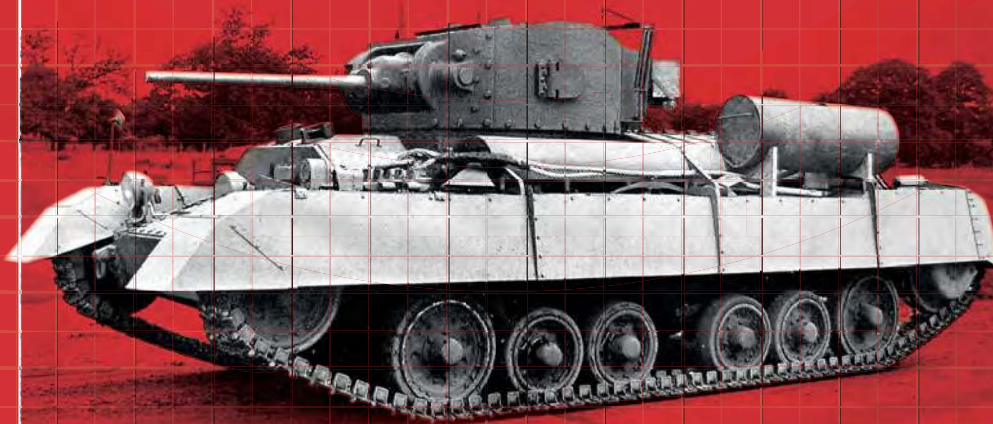




# VALENTINE INFANTRY TANK

WE START A MAJOR NEW SERIES THAT LOOKS AT ARMAMENT USED BY BRITISH FORCES OVER THE LAST 100 YEARS BY PROFILING A KEY INFANTRY TANK OF WORLD WAR TWO.

WORDS BY DICK TAYLOR.



**T**he most numerous produced British tank of the Second World War, the Infantry Tank, Mk.III, Valentine, was unusual in that it started life as a private venture by Vickers, as opposed to a General Staff (GS) specification, which would have allocated it a code number beginning with the prefix A. Rather, it was given the unlikely project title of 'Valentine' by the designers, and when the tank entered service, the name stuck. Indeed, it was none other than Prime Minister Winston Churchill, who became so exasperated with the arcane system of tank designations during



the war's early years, who insisted all such fighting vehicles should be given a name.

The basic hull and suspension was based on the in-service A10 heavy cruiser tank, but armoured up to the (then) amazing standard of 65mm frontally – at a time when most designs featured between 14-30mm of armour. The Vickers team was adamant that for the tank to be successful, it was essential to keep the weight down whilst maximising the frontal armour. This meant the vehicle was kept small overall, and was one of the reasons it became so well liked.

It was difficult to hit, and when it was struck, it tended to resist enemy fire. It was also mechanically simple and reliable.

### COLD RECEPTION

First appearing as a prototype in 1939, the War Office (WO) was not interested initially in the design. A compromise of design, the Valentine occupied a spot halfway between true infantry and cruiser tanks and having examined it the previous year and decided it did not meet its requirements for the former. Doctrine called for an armoured fighting ►

### PRODUCTION MODELS

**The British marks, with their main features, were as follows:**

- I: Original model with AEC A189 135hp petrol engine, 2-pounder gun and BESA machine gun
- II: As Mk.I but with AEC 190 131hp diesel engine
- III: As Mk.II but with new 3-man turret
- IV: As Mk.II but with GM 6-71 138hp diesel engine
- V: As Mk.III but with GM 6-71 138hp diesel engine
- IX: As Mk.IV but with uprated 165hp engine (last 300 only) and new 6-pounder gun turret, no machine gun. Some Mk IX's had welded hulls
- X: as Mk.IX but with 165hp engine, BESA machine gun, welded hulls
- XI: as Mk.X but with 75mm gun



**RIGHT** machine to accompany soldiers in the assault, much like the A11 Matilda I. It did not need to be fast, but it had to be able to withstand the enemy's anti-tank weapons and carry several machine guns, as these were thought to be the most effective armament for infantry support based on the experience with, and use of, tanks in the Great War.

