

University of North Carolina at Asheville

Technology of World War I and the Soldiers Who Experienced It

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When war was declared between Great Britain and Germany on 14 August 1914 the popular enthusiasm for the government's stance was overwhelming amongst the people of the two nations. There had not been a war in Europe for almost a century, and it seemed as if the people were glad to finally have one. The U.K. Daily Mirror News recorded the excitement of the British people on 4 August 1914 saying:

The King and Queen, accompanied by the Prince of Wales and Princess Mary, were hailed with wild, enthusiastic cheers when they appeared at about eight o'clock last night on the balcony of Buckingham Palace, before which a record crowd had assembled... the cheering was renewed with increased vigor and soon after 11.00 pm the King and Queen and Prince of Wales made a further appearance on the balcony and the crowd once more sang the National Anthem, following this was hearty clapping and cheering.¹

The Great War had begun, and it seemed as if everyone wanted to be a part of it.

From the very start the nations that were preparing to fight called on their citizens, encouraging them to enlist. To do this they depicted the war as a glorious chance for young soldiers to demonstrate their bravery while honoring their nation and its leaders. Early British and German propaganda posters showed romantic depictions of brave soldiers on horseback, attacking the enemy as soldiers had done in previous wars. (See Appendix 1) The leaders of each nation called on their citizens to join the armed forces using words such as "honor" and "duty."

U.K. Daily Mirror News Report: 4 August 1914," in First World War.Com, 20 October 2002, <<http://www.firstworldwar.com/source/dailymirror1914.htm>> (18 September 2005).

In King George V's message to the troops of the Expeditionary force he states, "You are leaving home to fight for the safety and honour of my Empire... I have implicit confidence in you my soldiers. Duty is your watchword, and I know your duty will be nobly done."²

When the call to arms was sent out, the response was made with great fervor. As one modern historian notes, "The men needed no convincing, and were no doubt enthusiastic about the prospects of participating in the "big show." However, in the nearly one-hundred years that had passed since the last war in Europe new military technologies had been conceived that would greatly change the way in which this war was fought. A children's book published in 1918 entitled hi the Ranks explains:

"You know fighting is not as it used to be," he said, "when the soldiers met on the field and faced each other. Nowadays, most of the fighting is done in the trenches... But trench fighting is not the only kind. There are battles in the air... Many of the cannons they use are so big it takes half a dozen men to fire them. Sometimes these guns are mounted on automobiles...The battles in the air are fought by aeroplanes. They are big machines which have wings and fly in the sky like birds... The tank is another machine which is feared by the enemy. It is a big war automobile run by gasoline. It is covered with heavy iron and armed with a big cannon."⁴

²"King George V's Message to British Troops 12 August 1914," in First World War.Com. <http://www.firstworldwar.com/source/georgev_aug1914.htm> (18 September 2005).

Alfred Emile Comebise, Ranks and Columns: Armed Forces Newspapers in American Wars (Westport, CT: Greenwood Press, 1993), 68.

⁴ "In the Ranks," in World War I Document Archive. June 2005, <http://www.lib.byu.edu/~rdh/wwi/comment/4_kids/ranks.html> (20 September 2005).

While this story succeeds in illustrating the use of new technologies on the battlefields of World War I, it fails to show their impact upon the soldiers who witnessed them in action. The new military technologies present on the battlefields of the Western Front would not only change the way in which war was fought but would serve to change the spirit with which it was fought as well.

The new technologies that debuted on the Western Front during World War I had both positive and negative effects upon the soldiers who witnessed them. For these soldiers, the new technologies served two main ends. The technologies contributed to the destruction of the perception of war as a glorious and noble act which allowed young men a chance to prove their courage and bravery by doing their duty; and second, the technologies introduced onto the battlefield served to make the soldier's situation more tolerable and often improved their chances of survival.

Technology and the Destruction of the Romantic Perception of War

There were several new technologies introduced during World War I that contributed to the destruction of the perception of war as a glorious and noble act. The new technologies did this in a variety of ways. The use of gas, or chemical weapons, on the Western Front certainly helped bring about a change in the perception of war. During the war, armies on both sides of the conflict used gas with the same effectiveness. Several different types of gas were employed on the Western Front. The use of gas with the intention of causing mass casualties was practically unheard of before World War I and the soldiers who became the test subjects for this new

technology would pay dearly for it.

