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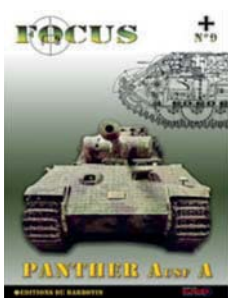


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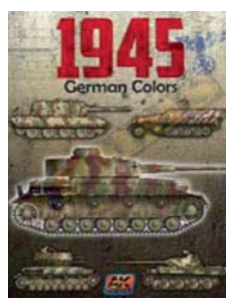
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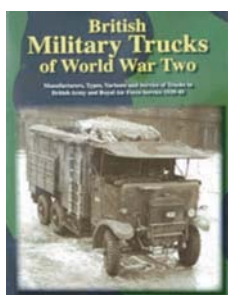
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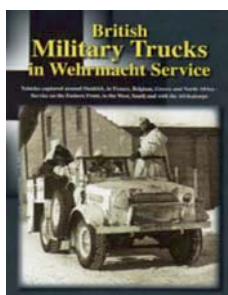
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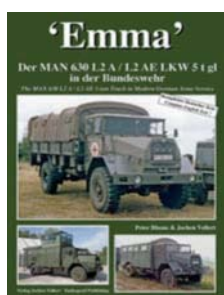
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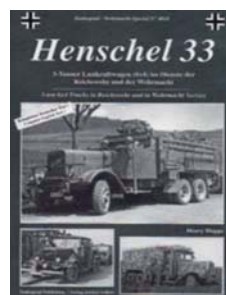
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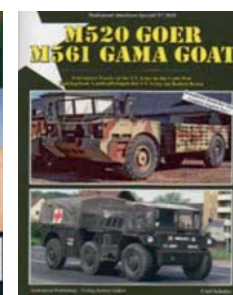
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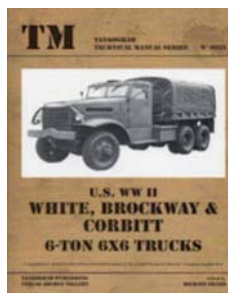
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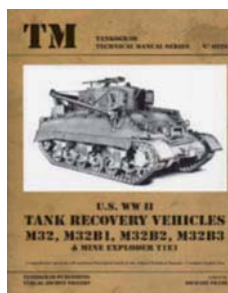
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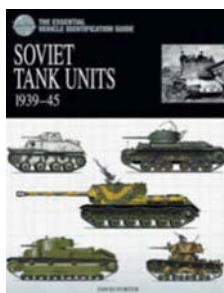
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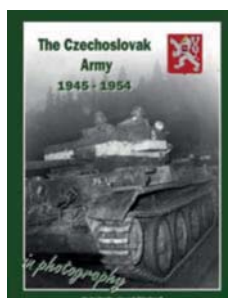
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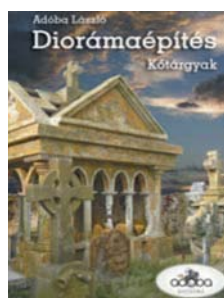
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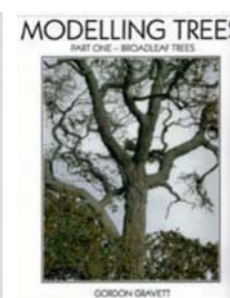
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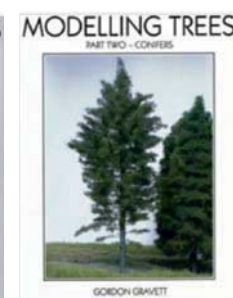
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It's not often that I get jealous of those writing for MMI, but this month, having seen the stunning images in his article, I found myself very jealous of author John Carroll and his trip across the Egyptian desert (see page 28). The trip traced the footsteps of the Long Range Desert Group, and in true 'Jeeping' tradition, involved a certain amount of make do and mend at times. The temperatures were scorching, the dust uncomfortable, and the journey long, but what is clear is that all those whose took part wouldn't have missed it for the world.

I guess that there are times in this hobby of ours that we all do things and take on projects that at the time may seem a little mad, but reap untold benefits in the end, often after many years of hard work, and in reality is part of the reason this hobby is so successful. After all, how many of the rare military vehicles in the world today would have been consigned to scrap if the enthusiasts hadn't saved them? I hope you enjoy John's article, and indeed the rest of the articles this month, and I'll be back with another fascinating selection of articles next month - Ed.



Ian Young

Ian Young
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EINHEITS DIESEL

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NEWS and REVIEWS

UP FRONT

Rare WW1 Tank Heads to Tank Museum

The Tank Museum has acquired a working replica of a German First World War tank. The full sized A7V replica was built in the UK by armour enthusiast and Tank Museum Friend Bob Grundy. Museum spokesman Nik Wyness said: "With the World War One centenaries approaching, we are delighted to have a working example of this unusual looking machine. It will be a great compliment to the working British Mk IV tank replica we acquired from the production team of 'War Horse' earlier this year."

The A7V was the first German tank design to see service when it was introduced in March 1918. Only 20 were built, and only one original has survived. The replica, which is a construction of plywood and angle iron on the chassis of an agricultural tracked vehicle, is identical in appearance and named 'Schnuck' after one of the originals.

'Schnuck' was captured by New Zealand soldiers in August 1918 before being displayed in London. It was sadly broken up for scrap in the early 1920's – around the same time The Tank Museum was being proposed in Bovington to preserve examples of the first British tanks.

"Whilst this is only a cosmetic replica, it will still give visitors a perspective on the German response to the tanks fielded by the British in World War One," Nik added. "Whilst it was a pretty poor design, it is still an essential part in the story of the tank, not least because the A7V was a protagonist in the first tank versus tank battle with a British Mark IV." Visitors to Tankfest in June 2013 will have the first chance to see it in action, as it takes to the arena alongside the Museums Mk IV replica.



Calling RAF Vehicle Owners



Organisers of the Newark and Nottinghamshire County Show, which is due to be held at the Newark Showground over the weekend of the 11th and 12th May 2013, are seeking owners of WW2 RAF related vehicles that would have been involved with the RAF around the time of the 'Dambusters'.

A planned display that will commemorate the 70th Anniversary of the famous 'Dambusters' raid in Germany at the show in May would benefit from associated RAF military vehicles so if you want to come and display your vehicle at the show and you have a suitable vehicle, be it a support truck, crew transport, ambulance or fire fighting truck, such as those shown here as examples, you can contact the organiser, Colin Holwell on Tel: 01780 751291/07977 142011 to discuss things further.



Land Rover Maintenance Truck

Ian Stroud from New Zealand has sent in a couple of photos of an Australian maintenance truck having read our article 'Death Row Pardon' in the January 2013 issue of MMI. The photos show a truck on display at the Waiouru show in February 2007.

Ian tells us he also has a photo of an Australian Land Rover maintenance truck taken in the Bandiana Army Museum, but it's a head on shot as it's hemmed in with other Land Rover variants, but shows the Land Rover in black and brown camouflage with a tool box mounted on front between front guards on top of bumper, and the exhaust system has been rerouted to the front with muffler under front bumper bar and exiting to the right side in front of wheel.

Sadly Ian tells us that it's not worth sending in, but he also found a photo of one in Australian service in Vietnam in the book 'Fighting Fourth - a History of 4 RAR/NZ Battalion 1971-72' on page 129.

Many thanks to Ian for sending in the information and photos – Ian.



Xmas Military Vehicle Road Run



Steve Tydeman emailed us this Christmas Road Run Report that took place on the 28th December 2012. This is what Steve has to report and thanks to Steve for sending in the report for inclusion in Up Front – Ed.

Today I participated in a Military Vehicle Road Run and have a small report and some photos to share with fellow readers. We arrived at the Newtown Industrial Estate in Poole, Dorset ready for the 11.00am departure. A small gathering of around fifteen vehicles and four motorbikes departed bang on time and headed off in convoy (or road run as it is much easier to stay on the correct side of the Thin Blue Line with this terminology!).



We headed down the Dorset Way before leaving Poole and taking the A351 into Wareham with the leader was doing a good job of keeping the pack bunched up, helped by the out riders providing road blocks on the Roundabouts and junctions. We soon entered the small town of Wareham and heads were turning and the people of Wareham were waving and looking very taken back as this green convoy as it passed through. Unfortunately we had our first breakdown just after Wareham when the motorcycle with side car stopped suddenly, so 'Tail End Charlie' (a Ford GPW Jeep) turned back to rescue them. The convoy continued and at Corfe Castle we turned right and headed towards Twynham





Village, of course famous for being commandeered just before Christmas 1943 by the War Office. Next up we headed high up in the Purbecks for a run through the MoD ranges, and while the weather was typical December drizzle, it still offered some great scenery including a few derelict Tanks on the Ranges. These roads are not always open as live firing is a regular occurrence in the area but on the day the road was open. We then proceeded past Wool railway station and in to Winfrith where we reached our final destination - The Countyman, a lovely old English Public House that welcomes us each year on the "Snow Flake Run". After topping up the Radiator and checking the fuel levels we rounded up and had a group photo before heading back to Poole following another great road run and a good turn out despite the damp December day, and after all it was and surely a much better way to burn off excess turkey than hitting the sales!



Heng Long RC Tanks

Fancy a go a tank driving but can't afford a tank? Why not try your very own scale version? Chinese toy manufacturers Heng Long offer a range of 1/16 scale radio controlled tanks, with some including realistic sound and smoke systems and some even fire plastic BB pellets! Standard versions include nylon tracks and an excellent level of detailing, but a number of 'Pro Versions' are available, which feature metal tracks and gearboxes for added ruggedness.

Models are available of the German WW2 Tiger 1, Panther, Jagdpanther and Panzer III and the American Sherman, M41A3 Bulldog, and 'Snow Leopard', along with others and all are widely available from toy shops and specialist stores. With the exception of batteries for the radio control unit the models are what is classed as 'Almost Ready To Run' or ARTR, and comes complete with tank, rechargeable battery, charger and radio control handset, so once you've charged up the battery for the tank you're ready to roll. The tanks are around 400mm long and 200mm wide, making them big enough to carry plenty of detail, but small enough to operate in your front room or transport in your car. A good range of spares is available and if you choose to you can upgrade a standard plastic track tank with replacement metal tracks.

List prices are around £100 mark, but shop around and you're bound to find a bargain. So if you fancy being an armchair general check out the range of Heng Long radio control tanks.

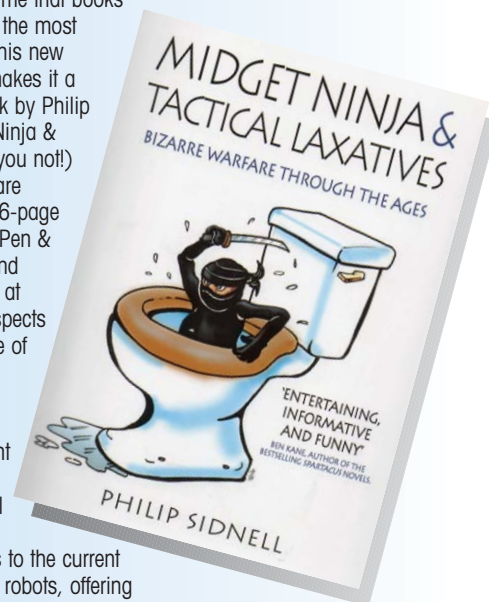


Batty Book!

It never ceases to amaze me that books can turn up for review on the most obscure of subjects and this new release is so obscure it makes it a fascinating read. The book by Philip Sidnell is called "Midget Ninja & Tactical Laxatives" (I kid you not!) and looks at bizarre warfare through the ages. The 166-page paperback, published by Pen & Sword, retails at £8.99 and offers a light hearted look at some of more unusual aspects of warfare, and as the title of the book would suggest, includes some highly unlikely attempts to generate new ways to fight the enemy!

The book draws on all periods of military history, from Babylonian blunders to the current development of battlefield robots, offering something of interest to every reader with an interest in military history – and of course a sense of humour. The tales of inventive genius, which it has to be said at times border on insanity, show just how far military planners will go to defeat the enemy. The acts of deception, despicable deviousness coupled with the hapless blundering and sheer hair brained lunacy wouldn't look out of place in a Loony Toons cartoon, and makes Wile E Coyote look like a paragon of caution and common sense.

The book is available from all good book stores, so if you fancy a bit of a chuckle while learning some new facts why not pick up your copy today?



Cornwall Area Annual Rally 2012

As usual, our annual get-together took place at the beautiful Mount Edgcumbe estate on the Rame Peninsula, just across the water from Plymouth. In a Summer of moist proportions, some inclement weather was forecast, and expected, however, we did not expect the pretty dire weather on the Friday and Saturday. With three marquees to put up, it was decided to press on in spite of the rain on the Friday morning. It was with eternal thanks to all the helpers that we at last stood back and pronounced a job well done. Then it stopped raining, but we were past caring by then I fear!

Traditionally a large group retire to the Edgcumbe Arms a few hundred yards away on the Friday evening, and this year was no different, and we enjoyed a pleasant interlude there with their splendid carvery being the preferred option in the main.

Saturday morning arrived wet. And so it went on until mid-afternoon. However, things then took a turn for the better, and this lasted till Monday morning. Well marshalled road runs took place over the weekend as usual. Sunday brought bright sunshine, and this lasted all day. The ground dried up, Joe Public arrived, and it was a good day, with the err.... traditional visit to the pub for a lunchtime pint. However, storm clouds threatened and the weather forecast for Monday was grim, with strong winds and heavy rain due. A decision had to be made, bearing in mind that we had three marquees up, and similar tents for one of the traders and the Falklands Group so we decided to de-camp while everything was dry.

We had a splendid turn out of vehicles and exhibitors with about forty vehicles of various eras, plus living history groups representing WW2, Vietnam, the Gulf War and the Falklands Conflict in evidence. Our thanks to everyone who made the effort, particularly to those from further afield, and also thanks to everyone who helped ensure we had a good weekend. The 2013 annual event is over the August Bank Holiday weekend as usual.



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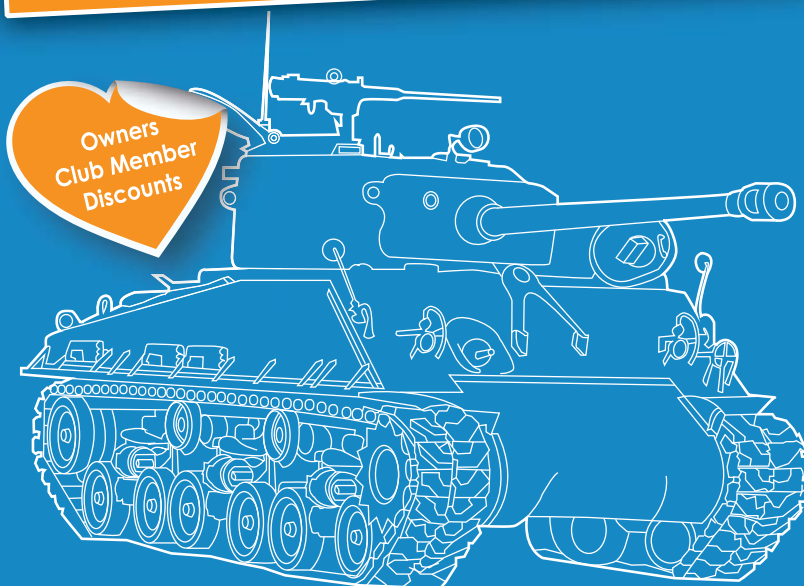
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ISRAEL HEAVYWE



Ofer Zidon & Nissim Tzukduian look at the Merkava Tank Family

The Merkava (Hebrew for Chariot) has been the Israeli Defense Forces (IDF) main battle tank (MBT) for over three decades. It has proved to be one of the best main battle tanks worldwide and remains one of the most innovative tanks ever to be produced, but the Merkava was born from a cancelled British-Israeli project and a weapons embargo.

In the mid 1960's the Israeli and British governments co-operated in a secret project to produce the world's most advanced battle tank. It was at the height of the Cold War, and the British government wanted a clear advantage

over Russian built battle tanks. At the time the IDF operated a vast number of British-built Centurion tanks, using them with great success on the battlefield against Russian-built tanks. The Israeli armoured corps commanders quickly found the weak spots of the Russian tanks and used numerous captured Russian tanks to simulate and improve tank warfare tactics.

Israel's part in the joint project was to provide all its military and technical knowledge and in return the IDF would receive hundreds of the older Centurion tanks and a total of 250 examples of the new tank. The new

HEIGHT

More than three decades of battlefield operation of the Merkava, culminated in the fourth generation of the Merkava tank, the Merkava Mk IV.



Prototype



tank was to be called Abir (Hebrew for knight) in Israel, but would be better known to the world as the Chieftain MBT. The new Chieftain MBT was introduced in 1966 and was the best tank of the time in terms of armour and firepower. The Israeli version was supposed to be delivered in early 1970's.

Despite the Secrecy of the project, Arab nations gleaned some information about the British-Israeli deal, and applied pressure on the British government to cancel the joint project. Following several attacks against British embassies and threats to withdraw all Arab nations' financial

investments from British banks, the British government terminated the Israeli involvement in the project in 1969. The Cancellation of the British deal together with the French, post the 1967 Six Day War weapons embargo, led the Israeli government to take a bold decision and produce its own MBT and stop relying on foreign sources for its most important ground forces asset – the main battle tank.

Major General Israel Tal, one of the best tank warfare strategists, became the new Israeli tank philosopher and the father of the Merkava MBT. The Merkava MBT project started in 1970, using experience from the Six Day War

(1967) and other Arab-Israeli tank battles as a guide to the Merkava design. Since the IDF operated British, American and French tanks, as well as captured Russian tanks, all the accumulated knowledge of these nations and the best features of their tanks would be combined into the new Israeli tank.

MERKAVA DEVELOPMENT

The IDF philosophy has always been that the most important element in the tank is its crew. Israel is a small nation and the replacement of a well-trained tank crew is expensive and takes time.

Top: early Merkava prototypes based on the Centurion tank, clearly showing that the tank was reversed, with the rear end located at the front.

Above centre: the Merkava Mk III Baz can track and lock multiple targets while targets and the tank are on the move. The Merkava can deliver shells with greater accuracy, making it deadly on the battlefield.

Above: a Merkava Mk IIB is seen here fitted with top turret armour and pictured at the end of an urban warfare drill in the Negev Desert.



Merkava I

Top left: an improved Merkava Mk I during field maintenance. Note the 2.5 Kg transmission and engine oil packs at the left. The tank's first bogie was replaced by a 'bogie sport' and a new bazooka plates replaced the old thin side skirts.

Top right: a side view of an improved Merkava Mk I shows the 60mm mortar located at the turret side below the commander's hatch (painted black), which is used externally only on the Merkava Mk I tanks.

Above: a front view of the improved Merkava Mk I during manoeuvres on the Golan Heights. The new bazooka plates and the smoke grenades discharger are clearly visible.

Keeping that in mind, the designer's guidelines were: first - the crew survivability, secondly - firepower and third - the tank manoeuvrability.

