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All Change

Welcome to the first new-look issue of Classic Military Vehicle magazine. As we go into 2017, we have added some new regular sections; book reviews, archive centrespreads and museum of the month. What's more we have repackaged others such as the regular Military Vehicle Market and Echoes of War features and wrapped the whole lot in a redesigned magazine.

The team behind this is a mixture of existing and new contributors along with a couple of new faces in the office team in the shape of Editorial Assistant, Vicky Turner and a new Editor, me.

I have been a military vehicle enthusiast for 40+ years, right back to when I had a bedroom window sill full of Airfix 1:76 scale AEC Matadors and used to read Bart Vanderveen's famous Jeep book in the school library.

What I have done in the past isn't important, far more important is looking forward; while there are numerous changes in this issue there are plenty more to come which we hope will



'while there are numerous changes in this issue there are plenty more

enhance the magazine and your enjoyment of it. As this issue goes to press, dates for 2017 events are being announced and, like you, we're looking forward to getting out and about in connection with green machines.

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John Carroll

Editor John is longstanding military vehicle enthusiast who has owned a variety of green machines from a Scammell Explorer to a Harley 45 via Jeeps and Land Rovers



Subscriptions. Please refer to the main advertisement within this magazine. CMV Subscriptions Department, Key Publishing Ltd, PO Box 300, Stamford, Lincolnshire, PE9 1NA, ÚK. Tel: +44 (0)1780 480404. Fax: +44 (0)1780 757812.

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Readers in the USA can place subscription orders by visiting www.imsnews.com or by calling toll free 800-676-4049 or by writing to CMV, IMS News, 3330 Pacific Ave, Ste 500, Virginia Beach, VA23451-9828.
Classic Military Vehicle (ISSN 1473-7779) is published monthly

by Key Publishing Ltd and distributed in the USA by Mail Right Int., 1637 Stelton Road, B4, Piscataway, NJ 08854. Postmaster: Send address corrections to Classic Military

Vehicle, Key Publishing Ltd c/o by Mail Right Int., 1637 Stelton Road, B4, Piscataway, NJ 08854.

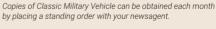
Vicky Turner

Editorial Assistant Vicky is crucial to the organisation of the new CMV team and the production of the

assic 1960s Land Rove

Michelle Toner

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Printed in England by Precision Colour Printing Ltd. Distributed by Seymour Distribution Ltd. +44 (0)20 7429 4000.

Key Publishing Ltd, PO Box 100, Stamford, Lincolnshire, PE9 1NA, UK. Tel: +44 (0)1780 755131

Fax: +44 (0)1780 757261 Subscriptions: +44(0)1780 480404

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Steve Donovan

Chief Designer Steve has worked with Designer Dave Robinson in redesigning the magazine to produce CMV's fresh, new look for 2017

The Fighting Matchless

Military motorcycles from the famous Plumstead, London factory

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Looking into military vehicles through an archive photograph





and related equipment from that conflict.

A de-commissioned Bren gun plus Lee-Enfield

of the country's most successful commercial buildings and whose other recreations include

ple riding on it one evening in Normandy and was retrieved from Egypt, so that its original



tinware had remained in good condition; to a little James 125 Villiers-engined ML. "It's probably the only original James ML survivor of the 6th

Airborne operation on D-Day," said John.
It had been part of the 53rd Worcester Regiment unit of light Royal Artillery supporting the

6th, so may have arrived by glider, or due to the lack of glider capacity, been with the regiment's two battalions which had come ashore on D-Day. It had been found in a barn south of Caen. "At the 70th anniversary 2014 memorial service at Breville near Pegasus Bridge,

I chatted to an airborne survivor who had come out of the back of a glider on an ML. He'd hated it – never got used to mixing the petrol and oil – and had left it in a barn,"...said John.

John likes WD machines with known history, and has a loose network of people in France



Yellow stripe on primary chaincase indicated centre of gravity, to help loading glider-borne machinery



Flipped-up exhaust was 'Joe's fancy'(though it had featured on a prototype), and is very loud!



G3/L's separate speedo, no longer driven from the front wheel, and headlamp-mounted ammeter replacing early G3 WO's tank-top instruments.



G3/L featured smaller bore exhaust and slimmeddown barrel finning, to save weight But the dynamo was still a pain for REME workshops Note wartime absence of rubber for pedals and controls



Early G3/Ls were airborne priority due to light weight. Regimental numbering denotes Oxford/ Bucks Light Infantry, whose glider-borne soldiers, as part of 6th Airborne Division, assaulted Pegasus Bridge on night of June 5, 1944

who know what he's interested in. He has a 16H Norton brought back from Normandy with bent forks, another G3/L found in a bunker in Cabourg and another Big Four bought from a dealer in Dunkirk.

The D-Day commemorations are a focal point for World War Two vehicle enthusiasts. As John's impressive bike collection indicates, though correct equipment is not neglected, his group, the Normandy Old Bikes Society, consider themselves primarily motorcyclists rather than re-enactors. They share a field in Normandy with like-minded French enthusiasts, the Juno Military Vehicle Club of France. The British group includes John and Peter Brown who each year research a different aspect of the invasion for the group to explore on the ground. Recently they looked at Operation Goodwood, the allied breakout offensive round Caen in late July; this yielded some wonderful riding on French back roads and green lanes.

John, to his credit, is very concerned to keep the younger generation, like his son Joe and Joe's pals Michael Neale and Matt Davies, involved and interested in this pivotal moment of our history, and gives light-touch but well-researched talks each year.

The Two Gs

I had ridden several G3s but they had all been later post-war tele-forked examples, burdened with the weight of rear suspension. I was therefore particularly interested in John's rigid, girder-forked G3 W0 from 1939. This is an early example of the wartime mount, with an engine number in the low 500s and a tank-top instrument panel, which would soon be dropped; so very much a militarised G3 Clubman with an









extra toolbox.

In the metal, the WO looks lower and longer than the G3/L, chunkier and heavier. Its regimental markings, a rhino on the toolbox, are those of a unit of the UK First Armoured Division, part of the BEF and a nod to Joe's grandfather Ted Sankey, a tank commander in that unit, who was captured at Calais in June 1940.

The WO, the earliest John knows of, had also eventually made it back from France, having been abandoned at Dunkirk, and post-war registered over there not as a Matchless, an unfamiliar name, but as something like a Motobecane.

It started easily, and moved off smoothly once an early-engaging clutch and a relatively tall first gear had been allowed for. The ride felt well-balanced and comfortable from the start, and the WO steered reassuringly well in the lanes. Any apprehension about a bone-jarring ride from the girder forks was soon gone. AJS/Matchless girders had benefited from the fitting of check-spring dampers from 1937, and these coped surprisingly well with both rippled tarmac and potholes; though off-road, in combination with the 350's weight and overall high gearing, it might have been a different story.

But on the road it felt light enough, and with plenty of power and notable responsiveness – we saw a comfortable 50mph, with more in hand. The responsive feel should have come as no surprise, since the post-war versions I'd



This early model G3 WO featured a prominent steering damper plus tank-top instruments, both dropped on the G3/L to save weight."



G3 WO's girder fork, featuring check-spring dampers, was fine of its type, but the G3/L's telescopics made it history



Many detail differences between this G3 WO and the G3/L included the former's bulkier rear chainguard, and front wheel drive for the speedo A fine machine but with a foot in the past



G3 WO's steering damper was dispensed with to help lighten G3/L Despite criticism of this, it was not restored post-war!



Tiny tail-lamps are a reminder that more people in wartime UK died in traffic accidents than from bombing

THE WARTIME G3 STORY

This tele-forked G3/L belongs to John's son, 26-year-old Joe, but has benefited considerably from John's attentions and spares hoard, both in its re-creation and in making it lively enough to keep Joe engaged. True to form, the Matchless had been found in the south of France. "In France, it feels like it's home!" said Joe. "In Normandy, they call it Lazarus, reborn from the dead. Dad used up a lot of his best bits on it. We built it together and it's on its third engine; on the first one, the big end went, as the crankpin hadn't been properly hardened. For the next, Dad picked the best motor from the pile of 18 G3 engines in his garage,

to a less vulnerable position behind it and on top of the dynamo. In addition the AJS cylinder head with its coil valve springs had been adopted. This was probably in response to the poor durability of the Matchless hairpin springs, as noted by service testers in 1935. Perceived weakness and weight, plus the Plumstead factory's London location near the Royal Arsenal at Woolwich, and finally the War Office decision in spring 1940 to adopt Triumph's 3TW light 350 twin as the standard military motorcycle, all meant that orders for the early, 375 lb, girder-forked G3 WO were sluggish during the first half of 1940

M20 and the Norton 16H - and even marginally quicker than the lightly detuned G3/L. But the WO's weight made it less of a favourite off-road, and Plumstead whittled away at this, with two prototypes of the G3/L. A list running to several A4 pages survives, with the factory weighing literally every component of the machine, to the gram – 5/16ths nuts x 48 = 9 oz 6 grams, etc.

Subsequent changes included lighter mudguards and rear chainguard, plus smaller headlamp and threegallon petrol tank, no steering damper, a smaller-bore exhaust system and shorter silencer, smaller brakes,

test. According to the Haynes G3 Superprofile authors Deryk Wilde and Keith Jackson, one morning he had been street-racing to the factory with his brother-in-law Jack Kelleher, and failed to make the turn at the bottom of Pol Hill outside Sevenoaks where they both lived. The AMC fork was patented as the Teledraulic, and when after the war BMW attempted to enforce their fork's patent, not surprisingly they were unsuccessful, and Matchless paid no royalties to Munich. Production of the new 16 bhp G3/L commenced late in 1941 (hence its 'W41' prefix), though the model only began to appear in any numbers



and that one lasted for years." This latest one has been built with the compression plate removed and a larger pre-war carburettor, and Joe has seen 70mph on it.

John is quietly working to maintain his own edge, putting together an OHV Ariel WN/G, distinctively finished with red mudguards denoting Bomb Disposal, but with a 500 barrel and head, a GS cam and a Red Hunter piston. John built up the Ariel in public at this year's Goodwood Revival, in a replica REME workshop. Bolting on the plates and putting the engine in, with the WN/G took just 10 minutes, where for the G3/L it takes much longer, due to the engine's tightness in the frame. Meanwhile Joe's bike has enjoyed 15 seconds of fame on film, in The Imitation Game it can be seen through the window while Turing is having his first interview.

The first World War Two forces' G3 was actually an AJS/Matchless hybrid, as during 1939 the Matchless model's twin-downtube frame had been replaced by a single downtube frame from the AJS equivalent. This in turn had meant moving the magneto from its characteristic Matchless position in front of the cylinder,

Then, as Plumstead worked to rectify the situation by developing the G3/L (Lightweight) outside events changed their situation. Following the rout of the British Expeditionary Force during early June 1940, three days before the Dunkirk evacuation began, the factory received an order for 6,000 G3 WO machines. A week after the rescue, ministry men came to Plumstead and compulsorily purchased their entire remaining stock of civilian models.

These rapid measures were aimed at replacing the motorcycle element among the 25,000 military vehicles abandoned in France. Then on November 14, 1940 Triumph's Coventry factory was blitzed, putting an end to the 3TW; a week later Plumstead received an order to submit their prototype lighter G3/L for evaluation. Nevertheless, more than 18,500 of the G3 WO would be produced between 1939 and 1942, with the contracts still valid even after the G3/L was in production The G3 WO was popular with forces' riders, as it was virtually the sporty Clubman model with a carrier and an extra toolbox. This made it quicker and more lively than the prevailing 500 side-valves like BSA's

no sidecar lugs, a smaller saddle, reduced cylinder finning (saving 4 lb 10 oz), and only one tool box. The prototype's final weight had been a sensationally low 319 lb, though this would creep up to around 340 Ib on equipped production versions with features like the pannier racks introduced late in 1942, a passenger pad, the Vokes air filter etc. Another contributor to lightness was the G3/L's unique feature, its telescopic forks. These famously derived from BMW's design, but how this was managed remains disputed. Jock West, previously an AJS racer and later AMC's sales director, rode for BMW pre-war and worked for AFN, their British importers; he is said to have provided Plumstead with a set of the forks for evaluation. Other sources believe that two sets were quietly sourced from the Irish importer in Dublin. Certainly, works manager Bert Collier supervised their development and improvement during

Irish importer in Dublin.
Certainly, works manager Bert
Collier supervised their development and improvement during
1939/40, with the use of light alloy
for their sliders contributing to the
G3/L's weight loss. Sadly 34-year
old Bert, one of the three brothers
who ran Plumstead, died in Oct
1941 riding a BMW on long-term

from mid-1942. Thanks to being the sole tele-forked service machine, with four-and-a- half inches of fork movement, it was soon recognized, in John Tinley's phrase, as "the Spitfire of WD motorcycles," equally good on or off-road, and eagerly sought after by keen forces' riders. Plumstead went onto two-shift work and occasionally produced 1,000 machines a week, leading to a total of more than 50,000 G3/L built by war's end.

There had been detail changes – the metal 'M' badges replaced by transfers, a rear stand fitted, heavier plain not ribbed mudguards, and improved valve-timing, but basically the G3L had been right from the start. REME workshops might not have appreciated the very inaccessible dynamo, the need to remove the saddle to get at the oil filter, or the general lack of space. All these were due to Plumstead having kept the same frame dimensions so that the former engine and gearbox could be used as replacements if necessary. And they were often unfamiliar with dismantling the new Teledraulics, when girders were still universal. But none of that stopped the G3/L being the true Forces' Favourite.



sampled had all been from after 1948, when the 350 had adopted the 500's larger, heavier flywheels; great for plonk, but no aid to liveliness or acceleration. You could see why these brisk OHV models had often been assigned to riding up and down convoys with the Royal Army Service Corps.

The big brakes were good, and the gearchange smooth (though in fairness the box was a later replacement from 1950 – John believed the original might have been smashed up, as

part of BEF orders to disable abandoned equipment). So, overall a cracking ride, requiring a revision of any ideas that the G3/L's predecessor had been a lumbering dinosaur.

Next up was Joe's 1943 G3/L, which proved another cracker, in every sense! The matt-black exhaust system, with a non-standard up-tilt to its short silencer was very noisy. It had a clutch which this time engaged late but again worked smoothly and well, and noticeably lower gearing, particularly in first, which would have

been welcome off-road, though in top the ratio seemed no inhibitor on tarmac.

Again the bike was controllable and comfortable, and with the teles - and good modern rubber - more chuckable than the WO, but only marginally so, on tarmac. Offroad the tele-forked G3/L and AJS Model 16's prowess is well-known, as they would go on, often with civilianized ex-WD machines, to be the mainstay of Clubman trials for a decade after the war, as well as providing the basis







for works' mounts which succeeded at the highest level.

This one's lightly tweaked engine was lively to the point of lustiness for a 350, and on main roads comfortably kept up with the cars (while deafening their owners!) The brakes though smaller than the WO's worked adequately. It seems appropriate that many of the early G3/Ls were assigned to the airborne and then the commandos. It had been primarily because of their lightness of course, but perhaps also due to their can-do, even aggressive, go-anywhere character; an elite among the girder-forked herd.







G3/L's light and eager looks were not deceptive. List of items changed on the prototype to get the weight down to 319 lbs ran to five pages

SPEC SHEET FOR MATCHLESS G3 WO, G3/L.

G3 WO Matchless Make Matchless Model W/39 G3 WO W/41 G3/L Nationality British British 1943 Year 1939 Production Run 1939-1942 1941-1955

Engine Single cylinder four-stroke Single cylinder four-stroke

Chain-driven, separate gearbox

 Type
 OHV
 OHV

 Fuel
 Petrol
 Petrol

 Displacement
 347cc
 347cc

Power 16bhp (est) 16bhp @ 5,600

Torque n/a n/a

Transmission Chain-driven, separate gearbox

TypeFoot-changeFoot-changeGearsFourFourTransfer boxn/an/a

SuspensionGirder front forks, rigid rearTelescopic forks, rigid rearBrakesDrum, 7in front and rearDrum, 6½in front and rearWheels19in front and rear19in front and rearTyres3.25x19in, front and rear3.25x19in, front and rearCrew/SeatsSprung saddleSprung saddle

Dimensions

 Length
 87in (est)
 85in

 Width
 28in (est)
 28in

 Wheelbase
 56in (est)
 54in



Despite weighty ancillaries, G3 WO was based on a pre-war sportster and originally gave livelier performance than lower compression G3/L





Elefant in Dorset

One of the largest combat vehicles to see action in World War One has arrived in Southampton from the USA and was trucked to the Tank Museum in Dorset by specialist hauliers, Inter Market Freight Services, 72 years after it fell into Allied hands.

The 70-ton Panzerjäger Tiger (P), commonly known as the Elefant, has undergone an historic 3,500 mile return journey across the Atlantic. It was captured near Anzio, Italy, by US troops in June 1944 and quickly shipped to the USA for military evaluation.

Tank Museum curator David Willey said: "Tiger tanks like this one have a powerful reputation which was underpinned with Nazi propaganda at the time. This reputation has persisted beyond

the war itself into books, films and video games." The tank is being loaned from the Ordnance Museum at Fort Lee, Virginia, by the United States Army Centre of Military History and is one of just two surviving examples of the 91 Elefants that saw service with German forces. It will be the first time one has ever been seen in the UK.

"This mythical reputation, coupled with their rarity, is what makes them of such great interest but, in truth, the myth has elevated them to be greater than the reality," David added.

