

British ingenuity brought the Sherman tank's main weapon to reasonable parity with the German Panther and Tiger during WWII

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SHERMAN FIREFLY

The Sherman tank was nimble and reliable in the field, and most of all it was available in great numbers from late 1942 through to the end of World War II. Approximately 50,000 of the American-built tanks were manufactured from 1941-45, and the Sherman became the primary armoured fighting vehicle of Allied armies around the world.

When the Sherman debuted with the British Eighth Army at the Battle of El Alamein in North Africa, October 1942, its 75mm gun was capable of dealing with the German PzKpfw. III and PzKpfw. IV tanks deployed with Panzer Armee Afrika. However, as German factories began turning out more powerful tanks, particularly the PzKpfw. V Panther and PzKpfw. VI Tiger, mounting high velocity 75mm and 88mm cannon respectively, the Sherman was at a decided disadvantage.

The tank's original main armament, the short barrelled M2 and its derivative M3 with a longer barrel (both 75mm guns) rapidly became inadequate in armoured combat. The 75's low muzzle velocity along with the increased armour protection of the latest German tanks rendered the gun ineffective at appreciable distance, while the German tanks were often able to destroy a Sherman prior to the Allied tank manoeuvring into reasonable firing range.

Although the Sherman had been conceived as a breakthrough and exploitation weapon, tank versus tank combat in the hedgerows of France and beyond was inevitable. The Americans sought a solution to the firepower disadvantage with the high-velocity 76mm M1 gun. Veteran British tankers and engineers settled on their own high-velocity weapon, a modified version of the Ordnance QF 17-pounder anti-tank gun. The resulting Sherman variant was nicknamed the Firefly due to its substantial muzzle flash when the 17-pounder discharged. The resulting combination of speed and firepower redefined the capabilities of the Sherman tank from D-Day to the end of the war.

"THE RESULTING SHERMAN VARIANT WAS NICKNAMED THE FIREFLY DUE TO ITS SUBSTANTIAL MUZZLE FLASH WHEN THE 17-POUNDER DISCHARGED"