The first effective use of gas on the Western Front occurred on 22 April 1915 near Ypres, France. At 5:30 pm, after waiting all day for a favorable wind, the Germans opened over a thousand cylinders of chlorine gas and watched as the yellowish-green cloud made its way towards the allied trenches. As the war continued, chemists on both sides experimented with over 3,000 different chemical agents coming up with approximately twelve that proved effective on the battlefield. While chemists experimented in the laboratory, tacticians came up with new ways to deliver the gas to the enemy. Artillery shells and mortars were common ways of releasing gas. Armies on the Western Front also employed projectors. A projector consisted of a cylindrical tank containing the gas which was connected to a system of hoses that, providing the correct wind conditions, would release the gas in the direction of the enemy trenches.⁶

The effects of gas on soldiers varied depending on the type of gas used, as well as how long they were exposed to it. The first gas to be used was chlorine gas but this was eventually superseded by mustard gas which became the most commonly used gas on the Western Front. Mustard gas was also responsible for inflicting the largest number of casualties.⁷

Gas, unlike other weapons, usually did not kill those exposed to it immediately. In fact, one of the most terrible aspects of gas was that it caused such terrible suffering that death was

L. F. Haber, The Poisonous Cloud: Chemical Warfare in the First World War (New York, NY: Clarendon Press, 1986), 15-16.

James H. Hallas, Doughboy War: The American Expeditionary Force in World War I (Boulder, CO: Lynne Rienner Publishers, 2000), 179.

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John Ellis, Eye-Deep in Hell: Trench Warfare in World War I (New York, NY: Pantheon Books, 1976), 65-67.

Propped up against a wall was a dozen men - all gassed - their colours were black, green and blue, tongues hanging out and eyes staring - one or two were dead and others beyond human aid, some were coughing up green froth from their lungs - as we advanced we passed many more men lying in the ditches and gutterways - shells were bursting all around.⁹

Thus for soldiers fighting on the Western Front, the pain of being exposed to gas was almost worse than dying, and the pain of watching other soldiers suffer from it was simply unforgettable.

Another characteristic of gas that made it a particularly dreadful weapon was that it was a constant threat that could come at anytime, and it could kill soldiers who were not even aware that they had been exposed to it. Sherwood Eddy, an observer of the war on the Western Front, witnessed victims of a gas attack and pointed out that most of them were unaware of the gas until it was too late:

It [gas] is, as we have said, invisible and odorless, so the men receive no warning, and consequently do not put on their masks. They do not know that they are being gassed until hours afterwards, when they find that they are burned head to foot. Here are twenty men lying in this tent, suffering from this new torture... The next man was taken with vomiting after the gas shells exploded. Seven of his fourteen companions sleeping in the

⁹Elmer Cotton, "Lance-Sergeant Elmer Cotton," World War I: Soldier's Stories, September 2005, <http://www.bbc.co.uk/history/war/wwone/soldiers_stories_gallery_05.shtml> (23 August 2005).

platoon and explains the necessity of the mask and how to wear it at the front. After this each platoon is drilled a few minutes with masks on. Another short lecture and we are thru with school.¹³

The use of gas on the Western Front had multiple effects upon soldiers. Soldiers exposed to gas were more often than not left in suffering and misery rather than death. Also, gas was a constant and sometimes undetectable threat. Lastly, the defense offered to soldiers in the event of a gas attack was commonly sub-par. In these ways gas warfare contributed to the end of the romantic perception of war because its characteristics made those who experienced it feel more like the defenseless victims of torture rather than soldiers who were proving their bravery and courage. In his autobiography, Robert Graves, a Welch Fusilier summed up the feelings of many soldiers with regards to gas when he wrote, "It's damnable. It's not soldiering to use stuff like that... It's dirty and it will bring us bad luck."¹⁴

Apart from gas there were several other technologies introduced on the Western Front that played a role in the destruction of the perception of war as a glorious act. Among these new weapons were the machine gun and the flamethrower. These two weapons allowed the individual soldier to wield more firepower than he had ever been capable of before. Similar to gas, these weapons were employed extensively by armies on both sides of the conflict.