These strict guidelines, led the chief engineer and Merkava designer, Israel Tilan, to 'reverse' the tank, locating the massive engine and transmission at the front, using it to help protect the crew from enemy fire. With the engine in front, the rear part of the tank was clear for installation of a new innovative escape hatch, unique to the Merkava MBT, which gave the crew a fast and easy escape route in case of fire. These rear doors would also protect the crew while loading ammunition and the rear passageway can be used to evacuate wounded infantry soldiers from the battlefield or to carry up to 5 fully equipped infantry soldiers to the battlefield, using the Merkava tank as an armoured personnel carrier (APC). A new state-of-the-art fire extinguishing system would prevent the ammunition or fuel tanks catching fire, even after suffering a direct hit.

Ergonomics were another important guideline. The Merkava was designed to give the crew maximum comfort during long periods of time in the tank, keeping them fresh and battle ready. The Merkava is literally a tank built around its crew!

At the time it was introduced on the 29th October 1979, the Merkava was the most advanced and innovative MBT in the world. The first Mk I tanks were delivered to the IDF in April 1979, with the 82nd Regiment of the legendary 7th Division the first to receive the Merkava.

The Merkava MBT saw its first operational use in operation 'Peace of the Galilee' (first Lebanon War), which started in June 1982. The 7th and 211th Armoured Corps divisions used the Merkava with great success. The Merkava Mk I tanks were constantly improved to meet new battlefield threats. One being the ball and chain armour located at the turret's rear end, protecting it from hollow charge anti-tank shells and rockets, and became an identifying mark for all the Merkava tanks.

The operational lessons of the Merkava Mk I, led to a new generation of Merkava MBT, known as the Merkava Mk II, which became operational in 1984. The Mk II included improved hull and turret armour, improved bazooka plates, new fire control system and night vision system, improved transmission and an internal operated 60mm mortar. A new automatic fire extinguishing system replaced the older system and a new nuclear, biological and chemical (NBC) system was fitted into the tank.

The original 62 shells carried by the Merkava Mk I, was reduced to 54 shells in order to make room for the mortar ammunition. Again, the 82nd Regiment of the 7th Division was the first to operate the new tanks.

The Merkava Mk II was widely used during the later years of the first Lebanon War and at the same time, all Merkava Mk I tanks were upgraded to Mk II standard, with the exception of the fire control system, night vision system and transmission. The Merkava Mk IIB was introduced just a few months later. It was fitted with a better

fire control system and a new thermal night vision system. At a later stage, the Merkava Mk IIB tanks were fitted with top turret armour for better protection against air attacks and any high trajectory weapons fired on the turret's top. Infantry stowage baskets were added to the hull rear end. This version is referred to by some as the Merkava Mk IIC.

NEW GENERATION

A new Generation of the Merkava, the Merkava Mk III, entered IDF service in 1990. While the Merkava Mk II was an improved Merkava Mk I and used the same hull, track system and turret base, the Merkava Mk III was a totally new design.

The Merkava Mk III used a new track system that consisted of new track links and a separate suspension arms and springs on each road wheel which, combined with the new 1200hp engine, dramatically improved the tank's speed and manoeuvrability. The 105mm rifled gun used in earlier versions was replaced with a new MG251 120mm smooth bore gun while the tank's effective range was increased and could fire any NATO 120mm shells. A new fire control system called Ramach (Hebrew initials for electric mirror head) gave the tank unprecedented accuracy and the capability to track targets on the move.

The new generation armour fitted to the Merkava Mk III was modular, allowing every piece of the armour to be rapidly replaced if damaged and the entire armour suit can be easily upgraded in the future.

Below: new style heavier and stronger bazooka plates as well as rear infantry stowage baskets are seen on this Merkava Mk IIB.

Bottom left: a Merkava Mk IIB with top turret armor is deploying infantry soldiers via the tank's rear escape hatch during a drill in the Negev Desert. Note the rear infantry stowage baskets and the tank's towing cable wrapped around them.

Bottom right: a side view of a Merkava Mk II during manoeuvres in the Negev Desert. The extra armour added to turret's side is clearly visible. This tank was fitted with the 'Nochri' (Hebrew for foreigner) mine roller system. (Photo courtesy IDF)

An electric turret control system replaced the hydraulic system, enabling the turret to rotate faster and increasing safety by eliminating the flammable hydraulic fluid. The shells were stored in individual stowage cells, making them more fire safe and preventing a chain reaction should one shell explode. The advanced NBC system of the Merkava Mk III was combined with the air conditioning system, meaning crewmembers did not need to use the NBC gear whilst inside the tank.

Mk III UPGRADES

The Merkava Mk III was constantly upgraded with a major upgrade taking place in the mid 1990's, when the majority of the Merkava Mk III tanks were upgraded to Merkava Mk III Baz. The Merkava Mk III Baz is named after its fire control system 'Barak Zoher' (Hebrew for shining lightning). The system is capable of

acquiring multiple targets (including helicopters), track them at all time, lock the weapons on the targets and fire at will, while the tank or targets are on the move. The system can be used day or night and in any weather condition to a range of over 5 miles.

The day sight can magnify objects by x12 and the thermal night sight by x5. The system uses a double stabilisation on two-view axis, and can be used either from the gunner or the commander posts. The system is most accurate, in fact the hit ratio of the system is more than 95%, capable of hitting the target in the first shell most of the times, firing only 2 to 3 seconds after the target is acquired and locked by the system.

As part of the lessons learned by operating the Merkava tanks on Israel's northern border and in Lebanon, great numbers of the Merkava Mk III Baz and Merkava Mk IIB, were upgraded in 1997, to 'Migun Dor Dalet' (Hebrew for fourth generation protection) known also as 'Migun Batash' (Hebrew for continuous security protection) and were designated Merkava Mk IIID and Merkava Mk IID. The new modular armour gave greater protection for the tank and is capable of dealing with new anti-tanks weapons.

Merkava II



Right: the wider and sloped modular armour fitted to this Merkava Mk IID turret, literally changed the shape of the Merkava Mk II tank. The new Modular armour can be replaced easily in the battlefield, making a damaged tank operational again very quickly.

Below: a Merkava Mk IID during maneuvers at the Golan Heights. Note the extra armour added to the hulls sides and front and the protective mesh over the tank's exhaust.



Above right: a side view of the Merkava Mk IID showing the extra modular armour added to the turret and hull sides as well as the new style bazooka plates that were introduced on the Merkava Mk IID.

Right: the 'Baz' fire control system of the Merkava Mk IV can track and lock multiple targets and distribute targets between several tanks, making a very efficient fighting group, as demonstrated in this photograph.





Left: a Merkava Mk IIID shows the extra heavy modular sloped armour added to the tank's turret. Note the protective metal mesh added over the tank's exhaust.

Below left: the Massive 120mm smoothbore gun of this Merkava Mk III Ramach, can easily destroy targets at ranges over 2300 metres. The older Ramach fire control system, can track targets while on the move and deliver a deadly punch with great accuracy.

Below right: Merkava Mk IIID, showing the Baz fire control system tank commander panoramic sight, located just in front the commander's hatch. This sight, combined with the gunner's sight, located at the turrets right hand side, allows the commander and gunner to engage two targets simultaneously.



Merkava III





Merkava Mk IV

The latest Merkava model is the Mk IV. This fourth generation Merkava MBT has been operational since 2003. The 401st Division was the first to receive the new tank, phasing out the veteran Magach tanks in IDF regular service units.

The Merkava Mk IV used a new and more advanced fire control system, based on the Baz system. The new system can acquire more targets and can distribute targets between the fighting tanks using a data link, making a formidable attack formation. The new modular armour is capable of protecting the tank and its crew from the most advanced anti-tank measures and the new MG253 120mm smooth

bore gun with higher internal ballistic pressure and superior muzzle velocity, is capable of firing a vast range of ammunition, including the APFDS-FS kinetic rounds and the laser-homing anti-tank (Lahat) missiles.

The Merkava Mk IV borrowed most of the key track system elements from the Merkava Mk III but it included some improvements which, combined with a greater power-to-weight ratio produced by its huge 1500hp engine and the new automatic transmission, can run over rough terrain in higher speeds.

To improve the tank's backward driving capabilities, a special camera was designed to give the driver a clear view of the tank's rear area, making it

Merkava IV

Top left: a Merkava Mk IVM crew during track replacement exercise. The Merkava Mk IV borrows the major track system elements from the Merkava Mk III and it's fitted with new wide high friction tracks which, combined with the new 1500 MTU MT883 engine, gives the tank a superior manoeuvrability at high speeds over extremely rough terrain.

Right: the 120mm smooth bore gun of the Merkava Mk IV, uses a higher internal ballistic pressure and superior muzzle velocity. Although it is designed to engage targets at ranges up to 2700m, actual combat and fire drill shows that it can hit targets at ranges well over 3000m with a very high kill ratio.

Right: this Merkava Mk IVM, seen during manoeuvres in north Israel, is fitted with the 'Trophy' Armoured Shield Protection – Active (ASPRO-A) system, which gives the tank 360 degrees protection against anti-tank missiles and other measures.



easy to drive backwards without any ground guides. A system of cameras and periscopes, give all the tank's crewmembers a 360 degrees view of the tank's surroundings, making it easier to fight in urban areas.

During the Second Lebanon war (2006), Hezbollah terrorists fired more than 500 anti-tank missiles upon Israeli Merkava tanks, among them the new Russian built Cornet missile that is capable of penetrating multiple armour layers. In these attacks 49 tanks were damaged and 33 crewmembers lost. It was obvious that even the most advanced armour was no match for new generation of anti-tank missiles, especially when fired from close range.

In order to maintain the tank as a key element of modern warfare, it was clear that new generation of protection was needed. The solution came in the form of the 'Trophy' system. The 'Trophy' system, called in the IDF 'Meil Ruach' (Hebrew for wind coat), is a new Armored Shield Protection – Active (ASPRO-A) system developed by Rafael in co-operation with Elta, Israel Military Industries and General Dynamics. The system can identify, intercept and destroy incoming missiles and other anti-tank measures before they reach the tank.

The system became operational in 2009 and was used successfully in the Gaza Strip. The new system gives the tanks the liberty to operate and use its massive firepower advantage in any area and battlefield without the worry of anti-tank measures. Merkava Mk IV tanks fitted with the system are designated Merkava Mk IVM.

URBAN WARFARE

Over the last decade some Merkava Mk III Baz and Merkava Mk IV were modified to become the Low Intensity Conflict (LIC) variant. The tanks are specifically designed for urban warfare and modifications include a special protective metal mesh around the tank optics, lights, exhaust and vents, preventing the insertion of explosives or damaging the delicate systems, a new remote weapon station that can be fired from inside the tank, without exposing the crew to small arms fire, and rubber whip poles with LED tips were installed to improve navigation and manoeuvrability by day or night.

'NAMER' APC

In order to replace the older M-113 armoured personnel carriers, the IDF wanted a new APC that gave the infantry soldiers the most advanced protection and manoeuvrability to keep up with the armoured units. Previous tank-based APCs developed by the IDF, like the 'Achzarit' (based on T-54/55 tanks) and others based on Centurion tanks were a good solution, but they were modified old tanks and more difficult to maintain.

The IDF developed a new APC based on the Merkava MBT hull. It was a totally new design that included a large inner compartment for the soldiers and APC crew, state-of-the-art protection and new weapon systems. The first prototypes were based on the Merkava Mk I and Mk II hulls as it was intended to use the older phased



out Merkava tanks for this project. The new vehicle called 'Namer' short for 'Nagmash Merkava' (Merkava APC - sounds like Tiger in Hebrew) became operational in 2008 and was eventually based on Merkava Mk III and Mk IV hulls. An Armoured Recovery Vehicle (ARV) called 'Namera' (Hebrew for Tigress) was also built and is intended to replace older vehicles to become the main ARV support vehicle.

CONCLUSION

The Merkava is a formidable main battle tank, which became one of the most recognized symbols of the state of Israel. The Merkava will continue to be Israel's protective shield and iron fist for years to come, and in the quickly changing modern battlefield, it is most likely that more Merkava upgrades and maybe new generations of the tank will be built in the future.

Above: the 'Namera' is also called 'Namer-Eyal' as it carries the 'Eyal' crane, is the new ARV (Armoured Recovery Vehicle) and maintenance vehicle used by the IDF. As it is compatible with the Merkava MBT's speed and manoeuvrability, the 'Namera' is a versatile close support vehicle that can easily keep up with the armoured corps units. (Photo courtesy Gil Hizkiva)

Below: the hulls of the Merkava Mk III and Mk IV are used to build the 'Namer' APC that can carry 8 fully equipped infantry soldiers as well as the 3 crewmembers. The rear hatch was increased in width for easy deployment of the troops and fitted with a sniper port.



Left: the 'Namer' APC is fitted with the advanced Rafael Samson RCWS modular remote control weapon station that can be fitted with various machine guns, grenade launcher or missiles.



MILITARY AUSTIN 7

WE CAUGHT UP
WITH A RARE
EXAMPLE OF WHAT
IS SEEN AS THE
BRITISH ARMY'S
FIRST PROPER
SCOUT CAR





Above: the classic lines of the 1929 Austin 7 Military would look equally at home at a classic car show as a military vehicle event.

On the modern battlefield the role of the military vehicle is now taken for granted and is as much a part of modern military equipment as a uniform and boots, however, mechanised warfare is still relatively new, spanning less than a century and in the early days of warfare some vehicles were pressed into service that today might be considered unsuitable for the job.

The Great War did much to pave the way for the introduction of vehicles onto the battlefield, from trucks and cars to tanks and armoured cars, they all made an impact on warfare in the 20th Century, and that forward thinking continued to be explored at the end of the First World War and in the lead up to the Second World War, but sometimes the eagerness to provide motorised transport saw those in charge of the finances seeking ways to reduce costs and one way of reducing costs was to use off-the-shelf, or slightly modified civilian vehicles, a practice that continues today as cash strapped armies look for ways of making the most of their budgets.

In the case of the Army, it was recognised that there was a need for a light scout car, and one vehicle put forward for the role was the then comparatively 'new' Austin 7 car. The Austin 7 was small and light and Austin promoted the all-terrain ability of this little car, and what's more they were readily available as a running chassis for conversion to specialist models by coachbuilders, which was common practice for the time.

A prototype was built for the military trials by 17th Field Workshop, and the basic layout became the template for that produced by Mulliners of Birmingham, who were local to the Austin factory and therefore ideally suited to the project. The end result was a very simplistic vehicle with just one door, but added storage space and few create comforts. Having been successfully completed military trials in 1928, the modified Austin 7 Mulliner bodied 'Military' entered service in 1929 and while at first glance it may seem to be a totally inappropriate vehicle for the job, reports from users at the time proved

Far left: sadly this head on image of the little Austin doesn't give an indication of just how small these cars were, making them especially cosy when occupied by the crew of two soldiers! Incidentally, this style of grille had been replaced on civilian Austin 7s by this time and it is thought that old stock may have been used up on the military contract vehicles.

Left: the knobbly tyres were fitted to the 19-inch wheels which, together with different axle ratio aided traction on softer surfaces. Needless to say the sodden ground at the time of the photo shoot didn't provide any problems for this capable little car.



Top right & below: here we have two views of the military Austin 7 showing the canvas roof in the raised position.

The roof was rudimentary, but did at least provide some protection from the weather for the cramped occupants.

Below right: the new rear bodywork, which was built by coachbuilder Mulliners of Birmingham, meant that the spare wheel normally fitted to the boot lid was relocated to the side of the vehicle, blocking the driver's door.

that while it wasn't unstoppable, it did cope with all but the very roughest terrain surprisingly well.

Of the 158 Mulliner bodied Austin 7s produced, most were issued to the Royal Artillery who used them to transport battery commanders to forward observation points before returning to relay instructions to the guns via wireless trucks. Later some vehicles were modified for the Royal Signals by Austin themselves to allow wireless equipment and aerials to be carried, thus eliminating the need to use separate wireless trucks and an example of this type is currently preserved at the Royal Signal



"Of the 158 Mulliner bodied Austin 7s produced, most were issued



Museum, Blandford. Other Austin 7s were modified to suit specific tasks, while some civilian Austin 7 cars and vans were pressed into service with the Home Guard.

MODIFICATIONS

The basic Austin 7 two-seat open top car, very similar in layout to the civilian Chummy, underwent a series of modifications to make it better suited to the military, with coachbuilders Mulliners of Birmingham being responsible for the modifications on most military Austin 7s, including the example featured in this article. The bodywork was modified to include a box-type locker at the rear and the driver's side door was panelled over as it was deemed unnecessary due to the relocation of the spare wheel from the rear of the vehicle to the side of the vehicle above the running board.

The Austin 7 is a remarkably small car and the thought of cramming two soldiers and their equipment into the interior led to further modifications, which included the fixing of rifle clips to the top of the rear bodywork. A small door at the bottom of the rear stowage locker also provided storage for ammunition and personal items, but there was no boot lid as such.

A rudimentary canvas hood was provided to give the crew some weather protection, but it made the already cramped interior even more cramped and, like many hoods on military vehicles, didn't keep all the weather out!

Mechanically the military Austin 7 benefited from a low ratio rear axle and 19-inch wheels shod with open block pattern tyres to enable it to better cope with fields and muddy terrain. In the event the vehicle should become stuck, small 'bobbins' bolted to the end of each wheel shaft allowed the crew to use handles to lift the car out of trouble, or in case of emergency they could use their leather belts! If the vehicle was really stuck and manhandling it out of trouble hadn't worked a small towing eye beneath the starting handle gave provision for it to be towed out of trouble.

Surprisingly for the time the designers had given great thought to the safety of the crew should the car overturn, and to this end the fuel tank mounted under the bonnet was provided with a special non-leak cap, which was also bigger than the civilian counterpart to aid filling with a standard military fuel can.

The carburettor was also fitted with a special device to prevent it from leaking should the car overturn.



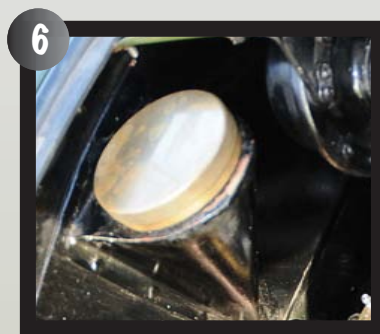
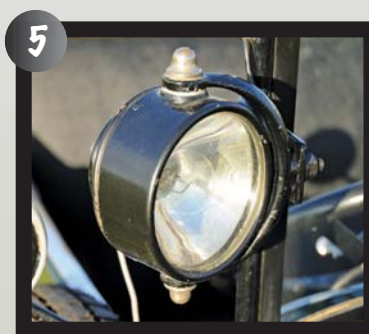
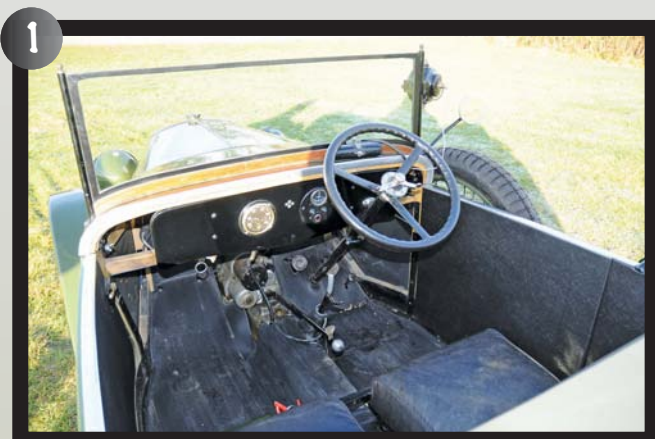
to the Royal Artillery to transport battery commanders..."



