

= Western Front (World War I) =

The Western Front was the main theatre of war during World War I. Following the outbreak of war in August 1914 , the German Army opened the Western Front first by invading Luxembourg and Belgium , then gaining military control of important industrial regions in France . The tide of the advance was dramatically turned with the Battle of the Marne . Following the race to the sea , both sides dug in along a meandering line of fortified trenches , stretching from the North Sea to the Swiss frontier with France . This line remained essentially unchanged for most of the war .

Between 1915 and 1917 there were several major offensives along this front . The attacks employed massive artillery bombardments and massed infantry advances . However , a combination of entrenchments , machine gun nests , barbed wire , and artillery repeatedly inflicted severe casualties on the attackers and counter @-@ attacking defenders . As a result , no significant advances were made . Among the most costly of these offensives were the Battle of Verdun , in 1916 , with a combined 700 @,@ 000 casualties (estimated) , the Battle of the Somme , also in 1916 , with more than a million casualties (estimated) , and the Battle of Passchendaele , in 1917 , with roughly 600 @,@ 000 casualties (estimated) .

In an effort to break the deadlock , this front saw the introduction of new military technology , including poison gas , aircraft and tanks . But it was only after the adoption of improved tactics that some degree of mobility was restored . The German Army 's Spring Offensive of 1918 was made possible by the Treaty of Brest @-@ Litovsk that marked the end of the conflict on the Eastern Front . Using the recently introduced infiltration tactics , the German armies advanced nearly 100 kilometres (60 miles) to the west , which marked the deepest advance by either side since 1914 and very nearly succeeded in forcing a breakthrough .

In spite of the generally stagnant nature of this front , this theatre would prove decisive . The inexorable advance of the Allied armies during the second half of 1918 persuaded the German commanders that defeat was inevitable , and the government was forced to sue for conditions of an armistice . The terms of peace were agreed upon with the signing of the Treaty of Versailles in 1919 .

= = 1914 ? German invasion of France and Belgium = =

At the outbreak of the First World War , the German Army (consisting in the West of seven field armies) executed a modified version of the Schlieffen Plan , designed to quickly attack France through neutral Belgium before turning southwards to encircle the French army on the German border . Belgium 's neutrality was guaranteed by Britain under the 1839 Treaty of London ; this caused Britain to join the war at the expiration of its ultimatum at 11 pm GMT on 4 August . Armies under German generals Alexander von Kluck and Karl von Bülow attacked Belgium on 4 August 1914 . Luxembourg had been occupied without opposition on 2 August . The first battle in Belgium was the Siege of Liège , which lasted from 5 ? 16 August . Liège was well fortified and surprised the German army under von Bülow with its level of resistance . However , German heavy artillery was able to ruin the key forts within a few days . Following the fall of Liège , most of the Belgian army retreated to Antwerp and Namur , with the Belgian capital , Brussels , falling to the Germans on 20 August . Although the German army bypassed Antwerp , it remained a threat to their flank . Another siege followed at Namur , lasting from about 20 ? 23 August .

For their part , the French had five Armies deployed on their borders . The pre @-@ war French offensive plan , Plan XVII , was intended to capture Alsace @-@ Lorraine following the outbreak of hostilities . On 7 August the VII Corps attacked Alsace with its objectives being to capture Mulhouse and Colmar . The main offensive was launched on 14 August with 1st and 2nd Armies attacking toward Sarrebourg @-@ Morhange in Lorraine . In keeping with the Schlieffen Plan , the Germans withdrew slowly while inflicting severe losses upon the French . The French advanced the 3rd and 4th Armies toward the Saar River and attempted to capture Saarburg , attacking Briey and Neufchâteau , before being driven back . The French VII Corps captured Mulhouse after a brief engagement on 7 August , but German reserve forces engaged them in the Battle of Mulhouse and

forced a French retreat .

