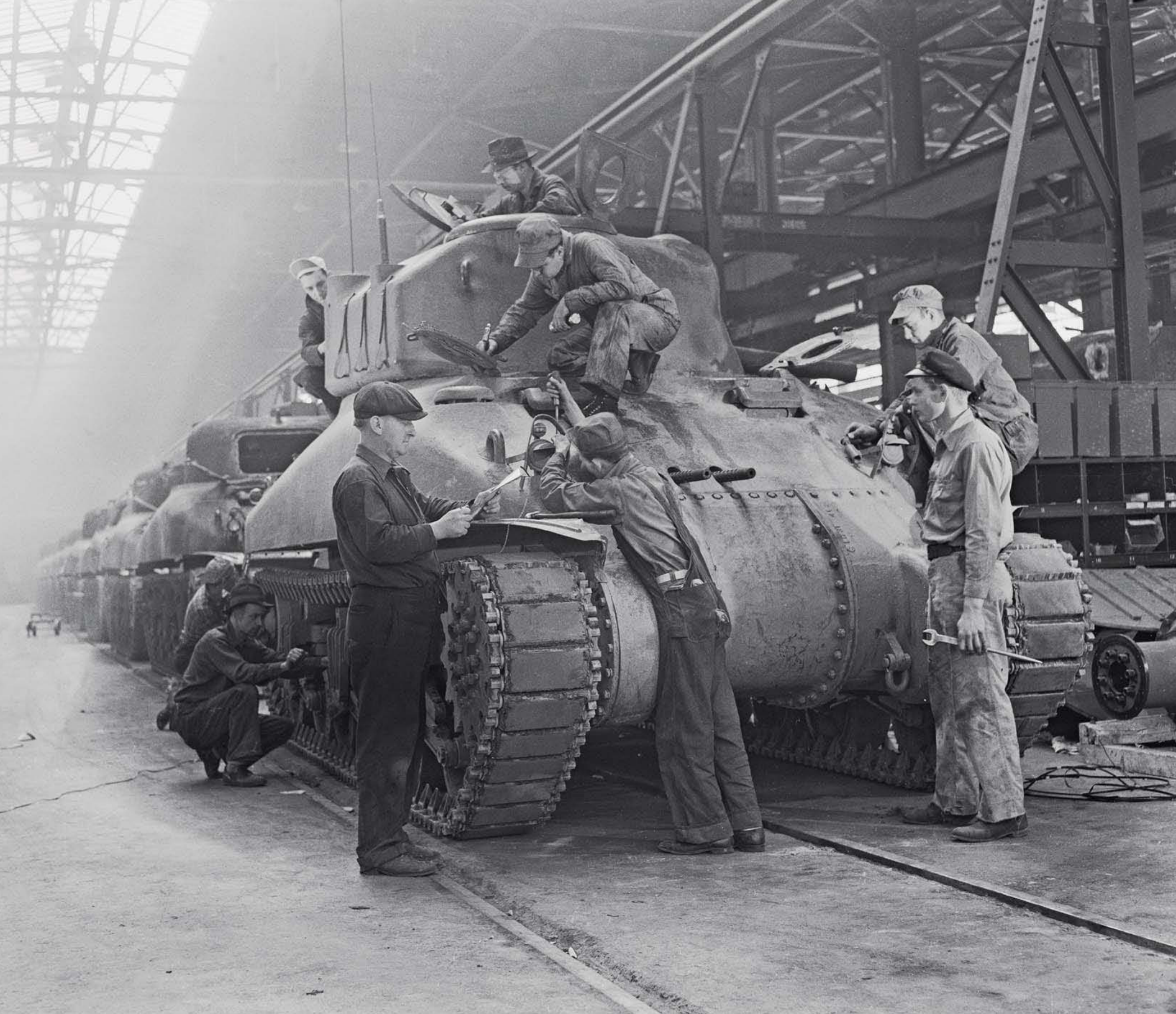


M4 SHERMAN TANKS

THE ILLUSTRATED HISTORY
OF AMERICA'S MOST
ICONIC FIGHTING VEHICLES







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INTRODUCTION

For three years, from June 1942 through June 1945, the United States Military Intelligence Service published the Tactical and Technical Trends series, booklets that discussed various aspects of the Axis enemies' strategies, tactics, weapons, and equipment during World War II. When useful to the publication's joint purpose of providing information and propaganda in the same package, it contained translated newspaper articles, memoranda, or other documents produced by the enemy. Such material, it was hoped, would provide insight into German, Japanese, or Italian perceptions of the Allied soldier and his weapons of war.