Top right: Richard and his father take to the arena at the 2012 Welland Steam Rally. The photo gives a good indication of how small the Austin 7 is, with the passenger needing to place his left arm over the side of the door, and don't forget that neither is wearing the bulky uniform and personal equipment the soldiers of the time would have worn!

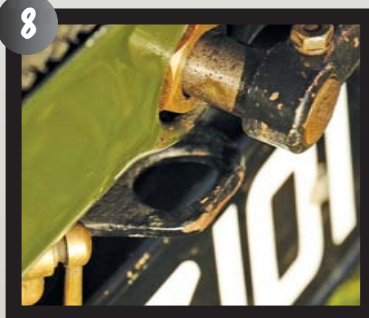
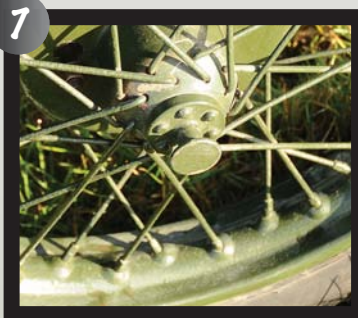
Above right: Richard leaves for the short journey home following the photo shoot, wrapped up well against the bitter December morning, but braving the hood down experience the Austin offers, which is something many classic car owners and enthusiasts enjoy.

Left: Richard poses for the camera with his pride and joy. This side view of the Austin gives a good indication of the new profile to the purpose-built military rear body built by Mulliners of Birmingham.



MILITARY AUSTIN **7**

"The Mulliner bodied Austin 7 is probably the most identifiable of the Austin 7s to be built for the military"



The Mulliner bodied military Austin 7 is the most identifiable of the military Austin 7s, but over the years a number of modifications and improvement were made, and other variants of military Austin 7s were built by other companies, including some 'tropical' variants destined for use in India.

RARE BEAUTY

The fine example of the military Austin 7 featured here is owned by Richard Sheppard of Cheltenham, and I first spied the Austin at my local Welland Steam and Country Fair, which also includes a well supported military section and attracts me the show each year. Having tracked Richard down at the show we arranged to get together for a photo shoot some time later, which if I'm honest I wasn't expecting to be until this year, but with a break in the winter weather just before Christmas I arranged to meet at the Cheltenham racecourse in Gloucestershire on a cold but bright December morning.

Richard has owned the Austin for five years now, having bought it from the previous owner who had it himself for many years, although during that time the Austin did very little mileage, believed to be no more than 100 miles in 10 years before Richard purchase the Austin! Anyone who owns a military vehicle (or a classic car for



MILITARY AUSTIN 7

- 1. Interior:** the Austin 7 was a small car even for the time and not ideally suited to military service.
- 2. Hood:** the rudimentary canvas hood offers some weather protection for the two occupants.
- 3. Rifle Rack:** provision is made to stow two rifles on top of the rear body due to a lack of space within the car.
- 4. Stowage:** the new Mulliners bodywork for the Austin 7 incorporated a stowage locker beneath the rear number plate.
- 5. Searchlight:** a small auxiliary searchlight is mounted to the windscreen on the driver's side of the military Austin 7.
- 6. Fuel Filler:** the militarised Austin 7 features a larger fuel filler cap on the bulkhead inside the engine compartment.
- 7. Wheel Lugs:** small lifting lugs are provided on the ends of each axle to enable the car to be manhandled out of trouble if it gets stuck.
- 8. Towing Eye:** in the event the vehicle gets completely bogged down or suffers a mechanical breakdown a towing eye is provided.
- 9. Engine:** with the exception of some safety devices, the engine of the military Austin 7 is essentially the same as the civilian version.



Austin 7's in Preservation ...

Given that so few of these rare little cars were built in the first place and all of them are now more than 80 years old, a surprising number of them survive in private hands and they regularly turn up at military vehicle shows up and down the country.

I personally have seen four examples to date, however, I am aware of a couple more that I have yet to track down! The first one I ever came across was at the Royal Signals Museum, Blandford in Dorset (shown top right) and while it is a different variant to that featured in this article, is nonetheless a fascinating vehicle.

Another example that has been a regular at the Duxford military vehicle show and belongs to David Morgan (bottom left & right) has even taken to the display arena, proving the 'off-road' credentials of these remarkable little Austin 7s! David has a second military Austin 7, albeit a slightly different variant to the Mulliner bodied 7 in this feature.

Another less familiar military Austin is affectionately known by its owner as 'Olive' (shown centre right), and is in fact a converted 1935 Austin 7 Ruby and quite different to the purpose-built military Austins. The Austin was converted to represent a type that is believed to be part of a small batch converted for military use. 'Olive' is now one of a number of classic cars owned by Kim Leachman, some of which are hired out for nostalgic trips around Dorset!



that matter) will know that lack of use isn't good for the vehicles, they need to run on a regular basis to avoid mechanical problems and sadly this lack of use resulted in regular breakdowns and mechanical niggles over the first few years Richard owned the car. While they were mainly minor irritations caused by the car sitting around, solving each fault made the car better and more reliable and since the car has been overhauled it has become a far more reliable vehicle and is in regular use, appearing at a number of shows.

Arriving at the cold, crisp racecourse for the photo shoot, the Austin 7 stood out from the hundreds of run-of-the-mill cars there for the Sunday morning car boot, and climbing from the car out to warm up while we chatted about what I wanted to do, Richard was quick to point out that the military Austin 7 wasn't the most comfortable of vehicles to drive due to its small size, and in cold

weather with the hood down is downright cold!

The wet weather over the previous months had meant that much of the grass car park at the racecourse was blocked off for the Sunday morning car boot sale, and I must admit I was a little reluctant to ask Richard to park the Austin on one of the few areas that wasn't roped off, fearing it might get stuck, even though it looked to be okay. Without a second thought Richard jumped into the car and immediately drove into position without any drama, and more importantly without sinking into the very wet ground, demonstrating perfectly the benefit of having such a light vehicle on the battlefield, in fact in reports from the time of the Austin 7's introduction would often note that the little Austin would go places the larger cars and trucks couldn't!

Not wishing to keep Richard hanging around on the cold and frosty morning I made a start on the photos

as Richard filled me in on the background to the vehicle, pointing out the various characteristics particular to the military Austin 7 and while the car didn't sink into the ground, I did! The Austin is a very pretty little pre-war car, and much sought after in collecting circles, so much so that prices are starting to rise significantly, but the military Austin 7 is such a rarity I would anticipate it commanding a five-figure sum – if you could find one of course!

In many ways the military Austin 7 fulfils a number of key criteria when it comes to vehicle ownership. It's small and easy to work on, parts are plentiful and there are many specialists offering parts and rebuild services for the Austin 7 family, and what's more the military Austin 7 would be equally at home at a classic car show as a military vehicle show. Couple this with a vehicle that looks to be a very good investment and you have a great candidate for a future project.

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DESERT



SONG

Originally called the Long Range Patrol, the Long Range Desert Group (LRDG) was founded in June 1940 and, with an urgency borne of necessity by the Italian threat to Egypt, the first Long Range Patrols left Cairo slipped into the desert in September of that year to, famously, 'engage in piracy on the high desert'. The David and Goliath exploits of the unit typified the fighting spirit of the British despite the fact that Britain and her empire stood alone against the Nazis and the fact that the war wasn't going Britain's way.

The LRDG's origins actually pre-date the war and stretch back to the twenties and thirties when Europeans were searching for the legendary lost desert oasis of Zerzura. Foremost among the group was Ralph Bagnold, a Cambridge graduate and officer in the Royal Corps of Signals. Having been posted to Egypt in 1926, he bought a Model T Ford and, impressed by its ability to travel on unsurfaced tracks, began to explore the vast and roadless desert regions. Using sun compasses, Bagnold and his colleagues learned how to navigate in the vast expanses of desert and mastered the art of driving their vehicles over huge sand dunes without overturning or getting stuck.



John Carroll and friends follow the tyre tracks of the LRDG through Egypt's western desert

As their collective experience grew, the group embarked on ever more ambitious trips. In 1929, in Ford Model A and Model T pick-ups, a group drove into the Great Sand Sea, a place that was generally considered to be impenetrable by car then, during 1930, the group drove to Jebel Uweinat. In the November after this trip, the Zerzura Club, named after the lost oasis, was founded by Bagnold and his companions. If anything, the mythical status of the oasis encouraged, rather than dissuaded, members and the club grew. One recruit was László Almásy, the man behind the fictionalised character in *The English Patient*.

The outbreak of WW2 brought this halcyon period of recreational desert travel to an end and via a circuitous route, Bagnold's pre-war desert experience led to the founding of the LRDG. The unit's adventures became the stuff of Boy's Own adventures and Commando comics and, regardless of the massive liberties taken with the truth in Michael Ondaatje's 1992 novel and the subsequent, Academy Award-winning movie, it reignited interest in the pre-war era of desert exploration.

FOLLOWING FOOTSTEPS

In our case, three friends, with overlapping interests in desert travel, military vehicles and classic 4x4s, talked more than once about following in the unit's tyre tracks through Egypt. Finally, after a few false starts and a year's delay imposed by the 2011 Egyptian Revolution, managed to make it happen. In April 2012, a diverse group of eight from Egypt, England, Sweden and the US set out, in a pair of 1943 Jeeps, to follow some of the LRDG patrol routes through the vastness of the Western Desert and the emptiness of the Great Sand Sea. It was a relief to finally find ourselves negotiating the bureaucracy in the Port of Alexandria to free the Jeeps from the shipping container in which they'd come from Harwich, England. It was a hot and tiresome business for a couple of days but, finally, in the cooling air one evening we were happy to head south west, Jeeps loaded and tilts flapping.



Jason

Bob



Mahmoud



Above right: filling up the Jeeps at Farafra, a far cry from European filling stations!

Right: throughout this journey we were treated to stunning scenery.

Far right: one of the stop offs during the journey was the 'Cave of the Swimmers' an incredible place offering us a welcome break.

Bottom right: one problem with the wartime Jeep is a lack of sun visors!

Main photo above: when the wind gets up in the desert and sand starts to fly there's little else you can do but press on regardless, albeit dressed suitably for the conditions.

There's a tarmac road through the oasis towns that wasn't there during the Second World War and we drove through the night to reach Bahariya. The next day with little more than military checkpoints and fuel stops to interrupt the journey through the oases of Farafra and Dakla we took turns driving and the group's spirits soared with each mile south. We overnights in Mut, serviced the Jeeps, including resetting the valves on one, and then, just south of yet another military checkpoint, simply turned right into the sand.

The advent of GPS has made desert navigation much easier and removed the reliance on the sun compass, but it hasn't removed the need to maintain old vehicles in this

arid environment. The Jeeps, a Willys MB and a Ford GPW, belonging to Toby Savage, would require daily maintenance and checks from now on especially as we were trying to cram an 11-week LRDG patrol route into three weeks. Both Jeeps had been recently overhauled but, with the exceptions of alternators in place of dynamos, modern tyres and dash-mounted power sockets, were largely standard. Desert war-inspired touches include the cut grilles and condenser bottles.

LRDG LEGACY

Not far into the sand from our first camp, we came on the first evidence of the LRDG and associated units such

as the Sudan Defence Force (SDF) when on top of a rock outcrop was a cairn made from the pre-war-style petrol tins known as 'flimsies' because of their inherent weaknesses. Soon afterwards was the scene of some truck maintenance; an in-line, six-cylinder Chevrolet engine and many of its components lay in the sand where a vehicle had been worked on. The next point of interest was a cairn with a Welsh slate plaque erected in 1984 to mark the point from where, in that year, a Chevrolet WA 30 cwt 4x2 truck was recovered. The truck in question is W8 Waikaha, truck No.8 of W patrol LRDG and is now on display at the Imperial War Museum in London, a place that seemed a very long way away at this moment.

John



Toby



Sam



Rick



From this point onwards, the next ten days of the trip settled into a routine of driving, camping and navigating our way via a selection of remains - some would say rubbish - left by the LRDG and the SDF including several Ford trucks. These include two different CMP 4x4 Ford and, near Wadi Bakht, a 1.5-tonner 4x2 with a yellow-edged, RAF desert air force roundel still visible on its cab roof. We see an airfield marked out with tens of flimsies but not the famous 'Eight Bells' one because, such is the current political situation that our mandatory military escort won't let us travel further south. We camp at the entrance to Wadi Wassa - wide wadi - and check the Jeeps over, so far we've only suffered one puncture.





Right: despite the harsh conditions the two Jeeps performed beautifully, needing only routine maintenance and the occasional makeshift repair, such as this air intake repair with a can.



Right: on one occasion we managed to get water in the carb, not good, but soon sorted thanks to our expert band of mechanics.

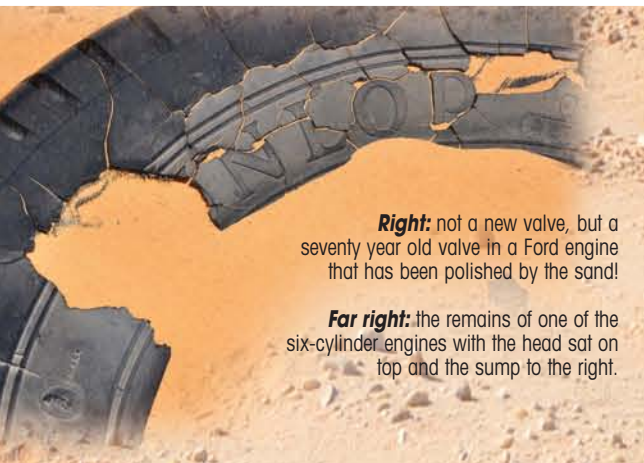


Around the dinner table, with the GPS, we work out that we have driven 127 miles that day and are a staggering 1100 miles from Cairo. The next morning we head out for what promises to be a demanding morning, starting with a brief stop at another abandoned in-line six engine where two holed pistons are testament to it failing. A steep, sandy climb to Shaw's Cave at Magharet El Kantara on the southern edge of the Gilf Kebir National Park then follows. On the saddle separating Wadi Wassa from Wadi Firaq, Rupert Harding-Newman discovered a series of rock paintings in a shallow cave. The pair both served in the Second World War, Kennedy Shaw with the LRDG and Harding-Newman with HQ 8th Army. The wadis were subsequently used as a route for the convoys supplying Kufra

Oasis in Libya, which was captured by LRDG and Free French under Leclerc in February 1941. From here we turned north, drove past the distinctive 'Three Castles' rocks and headed into Wadi Sora. Bouncing around in the back of the Willys MB, I scribble into my notebook, 'lazing on the back seat, blue sky, hot, dusty, views of far off hills and giffs. This is Jeeping!'

Hot Stuff

It really is hot and there's next to no shade as we pull up for lunch alongside an abandoned White 6x4 truck. From here the route is clearly marked with flimsies and ruts from the convoys of heavy trucks that once frequented this empty place in order to keep the occupied oasis of Kufra, Libya supplied. The going is mainly

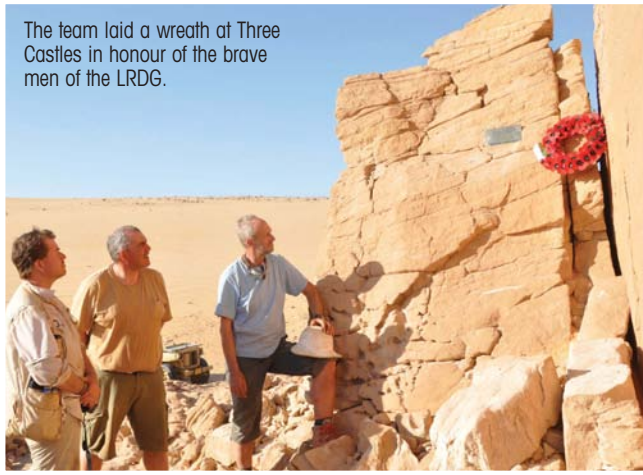


Right: not a new valve, but a seventy year old valve in a Ford engine that has been polished by the sand!

Far right: the remains of one of the six-cylinder engines with the head sat on top and the sump to the right.



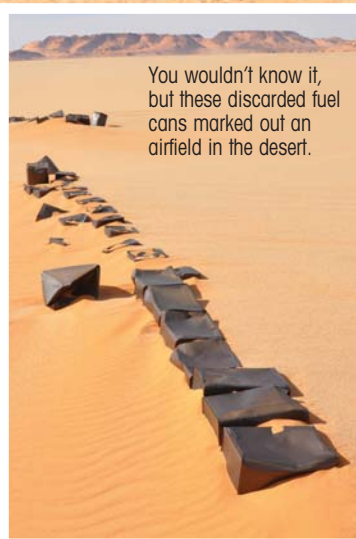
The team laid a wreath at Three Castles in honour of the brave men of the LRDG.



It's incredible just how many relics left behind by the LRDG are still out there in the desert and we took this rare opportunity to take a closer look at all of them.



firm but different coloured patches in the sand are a clue to the whereabouts of softer patches and we develop a technique for preserving momentum; from 2WD high range third, we knock it down into second then first as it gets stickier and if the Jeep almost stops, we knock it down into 4WD low range first and crawl through. We leave a poppy wreath at Three Castles, a LRDG look-out point, and, as the shadows lengthened, stopped at another abandoned truck, an SDF Chevrolet. As we drew near the gulf, the terrain changed and it was almost



You wouldn't know it, but these discarded fuel cans marked out an airfield in the desert.



Top right: with such a busy schedule it was sometimes a case of snatching a bite to eat during maintenance.

Above left: artefacts are littered everywhere, and in remarkable condition thanks to the hot, dry conditions in the desert.

Above right: an LRDG cairn constructed from old POW cans still sits atop a rise in the desert nearly seventy years on.



Above: the hotel in Cairo provided a welcome change to the camping in the desert. Note the pyramid in the background of the photo.

Top right: the long, arduous trip across the desert was made all the more enjoyable by the team members, all of whom got along well.

Below: there wasn't a lot of traffic in the desert, but this camel was one of the few things we can across.

dark as we pulled up to camp. The next morning László Almásy's name crops up again as we visit the famous Cave of the Swimmers where he discovered the 10,000 year old rock paintings in 1933. Ahead of us is El Akaba, a driveable pass first tackled by Almásy and party in 1933. It's a long, steep and sandy climb but the Jeeps make it.

We spend the rest of the afternoon negotiating saucer-shaped bowls of soft sand divided by rocky outcrops and camp at the southern edge of the Great Sand Sea. Each morning there's a ritual; tents down, breakfast and Jeep maintenance. We go over the Jeeps and re-inflate the tyres, starting at 15psi in the mornings, the heat of the day means this rises to over 20psi so they have to be partially deflated and the cool of the night makes them drop to around 10psi, which is a bit low for the rocky stuff. We have rags wrapped around the fuel pumps so that if things get too hot they can be soaked with water to prevent fuel evaporating. Later though, we have the only breakdown of the trip when a clutch linkage rod snaps. Necessity is the mother of invention and we make a new one by cutting and bending the steel from a long screwdriver.

