

How did the development of technology affect world war 1

[Technology](#), [Development](#)



Technology greatly affected the way in which wars were fought, especially in World War I. The inventions of the repeating machine gun, the development of poison gas, and the introduction of the first tanks caused armies to fight using the bunkering method. This allowed men to huddle in trenches along what are called skirmish lines and throw, lob, and fire by other means weapons to cause damage while men were protected by about 4 to 5 feet deep earth. This caused men to fight in rear or echelon columns behind tanks can basically caused defensive fighting tactics resulting in drawn out protracted battles. Technology was the single biggest factor in WW1 being waged the way it was.

Military strategy had yet to fully understand how to use recent technological advances (particularly, the machinegun, heavy artillery, and the submarine). As a consequence, old strategies turned out to be completely useless (or, worse, massive failures). The manner in which most of the fighting in WW1 occurred reflects military leadership slowly groping about to fully understand how these new technologies worked, and the implications for strategy and tactics. That is, how to effectively use these new weapons, and, on the other side, how to effectively counter their use.

The sad fact is that military leadership on both sides during WW1 was sadly lacking in intelligence and the ability to grasp that these new technologies had radically changed warfare, and that a corresponding whole new paradigm of tactics was required. Their stupidity cost Europeans 4 long years of war, and 10 million deaths. In 1915, new technology had once again created weapons that were more powerful and deadly than the old ones. For

one thing, in April 1915, Germany began using poison gas as a weapon. The gas burned lungs & blinded eyes. Soon, both sides used gases against each other. Germany continued developing deadly gases. Actually, the aforementioned tanks, airplanes, and chemicals were generally the only significant technologies invented during the First World War. And, overall, none proved to be a significant factor.

Chemical warfare, while horrible, proved to be unwieldy and unpredictable, and relatively easy to counter. After some limited successes against unprepared opponents, the use of chemical gas had very little tactical benefit; the recognition of this limited utility is that after widespread use in 1915 - except for the short-lived effects of the introduction of mustard gas in 1917 - gas was abandoned by both sides as an effective tactic.

Tanks likewise had very limited impact, though for different reasons. They were not available in sufficient numbers to make a difference when first deployed, and the technology was too new - WW1 tanks were too slow, too expensive, had too little armor, and broke down much too fast. Tanks in WW1 were "proof-of-concept", in that they showed a potential to change warfare, but the actual tank available was not up to the task of being useful. Tanks played no real role in the collapse of the German Army in 1918, and had extremely limited successes on the battlefield.

Airplanes were in a similar position as tanks - the technology was really too new and immature for effective combat use. At best, the airplane provided better observation and reconnaissance ability than previously available, but, in a static trench-warfare setting (with the commonly poor European

weather), the amount of benefit this provided is easy to overstate. Tactical and strategic bombing was non-existent; the airplane would have to wait for the wars of the 30s and 40s before becoming a useful (and game-changing) weapon.

On the other hand, several technologies which had been developed over the prior several decades first saw widespread use in European-style combat during WW1, and it was these technologies which proved to define the fighting. A short list would include: the practical submarine, machineguns, mass quantities of long-range artillery, effective hand grenades and mortars, and barbed wire. Lesser-known technologies which weren't as immediately apparent in impact, but still had a noticeable one, were: the diesel engine, motorized vehicles (primarily the tractor, not the automobile/truck), steam turbines, advances in field medicine, and improvements in many chemical processes (most noticeably, the introduction of smokeless powder for firearms, and radically more effective high explosives).

The impact of the aforementioned "pre-existing" technologies varied according to how they were used. Technologies like the submarine, diesel engines, and steam turbines were accompanied by radically new (and innovative) ideas on how to use them - WW1 proved the place where these new ideas were first employed, and they often resulted in a revolutionary new fighting style. Other technologies, such as the machine gun, barbed wire, heavy artillery, and smokeless powder, were simply incorporated into the existing military mindset, without the accompanying re-examination of their potential impact. This set of technologies had been previously

employed in a variety of smaller wars (primarily in colonial and non-European settings) in one-sided manners, and their impacts against similarly-equipped opponents were never really considered. It is these technologies which are primarily responsible for the wholesale slaughter of WW1 - the prevailing military theory had failed to consider the characteristics of this recent technology advances, and thus, missed the radical change required by their employment by both sides of a conflict.

Overall, brand-new technology in WW1 had no real impact; rather, it was the first use of many existing technologies in a European-style mass combat situation which defined the radical form of WW1. Most of the fighting during World War I was carried out by land armies in Europe. Naval forces were used primarily to prevent food and supplies from reaching their destinations. Airplanes were also used in a major military campaign for the first time during World War I, although they played a small role in the war's outcome.

World War I saw advances in the area of battlefield weapons. At the start of the war, the principal infantry weapon was the bolt-action magazine rifle, which was capable of firing 6 to 10 aimed shots per minute. The machine gun, which had been developed in the 1880s, was just gaining acceptance by the major European armies as the war began. It could fire rifle ammunition automatically at a rate of 200 to 250 shots per minute. It was an excellent defensive weapon, capable of devastating waves of cavalry and infantry. Other important weapons developed during the war were the flamethrower, the hand grenade, poison gas, and the tank. All these weapons were

designed to restore mobility to the troops huddled in the trenches avoiding machine gun and heavy artillery fire.

Naval operations were carried out primarily in the North Atlantic Ocean and in the North Sea. At the start of the war, Britain had decisive superiority in heavy battleships, which were the cornerstone of sea power at that time. But Germany eventually challenged British dominance of the seas with its submarine, or U-Boat, campaign.

The same year, Germany began using submarines to disrupt Allied seaborne traffic and prevent supplies from reaching Britain. In 1915 Germany instituted a submarine blockade around Britain. From February 1915 to September 1915 and again in 1917, Germany used unrestricted submarine warfare, sinking ships without any warning. Germany's use of unrestricted submarine warfare angered the Allies and resulted in the United States entering the war.

Airplanes were first used in large numbers for military purposes during World War I. At the start of the war, airplanes and other aircraft were generally used for reconnaissance and for observing and adjusting artillery fire. Both the Allies and the Central Powers made extensive use of small tethered balloons for observing stationary battlefronts, of dirigible balloons for scouting at sea, and of airplanes for scouting coastal waters. Later, airplanes specially equipped for combat came into wide use on the western front. Both sides also employed airplanes carrying machine guns and light bombs to attack enemy ground forces. Shore-based naval aircraft capable of landing on water proved useful in antisubmarine warfare.