Published on October 7, 1943, Tactical and Technical Trends No. 35 included, among other items, a discussion of the Italian SM-82 bomber, the employment of German anti-aircraft guns, the Japanese Model 99 machine gun, and the medical service of the German army. The issue also contained an article that was said to have been translated from a German newspaper story. It appeared under the heading "GERMAN COMMENT ON ENEMY TANKS."

The introduction, written by a staff member with the Office of Military Intelligence, reads, "A critical study of French, British, Russian and American tanks was published on 27 June 1943 in the German weekly newspaper *Das Reich*. It is interesting to note that the author does not attempt to minimize the merits of American tanks, particularly the General Sherman, and that he concedes that German soldiers 'know the dangers represented by these tanks when they appear in large numbers.'"

From the German newspaper to the American military intelligence bulletin, barely eight months had elapsed since the first US-built M4 Sherman medium tank advanced across a World War II battlefield. The event had taken place in October 1942, during the pivotal battle of El Alamein on the Egyptian frontier.

General Bernard Law Montgomery's British Eighth Army was sorely in need of tanks, many of its own already smoking wrecks and blackened hulls after months of fighting against the Axis *Panzerarmee Afrika* under the command of Gen. Erwin Rommel, who had become legendary during the fighting in North Africa and earned the nickname "Desert Fox."

The M4 Sherman was just becoming available in quantity at the time of El Alamein, and the initial thought was to train American tank soldiers to operate them and send a fully equipped 2nd Armored Division to Egypt under the command of Gen. George S. Patton, arguably the US Army's foremost authority on the deployment of the tank in battle. But time was of the essence. Training would take months, and the need was acute. The decision was made to ship the tanks directly to Montgomery's Eighth Army.

The Sherman initially compared favorably to the *PzKpfw. III* and *IV* tanks that made up the vast majority of German armored fighting vehicles in North Africa, and when the subject issue of Tactical and Technical Trends was published, Operation Husky, the Allied offensive in Sicily, was underway. Three years of hard fighting remained, up the Italian boot, into Normandy, across France and the Rhine to the heart of the Reich, and with the Soviet Red Army moving inexorably westward on the Eastern Front.

The Sherman was there on all fronts and deployed to the Pacific Theater as well. With the combat to come, this tank, produced in greater numbers than any other during World War II with the exception of the legendary Soviet T-34, became a legend in its own right. Its silhouette would become familiar to friend and foe alike—and both its proponents and detractors would evaluate its performance with great passion. For now, though, the Military Intelligence Division of the War Department in Washington, DC, chose to disseminate a German newspaper story that it

Opposite: A long line of M4 Sherman tanks equipped with Deep Wading amphibious equipment awaits the order to load into the belly of a Landing Ship, Tank (LST) at the French La Pecherie Naval Base in Tunisia for the journey to the beaches of Sicily. Operation Husky began on July 10, 1943, and involved approximately six hundred Allied tanks. By this time the Germans recognized the formidability of the Shermans when amassed in large numbers. *Voyageur Press collection*





Opposite: US Navy LST-77 offloads M4 Sherman tanks at Anzio, Italy, in May 1944. By this time, German comments on the Sherman were published, and the Allied offensive in Italy was underway. Voyageur Press collection

considered complimentary, believing it would bolster the confidence of the men who rode the Sherman into harm's way.

The article related, "The German High Command maintains a museum of captured tanks—or one might say a kind of technical school where some of our most highly skilled engineers and a number of officers specially chosen for the purpose are testing those monsters. . . . These tests are carried out in a forest region of central Germany where the terrain up-hill and down-hill is intersected by ravines and all manner of depressions of the ground. The results are embodied in long tabulations not unlike those prepared by scientific laboratories, and in recommendation to the designers of German counter-weapons, who pass them on to the tank factories and armament shops. . . ."

The Germans criticize the performance of the British cruiser tank and the American Stuart light and Lee medium tanks in service with the Soviets and the British through the Lend-Lease program, labeling each of these a failure. However, the commentary on the Sherman is quite different.

"This criticism does not apply, however, to the most recent North American development, the 'General Sherman,'" the German author continues. "The latter represents one of the special accomplishments of the North American laboratories. With its turtle-shaped crown rising in one piece above the 'tub' and turret it must be regarded as quite a praiseworthy product of the North American steel industry. The first things to attract attention are serial construction and fulfillment of the almost arrogant requirements of the North American automobile industry as regards speed, smooth riding, and streamlined contour of the ensemble. It is equipped with soft rubber boots, that is with rubber padding on the individual treads of the caterpillar mechanism. It seems largely intended for a civilized landscape or, to put the matter in terms of strategy, for thoroughly cultivated areas in Tunisian Africa and for the invasion of Europe. It represents the climax of the enemy's accomplishments in this line of production."