GREAT SAND SEA

The Great Sand Sea is one of the largest dune fields in the world and contains some of the largest recorded sand dunes. It is a revelation; it covers almost 30,000 square miles in which, seemingly endless, lines of sand dunes are oriented north-south. This means that we can drive north in the inter-



dune corridors so minimising the number of dune crossings required. Siwa Oasis is the northern gateway to this area and it will take us four days to get there. We make good time on the hard going between dunes but it slows down where crossings are required. Going over the dunes requires momentum and confidence and, with the lack of shade, it's hard to focus. The technique is to find and drive up the long side of the dunes gradually over several miles and then drop down the fall line of the steep side in 4WD High. On the way down, if the front end starts to dig in, it's imperative to accelerate. The wind makes things dusty but keeps the temperature down and faced with massive expanses of sand we drop the tyre pressures to 12psi.

That night we camped near an abandoned CMP 4x4 Ford with its flathead V8, with one cylinder head removed, lying in the sand. This truck belonged to the Rhodesian LRDG S-Patrol and was left here with a broken steering column during April 1941 (It was featured in the February 2011 issue of MMI). Next morning, the wind makes Jeep maintenance difficult and we use the tilts as windbreaks and it feels very authentic. A landmark is Pillar rock, so named by the 1930 Bagnold Expedition, the only rock outcrop of any sort for fifty miles or more and a LRDG rendezvous.

The LRDG patrols used to attach the Wyndon aerals - a wire of variable length stretched between two poles - or in this case a pole and the rock outcrop. In this way the No. 11 Radio Set, standard equipment for LRDG's wireless trucks and, using morse code

and this external aerial, communication over hundreds of miles could be achieved.

The next landmark, Russian Well, is the legacy of more recent exploration when, during Nasser's era, the Russians searched for oil. We camp near here and are awoken in the early hours as the wind shifts 180 degrees and blows almost a foot of sand against the tents. Even this uncomfortable night can't dampen our spirits, even though we'll be driving into the wind and grit all day, as we make the final run into Siwa Oasis from where the LRDG operated. It's not journey's end because it's still a long haul back to Cairo on the metalled road but the real desert and the real adventure is behind us.

There's a tell-tale spot of oil on the rear axle of the Willys MB and it's clear that the diff pinion seal has gone. We top up the oil with a funnel made from a plastic bottle and duct tape and with subsequent top ups, it gets us all the way back to Cairo via the inevitable 'Ice Cold In Alex' moment as there's no beer in Siwa. The toast is, of course, to Ralph Alger Bagnold and the LRDG. By the time we see the pyramids through the flat screens, we have driven the Jeeps 2300 miles, and of this, 1000 was off-road.

It's a trip that's generated memories that will stay with us forever and make us appreciate further the audacity of the LRDG both in terms of fighting the war and in travelling through these vast empty places.

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John Carroll



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— DAIMLER — FERRET

Geoff Fletch
Scout Car

The Daimler Ferret is an iconic vehicle of the Cold War period. It served with the British Army all over the world from 1952 to 1993 and today there are many examples in preservation and museums around the world.

By 1949 the range of types that had been used by the British Army in the Liaison role had been reduced to the Daimler Mk 10 (Dingo) and the Ford Lynx. In the Reconnaissance role the Humber Mk 2 remained, but all of the other types that had served during WW2 were declared obsolescent and sold to other countries or for scrap.

Parade ground photo of one of several Ferret Mk 2 vehicles used by FVRDE. Note the driver's window over the driver's hatch. (Photo - TMB)



er looks at the iconic British Armoured

A specification was drawn up for a replacement in 1947 as part of the new range of vehicles planned after the war. It was to use the B60 Rolls Royce engine and share the mechanical layout of the Dingo although the internal layout was changed, as the driver would sit in front of the commander rather than alongside him. This led to a high central raised hull to give the commander a good all round view particularly over the driver.

The earliest prototypes were called 'Field mouse' which may have been an accurate description of the intention of the vehicle – to move inconspicuously in the field like a mouse – but it was not a particularly military name. Before production began in 1951 the name 'Ferret' had been adopted, suggesting the vehicle had both an aggressive and stealthy character.

It should be noted that although the attached list details all the serials allocated on the British register to Ferrets, in the early years many, if not the majority, were intended for export. Large numbers of them were 'struck off' shortly after they arrived at a RAOC Vehicle Depot and thus although they entered service they, and one or two complete batches, were earmarked for export. After individual Ferrets were struck off they were sold on to various Commonwealth countries as well as a number of NATO allies. Ferret in its various forms remained in production until late 1967 with a few Ferret Mark 4 and 5 entering service as late as 1969.

VARIANTS

Initially there were two basic versions - one with a basic open-topped superstructure - known as the Mk 1 and another with a turret to be known as the Mk 2. The Ferret first saw operational service in Malaya, where a number of Mk 2 vehicles were converted by the addition of an

armoured collar to raise the height of the turret and improve the commander's vision and as such became Mk 2/2. Some of these were later returned to the UK and they served with the Berkshire and Westminster Dragoons.

The RAF ordered 17 Ferret Mark 2s under contract 6/FV/4267 (44 AB 04 to 44 AB 20) in about 1956 for service in Aden. They were presumably intended for use by the RAF Regiment and local Levies protecting Khormaksar airfield. The idea was to be short lived as they are noted for transfer to the Army in 1957 (as 09 BB 55 to 09 BB 70) although this action was never completed.

Ferret was the subject of at least two rounds of improvements in its armour protection. The first set of improvements was made to both the Mk 1 and Mk 2 in 1958 and resulted in the Mark 1/1 and Mark 2/3. A second round in 1967 resulted in the Mark 2/4 and Mark 2/5 representing upgrades to the basic Mark 2 and the Mark 2/1.

An attempt was made by GHQ MELF to find mine clearance equipment for Ferret and this became known as the 'Blues Roller'. A bracket mounted on the front of the hull allowed two arms with wheels to be fitted, which moved in front of the vehicle and cleared a track for the driver to follow. It is alleged to have

Below: the crew of a Ferret Mk 2/3 on watch in the 1960s as Chieftain tanks pass by on exercise in BAOR. The '7/2' is for the Chieftain regiment attached to 7 Armd Brigade. (Photo - TMB)

Bottom left: Ferret Mk 5 vehicles of the Household Cavalry paraded at Airborne Forces Day in June 1975.

Bottom right: Ferret Mk 1 at the Tyneside Show in Newcastle in July 1983. The markings '15/2' indicate the Queen's Own Yeomanry and this vehicle belongs to the Northumberland Hussars. (Photo - GDMcL)



Right: a group of Ferret Mk 1/2s awaiting disposal at 1 RHA, Hühne in Germany in July 1992. Note the different MG pintles on the two vehicles closest to the camera, the one on the left having a newer type for the GPMG. It also appears to have a stowage basket and stowage bins mounted over the rear engine compartment, a common modification given the lack of stowage space for the crew.



Below: Ferret Mk 1/2 showing the fixed armoured superstructure and the Bren machine gun mounted on the pintle at the front of the turret. (Photo - TMB)



Right: Ferret Mk 1/2 showing the fixed turret for the commander and the machine gun pintle bolted to the front face of the turret.



been developed and tested by the Royal Horse Guards ('The Blues' – hence the name of the device) whilst based in Nicosia between 1956 and 1959 and intended for use in the Persian Gulf, probably Aden. Most examples are photographed in Cyprus and show only the bracket so it is difficult to discern much of the mechanism but it is understood to have involved rollers on outriggers ahead of the vehicle.

A new version with a fixed turret for the commander with a machine gun pintle at the front became the Mk 1/2. Its intended users were the Battery Commanders and Forward Observation Officers of Field Regiments of the Royal Artillery in BAOR and entered service in 1962 with Abbot batteries, serving as an Observation Post (OP) vehicle until replaced by Warrior OPV.

The next stage of the Ferret story was a chapter of fitting it with anti-tank missiles. The British Army had experimented with an air-portable anti-tank system with the Humber Pig-based Hornet carrying the Australian Government Aircraft Factories Malkara missile. The concept was to engage enemy main battle tanks at long ranges (up to 5000 yards), thus enabling enemy armour concentrations to be broken up before they could threaten British armour. The Malkara trials had helped to develop the concept and the next stage was to mount two wire-guided Vigilant missiles on a Ferret turret. In this form the vehicle became the Ferret Mk 2/6 and it began to enter service in 1965. Seventy of these vehicles were purchased and from 1966 they equipped the two armoured reconnaissance regiments in BAOR. They were withdrawn from service in 1976.

In order to provide a recovery vehicle to serve with the reconnaissance squadrons of the Royal Armoured Corps, REME developed a Ferret Mk 2 equipped with a recovery jib at the rear. Several such vehicles are known to have been produced.

NORTHERN IRELAND

The Ferret Mk 2 served in Northern Ireland during the early days of the conflict. The resident Reconnaissance Regiment based at Lisanelly Barracks, Omagh was equipped with them and they were widely used for patrols in urban areas. To fit them out for their Internal Security role mesh covers were provided for headlamp glasses and vision slots as missiles were often thrown at the passing vehicles. At the

start of 'The Troubles' in 1969 the unit at Omagh was 17/21st Lancers although other regiments moved through later on 'Arms Plot' and there was also an additional roulement regiment at Gough Barracks, Armagh. The Ferrets were referred to as 'Daleks' by the local people and were much disliked. The army withdrew them in 1982 preferring to rely on Land Rovers and Humber Pigs that were less overtly aggressive.

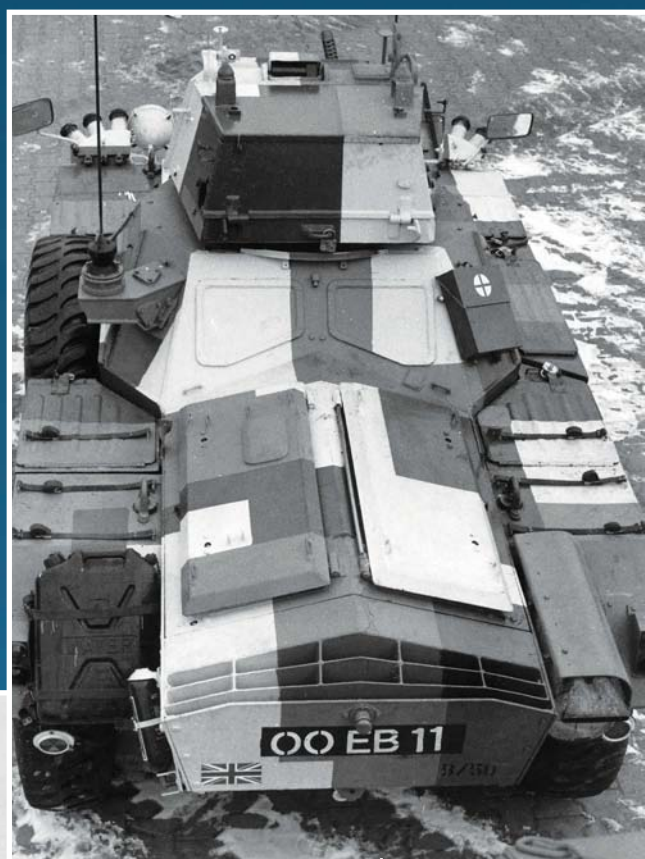
Although the Ferrets Mk 1 and Mk 2 had carried out their roles successfully, by the early 1960s plans were made to improve their ability to cross water obstacles. At this time the Army was convinced there was a threat that British armour in Germany could be trapped by the Warsaw Pact. With the Warsaw Pact and the fast flowing and broad German rivers such as the Rhine, Weser and Elbe the Army could find itself with no escape route. These fears were only overcome when the M2 Bridging and Ferrying system had fully entered service, but experiments were carried out at Fighting Vehicles Research & Development Establishment (FVRDE) Chertsey and resulted in the conversion of a few examples by the addition of buoyancy aids to enable them to be floated across rivers with limited propulsion provided by the wheels. Earlier there had also been a version of the Mk 1 known as the Mk 1/3, which was rigged for deep wading with a corrugated extension to the commander's hatch and extensions to the exhaust and air intake at the rear

of the engine compartment. Neither method of crossing rivers fully met the requirements of the Army in BAOR.

By 1964 versions of the Mk 1 and Mk 2 had been developed with a flotation screen and 11.00 x 20 tyres in place of the original 9.00 x 16 tyres. These became the Mk 3 and Mk 4 'Big Wheel' Ferrets. At the same time an interim vehicle was needed to mount the Swingfire anti-tank weapon whilst CVR(T) Striker was being finalised. This vehicle was intended to give reconnaissance regiments a significant anti-tank capability to enable them to engage the envisaged mass attack by Warsaw Pact tanks and was known as the Ferret Mk 5.

The Mk 3 was never more than a prototype. Some sources suggest that both Ferret Mk 4 and Mk 5 also did not enter service and were merely prototypes, however, both types entered service for a limited period with air-portable reconnaissance regiments supporting the Strategic Reserve. All of the Mk 3 and Mk 4 vehicles produced were conversions of existing chassis drawn from Ferret Mk 1 and Mk 2 production batches.

There was a batch of newly produced Mk 5 examples 03 ED 78 to 04 ED 09, although the apparently later batch 03 EE 02 to 03 EE 06 were all used for development work. Once CVR(W) Fox and CVR(T) Striker entered service in 1973 and 1977 respectively there was no longer a requirement for these versions as Fox superseded the Mark 4 and Striker the Mark 5 so they were withdrawn.

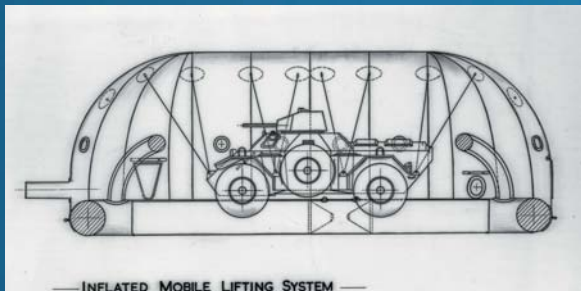


Top: this Ferret has been given a hard time in the mountainous country north of Aden. (Photo - TMB)

Above: Ferret Mk 2 with the unusual urban camouflage scheme worn in Berlin. (Photo - DP)

Left: the commander of a United Nations Ferret Mark 2/3 monitors the 'Green Line' as it crosses Cyprus dividing the opposing forces. (Photo - TMB)

FERRET PROTOTYPES



Top: one of the more 'wacky' ideas for crossing rivers was this inflatable mobile lifting system. (Photo - TMB)

Above: Ferret Mk2 prototype with flotation equipment crosses the river Bann in Northern Ireland during Exercise 'Coachman' in September 1963. (Photo - TMB)

The prototype Ferret Mk 2/6 with a Vigilant missile mounted each side of the turret. (Photo - TMB)



Ferret Mk 5 with the turret mounting four Swingfire missile boxes. (Photo - TMB)



Left: Ferret Mk 1/2s after withdrawal. The vehicle is one of several parked up at vehicle Depot Ludgershall marked for return to Alvis presumably for refurbishment and onward sale.

Bottom: Ferret Mk 5 vehicles of the Household Cavalry paraded at Airborne Forces Day in June 1975. These are rare vehicles in private hands due to the small numbers built.



As I explained in a previous article it was expected that Ferret Mk 1 would be phased out as the intended CVR (W) Vixen entered service. In practice both the Mk 1 and Mk 2 versions served on until they were withdrawn in the 1990s after having served with various units during the First Gulf War, with many of the last Mk 2s serving with the Royal

Engineers until replaced by CVR(T) Spartan, making the Ferret one of the longest serving armoured vehicles with the British Army.

My thanks to the Freelance Military writers (FMW), David Payne (DP), Gordon McLaughlin (GDMcL) and The Tank Museum, Bovington (TMB) for the use of photographs.



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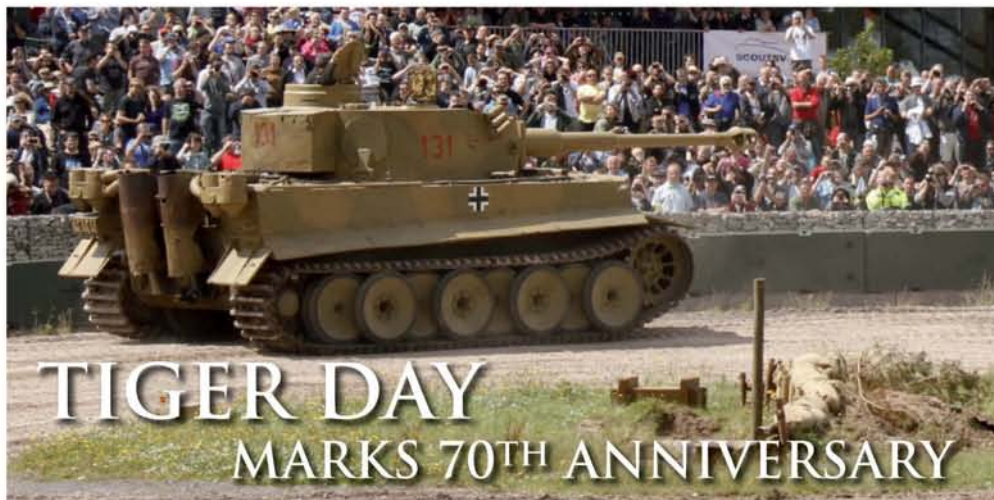
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TANKFEST



TIGER DAY MARKS 70TH ANNIVERSARY

2013 marks the 70th Anniversary of the capture of Tiger 131; a tank which is now the most famous vehicle in The Tank Museum collection.

To commemorate its spring 1943 capture by British soldiers, The Tank Museum is hosting Tiger Day on Saturday 30th March 2013.

"Tiger Day is an opportunity for us to explain the history and significance of the Tiger tank, and separate reality from the myth that has grown up around it," explained Curator David Willey.

The highlight of the day will be a 30 minute Tiger Tank Action* display which will examine and compare this World War Two beast to its Axis and Allied contemporaries; including Matilda II, Panzer III, T-34 and Sherman. The display will also examine the impact Tiger had on future tank design, with Centurion and Leopard taking to the arena. A range of other activities will be taking place in the Museum, with talks, tours, and kids activities.

Of the 1,300 or so Tiger 1's produced it is one of only six known to survive. It was the first to be captured intact by the western allies and having given up its secrets to British evaluators, it was given to The Tank Museum in 1951.

Last March saw 2,000 visitors looking on as the Tiger crept around the arena at the inaugural Tiger Day. But why so much attention on one tank?

David explained; "The Tiger was in effect a propaganda weapon and as a result it has had an aura around it from the moment it was first deployed in 1942. Many myths have endured and this is what gives the Tiger tank the status it enjoys today."

Normal admission and opening hours apply & annual pass holders admitted free! **T**

*As with all our historic machines, the appearance of the Tiger tank in the display is subject to its mechanical reliability on the day.