The firepower that the average individual soldier carried in the early Twentieth century was usually a basic bolt-action rifle. This was not the first war in which soldiers carried bolt-

Martin Marix Evans, ed., American Voices of World War I: Primary Source Documents 1917-1920 (Chicago, IL: Fitzroy Dearborn Publishers, 2001), 35.

¹⁴As cited in Donald Richter, Chemical Soldiers: British Gas Warfare in World War I (Lawrence, KA: University Press of Kansas, 1992), 50.

action rifles, however, this technology had seen great advancements in the decades prior to the outbreak of World War I. The German standard issue infantry rifle was the Mauser Gewehr model 1898, the British standard issue was the Lee-Enfield 0.303-inch rifle, the French army issued the Lebel early in the war and later changed to the Berthier due to design flaws, and the U.S. standard issue was the Springfield. The bolt-action rifle was certainly an improvement over the older muzzle loading rifle but was still limited to only twelve to fourteen rounds per minute on average.¹⁵ Thus, the firepower of the average soldier's weapon was quite small compared to that of the new machine guns which could fire approximately 300 rounds per minute depending on the model.

The machine gun was primarily a defensive weapon since it was too heavy to move quickly and usually took several men to operate. In his memoirs Charles Rooke describes the defensive power of this new technology, "It was mostly machine guns that worried us. I have seen one machine gun and one sniper hold up a battalion for hours and in the finish had to [be] blown out by artillery."¹⁶ Charging a machine gun armed with only a bolt-action rifle was practically suicide for a soldier. Colonel Frederick M. Wise of the 5th Marines, 2nd Division wrote in his diary:

¹⁵Major H. B. C. Pollard, A History of Firearms (New York, NY: Lenox Hill Publishing, 1973), 254-259.

¹⁶ Charles Rooke, "A Few of My Experiences Whilst On Active Service," in World War I Document Archive June 2005, <<http://www.duffin.demon.co.uk/family/rooke.htm>> (23 September 2005).

Captain Charley Dunbeck told me how Lieutenant Heiser had died. Leading an attack on a German machine gun nest, Heiser had been literally decapitated. His head had been cut clean from his body by a stream of machine gun bullets that caught him in the throat.¹⁷

For soldiers on the offensive, attacking a position defended by even a single machine gun would have been more comparable to slaughter than warfare.

Like the machine gun, the introduction of the flamethrower during World War I also gave the individual soldier an unheard of amount of firepower. A single man armed with this new weapon became capable of clearing out a trench or an entire dug-out with little help.

Furthermore, the flamethrower accomplished this task in a rather gruesome way. Sergeant Dan Edwards recalled witnessing a French "liquid fire man" in action:

He was just as calm and cool as if he was working on a farm. Placid and methodical, he walked along, looking for dugouts. When he spotted one, over he'd go. Just as he got to the entrance, he'd unlimber the nozzle of his canned flame and yell: "Raus mit ihm!" in a tone of voice that meant, "Get the hell out of there!" As he yelled, he trained the nozzle down into the dugout and let her rip... he'd look it over carefully to be sure it was on fire. He didn't give them a chance to "Raus mit ihm" Then he would go onto the next one and do it all over again.¹⁸ The machine gun and the flamethrower contributed to the destruction of the romantic

perception of war as a noble act in two main ways. First, these weapons allowed a single soldier

¹ Frederick M. Wise, A Marine Tells It to You (New York: J.H. Sears and Company, 1929), 221, as quoted in Hallas 95-96. 18

Lowell Thomas, This Side of Hell (Garden City, NY: Doubleday, 1968), 204-205, as quoted in Hallas, 80-81.

devastating effects. Ralph L. Williams, a combat engineer, recalled this scene while preparing to attack a German position in the French town of Vaux:

I had just passed my good friend Gus and asked him whether we were ready to move into it. He said, 'Okay, let's go!' In that instant, a shell burst over us and a hunk of shrapnel just missed me, but killed Gus instantly. I shook Gus and screamed, 'Oh no, pal, not you!' but he was gone.²⁰