*A Valentine Mk.XI command tank with QF 75mm gun in Goch, February 1945. The Mk.XI was used solely by battery commanders to direct batteries of Archer tank destroyers.*

In any case, the WO was expecting great things of the new A12 Infantry Tank Mk.II then under development, better known as the Matilda II. It saw no requirement for another infantry support vehicle which it thought would only make production and support more complicated. This view changed when a need for tanks at any cost became apparent in the run-up to the war.

**BELOW**

*A Home Guard section, armed with a Northover Projector, in action against 6<sup>th</sup> Armoured Division's Valentines at manoeuvres near Yelden, July 1941.*

In June 1939 the WO ordered Vickers to start producing the Valentine as an infantry tank. One of the deciding factors was Vickers' claim that two Valentines could be made



for every one Matilda, a convincing argument at the time. The Valentine also needed little prototyping as its major components had already proven successful on earlier tanks. The first production (Mk.I) variants with petrol engines and 2-pounder guns were issued to troops in June 1940, immediately following the Dunkirk evacuation. A Mk.II diesel-engined version appeared in April 1941 – it had always been Vickers' intention to use diesel powerplants as this fuel would deliver clear advantages, a fact lost for some time on the military. In total 11 marks of the tank were designed, although only ten were actually produced – the Mk.VIII was never made. The Mk.VI and VII were built in Canada under licence,

the main differences being Canadian engineering standards and the 0.30in Browning machine gun to replace the 7.92mm BESA.

**MULTINATIONAL USE**

Well over 7,000 gun tanks were built; nearly 6,000 were made in Britain and the remainder in Canada, the vast majority of the latter being sent to the USSR as part of the military support demanded by Stalin in 1941. Aside from the Mk.III and V, which both had three crew crammed into the turret, plus a driver in the hull, all the others were three-man tanks: driver, gunner and commander – who also loaded the guns. Two-man turrets always place an intolerable burden onto the commander, who is forced to try to do

the job of two men at the same time, to the detriment of both. This led to the 'stretching' of the original turret design to accommodate a third person, the loader, in the Mk.III and V. However, none of the marks could be considered roomy.

Unusually, the driver did not have a hatch above him, but entry and exit was provided with two side-opening hatches – this had its advantages as it reduced the risk of him being trapped inside if the only hatch had been blocked by the gun barrel. The small size made for an uncomfortable tank to operate in for extended periods, but the crews loved it for its low height and silhouette – the Mk.I was only about a foot taller than the average man. ▶

**BELOW**

The Tank Museum's Valentine Mk.II. (RUSS PRICE)

**“...CREWS LOVED IT FOR ITS LOW HEIGHT AND SILHOUETTE – THE MK.I WAS ONLY ABOUT A FOOT TALLER THAN THE AVERAGE MAN”**



**KEY DATA**

	Mk.IV	Mk.XI
<b>Crew</b>	3	3
<b>Length gun front</b>	17' 9"	20' 6"
<b>Height turret roof</b>	6' 7½"	6' 7½"
<b>Width over tracks</b>	8' 7½"	8' 7½"
<b>Weight</b>	16 tons	17.2 tons
<b>Engine</b>	GM 6-71 Model 6004 6.96l 135hp at 1,800rpm	GM 6-71 Model 6004 6.96l 165hp at 1,800rpm
<b>Transmission</b>	Spicer synchromesh 5F+1R	Spicer synchromesh 5F+1R
<b>Armament main</b>	2-pounder - 60 rounds	75mm - 39 rounds
<b>Armament secondary</b>	BESA machine gun	BESA machine gun
<b>Range</b>	158 miles (road) 95 miles (cross-country)	89 miles (road) 53 miles (cross-country)
<b>Max speed</b>	15mph	15mph



**ABOVE**  
The Archer self-propelled anti-tank gun – with rear-facing 17-pounder gun – was optimised for ambush tactics. A Bren gun was stowed on board for close defence.

**RIGHT**  
A surviving example of the Duplex Drive, or DD, Valentine. These floating tanks were used to train DD Sherman crews ahead of the Normandy invasion.

It was also very reliable. At a time when almost all British tanks had a terrible reputation for breaking down, the Valentine bucked the trend. This was largely due to two factors: clever design from the outset which kept the mechanics simple and accessible, and Vickers' insistence that the weight be kept to a minimum.