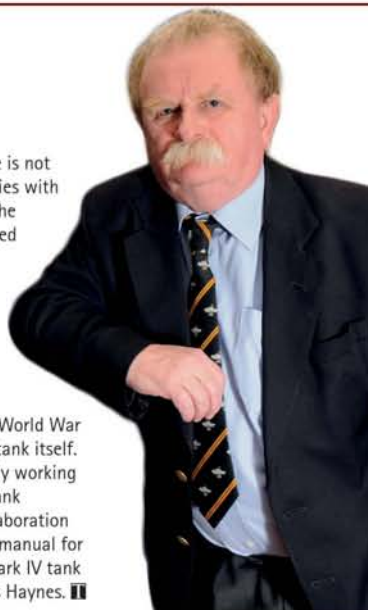
END OF AN ERA

Military Historian David Fletcher has retired after 30 years service.

David, who was awarded an MBE in the Queen's 2012 honours list, first visited the Museum in the 1960's and had spent many years researching armoured warfare before he joined the staff in 1982. He would become the world's leading armoured warfare expert. Now the longest serving Museum employee, David has over 30 books, hundreds of magazine articles and numerous television documentary appearances to his name.

David says he intends to spend his retirement writing and

hiking, but he is not severing his ties with the Museum he has contributed so much to. He plans to continue his research with one eye on the approaching centenary of World War One and the tank itself. He is presently working on another Tank Museum collaboration to produce a manual for the British Mark IV tank for publishers Haynes. **T**



INSIDE...

- CATCH THAT TIGER
- THE FIRST PANZER
- SOLAR POWER
- WHAT'S ON
- RE-ENACTORS WANTED

FROM THE PROJECT MANAGER



Roy Hicks

Torrential rain and high winds haven't slowed the pace of construction here this winter.

Two months on from the day that BBC presenter Jeremy Paxman volunteered to 'break the earth' on the Vehicle Conservation Centre (VCC) project, work halted for the Christmas break with 90% of the steel frame for the 40,000 sq ft building in place. Having seen only architects drawings over the last couple of years, it is only now that we can really appreciate just how substantial this new building is.

Contractors Dawnus remain on target to complete the new publicly accessible building before TANKFEST, but it will be late autumn before it is opened with a modest conservation exhibition and around 100 tanks - many of which will be on public display for the first time.



Jeremy Paxman
breaking ground

There has been just as much work taking place below ground level. On a 'brown-field site' there can often be unpleasant surprises lurking below the surface and with a site that has been in military use for around 100 years, that could have serious implications. The World War One era military huts that once occupied the site raised

Continued on page 2...



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FROM THE PROJECT MANAGER CONTINUED...



fears that there could be both asbestos and unexploded ordnance in the ground. Fortunately we have encountered neither so far.

Digging continues, as a new tank wash facility being built as part of the project requires a specialised drainage system and a 50,000 litre underground rainwater storage tank. The unit, which will remove the mud and grit that coats vehicles when used in the arena, will be fed by 'recycled' rainwater whilst the drains will filter out oil and silt to ensure that all waste water entering the sewage system is as clean as possible.

The Vehicle Conservation Centre is just one part of a wider programme which was awarded a £2.5m grant from the Heritage Lottery Fund last July. You may recall from August's Tank Times that the project also includes two major new exhibitions.



The first of these will be launched to mark the centenary of World War One in 2014. War Horse to Horse Power will specifically examine how this conflict saw contrasting fortunes for the role of the horse and the cavalryman and the role of military vehicles and their crews.

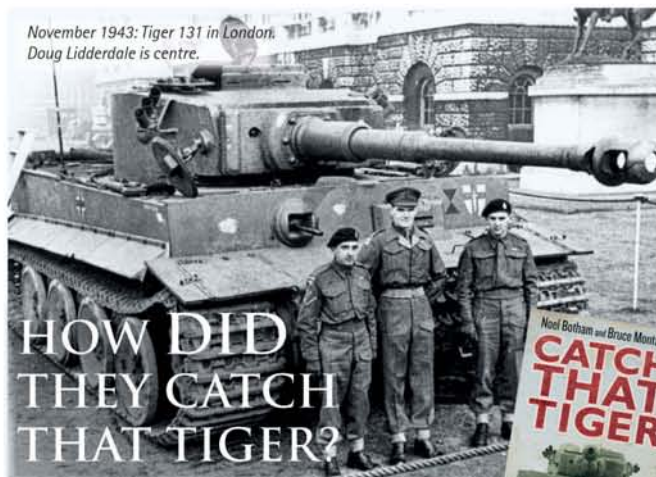
It will be a fantastic complement to our existing Trench Experience, ensuring we have a strong and unique narrative to commemorate the centenary period of a conflict that saw the birth of the tank.

There is a lot to look forward to at The Tank Museum! **T**

Handwritten signature of Roy Hicks

Roy Hicks
Project & Commercial Manager

November 1943: Tiger 131 in London. Doug Lidderdale is centre.



HOW DID THEY CATCH THAT TIGER?

There have been numerous books and documentaries written about The Tiger Tank since the first intact machine was captured in April 1943.

But no other title has sought to challenge the accepted version of events as dramatically as *Catch That Tiger* – a book that provides a new account of the capture and recovery of Tiger 131 which is based on a previously unpublished (and, to date, unverified) source.

"This book has put us in a difficult position because some of those who have read it have come away with the false impression that we support or endorse the work," said Museum Curator David Willey. "Our judgement on it is based on the evidence we hold, which I feel speaks for itself."

David argues that the account given in *Catch That Tiger* fails to correspond with the evidence held at The Tank Museum; which includes the testimony of the book's lead protagonist, Major Douglas Lidderdale.

The letters that Doug Lidderdale wrote before his death in 1999 would make uncomfortable reading for anyone who accepts the claims made in *Catch That Tiger*. Because whilst he was heavily involved in the story of Tiger 131, he clearly admits he wasn't there when it was captured.

In contrast, *Catch That Tiger* puts him central to the action. The authors claim that Lidderdale kept a secret wartime diary, which reveals that the capture of Tiger 131 was the result of a top-secret mission given to him by Winston Churchill in person. It describes a "close hand shoot-out" in which Lidderdale and his men overpower the crew of Tiger 131 in order to secure its capture. It states that Lidderdale's son uncovered the diary and that the Major had been ordered to remain silent about the mission.

As a REME officer, Lidderdale's role was to recover the tank from the battlefield and see it safely back to the UK for evaluation. This led

to a life-long fascination with the tank that had also played a large part in the life of Peter Gudgin – a veteran 48 RTR officer who was knocked out of his Churchill tank by Tiger 131 on the day it was abandoned. The two exchanged a lengthy correspondence in their later years. Peter Gudgin died in 2011.

Crucially, Doug never claimed or insinuated any involvement in the capture of Tiger 131. On the contrary. His letters reveal a man who is fascinated with accurately piecing together every minute detail of what occurred to Tiger 131 from its capture to the day it arrived at The Tank Museum in 1951.

In one letter he wrote that it was whilst receiving the briefing to recover the tank from the battlefield that he first heard that Tiger 131 had been immobilised in battle by a Churchill. He goes on to acknowledge that Peter Gudgin was the most reliable source on events that day because; "He was there at the time, I only later." In another letter he wrote; "No one can be quite sure which of Peter's troop fired the shot which caused the Tiger crew to abandon ship but he is content that one of them did."

"We aren't opposed to new theories that challenge our understanding of our artefacts," explained David. "But we do expect them to be rigorously backed with evidence. We should not forget that British soldiers died in the action that led to the capture of Tiger 131 and to cloud such history would be to do Lidderdale, Gudgin and the diminishing number of veterans a tremendous disservice."

The Tank Museum will be publishing some of Lidderdale's letters on its website so readers can make up their own minds. In the meantime, the Museum awaits any further evidence to support the version of events found in *Catch That Tiger*...

SUN POWERS MUSEUM



2012 may have been the 2nd wettest year on record – but the Dorset sunshine has powered a green revolution at The Tank Museum.

The 200 solar photo voltaic panels installed at the Museum in December 2011 have exceeded their initial power generation and carbon saving estimates, in what was the first independently financed renewable energy project on a Ministry of Defence building.

It was hoped that the panels would reduce the Museum's carbon footprint by 20 tonnes a year, whilst generating 10% of its total power needs. But readings show that the panels have generated 6,500 kilowatt hours more than the 47,000 initially expected, generating around 12% of the Museum's needs and reducing its carbon footprint by over 30 tonnes. **II**

HORSE TRIAL



With over 15 months to go until The Tank Museum launches "War Horse to Horse Power", the Exhibitions team are testing the devices they will use to tell the story.

One of the proposed interactive elements is a sculptural horse, of which up to ten are planned to feature in the exhibition. Inspired by Michael Morpurgo's book War Horse, each horse will 'talk', recounting their 'experiences'; whether taking part in a 1914 cavalry charge, pulling heavy guns across the muddy Somme battlefield, or racing across Salisbury Plain on a 1920's training exercise.

The prototype talks of its first encounter with a tank in 1916 and visitors are being asked to give their views about the horse and what it 'says'.

The feedback will enable the exhibition team to make changes during the next design phase. **II**



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A7V

THE FIRST PANZER

THE BRITISH MK I TANK WAS UNLEASHED DURING THE BATTLE OF THE SOMME IN SEPTEMBER 1916 – BUT THE GERMANS WERE MUCH SLOWER TO DEVELOP AN ARMoured FIGHTING VEHICLE OF THEIR OWN...

Whereas British strategists were eager to conceive and deploy some kind of 'land ship' as soon as the war reached a stalemate in 1914, there seemed to be less enthusiasm for the concept amongst the German General Staff. Even after the first British tank attack, they prioritised the development of anti-tank tactics and weapons.

This may be due to the fact that the tank was an offensive weapon and the Germans were, with one important exception, effectively engaged in a defensive war.

But the appearance of the Mk I did force a German response. That same month a unit was set up to design and build the first German tank.

The first pre-production model of the new tank was complete a year later. In appearance, it was more 'land ship' than its British counterpart; an armoured box on tracks bristling with weaponry. With a crew of 18, it required 10 more men than a British tank. There were two men for each of the 6 machine guns, two for the 57mm gun at the front, a driver, a signaller, a mechanic and the commanding officer. 24ft long, 10ft wide, and almost 11ft high, with two powerful engines and armour plate that varied between 30mm at the front and 15mm at the sides, it weighed 33 tons and could travel at 4mph across country.

It was a promising start from a nation that would come to lead the world in tank design twenty years later. Like those later German tank designs the A7V was superbly engineered; far in advance of the British machines in their quality and mechanical sophistication. And just like some of those later designs, that sophistication would also prove to be what undermined it the most. Whilst 100 A7V's were ordered, only 20 were built and they didn't arrive on the frontline until March 1918. Their numbers would be dwarfed by the quantity of armour the British and French were putting into the field.

Meanwhile in late 1917, around 40 British Mark IVs were captured and put into service with the German Army. The new German Tank Companies were fighting first in British hardware – and the Mk IV would remain the most numerous tank in German service.



It has been suggested that German crews preferred the Mark IV. It may have been a less sophisticated vehicle, but it was far better suited to the ruling conditions on the Western Front. Whilst the A7V performed much better on open terrain, its high centre of gravity and low ground clearance meant it struggled to cross the muddy, pock-marked ground found in its intended area of operation.

The real test of a tank's performance comes in battle. At the Second Battle of Villers-Bretonneux, on 24 April 1918, the Germans used as many as 15 A7V's across a four mile front. Some estimates suggest that by the end of the battle they

had lost half to a combination of capture, battle damage, ditching, or breakdown. In places they were successful, with at least one British unit reporting that their lines had been breached by tanks. But what would happen when British tanks met German tanks in battle?

That's exactly what occurred on the opening day of Villers-Bretonneux, as a group of three advancing A7V's unexpectedly encountered three British Mark

IV's. Two of the British Mark IV's were 'female' (armed only with machine guns for infantry support) and were unable to damage their opponents and forced to withdraw when the A7V's engaged and damaged them with armour piercing rounds.

The remaining Mark IV 'male', commanded by Second Lieutenant Frank Mitchell, managed to score three direct 6 pounder hits on the lead German A7V. These set it ablaze and toppled it into a shell hole. The crew fled on foot. Mitchell then turned his guns on the remaining A7V's, later reporting that they withdrew after he had fired several ranging shots at them. Mitchell continued to engage the advancing Infantry but by then he had gained the attention of enemy artillerymen. His tank was disabled by a mortar, but he and his crew escaped.

The first tank vs tank engagement was a messy encounter, but it is reasonable to attribute victory to the Mk IV. Of course, both tank designs are poor by modern standards, but even in 1918 the Germans did not consider the A7V to be practical. It was too big, too ungainly, too expensive, and needed too many men to crew it. German designers went back to the drawing board – and some far more promising designs were being advanced when the war came to an end. ■

OUR 'A7V' REPLICA



The Tank Museum has acquired a working replica of an A7V.

The full sized 'A7V' was built in the UK by armour enthusiast and Museum Friend Bob Grundy from plywood and angle iron on the chassis of an agricultural tracked vehicle.

Thought to be the only operational replica in the world, it is identical in appearance and named 'Schnuck' after one of the originals. 'Schnuck' was captured by New Zealand soldiers in August 1918 before being displayed in London. It was sadly broken up for scrap in the early 1920's around the same time The Tank Museum was being proposed to preserve examples of the first British tanks.

Visitors to TANKFEST 2013 will get the chance to see the replica in action – but if you can't wait that long, we have a short video about this new acquisition on our YouTube channel.

SOLE SURVIVOR



There is only one original A7V remaining. It was captured by an Australian regiment, who had it shipped home to Brisbane where it can be seen on display in the Queensland Museum.

THE NAME...

The name 'A7V' is an abbreviation of the organisation within the German War Department that created it:

'Allgemeines Kriegsdepartement
7. Abteilung Verkehrswesen'
(General War Department 7
Branch, Transportation) T



FROM THE EDITOR



It is only fitting to start 2013 by expressing our gratitude to our supporters, volunteers and visitors.

Tank Times readers have responded amazingly to the VCC Appeal we launched in the last edition. We have been overwhelmed by your generosity, which came at the end of a financially tough year for all. Together, you have raised over £10,000 - which takes us a giant step towards our £25,000 public appeal target.

The eBay Tiger Auction raised £3,500; at the time of going to press the raffle ticket stubs are yet to be drawn - but we are looking forward to meeting the winners at Tiger Day.

Late last year The Tank Museum became the grateful recipient of two major cash grants which also boosted our VCC fundraising. With £250,000 from the Garfield Weston Foundation and £70,000 from the Arts Council Designation Development Fund on top of the £2.5m pledged by the HLF, it is clear that there is a great deal of confidence in what we are doing.

December saw the end of an era with the highly respected David Fletcher MBE retiring after 30 years' service. We also learned that a regular visitor, the US based researcher and author Tom Jentz, had lost his battle with cancer. Both men have made a huge contribution to our field of study and are recognised around the world for their published work.

There is much to look forward to at The Tank Museum in 2013, and that is not least thanks to the work done over the past decades by passionate experts like David and Tom.

We look forward to seeing you. T

Nik Wyness
Nik Wyness
Editor

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RE-ENACTORS WANTED!

TANKFEST wouldn't be TANKFEST without the contribution made by the Living History Community.

Visitors enjoy the spectacle of tank displays, but they equally enjoy the feeling of stepping back in time to meet 'soldiers from the past'. Our Living History contingent has gone from strength to strength in recent years, and we are even more ambitious for our mock battle finale in 2013.

"In the past we have used an intermediary to bring living history groups together on our behalf," said Event Manager Vicki Pol. "But this doesn't help us get to know the re-enactment groups on a more personal level, so we can better look after them when they are working with us."

"This year we want to build direct links with the re-enactment community. For this reason we want to recruit our 20th century Living History Groups directly with this appeal!" she added.

"Space is limited, so this will be a selective application process to ensure we have a broad spread of armies and eras represented," said Vicki. "We are looking for groups to represent all nations of 20th Century conflict; and we are particularly keen to find groups who can portray Cold War era NATO and Soviet forces to take part in our mock battle."

The battle promises to be an ambitious attempt to convey what might have happened if the Cold War had turned hot in North West Europe. With a number of NATO and Warsaw Pact vehicles set to take part, the Museum is hoping to put more vehicles and soldiers into the arena than ever before.

Groups interested in taking part should apply using the form found on the TANKFEST 2013 page of the museum website. II



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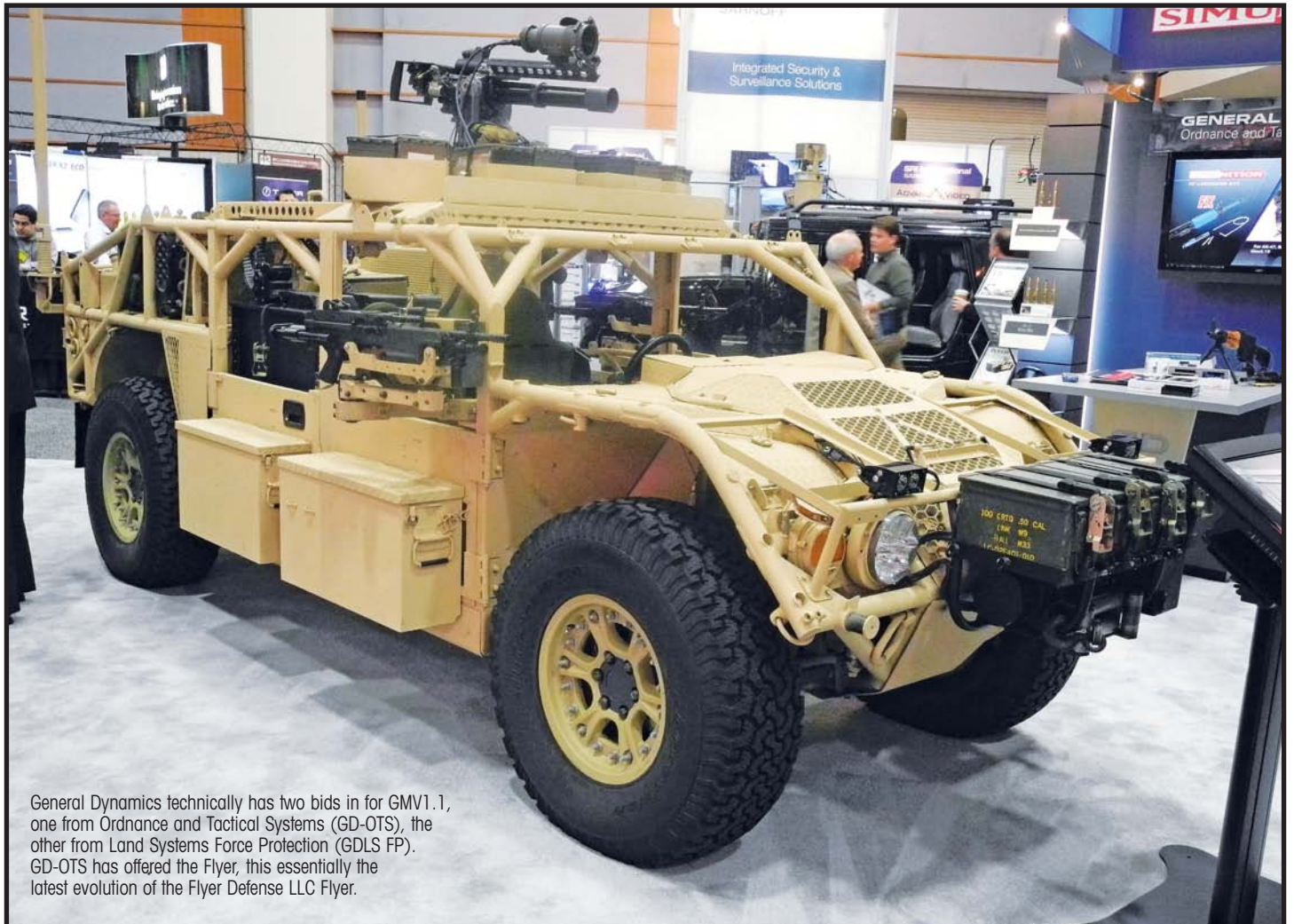
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STARS &



General Dynamics technically has two bids in for GMV1.1, one from Ordnance and Tactical Systems (GD-OTS), the other from Land Systems Force Protection (GDLS FP). GD-OTS has offered the Flyer, this essentially the latest evolution of the Flyer Defense LLC Flyer.