Designed by famed auto-engineer Ferdinand Porsche, the Elefant was a self-propelled anti-tank gun and member of the Tiger family of World War Two German tanks. Before serving in Italy, it took part in the Battle of Kursk, which remains

the biggest tank battle in history. The Elefant will be displayed at The Tank Muse-

um at Bovington in Dorset, where it will feature in 'The Tiger Collection - the Tanks, the Terror & the Truth' exhibition sponsored by World of Tanks. "Tigers are large and impressive by contemporary standards - but there is a moral responsibility to remember what they were used for and the regime who created them," said David. "Representing less than seven per cent of their wartime tank production, Tiger tanks failed to have a real impact and our exhibition will be presenting a more balanced account of these vehicles, along with views of veterans." Set to open in April 2017, the exhibition will bring every member of the Tiger tank family together in one space for the first time in history. However, one example that has eluded the museum will be appearing virtually, courtesy of exhibition

"We're taking our experience of creating historically accurate models for our World of Tanks video game and using this to create an exhibit to complete the collection," said Richard Cutland, World of Tanks European head of military relations. "Using the latest digital technology, visitors will be able to see a full-sized Sturmtiger in the exhibition with the use of our augmented reality app. We're pleased to be supporting an exhibition of such international significance."

sponsors World of Tanks.



Beaverette Mk II

The photograph of the Beaverette Mk IIs at the end of CMV issue No 187 is most interesting. Note that various of the Beaverettes are numbered as motor cars ('M' prefix) and armoured cars ('F' prefix). Both the Beaverettes and the other vehicles in the column belong to the same unit: 3rd Battalion, Reconnaissance Corps. The battalion, forming the reconnais-

sance component of 3rd Division, an infantry division, is on exercise in Dorset in August 1941. The black and red badge of the 3rd Division is on the right rear of the Beaverettes. 3rd Division would be the first to land on Sword Beach on June 6, 1944, though by then the Beaverettes would be replaced by purpose-built armoured cars. *John Teasdale*



CMV Pub of the Month THE MULBERRY CONWY MARINA ROBINSONS ENTRACE

The Mulberry Conway Marina

The Mulberry is a modern pub on the Conwy Marina where the halyards of expensive yachts chime against their masts and there's little but its name, to mark the historical importance of this place.

Hugh lorys Hughes (1902-1977) was a Welsh civil engineer and hobby yachtsman who, in 1942, submitted ideas to the War Office for the design of the Mulberry harbours used in Operation Overlord. These ideas were ignored until Hughes' brother, Alain Sior Hughes, a Commander in the RNVR, drew attention to the documents. Following Winston Churchill's memorandum 'Piers For Use On Beaches' of May 30, 1942, the Mulberry project gained momentum under the direction of Major General McMullen and a civil engineer, Brigadier Bruce White. Hughes designed and supervised the construction of a prototype jetty consisting of 'Hippo' concrete caissons sunk on the sea bed supporting 'Crocodile' steel roadway bridge units which spanned the gaps between the Hippos.

The prototype was built at Conwy Morfa on the coast adjacent to Hughes' home town of Conwy and towed to Garlieston Wigtownshire in Scotland, where it was installed and tested against two other designs. In June 1943, the War Office set up a committee of civil engineers to advise on the design of the artificial harbours and the equipment to be used in them. While there is a plaque in Hughes' memory

For more details visit
www.robinsonsbrewery.com
or
www.ddaymuseum.
co.uk/d-dayonyourdoor
step/details/mulberryharbour-construction
-site-morfa-conwy

in the museum at Arromanches, there's no mention of him or his invention and no photographs in this pub, just its name to subtly mark the importance of what happened here on this stretch of the North Wales coast in 1942-43.

Russian Tank Exports Explode

With the deployment of Russian tanks in the Syrian conflict, the press department of the Uralvagonzovod Corporation says sales of armoured vehicles and tanks have doubled. They put this explosive growth down to the successful engagement in the arena and their hardware's capabilities in the field. With upwards of 149.9 billion sales in Rubles - around £2.008 billion, UVZ is likely to join the list of

the global top 50 arms manufacturers. Meanwhile, they continue to invest in R&D and are bringing online more technical weaponry. They've revamped the T-72 in the form of the T-72BZ with its state of the art fire control system and a bigger, better engine, and launched a mass produced mine clearing vehicle, the BPM-3MA, which can clear a path through mine fields as it travels.

News Briefs

The Czech Ministry of Defence is planning to acquire 20 Pandur armoured personnel carriers (APC) and Nexter Titus 6x6 armoured vehicles for the country's military, according to Deputy Defence Minister Pavel Beran.

Indian armoured formations will become more high-tech as the army has revived the process to equip its T-90 main battle tanks with better night vision systems. The army intends to procure 1,400 uncooled thermal imager-based driver's night sight (DNS) with fusion technology http://tinyurl.com/gvrr57m. Indian Army plans to replace the existing image intensifier sights used in T-90 tanks in the next five years.



France has donated 15 vehicles, weapons and equipment to Cameroon's Special Forces as part of assistance to combat Boko Haram militants. The vehicles, including 10 Peugeot P4 all-terrain 4x4 vehicles, three ACMAT VLRA tactical trucks and two Renault TRM 2000 light trucks, were handed over in November 2016.

The Chinese government has donated 36 vehicles to Kenya's Defence Force, including water and fuel trucks, recovery vehicles and earthmoving equipment painted in military green. The 36 vehicles were handed over by Dr Liu Xianfa, Chinese Ambassador to Kenya. They are worth \$4.5 million. China also donated three containers of spare parts.

The US Senate has passed the Fiscal Year 2017 National Defense Authorisation Act (NDAA), which authorises funding for the Abrams Tank and the Stryker Vehicle – critical work is done on both systems at Lima, Ohio's Joint Systems Manufacturing Centre (JSMC). The NDAA includes more than \$652 million to support modifications to the Abrams Tank and more than \$579 million for the Stryker Vehicle.









DUKW Dodge Discovered

DUKW enthusiasts who had always thought that cutting slots in the top hat sections on DUKWs to let out trapped water and avoid corrosion was a post-war French army practice have now been proved wrong. This June 1944 photo at Pointe Du Hoc tells a different story; it now appears that this modification was actually recommended by a 1944 issue of Army Motors - the official magazine published by the US Army to encourage better practice among its drivers and mechanics. Thanks to MVCG France for the discovery, it really is a very interesting picture for the DUKW world. *Nigel Hay*

Centauro I

The eight-wheeled Centauro II, was displayed at the Cecchignola Army range near Rome



Italy's new armoured vehicle, the Centauro II, was displayed at the Cecchignola army range near Rome where a prototype was put through its paces as the country's parliament continued to decide whether to fund the vehicle. The Italian Army hopes to buy 150 of the vehicles, which is built by a joint venture between Leonardo and Italian truck-maker Iveco. With a 120mm cannon, digital communications and a 720bhp engine, the new Centauro II is bigger, more powerful and better wired than its predecessor, the Centau-

ro, which it will replace. It is agile, flexible and can do more than 100kph on the road. It has a 120mm gun and is designed to function in temperatures ranging from minus 32 to 49°C. Extra protection has been added following three years of testing on ballistic, ceramics and composites, while seven cameras are mounted on the hull. Italian lawmakers are debating approval for a €530 million order for a first tranche of 11 pre-series Centauro IIs and 39 production vehicles, along with 10 years of logistics service.



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NIMR N35

The Ajban SOV is a lightweight 4×4 long-range reconnaissance vehicle

UAE-based NIMR Automotive, a subsidiary of Emirates Defence Industries Company and a manufacturer of wheeled military vehicles, has announced that two of its most advanced models, designed and manufactured in the UAE, have entered service with the UAE's armed forces. NIMR vehicles are made at the Tawazun Industrial Park, which is located in Abu Dhabi.

The NIMR N35 series, which comprises the 4×4 N35-4 and 6×6 N35-6, were acquired from

Denel Vehicle Systems (which was acquired from BAE Systems Land Systems South Africa).

The N35, a mine-protected multi-purpose fighting vehicle in both 4x4 and 6x6 configurations, and the Ajban-class Special Operations Vehicle (SOV) were on display at the UAE's National Day parade recently. The N35 is a multi-purpose vehicle that provides the armed forces 'with a combination of firepower, survivability and mobility to meet

modern, asymmetric operational threats,' said the company. The cabin, known as the 'crew citadel', is capable of providing high levels of protection against mine, IED and ballistic threats, it stated. The Ajban SOV is a lightweight 4×4 long-range reconnaissance vehicle that is easily transportable, including by helicopter, and capable of operating offroad in any environment for covert missions as it was 'designed to be highly mobile in all terrains, according to its maker.

Pearl Harbor 75th Anniversary



ABOVE: Fred Wiles, a Navy World War Two veteran and native of West Virginia, poses for a photo with Air Force Master Sgt Alejandra Anderson, of Miami and Staff Sgt Brittany Johnson, of Mystic, Conneticut, before his flight back to Los Angeles BELOW LEFT: US Coastguard crew members from the Coast Guard 14th District greet a Pearl Harbor survivor from an American Airlines flight at the Honolulu International Airport

BELOW RIGHT: Former Navy Chief Petty Officer Howard Bender, a World War Two veteran and native of Mission Viejo, California, prior to boarding an honour flight back to Los Angeles at Honolulu International Airport

The US military and the State of Hawaii hosted a series of remembrance events on December 7, 2016 to honour the courage and sacrifices of Pacific Theatre veterans on the 75th anniversary of Pearl Harbor.





More than 100 World War Two veterans, including Pearl Harbor survivors, attended the events. (Photos by Petty Officer 2nd Class Tara Molle)

News Briefs

India's first Heritage Military Transport Park has been inaugurated at the Army Service Corps (ASC) Centre and College in Bengaluru. The heritage park is the brainchild of Lieutenant General S P S Katewa and is aimed to document exhibit and educate the future generations about the contributions of the mechanical transport feet to the armed forces. It has displayed five vintage vehicles - Jeep, Jonga, Nissan, 1-Ton and Shakthiman vehicles which served the army in all terrain and operational conditions since independence. These vehicles have been superseded and paved the way for new generations of vehicles.

The Indian Army will replace its Maruti Gypsy 4x4 fleet with a new range of SUVs, having selected the Tata Safari Storme for an initial order of close to 3,200 vehicles, which could increase in the coming years.

Some of the US Army's excess flat-bottomed Stryker Infantry Carrier Vehicles could go to Peru. As the army converts its flat-bottomed Strykers to the double-V hull configuration, some of the older versions are being offered to other countries. The State Dept notified Congress of a possible Foreign Military Sale (FMS) to Peru for 178 reconditioned Strykers.

www.mod-sales.com



Spartan CVRT Dieselised APC, Fitted Cummins BTA 5.9It Turbo diesel engine, Engine: power 195 hp, David Brown TN15d Epicyclic Semi-Automatic Gearbox with Neutral turn capability, Max road speed 72 km/n, Range 750 km, Manoeuvrability, Gradient 60%, Side slope 35%, Vertical step 0.5 m, Trench 2m, Fording 1m etc, Ex condition, Guide price from £19,995 (3 Available)



Alvis Stormer Tracked Armoured Recon Vehicle, Fitted Perkins 6-litre, 6-cylinder, Crew: Driver, Commander plus 2 pax, year 1992, low mileage, Excellent condition,

Guide price from £12,500 (6 Available)



Alvis CVRT Shielder, Tracked Armoured load carrier with flat bed platform, flatbed can be adopted for a wide range of roles such as logistic carrier, bridge layer repair/recovery & towing. Built to a high spec the vehicle hull is composed of aluminium armour to protect the crew etc, Mileage from 500, Ex condition, Guide price from £15,000 (4 Available)



Land Rover Wolf 90 300Tdi Hard Top RHD, Fitted 300Tdi engine, 5 speed R380 gearbox, Hi/Low transfer box with centre diff lock, full FFR installation kit, 24-volt electrics, PAS, front and rear disc brakes etc, Mileage from 451 10km,

m 45110km, **Guide price from £10,995 (6 Available)**



Wolf 130 Battlefield Ambulance RHD, Fitted 300Tdi engine, 5 speed R380 gearbox, Hi/Low transfer box with centre diff lock, PAS, front and rear disc brakes, heavy duty chassis and axles, Goodyear G90 tyres, spare wheel, low mileage, Year from 1997, runs and drives well, Very good condition.

Guide price from £13.750 (5 Available)



The DAF 4x4 Truck, Cargo capacity of 5000kg, Fitted Cummins 5.9 ltr Turbo Diesel, permanent 4x4, Hi Lo Ratio with Diff Lock, PAS, Air brakes, Nata style rear hitch, Engine power 145hp, Maximum road speed 89 km/h, Range 500 km, Year from 1994.

...... Guide price from £4,500 (40 Available)



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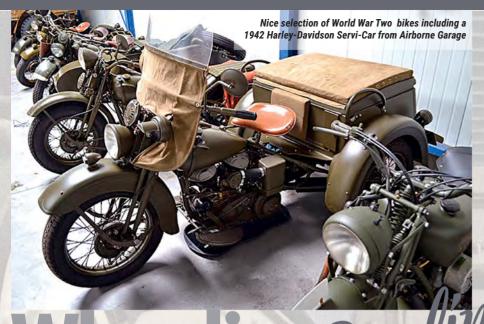
Crocodile wagon and Sherman 'OO' 19cm. £46.50 +p+p.



Dock shunter 0-4-0 WD markings. OO 16cm. £45.00 +p+p

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Nigel Hay looks at how the market for

military vehicles and accessories thrived in 2016

f 2016 is remembered for anything, it has to be the all time peak in military vehicle prices at the Normandy Tank Museum in September which CMV covered in the November issue. However, this didn't appear to have had any tangible effect on the market, beyond accelerating a few rapid sales in the ten days afterwards.

Looking back, we have seen a year where lots of vehicles have been bought and sold, at home and abroad, but despite a few spikes, prices had averaged out by December to

pretty much where they were 12 months ago. The post Brexit exchange rates meant the Europeans have found the UK market offering good value and European vehicle dealers say that the thriving UK hobby is vital for their businesses. This is borne out by the massive marketing effort made at War and Peace by Dutch armour specialists BAIV.

Surprisingly, we see very few British traders at the shows in Europe: those who do attend seem to be there to buy spare parts rather than sell their wares.

European military vehicle shows, with a few exceptions, are far less overtly commercial than many in the UK. It is quite normal to visit a European event and find very few sellers and far less emphasis on attracting the public. But in the UK we have a formula for events that works and our shows, whether large or small, are an important part of the marketplace.

Some very good quality vehicles came up for sale in 2016. One of the nicest examples of a

Russian Amphibian GAZ 46 MAW built in 1957 was offered by a Polish

seller for around £70,000. It owes a lot to the wartime Ford GPA and certainly has a few refinements but they command more modest prices with the value of good GPAs still floating around £120,000. The GPA market surprised us all, outpricing the much larger GMC DUKW by around 200 per cent.

Kent based RR Services always offer a good selection; projects they had on offer towards the end of the year included a White Scout Car, uncut



White M3A1 needs completing for £18,000

cles. These include a nice 1940 BSA M20, 95 per cent restored, almost finished for €5,950, a Triumph 3HW, unspoiled condition for restoration restore €4,950 and an unusual Zundapp DB250, civilianised in its post war life for €5,500. They

also offer a Matchless G3L, found in a forest in Germany after the end of the 1945 live-firing exercise, at a competitive €5,950. If you think pounds for euros it gives you an idea of the price once they are back in the UK. Military motorbikes are definitely proving to be good investments as their popularity increases and they are no

longer regarded as an entry level military vehicle. The Abbot SPG is not always an easy seller as there were far fewer built than the more sought-after FV432. We had a nice one keenly priced at £20,000, which compares well with fairly well used one that sold for £15,000. A private seller offered a very nice FV434 at £15,000. For any armour or heavy vehicle owner who doesn't have a serious fork lift, a FV434 is a desirable bit of kit for the workshop as it is designed for lifting engines out and most of them haven't had to work to hard in military life. (Apparently the REME are more careful with their vehicles than other units....)

January 29, will see many of the enthusiasts heading for the Stoneleigh event. Called Militaria 2017, increasing numbers of parts, paint and accessory sellers are trading at this one-day event which is firmly established in the military vehicle calendar.

And following the lead set by War and Peace back in the 1990s, most of the major show organisers now use Stoneleigh as an important part of their marketing campaign. With a really good mix of traders, large and small, World War Two and modern, whatever your reason for going, it's a magnificent social event and very good for our hobby.

'Military motorbikes are definitely proving to be good investments as their popularity increases'

but needing finishing, for £18,000 and a 'barn find' Excelsior Welbike . Neither White Scout Cars nor Welbikes come up too often these days, so there was a lot of interest in these two.

Dutch based Airborne Garage is a prolific dealer in World War Two vehicles and motorcycles and they had an interesting collection of several German and British World War Two motorcy-



Barn find Welbike looking for a good home....



Fully restored Gaz 46 from a Polish seller

Ole Bill: London Buses and the First World War

Author Dr William D Ward

Publisher London

Transport Museum

Year **2014**

ISBN 978-1-871829-22-8

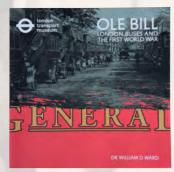
Language English

Size 9.5x9.5in

Price £15

www.ltmuseumshop.co.uk

This lovely 115 page book that contains around 90 images and photos was published by the London Transport Museum as part of its commemoration of World War One. The London B-type bus played an important part in this war because the British Army didn't have enough of its own transport so used around 1,000 London buses as troop transport, ambulances, pigeon lofts, anti-aircraft gun platforms and more. Wiiliam Ward's text is marked as copyright 1999 but in this, the 2014 edition, the book is divided into ten chapters that tell the story of



the London bus from pre-war civvy street to demob, a period of increasingly mechanised war. Additionally the book contains sections of the markings applied to the impressed buses, to press coverage, memorials and remembrances as well as a brief section on preserved buses of the era. Further, its design, informative captions, references and lists of further reading give it an authority that isn't found in all contemporary military transport books.

