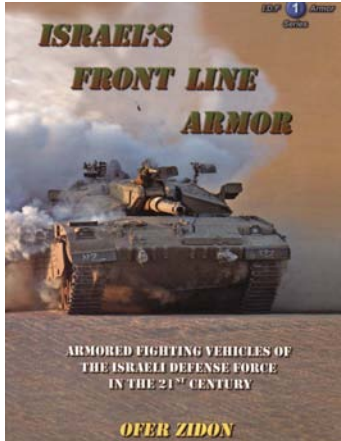
Format: Softback

Available From:
Pen & Sword Books Ltd.
www.pen-and-sword.co.uk

Our final offering from the Pen & Sword 'Images of War' series is this 160-page book based on the photo album of a crewmember of the German U-Boat U-108, commanded at the time by Kapitän-Leutnant Klaus Scholz. The photographer and owner of the album, Willi Wilke, is thought to have been a member of the torpedo crew and the images offer an interesting look behind the scenes at the service life of U-Boat crewmen during the Second World War. The photographs concentrate on the crew performing the

routine tasks involved in life on a U-Boat, both above and below decks, with some images of the submarine itself, and some great examples showing the extremes of weather endured by this hardy breed of mariner. Ice encrusted guns and ice-locked submarines in port contrast sharply with images of the crewmen sunbathing in shorts, but provide an interesting insight into life as a submariner. Images of War - U-108 at War is widely available from most good specialist booksellers, and is published by Pen & Sword.





Heavy Armour of the Israeli Defence Force

This book was sent in for review by the author, Ofer Zidon, who has gathered together a superb and fascinating collection of colour photographs that depict current, in-service Israeli Defence Force armoured fighting vehicles. The 78-page softback book covers a wide range of vehicles from the current IDF inventory, from the state-of-the-art Merkava MkIV Main Battle Tank, to the often seen armoured bulldozers and many more in between. Rather than being of the more familiar 'walkaround' type of layout, the book instead concentrates on showing

these vehicle operating in the field, with some stunning shots of the tanks kicking up the dust in the desert and plenty of atmospheric shots that really convey the size of these massive machines. Model makers will no doubt find the book of interest, showing as it does these vehicles in true 'in the field' guise, complete with the many accessories carried into battle by the crews, all of which will provide inspiration to the modeller. At the time of writing the book was not being distributed in the UK, but is available direct from the publisher via the email address provided.

Title: Israel's Front Line Armor

By: Ofer Zidon

ISBN: 9789657371121

Price: £22 + P&P

Format: A4 Softback

Available From:
direct from the author at:
oferz@netvision.net.il

Title: Operation Barbarossa

By: Michael Olive &
Robert Edwards

ISBN: 9781848848672

Price: £19.99

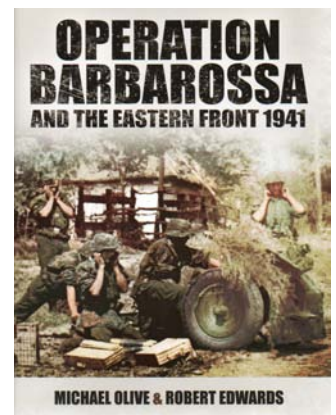
Format: Hardback

Available From:
Pen & Sword Books Ltd.
www.pen-and-sword.co.uk

Classic World War Two Operation

Operation Barbarossa and the fierce fighting between the German and Soviet forces on the Eastern Front during World War Two continues to fascinate historians and this new book from Pen & Sword provides a pictorial account of the epic battles that took place on the Eastern Front. The 200-page hardback book is crammed with wartime black and white photographs that depict the men and machines involved in Operation Barbarossa. Chapters cover the German and Soviet soldiers, German engineers,

German motorized vehicles, Soviet motorized vehicles, German and Soviet artillery, German and Soviet air forces and finally the land and the people involved in the fighting. An additional short, 8-page colour section in the centre of the book provides colour photos of preserved weapons and uniforms from both sides. There's no doubt that the Eastern Front continues to be of interest, and if you're looking for a pictorial account of life on the Eastern Front it would be worth taking a look at this new title from Pen & Sword.