Shaun Connors reports from the annual Washington DC Association of the United States Army [AUSA] show



BARS

For a change it was lighter weight vehicles, some even unprotected..., that attracted the most attention at AUSA. The US Army's SOCOM (Special Operations COMand) Ground Mobility Vehicle 1.1 (GMV1.1) was probably the most talked about program at the show, and with bids submitted, a GMV1.1 contract award announcement is expected in the near future.

The requirement calls for up to 1,297 vehicles, with deliveries running until 2020. A ceiling price of \$350,000 per vehicle has been set by the Army and when delivered, GMV1.1 will replace the current HMMWV-based GMV1.0.

Those competing for GMV1.1 are known to include AM General, General Dynamics Ordnance and Tactical Systems (GD-OTS), General Dynamics Land Systems (GDLS), Navistar, Northrop Grumman, and Oshkosh. Given the wide spread of offerings from these companies, the GMV1.1 requirement has either been very well, or very badly written...

AM General has proposed a much-modified HMMWV. Based on an M1100 series chassis, modifications include a 6-inch width reduction (to 79.5-inches) to enable the requirement for internal CH-47 transport to be met. The standard 16-inch HMMWV wheels are replaced by new 22.5-inch wheels, and to meet GMV1.1's mobility requirements (specifically speed across rough ground), suspension has been upgraded. Motive power is provided by AM General's latest Steyr-based Optimizer 3200 3.2-litre 6-cylinder monoblock diesel engine, this developing 270 hp and coupled to an uprated 4L85 HMMWV automatic transmission.

Navistar has teamed with Indigen and proposed the commercial pick-up-looking (but purpose-designed) Special Operations Tactical Vehicle. The SOTV is a development of Indigen's Non-Standard Tactical Truck (NSTT), which despite visual resemblance to a conventional pick-up truck is built on a purpose-designed frame and fitted with fully independent suspension. Motive power is provided by Navistar's MaxxForce 6-litre V8 diesel, this developing 325 hp and coupled to an Allison 6-speed fully automatic transmission.

Top left: AM General's proposal for SOCOM's GMV1.1 is a much-modified HMMWV, this based on an M1100 series chassis. Modifications include a 6-inch width reduction (to 79.5-inches) to enable the requirement for internal CH-47 transport to be met. The standard 16-inch HMMWV wheels are replaced by new 22.5-inch wheels, and to meet GMV1.1's mobility requirements (specifically speed across rough ground), suspension has been upgraded.

Top centre: displayed by Meritor, this HMMWV upgrade proposal features Meritor's Series 30 High Mobility Independent Suspension (HMIS).

Top right: for GMV1.1 Navistar has teamed with Indigen to propose the commercial pick-up-looking (but purpose-designed) SOTV. SOTV is a development of Indigen's NSTT, which despite visual resemblance to a conventional pick-up truck is built on a purpose-designed frame and fitted with fully independent suspension.

Left: GDLS FP has offered Spectre for GMV1.1. Spectre the latest development of the Jamma. Jamma was originally developed by Force Protection, Force Protection acquired by General Dynamics late-2011 for around \$360 million.



*“...GAARV
will provide
an air-
deployable,
surface
recovery
platform...”*

Highlighting the variance in GMV1.1 vehicle offerings, the remaining four known bidders all opted to offer spaceframe-type off-road racer/buggy-style designs...

General Dynamics technically has two bids in for GMV1.1, one from Ordnance and Tactical Systems (GD-OTS), the other from Land Systems Force Protection (GDLS FP).

GD-OTS has offered the Flyer, this essentially the latest evolution of the Flyer Defense LLC Flyer. Flyer, which has been around in numerous guises for several years now is, according to sources at the show, believed to be the front runner for the GMV1.1 requirement. GD-OTS is also understood to have offered the Flyer to meet special forces-type requirements that currently exist in Holland and Belgium.

GDLS FP has offered Spectre, the latest development of the Jamma. Jamma was originally developed by Force Protection, Force Protection acquired by GD late-2011 for around \$360 million.

Oshkosh has offered its Special Purpose All-Terrain Vehicle (S-ATV), however, aside from confirming it is equipped with the latest generation of Oshkosh's TAK-4 independent suspension, the company will disclose little in the way of vehicle specifications.

Northrop Grumman, as prime contractor, has offered the Medium Assault Vehicle – Light (MAV-L) in

partnership with engineering firm Pratt & Miller Engineering and BAE Systems. The MAV-L is powered by a Caterpillar 4.4-litre 4-cylinder diesel engine, this developing 220 hp and coupled to a ZF fully automatic transmission. Should Northrop Grumman (best known for their aerospace and high-technology production experience) be awarded the GMV1.1 contract, the MAV-L would be manufactured at BAE Systems' Sealy facility in Texas, this virtually redundant since production of the FMTV concluded following the award of the Rebuy contract to Oshkosh.

ANGEL EYES...

Another light vehicle program for which bids are in, and a contract announcement is expected soon, is the Guardian Angel Air Rescue Vehicle (GAARV) requirement.

The latest solicitation document for the long-running GAARV requirement states that: The GAARV will provide an air-deployable, surface recovery platform capable of manoeuvring over adverse terrain in order to search for and recover IP [isolated personnel] and/or equipment, while also providing the capability of transporting the RT [rescue team] and the IP from an area of high threat to a defensible location for recovery by aircraft or self recovery to the final destination. Up to 61 vehicles are required.

Bidders for GAARV are known to include HDT, the company offering its Storm SRTV in conjunction with BC Customs and Enginotech. Design of what evolved to become the Storm SRTV began around eight years ago, the BC Customs design team leveraging their legacy of experience of off-road racing and rock crawling designs. A true designed-for-application vehicle, the Storm SRTV is based around a steel tubular spaceframe, this fitted with purpose-designed beam-type axles, these sprung by coil-over-shocks with nitrogen dampers. Limited-slip differentials are fitted and front-, rear-, or all-wheel drive is selectable, and with front-wheel drive engaged, rear axle steering-assist brakes can be used.

Motive power is provided by a GM LS 6.2-litre petrol engine, this developing 480 hp and coupled to a three-speed proprietary automatic transmission and Atlas two-speed transfer box. Given the vehicle is expected to be operated at high altitude, a petrol engine option was selected for this types' better high-altitude performance.

One of the most talked about vehicle competitions in the US in recent years has been the HMMWV-replacing JLTV (Joint Light Tactical Vehicle). However, with all-up weights of 23,000 lbs (10,433 kg) being spoken of, the light part of that description must be placed very firmly in context...



MAV-L

To meet GMV1.1, Northrop Grumman (as prime contractor) has offered the Medium Assault Vehicle – Light (MAV-L) in partnership with engineering firm Pratt & Miller Engineering and BAE Systems. The MAV-L is powered by a Caterpillar 4.4-litre 4-cylinder diesel engine, this developing 220 hp and coupled to a ZF fully automatic transmission. Should Northrop Grumman be awarded the GMV1.1 contract, the MAV-L would be manufactured at BAE Systems' Sealy facility in Texas.





JLTV was covered in reasonable detail in the December 2012 issue of MMI, but in brief for those that missed it... JLTV is a US Army-led joint Army/Marines program that could be worth up to \$30-40 billion to the winner, its aim being to procure a vehicle to replace a large part of the Army/Marines' ageing HMMWV fleet.

It was disclosed late-August 2012 that the Army had awarded three JLTV Engineering and Manufacturing Development (EMD) phase contracts, these to teams led by AM General, Lockheed Martin and Oshkosh, and worth around \$64.5 million, \$66.3 million, and \$56.4 million respectively. Post EMD awards it became known that at least seven teams responded to the EMD phase RfI.

According to the US Army, those companies (it did not name them or give numbers) not awarded EMD phase contracts were welcome to proceed at their own risk and expense with development, and could bid for JLTV's final production contract. The contracting authority had to be notified of this intention within 30 days of the EMD award, and it was suggested at

AUSA that one company had done this, Hardwire.

Hardwire are believed to be developing a proposal featuring a hybrid electric drive train. Not necessarily known as a vehicle producer, Hardwire's armour solutions have been employed on Mine Resistant Ambush Protected (MRAP) vehicles, and the company is known for developing an innovative 'blast chimney' that it designed to provide an outlet for energy released in an underbelly blast.

The three contracted EMD phase bidders all had vehicles on display at the show.

AM General was displaying its Blast Resistant Vehicle – Off-road (BRV-O), although like its competitors, the company was not revealing too much in the way of technical detail. The BRV-O, which is smaller and lighter than AM General's JLTV TD phase joint venture development with General Dynamics, is understood to leverage AM General's extensive developmental experiences with the HMMWV Expanded Capacity Vehicle 2 (ECV2)



and HMMWV Modernised Expanded Capacity Vehicle (MECV) programs.

Motive power for the BRV-O is provided by AM General's Optimizer 3200, this thought to be rated at around 300 hp and coupled to an Allison six-speed automatic transmission. Semi-active independent suspension is fitted.

Oshkosh was displaying its Light Combat Tactical All-Terrain Vehicle (L-ATV)-ATV. The L-ATV has a developmental trail that includes 15 developmental/prototype vehicles that trace back to Oshkosh/Northrop-Grumman's failed initial JLTV proposal, and that make the M-ATV (MRAP-All-Terrain Vehicle) an evolution of it, and not the other way round as is so often reported...

L-ATV is understood to be powered by a GM Duramax 6.6-litre diesel, this coupled to an Allison 2000 series automatic transmission and Oshkosh transfer case. Suspension, which was shielded at the show, is understood to be a derivative of Oshkosh's TAK-4 fully independent system, and one that offers 20-inches of wheel travel and allows L-ATV to cross rough ground around 70% faster than the M-ATV.

Top left: another light vehicle program for which bids are in is the Guardian Angel Air Rescue Vehicle (GAARV) requirement. Bidders for GAARV are known to include HDT, the company offering its Storm SRTV in conjunction with BC Customs and EngineTech.

Top right: One of the most talked about vehicle competitions in the US in recent years has been the HMMWV-replacing JLTV (Joint Light Tactical Vehicle). AM General was displaying its JLTV offer, the Blast Resistant Vehicle – Off-road (BRV-O).

Above right: Oshkosh displayed its JLTV offering, the Light Combat Tactical All-Terrain Vehicle (L-ATV).

Left: rear three-quarter view of Northrop Grumman's MAV-L.



Top right: possibly the biggest vehicle overall on display, and definitely the most imposing one, was the Pearson Engineering Route Opening and Clearing Capability (PEROCC).

Bottom right: the biggest surprise at the show was probably provided by General Dynamics Land Systems (GDLS). For years GD has been promoting the Stryker 8x8, aggressively advocating the benefits of its wheels when compared to an equivalent tracked platform. GD unveiled its likely offer for the US Army's Armored Multi Purpose Vehicle (AMPV) program at the show, a Stryker + Tr; a Stryker mated with a new tracked undercarriage...

Lockheed Martin is unique in that for JLTV's EMD phase competition it opted to stick with its TD phase offering, albeit a version that according to the company is 'hundreds of pounds lighter in weight.' A TD phase vehicle was shown at the show, although the company confirmed that the first EMD phase prototype had been completed. Should Lockheed Martin be awarded JLTV, production would be undertaken at BAE Systems' Sealy, Texas facility.

Most commentators now agree that a vehicle will be delivered under the JLTV program, however, with current order projections at around 55,000 (inc. 5,500 USMC) it is clear that JLTV will no longer replace the HMMWV on a one-for-one basis as was originally intended. US Army HMMWV fleet totals in February 2012 were quoted as 159,759 (+24,600 USMC), so irrespective of the JLTV program, it is a certainty that the HMMWV will remain in the US inventory in large quantities for a number of years yet.



REJUVENATION...

Given the length of its vehicle procurement cycles, the US Army is pretty much unique in that it regularly issues contracts that include Reset and Recap options alongside new-build delivery orders. Reset/Recap sees older time-served vehicle variants rebuilt and returned to service complete with a new vehicle warranty, and for less than 75% of new-build cost. A Reset vehicle is returned in original build configuration, a Recap'd vehicle (the current favoured option) in current build configuration.

HMMWV Recapitalization (Recap) efforts have been running for several years now, these primarily at Army depots, and by late-2012 around 55,000 HMMWVs had been Recap'd. HMMWV Recap is almost certain to continue for the foreseeable future, although at some stage consideration will have to be given to what will ultimately replace the >50% of the fleet not replaced by JLTV...

AND FINALLY...

To conclude this report from AUSA, I'll have a quick look at the biggest surprise on show, and possibly the biggest vehicle on show...

The biggest surprise was probably provided by General Dynamics Land Systems (GDLS). For years GD has been promoting the Stryker 8x8, aggressively advocating the benefits of its wheels when compared to an equivalent tracked platform. GD unveiled its likely offer for the US Army's Armored Multi Purpose Vehicle (AMPV) program at the show, a Stryker + Tr; a Stryker mated with a new tracked undercarriage...

And possibly the biggest vehicle overall, while definitely the most imposing one on display, was Pearson Engineering's Route Opening and Clearing Capability (PEROCC). PEROCC is a Caterpillar wheeled loader-based engineering vehicle designed to address what Pearson considers to be weaknesses in current route-clearing methods.

PEROCC is designed to be fitted with a range of route-clearing equipment including rollers and an articulated arm, which can be used to investigate suspicious objects, currently an all too common problem in theatre. The three-seat crew compartment for driver, gunner and commander is protected from beneath by an armoured double V-shaped hull for mine blast deflection.

HMMWV Evolution

AM General displayed the recently introduced right-hand drive version of the HMMWV (34% of the world's population live in countries that drive on the left); while Oshkosh displayed its proposal for a possible HMMWV upgrade (shown bottom left).



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Einheits Diesel



We take a closer look at rare example of this World War Two German workhorse

Far right: the Millitracks 2012 event saw the first public showing of this newly restored example of the Einheits Diesel.

Below: the Einheits Diesel has a typical utilitarian military appearance, but being of German design it is mechanically sophisticated.

For many decades it has been common practice for armies all around the world to seek a certain degree of standardisation within their inventories to simplify maintenance and the supply of spares, and military vehicles are arguably the main group to have been subjected to these standardisation programmes.

In the lead up to the Second World War, Germany created the Einheits Büro (Office for Standardisation) and initiated the design and production of a range of standardised trucks for the military. Following a false start with regard to the creation of a range of off-road capable 1.5-ton military trucks in the late 20s, a new requirement was created for an off-road capable 2.5-ton military truck as the threat of war once more loomed. The trucks would be produced by a range of manufacturers, including Büssing-NAG, Daimler-

Benz, Faun, Borgward, Henschel, Krupp, Magirus, MAN and Vomag, but the design was essentially identical, thus simplifying the supply and maintenance of the trucks. The level of standardisation was such that all trucks were virtually identical and could only be identified by the vehicle's data plates and in some cases, their radiator caps, which over the years has made the identification of specific vehicles from wartime photos most difficult.

A range of trucks were eventually built, with production starting in 1936, and the first production vehicles being passed to the military shortly after in 1937. The Einheits trucks would go on to be produced right up until 1940, but due to the complexity of their design, the benefits of standardisation were not fully realised as the trucks tended to be over complicated, requiring excessive maintenance in the field.





Einheits Bodywork



Top left: unlike most Allied trucks, the Einheits Diesel featured twin swing open rear doors rather than a drop down tailgate.

Above: the Einheits Diesel was designed and built at a time when there wasn't a steel shortage, as shown with the steel panelled rear body.



Above: in addition to the standard military fittings such as the Notek light and standard holder, the Einheits Diesel featured illuminated width markers.

Right: the cab has a separate canvas and opening windscreens. Seen here is the left hand trafficator or turn signal and rear view mirror.



“...In the lead up to the Second World War, Germany created the Einheits Büro...”



Of the types produced the standard 6x6 cargo truck was the most numerous, but other variants based on the cab and chassis included a whole range of box bodied trucks, mainly used for radio and communications roles, trucks fitted with snow ploughs, maintenance and repair vehicles, recovery trucks as well as a number of specialist vehicles, some of which were adapted and modified in the field for specific roles.

The trucks themselves were quite elaborate in their mechanical design when compared with their Allied counterparts (like many German military vehicles of the war), rather than the simple leaf springs and live axles employed on the vast majority of Allied trucks. Instead the Einheits Diesel truck utilised independent



suspension all round, a far more complicated system that required lots of maintenance and when damage or failures occurred, took a long time to fix. Body wise the Einheits Diesel range was typical of military vehicles of the time, with a simple steel body and in the case of the standard cargo truck, fitted with a canvas roof for the cab and rear body, which could be removed if necessary, while the box bodied trucks were fitted with a wooden paneled rear body with windows down each side, and a wooden paneled cab.

Motive power came from a 6.2-litre, six-cylinder, water-cooled diesel engine Type HWA 526D that developed 80hp at 2,400rpm. The engine was coupled to a 4-speed plus pre-selection gearbox with three self-locking differentials and a single locking differential in the pre-selection gearbox. Brakes were air operated on all six wheels, while the parking brake was a typical mechanical brake operating on the gearbox.

PRIVATE HANDS

The 2012 Militracks event at Overloon in the Netherlands attracted a wide range of rare wartime German vehicles for its annual event, and amongst them was the newly restored Einheits Diesel truck featured here. This particular

example was built by Büssing-NAG, as evidenced by the radiator cap, which despite conflicting references, is believed to be the largest supplier of Einheits Diesel trucks, having supplied a total 3,195 vehicles. The truck took to the off-road course surrounding the museum throughout the event, attracting a great deal of interest from visitors to the show as well as fellow exhibitors.

The truck shown here had been subjected to a complete overhaul and restoration, the result of which is a spectacular example of this very rare wartime German truck.

Bottom left: close-up of the pick axe carried on the left hand side of the cab.

Bottom right: close-up of the rear tow hitch and air coupling on the truck.