The experience of Ralph L. Williams was not an uncommon one since massed barrages of artillery fire were routinely carried out on the Western Front. Some of these bombardments were considered light barrages. A light barrage usually consisted of about half a dozen shells every ten minutes. However, the larger bombardments consisted of thirty shells in a company sector every minute. The shells were fired by both howitzers and ordinary field guns, and were a mix of high explosives and shrapnel.²¹ Shelling was such a common aspect of a soldier's day that it was often referred to in their diaries in a rather nonchalant voice. One soldier's daily diary simply notes:

September 11th

Quiet day in the billets. Evening shelled with high explosives. About 2:00 p.m. Lord Brook, Colonel Clark and several men were wounded by a shell on the readjust outside the Chateau, about 50 yards from our billets. Apart from that everything quiet.⁹⁹

²⁰ Evans, 87.

²¹ Ellis, 62.

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"A.C.M. Thomson, "Field Diary of A.C.M. Thomson: June 1915-May 1917," in World War I Document Archive June 2005 <<http://www3.ns.sympatico.ca/mackay4/pop1.htm>> (22 September 2005).

Thus, soldiers on the Western Front were faced with another constant threat from which they could do little to defend themselves. A letter found on the body of an unknown German officer explains, "After crawling out through the bleeding remnants of my comrades, and through the smoke and debris, wandering and running through the midst of the raging gunfire in search of refuge, I am now awaiting death at any moment." Artillery created a sense of resignation to one's fate and helplessness which made it difficult for soldiers to compare themselves to the heroic and glorious soldiers of previous wars.

Another effect that the massed artillery barrage had on soldiers of the Western Front was that it forced them to dig in and essentially live in a hole, helpless to improve their situation, while the shells were falling. An official German Observer at the Third Battle of Ypres described the experience of being in a trench during a bombardment saying:

Our soldiers sit in their dugouts, and cannot do anything but trust to luck. Just now the infantry must keep quiet; only the big guns are talking. The waiting infantry is, as it were, locked in a prison. The men cannot get out, nor can any approach them.. The way to them is fraught with fearful danger.

All around spatter steel splinters, shrapnel bullets, stones and earth. If you are hit you are dead or crippled. What shall one do? One smokes incessantly, until the air in the narrow shaft is heavy enough to cut. That is bad, but it somehow helps one to endure the horrors of the situation.

You live for days in the closest contact with your comrades in a contracted space.

You cannot move, and are unable to think clearly. Never did I realize how difficult it can be to lead a human life. There is nameless agony in it.

The continuous bombardment forced soldiers on the Western Front to live life underground in demoralizing conditions where all they could do was wait it out and hope that the next shell was not for them. These conditions certainly did not match the romantic image of war and its brave participants.

Another impact that the massed artillery barrage had on soldiers was a psychological disorder simply named "shell shock." Shell shock was a disorder which today is known as Post Traumatic Stress Disorder but during World War I was unheard of. The effects of shell shock on a soldier remained long after the shelling, and even the war, had ended.

Soldiers who were inflicted with the unknown illness were diagnosed as casualties "without physical cause." In the first few years of the war these soldiers were accused of being cowards who were merely trying to get out of fighting and they were often court-martialed for desertion. In the later years of the war, however, soldiers who suffered from this unknown trauma of the mind were sent to special clinics known as NYDN hospitals, which simply stood for "not yet diagnosed, nervous." Soldiers afflicted by shell shock often went blind, deaf, or

²⁴Max Osborn, "Artillery Devastation at Third Ypres," in First World War.Com 31 January 2004 <<http://www.firstworldwar.com/diaries/ypres3osborn.htm>> (18 September 2005).

dumb. Other symptoms included paralysis, loss of memory, and uncontrollable shaking.²⁵

Furthermore, doctors knew little about the nature of shell shock, as is evident in this passage from a document published in 1917 by the Manchester University Medical School:

The term [shell shock] is vague; perhaps its use implies too much; but this is not altogether a disadvantage, for never in the history of mankind have the stresses and strains laid upon body and mind been so great or so numerous as in the present war. We may therefore expect to find many cases which present not a single disease, not even a mixture, but a chemical compound of diseases, so to speak. In civil life, we often meet with cases of nervous breakdown uncomplicated by any gross physical injury. We are scarcely likely, for example, to meet it complicated by gas poisoning and a bullet wound.