When more powerful engines became available – giving a 22% increase in horsepower – it was possible to add bigger guns and more armour, but the original design still proved to be remarkably durable. For its size it was well armoured. As already noted, it carried 65mm of frontal armour on the mantlet (turret front) and the turret rear which was double the standard at the time, only being beaten by the Matilda II with 78mm. The vertical hull front plates and hull front sides were all

**COMPARISONS**

**SPEED (MPH)**

	0	10	20	30	40	50
<b>Valentine XI</b> Armament: One QF 75mm gun. One 7.92mm BESA machine gun Armour: 65mm front, 60mm side, 40mm rear Maximum road speed: 15mph						
<b>Matilda II</b> Armament: One 2-pounder (40mm) gun. One 7.92mm BESA machine gun Armour: 78mm front, 65mm side, 55mm rear Maximum road speed: 15mph						
<b>Panzer IIIJ</b> Armament: One 5cm KwK L/60 gun. Two or three 7.92mm machine guns Armour: 50mm front, 30mm side and rear Maximum road speed: 24mph						
<b>M4A1 Sherman</b> Armament: One 75mm M3 gun. Two or three 7.62mm machine guns Armour: 50mm front, 37mm side Maximum road speed: 25mph						





60mm thick, giving it the best side protection of any tank of the early war years and which would still be better than the majority in 1945 (including the side armour of the German Panther). It gave the crew greater confidence in their chances of survival if hit.

**INTO BATTLE**

The Valentine first saw operational service in North Africa in November 1941, when examples belonging to 8<sup>th</sup> Royal Tank Regiment successfully took part in Operation Crusader, and it continued to be used throughout the North African campaign until the fall of Tunisia in May 1943. By this stage it was clear that its days as a front-line gun tank were at an end, as better machines – such as the Crusader III, the Churchill and the US Sherman – were all available in large numbers.

However, it continued in use as a Duplex Drive amphibious tank, and provided the basis for a number of variants that continued in service for the rest of the war and beyond. For example, it led to the stop-gap Bishop self-propelled 25-pounder gun, the Archer 17-pounder self-propelled anti-tank gun, the Scorpion III mine flail tank, and the Scissors Bridgelayar which carried a 30ft bridge capable of carrying 30 tons. Later marks (IX to XI) saw front-line service until the very end of the North West Europe campaign, being used by the Royal

Artillery as ‘chargers’, their name for armoured run-arounds.

In the immediate aftermath of the war almost all were disposed of by the British Army, with only Archers and some Bridgelayers being retained. Several versions of the Valentine are on display at the Tank Museum, in Bovington, Dorset.

Both New Zealand and the USSR used the Valentine in large numbers during the war. The first Canadian-built models were shipped to Russia in November 1941, and Mk.II, III, IV, V, VI, VII and IX were all supplied, total numbers being around 3,400 – or nearly half of total production of the type. The Soviets liked the same aspects of the design that the British did – small size, simplicity and reliability.

New Zealand received nearly 300 examples starting in November 1941, and some 18 of these were later locally modified to take a 3in close support howitzer, which made it extremely effective in supporting infantry in jungle conditions. After the war, the New Zealand army retained Valentines in service well into the late 1950s. Others were used by Egypt, India, Portugal and Turkey. 📍

**BOTTOM LEFT**

*The Tank Museum's Valentine Mk.IX, with 6-pounder gun. A novel solution the absence of a machine gun was the use of a Browning 0.30in machine gun fitted inside an empty shell case. Once 'loaded' into 6-pounder breech, the machine gun could be aimed using the main controls, and fired using a solenoid.*  
(RUSS PRICE)

**BOTTOM RIGHT**

*The turret front of the Tank Museum's Valentine, showing the 2-pounder main gun and coaxial BESA machine gun.*  
(RUSS PRICE)

**NEXT MONTH**

January's 'Weapons of War' will focus on a key ship in the Royal Navy's arsenal in the Second World War – the Leander-class light cruiser. Don't miss this exciting profile! The next issue is in the shops on 27 December.