Wartime German Heavyweight

This 18-page softback book on the German Tiger 1 is clearly aimed at the military model maker, including as it does details for sixteen different camouflage schemes used on the Tiger during the war, together with a large, well-printed sheet of accompanying decals, with the twist being that markings are provided in three different scales, namely 1/35, 1/48 and 1/72, to suit a range of available models currently available. At £14.99 it's neither cheap or expensive, and the superb colour illustrations are supplemented by a small number of black and white photos and some background information relating to the units depicted in the decals. A great idea and just one of a large available range of decals.

Title: Pz.Kpfw. VI Tiger

By: Mark Jaszczolt &
Jacek Pasieczny

ISBN: 9788362878307

Price: £14.99

Format: Paperback

Available From:
Casemate UK Ltd.
www.casematepublishing.co.uk

Superb Model Making Reference Work

Title: Barbarossa 1941

By: Stanislaw Jablonski,
Jacek Pasieczny & Arkadiusz Wrobel

ISBN: 9788362878048

Price: £14.99

Format: Paperback

Available From:
Casemate UK Ltd.
www.casematepublishing.co.uk

Our final title this month is another that relates to Operation Barbarossa and is the second of the titles from Polish publishers Kagero. Once again a large decal sheet is included with the 18-page book, with markings for an assortment of 18 vehicles that fought on the Eastern Front, including the Panzer I variants, Panzer II, Panzer III, Panzer IV, T-34/76, KV-2, and Sd.Kfz.250 half-track. The markings are provided in three different scales, namely 1/35, 1/48 and 1/72, on a large, almost A4 size sheet and suit a range of available models. This is just one of a large range of books/decals available that cover a variety of vehicles and aircraft. For details see: www.kagero.pl



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Farnborough International Airshow 2012 DVD

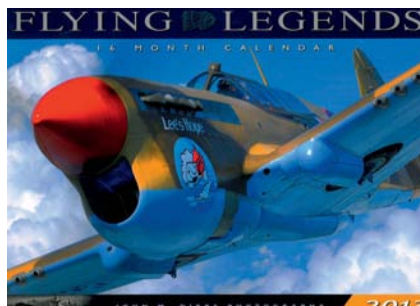


This official DVD of the 2012 Farnborough International Airshow features a stunning flying display including the Qatar Airways Boeing 787 and Malaysian Airlines' Airbus A380. Also featured is Vulcan XH588, Boeing F.18 Super Hornet, Eurofighter Typhoon, Breitling Jet Team, The Red Arrows and much, much more!
Running time 120 mins.
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Subscribers call for you £2.00 discount!

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NEW ONLY £14.99

Flying Legends 2013 Calendar



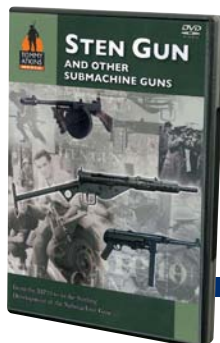
The Flying Legends 2013 sixteen-month calendar features legendary World War II warbirds from around the world, captured in flight by award-winning photographer John M. Dibbs. Razor-sharp, un-retouched air-to-air photography brings these old warbirds to life. The calendar starts from September 2012 so there's no better time to buy your perfect accompaniment to the year ahead!

Code: M136

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NEW

Sten Gun DVD

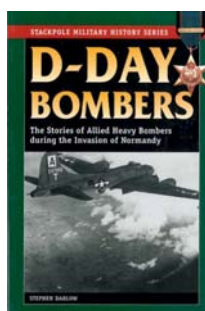


From the MP18 to the Sterling Development of the Submachine Gun, World renowned Sten Gun authority Peter Laidler is the star of a new specialist DVD about the history of the Sten and other submachine guns. Peter reveals fascinating inside stories about the gun that played such a crucial role during the Second World War. Running time 100 mins. Region 2 (PAL) DVD.

Code: DVD514

ONLY £9.99

D-Day Bombers Book

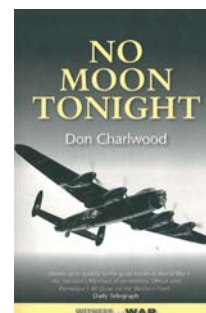


Before Allied soldiers set foot on the beaches of Normandy on D-Day, American and British bombers helped pave the way by pounding German positions on the shoreline and farther inland, a vital mission that continued as the troops waded ashore and the battle beyond the beachhead began. 320 pages, softback.