Yet such combinations as these - or worse - are to be met with in the hospitals every day.²⁶

Thus, what made the experience of soldiers with shell shock even worse was that the disease was practically unknown, and a cure seemed completely out of reach.

The ability of the nations fighting on the Western Front to carry out sustained massed artillery barrages also contributed to the destruction of the formerly held perception of war as a noble act in several ways. Artillery, like gas, was a constant threat to soldiers on the Western Front. While the massed artillery barrages that the soldiers experienced did not always kill, they constantly threatened to, which was perhaps even worse. Also, the use of artillery forced those

²⁵Peter Jennings and Todd Brewster, The Century (New York, NY: Doubleday, 1998), 61.

²⁶Graffton Elliot Smith, MA. MD. FRCP. FRS. and Tom Hamerley Pear Bsc, Shell Shock and its Lessons (Manchester, England: Manchester University Press, 1917), 3.

being fired upon to live underground like rats for hours and sometimes days on end.

Furthermore, the artillery tactics of World War I created a new form of battle casualty, men inflicted with a psychological disorder that would stay with them long after the guns fell quiet. Thus, the use of artillery on the Western Front made soldiers feel more like helpless prisoners incapable of improving their situation than men proving their bravery and courage on the field of battle.

Technology and its Positive Impact on the Soldier's Experience

While many of the new technologies that debuted on the Western Front served to destroy the conception of war as a glorious and noble act that allowed young men to prove their courage and bravery by fulfilling their duty, others served a different purpose. Many of the new technologies that appeared on the battlefields of the Western Front improved the situation of the soldiers who came in contact with them. The new technologies improved a soldier's experience during the war in a variety of ways.

Several new technologies that were present on the Western Front acted as a distraction from the war. These new technologies served as forms of entertainment for soldiers. The introduction of the airplane to the battlefield was one of these new technologies. The warplane was designed to be a mechanism of destruction, but in its early years it proved to be less of a threat to soldiers on the front, and more of a form of entertainment. Herbert Ward, stationed in France during the war wrote, "German aeroplanes paid frequent visits to Gerardmer, dropping innumerable bombs, they accomplished no military damage."²⁷ This sentiment was a common

Herbert Ward, "Mr. Poilu: Notes and Sketches with the Fighting French," in World War I Document Archive June 2005 <<http://www.lib.byu.edu/~rdh/wwi/memoir/MrPoilu/Wardl.htm>> (23 September 2005).

one. The airplane was a new and relatively untested technology, as such it was often more of a threat to the pilot than to anyone on the ground. Edward D. Toland wrote in his diary of airplanes saying, "On the whole... aeroplane bombs are ineffective, they never hit what they are aimed at, and the number that can be taken up is limited."²⁸ One soldier stationed in Mourmelon with the American Field Service recorded in his diary an early encounter with an airplane:

Sometimes they come to drop bombs, and on those occasions every man is ordered to hide in the bombproofs, or at least get within doors, or under trees where he can't be seen. When the aeroplanes first came the soldiers and civilians alike, instead of being afraid, used to crowd into the streets and open fields to see the sight, and now, to keep the Germans from spotting garrisoned villages... the general staff has issued an order punishing with fifteen days in jail any person in Mourmelon who is so careless as to let himself be hit by an aeroplane bomb.²⁹

The diary entries, postcards, letters, and personal memoirs of soldiers seem to always record one's encounter with an airplane, no matter how briefer arbitrary it may have been. The following diary entry by a member of an artillery unit is characteristic of entries found in the writings of soldiers on the Western Front: August 31st

²⁸Edward D. Toland, The Aftermath of Battle: With the Red Cross in France (New York, NY: The MacMillan Company, 1916), 127

²⁹"Diary of Section VIII American Ambulance Field Service, 1917," in World War I Document Archive

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"Diary of Section VIII June 2005
<<http://www.lib.byu.edu/~rdh/wwi/memoir/SSU8/DiarySSU8.html>> (15 September 2005).

