

Technology in wwi

Technology



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In these battles, thousands of casualties were common, and tens of thousands of casualties were considered vegetating. However, during WWI, mankind witnessed the loss of over 15 million lives. Along with those lost, another 20 million are wounded; an entire generation of humanity was dead. There was also a polar shift in the nature of warfare. World War I did not see the formal battles of the former century. No, World War I was a war of attrition. It was a war fought in deadlock. Trenches delved the landscape from the beaches of northern France, all the way to the Swiss Alps.

Conditions were absolutely terrible in these trenches. Troops were starving from lack of supplies, sick from lack of clean water, and their feet were rotting off from standing in filth for days on end. Not only did this war stretch across Europe, battles were fought as far south as northern Africa and as far west as the shores of the Black Sea. Troops from countries as far away as New Zealand and Japan participated in the war. Technological innovation was responsible for this massive shift in the nature of warfare.

The mass production of weapons and arrival of aircraft to the war front were among the main factors that contributed to the new definition of war. At the dawn of WWI, the industrial revolution had been raging for over fifty years. Mass production had a huge effect on the quantity and variety of weapons available to armies. New defensive weapons made winning the war, or even advancing a few miles, all but impossible for armies on either side of the fight. The machine gun was the most foreboding defensive weapon on the battlefield.

The version seen on the WWI battlefield was invented by Sir Hiram Stevens Maxim in 1884. Over the thirty years since its conception, the Maxim gun had been virtually perfected. This perfected version was called the Vickers gun, adopted by the British in 1912. However, the Germans and Russians used what were essentially copies of the 19th century Maxim gun. World War I also saw the dawn of chemical warfare, which was also enabled by industrial and technological innovations. The most infamous version seen on the battlefield was mustard gas.

The origin of weapons mustard gas is noted to have taken place around the year 1913, when British chemist Hans Thayer Clarke began experimenting with a process to produce mustard gas with higher purity. During one of his experiments, a flask containing this hazardous material broke, and Clarke was hospitalized for two months. He submitted a report to the German Chemical Society, which caught the interest of the German Empire and initiated research on the use of it had devastating effects on its victims. Victims experienced itching and widespread skin irritation within twenty-four hours of exposure.

This was followed by the development of large, fluid-filled blisters on any exposed skin or mucous membranes. These blisters caused debilitating pain. A British nurse who was helping soldiers who had been exposed to mustard gas during World War I commented: They cannot be bandaged or touched. We cover them with a tent of propped-up sheets. Gas burns must be agonizing because usually the other cases do not complain, even with the worst wounds, but gas cases are invariably beyond endurance and they cannot help crying out. Mustard gas also affected the respiratory system.

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If inhaled, the mustard gas causes blisters and bleeding in the respiratory system which was frequently fatal. On the battlefield, the gas was typically dispensed from canisters, which were either thrown or fired upwind of the enemy. Approximately 10 years after the Wright Brothers made their first flight at Kitty Hawk, aircraft began to be recognized by militaries across the world as an imminent military threat. In 1909, Italian staff officer Giulio Douhet noted that: The sky is about to become another battlefield no less important than the battlefields on land and sea...

In order to conquer the air, it is necessary to deprive the enemy of all means of flying, by striking at him in the air, at his bases of operation, or at his production centers. We had better get accustomed to this idea, and prepare ourselves. Contrary to popular conception at the time, Douhet was correct. Aircraft would prove invaluable in bombing and reconnaissance missions and the need to defend against bombers and reconnaissance planes sparked the need for fighter aircraft.

The first instance of air to air combat occurred on September 8, 1914 when Russian pilot Porchik Nesterov's rammed an Austrian reconnaissance aircraft. Further instances of air to air combat provoked the development of aircraft borne machine guns. Initially there were problems with mounting the large weapons because they had to be mounted where they could be fired without damaging the propeller. To solve this problem, designers in multiple countries began to develop interrupter gear, a mechanism that prevented the gun from firing when the propeller was in its path.

The first confirmed victory by a pilot using interrupter gear occurred on July 1, 1915. The development of new aircraft technology resulted in aircraft that were orders of magnitude better at the end of the war than those used in the beginning. All in all, the new technology available to World War I military forces caused a shift in the nature of warfare and shocked the entire world. There was a new definition of warfare, in which man was reduced to crouching in a ditch with the chance of a Heimlich or airborne attack looming over constantly.

Then, when soldiers were ordered out of the trenches they were mowed down in larger numbers by enemy machine gun nests. The machine gun and the combat aircraft were responsible for changing the understood nature of warfare in World War.