The Nazi Death Camps Then and Now

Author Winston Ramsey (Ed)
Publisher Battle of Britain International Ltd

Year 2016

ISBN 9-781-870-067898

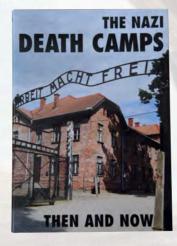
Language English

Size **12.5x8.5in**

Price **£44.95**

www.afterthebattle.com

News that a new book has joined the After The Battle selection is always noteworthy because the company's books are always meticulously researched and utterly comprehensive. The Nazi Death Camps Then and Now deals with a harrowing subject and one from which the echoes still ring down the decades. Those who deny the holocaust and those with political agendas about it would do well to read this book about a dark period in European history and people's inhumanity to others. In the 12 years the Nazi Party was in power in Germany between January 1933 and May 1945, around 15,000 concentration and labour camps were established in the Reich and the occupied countries to incarcerate all who were deemed enemies of the state. The first was set up by Heinrich Himmler, then the Police President of Munich, just outside the city of Dachau, its very name becoming associated with death.



Camps were then established at Sachsenhausen, Buchenwald, Flossenbürg, Mauthausen in Austria, Ravensbrück (primarily for women), Neuengamme, Gross-Rosen and, later in the war, Belsen. There was even one in the Channel Islands on Alderney.

Later, it was the extermination camps, hidden away in eastern Poland, that horrified the world when their existence was revealed in 1945. Specifically designed and built to kill people in order to carry out the Nazis' 'Final Solution', the names of Auschwitz, Belzec, Chelmno, Majdanek, Sobibor and Treblinka will forever be linked with death on an industrial scale.

Sherman in The Pacific War

Author Raymon Giuliani
Publisher Historie et Collections

Year 2015

ISBN 978-2-35250-283-8

Language English

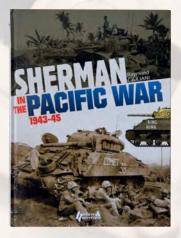
Size 12.5x9.25in

Price £35

www.casematepublishing.co.uk

The chapters of this largely pictorial book are named sequentially after the Pacific islands that had to be taken. from the Japanese during the Pacific War and its island hopping campaign that typified the fighting. Many of the islands listed are well known, including Tarawa, Saipan, Iwo Jima and Okinawa, while others are less so. Roi-Namur, Biak, Pavuvu and Cebufor for example. On each of these islands, the M4 Sherman played a vital part in the eventual victory by providing support for the infantry. The terrain here wasn't the farmland, forests, tarmac or cobbled roads of Europe, but dirt tracks and often volcanic soil and beach sand so operating conditions were different.

The 300 archive photographs and a number of illustrations show that, early in the campaign, many of the Shermans, both cast and welded



hulls, were relatively bare of stowage or extra protection. As things developed, increasing quantities of extra armour was added. These included track links welded to the hulls and turrets, as well as wooden planks and wire mesh added to the hull sides to help against magnetic mines, nails welded on top of hatch covers and metal bars added to partially cover the road wheels and lower hull sides to protect against the actions of determined defenders. Illustrated maps put the Sherman crews' campaigns in context.

Chieftain Main Battle Tank

Author Dick Taylor
Publisher Haynes in conjunction
with The Tank Museum

Year 2016

ISBN 978-1-78521-059-4

Language English

Size 11x8.5in

Price **£22.99**

www.haynes.com

Haynes is probably most famous for the seemingly infinite series of comprehensive DIY workshop manuals that John Havnes established the company with from the 1960s onwards. Therefore it's perhaps not surprising that some of the company's current publications look like workshop manuals and Chieftain Main Battle Tank 1966 to present. is one such tome. It's also entirely plausible that some readers of this magazine might need a workshop manual for a Chieftain tank so I should point out that this book doesn't give instructions on how to change the head gasket on the machine's Leyland L-60 multi fuel engine. It does however, provide an overview of the technical specification and history of this Cold War era main battle tank and its upgrades



and variants including bridging and dozer versions.

The informed text, in six chapters and two appendices, and the mixture of colour and black and white archive photographs backed up with a number of diagrams and a few contemporary photos makes this book more entertaining than I expected. This is perhaps not as surprising as it seems, as the author LT Col Dick Taylor RTR was involved with the Chieftain tank for more than 20 years of an army career that saw him as crewman, commander and gunnery instructor.

Unique Auction in March 2017



During the last 30 years Peter Van de Perck built up an impressive collection of historical military vehicles. What began with a Dodge WC 52, which was saved on a Belgium yard just prior to a transport to North Africa, Peter gathered a beautiful collection of historic Military Vehicles with rare trucks as the GMC CCKW353 with 4-tons Quick Way crane, the GMC LeRoi Compressor, many wreckers, equipment, parts and so on.

Last year Peter decided to sell his collection. He asked Troostwijk Auctioneers and BAIV as Military Vehicle specialist to organize an auction to sell his entire collection. So ... No reserve ... No reservations ... All vehicles and parts will be sold as is.

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The Defeat of Germany Then and Now

Edited by Winston Ramsey

Publisher After The Battle

Year 2015

ISBN 9 781870 067843

Language English

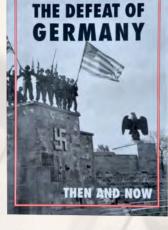
Size **12×8.25in**

Price £44.95

http://afterthebattle.com

It's unlikely that many people reading Classic Military Vehicle haven't heard of the authoritative, After the Battle publications and their associated Then and Now books. This series of books are painstakingly researched to provide accurate and comprehensive historical records of various military campaigns. A recent book from the company is entitled, The Defeat of Germany Then and Now, a subject area that overlaps with many military vehicle interests.

A glance at the specifications of this hardback - 544 pages and more than 1,500 Illustrations - suggests that this is a book to take seriously. Its source material is from very official channels; although more than 500 correspondents, photographers and broadcasters had been accredited by the Public Relations Division to cover the D-Day invasion of France. SHAEF also decided to issue its own daily communiqués, charting the progress of the battle, to be released under the signature of a former US pressman, Lieutenant Colonel D Reed Jordon, the chief of the



the usual Then and Now way, alongside the measured text of the official communiqués, hundreds of photographs - many complete with censor deletions - taken by war photographers in France, Belgium, Holland, Luxembourg and Germany, are reproduced alongside the recent comparison photos taken by After the Battle personnel. Illustrating the battles by the western Allies to liberate western Europe, it follows the fighting month by month, from D-Day in Normandy until the final defeat of Nazi Germany.

Although at £44.95, this book isn't cheap, another way to look at it is if this is the only book you need to buy on the subject, then it represents

value for money. I have been poring over it since I got it, letting cups of tea go cold, because it is so informative. A few of the pictures included you may recognise - as the SHAEF 'press' images were widely circulated - but lots you won't. There's even a chance that with the photos you

do recognise, there's something to be learned because the whole of the original caption is here and is something that's often not reproduced in more general or vehicle-specific books. For those of us who have been on MV tours to Europe or are planning to go in future, this book is destined to become an invaluable reference work especially if you want to visit the crossroads and villages where history was made. Treat yourself, you won't regret it.



communications section.

In the following months, nearly 400 communiqués were released by SHAEF and these are reproduced in this book. They were designed mainly as a guide for the press covering battlefield activities, so descriptions of the horror, the suffering and the destruction that go with each shell fired and each bomb dropped were left to the news reporters and photographers nearer the action. In

Where Soldiers Fear To Tread

Author Ranulph Fiennes
Publisher Hodder and Stoughton

Year **1975**

ISBN 0 340 14754 7

Language **English** Size **8.75x5.75in**

Price £20

(secondhand on Amazon)

www.hodder.co.uk

This is the original hardback version of Ranulph Fiennes' fourth book and is his account of a spell of time spent fighting Oara rebels in 1968-70. He was a 'contact officer' on loan. with others from the British Army, to assist the Sultan of Oman in his wars with the Marxist-indoc-

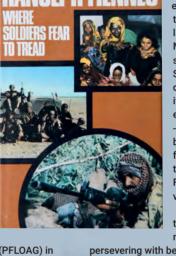
trinated guerrillas (PFLOAG) in Dhofar, a harsh and hot territory on the border with The People's Democratic Republic of South Yemen. Non-fiction, it was written following a return trip in 1973 and after consultation with many of his peers at the time. It is one of the many books that details operations that, with the exception of those who were there, is largely forgotten outside the military history enthusiasts' world even if the conflict itself is remembered. Where Soldiers Fear

Where Soldiers Fe
To Tread talks of
Cold War politics
as a hot war
being conducted
by proxy, in places like Dhofar
where the enemy insurgents
were fresh
from training
in communist
countries like
the USSR and
China.

The book details patrols and personalities,

contains black and white photos of Land Rovers and landscapes yet, in these high-tech days, seems somehow remote because of the basic equipment and weaponry used; the Series IIA LWB Land Rover without a roof and the FN 7.62 rifle and manhandled field guns were then considered to be

state of the art equipment. It mentions places that came to prominence later such as Mirbat where a small team of SAS soldiers distinguished itself against enormous odds - interestingly, a hattle that was fought between the dates of Fiennes' two visits to Dhofar. It is these things that make it worth



persevering with because this out of print book is the crucial start to another of Ranulph Fiennes' books and one that is far more well known, namely *The Feathermen*. The events described in *Where Soldiers Fear To Tread* are those that start the chain of events in *The Feathermen*, the controversial book that may be fact or fiction. The hardback edition is collectable but available and there was a 1995 paperback edition both can be found secondhand online





January 29 Militaria 2017

Exhibition Centre, Stoneleigh Park, Coventry, CV8 2LZ.

Militaria fair with stands selling militaria, vehicle spares, books and collectables.

9am-4pm. Admission £10

Amanda Lycett 01743 762266/info@militaria-shows.com

www.militariashows.com

February 12 Chatham Fair

Historic Dockyard, Chatham, Kent. ME4 4TZ www.chathammilitariafairs.co.uk

March

12 Chatham Fair

Historic Dockyard, Chatham, Kent. ME4 4TZ www.chathammilitariafairs.co.uk

19 Malvern Militaria Fair

Three Counties Showground, Malvern, WR13 6NW.

Militaria, vehicle spares, books, badges and Jeeps for sale at this well established event. 9am-3pm. Admission £5

Amanda Lycett 01743 762266/sales@jeeparts.co.uk

www.militaryconvention.com

April

9 Chatham Fair

Historic Dockyard, Chatham, Kent. ME4 4TZ www.chathammilitariafairs.co.uk

23 Northern Military Expo

Newark County Showground, NG24 2NY (just off the A1/A46 junction)

Trade stalls selling militaria, vehicles, books, vehicle parts etc

Admission £5

Mark Askew 01302 739000

http://northernmilitaryexpo.co.uk

29 Tiger Day

Tank Museum Bovington, Dorset www.tankmuseum.org

May

5 Chelmsford Militaria Fair

Marconi Social Club, Beehive Lane, Chelmsford www.chelmsfordmilitaria.com

6 Military Motorcycle Ride

Sponsored military and vintage motorcycle ride Theale to Hungerford, Berkshire for the ABF/ Soldiers Society.

Peter 077 483 10996

www.soldierscharity.org/events/ve-weekend-vintage-motorbike-rally



14 Chatham Fair

Historic Dockyard, Chatham, Kent. ME4 4TZ www.chathammilitariafairs.co.uk

21Chelmsford Militaria Fair

Marconi Social Club, Beehive Lane, Chelms-

www.chelmsfordmilitaria.com

27-29 Chipping Steam Fair

Green Lane Showground, Chipping, Lancashire, PR32TO Military vehicle class 01995 61866 www.chippingsteamfair.co.uk

June

11Chatham Fair

Historic Dockvard, Chatham, Kent, ME4 4TZ www.chathammilitariafairs.co.uk

29 Tankfest

Tank Museum Bovington, Dorset www.tankmuseum.org

7-9 Yorkshire Wartime **Experience**

Hunsworth Lane, Hunsworth, Bradford, BD4 6RN (J26 M62)

North of England's largest military vehicle/re-enactment show - over 400 military vehicles plus re-enactment groups and trade stalls

Stuart Wright stuart.wright@hotmail.co.uk www.ywe-event.info

9 Chatham Fair

Historic Dockvard, Chatham, Kent, ME4 4TZ www.chathammilitariafairs.co.uk

25-29 War and Peace Revival

Folkestone Racecourse, Hythe, CT21 4HX, https://warandpeacerevival.com

13 Chatham Fair

Historic Dockyard, Chatham, Kent. ME4 4TZ www.chathammilitariafairs.co.uk

19-20 Combined Ops

Military and Air Show Headcorn Aerodrome near Maidstone, Kent www.combinedops.co.uk

24-28 Great Dorset Steam Fair

Southdown, Tarrant Hinton, DT11 8HX (On A354 between Blandford and Salisbury) http://gdsf.co.uk

26-28 **Military Odyssey**Kent Show Ground, Detling, Maidstone. Living History Event. James Aslett 07595 511981 www.military-odyssey.com



September

10 Chatham Fair

Historic Dockyard, Chatham, Kent. ME4 4TZ www.chathammilitariafairs.co.uk

17 Chelmsford Militaria Fair

Marconi Social Club, Beehive Lane, Chelms-

www.chelmsfordmilitaria.com

8 Chatham Fair

Historic Dockyard, Chatham, Kent. ME4 4TZ www.chathammilitariafairs.co.uk

22 Chelmsford Militaria Fair

Marconi Social Club, Beehive Lane, Chelmsford

www.chelmsfordmilitaria.com

Vovember 12 Chatham Fair

Historic Dockyard, Chatham, Kent. ME4 4TZ www.chathammilitariafairs.co.uk

19 Malvern Militaria Fair

Three Counties Showground, Malvern, WR13

Militaria, vehicle spares, books, badges and Jeeps for sale at this well established event. 9am-3pm. Admission £5

Amanda Lycett 01743 762266/sales@ jeeparts.co.uk

www.militaryconvention.com

3 Chelmsford Militaria Fair

Marconi Social Club, Beehive Lane, Chelms-

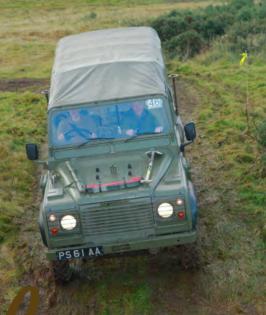
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Multinuster 2016

twister caught out a lot of the army teams in their LWB Wolf Defenders who went too slowly and stopped with wheels spinning ABOVE RIGHT: Some of the army Wolfs were 20 years old bordering on classic status

he Bearmach Mudmaster Navigational Trial, which took place on the last weekend of November, 2016, is a two-day, 4x4 navigational and skills-testing event organised by the British Army Motorsports Association (BAMA) in conjunction with the Scottish Land Rover Owners Club and Scottish Off Road Club.

It is an annual event based in Dunfermline and this year more than 50 4x4s and light commercials were entered with a two to one ratio of

The Friday evening consisted of scrutineering at the army TA centre in Dunfermline. from where the rally started at 9.30am the following morning after a briefing on rules and regulations.

The weather for the weekend was forecast to be dry and sunny, if a little nippy, much to the relief of the many marshals who have had to endure non-stop driving rain on past events.

The competitors set off at one-minute intervals and headed south over the Forth Road Bridge to a shale slag heap at Winchburgh Bing where an autotest course awaited them. This involves navigating a course in and out of cones and reversing into garages, all under a stopwatch.

The event then headed out to the next task site

while following a route that each team had to work out using cryptic clues in the pre-event info pack. To ensure the vehicles followed the intended route, letter boards

were hidden along the roadside which had to be noted down by the co-driver.

There then followed an orienteering section where it was a case of navigating using a satellite image of the site and collecting stamps within a set time. Penalties were awarded for missed stamps and going over time.

The next discipline tested driving skills in the form of traditional trials sections on a great site high above the Firth of Forth. The view stretched for miles in all directions and was unusually clear. More trials sections awaited followed by a long orienteering course in a quarry.

The first day ended with a dusk, and for some dark, navigation 'regularity' test, locating letter boards while not exceeding 15mph. Speed traps awaited those tempted to break the speed limit and make up lost time. Weary competitors headed off for pints, pub grub and bed before another day of the above but on different sites.

This year's Mudmaster was considered a particular success, aided no doubt by the clement weather. The overall winner was car number three Gareth Carruthers and Sharon Scott, a 90 from Northern Ireland, while the first military crew was LCpl Edward Hill and Sgt Colin Hodgson of RNRMMS

www.armymotorsports.co.uk





The overall organising crew overseeing the rally



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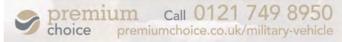
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GA PROMOTIONS

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The three-ton Commer 'Superpoise' Q4 was offered with a variety of specialist rear bodies, this is a 1957 model



In this guise, the 1951 Leyland Martian is officially the 10-ton, 6x6, Heavy Recovery FV1119 truck and is Rolls Royce B81-powered



The museum's Leyland Hippo is a 1944, Mk II, 10-ton, 6x4 GS model and was acquired from near Ripley



The three-ton, 4x4 Bedford RL was supplied in numerous variations, including air-portable, in the FV13000 series from 1952

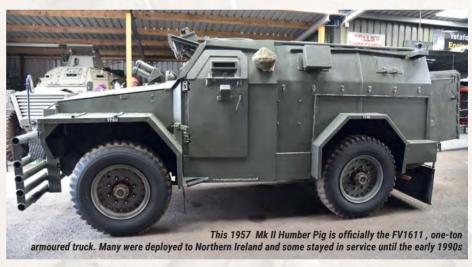


THIS 1960 Green Goddess is a fire engine variant of the three-ton Bedford designated RLHZ built to Home Office specification and used mainly by Auxilliary Fire Service units



of Glimpse into the Past

Anglesey's foremost tourist attraction makes for a perfect day out



he Welsh name of this museum translates as 'grandfather's tackle' so, as you might expect, it features a wide variety of exhibits. What's more, the grandfather in question, Arfon Williams, has amassed a huge collection including vintage cars, motorcycles and, mostly Anglesey-registered, tractors.