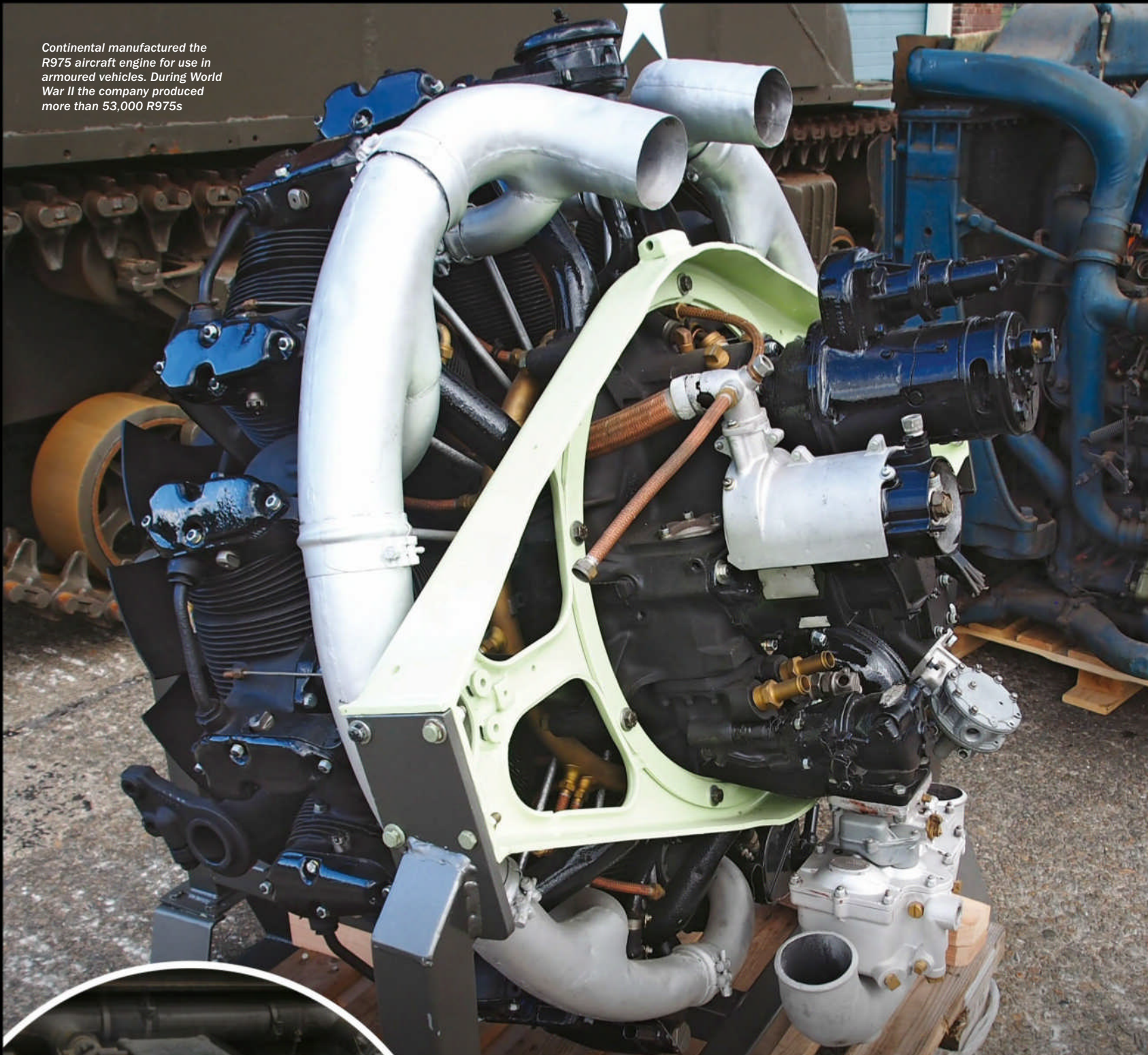
SPECIFICATIONS

COMMISSIONED: 1943 **CREW:** 4 **ORIGIN:** GREAT BRITAIN
LENGTH: 7.77 METERS (25 FEET, 6 INCHES) OVERALL
RANGE: 193 KILOMETRES (120 MILES)
ENGINE: CONTINENTAL R975 C-1 9-CYLINDER RADIAL GASOLINE ENGINE
PRIMARY WEAPON: 1 X QF 17-POUNDER ANTI-TANK GUN
SECONDARY WEAPONS: 1 X COAXIALLY MOUNTED 7.62MM (.30-CAL.) BROWNING M1919 MACHINE GUN; 1 X TOP MOUNTED 12.7MM (.50 CAL.) BROWNING M2 MACHINE GUN

A Sherman Firefly patrols the Meuse at Namur during the Battle of the Bulge



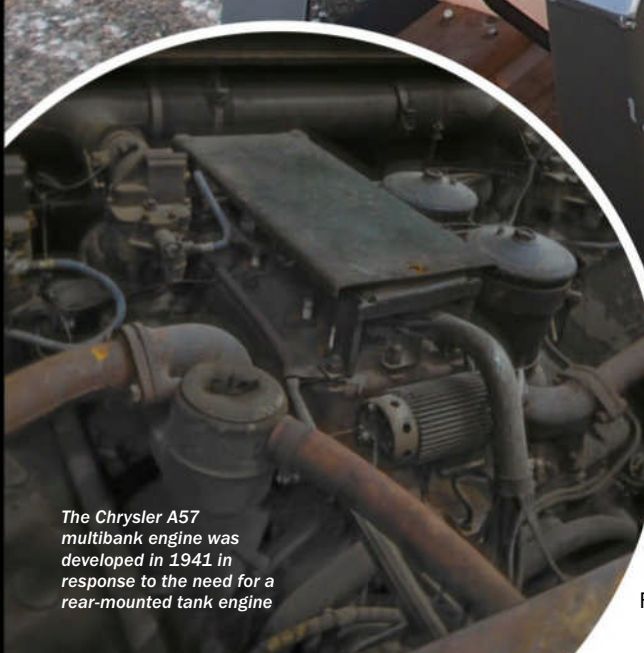
Continental manufactured the R975 aircraft engine for use in armoured vehicles. During World War II the company produced more than 53,000 R975s



“THE CONTINENTAL R975 WAS ORIGINALLY AN AIRCRAFT ENGINE MODIFIED FOR USE IN ARMOURD VEHICLES”

ENGINE

Three Sherman tank models were converted in British facilities to the Firefly configuration. The M4 and M4 composite, named due to both cast and welded hull components, were powered by the Continental R975 9-cylinder radial gasoline engine capable of generating up to 400 horsepower, while the M4A4 variant utilised the 470-horsepower Chrysler A57 multibank gasoline engine. The Continental R975 was originally an aircraft engine, modified for use in armoured vehicles, and the hull of the Sherman was lengthened slightly to accommodate the rear-mounted, 30-cylinder Chrysler A57. The top speed for the Sherman Firefly reached 40 kilometres (25 miles) per hour.



The Chrysler A57 multibank engine was developed in 1941 in response to the need for a rear-mounted tank engine

Left: A Firefly crew of 1st Northamptonshire Yeomanry load ammunition for the 17-pounder prior to Operation Totalise



“FULL PRODUCTION BEGAN THAT YEAR, AND ITS ARMOUR-PIERCING AMMUNITION PROVED CAPABLE OF DEFEATING THE LATEST GERMAN TANKS”



While German tanks were prone to mechanical failure, the Sherman was robust and easily serviced in the field

ARMAMENT

The Ordnance QF 17-pounder anti-tank gun was a high-velocity 76.2mm (3-inch) weapon designed to replace the 6-pounder gun that was rapidly becoming obsolete during World War II. Development began in 1940, and a production line was established the following spring. As German PzKpfw. VI Tiger tanks reached North Africa in 1943, the 17-pounder was rushed into service. Full production began that year, and its armour-piercing ammunition proved capable of defeating the latest German tanks. Major George Brighty and Lieutenant Colonel George Witheridge are credited with the idea of pairing the Sherman tank with the 17-pounder to produce the Firefly.