Code: B368

ONLY £13.49

No Moon Tonight Book



A Bomber Command classic depicting the deep feelings associated with the human cost of the air war in World War II. This is the breathtaking story of a wartime bomber crew facing the hazards of bombing strongly defended targets. A navigator with the RAAF based at Elsham Wolds, Charlwood writes sympathetically and understandingly of the hopes and fears of the crews as squadron losses mounted. Softback, 224 pages.

Code: B310

ONLY £7.99

Airfix 88mm Gun & Sd Kfz7 Tractor

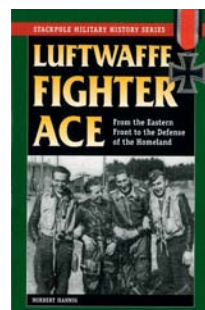


The "88" proved to be an excellent anti-tank gun in France in 1940. By the time it arrived in North Africa it was a feared tank killer, which could knock any Allied tank at distances well over 1000 metres. It again proved its reputation in Russia, where it was the only gun capable of dealing with Soviet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

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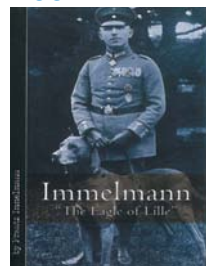


In this action-packed memoir of aerial combat in World War II, Norbert Hannig remembers what it was like to fly with the German Luftwaffe on the Eastern Front: the high-altitude drama of closing in on a Soviet bomber, the thrill of watching his rounds hit home and burst the enemy into flames, the excitement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

Code: B388

ONLY £11.99

Immelmann – The Eagle of Lille Book



Max Immelmann was one of Germany's first air fighters during the Great War, and as such became a national hero, famous to this day for the combat manoeuvre that still bears his name. In this book, written by his brother, the early days of air warfare are brought vividly to life. Hardback, 212 pages.

Code: B380

ONLY £16.49

Airfix Panzer IV Tank



The most widely manufactured and deployed German tank of WWII, the Panzer IV. Robust and reliable, it saw service in all combat theatres involving Germany, and has the distinction of being the only German tank to remain in continuous production throughout the war, with over 8,800 produced between 1936 and 1945. 1:67 scale.

Code: MOD6

ONLY £7.99

Airfix AEC Matador & 5.5in Gun

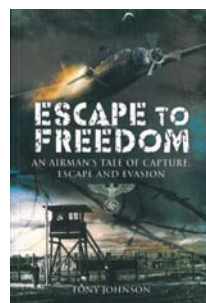


The Matador was the workhorse of the British Military throughout the war. The first units were equipped in UK in the summer of 1941 and in North Africa a year later, 20 guns equipped British and Free French batteries at El Alamein. 1:76 Scale Airfix Model.

Code: MOD8

ONLY £5.99

Escape to Freedom Book



Tony Johnson was shot down in his Wellington bomber on his third operational mission. Captured shortly after he was interrogated in Dulag Luft before being sent to Stalag Luft 1 on the Baltic where he stayed from April to September 1944. As the noose tightened on Germany, Tony and his fellow kriegies were kept on the move. 208 pages, softback.

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DATES FOR YOUR DIARY

SEPTEMBER 2012

Saturday 15 Sunday 16 September 2012: Salute to the 40's: held at The Historic Dockyard Chatham. Participants should call the enquiry line on: Tel: 01634 823816
Visitor information line: Tel: 01634 823807
www.thedockyard.co.uk

Sunday 16 September 2012: Cliff's Clearout: held at Universal Jeep Supplies, Marsh Farm, Station Lane, Milford, Surrey, GU8 5AE. Bring and buy your spare parts. For further details call: Tel: 01483 860403
or check out the website at: www.universaljeepsupplies.co.uk

Saturday 22 September 2012: Military Vehicle Day: held at the Tank Museum, Bovington, Dorset, 10.00 till 17.00. Display of vehicles, including those from the Military Vehicle Trust. For further details about the event check out the website at: www.tankmuseum.org

DATE CHANGE...DATE CHANGE...