There is a mass of motoring ephemera, some construction equipment and, of particular interest to CMV readers, an interesting selection of military vehicles. These include a couple of rarities, one of which is an Albion 6x4 CX22S artillery tractor that Arfon acquired as a recovery truck in 1994.

Many of the military vehicles, including the armoured ones - a Ferret and a Saracen - are British post-war machines. One of the museum's ongoing restoration projects, a 1944 Leyland Hippo, is also on show to the public and gives an indication of what goes into large lorry rebuilds.

The museum was established in 2001 and is now one of Anglesey's largest tourist attractions with the museum, an adjoining cafe, caravan site and children's play area.

The exhibits are displayed in a number of agricultural buildings around the site where visitors can walk back in time and see more than 100 gleaming classic vehicles from the 1920s onwards set in a replica of a 1940s cobbled village street - some of which have been used in films and TV programmes.

A second exhibition building houses most of the military vehicles although, in the summer months, some are brought outside and displayed in front of it.

Tacla Taid - Anglesey's Transport Museum

The museum is situated near Newborough on the A4419, five miles off the main A5 through the village of Llangaffo. It is open from 10am-5pm seven days a week from March until the end of October. A Caravan Club caravan site is immediately behind the museum

Tacla Taid, Newborough, LL61 6TN. 01248 440344. www.angleseytransportmuseum.co.uk



From Fields to War

James Kinnear looks at the role played by the Soviet KhT-16 Armoured Tractor during times of war

n the final years of the post-Soviet era when demilitarisation was popular, the phrase "from swords to ploughshares" was commonly used for all manner of military conversion to civilian applications. As was discovered at the end of World War Two, tanks and military vehicles do not necessarily convert easily to civilian application, not least due to the high running and maintenance costs involved.

As has often been the case in history however, civilian vehicles can in times of emergency often be adopted for military use. World War One and the years that followed, witnessed the conversion of many civilian vehicles for military use. Russia in particular developed an industry to build armoured cars on imported truck chassis, with names such as Austin-Putilov, Fiat-Izhorsky and Russo-Balt becoming integral to the history of the Russian Revolution and the civil war that followed.

The 1920s and early 1930s were relatively quiet in Europe, but the outbreak of the Spanish Civil War again witnessed the conversion of civilian ve-

hicles to military use, with all manner of ad-hoc armoured vehicles being built on available chassis, a pattern repeated as recently as 2014-15 during the currently dormant conflict in Ukraine.

Although some tracked agricultural tractors were converted to military use during the Spanish Civil War, they were generally slow and unwieldy as armoured fighting vehicles. In the desperate days of late 1941 however, the Soviet Union made some attempts at converting tracked agricultural tractors to military use that ranked positively industrial in scale.

Dark Days in the Soviet Union

On June 22, 1941 German Axis forces crossed into Soviet territory and "Operation Barbarossa" began. The scale of Soviet tank losses was such that within three weeks the Red Army had lost more than 50 per cent of its available tank park, which, to put things in perspective, was greater than the rest of the world's armies combined.

The majority of the tanks lost were out-dated de-

signs from the early 1930s, such as the T-26 light tank, early BT fast tanks and the T-28 medium, but new generation tanks such as the T-34 and KV were also lost in significant quantities. Plans for a stratospheric ramp up in tank production were immediately implemented; however, converting paper plans into manufacturing production reality was a significant challenge.

The situation with light tanks was particularly difficult, as the decision to replace the T-26 with the new and better armoured T-50 had been taken, but the T-50 was a significantly more complex tank, particularly its new diesel engine, and it took far longer to put into series production than expected, such that war ultimately interrupted its timely introduction.

The engine for the T-50 was built at Plant N^2 75 in the Ukrainian industrial city of Kharkov; however the same plant also produced engines for the T-34 being built at Plant N^2 183 also located in the city, which was at that time the main Soviet production facility for assembly of the new T-34 medium tank.

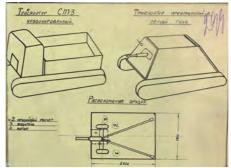
Understandably, the T-34 was given priority with regard to engine deliveries, to the extent that some T-50 engines (which used the same cylinders, liners, cranks and other components) were stripped down to ensure engine deliveries to Plant Nº183. In parallel with tank production. Kharkov was also the Soviet production centre for light agricultural tractors, which were assembled at the Kharkov Tractor Plant (KhTZ), so Kharkov was a major production centre for tracked vehicles. And in the late summer of 1941 it was under immediate threat of being captured by advancing Axis forces.

Civilian Production

In 1937, KhTZ had begun series production of a tracked light agricultural tractor designed by the Moscow-based Scientific Auto Tractor Institute (NATI), which entered production in Kharkov as the SKhTZ-NATI and at Stalingrad as the STZ-3. Documents show that a small number of SKhTZ-NATI and STZ-3 tractors were also used by the Red Army pre-war as artillery tractors, but they were not particularly suited to the role, as they had no cargo area for ammunition and the-



The STZ motif cast into the STZ radiator housing. The Stalingrad-built STZ-3 and Kharkov-built SKhTZ-NATI were based on the same Moscow-based NATI institute design, and were near-identical. Both versions were used by the Red Army and latterly also the Wehrmacht (ANDREY AKSENOV)



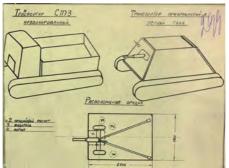
tracks were not designed for road use.

In parallel with the original NATI designs for a tracked agricultural tractor, a military version was designed, with a reconfigured mechanical arrangement, front-mounted cab and rear cargo area that would enter production at STZ in Stalingrad as the STZ-5. With the outbreak of war and the massive losses that followed, all distinctions between civilian and military were blurred, and any available vehicle was pressed into service in any role as required.

The KhTZ tractor plant was clearly in a very similar line of business to the nearby $N^{0}183$ and $N^{0}75$ 'military' plants with their official military plant designators, and the question arises why KhTZ was not drawn into dedicated military production earlier. In fact the KhTZ plant was considered as a centre for T-50 'light' tank production, but the machine tooling required to produce the T-50 was not available at the plant, and a new dedicated workshop and machine tooling was required to expand the plant's capability, though this would still not resolve issues related to engine production for the T-50 at Plant Nº75.

All such plans were cancelled when, on July 13. 1941. GKO Resolution №124 was issued allocating machine tooling destined for the new workshop at KhTZ to the STZ plant in Stalingrad for increasing production output there.

In the late summer of 1941, the KhTZ plant in Kharkov was thereby directly in the path of an



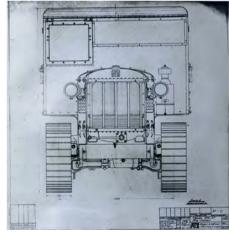
ABOVE: An STZ-3 in standard civilian configuration. with agricultural tracks, perhaps at the end of the war judging by the 'scrapyard' setting LEFT: A similar Plant №264 project to modify the STZ-5 artillery tractor as an armoured tractor

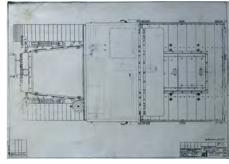
impending onslaught by Axis forces but not in a position to directly contribute militarily to the fight. It was at this point that local engineers determined to manufacture bronetraktori, ersatz tanks based on available agricultural tractor chassis.

Available records do not indicate whether the original initiative came from NATI, KhTZ or the Red Army, but most likely the decision was taken locally, as with the 'Na-Ispug' (frightener) ersatz tanks built from tracked tractor chassis in Odessa to the south-west, in almost identical circumstances.

Back in Moscow, with Axis forces then still far distant, designers at the NATI institute in early July 1941 returned to plans developed in the early 1930s to build armoured tracked vehicles and self-propelled guns on the basis of tracked agricultural chassis.

The NATI development team was headed by V Ya Slonimsky, who had led the development of what became the SKhTZ-NATI, and E G Popov, who would later create the NATI-D tracked tractor, which would enter series production as the Ya-11. They were assisted by A M Cherepyn and by A V Sapozhnikov.





ABOVE & ABOVE MIDDLE: The ATZ-3T was a diminutive artillery tractor developed at the ATZ plant at Rubtsovsk in 1943 by the same team that developed the KhTZ-16 at KhTZ in Kharkov. It did not enter series production as by 1943 the faster, purpose built Ya-11 artillery tractor was being assembled in Yaroslavl



ABOVE & OPPOSITE: An STZ-3 restored by the Shamansky Company on display at an exhibition in Moscow. The STZ-3 and Kharkov built SKhTZ-NATI were diminutive compared to the larger Chelyabinsk built S-60 and S-65 tractors, such that turning the design into an armoured fighting vehicle was no small challenge (ANDREY AKSENOV)

By mid-July the technical project for developing armoured tractors on the basis of the SKhTZ-NA-TI was prepared and sent to the People's Commissar for Medium Machine Building (NKSM) V A Malyshev. The NATI proposed armoured tractor was approved with some reservations, and on July 19, Malyshev sent Stalin the draft of a resolution to produce 2,000 of these "KhTZ" combat vehicles

Resolution №019 of the State Defence Committee: "About the additional armouring of light tanks and the armouring of tractors", suggests that production was assigned to both KhTZ (producing the SKhTZ-NATI) and STZ (producing the near identical STZ-3). However, GKO Resolution №219/ss signed on July 20, 1941 and entitled "About the organisation of production of two thousand armoured tractors" does not mention STZ, and it would appear that the production of these new armoured tractors was to be undertaken exclusively at KhTZ in Kharkov.

This would seem realistic in that STZ was involved in the assembly of tanks, not least preparations to build the T-34 in massive quantities, and producing hybrid tanks on tracked tractor chassis would be a major distraction, particularly with Axis forces moving rapidly eastward. Resolution Nº219/ss, which details not the development of the tractor, but rather implementing its series production, specified that KhTZ should deliver its first 50 bronetraktori - or armoured tractors - in August 1941, with a further 850 in September and rising to 1,100 in October. There are some indications that four prototypes were built in August, but this is not supported by available plant documents and a single prototype was sent to the NIIBT proving grounds at Kubinka for evaluation.

In addition to clearly defining the base chassis as the SKhTZ-NATI, Resolution GKO №219/ss specified the required performance characteristics for the new armoured tractor. Armament was to be a 45mm tank gun, then standard armament on Soviet light and fast tanks, with a co-axial 7.62mm DT machine-gun. The frontal armour basis was to be 30mm, with 13.5mm on the hull sides. The tractor was expected to travel at a speed of 18-20 km/h on made roads and 10 km/h when travelling cross-country.

The KhT-16 Enters Production

The specific designation KhTZ-16 rather than the generic term bronetraktori appears in formal correspondence at the beginning of August 1941, by which time engineers at NATI and KhTZ were already working together to introduce the new bronetraktori into series production. Engineers at KhTZ, working under the direction of chief design engineer M S Sidelnikov worked to assemble two prototypes by August 12, but managed to complete only one by this date, which was subjected to accelerated plant testing before being shipped to the NIIBT tank-proving polygon at Kubinka.

The prototype was assembled from available components, which inevitably led to compromises. Due to the lack of 13.5mm steel plate, the prototype used 10mm plate on the hull sides, and the majority of the armour was from non-hardened steel.

By the time the prototype was released for testing, KhTZ was already well advanced in making the chassis for the new bronetraktori. Historically it was always assumed that the Stalingrad-built STZ-3 and / or STZ-5 was used as the chassis









ABOVE FROM TOP: The driver-mechanic had his own side hatch, which was not replicated on the left side of the vehicle; The KhTZ-16 prototype, NIIBT polygon Kubinka, August 1941. Full and formal prototype testing was conducted on the KhTZ-16 despite the fact that within weeks the Kubinka polygon would be on the front line, and Kharkov would be captured; The frontal armour plate on the KhTZ-16 was bolted on to allow for engine maintenance access; The rear acces hatch with firing port

for the KhTZ-16, but recently available Russian wartime archive material would suggest that this is not the case.

The technical drawings for the KhTZ-16 clearly indicate that the chassis was the Kharkov-built SKhTZ-NATI agricultural tractor (albeit the STZ-3 was essentially the same NATI design built at another plant - so the base chassis were effectively interchangeable and either plant could have supplied chassis). The base SKhTZ-NATI required 27 significant engineering changes to make it suitable as the chassis for the KhTZ-16. This is not surprising; since SKhTZ-NATI with its front

mounted engine and rear cab did not immediately lend itself to providing good internal space for an armoured fighting vehicle. The 1-MA engine was also uprated from 52 to 58bhp; not a huge increase, but with the KhTZ-16 adding 3.5 tonnes of armour and armament onto the base chassis (5.1 tons for the SKhTZ-NATI versus 8.6 tonnes combat weight for the KhTZ-16) any additional power output from the engine was critical.

Due to the significantly increased and now 'combat' weight, and uprated engine, the transmission also had to be strengthened. For good measure, the chassis was extended, new wheels as used on the STZ-5 were used and the return rollers moved forward slightly. The road track from the STZ-5 also replaced the agricultural track used on the SKhTZ-16 and STZ-3 as it was far better suited for a combat vehicle, allowing higher road speed, with less vibration and far longer track life.

The fuel tank was moved to the left of the vehicle, and the driver-mechanic's position moved forward and to the right. These changes provided room for the fighting compartment, which housed the commander and gunner/loader. All-in, the engineering changes to the base chassis were significant.

Effectively armouring the diminutive SKhTZ-NA-TI was a challenge. The base SKhTZ-NATI chassis was only 3.451m long, while the lengthened KhTZ-16 was 3.83m long and 1.87m wide (no larger than a modern saloon car), and 2.30m to the casemate superstructure roof. The 30mm glacis armour protecting the engine was sloped at 200, and the fighting compartment increased in slope to 250. The frontal elevations were thereby protected from large-calibre machine guns and cannon fire up to 20mm in calibre. The KhTZ-16 could not withstand fire from anti-tank guns, but it was nevertheless heavier than most Soviet contemporary light tanks.

The armoured casemate was of welded construction, with the frontal glacis plate bolted on so as to allow engine access. Crew access hatches were confined to the vehicle right side and rear, and visibility was reasonable. As regards armament, although the 45mm tank gun was considered obsolescent by the autumn of 1941, it compared not unfavourably with the armament of the majority of contemporary Soviet and Axis tanks.

Prototype Testing & Early Production

Despite the urgency of the time, the prototype KhTZ-16 was subjected to an extensive programme of mobility and firing trials as would have been conducted with any pre-war tank design. During these trials, the KhTZ-16 travelled 470km, of which 139km was on made roads, 240km on cobbled roads, 69km on a graded dirt roads, and 22km on other surfaces, significant testing for a hybrid tank design to be built under emergency conditions. The KhTZ-16 managed an average road speed of 17km/h, reducing to approximately 9km/h when travelling across terrain. Range for the underpowered bronetraktori was another matter, limited to 119km on roads and with an all-terrain range of 61km. The vehicle was however expected to participate in critical local defence rather than a march across Europe to Berlin, so these figures were not at the time of any consequence.

Again unsurprisingly, considering the increased weight, the uprated engine ran very hot during testing, not aided by the fact that cooling air was

SPECIFICATIONS

Make and Model KhT-16 (Kharkov Tractor Plant)
Nationality Soviet
Year 1941
Production Run 142
Armament 1 x 45mm 20K
M-1932/34/37 tank gun
(depending on availability)

1 x 7.62mm DP Section Machine Gun

Engine 1-MA four-cylinder Fuel Kerosene Power Output 58bhp Suspension Tracked chassis,

as SKhTZ-NATI agricultural tractor

Brakes **Skid turn** Crew **Two-three**

Dimensions (metres)
Length 3.83m
Width 1.87m
Height 2.30m
Weight Approximately seven
metric tonnes

(varied by vehicle)
Performance (kilometres)

Maximum road speed

17-20km/h

Maximum road range **120km** Armour basis **5-25mm**

drawn via the fighting compartment and that testing was conducted in summer temperatures of nearly 30 degrees. Other than some track damage, the tests did not indicate other significant issues.

Firing trials were also extensive, with 247 rounds fired of which 147 were armour-piercing. Accuracy was observed as slightly below the standard firing table for the 45mm weapon, which was attributed to recoil forces affecting the weaker gun mounting. The average rate of fire was five rounds per minute. The armour around the rear of the gun mantlet was observed as inadequate, allowing small arms fire and shrapnel to penetrate when directed obliquely from behind the vehicle centreline.

Test results might be described as not untypical, and for an emergency hybrid tank designed



'Range for the underpowered bronetraktori was another matter, limited to 119km on roads and with an allterrain range of 61km'

under wartime conditions rather impressive; however the hierarchy within the Red Army was not impressed and dissenting opinion demanded the establishment of fully-fledged (T-60) tank production at KhTZ in the shortest possible time. GKO Resolution №222 issued on July 20, 1941 instructed KhTZ to prepare for series production of the T-60 small tank, which might have terminated all further consideration of the KhTZ-16. The T-60 would not however be leaving the KhTZ plant gates anytime in the immediate future, and on August 18, as KhTZ was still receiving the production drawings and preparing machine tooling for T-60 production, there were 329 chassis for the KhTZ-16 then in various stages of final assembly at the same plant, albeit many were awaiting electrical components and road tracks.

