M18 HELLCAT TANK DESTROYER

The US Army's 76mm Gun Motor Carriage first saw service with the Allies in 1944

WORDS **CRAIG MOORE**

SOVIET AND BRITISH INDIFFERENCE

The Soviets and British were not interested in ordering the 76mm GMC M18 under the Lend-Lease scheme. The British converted some of their 75mm GMC M10s to carry the more powerful 17lb anti-tank gun, renaming them the SP M10 Achilles.

17LB VS 76MM GUNS

The US 76mm armour-piercing round only contained 3.6lb of propellant. The British 17lb round contained 9lb of propellant and could fire its projectile at a higher velocity, which improved its armour-penetrating properties.

During World War II the Hellcat was best-suited to an infantry support role

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The name Hellcat was never approved by the US Army during World War II. The vehicle's official designation was 76mm Gun Motor Carriage M18, but the publicity department at the Buick Motor Division of General Motors came up with the name Hellcat for its advertising campaign.

Buick built 2,507 M18s and it was the fastest tracked vehicle of the war, designed to be a hard-hitting and manoeuvrable tank destroyer. Its thin armour meant that M18 was not designed to be at the front of an attack. In defence it would guard the flanks of a position and scoot to a new location once it had fired at the approaching enemy before they could return fire. It also acted as an emergency resource that could be rushed to deal with any enemy breakthrough.

The M18's 76mm gun proved inadequate at penetrating the frontal armour of the German heavy tanks but could knock most out by aiming at their side and rear armour. It was more often used in an infantry support role as it could directly and indirectly fire high-explosive shells at targets.

76MM GMC M18 HELLCAT

PRODUCTION	FROM JULY 1943
ORIGIN	USA
LENGTH	6.65M (21FT 10 IN)
MAX SPEED	80KM/H (50MPH)
RANGE	241KM (150 MILES)
ENGINE	CONTINENTAL R-975-C2 9-CYLINDER AIR-COOLED RADIAL 400HP ENGINE
CREW	5 MEN (GUN-COMMANDER, GUNNER, LOADER, DRIVER, CO-DRIVER)
MAX ARMOUR	13MM
PRIMARY WEAPON	76MM M141, M1A1C OR M1A2 GUN