The article concludes with a broad assessment of the Allies' intended purpose for the Sherman. "We look upon the 'General Sherman' as embodying a type of strategy that is conceived in terms of movement: it is a 'running' tank, all the more since the Americans most likely expected to use it on readily passable terrain, that is on European soil. The caliber of its principal weapon is slightly in excess of the maximum so far attained by the foreign countries. It is spacious inside. Its aeroplane motor is of light weight. It is a series product, the same as its cast-steel coat, the latter being modeled into an almost artistic-looking contour, in such manner as to offer invariably a curved, that is a deflecting surface to an approaching bullet."

In a sense, the Germans were prophetic with their appraisal of the Sherman. The tank was built for speed, sacrificing armor protection and heavier firepower in exchange for it. The Sherman was also intended for mass production, ease of maintenance, and reliability on the battlefield, while its vast numbers would be capable of overwhelming the relatively low German industrial output of PzKpfw. V Panther medium and PzKpfw. VI Tiger heavy tanks, precision weapons with substantial armor and powerful main guns that were expensive to produce and prone to mechanical breakdown.

By the end of World War II, swarms of Shermans advancing steadily eastward did simply overwhelm the opposing German armor. However, the cost was great, and the relative merits and shortcomings of the Sherman tank will be the subject of debate as long as historians continue to study warfare.

Certainly, however, the Sherman had staying power. Seventy-five years after the prototype entered its evaluation period in the United States, elderly Sherman tanks are still seen in service. From the Soviet Union to the Sinai, the Pacific to the Balkans, and the Mediterranean Basin to the hedgerows of France, the ubiquitous Sherman has compiled an incomparable service history and remains one of the most enduring and iconic weapons developed during the twentieth century.

PART I

ARMORED HERITAGE



CHAPTER ONE

Early Tank Development

On the morning of September 15, 1916, on the stalemated Somme front during World War I, the British Army changed the course of land warfare with the deployment of forty-nine Mark I tanks. It was the first time in history that these armor-clad behemoths, armed with machine guns and cannon, entered combat.

The tanks crept forward toward their starting positions near the French towns of Flers and Courcellette, and within minutes thirteen of them had fallen away due to mechanical difficulties. Another fourteen broke down just after the signal was given to begin their assault on the German lines. Eventually, only nine were left operational, but these were enough to panic many of the enemy troops they confronted.

For the next three days, the British tanks advanced here and there, supporting the infantry and penetrating about a mile beyond the original German defensive line. Although they never concentrated in great numbers, their mere presence was enough to signal that a new era in warfare had begun. The first armored action at the Somme was in fact the validation of years of experimentation, testing, engineering, and design work by visionary, military-minded individuals in several countries.

Those ponderous, rudimentary tanks that took the field at the Somme and later during the Great War were the precursors of the spearheads that swept across Europe with speed, firepower, and armor protection a generation later during

This image of a Mark I series British tank purportedly shows the armored vehicle in combat during World War I. The tank is attempting to clear a shell hole, with its sponson-mounted cannon pointing in the direction of the enemy. *William Ivor Castle/George Grantham Bain Collection Library of Congress*