Below: the vehicle jack is carried on the right hand side front wing.



Suspension Details

Below from top to bottom: view of the front independent suspension, clearly showing the front drive shafts; viewed from the rear, an underside view of the rear suspension set up, which is significantly more complicated than Allied counterparts; the rear swing arms viewed from the side of the of the vehicle and showing the springs and vertical control arms; the same wheels are used on all six wheels meaning that just one universal spare wheel was required.



Mike & Julie Blenkinsop go to Etampes, near Paris, to celebrate the 20th anniversary of this great show

Below: ready to roll, an M4 Sherman, one of many armoured vehicles to be found at this popular show.

It was the big 20th anniversary on the weekend of June 9th/10th for La Locomotion en Fête, the biggest vehicle event in France at Etampes, just south of Paris. The financial crisis did appear to have bitten to some degree, as numbers of vehicles in some sections appeared to be depleted from previous years. However, the military

vehicle enthusiasts, including the Balmoral Green collection, seemed to have really pulled out the stops and some fine heavy kit was on display there. Supported by the Army engineers from Angers, the French Foreign Legion and the Tank Museum at Saumur, the collector, Alain Galland, now known as 'Balmoral Green' also

brought a large and interesting selection of 'green machines' from a Jeep to an M4 Sherman. The collection is named after the shade of green used for his military vehicles.

This year saw some good visual displays in the public areas with a Ward la France performing a repair on a Lee/Grant and a Pacific M26 hauling



M4 Sherman

M26 Pacific





Above: 'MP's swarm around the Pacific keeping the visitors in check, while a Dodge Command car and Diamond T move past the stricken M4.

Below right: a Diamond T 969A wrecker uses its Holmes twin booms to drag the broken track away from the tank during the track replacement demonstration.

a 'dead' Sherman 'shedding' a track, as it was towed around the arena. The operation put the re-enactors to task, in re-fitting the track to the Sherman, which they did, with admirable speed, using a six-wheeled Dodge Command Car and a Diamond T 969A wrecker.

Another 'dead' Sherman was used as part of the security fencing, suitably 'dug-in' and turretless. It was great to see the M26 'Dragon-Wagon' being used for its original purpose, of hauling 'dead' tanks off the battlefields. Three Sherman M4-based battle tanks and one M3 were on site this year. On the Axis side, the Saumur tank museum brought a pair of static light tanks in the form of Panzer IIs'.

The Sd.Kfz. 121, produced from 1934,



Above: one of the more unusual and rare vehicles to be displayed at La Locomotion en Fête was this fabulous World War One De Dion-Bouton, type FR 3.5-ton troop carrier, which recently completed an 800 kilometre journey through Belgium & northern France, not bad for a vehicle on solid tyres and nearly 100 years old!



World War Two German Tanks

Below: a surprise visitor to the show was this rare example of the German WW2 Panzer II 'Luchs' (Lynx), which drew a large crowd due to its rarity, with plenty of photos being taken!

Bottom: another rare WW2 German tank that was brought along to the show by the Saumur Tank Museum was this fine example of the WW2 Panzer II light tank of the Blitzkrieg era.



Diamond T 981



Far right: Chevrolet M6 Bomb-handler. Used to load, unload and tow bomb-carrying trailers. This one is well-known at La Loco and belongs to one of the original organisers, Jean Pisapia.

Right: a rare German Steyr 1500A/02; seen here half way through its restoration.

Right: German WW2 NSU Kettenkrad half-track picks its way through the crowds.

Below: another rare vehicle, this time an American Federal 605 6x6 7.5-ton Wrecker.



Left: GMC 353 6x6 with Le Roi compressor on the back, another from the Balmoral Green collection.

Below left: Ward La France M1A1 wrecker demonstrates its 5-ton swinging boom crane in a diorama with an M3 based Grant battle tank.

was the medium gun tank used in both the Polish and French campaigns of 1939 and 1940. The other was a reconnaissance version with 20mm cannon, the Sd.Kfz. 123 Luchs (Lynx), of which only 125 were produced and were issued to tank units between 1942 and 1943.

A Steyr appeared in a state of partial-renovation, with newly-built personnel bodywork. Although the 1500A/02 4x4 personnel carrier was built in Austria by Steyr, some of the 12,500 examples came out of the Auto Union factory too.

This year only one Diamond T tank transporter tractor was represented, again part of the Balmoral Green collection. This post '43 'rag top' 981 was coupled up to a Rogers 45-ton three-axle trailer.

Going back to the First World War, a 1914 De Dion-Bouton 3.5-ton truck attracted a lot of interest. This type FR 4x2 cargo truck was powered by a water-cooled 20 hp. DDB petrol engine, but had a few minor modifications to make starting easier. This vehicle had attempted a 1,200 kilometre journey through Belgium and Northern France in November 2011, eventually stopping a little short of its goal in Verdun having covered around 800 km, due to very bad weather conditions. It drank 52 litres of petrol and used two litres of oil every 100 kilometres and ran all the way on solid tyres!

All in all, a very good show, due, largely, we feel, by an exceptionally good turn out from the military vehicle groups.



Maintenance Demonstration

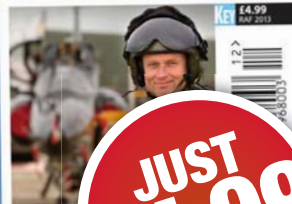
This M3 Lee was part of a great maintenance and repair diorama with a Ward la France M1A1 wrecker.



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2012 WELLAND

MMI checks out the military section of the Welland Steam & Country Rally

The Welland Steam & Country Rally, held in the picturesque surroundings of the Malvern Hills has long been a favourite with steam buffs, attracting a great many steam traction engines as well as tractors, classic commercials, motorcycles and of course - military vehicles. Being so close to the MMI offices it's a show I tend not to miss, but this year the event was postponed

due to the heavy rainfall over the summer period, so I had to wait until September before I could get my regular dose of military excitement!

Given the amount of vehicle types on display and the addition of a large traders area and several large marquees packed with a variety of exhibits, crafts and local produce, the Welland show is ideal for all the family, and while dad is checking out the military section,

mom and the kids can find plenty to keep them occupied.

The parade ring is also well supported with displays throughout each day, many of which are vehicle related and this year included a car crushing demonstration, an Auxiliary Fire Service (AFS) water pumping demonstration and of course the military vehicles. A short distance away from the arena was the tractor





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pulling course, a great place for kids of all ages, where weird and wonderful contraptions aim to tow heavy sleds along a course and try and deafen onlookers into the bargain. If you want noise and smoke this is a great place to be, and no matter where you are on the large show site you'll know when the tractor pulling has started!

CHANGE OF SCENERY

While I live eat and breath military vehicles and the majority of my wardrobe is green or camo (much to the dismay of my other half), I do like to check out the other exhibits at the show, with a change from military vehicles being as good as a rest. This year I took time to take a closer look at the tractors, commercial vehicles and steam traction engines, as well as the ploughing demonstrations, and while this may not seem like a particularly interesting part of the show, a number

of the vehicles being used were either ex-military or of the same type used by the military.

The different mechanical solutions to the differing tasks these vehicles are designed for can turn me into a mechanical 'Geek', but it's a fascinating way to while away the hours, and often helps to explain mechanical processes I didn't fully understand. The steam area has the added benefit of creating its own atmosphere (quite literally), with the majority of the engines belching steam and smoke to the tune of intermittent hissing and clanking while being tended and lovingly cleaned and adjusted by their owners.

I say this every time I report from Welland, but if you haven't been to a steam rally you really ought to give it a go. The atmosphere of these shows tends to be different to a full-blown military vehicle event, plus there's more variety for all the family to enjoy.



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1. Ward La France M1A1 Wrecker: dating from 1944 and taking a tour of the arena.

2. Hellcat Tank Destroyer: owned by military section organiser Mike Phelps and driven here by his son as Mike does the arena commentary.

3. Big Wheeled Ferret: dating from 196, a regular at the show owned by local man Jeremy Carvill.

4. Parking Disputes: are dealt with in a severe manner at the show! The FV432 is owned by a local scrap metal company.

5. Fordson WOT: another of the many locally owned vehicles to be brought along to the Welland Show.

6. Box Bodied: GMC 353 complete with front lifting frame - an unusual vehicle.

7. Daimler Ferret: Mk 1/2 seen here during the military display in the arena and one of several at Welland.

8. VW Kubelwagen: dating from 1943 and belonging to a local owner from Worcester.



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WELLAND

2012

9. Mike Phelps: rarely gets a mention but works hard organising the military section and here he is chatting with the owners of a Humber Box.

10. Foden Steam Wagon: one of the many beautifully and lovingly restored steam powered vehicles to be found at this diverse show.

11. Allis Chalmers HD-15 Dozer: and while it isn't ex-military, is very similar to those used by the military during World War two.

12. Morgan Three Wheeler: part of the extensive classic car display and built by the local Morgan Car company based in nearby Malvern.

13. Little Grey Fergie: in typical ex-farm condition, but still going strong more than 60 years after it was built, and no doubt fit for another 60!

14. Green Goddess: one of a large number of Auxiliary Fire Service vehicles to be found on display at the Welland show.

15. Bedford Recovery Truck: another of the Auxiliary Fire Service vehicles, which took part in the arena display during the show.

16. Bedford Command Centre: one of the more unusual vehicles in the Auxiliary Fire Service display was this box bodied command vehicle.



11



12



13

"I do like to check out the other vehicles at the show..."

10



14



15



16



New Kit Release for 2013!

ARMORTEK

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for delivery
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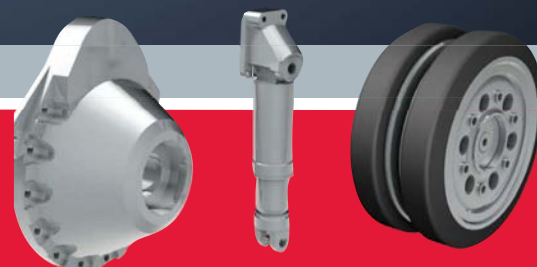
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Into the Archives



Les Freathy delves into the archives and brings us a varied selection of British Military Tankers

Vehicles designed to carry various liquids be it water, fuel or lubricants have been in the military inventory since the earliest horse drawn wagons. Over the years many makes of vehicles have been specifically built or adapted for this purpose and of course with the advent of air power these vehicles became specific targets and many were built with normal truck tilt frames and a canvas tilt to give the impression from the air they were ordinary general service trucks.

Without doubt the Second World War saw a major increase in both water and fuel tankers being used by all of the British military services from 200-gallon tankers to the AEC O854, capable of carrying 2,500-gallons of aviation fuel. These six-wheel tankers were developed to supply fuel to four engine bombers, which would consume around this amount of fuel on a single mission, many of the O854 tankers served on into the post-war period well into the 1960s before gradually being replaced by more modern vehicles, again from AEC and also Leyland, all with a large carrying capacity.

During World War Two the 15cwt Morris and Bedford tankers were the dominant carriers of water in the 200-gallon class, whereas for larger capacities 3-ton trucks were specifically built or adapted to carry liquids up to 800-gallons. It would appear that Bedford were the major supplier, utilising the OY and QL models, as well as AEC with all types being used by all three services. This archive concentrates on tankers used by the British military since 1945 with just a brief inclusion of pre and WW2, but it has to be said that we're only scratching the surface on these pages so I hope I have covered the subject in variety if not in depth and will aim to return to this fascinating subject sometime in the future.



Main photo opposite left: running into the late 1960s this low profile AEC Mercury Mk 2 10-ton 2200-gallon dual purpose refueller was designed with air portability in mind. With the cab top, windscreen and steering wheel removed it could negotiate the loading ramps of an Argosy transport plane, the main military transport aircraft of the time. The AEC Mercury Mk 2 10-ton 2200-gallon dual purpose refueller was capable of delivering fuel to aircraft at the rate of 300 gallons per minute. Power came from an AEC Mercury Mk2 6-cylinder diesel engine.



Below left: I made a mention of the Morris Commercial as a 200-gallon tanker and here is the truck a model MRA1 1-ton 4x4 again based on civilian components and with the familiar tilt frame.

Bottom left: during the 1950s a range of 1-ton vehicles were built on Austin, Morris and Humber chassis. The Austin, designated the K9, was based on the civilian Loadstar model with adaptations for military use and used in a number of roles including the 200-gallon water tanker complete with filter and pumping equipment mounted in the cabinet on the rear of the tank. This demobbed vehicle also shows the frame for a canvas tilt.

Below: a very early post-war Bedford O series 3-ton water tanker probably of around the 400 to 600-gallon capacity, of interest here are the sprinkler bar across the back which may indicate some use by the Royal Engineers and the frame and canvas tilt to disguise its true purpose.



Top right: wartime Bedford OY 800-gallon fuel tanker seen filling 4-gallon cans (better known as flimsies due to their ability to leak fuel) through a distribution filter system. As can be observed all operations here were manual on both the filter and the vehicle although loading the tanker would have been direct from a bulk tank or by a mechanical pump.

Above: In the pre WW2 days the first 15cwt Morris Commercial trucks were issued to the army almost immediately and water tankers were built or adapted on the cargo bodies for the transportation of water. A number were factory built with tanks to hold 200-gallons of water and to a smaller degree for fuel, the vehicle in this image shows the tank plus the filters seen mounted on the front sides of the tank and is typical of the types employed.

COMBAT CAM

Shaun Connors shows us just how down and dirty military vehicles can get at times!



This month Shaun Connors (in his own words...) melds a bit of a popular Combat Camera subject with a bit of Into The Archives, your agreement with the latter description likely driven by your own personal opinion of precisely what constitutes an 'archive' image... And the popular Combat Camera subject? Things stuck in the mud, or sand, a situation these vehicles find themselves more often than you might think! Combat Camera features a selection of images captured by service photographers around the world on exercise, disaster relief/humanitarian operations, and operational deployment. Where possible and where available the original captions that came with the images, are shown as originally presented. This month's selection of images are all US DoD copyright



MEERA



Main photo: Two M-60A1 tanks from Company B, 4th Battalion, 37th Armor, Fort Knox, Kentucky, are stuck in a muddy cornfield near Normandy Loop during Exercise EAGLE STRIKE III (10/12/1982) (SPC4 Tom Jackson. (Photo - US DoD))

1. Marines with 1st Combat Engineer Battalion use an M88A2 Hercules to recover another M88A2 Hercules after getting stuck in a mud patch (16/03/2011) (Cpl John McCall). (Photo - US DoD)

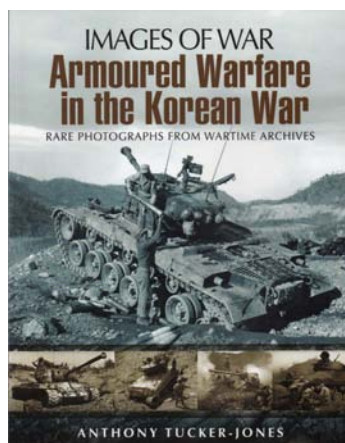
2. Sadly this image of a LARC being recovered from soft/loose sand by a Caterpillar bulldozer (with 'Heath-Robinson' pusher bar...) came with no details other than a date (12/05/2001) and photographer details (Staff SGT Lee A Osberry). (Photo - US DoD)

3. Marines work to free a M-51 5-ton dump truck stuck in the sand while constructing a fuel farm during Exercise Solid Shield '85 (09/08/2002) (SGT T.K. Burch). (Photo - US DoD)

4. This image of a Cougar MRAP recovering a stranded Afghan Police Ford Ranger crew-cab pick-up is another that sadly came with little more than a date (22/03/2011) and photographer details (Spc David Zlotin). (Photo - US DoD)

5. A mobile air defense system became stuck in a field because of ice, snow and water holes. This occurred during rotation 97-8 at the Joint Readiness Training Center (13/01/1997) (Raymond A. Barnard). (Photo - US DoD)





Korean War Armoured Vehicles in Photographs

This new title from the Pen & Sword 'Images of War' series takes a look at some of the many vehicles to be involved in the Korean War on all sides. As such there's a good selection of tanks, afvs and other military vehicles scattered across the book, interspersed with a fascinating collection of images that tell the tale of this almost forgotten war. It would be impossible to list all of the vehicles covered in the space available to me, but by way of a taster you'll find photos of the British Centurion and Cromwell, American Sherman, Patton and Pershing and an

assortment of Russian equipment used by the enemy, but it is worth noting that there are a few images within the book that are 'examples of' and not photographed during the Korean War. The amount of equipment covered within the book is varied enough to appeal to a wide audience, including model makers perhaps seeking inspiration for future projects or diorama settings. All of the images contained within this fine book are black and white, but the quantity and quality of those images makes it well worth the cover price and at just £14.99 it's worth taking a look at.

Title: Armoured Warfare in The Korean War

By: Anthony Tucker-Jones

ISBN: 9781848845800

Price: £14.99

Format: Softback

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

Desert Fox and his Battles in Photographs

Title: Images of War - Rommel's Army in the Desert

By: Alistair Smith

ISBN: 9781848848078

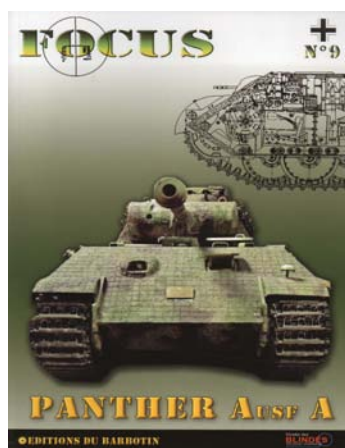
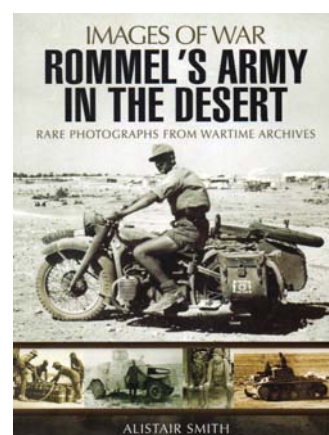
Price: £14.99

Format: Softback

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

The second new title in the 'Images of War' series from Pen & Sword is this book looking at Rommel's Army in the desert during World War Two. Like all the books in the series it features a compilation of photos relating to the subject in question, however, there's not a huge amount within the book to interest vehicle enthusiasts in terms of images of vehicles. What are there are interesting, and there are many super images crammed into this 140-page book, it's just that many of them feature other subjects, some of which are a touch bizarre, like the photo of two

soldiers sharing a bath in the middle of the desert - very odd! Of the vehicles featured in the book you'll find a variety of motorcycles, trucks, tanks and armoured cars, but I can't honestly say that they're of any great or special interest. If you're looking for a relatively concise and well illustrated book that looks at the German Afrika Korps in the desert that's not too heavy on the text size and good value for money then you would do well to consider this new title from Pen & Sword, sadly though if you're looking for vehicles in the desert you'll need to look elsewhere.