The German army swept through Belgium , executing civilians and razing villages . The application of " collective responsibility " against a civilian population further galvanised the allies , and newspapers condemned the German invasion and the army 's violence against civilians and property , together called the " Rape of Belgium " . (A modern author uses the term only in the narrower sense of describing the war crimes committed by the German army during this period .) After marching through Belgium , Luxembourg and the Ardennes , the German Army advanced , in the latter half of August , into northern France where they met both the French army , under Joseph Joffre , and the initial six divisions of the British Expeditionary Force , under Sir John French . A series of engagements known as the Battle of the Frontiers ensued . Key battles included the Battle of Charleroi and the Battle of Mons . In the former battle the French 5th Army was almost destroyed by the German 2nd and 3rd Armies and the latter delayed the German advance by a day . A general Allied retreat followed , resulting in more clashes such as the Battle of Le Cateau , the Siege of Maubeuge and the Battle of St. Quentin (Guise) .

The German army came within 70 km (43 mi) of Paris , but at the First Battle of the Marne (6 - 12 September) , French and British troops were able to force a German retreat by exploiting a gap which appeared between the 1st and 2nd Armies , ending the German advance into France . The German army retreated north of the Aisne River and dug in there , establishing the beginnings of a static western front that was to last for the next three years . Following this German setback , the opposing forces tried to outflank each other in the Race for the Sea , and quickly extended their trench systems from the North Sea to the Swiss frontier . The resulting German occupied territory held 64 % of France 's pig iron production , 24 % of its steel manufacturing and 40 % of the total coal mining capacity , dealing a serious , but not crippling setback to French industry .

On the Entente side , the final lines were occupied by the armies of the Allied countries , with each nation defending a part of the front . From the coast in the north , the primary forces were from Belgium , the British Empire and France . Following the Battle of the Yser in October , the Belgian forces controlled a 35 km length of Belgium 's Flanders territory along the coast , known as the Yser Front , along the Yser river and the Yperlee canal , from Nieuwpoort to Boesinghe . Stationed to the south was the sector of the British Expeditionary Force (BEF) . Here , from 19 October until 22 November , the German forces made their final breakthrough attempt of 1914 during the First Battle of Ypres . Heavy casualties were suffered on both sides but no breakthrough occurred . After the battle Erich von Falkenhayn reasoned that it was no longer possible for Germany to win the war , and on 18 November 1914 he called for a diplomatic solution , but Chancellor Theobald von Bethmann Hollweg , Paul von Hindenburg and Erich Ludendorff disagreed . By Christmas , the BEF guarded a continual line from the La Bassée Canal to south of St. Eloi in the Somme valley . The greater part of the front , south to the border with Switzerland , was manned by French forces .

= = 1915 ? Stalemate = =

Between the coast and the Vosges was a westward bulge in the trench line , named the Noyon salient for the captured French town at the maximum point of advance near Compiègne . Joffre 's plan for 1915 was to attack this German salient on both flanks to cut it off . The British would form the northern attack force by pressing eastward in Artois , while the French attacked in Champagne .

On 10 March , as part of what was intended as a larger offensive in the Artois region , the British army attacked at Neuve Chapelle in an effort to capture the Aubers Ridge . The assault was made by four divisions along a 3 kilometre (2 mi) front . Preceded by a concentrated bombardment lasting 35 minutes , the initial assault made rapid progress and the village was captured within four hours . The advance then slowed because of problems with logistics and communications . The Germans then brought up reserves and counter attacked , forestalling the attempt to capture the ridge . Since the British had used about one third of their supply of artillery shells , General Sir John French blamed the failure on the shortage of shells , despite the success of the initial attack .

== Gas warfare ==

All sides signed treaties (the Hague Conventions of 1899 and 1907) which prohibited the use of chemical weapons in warfare before World War I. In spite of this , World War I saw large @-@ scale chemical warfare .