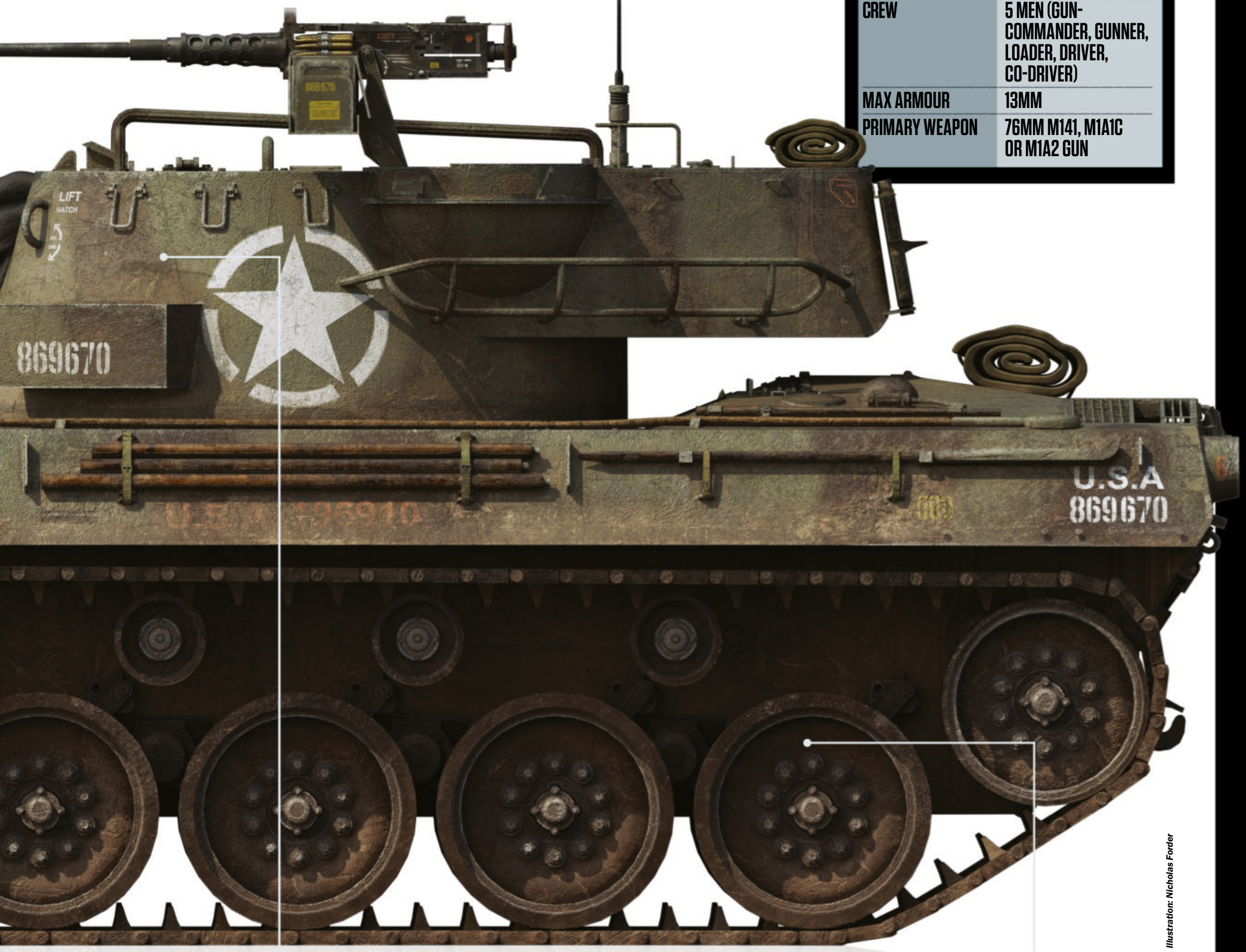


Illustration: Nicholas Forder

OPEN TURRET

The turret was open-topped, but a canvas cover could be strapped down over it. The lack of an armoured roof reduced the weight of the M18 but made the crew vulnerable to snipers and high-explosive air-burst shells.

"IT WAS THE FASTEST TRACKED VEHICLE OF THE WAR, DESIGNED TO BE A HARD-HITTING AND MANOEUVRABLE TANK DESTROYER"

ADVANCED SUSPENSION

The Hellcat was the first American armoured vehicle to use torsion bar suspension rather than the standard vertical volute spring suspension. Its five large road wheels made it easily identifiable from other US tank destroyers and tanks.

The gun breech was fitted at an angle to make it easier to insert shells

The 76mm shells were stored in ready racks next to the machine gun ammunition boxes

ARMAMENT

The initial batch of 1,857 M18s had a 76mm M1A1 gun. After complaints about excessive blast, an improved 76mm M1A1C gun was introduced with the end of the barrel threaded so a muzzle brake could be fitted later. 76mm guns fitted with a muzzle brake in the factory were designated M1A2 (only 700 were produced.) The main gun could fire high-explosive shells as well as armour-piercing rounds. A .50 cal (12.7mm) Browning M2HB machine-gun was mounted on top of the turret.

On the left of the main gun was the gun sight. A canvas dust cover protected the mantlet and gun

A Hellcat supporting US infantry in northern Germany fires on an enemy position, April 1945

The light weight of the M18 enabled it to cope with muddy and snowy conditions better than other armoured vehicles

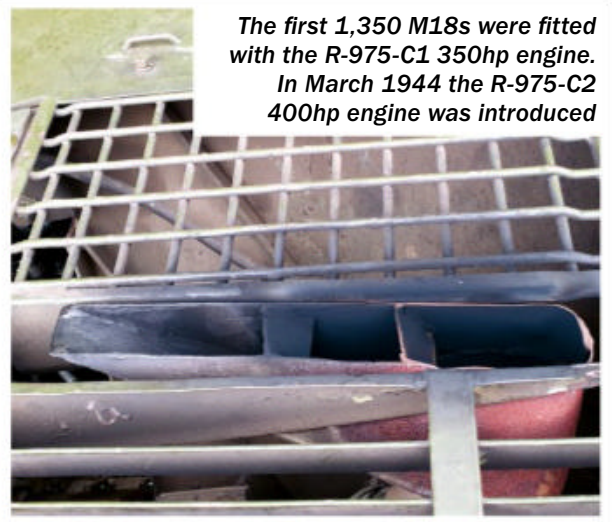
DESIGN

The hull was a completely welded structure. The armour thickness ranged between 4.8mm to 25.4mm, which could only protect the crew from small arms fire and shrapnel. The hull was divided into two compartments: the fighting and driving compartment at the front and the engine compartment at the rear. These compartments were separated by a bulkhead. The front of the hull sloped downwards at the top and upwards at the bottom. A hull machine gun and a coaxial machine gun were not fitted to the Hellcat.

"THE LIGHT ARMOUR OF THE M18 ENABLED THE ENGINE TO PROVIDE ENOUGH POWER TO GIVE A MAXIMUM ROAD SPEED OF 80KM/H"

ENGINE

The 76mm GMC M18 was powered by a Continental R-975-C2 nine-cylinder air-cooled radial 400hp engine. The Wright R-975 Whirlwind engine was originally designed by the Wright Aeronautical division of Curtiss-Wright as an aircraft engine. In 1939 the US Army chose Continental Motors to build a version of the R-975 engine under licence that could power armoured fighting vehicles. They would manufacture over 53,000 R-975 engines. The light armour of the M18 enabled the engine to provide enough power to give a maximum road speed of 80km/h (50mph).



