

MEDIUM MARK II

Tank historian David Fletcher profiles the Medium Mk II tank and its later derivatives

Medium tanks Mark I and II were quite different and deserve to be treated as such. Here, we are going to concentrate on the latter and its derivatives, 37 of which were built by Vickers Ltd and 63 by the Royal Ordnance Factory. Visually, the Mark II is distinguishable by the way the side skirting plates continue all the way down to cover the suspension and track rollers, and the way that the driver's hood is raised to the level of the turret, rather than below it. One imagines this might have been done to improve the driver's view of the road ahead, but since a crew member is usually seen sitting on the outside near the driver, this may not have worked. Inevitably, the shape of the armour plates at the front of the tank had to be modified accordingly which gives the tank a much chunkier, bulkier look than the Mark I.

RACKHAM'S TREASURE

These features had been foreshadowed on the two special tanks built for trials in India, although they retained the same drive train as the Mark I. On the Mark II, although the engine, clutch and primary gearbox remained the same, there were changes further back. Beyond the gearbox but in line with it was a two-speed epicyclic 'box which provided an emergency low gear and beyond that again a bevel box which transferred the drive through 90 degrees to the cross shaft that linked to the drive sprockets. However, here was another



A Medium Mark II in 5th Battalion service, still painted in Mechanized Force colours and the crew wearing gas masks, posing with a Hotchkiss gun mounted for ant-aircraft defence.

change, and quite a striking one. Instead of the steering epicyclics in the Mark I, the Mark II was equipped with Rackham clutches and brake drums at each end of the axle. The Rackham clutch, the invention of a gifted ex-Tank Corps engineer, relied on a system of cams and ball bearings to disengage the drive along with a conventional brake drum which slowed down or locked the

track. Used independently they served as a steering medium but used together they brought the tank to a halt. The only problem with Rackham clutches was a tendency to run hot, so much so that on occasion the crew found it necessary to squirt them with the contents of Pyrene fire extinguishers in order to cool them down. Since Rackham clutches were later used, quite successfully, >>>

Below: A Medium Mark II in Egypt, asbestos clad to reduce the internal heat.





This Mark II is the Tank Museum exhibit, displaying the Bishop's mitre cupola and the co-axial machine gun mounting.*

on Matilda tanks this problem must have been solved.

The other difference concerns the main armament, the 47mm three pounder gun. It was slightly longer than the gun in the Mark I and also had a horizontal sliding breech instead of the falling breech of the Mark I, a small detail, granted, but worth recording since they did make a bit of a difference. The gun in the Mark II had a greater muzzle velocity, 1850ft per second as against 1750ft per second in a Mark I, and a slightly greater effective range of

7000 yards as against 6000 yards in the Mark I. A few tanks were again fitted out for the Close Support role, mounting a 3.7in breech loading mortar instead of the three pounder. Otherwise the armament, in particular the secondary armament, was the same and underwent the same changes. As new a Mark II would have air-cooled Hotchkiss .303 machine guns around the turret and two water-cooled Vickers, mounted one in each side of the hull. Later developments saw the adoption of a co-axial water-cooled Vickers and the

elimination of the Hotchkiss guns which, with the addition of a Bishop's mitre cupola on top of the turret, led to the designation of Mark II*. Later still, half of them were fitted with a large, box-like extension to the turret which housed a type MC wireless set. In this guise they were designated Mark II**. A few of the tanks were also seen with a vertical tube mounted at the front of the turret. To be honest we don't know what this was for, suggestions have included a signalling lamp or a compass, but it is not written down anywhere and there is no obvious clue as to what it was.



*A Medium Mark II** showing the wireless extension on the back of the turret. When the gun was painted white it was normally meant to represent a Close Support tank on an exercise.*



*A rare top view of a Mark II** stuck in a hole showing the Bishop's mitre cupola and the wireless bulge, complete with aerial. Notice too the tinplate cowl over the nearside headlight. This was intended to mask the beam at night from the air.*

FIRE AT WILL

Mark II tanks dominated the Experimental Mechanised Force of 1927 and the Experimental Armoured Force of 1928. They were built in larger numbers than the Mark I, at least 100 of them, and they can be seen in contemporary photographs, sweeping across Salisbury Plain in what look like great masses.