Fine and warm. Awakened by our antiaircraft guns shelling German plane right over our billets.³⁰

Other entries that record encounters with airplanes are more dramatic, though they usually are written with a sense of entertainment. Captain P.M. Wood recalled:

The evening of the 14th we moved back to support position with the rest of our battalion.

There I witnessed two grand conflicts, one in the air and one on the ground. Our planes • were everywhere, we evidently had air superiority, the only time I have ever seen it so.

The sky was full of them circling and dipping. Both Boche [German] and Allies, each maneuvering for positions, then a flame would burst and down like a rocket some poor devil would go to his death. I saw six go down in 15 minutes.³¹

Witnessing this new technology in action was often an exciting event for soldiers as many of them had never seen an airplane with their own eyes prior to being stationed on the Western Front. The airplane was a new technology that gave soldiers a glimpse at the future, to a time when the war had would end. In this way the airplane often served to improve the experiences of soldiers on the Western Front and make life a bit more tolerable. The airplane demonstrated man's capability to do great things, and this was important to soldiers whose daily lives exposed them to the worst of humanity.

There were other new technologies present on the battlefields of Europe during World War I that had a similar impact on soldiers to that of the airplane. One of these new technologies was

³⁰ A.C.M. Thomson, "Field Diary".

³¹ Evans, 125.

the camera. The camera was similar to a soldier's personal diary and provided soldiers on the Western Front a pastime.

World War I was one of the most photographed wars, however, unlike previous wars it was the first time that soldiers themselves, as opposed to professional photographers, were taking the pictures. Prior to the outbreak of the war the Kodak camera, invented by George Eastman in 1888, had been continuously refined. In 1912, Kodak introduced the Vest Pocket Kodaks followed in 1916 by the No. 3 A Autographic Special. These cameras were small and affordable and the quality of their pictures was reasonably good. Thus, a camera was not an uncommon part of the personal kit taken by soldiers into the trenches.²

Soldiers took photographs of the things they saw around them in their daily lives. For many soldiers this was the first time they had ever been away from their hometown, let alone their country. The camera provided the latest and most high-tech way of recording their travels. They used their cameras to record everything. One of the most interesting uses of the camera was in instances of fraternization with the enemy. An American serving with the Ambulance Field Service in France wrote this in a letter home:

I have had many long talks with soldiers and they tell me most interesting stories. One told me that he got on such friendly terms with the Germans in a trench ten metres away that he asked them all to put their heads above the trench so as to take their photos, and I have been promised a copy.³³

³²Jane Carmichael, First World War Photographer (New York, NY: Routledge, 1989), 10-11.

"With the American Ambulance Field Service in France: Personal Letters of a Driver at the Front," in World War I Document Archive June 2005 <<http://www.lib.byu.edu/~rdh/wwi/memoir/Buswell/AAFSI.htm>> (22 September 2005).

Photography reminded soldiers that there was more to war than just death and destruction.

Sometimes, there was some good to be found buried in the mud and stench of the trenches, and when it was found it was worth photographing so it would never be forgotten.

While airplanes and photography improved the situation men found themselves in at the front by offering a glimpse at the future or giving them a pastime, other technologies improved the chances of surviving wounds incurred on the front. World War I served as a catalyst for the giant leaps made in medical technology during the early Twentieth century. According to The Oxford History of Western Medicine:

In the battlefield of the first war, the preeminent medical problems were the control of infections, the advancement of surgical techniques, and wound control. During that period, the management of compound fractures, wound infection, and the development of plastic, reconstructive surgery all advanced.³⁴

The new medical technologies allowed soldiers on the Western Front to survive wounds that in previous wars would have certainly spelled their death. World War I was the first major war in which battle casualties exceeded deaths due to disease and infections. (See Appendix 4) The medical technologies provided to soldiers on the Western Front were the best available. Gustavus M. Blech recorded in his memories a description of the new military hospital complexes built in Europe during the war as compared to those he had seen back in the United States:

³⁴ Irvine Loudon, ed., The Oxford Illustrated History of Western Medicine (Oxford, UK: Oxford University Press, 1997), 109.

comparable to a military city for the sick and wounded... in the hospital centers, scientifically equipped institutions with modern operating rooms, with bacteriological and pathological laboratories, with x-ray appliances costing enormous sums, with a capacity eighty times larger than our largest institutions.³⁵

The advancements in medical technology during World War I were astounding and served to improve the conditions of soldiers who incurred wounds while fighting on the Western Front.