The first 1,350 M18s were fitted with the R-975-C1 350hp engine. In March 1944 the R-975-C2 400hp engine was introduced

The exhaust pointed vertical out of the engine deck to reduce the amount of dust produced by the M18

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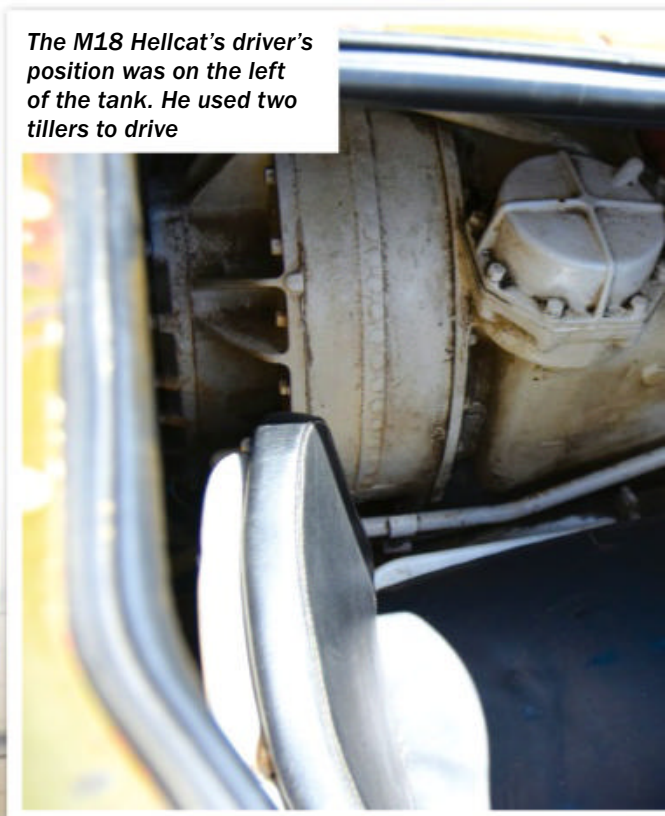
CREW COMPARTMENT

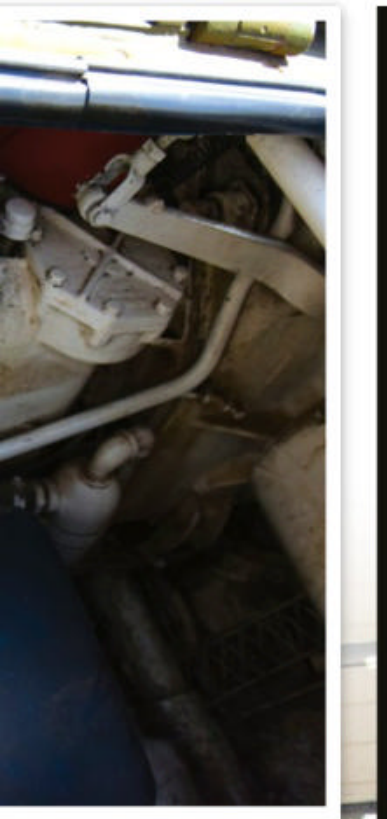
The driver sat on the left at the front of the vehicle and the co-driver was to his right. The driver steered the tank using two large tillers. The co-driver also had two tillers so he could take over driving if necessary. The gunner sat on the left of the turret at the front, and the gun-commander sat behind him and operated the .50 cal M2 Browning machine gun that was mounted on the left rear of the turret. The loader's position was on the right of the main gun.

The tank had a low profile and could use natural cover better than taller vehicles

The co-driver sat on the right side of the driver and was provided with an identical set of driving controls



The M18 Hellcat's driver's position was on the left of the tank. He used two tillers to drive



The success of the M18 was attributed to its crews' skill and training rather than the tank's design

SERVICE HISTORY

In May 1944, five M18s were shipped to Italy. The evaluation reports stated it was excellent in a reconnaissance role due to its speed but it was not as good as the M10 in a tank-destroying role, mainly because of the lack of internal space in the turret which hindered operating the gun. The 603rd, 704th and 705th Tank Destroyer Battalions, who were part of George Patton's Third Army, were equipped with M18s and took part in Operation Cobra in Normandy; as the war progressed more M18-equipped TD Battalions arrived in Europe. Only one of these battalions was deployed to the Pacific. The high tank-kill-to-loss ratio obtained by the M18 crews has been attributed to their training and dedication rather than the abilities of the M18. Post-war, the M18 saw service in various armies around the world.

"THE M18 WAS EXCELLENT IN A RECONNAISSANCE ROLE DUE TO ITS SPEED BUT IT WAS NOT AS GOOD AS THE M10 IN A TANK-DESTROYING ROLE"

Limited space inside the M18 meant the crew had to strap their equipment to the outside of the vehicle

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