Friday 21 Saturday 22 Sunday 23 September 2012: Welland Steam and Country Rally: held at Woodside Farm, Welland, Worcs, between Upton-on-Severn & Malvern, WR13 6LN. New date due to postponement caused by waterlogged fields. For further details see: www.wellandsteamrally.co.uk or call: Tel: 01531 890762

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

Saturday 22 Sunday 23 September 2012: Iowa All Breeds Jeep Show and 4x4 Swapmeet: held in Nevada, Iowa, hosted by the Jeep Outdoor Club of Central Iowa. For more details call: Tel: 515 708 0080 or see: www.iowajeepshow.com

SEPTEMBER 2012

Sunday 30 September 2012: Newbury 4x4 and Vintage Spares Day: Newbury Showground, Chieveley, Berkshire, RG18 9QZ. Call details call Mark Woodward: Tel: 016974 51882
www.4x4sparesday.co.uk

Sunday 30 September 2012: History on Wheels Motor Museum: Open Day, located at Longclose House, Common Road, Eton Wick, nr. Windsor, Berks, SL4 6QY. For details: Tel: 01753 862637/833833
www.historyonwheels.co.uk

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 details call Amanda: Tel: 01743 762266
www.militaryconvention.com

Sunday 30 September 2012: Military Vehicle Road Run: in aid of Help for Heroes, meet at the White Lion Pub, Baldock High Street, Baldock, Herts at 10.00am. Road run starts at 11.00am, meet back at the White Lion. Call Mr Baker: Tel: 01462 630214
Mob: 07963 09143

Sunday 30 September 2012: Jeep Day: bring your WW2 Jeep to Debach Airfield to celebrate the Jeep coming to Europe 70 years ago. Open between 11.00am and 4.00pm, free to everyone. For further details call Richard on: Tel: 07850078432 or see: www.493bgdebach.co.uk



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

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

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

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

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

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

NOVEMBER 2012

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

Sunday 4 November 2012: Northern Military Expo: popular indoor show held at the Newark Country Show Ground, Notts, 2 minutes off the A1M (NG24 2NY). For further details contact Mark Askew on: Tel: 01302 739000
or check out the website at: www.northernmilitaryexpo.co.uk

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

Sunday 18 November 2012: Military Vehicle Day at Brooklands Museum: held at the Brooklands Museum, Brooklands Road, Weybridge, Surrey, KT13 0ON. For details check out the website at: www.brooklandsmuseum.com

Sunday 18 November 2012: Malvern Militaria Fair: large, indoor militaria event held at the Three Counties Showground, Wye Hall, Malvern, Worcs, WR13 6NW. For further details or to book in contact Amanda on: Tel: 01743 762266
amanda@jeeparts.co.uk
www.militaryconvention.com

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

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



DECEMBER 2012

Sunday 16 December 2012: History on Wheels Motor Museum: Open Day, located at Longclose House, Common Road, Eton Wick, nr. Windsor, Berks, SL4 6QY. For details: Tel: 01753 862637/833833 www.historyonwheels.co.uk

JANUARY 2013

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

JANUARY 2013

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

MARCH 2013

Sunday 17 March 2013: Malvern Militaria Fair: large, indoor militaria event held at the Three Counties Showground, Wye Hall, Malvern, Worcs, WR13 6NW. For further details contact Amanda on: Tel: 01743 762266 amanda@jeeparts.co.uk www.militaryconvention.com



APRIL 2013

Saturday 6 April 2013: Shoreham Airport Aerojumble: aviation and military collectors fair, held at Shoreham Airport, A27, Shoreham, West Sussex, doors open 10.30am. For more details contact: SNZ338@aol.com

JULY 2013

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

SEPTEMBER 2013

Sunday 29 September 2013: Manchester Militaria Fair: held at Event City, Phoenix Way, Urmston, Manchester, M41 7TB. Located next door to the Trafford centre. For details call Amanda: Tel: 01743 762266 www.militaryconvention.com

NOVEMBER 2013

Sunday 24 November 2013: Malvern Militaria Fair: large, indoor militaria event held at the Three Counties Showground, Wye Hall, Malvern, Worcs, WR13 6NW. For details contact Amanda on: Tel: 01743 762266 amanda@jeeparts.co.uk www.militaryconvention.com



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

Why not email your show & event details direct to the Editor at:
ian.young@keypublishing.com
or post them to the Editorial Office - details can be found on page 3

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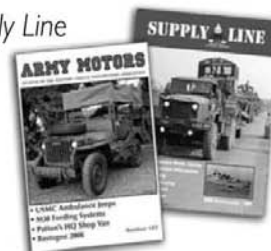
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