The 17-pounder gun of the Sherman Firefly extended considerably longer than the original 75mm weapon mounted with the tank



The driver position in the Sherman tank chassis is situated forward in the hull and to the left. The tillers the driver used to operate the tank are visible in front

“THE HULL GUNNER, OR CO-DRIVER, POSITION WAS VACATED TO PROVIDE SPACE FOR THE LARGE PROJECTILES FIRED BY THE 17-POUNDER GUN”



The crew of this Sherman Firefly is unbuttoned as their tank moves forward along a crowded street



Below: The cramped interior of the conventional Sherman tank was made even tighter with the addition of the Firefly's heavy 17-pounder

INTERIOR

The standard five-man crew of the Sherman tank was reduced to four with the Firefly. The hull gunner, or co-driver, position was vacated to provide space for the large projectiles fired by the 17-pounder gun. The confines of the turret presented challenges for the accommodation of the big weapon as well. The Firefly commander was positioned to the rear of the turret with the loader forward and left of the gun breech, and the gunner forward to the right. The driver was seated in the front of the hull to the left and operated the gearbox with levers.





Now a museum piece, the Sherman Firefly changed the dynamic of combat on the Western Front during World War II

DESIGN

Several design modifications were required to convert the Sherman tank to the more-powerful Firefly. The weapon itself was reconfigured with recoil cylinders shortened and relocated to the sides, while the breech was rotated 90 degrees for side loading

and the gun cradle shortened to accommodate the 17-pounder. The tank's radio was moved to a steel box called a bustle, which was welded to the rear of the turret. Since the gun consumed a considerable amount of space, a second hatch was built into the top of the turret to allow the crew to bail out if the tank caught fire during battle.

SERVICE HISTORY

THE SHERMAN FIREFLY AND ITS 17-POUNDER GUN GAVE BRITISH ARMoured UNITS ON THE WESTERN FRONT A REASONABLE CHANCE TO DEFEAT GERMAN TANKS

The bitter lessons of armoured combat against German forces were not lost on the British and Commonwealth veterans, who recognised that the 75mm main gun of the M4 Sherman tank was inadequate against the superb high-velocity cannon of enemy Panthers and Tigers, and two enterprising British officers set out to remedy the situation in early 1943.

Major George Brighty and Lieutenant Colonel George Witheridge of the Royal Tank Regiment saw the solution in combining the Sherman and a more-powerful main weapon, the Ordnance QF 17-pounder gun. Progress was frustratingly slow, and the two were ordered to cease the effort; however, a new champion came forward – Vickers engineer WGK Kilbourn, whose genius solved the problems inherent in marrying the Sherman turret with the 17-pounder.

Firefly production began in January 1944, and by 6 June 1944, D-Day, a total of 342 had been delivered to British armoured units. The Firefly proved its worth in Normandy and

the Germans took note that the tank, easily distinguished from the conventional Sherman due to the length of the 17-pounder's barrel, was a formidable opponent. The Germans sought to neutralise the Firefly threat first in any armoured encounter, and British crews camouflaged their gun barrels with various paint schemes.

In action, experienced Firefly tankers often gave as good or better than they received. On 14 June 1944, a Firefly of the 4th/7th Dragoon Guards destroyed two German Panthers from a distance of 800 meters (870 yards), relocated, and then blasted three more in rapid succession. The remarkable feat put five enemy tanks out of action with five shots.

In August, a Firefly of the 1st Northamptonshire Yeomanry destroyed three enemy Tiger tanks, possibly killing legendary German ace Michael Wittmann. During the course of World War II, some 2,200 Sherman tanks were converted to the Firefly specification.

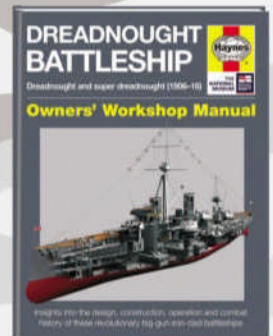
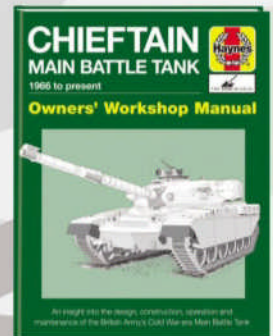
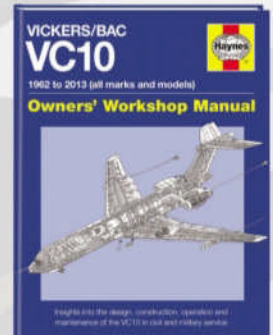
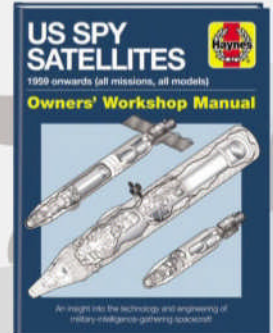


A camouflaged Sherman Firefly, its commander peering from his hatch atop the turret, sits amid the rubble of a devastated city

Images: Alamy



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