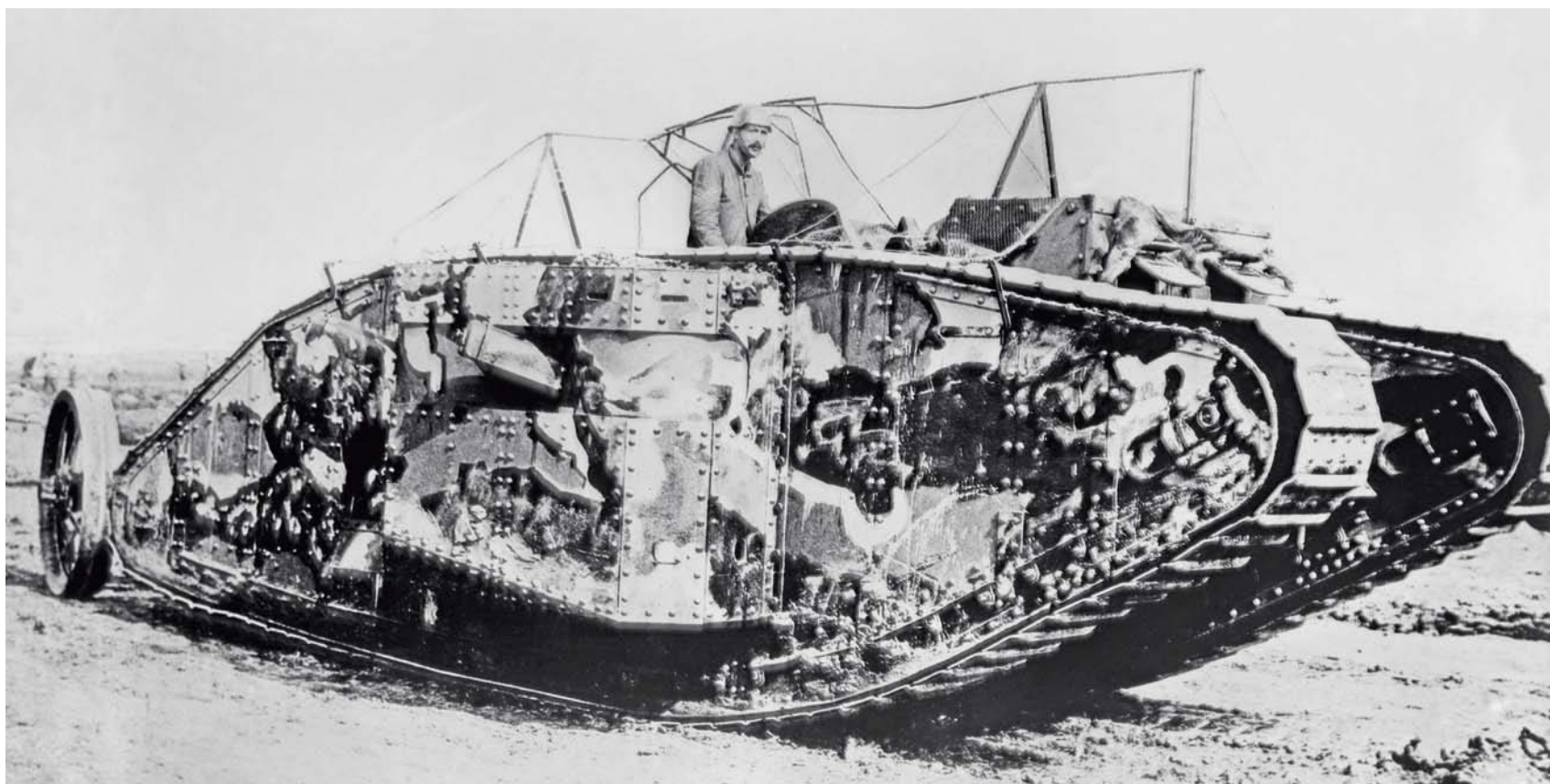
World War II, and even those modern marvels that prowl the battlefields of the new millennium.

Along the way there were milestones, and one of the most significant was the introduction of the Medium Tank M4, the Sherman that appeared in the mid-twentieth century and remained in service for decades. A few Shermans are probably still clanking along somewhere around the globe, and now seventy-five years after its introduction, the Medium Tank M4 remains an icon of the most catastrophic war in the history of mankind. The Sherman traces its lineage back to the first conceptions of armored warfare, and it was the product of half a century of technological advancement coupled with the development of tactical doctrine.