Only two modifications of the Medium Mark II are known. One was fitted with a pair of hinged bridge girders, carried in brackets on each side of the tank. But since they had to be lifted off and emplaced by the crew you could hardly call it a bridgelay. The other featured an enlarged, flat-topped turret which is believed to have housed more communications equipment. We are not sure whether this turret could still rotate or not, or indeed whether the gun it mounted was real or a dummy. But gunnery, particularly firing on the move, was what the Royal Tank Corps was all about. Recruits, trained at the RTC Gunnery School, Lulworth Camp, were taught to fire the three-pounder from a moving tank running over a special course. This consisted of a track, marked out in the form of a square, each side approximately half a mile long, down which the tank proceeded, firing as it went.

Undoubtedly the most interesting and unusual version of the Mark II was one described as Tank, Medium, for Radio and Wireless. This dispensed with a turret altogether and instead came with a much enlarged box superstructure which contained two wireless sets and a single machine gun. It was intended as an armoured command vehicle for the



T198 started life as an ordinary Medium Mark II but was later modified into a command tank with a special turret. We know very little about it.

commander of an armoured formation, such as a Tank Brigade. Known unofficially as The Boxcar, or even less politely as The Thunderbox it was built by the Royal Ordnance Factory in 1926. A contract for four more was issued in 1927 but there is no evidence that they were ever built.

In 1928, after the last of the Medium Mark II tanks had been built, ten more appeared with the designation Mark IIA. In this case seven were built by Royal Ordnance and three by Vickers. The only distinguishing feature, small as it is, is the way that the return rollers were mounted

on each side. They were fitted on brackets above the supporting bar rather than passing through it. In fact, the turret still had a bevel at the back as with the Mark II. At least one of them was fitted with the close support howitzer, at least for a while. The plan was that these tanks should all be sent out to Egypt where two Royal Tank Corps armoured car companies were in the process of converting to a tank company from February 1929, ultimately becoming 6th Battalion, RTC on 1st April 1933. The plan was at one stage to equip these tanks with a Ricardo S90 diesel engine which it



Below: The so-called Medium Tank Bridgelay on a Medium Mark II with what appears to be a civilian driver.



Above: The Medium Mark II command tank 'Boxcar' with the French General Weygand taking the salute. He was over here as a guest of the Royal Tank Corps.
Right: This is a Medium Mark IIA close support tank mounting the 3.7in breech loading mortar.



was hoped might cope better with the heat than the air-cooled Armstrong-Siddeley. This never happened, and in any case a mere ten tanks was insufficient to equip a battalion, even if all ten had gone out there in the first place, which they may not have done, so the numbers were made up with ordinary Mark II tanks. Some were fitted with an outer layer of asbestos panelling in order to reduce the heat while at least one appears to have had a series of ventilation slots cut into the front of the engine compartment to improve the air flow. Two were captured by the Germans during the desert war, but whether Mark II or IIA we don't know. Either way they could not have been much use.