In 1914 , there had been small @-@ scale attempts by both the French and Germans to use of various tear gases , which were not strictly prohibited by the early treaties , but which were also largely ineffective . The first use of more lethal chemical weapons was against the British near Belgian town of Ypres .

Despite the German plans to maintain the stalemate with the French and British , German commanders planned an offensive at Ypres , which the British had defended in November 1914 . This Second Battle of Ypres , April 1915 , was intended to divert attention from offensives in the Eastern Front and disrupt Franco @-@ British planning . After a two @-@ day bombardment , the Germans released 168 tons of chlorine gas onto the battlefield . Though primarily a powerful irritant , it can asphyxiate in high concentrations or prolonged exposure . Being heavier than air , the gas crept across no man 's land and drifted into the British trenches . The green @-@ yellow cloud started killing some defenders and those in the rear fled in panic , creating an undefended 6 @-@ kilometre @-@ wide (4 mi) gap in the Allied line . The Germans were unprepared for the level of their success and lacked sufficient reserves to exploit the opening . Canadian troops quickly arrived and drove back the German advance .

The gas attack was repeated two days later and caused a 5 @-@ kilometre (3 mi) withdrawal of the Franco @-@ British line , but the opportunity had been lost . The success of this attack would not be repeated , as the Allies countered by introducing gas masks and other countermeasures . An example of the success of these measures came a year later , on 27 April at Hulluch 40 km (25 mi) to the south of Ypres , where the 16th (Irish) Division withstood several German gas attacks .

The British retaliated , developing their own chlorine gas , and using it at the Battle of Loos in September , 1915 . Fickle winds and inexperience led to more British casualties from the gas than German .

French , British , and German forces all escalated the use of gas attacks through the rest of the war , developing the more deadly phosgene gas in 1915 , then the infamous mustard gas in 1917 , which could linger for days and could kill slowly and painfully . Countermeasures also improved , however , and the stalemate continued .

== Air warfare ==

Aeroplanes specifically modified for aerial combat were introduced in 1915 . While planes had already been used in the war for scouting , on 1 April the French pilot Roland Garros became the first to shoot down an enemy plane by using a machine gun that shot forward through the propeller blades . This was achieved by crudely reinforcing the blades so bullets which hit them were deflected away .

Several weeks later Garros was forced to land behind German lines . His plane was captured and sent to Dutch engineer Anthony Fokker , who soon produced a significant improvement , the interrupter gear , in which the machine gun is synchronised with the propeller so it fires in the intervals when the blades of the propeller are out of the line of fire . This advance was quickly ushered into service , in the Fokker E.I (Eindecker , or monoplane , Mark 1) , the first single seat fighter aircraft to combine a reasonable maximum speed with an effective armament ; Max Immelman scored the first confirmed kill in an Eindecker on 1 August .

This started a back @-@ and @-@ forth arms race , as both sides developed improved weapons , engines , airframes and materials , which continued until the end of the war . It also inaugurated the cult of the ace , the most famous being the Red Baron . Contrary to the myth , anti-aircraft fire claimed more kills than fighters .

= = = Continued Entente attacks = = =

The final Entente offensive of the spring was fought at Artois , with the goal of trying to capture Vimy Ridge . The French 10th Army attacked on 9 May after a six @-@ day bombardment and advanced 5 kilometres (3 mi) . However , they retreated as they had come into sights of machine gun nests and the German reinforcements fired artillery at the attackers . By 15 May the advance had been stopped , although the fighting continued until 18 June .

In May the German army captured a French document at La Ville @-@ aux @-@ Bois describing a new system of defence . Rather than relying on a heavily fortified front line , the defence is arranged in a series of echelons . The front line would be a thinly manned series of outposts , reinforced by a series of strongpoints and a sheltered reserve . If a slope was available , troops were deployed along the rear side for protection . The defence became fully integrated with command of artillery at the divisional level . Members of the German high command viewed this new scheme with some favour and it later became the basis of an elastic defence in depth doctrine against Entente attacks .