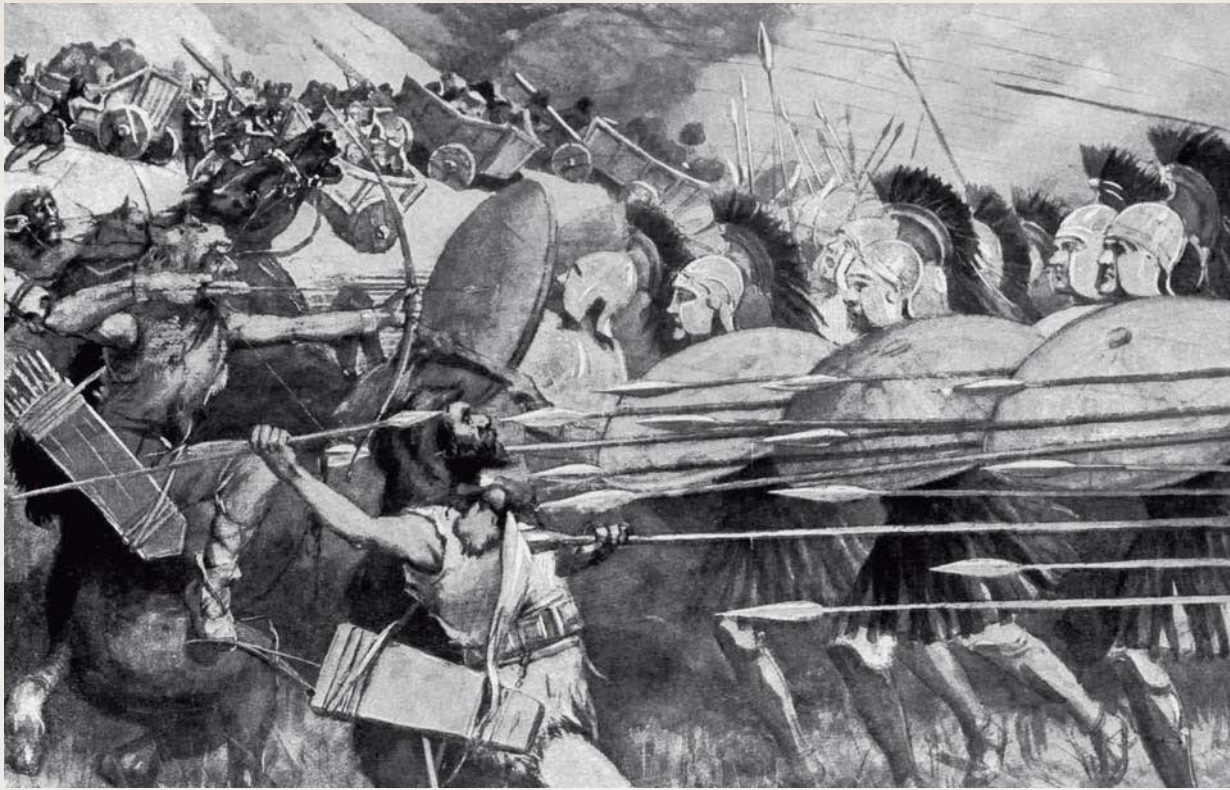
Since the earliest days of combat, the idea of the armored fighting vehicle, impervious to enemy fire, transporting combat troops in relative safety and breaking through the enemy's defenses, had fascinated inventors, conquerors, and kings. The siege engine of the Assyrians, the Greek phalanx, Hannibal's Carthaginian war elephants, and Leonardo da Vinci's circular tank of heavy wood reinforced with sheet metal preceded the experimental caterpillar-tracked "cart that carries its own road," a design of the 1770s conceived by British inventor and politician Richard Lovell Edgeworth. It was Edgeworth who realized that the caterpillar track was much more practical to facilitate cross-country movement than the standard wheel.

Opposite: A column of infantrymen follows a British tank somewhere near the front lines during World War I. This Mark I features a double-wheeled steering tail and a triangular wire mesh apparatus to deflect German grenades. The British Army changed the course of land warfare when it deployed forty-nine Mark I tanks—the first time that these armor-clad behemoths entered combat. *National Library of Scotland*

Below: A British Mark I series tank is painted in a camouflage scheme designed by Solomon Joseph Solomon, an artist and pioneer in the art of military concealment. Note the trailing wheel that helped the tank to maintain its course in rough terrain. *George Grantham Bain Collection Library of Congress*







Left: A Macedonian phalanx moves forward against the enemy during an action known to history as the Battle of the Carts. The phalanx was, in essence, an early attempt to mass the protection of individual soldiers' shields and coordinate their movement in a primitive human "tank." Public Domain

Opposite: At the Battle of Zama, Carthaginian war elephants under the command of the fabled leader Hannibal, and with archers firing from their backs, crush Roman soldiers. The war elephants were primitive tanks of sorts, whose presence on the field certainly gave pause to any enemy. The Roman legions were ultimately victorious, however, at Zama in 202 BC. Henri-Paul Motte/Public Domain