By August 30,

1,037 chassis were complete - in other words approximately 70 chassis a day were being built - but the situation was critical in that the armoured hulls for completing and delivering KhTZ-16 armoured fighting vehicles were not available in anything like the required quantities.

Meantime some components arriving for the T-60 such as the observation devices were purloined for KhTZ-16 assembly.

The production of welded casemate hulls for the KhTZ-16 (and the T-60) was assigned to the Voroshilovgrad and Novo-Kramatorsk plants. As of the end of August neither plant had delivered a single armoured hull, largely due to problems with a lack of furnace capacity for heat treatment of the armour plate. The situation being critical, the first 33 KhTZ-16s were completed with hulls constructed of mild steel.

The first KhTZ-16 to be completed, which in GABTU correspondence also became known as the T-16, was released through the KhTZ plant gates on September 7, 1941. The vehicles had serial numbers beginning with N $^{\circ}$ 16 (N $^{\circ}$ 16-001, etc); however the serial number was attached to the chassis rather than the completed bronetraktori, so vehicles had numbers such as N $^{\circ}$ 16-1672, even though production of the KhTZ-16 never reached anything like this quantity.

36 KhTZ-16 bronetraktori had been delivered by September 14, 1941, by which time a backlog





ABOVE LEFT & RIGHT. A KhTZ-16 destroyed in the winter of 1941-42. A wartime "souvenir" photograph for the two German infantry; however their lightweight uniforms and attempts to keep warm as the bitter Russian winter approached are in more ways than one a moment frozen in time

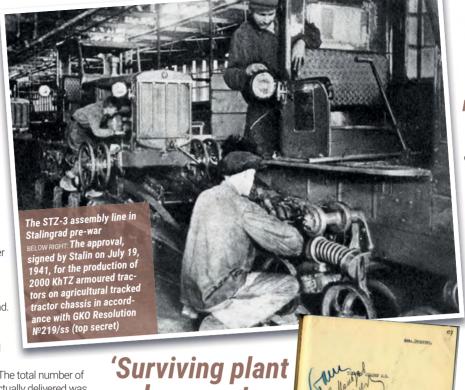
of some 1,528 assembled chassis had been accumulated at KhTZ, of which 717 were without tracks, 1,334 without fuel tanks and 1,304 without electrical equipment. The overriding problem remained however an acute shortage of armoured casemate hulls from the sub-contractor plants, which prevented the delivery of the urgently required KhTZ-16 armoured fighting vehicles.

Two days later, on September 16, Resolution GKO Nº681 was issued, instructing the evacuation of the machine tooling from KhTZ to Stalingrad. The production of KhTZ-16 bronetraktori continued after this date, but the total planned production of 2,000 vehicles

was now out of the question. The total number of KhTZ-16 armoured tractors actually delivered was 142, a fraction of what could have been delivered had the manufacture of armoured hull sets kept up with chassis production.

The KhTZ-16, the correct description of which has been only recently understood from original wartime military and plant documents, was historically often cited as having been produced at the STZ plant in Stalingrad on the STZ-3 and / or STZ-5 chassis. This was considered by Plant Nº264 (which manufactured hull and turret sets), and indeed in mid-August, while the Kharkov designed KhT-16 was undergoing trials at Kubinka, the engineers Krasilshikov and Nemchinsky at Plant №264 in Stalingrad had written a letter to Stalin and the people's Commissar of Shipbuilding Industry (NKSP) I I Nosenko suggesting that their plant could build armoured tractors using the Stalingrad built STZ-5 artillery tractor chassis, but this request was refused.

Even had the request been approved, Plant N^2 264 in Stalingrad was loaded with building hull and turret sets and many other components for final T-34 assembly at STZ in Stalingrad, and had additionally received orders to manufacture the T-60 small tank (T-60s were defined as such, and not as light tanks).



'Surviving plant documents show that a prototype ATZ-3T was built in the summer of 1943'

Further, Plant №264 was having significant issues with maintaining required production schedules for both tank types, so was in no position to also assemble KhTZ-16 or similar tractors. Thereby, in both Kharkov and Stalingrad it was not the lack of tracked tractor chassis that was the problem, but a lack of capacity to manufacture the armoured hulls for KhTZ-16 type armoured tractors. The machine tooling from the KhTZ plant was also only partially evacuated to Stalingrad before Kharkov fell to advancing Axis forces, so overall it is unlikely that any KhTZ-16-type armoured tractors were built as the STZ-16 at Stalingrad.

A Short Combat History of the KhT-16 Armoured Tractor

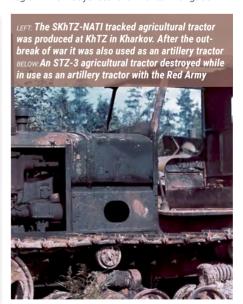
The original batch of KhTZ-16 (T-16) bronetraktori built with unarmoured steel hulls was according to available plant documentation sent to training units, located not just in Kharkov but also in Ulyanovsk, Armavir and Stalingrad. The first KhT-16s produced with armoured steel hulls were delivered to the 12th tank brigade, which received 14 vehicles. The largest individual batch of KhTZ-16s was received by the 133rd tank brigade, which received 36 vehicles. Eight KhT-16s went to the 14th tank brigade, one to the 13th tank brigade, and five to the 7th tank brigade. Eight were received by the 47th tank division and the 23rd reserve regiment. Documentation confirming

dispatch did not necessarily confirm receipt; for example, the 35th tank brigade formally received eight KhTZ-16s, but in reality they never arrived.

The combat debut of the KhTZ-16 was in and around the Ukrainian city of Kharkov where it was built, as KhTZ-16 bronetraktori were used by the Soviet 38th Army in the defence of Kharkov from the German 6th Army in the autumn of 1941.

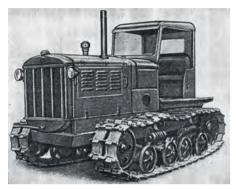
The strange looking KhT-16 had its combat debut in heavy fighting against Italian forces when on September 22, the 12th tank brigade was given the task to take Krasnograd in the Kharkov region. A few days later the 12th tank brigade





3ronetraktor " - literally Armoured Tractor, plural "Bronetraktori"

including KhTZ-16 bronetraktori was engaged in heavy street fighting in the city suburbs. On September 27, Red Army units had to go on the defensive, and the brigade suffered heavy losses in tanks and personnel. One KhTZ-16 is documented in action on 24th Oct 1941 in support of militia troops near the TsUM (Central Department Store) in Kharkov, during which action the KhTZ-16 was destroyed and the crew killed. Kharkov fell to the German 6th Army the same day, but the defensive action by the Red Army with its eclectic mix of tanks including the KhTZ-16 had bought sufficient time to organize the evacuation of the machine tooling and personnel from some 70 military plants. These were moved out of Kharkov



ABOVE The almost identical STZ-3 was produced at STZ in Stalingrad and similarly drafted for military service in 1941

BELOW: STZ developed a military version of the STZ-3, with significant modifications, an open cab for maximum military driver comfort and road tracks. This is the prototype as completed at STZ



to other cities on 320 individual trains for ongoing use in the war effort. Soviet documents indicate that 809 chassis for KhTZ-16 'bronetraktori' remained at the plant in later October when Kharkov fell to the advancing Axis forces

A small number of KhTZ-16 bronetraktori survived the combat engagements of 1941, with documented use of a handful of KhT-16s extending as late as May 1942, though for obvious reasons Soviet records of the time are minimal.

New Ownership and New Roles

The German 6th Army inherited considerable amounts of Red Army military equipment when it captured Kharkov and its immediate region. A few KhT-16s survived intact but were of little operational use to the Wehrmacht; and although a large number of chassis were captured within the KhTZ plant, there were no armoured hulls available, which had limited the number of KhTZ-16s the Red Army could

deploy against the advancing Axis forces.

What the Wehrmacht lacked however, was mechanised transport, and a significant number of SKhTZ-NATI agricultural tractors. KhTZ-16 chassis and miscellaneous other tracked vehicles were captured with the fall of Kharkov. A significant number of captured KhTZ-16 chassis were modified as artillery tractors by simply fitting an ad hoc seat or cab arrangement on the available chassis; however there were a myriad of variants, entirely based on available components to get the vehicles running and serviceable. Some were fitted with cabs, others were open, some had STZ-5-type road tracks, and others were fitted with standard agricultural track. The Wehrmacht used most as artillery tractors.

ATZ-3T

The wartime emergency KhTZ-16 bronetraktori almost had a second lease of life in Red Army service. Part of the machine tooling evacuated from KhTZ was sent by train to the town of Rubtsovsk in the mountainous Altai region where tracked tractor manufacture was re-established within the newly formed Altai Tractor Plant (ATZ). The chief design engineer at the plant was M S Sidelnikov, who had developed the KhTZ-16 bronetraktori at KhTZ in Kharkov prior to the plant's partial evacuation.

In August 1942, the ATZ plant began series production of its first new tracked agricultural tractor design, the ATZ-NATI, which bore more than a passing resemblance to its pre-war SKhTZ-NATI forebear. The country had a more urgent requirement for artillery tractors rather than agricultural tractors however, and having established series production of the latter, the design bureau (KB) at ATZ in 1943 developed under the direction of Sidelnokov a new tracked artillery tractor, the ATZ-3T. This was similar in design to the Stalingrad-built STZ-5 but utilised many of the design changes originally incorporated into the KhTZ-16 when modifiying it from the KhTZ-NATI agricultural base chassis, including the uprated engine developing 58bhp. The fuel tank was moved to the left, and the driver located on the right, which in the case of the ATZ-3T allowed for a small load area behind the cab for transporting ammunition. Surviving plant documents show that a proto-

type ATZ-3T was built in the summer of 1943. On July 1, 1943, the head of the Artillery Directorate (GAU), General-Colonel Yakovlev, approved the production of an establishment lot of ATZ-3T tracked artillery tractors for military evaluation purposes. But a larger and purpose-designed artillery tractor, the Ya-11, which was clearly more suitable for its intended role than the Altai design, had already entered production in Yaroslavl. The ATZ-3T was shelved, ending the history of a vehicle chassis which had started life as the agricultural KhTZ-NATI tracked tractor, had been developed into the wartime KhTZ-16 armoured tractor with its 45mm tank gun armament, and later in the war, had almost seen a third role as a specialized tracked artillery tractor. By 1943 the desperate need for using agricultural-tracked tractors as military vehicles had passed however, and new generations of dedicated artillery tractors such as the Ya-11 were entering series production, designed with the road speed to keep up with Red Army tanks as the Soviet Union moved from defensive to fast-paced offensive operations.



A "civilian" STZ-3 with cab at the STZ plant, assembled directly alongside T-34s



Another KhTZ-16 destroyed in 1942, which also appears to have faded whitewash camouflage from the preceding winter



A KhTZ-16, stripped of its armoured casemate hull and reconfigured as a makeshift artillery tractor in Wehrmacht service. Or perhaps a KhTZ-16 chassis taken directly from the KhTZ plant



A partially burned out KhTZ-16. The photograph and faded camouflage would suggest this KhTZ-16 survived through the winter of 1941-42 and was destroyed in the spring of 1942. Note also the unit markings



A KhTZ-16 abandoned in a cornfield having been destroyed in the spring of 1942

Each year thousands of Dutch citizens turn out to give thanks to the Paras who came to liberate them in September 1944, Craig Allen joined them



he fuselage is packed with heavily laden paratroopers strapped into webbing seats as the aircraft barrels across the Dutch countryside at low altitude. The RAF dispatcher's shouted command of "prepare for action" passes rapidly down the crowded aircraft. A flurry of movement follows as men battle with buckles and leg straps. Another cry of "stand up fit equipment" and the doors come open with a rush of air as they struggle to their feet and clip on containers and reserves before hooking up and telling off.

Those nearest the doors can now clearly see the green fields of Holland flashing by a mere 800ft below as they bank for the final turn onto the gorse-covered drop zone. The pilots throttle back, the first men braced in the doors and everyone straining against their harnesses and watching for the lights. "Green on go" and they are out into the buffeting slipstream rapidly followed by their comrades as the dispatchers struggle to maintain the interval against the rush of bodies.

The sky fills with blossoming chutes, but this is Arnhem 2016 not 1944. Below wait only





spectators rather than an alert and dangerous enemy but the spirit is still the same. These young men of the Parachute Regiment are the direct heirs of those who forged their reputation in battle so many years before, now joined by US, Dutch and Polish paras in what must be the most unique of all World War Two re-enactments.

The drop zone at Ginkel Heath is almost unchanged from its wartime appearance, but on the second Saturday in September each year it becomes the scene of a grand spectacle as the Dutch turn out in their thousands to witness the drop and applaud the ever shrinking band of veterans who return each year.

Many Dutch families will host a veteran in their homes so they have become more like family members. In fact it would be difficult to find anywhere with such a close bond between the civilian population and their veterans, a bond forged in conflict which has survived through the decades of peace.

After the 65th anniversary and with fewer veterans able to attend, there was an expectation the event would be gradually scaled

back, in fact the opposite has happened and it is as popular as ever. For the Dutch it is a family event and many arrive early by bicycle to secure a good spot to view the drop. It is also a Mecca for re-enactors many of whom restore and maintain original World War Two vehicles which add to the spectacle and have become an intrinsic part of the event.

They arrive early and drive in convoy down the main track at the head of the DZ before parking up to watch the jump. As might be expected airborne Jeeps are much in evidence and there is always a good selection of authentic vehicles. In fact they were originally intended to play a crucial role in the battle itself. Major Freddie Gough's jeep-mounted recce squadron had planned to rush the bridge in a 'coup de main' assault in case many of the glider serials carrying them failed to arrive and the rapid German reaction forestalled such an attempt. 2 Para were the only unit actually making it to the bridge, the fight to hold its southern end and the rapidly shrinking airborne perimeter going down as one of the most desperately-fought actions of the war



The re-enactors, many whom are Dutch, spend much time and attention getting their uniforms period correct















stones at the Airborne Cemetery



Seeing these Jeeps appear out of the morning mist complete with uniformed crews gives a flavour of what it must have been like on that first day of battle, but they are not the only allied vehicles on display with US 'Deuce-and-a-Halfs', staff cars and motorcycles scattered among the convoy. The enemy is not forgotten either and this year marked the appearance of a beautifully turned out NSU Kettenkrad and a pristine example of the ubiquitous Kubelwagon complete with mounted MG34. All these vehicles are painstakingly restored and packed with period details including the stowed equipment and de-activated weapons. Once parked up, the crews usually brew up while waiting for the jump, using period correct Primus stoves and tin mugs of course.

However, it is the motorcycles that provide some of the most interesting examples and each year they gather on a small mound just behind the main access track. BSA M20s and Royal Enfield Flying Fleas vie with DKWs and Zundapps for attention and there is an increasing number of the diminutive Welbikes on display. These tiny machines were packed into containers for the drop to be recovered later on the DZ and were possibly the small-



Local children lay flowers on the airborne graves at



est military vehicle of the conflict. The recent availability of spares manufactured by a UK company has meant more of these little bikes have been restored although their actual utility in action must have been limited.

The RE 'Flying Flea' was a much more capable machine and was ironically based on a lightweight motorcycle originally developed for the Dutch before the outbreak of war.

While the para drop on the Saturday is the spectacle which many come to see, the airborne service at Oosterbeek on Sunday provides a moving counterpoint and a reminder of the sacrifice of so many young airborne soldiers. Famously, 10,000 went in and fewer than 2,000 came out after nine days of furious battle. They are not forgotten especially by those they came to liberate back in 1944. At the high point of the service local schoolchildren lay flowers on the graves in a moving commemoration from one generation to another and the few remaining veterans walk among the headstones looking for old comrades. Those able to return will be back again next year and there will always be a welcome for the 'airbornes' as they are affectionately known by the Dutch people who have taken them to their hearts.









A photograph issued by the Ministry of Information on October 24, and stamped 'passed by censor' on the reverse before being published in the News Chronicle (Manchester) newspaper. It appears to show two soldiers, one of whom is wearing a Royal Artillery cap badge, being instructed in the finer points of a military lorry rear axle by a third. Can any CMV reader identify the axle or the vehicle that it came from?







Doing it Right

British drivers of the Army Service Corps were given a driving manual as they arrived in France during World War One.

Tim Gosling highlights some of the information it contained



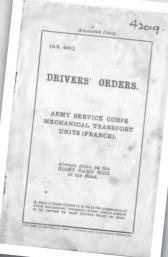
n 1914 the British Army had been desperate for skilled drivers, taking on many bus or commercial vehicle drivers whose level of fitness would otherwise not be considered good enough for front line work.

Unfortunately, this also resulted in some recruits who had been rejected from the infantry, exaggerating their abilities or experience at driving in order to get in to the war. One reported example (with there no doubt being many similar ones) concerned a new recruit who, having no driving experience whatsoever, convinced his recruiter that he could drive and then promptly wrote off a car.

In order to prevent this from happening recruiters had to ask new recruits who claimed to have some level of driving experience several rudi-

mentary questions to gauge their skill level. Those who were not immediately passed off as a driver would take an eight-week training course at one of the army driver training schools before being posted to join a Mechanical Transport (MT) company.

The size of the MT company would vary depending on what task it was assigned to but would usually vary between 40 and 70 lorries. Once in France the company would be assigned a depot, usually an old



industrial building, farm, or if nothing was available they would occupy huts or tents in a field.