The German wartime Panther Tank under Scrutiny

Clearly aimed at the model maker, this new book in the 'Focus' series takes a detailed look at the WW2 German Panther tank, or to be more exact, the Ausf A variant of the Panther tank. The small format 50-page book (just a little bigger than A5), is crammed with colour and black & white photographs of the Panther, some of which are from the wartime, but the vast majority are of the examples preserved at what is viewed as one of France's finest tank museums, the Musée des Blindés at Saumur. A small amount of introductory text is also included, which is provided in both French and English, as are the

captions and there's also a series of colour illustrations to the back of the book, all of which builds up a useful and concise reference source on this popular tank, which unlike many more detailed books, is at an affordable price. In addition to the general overall exterior photos (including the Jagdpanther and Bergepanther) there are numerous detail photos showing every last little detail of the Panther Ausf A with just one notable exception - the interior. It's an interesting book, and priced sensibly so as to appeal to those with smaller pockets, so if the subject matter appeals why not check out this new book.

Title: Focus No.9 - Panther A

By: Pascal Danjou

ISBN: 9782917661161

Price: £11.99

Format: Softback

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

Classic British Wartime Battleships

Title: Nelson & Vanguard - Warship design & Development

By: David K. Brown

ISBN: 9781848321496

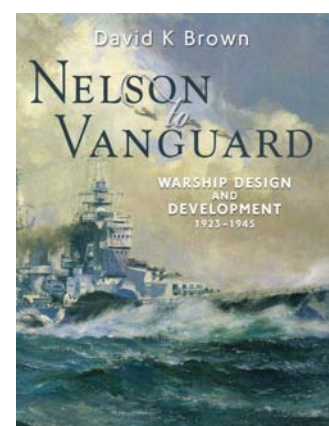
Price: £19.99

Format: Softback

Available From:
Seaforth Publishing Ltd.
www.seaforthpublishing.com

Those with an interest in wartime warships and particularly British warships will find this book fascinating. It traces the development of the British warship from the inter-war period through to the end of World War Two, covering many of the great ships of the time. This wide ranging includes aircraft carriers, destroyers, motor torpedo boats and submarines as well as the great battleships, all illustrated with a fine selection of black and white photos and numerous illustrations and data tables describing production numbers, dates and specifications. The book

includes chapters on battleships, fleet carriers, cruisers, destroyers, submarines and escorts, as well as chapters discussing the modernisation, updates and scrapping of vessels plus details of specific wartime damage, production and repair. Given the quality and quantity of information and photos packed into this 224-page book, it would be well worth a look at if wartime British warships interest you, and with the price being tucked just under the twenty pound mark, it's good value for money too. Available from many good book stores.





The Raupenschlepper Ost gets the Nuts & Bolts treatment

The Raupenschlepper Ost or RSO is the latest WW2 German vehicle to get the Nuts & Bolts treatment, and what a fine book this is. The first half of this 180-page book is dedicated to a terrific collection of archive images depicting the RSO during the war, which includes most types of the vehicle and many shots I haven't seen before. This collection of B&W images is then followed by a further sixteen pages of 1/35 scale line drawings describing all the different variants of the RSO, while the next eight pages feature a selection of colour side view illustrations depicting a number

of common camouflage schemes that were used on the RSO during the war. The final section of this information packed book features numerous colour and black & white photos of preserved examples, plus a selection of photos showing models that have been built and modified to an exceptional standard. While this series is aimed at model makers, the quality and quantity of information packed into the book will undoubtedly ensure that it is bought by military historians and enthusiasts alike. A great information source at a sensible price.

Title: Nuts & Bolts Vol.29 - Raupenschlepper Ost "RSO"

By: Volker Andorfer, Tony Greenland, & Lutz Konetzny

ISBN: 9780857330802

Price: £23.95

Format: Softback

Available From:
Historex Agents
www.historexagents.com

Classic Post-War German 5-ton Truck Under the Spotlight

Title: Militärfahrzeug Special No.5040 - 'Emma'

By: Peter Blume & Jochen Vollert

ISBN: N/A

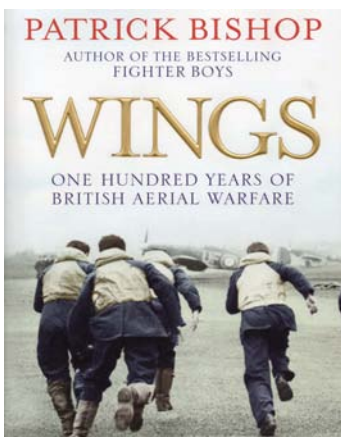
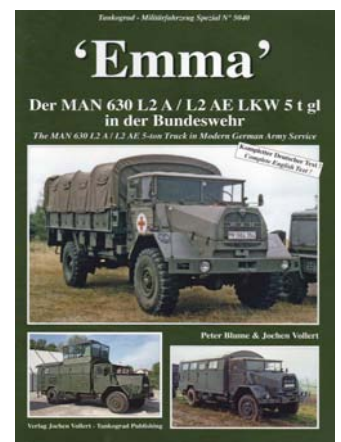
Price: £13.99

Format: Softback

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

The MAN 630 truck 'Emma' has always been a personal favourite of mine ever since as a boy I bought a Roco Minitanks model of one! The rugged appearance of this late 1950s German truck leaves you in no doubt that it was built for military use, and yet very few have found their way into preservation since their role was taken over by newer trucks. This excellent book from Tankograd is a new release in their Militär Fahrzeug series, written and compiled jointly by Peter Blume and mr Tankograd himself, Jochen Vollert. The 76-page book features text in both

German and English and is packed with colour and black and white photos of the MAN 630 variants in service with the German Bundeswehr. All variants are featured within the book, from the standard soft top cargo truck and office bodied variants to the more specialised types such as the mobile airfield truck and fire trucks as well as many others. The book features numerous images that show the different variants in great detail, which includes some excerpts from technical manuals. All in all another great book on an interesting subject from Tankograd.



One Hundred Years of British Aerial Warfare

With the exception of several small sections of black and white images featuring a variety of aircraft and RAF personnel from across the ages, this ostensibly written account from Patrick Bishop describes one hundred years of British aerial warfare. Featuring eye-witness descriptions from RAF personnel, this superb 416-page book marks the epic story of British aerial warfare and the centenary of the RAF, which was born out of the Royal Flying Corps that was granted a Royal Warrant one hundred years ago.

The Royal Air Force is synonymous with numerous heroic actions and achievements over its 100-year history, from personal tales of daring action to the war-changing efforts of whole squadrons, the importance of these historic achievements is documented in this excellent book from Britain's best-selling writer of RAF history. If it weren't for the fact that we know the heroic actions in this book to be true, it could be the stuff of a boy's adventure tale! An excellent book and testament to these brave pilots.

Title: Wings

By: Patrick Bishop

ISBN: 9781848878921

Price: £25.00

Format: Hardback

Available From:
Atlantic Books Ltd.
www.atlantic-books.co.uk

Tales of raid on Dieppe during World War Two

Title: Raid de Dieppe

By: Heimdal

ISBN: 9782840483168

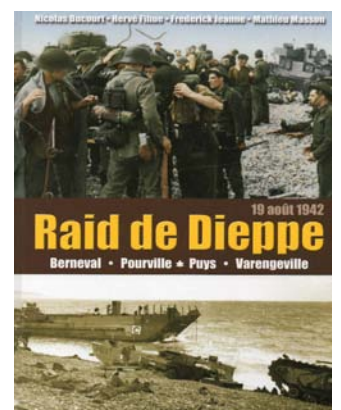
Price: £32.95

Format: Hardback

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

Our final book this month deals with the British Raid on Dieppe in 1942, but before you get too excited I'm afraid that the text and photograph captions are only supplied in French, so if you're not able to read French your enjoyment of this undoubtedly good book may be diminished. That said, the 400-page hardback book is a veritable photographic feast, with hundreds of wartime images combined with colour photos of preserved artefacts relating to the raid on Dieppe. While much of the book is dedicated to

the people and places involved in the conflict, there is a large collection of vehicle-related images within the book, which features lots of images of the early Churchill tanks used in the attack, including some showing the captured tanks in German army service. A number of other British vehicles are also featured, including various Jeeps, Dingo armoured cars and Universal Carriers. Overall this looks to be a great book, and I did enjoy most of it, but not reading French fluently I found it a little frustrating at times!



MISSION BRIEFING

DATES FOR YOUR DIARY

MARCH 2013

Sunday 3 March 2013:

Hack Green Secret Nuclear Bunker Rally: French Lane, Nantwich, Cheshire, CW5 8BL. For details call Rod on: Tel: 01270 623353 coldwar@hackgreen.co.uk

Sunday 3 March 2013: 5th Annual Vintage Transport Day:

held at the Bournemouth Aviation Museum. Wartime vehicles wanted, plus army surplus dealers, re-enactment groups. For details call Steve Tydeman: stevedtydeman@yahoo.co.uk

Sunday 3 March 2013:

S.M.V.G Military Swap Meet: Institute Hall, Bridge of Earn, Perthshire. Hosted by the Scottish Military Vehicle Group. Come and buy and sell your items of militaria, military vehicle parts and collectibles. Traders and individuals welcome. Military vehicles and exhibits on display. For table bookings call: Tel 07704 187739 secretary@scottishmvg.org

Monday 11 to Sunday 17 March 2013: 34th Annual Corowa Swim-in & Military Vehicle Gathering:

held in Corowa, NSW, Australia. 2013 is the 'Year of the Trained Equipment and Armoured Vehicle. For further details or to book in for the event contact Jan Thomson, 9/1 Millett Road, Mosman, NSW, 2088 kveinc@optusnet.com.au

Sunday 24 March 2013:

Malvern Militaria Fair: large, indoor militaria event held at the Three Counties Showground, Wye Hall, Malvern, Worcs, WR13 6NW. Contact Amanda: Tel: 01743 762266 www.militaryconvention.com

Sunday 30 March 2013:

Tiger Day: held at the Tank Museum, Bovington, Dorset, BH20 6JG. See Tiger 131 perform in the arena as it celebrates the 70th anniversary of the capture of Tiger 131. Normal admission and opening hours apply. For further details check out the website at: www.tankmuseum.org

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: Tel: 01424 753356 Mob: 07710 154606 sndz338@aol.com

Sunday 28 April 2013:

Northern Military Expo: popular indoor show held at the Newark Country Show Ground, Notts, 2 minutes off the A1M (NG24 2NY). For further details contact: Tel: 01302 739000 www.northernmilitaryexpo.co.uk

Sunday 28 April 2013:

Aviation, Airline, Military & Model Collectors Fair: held at Gatwick Airport, K2 Centre, Crawley, W. Sussex. Open 10.30am. For details contact: tom@singfield.freemove.co.uk

MAY 2013

Saturday 4 to Sunday 12 May 2013:

The Stars of the Sandstone Festival: held at the Sandstone Estates, Eastern Free State South Africa, and for the first time there will be night time activity. As in previous years, military equipment will feature alongside the steam railway, agricultural vehicles and vintage vehicles. More information can be found on the website at: www.sandstone-estates.com/index.php/military-vehicles



MAY 2013

Sunday 5 May 2013:

Cobbaton Clearout: militaria market, held at Cobbaton Combat Collection, Chittlehampton, N. Devon, EX37 9RZ. For details contact: Tel: 01769 540740 info@cobbatoncombat.co.uk

Saturday 11 Sunday 12 May 2013:

Newark & Nottinghamshire County Show: held at Newark Showground, Newark-on-Trent, Notts, NG24 2NY. Plenty to see and do for all the family. Seeking RAF vehicles for display that would have been involved with the Dambusters. For further details please contact Colin Holwell on: Tel: 01780 751291 Mob: 07977 142011

JUNE 2013

Saturday 8 Sunday 9 June 2013:

Wicksteed at War: held at Wicksteed Park, Kettering, Northants, NN15 6NJ. Incorporating the MVT National Show and featuring military vehicles, exhibitors stands and trade stalls, military dioramas and more. For details contact: John Denny (Re-encactors) Tel: 07713 636760 Tim Hawkes (Vehicles & Trade) Tel: 01536 799395 www.wicksteedpark.co.uk

Saturday 15 Sunday 16 June 2013:

Dunsfold Collection Open Weekend: held at the Springbok Estate, GU6 8EX. See one of the finest collections of Land Rovers in the world. For details contact: Tel: 01483 200567 openweekend@dunsfold.com www.dunsfoldcollection.co.uk

JUNE 2013

Saturday 22 Sunday 23 June 2013:

Wartime in the Vale: held at Ashdown WW2 Camp, Ashdown Farm, Badsey, nr Evesham, Worcs, WR11 7EL. Military vehicles, arena events, militaria stalls, re-enactors and classics. For further details contact Paul on: Tel: 0779 1591528 www.ashdowncamp.webs.com

Saturday 29 Sunday 30 June 2013:

Tankfest 2013: held at the Tank Museum, Bovington, Dorset, BH20 6JG. Experience the world's best display of historic moving armour. Lots to see and do for the family with trade stands and living history displays. For further details check out the website at: www.tankmuseum.org

JULY 2013

Friday 5 to Sunday 7 July 2013:

The Yorkshire Wartime Experience show: now one of the largest battle re-enactment/military shows in the North of England. Held in 30 acres of land to the south west of Leeds with easy access to the M62 motorway (Junction 26) just off the A58 Hunsworth Lane, Hunsworth, Bradford, BD4 9RN. For details contact Stuart on: Tel: 07748604461 www.ywe-event.info

Saturday 6 Sunday 7 July 2013:

Capel Surrey Vintage Military Vehicle Show: held at Aldhurst Farm, Temple Lane, Capel, Surrey, RH5 5HJ. The East Surrey and West Kent Area MVT Capel show. In aid of Help for Heroes, including Military Vehicles, Re-enactor Groups, stall Holders and Traders. For information and entry forms contact Area Sec John Hotston: Tel: 07445 962945 adenjohn@virginmedia.com or Phil Harris on: Tel: 01293 871727 langdon34@yahoo.co.uk

Saturday 6 Sunday 7 July 2013:

Lympe Aero Classic: celebrating the history of Lympe Airfield from 1916-1980s. Held at Lympe Village Hall and playing fields. For details call John Simpson: Tel: 01303 265078 johnsimpson43@btinternet.com

JULY 2013

New Venue...New Venue...

Wednesday 17 to Sunday 21 July 2013: The War & Peace Revival:

held at RAF Westenhanger, Folkestone Racecourse, near Hythe in Kent. The world's largest military vehicle show. For details call: Tel: 01304 813337

www.thewarandpeace revival.co.uk

AUGUST 2013

Friday 2 to Sunday 4 August 2013: Military and Flying Machines Show:

held at Damyns Hall Aerodrome, Aveley Road, Essex, RM14 2TN. 300 plus military vehicles, 60 living history displays and a thousand plus re-enactors, full flying display, arena events and mock battle. For details see website: www.militaryandflyingmachines.org.uk

Saturday 3 Sunday 4 August 2013: Woodhall Spa 40's Festival:

held at Jubilee Park, Stixwold Road and Woodhall Spa village hall. Lincolnshire, LN10 6QH. For details contact Stuart on: Tel: 01526 353215 www.woodhall-spa-40s-festival.com

Saturday 17 Sunday 18 August 2013: Cobbaton Combat VJ Weekend:

military vehicle show, stalls, living history, held at Cobbaton Combat Collection, Chittlehampton, N. Devon, EX37 9RZ. For details contact: Tel: 01769 540740 info@cobbatoncombat.co.uk

Saturday 17 Sunday 18 August 2013: Wings & Wheels:

the South West Airfield Heritage Trust Wings & Wheels show held at Dunkeswell Airfield, nr Honiton, Devon. Meet cast members from H.B.O's Band of Brothers, plus military vehicles, re-enactors, planes, and much more. For further details contact Dave Bunney on: Tel: 01404 890174

Saturday 17 Sunday 18 August 2013: Lacock at War, Codename Bolero:

Military Vehicle & Re-Enactment Show. Lacock Village near Chippenham SN15 2LQ. Contact, John Wardle on: Tel: 01373 300384 westwiltsmvt@yahoo.co.uk www.westwiltsmvt.co.uk

AUGUST 2013

Saturday 24 to Monday 26 August 2013: Cornwall Area MVT Show:

held at Mount Edgcumbe Country Park, Cremyll, Cornwall. Exhibitors are invited to bring military vehicles (of any era), military or living history displays. Free entry and camping for exhibitors. For entries call Gwen Jenkins: Tel: 01872 561653 gwenjen@talktalk.net

Saturday 24 to Monday 26 August 2013: Rauceby War Years Weekend 2013:

The Mid Lincs MVT is holding their 5th War Years Weekend. We are a non-profit making event so any monies raised after expenses will go to the charities, Air Ambulance, Royal British Legion and Marie Curie Cancer Care. For further details call: Tel: 01529 488354 www.raucebywarweekend.co.uk

Saturday 31 August Sunday 1 September 2013: 70th Anniversary of the Assault Training Center:

held in Woolacombe, North Devon, featuring living history displays, beach invasion re-enactment, vehicle run along beach, wreath laying ceremony. www.assaulttrainingcenter.com

SEPTEMBER 2013

Sunday 1 September 2013: Jeep & Cheerful day:

a Free day out for anyone with a Military Jeep, or Military Vehicle, held at the South Yorkshire Aircraft Museum 'AeroVenture' at the former site of RAF Doncaster. For more information contact Mark Askew on: Tel: 01302 739000 info@jeepworld.co.uk www.jeepworld.co.uk

Saturday 7 September 2013: Peopleton Autumn Show:

held at Peopleton Village Playing Fields, Peopleton, Worcs. Featuring a variety of Classic Cars, Military Vehicles, stalls and entertainment. The event is open 12.00 noon till 6.00pm. For further details about the show call John Sargeant: Tel: 01905 840155 sarg-37@fiscali.co.uk

Sunday 29 September 2013: Manchester Militaria Fair:

held at Event City, Phoenix Way, Urmston, Manchester, M41 7TB. Located next door to the Trafford centre. For further details or to book in for the event please contact Amanda at: Tel: 01743 762266 amanda@jeeparts.co.uk www.militaryconvention.com

SEPTEMBER 2013

Sunday 29 September 2013: Stoneleigh Mini Militaria 2013:

Blackdown Buildings, The Exhibition Centre, Stoneleigh Park, Coventry, Warks. CV8 2LZ. For details contact Amanda on: Tel: 01743 762266 amanda@jeeparts.co.uk www.militaryconvention.com

OCTOBER 2013

Sunday 6 October 2013: Hack Green Secret Nuclear Bunker Rally:

French Lane, Nantwich, Cheshire, CW5 8BL. For details call Rod on: Tel: 01270 623353 coldwar@hackgreen.co.uk

Friday 11 to Sunday 13 October 2013: Wartime Weekend:

held in Pickering, N.Yorks with steam trains, trade stands and re-enactors. For details about the show visit: www.nrmr.co.uk details about the trading area at: www.jeepworld.co.uk/pickeringwartimeweekend.htm

NOVEMBER 2013

Sunday 3 November 2013: Northern Military Expo:

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

Sunday 17 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 at: Tel: 01743 762266 amanda@jeeparts.co.uk www.militaryconvention.com

Why not email your show & event details direct to the Editor at:

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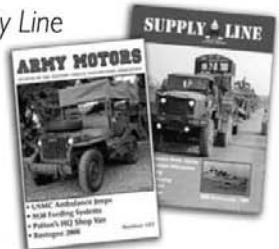
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