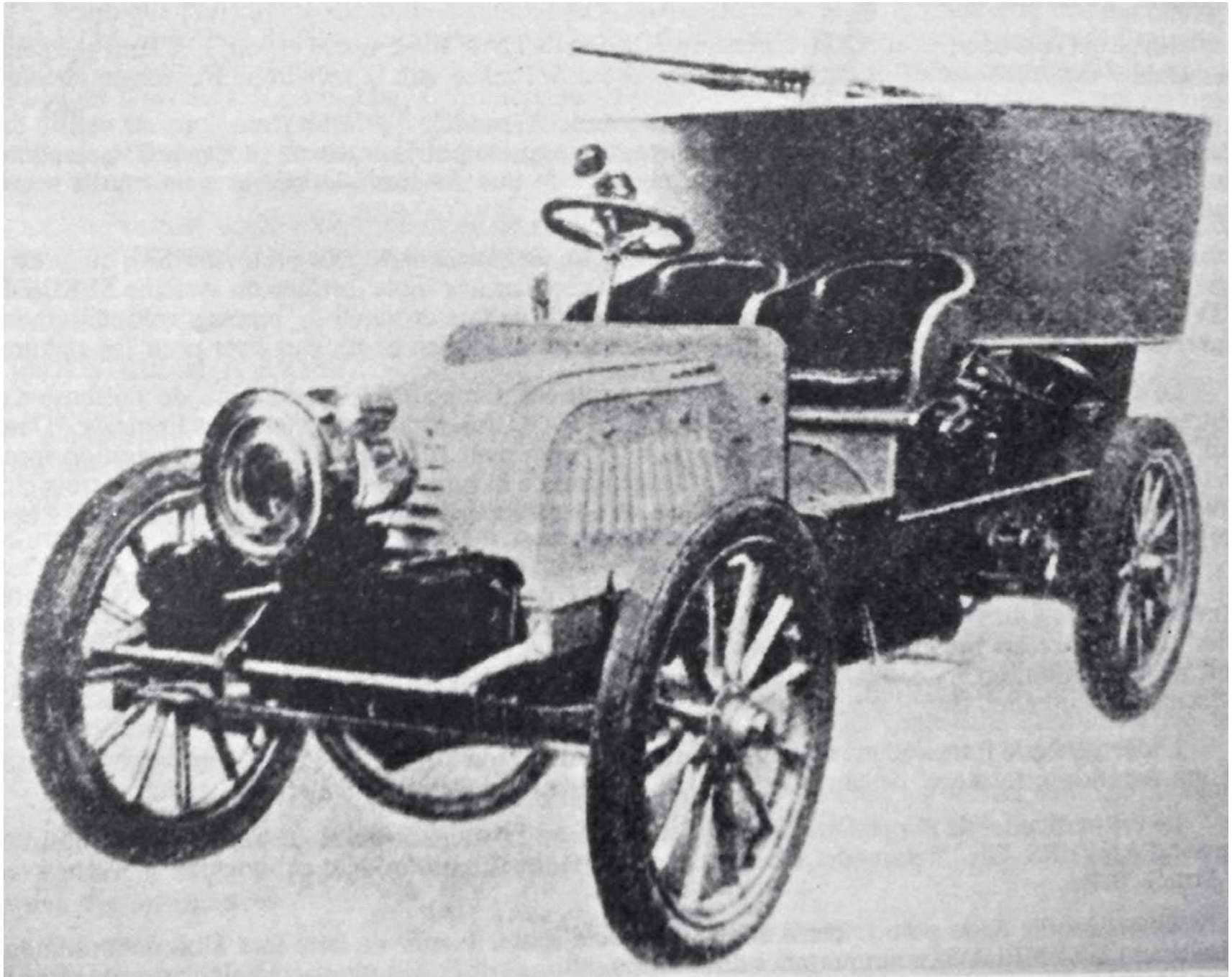
Although these precursors to the modern tank were a diverse lot, they shared one common attribute—each was dependent for mobility on the brute strength of men or animals. During the mid-nineteenth century, the introduction of armor plating revolutionized the construction of naval vessels and war at sea. It was, therefore, not a great leap for such riveted iron protection to be applied to land vehicles. However, the problem of propulsion persisted. During the Crimean and Boer wars, the steam engine was employed on a limited basis to move artillery, but it proved impractical. The emergence of the internal combustion engine powered by petroleum-based fuel provided a breakthrough.