One of the new medical technologies to emerge as a direct result of the fighting in World War I was reconstructive surgery. Among the wounds suffered by soldiers during the war, facial injuries, and the resulting deformities they caused were among the most numerous. The new weapons introduced during the war as well as the tactics employed by armies on both sides of the conflict lead to an overwhelming number of soldiers who were left grotesquely disfigured. The deformities sustained by soldiers during World War I were recognized as both a surgical and a social problem. Surgeons in countries on all sides of the conflict began experimenting with ways to improve these veteran's lives through surgery.³⁶

The desire these disfigured veterans had to return to a productive normal life at the end of the war was the main driving force behind the advancement of reconstructive surgery. The new field of reconstructive surgery excited and amazed disfigured veterans as well as the civilian population, hi the New York Times Magazine, Mrs. William K. Vanderbilt described her 1916

Gustavus M. Blech, Personal Memoirs of the World War (Chicago, IL: The American Journal of Clinical Medicine, 1924), 150-151.

³⁶™.

Elizabeth Haiken, Venus Envy: A History of Cosmetic Surgery (Baltimore, MD: The Johns Hopkins University Press, 1997), 29-30.

³⁵

visit to an American Ambulance Hospital stationed in France. In the article she notes the importance of reconstructive surgery:

The Ambulance takes these torn, mutilated beings, without any faces, who would otherwise be unbearably repulsive and almost certainly economically dependant, and makes them over. It turns them into normal men again, so that they can live normal lives, as individuals, and be of service to their country as well.³⁷

Reconstructive surgery did a great deal to improve the lives of soldiers not only during the war but well after it had ended. This new technology allowed many veterans the ability to return to a productive civilian life despite the terrible injuries they had suffered during the war.

Another medical technology employed by hospitals that served soldiers wounded on the Western Front was the X-ray machine. During World War I doctors, for the first time, had access to X-ray machines. The X-ray had been discovered in 1895 by Wilhelm Rontgen through an unexpected observation. The medical potential of the X-ray was realized soon afterwards and the new technology was integrated into hospital practice. This was the beginning of a move towards non-invasive diagnostic procedures. For his discovery Rontgen was awarded the Prussian Order of the Crown by Kaiser Wilhelm II.³⁸

The X-ray machine was of great value to doctors with regards to soldiers who had been wounded by bullets, shrapnel, and other flying debris. The new technology allowed surgeons and doctors to see where the object was in the victim's body as well as the actual damage it had done

³⁷ Mrs. William K Vanderbilt, Miracles of Surgery on Men Mutilated in War, "New York Times Magazine", 16 January 1916, 6:1.

³⁸ Loudon, 109.

technology during World War I that served to improve the wounded soldier's condition by making it less likely that he would die from wounds and the infections that they often lead to.

World War I saw advancements made in many technologies as well as the debut of some completely new technologies. These technologies had a wide variety of impacts upon soldiers who were stationed in the trenches on the Western Front. Some of the new technologies increased the destructive firepower of armies and individual soldiers; in a variety of ways these technologies served to destroy the romantic concept of war as a glorious act. At the same time other technologies of the Western Front served totally different purposes. Some of the new technologies allowed soldiers to take their minds off of the war, if only for a short while. Other technologies improved the chances of a soldier surviving wounds that he may have sustained while fighting on the front line. Still other technologies introduced during the war allowed soldiers to more easily assimilate themselves back into civilian life despite the traumas and wounds they suffered during their service.

The new technologies introduced during World War I that soldiers on the Western Front experienced had a profound impact upon them. These technologies allowed for the destruction of the romanticized concept of war while at the same time helped improve the situations that many soldiers found themselves in both during and after the war.