The quality of their depot could vary considerably and one of the least pleasant surely had to be that assigned to 43rd Auxiliary (petrol)
Company in Boulogne which was described as a "fish yard" with the personnel sleeping in the cellars (hopefully after the fish had been removed). From these depots the lorries would be assigned daily tasks either singularly, in small groups or



ABOVE: Photographed in Ramsgate this Dennis seems to have run away down Grange
Street (a long steep hill) hitting a motorcycle and sidecar and crushing it against the wall
ABOVELEFT: It would have been interesting to hear the driver explain to his sergeant major how his
Napier lorry became stuck through the side of this bridge

the complete company depending on the volume of cargo that was required to be moved. The drivers also had to be able to operate alone on 'detached' duty when there would not be an NCO or officer to report to.

Driving

The general rules for driving were straightforward and not dissimilar from a modern day highway code. Drivers had to drive carefully, be considerate to other road users ("to avoid covering them with dust or mud"), pass marching troops carefully ("especially cavalry") and when slowing down or coming to a halt the driver would have to hold out his hand to warn any vehicles behind him.

The driver was reminded that when he came to a steep incline he would need to change into a lower gear before the engine had lost any reserves of power. Similarly, when about to descend a hill "which appears to be at all dangerous" to put the vehicle into an intermediate gear to use the engine as a brake.

The use of brakes was quite different to a modern vehicle as the handbrake was to be used as much as possible with the foot brake only to be used as an emergency. On a long descent the foot brake and the hand brake were to be used alternatively to prevent overheating. The top speed of a three-ton lorry would be in the region of 18mph, but the speed limit was set at 10mph in the country and 6mph through towns. The objective of these speed limits was to minimise wear and tear on the vehicles and

reduce the chance of accidents. The engine of each lorry was fitted with a governor to control its maximum speed and tampering with this was a very serious offence.

AUGUSTINES

Roads

The French and Belgian roads were made out of cobblestones or pave (stone blocks), but it was found that those in the country had usually been laid straight on to the soil which meant that they would subside under heavy use with the ones at the edge giving way and possibly consigning any vehicle into a ditch.

Drivers were therefore instructed to stay on the "crown" of the road with cars and empty ambulances consigned to the edge, as it would be easier to extract them. Lorries were not to

go off-road unless the ground was firm enough to support them. If a lorry did get stuck in mud the driver was instructed to "refrain from uselessly spinning his driving wheels, as this will only make matters worse". Instead he was to place, chain, rope, stone or sacking under the wheel or ask the driver of a passing lorry to tow him out

To help avoid these problems, drivers were issued with maps which showed one-way roads highlighted in black, two-way roads were highlighted in red and those which were not highlighted at all were considered unsuitable for vehicles.

One period publication gives a blow-by-blow account of how their convoy of 12 lorries was delayed by four hours when it encountered a French convoy of 82 lorries coming the wrong way down a one-way road.

Following a discussion between the French and British officers, the French convoy attempted to take a side road. The car of the French officer got stuck as the driver tried to cut across the verge and had to be recovered by a team of six horses. As the French convoy headed up this

road they ran into six emp-



ABOVE Parked outside a tea room, it appears that the driver is ignoring order 10 which states that no driver is to leave his vehicle to go into a café or estaminet become in freezing weather, the radiators of these Thornycrofts would have had to be drained down Refilling them all at the same time would have been an interesting logistical exercise as it would all have had to been done using buckets and two-gallon tins had to been done using buckets and two-gallon tins.



tv ambulances

coming the other way. The ambulances went to the side to let the convoy through which quickly resulted in five of them being stuck in a ditch with the sixth stuck across the centre of the road, before it was pushed into the ditch with the others.

Unfortunately, the side road was nothing but a big loop and the French convoy somehow turned itself around and now ended up behind the British convoy facing back the same direction it had just come from!

It seems that railway level crossings were considered to be a particular hazard and the risks of crossing them could not be stressed highly enough. When working independently, and if a clear view could not be obtained from

the cab, then all lorries had to stop before crossing so that the assistant driver could get out and confirm the all clear.

Unsurprisingly, the orders go on to say that drivers should not stop on the crossing, and once they had started they should "proceed without delay".

Despite this sound advice it appears that accidents were not uncommon. A Commer lorry from the 43rd Auxiliary (petrol) company was hit by the Paris express at the town of Rouxmesnil. The Commer was "completely smashed" and the locomotive overturned, telescoping two carriages. Strangely enough the lorry driver survived with just bruises and was found sitting on the buffers of the locomotive.

Breakdowns and accidents

Accidents (no matter how trivial) had to be reported to the company sergeant major immediately and the name and address of any witness, owner of damaged property or the other driver had to be obtained.

The driver would also have to make a rough sketch of the accident showing the positions of the vehicles involved. Such a diagram would no doubt help in apportioning blame and punishment if the driver was at fault. The driver's orders also indicate that the driver would probably be at fault if a

ABOVERIGHT: This modified Dennis subsidy lorry was broken in two when it was hit by a train while crossing a railway line. Unsurprisingly the driver did not survive the impact and neither did the fireman of the locomotive RIGHT: Not all accidents happened in France This Leyland of the Royal Flying Corps ran away into a house on a steep hill in Wrecclesham in 1916





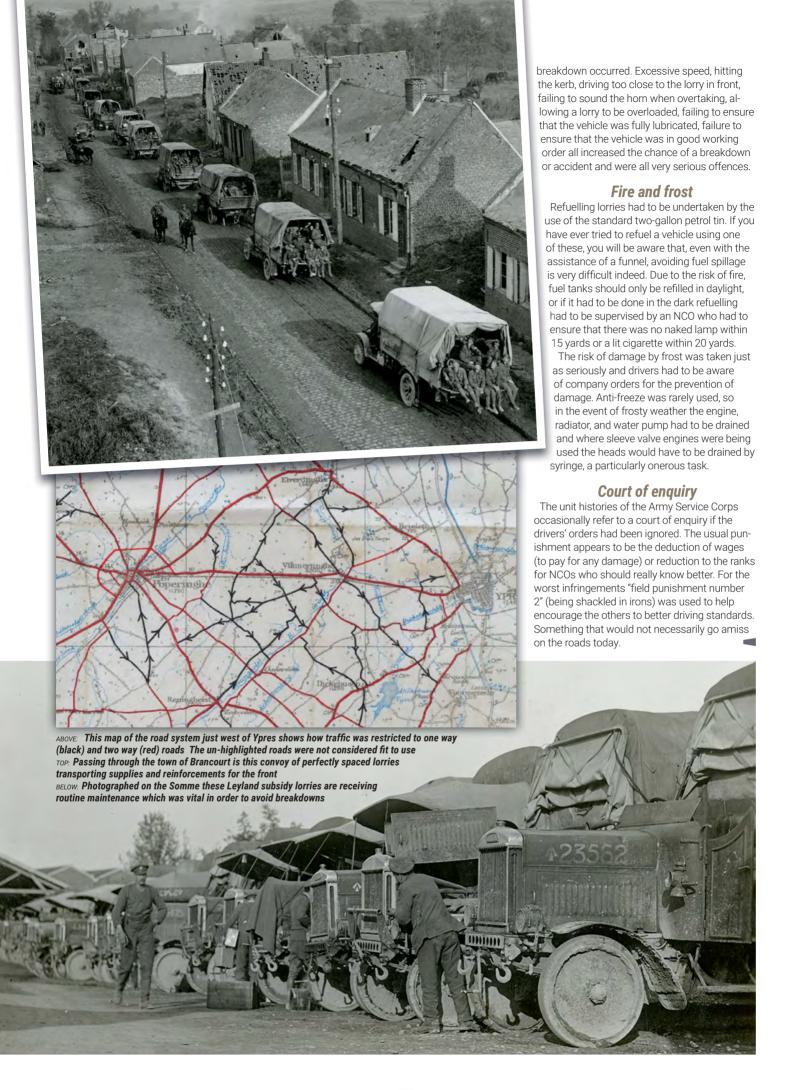
on the rear wheels of this Karrier did not stop it from slipping off the road ABOVE MIDDLE: This driver of this Daimler CB is in a lot of trouble By putting his left wheels in a gully he appears to have smashed the engine sump causing oil to spill out on the road. ABOVE RIGHT: The perils of driving too close to the edge of the road Another Pierce Arrow has got stuck when the edge of the road collapsed consigning it into a ditch RIGHT: Driving a little bit too far to the right has resulted in this Daimler CB half coming off

the road











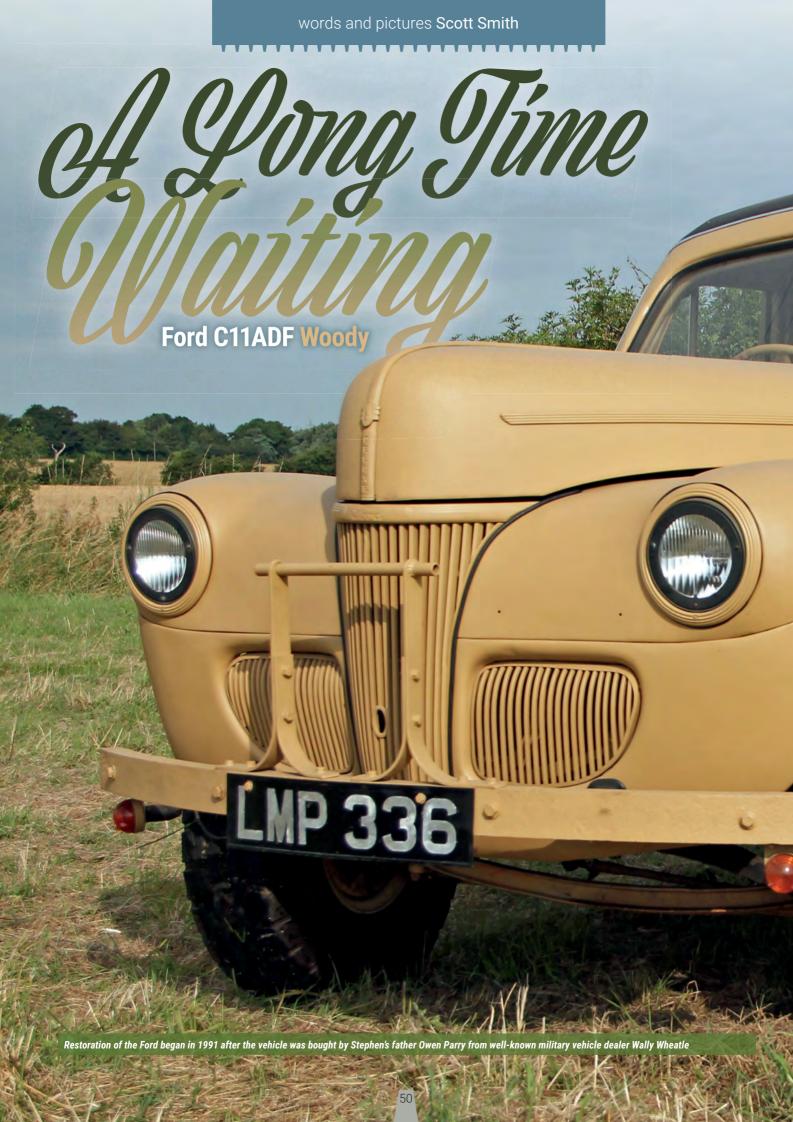






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MAFVA



Some restorations can take longer than others due simply to the nature of the vehicle involved. **Scott Smith** finds out about one such project that took almost 25 years to complete





or Stephen Parry, military vehicles have been a way of life for more than 40 years - thanks in part to his father Owen whose early collection began with a Dodge Command Car before progressing on to Jeeps and a Windsor Carrier. One such vehicle that has been part of the family's collection for a number of years is this 1941 Ford C1 ADF – but despite having owned it for the best part of 25 years it wasn't until 2015 that it was still seen on the show circuit for the first time.

Affectionately known as a 'Woody' - the name referring to the bodywork that, except for the mudguards and engine cover, was completely made of wood instead of metal - the C11 ADF was built in Canada for just 12 months and was commonly used as a staff car with the British and Commonwealth Forces throughout the North Africa campaign.

There were two different versions commissioned, a seven-seater and a five-seater like this example featured here, with the latter having heavier axles and a bigger luggage compart-

Due to the fact that only around a 1,000 were ever built - with a number of these having been used to within an inch of their life in North Africa - very few will have survived into the post-war period. And so, Owen Parry jumped at the chance to buy one.

"My father brought the vehicle in 1991 from a guy called Wally Wheatley," Stephen explained. "It was kept on an old airbase in Kent. He used to

RIGHT: The vehicle still carries its original Ford

V8 engine
FARRIGHT: During the second part of the restoration,
from 2003 until 2015, the family was able to source
replacement wings for both the front and rear of

'We started work in 1991, got as far as the chassis and running gear and then ran out of parts'



store a lot of old military vehicles there and dad had found out that there was one of these on the site so he brought it direct from him."

After getting the vehicle home, work did began in earnest on a restoration of what is a rare vehicle with less than dozen known to survive in their military guise.

However, as can guite often be the case, vehicle restorations - especially with a rare machine like this C11 ADF – can become bogged down due to a lack of available parts to replace those that have become worn out.

As Stephen explained: "We started work in





ABOVE: The coachwork has been finished to an excellent standard. BELOW: The 'F' in the C11 ADF indicates that the vehicle had right hand drive



1991, got as far as the chassis and running gear and then ran out of parts. It had most of the parts, but they weren't in good enough condition to do anything with them.

"There wasn't, and still isn't, anything around. They made this car in 1941 only and that was it, so all the items like the bonnet and grille are unique to the car itself.

"One thing we did manage to fix straight away was the flathead Ford V8 engine. It is the original engine to the car and all my brother Kevin did in 1991 was rebuild the whole thing. He stripped it all down, put all new parts in and it runs really lovely and quiet."

'One thing we did manage to fix straight away was the flathead Ford V8 engine'

And that would be how it was left for over a decade until the family decided to take another look at the old Ford.

"We left it sat around under cover until 2003 then we found some tyres and thought we have got to start again now," Stephen said. "Then it was just a case of sourcing items off the internet.

"We found one wing, then another two wings ten years later and gradually started spraying it and putting it all back together again, including the bodywork which was pretty good."

That certainly makes it all sound very easy, and on the whole it was – apart from the parts issue – however Stephen did admit there were times when he wondered if it would get completed.

He continued: "It was very much a labour of love for sure. We have pushed it along in the last couple of years as I was just desperate to get



FORD C11ADF WOODY

Make Ford Model C11ADF Nationality Canada Year 1941 Production Run 1941-43 Engine Ford Type Flathead V8 Fuel **Petrol**

Displacement 239cid Power 96bhp Torque n/a

Transmission Type Manual Gears Three forward and one reverse Transfer Box Not fitted

Suspension Full floating truck type rear axle with open propeller shaft and semi-elliptic springs

Brakes Four-wheel hydraulic drum brakes Wheels 9.00x13

Tyres Desert Crew/seats Five

Dimensions

Length 194in Width 79in Wheelbase 114in Weight 1814kg

Modifications

Five-seater version had heavier axles and larger luggage compartment compared to seven-seater Two roof hatches included on some models.

Additional Notes

Fitted out on the production line with blackout equipment, rifle carrying stands, map container, map table and first aid box

There were two different variants produced, a seven-seater and a five-seater like this example here. This model has the extra luggage compartment which can be accessed by lifting the rear window

driving it as it had just been sat too long on axle stands in the shed.

"The thing with the Ford is that it is totally different, there a handful more in this country but this is the only drivable one at the moment. There is another one in Essex which I was able to go and borrow bits from to copy and then take back.

"There is also one in Basingstoke, which we looked at in about 2003, and had done been done as a civilian vehicle- although it still had all the military data plates – but I don't think that it had been finished."

Sadly, despite spending a number of years working on the body and other areas of the vehicle, Stephen has been unable to source any history on the Ford.

As he explained: "There were no markings on any metal or under the paint anywhere. The only thing that we found out was the original paint was green, which I presume was the primer or top coat that was applied in the factory, two coats of sand colour and then there were two or three coats of maroon paint over the whole car.

After a 24-year wait Stephen was finally able to get the vehicle back on the road for the first time, with the first ever being a successful trip to Dunsfold Air Show on August Bank Holiday in 2015

Stephen finishes the story: "Then my son Jack and I decided to go to France in June 2016 for the D-Day commemorations We took it out to Normandy and drove it around for a whole week doing about 370 miles in it. It ran fine, there were a couple of issues but they were soon fixed. Then we booked into War and Peace - with it drawing a number of comments.





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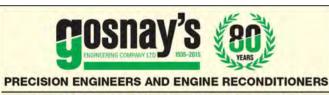
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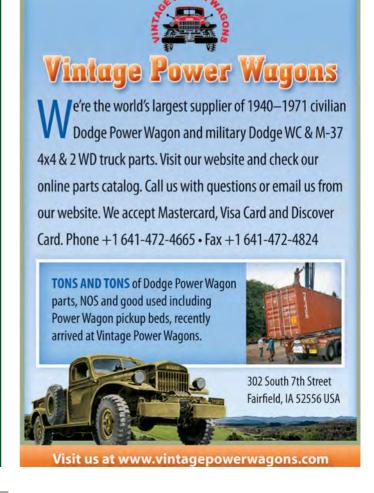


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It Ain't Hali

British companies such as Crossley Ltd and Morris Commercial Cars Ltd, supplied the so-called 'Light Six-Wheeler' Forward Control lorries for use on India's North West Frontier in the interwar period



he British empire was established during the 18th and 19th centuries and, within it, India was often described as 'the jewel in the crown.' British India comprised the entire sub-continent, including the areas that are now the countries of Bangladesh, Burma and Pakistan so the term 'British India' is used to describe the pre-partition country.