With the identification of the components necessary to produce a practical armored fighting vehicle, pioneer innovators set to work. For a while, though, the idea of

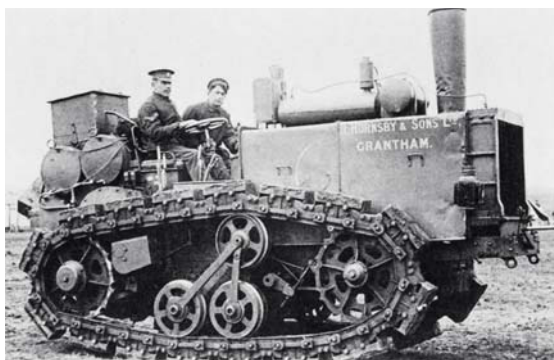
the tank remained fodder for science fiction as related in "The Land Ironclads," a short story written by H. G. Wells and published in the December 1903 edition of the *Strand* magazine published in Great Britain. Wells's imagination conjured up great machines that were "... essentially long, narrow and very strong steel frameworks carrying the engines, and borne upon eight pairs of big pedrail wheels, each about ten feet in diameter, each a driving wheel and set upon long axles free to swivel round a common axis ... [with] look-out points at small ports all-around the upper edge of the adjustable skirt of twelve-inch iron plating which protected the whole affair. ..."

Meanwhile, by 1900 there was more to the development of the tank than just imagination. The immediate forerunner of the tank, the armored car, was coming into its own. Most of the armored cars that



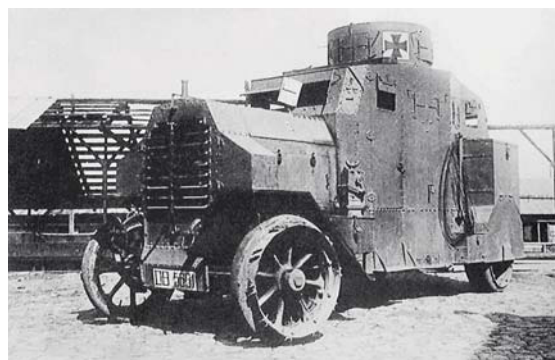


The Charron-Girardot et Voigt 1902 was an early armored car of French manufacture. The vehicle included an open gun tub with 7mm armor mounting a Hotchkiss machine gun. The vehicle demonstrates the growing emphasis on mobile military firepower in the early twentieth century. *Public Domain*



Left: A pair of British soldiers demonstrates the Hornsby Chain Tractor manufactured by R. Hornsby & Sons Ltd. The chain tractor was operated with primitive caterpillar tracks. Agricultural engineer Richard Hornsby was a pioneer in tractor development, and early tank designers borrowed extensively from his work.

Public Domain



Middle: The German Panzerspähwagen Ehrhardt E-V/4 armored reconnaissance car presented a towering silhouette; however, it carried armor up to 9mm thick and mounted three machine guns. The vehicle entered service during World War I.

Public Domain



Right: The Belgian army took an early interest in the development of the armored car, and with the outbreak of World War I its inventory of the vehicles was substantially higher than that of other nations. In this photo, a trio of Belgian soldiers appears to be posing for the photographer as they point their Hotchkiss machine gun toward a distant enemy. *Public Domain*

appeared in the early years of the twentieth century were conversions from civilian automobiles. Prior to World War I, the Belgian army was a pioneer in the deployment of the armored car, particularly the Minerva 38CV, a modified automobile mounting an 8mm Hotchkiss machine gun.

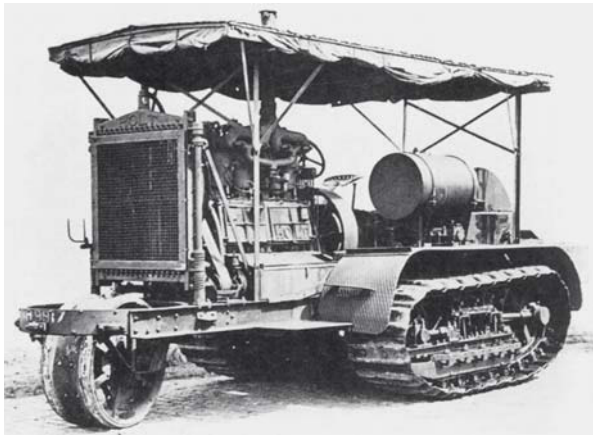
Early British armored car development was within the sphere of the Royal Navy, and Petty Officer L. Gutteridge introduced a design built around the Ford Model T with armor plating 5mm thick. In France, the Charron-Girardot et Voigt was unveiled in 1905. Largely the work of Russian army officer M. A. Nakasjidze, the Charron resembled a steel box with a simple turret on top. The German Panzerkraftwagen Ehrhardt BAK (Ballon Abwehr Kanone), an antiaircraft weapon, and the Austrian Austro-Daimler were also products of pre-World War I research and development in Europe.