PAST ITS BEST

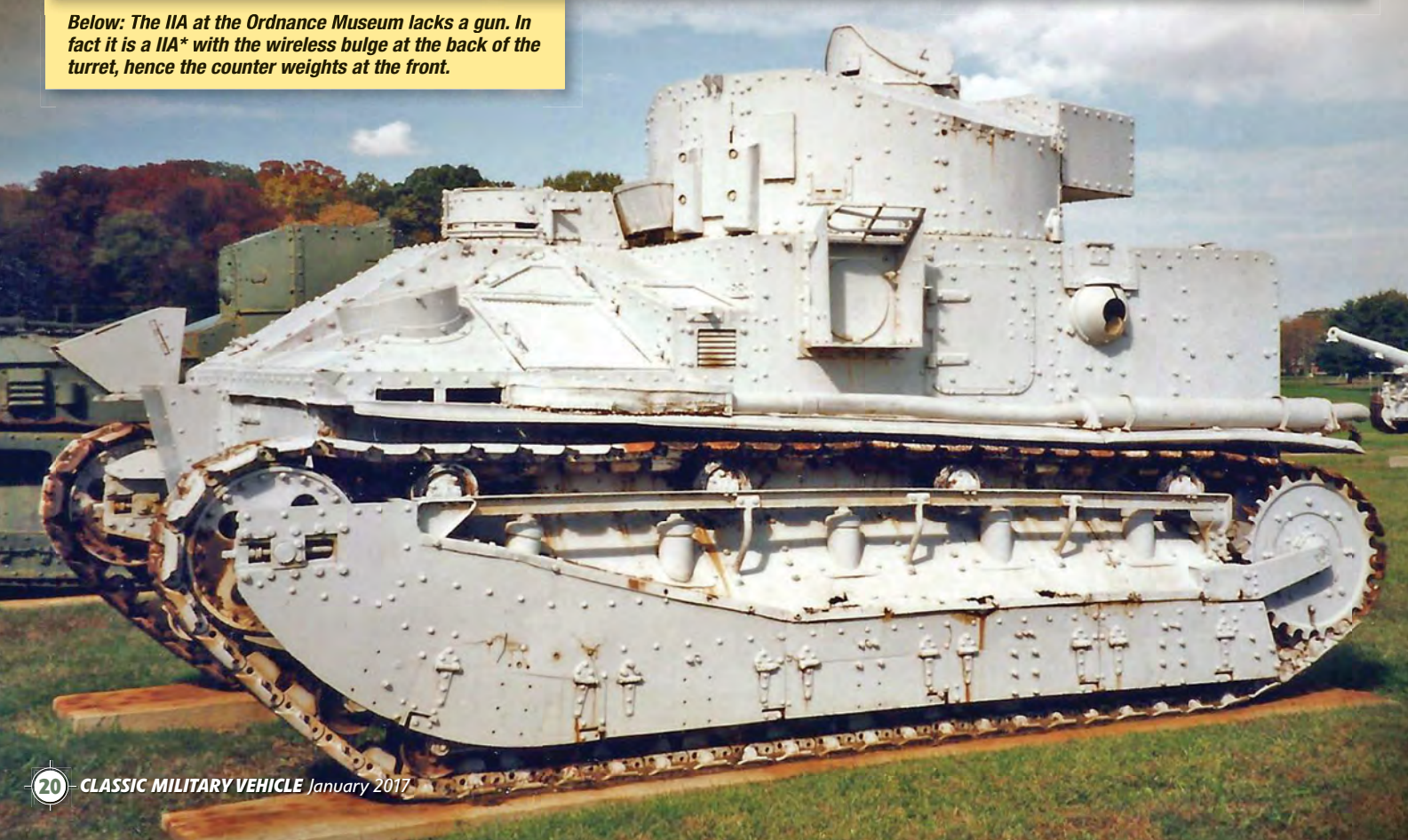
In about 1930 Vickers-Armstrongs Ltd published a catalogue entitled *Mechanization* that listed and illustrated its range of military products. These included a Medium Mark II tank which it described as the Vickers-Armstrongs Medium Tank. Presumably by this time the British Army had lost interest in the tank, although they still continued to use it, otherwise Vickers would not have been allowed to offer it for sale. It seems a rather desperate effort to sell what was by then quite an old tank.

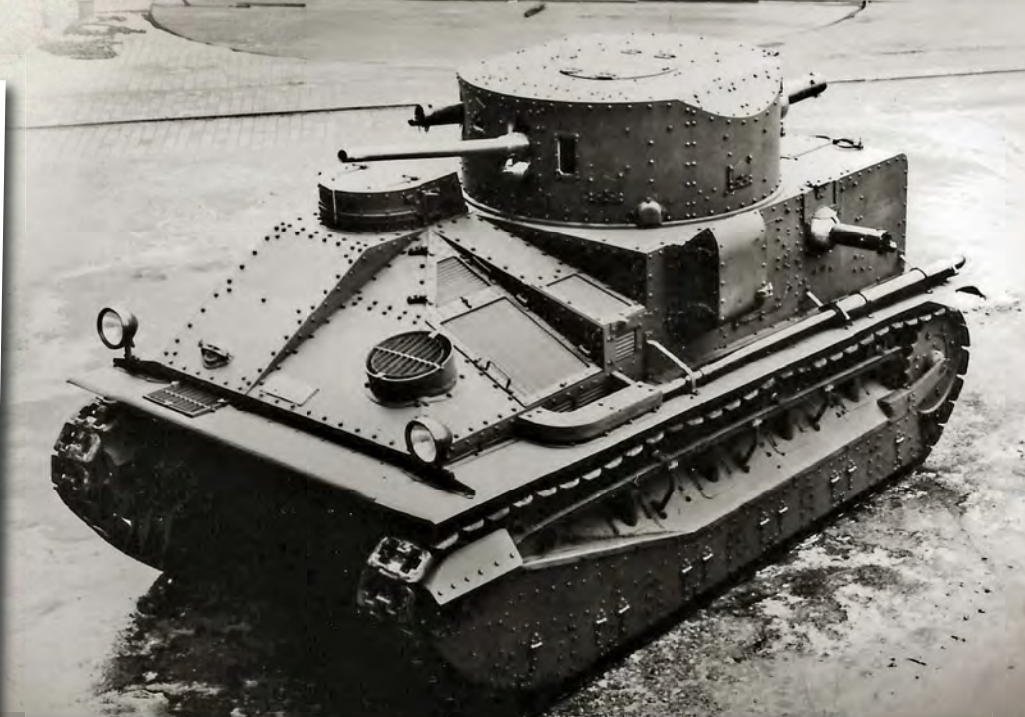
It is interesting to note that it describes the armament of its commercial product as having one 47mm gun and two Rifle Calibre