The main task of the Indian Army, a separate organisation to the British Army, was to police this large portion of the empire. Despite the separation, there was a close relationship between the two; the majority of the officers in the Indian Army were British nationals who had joined the army, been trained at Sandhurst

and then transferred to the Indian Army. There were also Viceroy Commissioned Officers, experienced Indian soldiers who had served as other ranks and been granted a commission by the Viceroy of India.

In addition, by the early 1920s, Indian nationals were allowed to attend the Royal Military College, Sandhurst, where they became King's Commissioned Officers with the same status as their British colleagues. During the 1930s, a process described as 'Indianisation' would commence with the intention of gradually replacing British officers: an Indian military college was opened in Dehra Dun, with its graduates described as King's Indian Commissions.

sioned Officers.

Also during this era came mechanisation of the British and Indian armies. The introduction of the tank in 1916 pointed to the future dominance of armoured and mechanised vehicles and the replacement of horses after World War One was stilted. Defence spending plummeted from £766 million in 1920 to £102 million in 1932 as the British Government believed there would not be a major war for at least a decade. It was however clear that future wars would place less reliance on cavalry and, in 1928, cavalry regiments began to mechanise with Rolls-Royce and Lanchester armoured cars.

'Among the facilities at Chakala was a military testing ground where vehicles could be driven over rough terrain at speed'

The mechanisation process took more than 13 years to complete because it was constrained by industrial, financial and strategic issues. While mechanisation seemed essential for armies preparing to fight a modern war in Europe, forces engaged in imperial policing faced different challenges.

Tactical Issues

On the famous North West Frontier, for example, there were always tactical issues, such as how best to protect motor convoys moving at speeds over and above the protection of foot soldier or cavalryman. As a result mechanisation of the Indian Army took place even more

slowly than in the British Army even though armoured cars were deployed to the North West Frontier in the 1920s.

The North West Frontier Province was a significant province in British India along with Madras, Bombay, Central Provinces, Punjab, United Provinces, Bengal, Assam, Bihar and Orissa. Burma was a province of India until 1937 when it was granted separation while remaining part of the British empire.

Before World War Two, the India Command was divided into four commands named after the points of the compass. Northern Command was one and comprised the Peshawar, Kohat, Rawalpindi, Lahore and Waziristan districts of

the Punjab. Northern Command's headquarters was in Rawalpindi which stands on a vast plain in the Punjab, the Land of the Five Rivers.

Captain Leigh IASC and Major Monk RTC watch the Morris Commercial on the loose surface of No3 Obstacle

By 1907, its cantonment was reputedly 'the largest and most important in the Punjab'. The bazaar was known as 'Lalkurti,' which means 'red shirt' in English, a reference to the red coats worn by the soldiers who were stationed there.

By 1926, it was notable as a large military station, still the location of HQ Northern Command and a base for operations on the North West Frontier, where numerous barracks existed; Roberts, Victoria and West Ridge. The Victoria barracks were solidly constructed, Victorian-era buildings, raised from the ground with thick



mud-brick walls and roofs, all of which were intended to make them cooler for the units due to spend the hot weather in the plains.

That part of the cantonment was well planted with trees, lawns and gardens which were a blaze of colour for a short time before the hot weather scorched them to cinders, and offered a pleasant change from the semi-desert West Ridge. Victoria barracks was also much closer to European-style shops, cinema, eating places and the bazaar, so was preferred by the soldiers.

The East Surrey Regiment alternated between Victoria barracks and West Ridge throughout its deployment to the region. An account of this period records that, 'In 1927, on return from Kuldana, A and C Companies, the Machine Platoon and the Band and Drums marched to Abbotabad for additional training with the Gurkhas'.

In May 1928 the district manoeuvres were cancelled because of torrential rain so, in November they took place at Jhelum, five days march away. In 1929, the battalion remained in the plains but each company had six weeks

in the hills at Bharian. In January of that year, it was sufficiently expert to be asked to play the role of Afridi tribesmen to simulate the enemy attacking the brigade, a task much enjoyed by the soldiers.

Unsavoury

The battalion worked hard and played hard. Within months of its arrival teams were winning the Rawalpindi District events at boxing, tug-of-war and football, with hockey coming on but cricket lagging behind because of the shortage of grass pitches.

At Kuldana, where training and sports facilities were more limited, bayonet fencing was taken up with enthusiasm, competing for the Luard Cup which had been presented to the battalion by Major-General Luard, GOC British Forces in South China. In May 1927 a letter of approbation was received from the Army Council for the commendable state of soldiers' education in the battalion.'

Far less savoury were the so-called 'Rawalpin-di Experiments' of the early 1930s. Tests were carried out by scientists from Porton Down on Indian soldiers to determine the effects of mustard gas (now proven to be highly carcinogenic). According to documents at the British National Archives in London, British army scientists and doctors carried out these tests over a ten-year period. They sent Indian soldiers, wearing shorts and cotton shirts, into gas chambers to experience the effects of the gas in a bid determine the appropriate dosage to use on battlefields. These tests caused horrible



SPECIFICATIONS Make Crossley Ltd

Model **Light Six 30 cwt**Nationality **British**Year **1929**Production Run **1929-35**Engine **Crossley**

Type four-cylinder

Fuel **Petrol**Displacement **3705cc**

Dawar 10 6hhr

Power 19.6bhp

Torque **n/a**

Transmission 6x4

Type **manual**

Gears 4F,1Rx2

Transfer Box n/a

Suspension leaf springs

Brakes **drum**

Wheels steel disc

Tyres 36x6

Crew/seats Three

Dimensions

Length n/a

Width n/a

Wheelbase 118in

Weight n/a

Additional Notes

Also available with 140in wheel base and twin rear wheels

SPECIFICATIONS

Make Morris Commercial Cars Ltd

Model Model D 30 cwt Cargo

Nationality **British** Year **1929/30**

Production Run 1926-32

Engine Morris Z

Type Four-cylinder

Fuel **Petrol**

Displacement 2513cc

Power 15.9bhp

Torque n/a

Transmission 6x4

Type **Manual**

Gears 4F1Rx2

Transfer Box n/a

Suspension leaf springs

Brakes drum

Wheels steel disc

Tyres 32x6

Crew/seats Three

Dimensions

Length 16ft 3in

Width **5ft 11in** Wheelbase **120in**

Weight n/a

Additional Notes

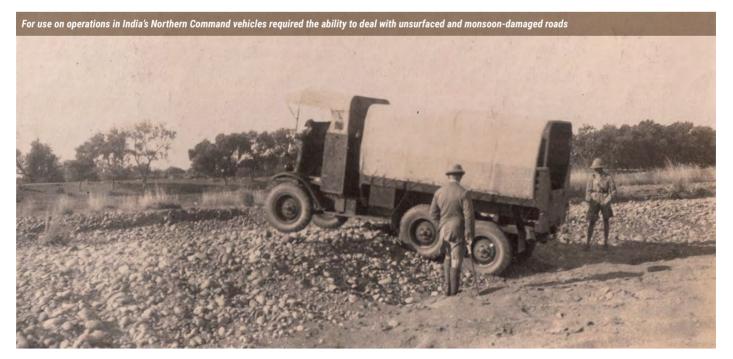
Wooden cargo body with lath sides. Twin rear-wheeled versions and 144in wb versions offered The spartan nature of the Morris Commercials forward control cab is evident as the driver negotiates a rock strewn dry riverbed

burns, some of which were so damaging that the subjects had to be hospitalised, yet no longterm effects of exposure were documented or studied. After the tests, the patients were treated at the Indian Military Hospital Rawalpindi.

Chaklala was a military suburb on the south side of Rawalpindi which comprised a mass of huge storage facilities and workshops intersected by numerous roads and railway sidings. Many courses for soldiers were run here including those for the Army Veterinary School Certificate, the Supply Course and the Animal Transport Course at the RIASC School and the Short Motor Transport Course.

Later, Chaklala would be the location of an RAF airfield and, from 1942, a parachute training school. Among the facilities at Chakala was a military testing ground where vehicles could be driven over rough terrain at speed and ford rivers while being assessed by officers from the Royal

Tank Corps and the Indian Army Service Corps (IASC) and watched by numerous spectators. The origins of the IASC stretch back to 1901 when an extant organisation was named the Supply and Transport Corps. During World War One the corps became a permanent component of the British Indian Army and was renamed the Indian Army Service Corps in 1923. In 1935 the IASC was given the Royal prefix and became known as Royal Indian Army Service Corps.



Some such off-road tests, for lorries generally described as 'Light Six-Wheelers,' took place on October 5, 1930. An indication of the type of terrain on which they were tested can be gleaned from the journal of the RTC which records that 'Four Light Tanks Mark I arrived in India at the end of January 1931. They were sent to Chaklala for preliminary running-in trials which commenced on February 25 and were then sent to the testing ground, where they were driven over a series of obstacles, most of which had been designed to test wheeled vehicles. These they seem to have found too easy so other, more difficult obstacles were found that were too difficult for wheeled vehicles including a steep slope, sand and water.

The 1930s tests comprised a series of similar obstacles and lorries from companies such as Morris Commercial Cars Ltd and Crossley Motors Ltd were tested. The British Army in India had specific requirements for armoured cars and lorries for operations in areas such as the North West frontier.

Armoured Car

The Crossley India Pattern armoured car, for example, was developed in this interwar period for internal security duties in Northern India by the Manchester-based company that had provided RFC vehicles during World War One. In 1923 the Government of India, had issued a specification for a goods vehicle with a payload of 30 cwt. One such Crossley was the Indian Government Lorry (IGL) based on a chassis configuration that was under consideration as a medium. truck for India and subsequently designated the IGL1.

Morris Commercial, from its Soho, Birmingham factory, had begun its association with the British War Department (WD) in the mid-1920s with some half-track experimentation although the WD eventually favoured 6x4 lorries. A Renault 6x4 system had been proven in overland forays and subsequently, a developed version of the concept became the basis of the WD's articulating 6x4 system. It used a twin axle, articulating bogie with all its wheels driven that was designed and patented by the Royal Army Service Corps.

In Britain, in the wake of the World War One 'subsidy scheme' for vehicles, a second one was set up in 1923, to encouraged British vehicle manufacturers to make a subsidised military-type lorry available to civilian owners and users. This was so, in time of war, the vehicles could be quickly impressed into military service.

The favoured type was a pneumatic-tyred, 30cwt, 6x4 with a degree of off-road ability then described as 'cross-country.' In the UK, the spartan open military cabs and the high load height of the cargo body made the 6x4 ABOVE: The 19.6hp Crossley climbs the loose rocks

воттом: The No3 Obstacle comprised small stones and loose sand that would have sapped the Crossley's engine power **BELOW: The Crossley light six-wheeler being driven** on the loose going of Obstacle No4

required to store the WD cab for remounting The RASC twin-axle articulating bogie was used in the lorry Crossley designed to meet the 1925 government specification for a medium general service vehicle of a 30cwt, six-wheel, three-axle type. The IGL chassis was lengthened to become a six-wheeler rated at three-ton of No2 Obstacle on Chakala's testing ground capacity, manufactured in 1926 and 1927 as

the IGL2. It was further upgraded to four tons in 1928 to become the IGL3 available in both forward and bonneted control versions, fitted with a 30/70 pet-

configuration unpopular for civilian use and

owners were allowed to fabricate enclosed

cabs for their subsidy-scheme lorries but

mitigated against the subsidy scheme. Civilian

rol engine. Albion offered its Model

32 six-wheeler and Morris Commercial built its 30cwt D models of 1926-33 and. from 1933 onwards, CD/CDF models to conform to the 6x4 subsidy scheme specification. The D-type used the Morris four-cylinder side-valve Z type 15.9bhp engine and the War Office rear bogie and the military versions generally had open cabs. During the production run there were design changes; notable was an increase in the size of the rear bogie centres from 36in to

40in and the introduction of a 144in wheelbase variant in addition to the original 120in model. Payload on the longer wheelbase model was increased to 40cwt.

A further government specification. War Department 30C, for a 6x4 three-ton vehicle was issued in 1925. To meet this requirement, Crossley produced a three-axle vehicle designated the IGL2. It proved to be too cumbersome for some uses so new 4x2 and 6x4 chassis using a 14bhp car engine were introduced in 1927.

These were called the 15cwt Light 14bhp

and the 20-30cwt Light Six respectively but the six-wheeler was later changed to the British General Vehicle 1 (BGV1). In 1928 a six-wheel IGL3 of a forward control configuration, that provided greater load space, was unveiled. It used the 30/70 engine from the IGL2 and bonneted control versions followed as did further variants until the IGL8 of 1936.

In parallel, a new light six with a semi-forward control layout appeared in 1929, known as the Light Six 30 cwt. It was powered by a 20/60 3,705cc engine. The first batch of these went to India and were designated the Standard India Office Model. They were followed by British Army versions referred to as BGV3, 4 or 5 depending on specification and approximately 600 were supplied before 1935.





'The East Surrey Regiment alternated between Victoria barracks and West Ridge throughout its deployment to the region'



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ne of the enduring realities of having lived and worked in the Russian Federation is the scale of everything – the sheer size of the country, the enormity of its often tragic history and the number of large military museums.

It is just over two decades since the Kubinka tank museum, located some 70km west of Moscow saw its first western visitors. In the intervening years the museum has gone from being a 'secretny obiekt' (secret object), a collection of tanks entirely unknown outside the Soviet Union, to being a separate museum complex with no access restrictions for Russian nationals, and, in recent years, increasingly easier access for foreigners.

Far less well known was the Military Transport Museum located in the town of Ryazan, 196km south east of Moscow. The museum's more remote location from Moscow always made it a more difficult place to visit, not aided by its strict security policy with regard to access and photography, particularly for foreigners. The museum eventually closed, probably because it was so difficult for people to actually visit it, and its collection, for some time, became entirely inaccessible.

Meantime, in 2014, amid a background of the greatest military tension between the Russian Federation and NATO countries since the Cold



'The Patriot Park collection is at the time of writing an evolving display of modern-day technology and museum exhibits'

War, and heavy fighting in Ukraine, the decision was taken to create an entirely new and permanent military exhibition ground. This would be used for holding military exhibitions and for the permanent presentation of historical military vehicles, with unrestricted access for the general public.

The new permanent exhibition area was given the designation 'Patriot Park', which is Russian terms is an entirely fitting description.

The Patriot Park collection is at the time of writing an evolving display of modern-day technology and museum exhibits, with the historical vehicles being primarily sourced from the Kubinka tank and Ryazan military transport

museum collections.

The vehicles on display are rotated rather than being on permanent display, but the long-term intent is to have the majority of the Soviet and Russian vehicles from both the above and perhaps other museum collections on permanent display.

This presents an enormous opportunity for historians and armour enthusiasts alike. Even for those few individuals who have in the past had the opportunity to visit the Kubinka tank museum, the close proximity of the tanks and the abhorrent lighting conditions have always made photography difficult, particularly in the pre-digital age.



The GAZ-3937 'Vodnik' has now been in service for some years. This prototype is fitted with ceramic combination armour







A wartime T-70 clearly in running order, with the final production model of the T-26 series in the background



The Patriot Park collection includes many development prototypes that did not make it to series production, such as this GT-TM.



The T-80 MBT was a high-risk generation-leap MBT, balanced by the low risk T-72, kept at home for Soviet and latterly Russian Army service as was the case with its predecessor the T-64 MBT.



The RKhM chemical reconnaissance vehicle was almost unknown for most of its service life. It is based on the 2S1 self-propelled artillery vehicle



The Soviet Union was always at the forefront of military bridging technology, and as this latest pontoon park demonstrates, this has not changed



Many of the Kubinka tanks of Soviet origin have now been moved out of the eight sheds at Kubinka to their new location, including some rare and unique prototypes. These are now displayed under the open skies with ample space around them. It is unlikely these particularly rare vehicles will be allowed to languish long in their current location, entirely open to the severe Russian elements. But until a permanent housing is provided, they are in a

perfect position for those enthusiasts who can manage the trip during what, as always in the Russian Federation, is an unknown window of opportunity

As might be expected, attendance at the vast new military display and museum collection is high, particularly as all the uncertainty of visiting military museums located within active military garrison territory has been removed.

Russian children seem to have a natural affinity



The T-72 MBT was the mainstay Soviet main battle tank (MBT) throughout the 1970s. It was also exported in large quantities



for clambering on tanks and armoured vehicles, and they are free to do so without health and safety lectures or special reflective clothing.

The Russian Federation is yet to open its first Disneyland Park, but in the meantime Disneyland po-Russkiy (Russian style) is now firmly on the agenda. And the idea that foreigners are now able to wander in as they please and photograph whatever takes their fancy is far from the closed doors and severe restrictions

on access and photography of only a few years ago. Unless one has experienced the comparison it is hard to understand what huge changes have actually come about in recent years.

It is of course best to take advantage of Russian hospitality while the door is open. With US and European economic sanctions on the Russian Federation biting the average citizen hard and the Russian government not in the slightest the door may not remain open forever.