An early American contribution to the development of the tank came from the Holt Manufacturing Company based in Stockton, California. In 1894, the company began manufacturing tractors powered by internal combustion engines paired with chassis that moved atop caterpillar tracks. Initially intended for the farming, mining, and forestry industries and other endeavors that required traction and some degree of mobility in terrain that was often muddy, steep, and difficult for a wheeled vehicle to traverse, the Holt tractors, particularly the Models 45, 75, and 120, were modified for military use.

The Holt tractors, some powered by large, six-cylinder engines, were ideal as prime movers for artillery and as recovery vehicles or for towing mobile repair, headquarters, and workshop facilities behind the front lines during World War I. By the autumn of 1916, a Holt Company executive announced that the firm had sold approximately one thousand tractors to Great Britain for use in the war effort. He added, “We have had nothing to do with putting armor on them, or placing machine guns, but some of our men at Aldershot, England, recently were notified that the British Government intended to arm some of the tractors and use them for work other than the usual towing of big guns.”

Indeed, the British intended just that. In 1912, Australian Lancelot Eldin de Mole had offered a tank design to the War Office, but the idea gained little support. De Mole’s work was discounted again in 1914 and 1916, but after the end of World War I he received a small measure of recognition for his contribution to British tank development. In the autumn of 1914, Lt. Col. Ernest Swinton persuaded the War Office to purchase Holt tractors for use in the field and then advocated their development into fighting machines.

With its experience in armored cars, the Royal Navy took the lead in tank development and the prototype “Big Willie,” also known as “Mother,” entered production as the Mark I in early 1916. The stalemate on the Western Front contributed to a quickened pace in British tank development, and



the rhombus-shaped series that followed the Mark I resulted in numerous improvements.

The Mark IV was produced in the greatest numbers and was the centerpiece of the massed British armored attack at the Battle of Cambrai fought November 20 through December 8, 1917. More than 1,200 Mark IV tanks were built during the Great War in two variants, Male and Female, the Male carrying .30-caliber machine guns and a 6-pounder gun, while the Female was armed only with machine guns.

At the same time that the British heavy tank was being tested in battle, a division of labor began to emerge with the Medium Tank Mark A, dubbed the Whippet, being deployed as a swift weapon that could exploit breaches in enemy lines. The Whippet embodied the concept of mobility. Its top speed of eight miles per hour was considerably faster than that of larger tanks of the era.

Meanwhile, Captain Levasseur, an artillery officer in the French Army, peddled his “automobile cannon project” to anyone who would listen. Levasseur mounted an armored box on a caterpillar-tracked chassis and placed a 75mm cannon inside. Some historians consider the project the first real attempt to develop a workable tank. Levasseur was rebuffed several times, and the French military establishment killed his proposal for good in 1908.



Nevertheless, the coming of the Great War revived and energized French tank development, and Gen. Jean Baptiste Eugene Estienne, remembered today as the “Father of the Tank” in the French army, championed the experimentation. The inefficiency of the French military bureaucracy and a heated rivalry among manufacturing concerns resulted in two heavy tanks being developed simultaneously, and both the Schneider CA 1 and the Saint-Chamond entered production. The ponderous Schneider was twenty-one feet long and weighed fourteen tons, while the Saint-Chamond weighed twenty-three tons.

Despite such infighting that was detrimental to the war effort, the French produced the finest tank of World War I. Automaker Louis Renault, at the urging of Estienne, initiated a light tank design, and the resulting FT-17 literally broke new ground. The FT-17 included a turret with a 360-degree traverse and mounted a 37mm Puteaux SA 1918 main gun along with a pair of 8mm Hotchkiss machine guns. More than 2,700 were built, and the generation of tanks

Left: The Allies utilized the Holt Model 120 tractor in large numbers as an artillery prime mover during World War I. It featured caterpillar tracks that later became standard on armored vehicles. Later models were manufactured without the front tiller wheel.
Public Domain

Above: French soldiers pause in the rugged Vosges Mountains of southern France during the spring of 1915. They appear to be operating a Holt artillery tractor to haul a heavy 155mm field gun into firing position.
Public Domain

Right: Soldiers fire machine guns from their Davidson-Cadillac semi-armored anti-aircraft military car, the first American military anti-aircraft vehicle. The anti-aircraft car was a variant of the basic armored car designed by Royal P. Davidson and produced by Cadillac in 1915. *Public Domain*



Below: Cadets of the Northwestern Military and Naval Academy stand at attention behind one of their Davidson-Cadillac armored cars during a 1915 convoy from Chicago to San Francisco. The school's commandant, Royal P. Davidson, led the convoy and designed the vehicle that was later produced by Cadillac. *Public Domain*