Appendix 1



British Propaganda Poster



German Propaganda Poster

Duffy, Michael, ed. "Propaganda Posters." In First World War.Com. 24 September 2005.

<<http://www.firstworldwar.com/posters/index.htm>> (20 September 2005).

Appendix 2

Country	Total Casualties	Death
Austria-Hungary	100,000	3,000
British Empire	188,706	8,109
France Germany	190,000	8,000
Italy Russia USA	200,000	9,000
Others	60,000	4,627
	419,340	56,000
	72,807	1,462
	10,000	1,000

Total Casualties and Deaths from Gas in World War I

Duffy, Michael. "Weapons of War: Poison Gas." In First World War.Com. 5 May 2002.

<<http://www.firstworldwar.com/weaponry/gas.htm>> 23 September 2005

Appendix 3

Light artillery

British	[redacted]	a.599 i
American	[redacted] 1,025	

Heavy artillery

British	[redacted] 372	
American	[redacted]	701

Light artillery shells

British	[redacted]
American	[redacted]

Heavy artillery shells

British	[redacted] 1,153,000
American	[redacted]

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British and American Production of Artillery and Ammunition in the First 20 Months
of War.

Statistics Branch of the General Staff. "The War With Germany: A-Statistical Summary."

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Appendix 4

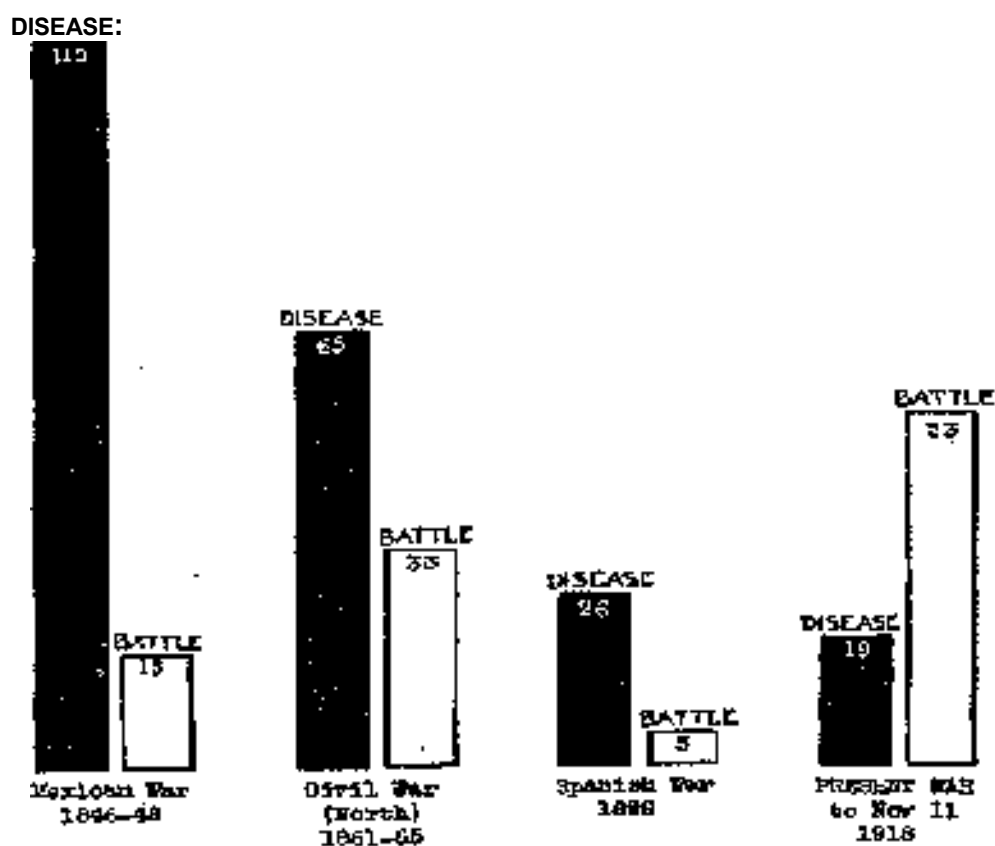


Diagram 54.—Disease and battle deaths.

Disease and Battle Deaths

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