A T-34-85 with 1960s rebuilt programme modifications, with several generations of BTR wheeled APCs in the background, from the BTR-152 to the BTR-90



The BTR-152A, armed with the ZTPU-4 quad 14.5mm air defence system (ALEKSANDR KOSHAVTSEV)



The K-90 amphibious light tank was developed on the chassis of the M2 artillery tractor. It was the predecessor to the PT-76



Many vehicles from the former Ryazan Military Vehicle Museum are now located at Patriot Park. Seen here a 6x4 KrAZ-219 MM4 maintenance vehicle



The K-90 and PT-76M, the predecessor to, and intended potential replacement for, the PT-76



The Objekt-685 was a potential replacement for the original BMP series. Armed with a 100mm 2A48 gun. It was one of the early prototypes for the current BMP-3

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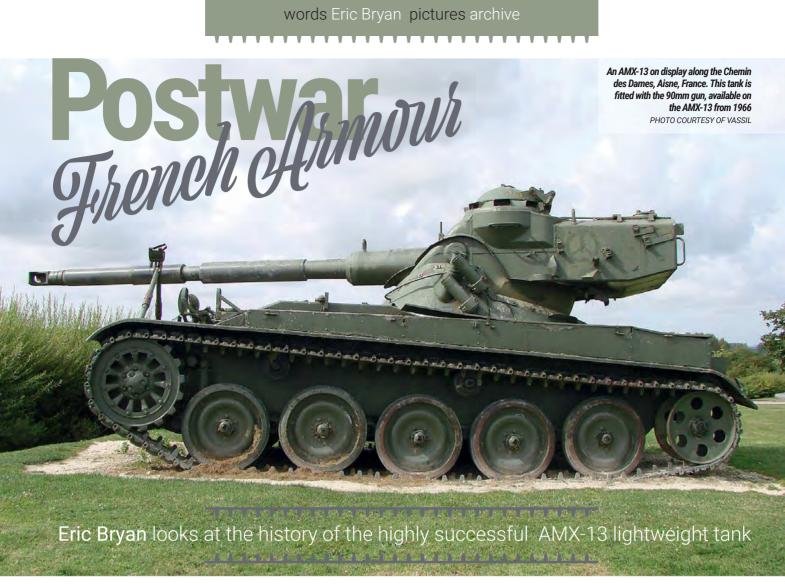
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n the 1967 film Desert Commandos (aka Attack on the Big Three), written by Umberto Lenzi, there are some unusual looking light tanks with aft-positioned turrets. Masguerading in US Army insignia, they roar menacingly over North African desert dunes in this World War Two film which tells a story from a German perspective. In reality, these machines are postwar French AMX-13 tanks.

Conceived immediately after the war by Atelier de Construction d'Issy-les-Moulineaux, the plan was to create a light tank suitable for air transport, which could function as a tank destroyer and reconnaissance vehicle. Constructed on a sturdy, dependable chassis, the AMX-13's eight-cylinder

petrol engine occupied the right front of the hull, beside the driver

It features a two-section oscillating turret, which allowed the fitting of a relatively heavy armament onto a light chassis. The gun was fixed to the upper portion of the turret. The lower segment of the turret rotated laterally; the upper part adjusted vertically. The crew was made up of a commander, driver and gunner. This engine-forward and turret-aft arrangement was for weight distribution, and for the accommodation

This (originally) 13-tonne tank

'The robust reliability of the machine's chassis led to more than 100 variations being devised and produced' was in prototype form in 1948, and began production in 1952. Initially it was fitted with a 75mm gun. In 1966 the AMX-13 could be had with a 90mm weapon, and in the early 1970s it was available with a 105mm gun. Other armament included four turret-mounted smoke grenade launchers, a coaxial 7.62 or 7.5mm machine gun, and an optional 7.62mm ant-aircraft machine gun. In 1985, the AMX-13's torsion bar suspension

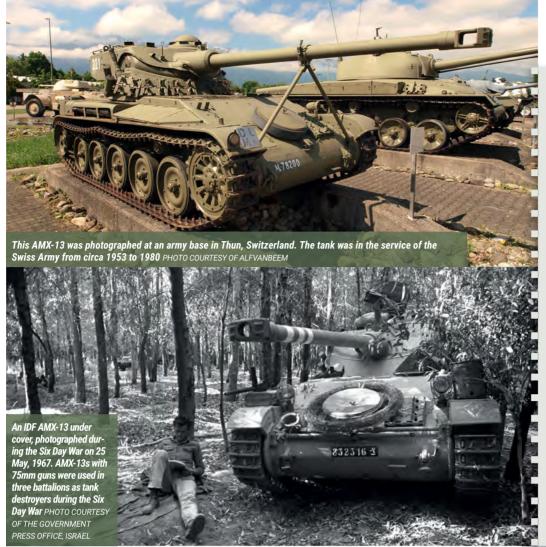
was changed to a hydro-pneumatic type, and the tank was fitted with a diesel engine and automatic transmission. Production ceased in 1987, and the AMX-13 was phased out of the French Army.

The design of the AMX-13 proved successful. The vehicles were exported to perhaps 30 coun-

> tries including Switzerland, Egypt, the Netherlands, and Israel. The robust reliability of the machine's chassis led to more than 100 variations being devised and produced.

A series of armoured personnel carriers was based on the AMX-13. There are several anti-aircraft, and anti-tank guided-missile variations of the machine. A number of self-propelled howitzer versions were produced and saw service with the Dutch Army as well as in Argentina and Chile. Several of these were tested by the Swiss Army. Another formidable variant





SPECIFICATIONS

Make AMX
(Atelier de Construction
d'Issy-les-Moulineaux)
Type Light Tank
Model AMX-13
Nationality French
Year 1953
Production Run 1952-87
Engine SOFAM
Type 8Gxb eight-cylinder
Fuel Petrol
Displacement 8.25-litre
Power 270bhp @ 3200rpm
Torque n/a
Transmission Manual

Dimensions

Type **n/a**

Armament 75mm Main Gun and 7.62 or 7.5mm MG Armour 10-40mm Length 4.88m (hull), 6.36m (including Main Gun) Width 2.51m Weight 14,800kg Vertical obstacle 0.65m Trench 1.6m

Gears Five forward, One reverse Suspension Torsion Bar Crew/seats Three

carried a 155mm mortar.

The AMX-13 chassis also served as the platform for a scissors-style bridge-laying vehicle. Other incarnations included a turret-less model for driver training, a recovery vehicle, and some early versions with M24 Chaffee turrets. More variations on the AMX-13 theme comprised of transport vehicles and ambulances. Beyond these there was a myriad of modified examples fitted with searchlights, rocket launchers and cannon.

The AMX-13's lightness contributed to its manoeuvrability and top road speed of 37-39mph. These attributes, combined with its heavy gun, made it an effective, quick-striking machine. All of this was offset by its armour thickness



69

ABOVE: An AMX-13, also with a 90mm gun, at Monuments de Chars near Berry-au-Bac, France. Photo Courtesy of Alf van Beem
BELOW: Another shot of the AMX-13 exhibited along the Chemin des Dames,
Aisne, France. The 90mm gun has a single baffle muzzle brake, while the 105mm
weapon has a double baffle muzzle brake PHOTO COURTESY OF VASSIL

of 10-40mm

The tank's initial 75mm gun had the advantage of being fed semi or fully-automatically by two six-round magazines, with the shells auto-ejected through the rear of the turret. The downside of this was that once the 12 rounds of ammunition were spent, the vehicle had to seek shelter for the crew to commence reloading, an operation most efficiently conducted from outside the tank. The rifled 75mm weapon, derived from the German Panther gun, is world-renowned for its accuracy.

The AMX-13 was used extensively by the French Army and the Israel Defence Forces in the 1956 Suez Crisis. It also saw action with the Indian Army during the 1965 Indo-Pakistani War, and in Lebanon during conflicts in the 1970s. The IDF also utilised the AMX-13 in the 1967 Six-Day War. Some AMX-13s are still active in the forces of countries in South America, Africa, and the Far East.

An AMX-13 in Yad la-Shiryon Museum, Israel. The tanks were in service with the IDF from 1956 to 1969. AMX-13s saw action during the Suez War at Mitla Pass on October 31, 1956, where they provided support to airborne forces PHOTO COURTESY OF BUKVOED, CREATIVE COMMONS



The origin of the **Coquet Run** is shrouded in mystery. Nobody, not even those veterans who have been there from the very start, are exactly sure when it started







Michael Dickon's Willys MB tackling a steep descent in the Coquet valley



Phil Harrison's Hotchkiss M201 Jeep plunges through the River Breamish



A Hotchkiss M201 followed by an Austin Champ tackles a steep descent



A low-level shot of typical Cheviot country



hemmed in between the heather-clad Simonside Hills and looking westward and northward into the brooding Cheviots and further again to the Ministry of Defence ranges at Otterburn and onwards to the Scottish Border.

These hills and valleys form the backdrop to one of the most challenging events on the calendar for smaller, vintage military vehicles. It's one which has become an addiction for many of the participants who return year after year to test themselves and their machines on some of the most unforgiving, yet beautiful and remote, terrain in the United Kingdom.

It is only smaller vehicles that can endure the conditions the Coquet Run provides. The majority are a selection of Jeeps with a smattering of Champs, Lightweight Land Rovers and exotic participants including a Gaz 64. The maximum number that can reasonably be accommodated is around 20 for a range of reasons, including the number of motorcycle marshals available, licence restrictions on MoD land and the all-important requirement not to damage farmland.

The earlier days were marked by a distinct lack of bureaucracy which has steadily become

a feature in more recent times. In those halcyon days all the permission that was required was a 'bit of craic' with the farmers, shepherds, foresters and gamekeepers that still make up the backbone of the economic life of this part of rural Northumberland.

Of course, things were always better in the olden days, and we relative youngsters clearly need constant reminders about them: the same old stories of historical mishaps emerge in the bar of the Queens Head pretty much every year. Tales of abandoned Bombardiers finally located on a lonely hillside long after dark, the airborne Champ with all four wheels off the ground and numerous stories of Jeeps up to their bellies in peat bogs and being washed off fords - much to the alarm of their occupants.

The actual routes depend largely on weather and ground conditions on the weekend in question which usually lands in late March or early April to avoid bird nesting on the grouse moors and the all-important lambing season. In Northumberland this can vary from pleasant spring sunshine to heavy snow, gales and torrential rain, quite often on the same day!





It is an event where vehicles and their occupants have to come equipped for all eventualities. A poorly-maintained vehicle may well come to grief and although no-one has ever been left behind and breakdowns are always a possibility with vehicles of this vintage, there is no substitute for ensuring that everything is working properly, all fluid levels are where they should be and a spare, full jerry can is securely strapped on. The Cheviot Hills are not blessed with many fuel stations.

Clothing is equally important and we have seen some sights over the years including full East German Cold War border guard uniform and jackboots, evil smelling gas capes, moth eaten greatcoats and Dixie overalls through to modern, day-glo hiking apparel which is usually substituted for something heavier and more khaki when the ridicule gets too much. Needless to say, plenty of food and full flasks are vital for an enjoyable day.

After a good 'kick at the ball' over a pint or two on the Friday evening where old friends are greeted warmly and new folk initiated into the inner circle, the Saturday morning starts after breakfast at the Haugh car park, the traditional starting point for the run. A drivers' briefing is given on the likely hazards that will be encountered and includes the equally traditional lecture about convoy driving rules.

In practice this briefing is rarely fully put into practice during the day. Most struggle to grasp the physics lesson that indicates that the vehicle at the back of the line has to drive almost twice as fast as the vehicle in front in order to keep the convoy together. The simple approach is to make sure that each driver can always see the vehicle behind in the rear view mirror but differences in both performance and the weight of the right foot lead to gaps appearing which can cause mayhem on un-signposted tracks in dense forestry.

To counter this, the motorcycle-mounted marshals spend much of the day, buzzing back and forward in a cloud of blue smoke herding the convoy towards its various destinations.

The first few miles are usually along narrow country lanes which gives drivers and vehicles an opportunity to 'ease springs' although some of the potholes on the county roads present



Sheltering from the Otterburn wind chill in a set of World War One practice trenches



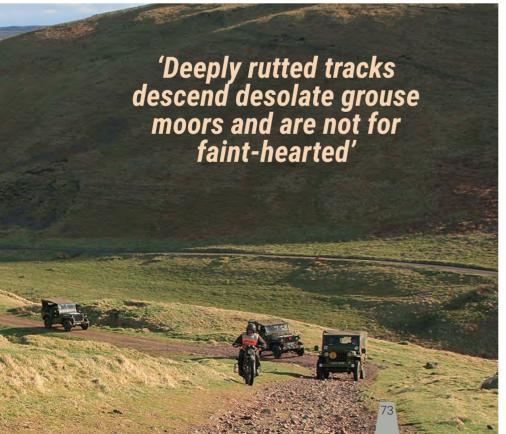
There are always a range of experts on hand in case of a breakdown



Denny Thompson's CanAm Bombardier negotiates a difficult ford in the River Breamish



All kinds of weather can be encountered on the Coquet Run





Northumbrian climate cares to dish out.



Photographs through the years have seen the convoy wreathed in dust with drivers towards the back of the line choking and muttering darkly about dust meaning death. In other years, we have emerged into driving snow or a howling gale which tatters the jaunty flags that adorn some of the vehicles.

Deeply rutted tracks descend desolate grouse moors and are not for the faint-hearted. Likewise the sight of Winter's Gibbet by the side of the road, erected to commemorate a foul murder creaks eerily in the ever present wind, its wooden head swinging on its chain.

Once on to the Otterburn Ranges and depending on the ground conditions on the day, the real challenges begin. Having secured permis-

sion from the MoD and having paid handsomely for the privilege and sought agreement from the tenant farmers, the hard work begins.

The Holy Grail of the Coquet Run is to get up to the border between England and Scotland. Much relies on the weather on the run up to the weekend as the routes followed are often no more than quad bike tracks and sometimes not even that. The winter of 2014 was particularly dry and the border was reached not once but twice over the weekend, once by a route that had not been conquered in at least ten years.

Driving on this ground takes real skill and a steady nerve to achieve just the right blend of boldness, speed, gear selection and route identification.

The short grass turf characteristic of the

southern slopes of the Cheviots in the Upper Coquet valley may look easy to drive on but a shower of rain combined with even a moderate gradient makes it extremely slippery and difficult to gain traction.

Further up, the blanket bogs can form a trap for the unwary or the plain unlucky. One wheel in the wrong place and the vehicle is suddenly up to its belly in an evil-smelling bog and nobody really wants to crawl under it to attach a tow rope.

Mishaps and damage to vehicles is a frequent occurrence. Recent events have included snapped suspensions, broken half-shafts, collisions with gate posts and, on one occasion, a sudden stop in a drainage ditch leading to





a smashed windscreen.

Thankfully, no injuries to anything other than pride have resulted but this is not an event for 'Sugar Jeeps' that disappear under canvases and tarpaulins on a show field at the merest hint of drizzle. Even the lower ground part of the event has

Even the lower ground part of the event has its dramas. A ford across the river just outside of the village of Thropton was a favourite haunt





and a challenge for vehicles to get across due to the instability of the gravel on the river bed. One participant described it as like driving on marbles underwater.

Quite a few have come to grief here; too timid and traction is lost, too fast and a bow wave up under the bonnet ensures that sensitive Jeep electrics will spend the rest of the day misfiring. None however were as spectacular as the Champ which, having lost momentum, slid gracefully backwards into a deeper hole necessitating a sharp exit by the driver who had to sit on the bonnet until he and his heavyweight 'light' vehicle were hauled out by a chuckling horde of Jeep drivers who knew that they had bragging rights for a long time to come.

That ford was completely washed out in 2009 but the story endures.

The Coquet Run is a unique event and much has changed since its mysterious beginnings. Friends and vehicles have come and gone, bureaucracy and environmental constraints have increased tenfold.

However, most of the things that make it special have endured; the camaraderie and friendship, the love of being able to drive these special vehicles in the way they were intended to be driven and the timeless landscape that

forms the backdrop to it all.

There is history here, both ancient and modern. It is to be hoped that there is still a future for events like this and the connections that they bring. They are much too valuable to be allowed to slip away and become a memory for those who sit around and talk about what they used to do.

Spring will come again and with it the Coquet Run, for the time being anyway...





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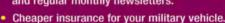
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fficially, a fleet review is a gathering of naval ships for observation by a reigning monarch or their representative. The British Royal Navy has a long tradition of such reviews and two have taken place in Scotland during the reign of Queen Elizabeth II. The first, when this photograph was taken, took place during May 27/28, 1957 at Invergordon, a town and port on Cromarty Firth in Easter Ross, Ross and Cromarty.

Among the ships visited by HM The Queen and HRH The Duke of Edinburgh was HMS Albion (R07), a 22,000 ton Centaur-class aircraft carrier. This ship carried RN Land Rovers and one of these -18 RN 65 - was used by the royal couple as they inspected the ship's company. Its official military designation describes it as a Rover Mk2 which means that it is the two-litre engined version of the 80in model rather than the earlier 1,595cc model. For this reason, in civilian parlance it would be

described as a 'late 80in', something that is borne out by the so-called T-grille used in conjunction with the distinctive 80in windscreen seen raised here and bearing the HMS *Albion* lettering.

Interestingly, during the same review, other photos show a similar 80in Land Rover - 11 BH 45 - being used by HM The Queen and HRH The Duke of Edinburgh while aboard HMS *Ark Royal*. Additionally, that Land Rover has whitewall tyres and rear steps.

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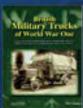
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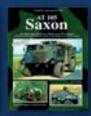
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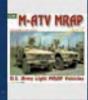
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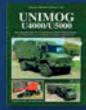
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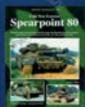
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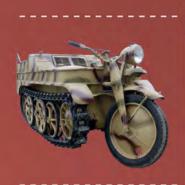
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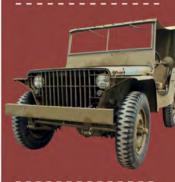
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