

Italy thus joined France, Great Britain, and Russia, who had previously been known as the Triple Entente, but now were called the Allied Powers, or Allies.

By this time, the Germans had come to the aid of the Austrians. A German-Austrian army defeated the Russian army in Galicia and pushed the Russians far back into their own territory. Russian casualties stood at 2.5 million killed, captured, or wounded. The Russians had almost been knocked out of the war.

Encouraged by their success against Russia, Germany and Austria-Hungary, joined by Bulgaria in September 1915, attacked and eliminated Serbia from the war. Their successes in the east would enable the German troops to move back to the offensive in the west.

✓ Reading Check **Contrasting** How did the war on the Eastern Front differ from the war on the Western Front?

The Great Slaughter

MAIN IDEA New weapons and trench warfare made World War I far more devastating than any previous wars.

HISTORY & YOU How do new inventions and strategies affect warfare today? Read on to learn about the new inventions and trench warfare that characterized the fighting in World War I.

On the Western Front, the trenches dug in 1914 had by 1916 become elaborate systems of defense. The Germans and the French each had hundreds of miles of trenches, which were protected by barbed-wire entanglements up to 5 feet (about 1.5 m) high and 30 yards (about 27 m) wide. Concrete machine-gun nests and other gun batteries, supported further back by heavy artillery, protected the trenches. Troops lived in holes in the ground, separated from each other by a strip of territory known as no-man's-land.

Tactics of Trench Warfare

Trench warfare baffled military leaders who had been trained to fight wars of movement and maneuver. At times, the high command on either side would order an offensive that would begin with an artillery barrage to flatten the enemy's barbed wire and leave the enemy in a state of shock. After "softening up" the enemy in this fashion, a mass of soldiers would climb out of their trenches with fixed bayonets and hope to work their way toward the enemy trenches.

The attacks rarely worked because men advancing unprotected across open fields could be fired at by the enemy's machine guns. In 1916 and 1917, millions of young men died in the search for the elusive breakthrough.

In just ten months at Verdun, France, 700,000 men lost their lives over a few miles of land in 1916. World War I had turned into a **war of attrition**, a war based on wearing the other side down by constant attacks and heavy losses.

War in the Air

By the end of 1915, airplanes had appeared on the battlefield for the first time in history. Planes were first used to spot the enemy's position. Soon, planes also began to attack ground **targets**, especially enemy communications.

Fights for control of the air occurred and increased over time. At first, pilots fired at each other with handheld pistols. Later, machine guns were mounted on the noses of planes, which made the skies considerably more dangerous.

The Germans also used their giant airships—the zeppelins—to bomb London and eastern England. This caused little damage but frightened many people. Germany's enemies, however, soon found that zeppelins, which were filled with hydrogen gas, quickly became raging infernos when hit by anti-aircraft guns.

✓ Reading Check **Explaining** Why were military leaders baffled by trench warfare?

See page R50 to read an excerpt from Arthur Guy Empey's *An American Soldier Remembers World War I* in the Primary Sources and Literature Library.

SCIENCE, TECHNOLOGY, & SOCIETY

The New Technology of World War I

Warfare in the trenches produced unimaginable horrors. Battlefields were hellish landscapes of barbed wire, shell holes, mud, and injured and dying men.

Trench warfare left World War I in stalemate, with neither side able to gain more than a few miles of ground. Both the Allied Powers and the Central Powers attempted to gain an advantage with new weapons and war machines. Machine guns, poison gas, fighter airplanes, and tanks were all introduced or vastly improved during World War I.

In the end, new technology did not break the stalemate. It did, however, cause the deadliest war the world had yet seen. Nearly 10 million people perished during World War I, which became known as "the war to end all wars."

Writer H. G. Wells described the impact of the new war technology:

"Now, there does not appear the slightest hope of any invention that will make war more conclusive or less destructive; there is, however, the clearest prospect in many directions that it may be more destructive and less conclusive. It will be dreadfuller and bitterer: its horrors will be less and less forgivable."

—H. G. Wells, "Civilization at the Breaking Point," *New York Times*, May 27, 1915

Machine guns could fire faster than other types of guns. Here, machine gunners wear masks to protect themselves from poison gas.



German fighter pilot Manfred von Richthofen, better known as the Red Baron, stands in front of a Fokker DV-II biplane. Airplanes could drop small bombs on the enemy's trenches and fire machine guns at the troops.



In 1916 the British became the first to use armored tanks in war. Armor protected the tanks from machine-gun fire. Caterpillar tracks allowed tanks to cross barbed-wire entanglements.

DOCUMENT-BASED QUESTIONS

- Explaining** How did each of the inventions shown here provide an advantage on the battlefield?
- Analyzing** What did H. G. Wells believe was the overall impact of the new war technology? Do you agree? Explain.

Technology and Trench Life Define Total War

The politicians and generals who led their nations into World War I anticipated an old-fashioned conflict. But once the Allies and Germans reached a stalemate, the armies, for the first time, dug miles of trenches opposite one another as protection against exploding shells and machine-gun fire. Infantry soldiers rotated into and out of the trenches five days at a time. It was a world of mud and blood, poison gas and high-explosive shells overhead. The tedium of trench life was broken most often by one army or the other charging out of its trenches and into the enemy's barbed wire and machine guns.



Steel helmets protected infantrymen against shrapnel, high-speed splinters of metal from exploding shells.

Earhtones replaced vibrant blues and reds in infantry uniforms.

Machine guns shot down soldiers charging across the no-man's-land between opposing trenches in great numbers.

COLD COMFORT IN THE TRENCHES

Trenches provided infantry soldiers with their only protection against enemy fire. They were a necessary innovation for armies fighting in close contact with powerful and accurate weapons. Hot food was brought forward in containers to discourage cooking fires. In some places, soldiers fired at the enemy trenches at every opportunity. In others, enemies took a "live and let live" approach. These attitudes often depended upon the level of exhaustion the soldiers were feeling.



The area between opposing trenches was called no-man's-land.

Soldiers fixed bayonets, long knives, on front of their rifles to charge the enemy.

When possible, mud floors were covered with wooden planks.

Barbed wire in front of a trench slowed or stopped an enemy attack.

Gas masks provided the only hope of protection from the chlorine gas clouds that came before enemy charges.

TECHNOLOGY AND THE HORROR OF WAR

Tanks made their first appearance in battle during World War I. Though slow and cumbersome, they foreshadowed the destruction mechanized warfare would bring. Airplanes fought one another for the first time as well, and both sides experimented with bombs and machine guns in aerial attacks on ground positions. These applications of technology left a deep, terrifying impression on soldiers showing the dark side of industrialization.

ANALYZING VISUALS

1. **Comparing** How well do you think infantry soldiers' uniforms protected them from modern weapons? How has this changed since World War I, and why?
2. **Theorizing** Think about the images of early tanks and airplanes shown here. Why do these devices seem primitive to us today?