machine guns, which we assume are the two mounted in the sides of the hull. There is no evidence of any machine guns fitted to the turret at all, unless of course, that is what the customer wanted.

In 1929 four Medium Mark II tanks were purchased by Australia. They were identical to the British version except in respect of the secondary armament. Since the Australian Army did not use the air-cooled Hotchkiss machine gun the turret was adapted to mount two Vickers machine guns instead, in addition to the two fitted on each side of the hull. In order to accommodate the larger guns in the turret the side bevels were much

Below: The IIA at the Ordnance Museum lacks a gun. In fact it is a IIA* with the wireless bulge at the back of the turret, hence the counter weights at the front.





Above: Photographed at Vickers, Newcastle, one of the tanks supplied to Russia. The turret is identical to the one supplied to Australia but it's running on a Mark IIA hull. Only this one, we think, carried a three-pounder gun.

smaller and there was no bevel at the back. As in Britain these Medium Tanks, now well beyond their sell-by date, remained in service as training machines into the early part of WW2.

The Soviet Union also acquired 15 Medium Mark II tanks, which they called the 'English Workman', or so it is said. They had the same return roller arrangements as the Mark IIA in British service, but had modified turrets to take a couple of Maxim water-cooled machine guns. Only one was apparently delivered with the 47mm weapon, the rest were supplied without guns, which were fitted in Russia (probably their 45mm). Funds for them are said to have been made available in 1930 but it has to be said that they were a very elderly design by this time and even the Russians realised that they were not worth developing any further. In any case Russia obtained a couple of Christie prototypes from America at about the same time and realised that

their future tank design lay in that direction. The Medium tanks were sent down to Kazan, in Soviet Central Russia where the Germans were also training their embryo tank force. Whether the Mediums were sent down there to give the Germans a false impression is not clear. About half a dozen Russian Mediums seem to have fallen into

KNOWN SURVIVORS

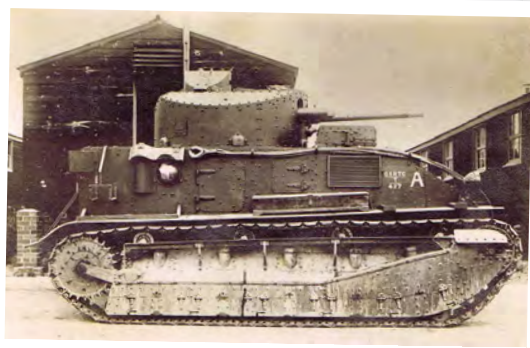
There are only a few Medium Mark II tanks left now. There is a Mark II*, T199, at the Tank Museum and for a while the collection contained a Mark IIA, or the remains of one, which was dug up from Ashdown Forest in Sussex where it had been since the war. Sadly it was too far gone to be worth

preserving. There is a Medium Mark IIA in the Ordnance Museum Collection in the USA which was recovered from the desert, and the

“Half a dozen Russian Mediums seem to have fallen into Finnish hands at the time of the Russo-Finnish War.”

Finnish hands at the time of the Russo-Finnish War but what they were doing in that region is not at all clear. They look too dilapidated to be fit for any sort of action and it seems a miracle that their engines carried them that far anyway.

Australians have one of their four machines which now lives at the Royal Australian Armoured Corps Museum at Puckapunyal, Victoria. I don't believe any survive in Russia, or anywhere else that I am aware of – but if anyone knows differently... [READ MORE](#)



Above: A Medium Mark IIA at Lulworth, a rare picture of one in original condition and still in England. Right: An Australian Medium Mark II with its crew on parade. There were only ever four of these, now just one survives.