During autumn of 1915 , the " Fokker Scourge " began to have an effect on the battlefield as Allied spotter planes were nearly driven from the skies . These reconnaissance planes were used to direct gunnery and photograph enemy fortifications but now the Allies were nearly blinded by German fighters . However , the impact of German air superiority was diminished by their doctrinal reluctance to risk their pilots capture by fighting over Allied held territory .

In September 1915 the Entente allies launched another offensive , with the French attacking at Champagne and the British at Loos . The French had spent the summer preparing for this action , with the British assuming control of more of the front to release French troops for the attack . The bombardment , which had been carefully targeted by means of aerial photography , began on 22 September . The main French assault was launched on 25 September and at first made good progress , in spite of surviving wire entanglements and machine gun posts . Rather than retreating , the Germans adopted a new defence @-@ in @-@ depth scheme that consisted of a series of defensive zones and positions with a depth of up to 8 @. @ 0 km (5 mi) .

On 25 September , the British began their assault at Loos , which was meant to supplement the larger Champagne attack . The attack was preceded by a four @-@ day artillery bombardment of 250 @, @ 000 shells and a release of 5 @, @ 100 cylinders of chlorine gas . The attack involved two corps in the main assault and two more corps performing diversionary attacks at Ypres . The British suffered heavy losses , especially due to machine gun fire , during the attack and made only limited gains before they ran out of shells . A renewal of the attack on 13 October fared little better . In December , British Field Marshal Sir John French was replaced by General Douglas Haig as commander of the British forces .

= = 1916 ? Artillery duels and attrition = =

The German Chief of Staff , Erich von Falkenhayn , believed that a breakthrough might no longer be possible , and instead focused on forcing a French capitulation by inflicting massive casualties . His new goal was to " bleed France white " .

As such , he adopted two new strategies . The first was the use of unrestricted submarine warfare to cut off Allied supplies arriving from overseas . The second would be targeted , high @-@ casualty attacks against the French ground troops . To inflict the maximum possible casualties , he planned to attack a position from which the French could not retreat for reason of both strategic positions and national pride and thus trap the French . The town of Verdun was chosen for this because it was an important stronghold , surrounded by a ring of forts , that lay near the German lines and because it guarded the direct route to Paris . The operation was codenamed Gericht , German for " court " , but meant " place of execution " .

Falkenhayn limited the size of the front to 5 to 6 kilometres (3 to 4 mi) to concentrate their firepower and to prevent a breakthrough from a counteroffensive . He also kept tight control of the main reserve , feeding in just enough troops to keep the battle going . In preparation for their attack ,

the Germans had amassed a concentration of aircraft near the fortress . In the opening phase , they swept the air space of enemy spotters which allowed the accurate German artillery spotters and bombers to operate without interference . However , by May , the French countered by deploying escadrilles de chasse with superior Nieuport fighters . The tight air space over Verdun turned into an aerial battlefield , and illustrated the value of tactical air superiority , as each side sought to dominate air reconnaissance .

= = = Battle of Verdun = = =

The Battle of Verdun began on 21 February 1916 after a nine @-@ day delay due to snow and blizzards . After a massive eight @-@ hour artillery bombardment , the Germans did not expect much resistance as they slowly advanced on Verdun and its forts . However , heavy French resistance was encountered . The French lost control of Fort Douaumont . Nonetheless , French reinforcements halted the German advance by 28 February .

The Germans turned their focus to Le Mort Homme to the north from which the French were successfully shelling them . After some of the most intense fighting of the campaign , the hill was taken by the Germans in late May . After a change in French command at Verdun from the defensive @-@ minded Philippe Pétain to the offensive @-@ minded Robert Nivelle the French attempted to re @-@ capture Fort Douaumont on 22 May but were easily repulsed . The Germans captured Fort Vaux on 7 June and , with the aid of the gas diphosgene , came within 1 kilometre (1 @, @ 100 yd) of the last ridge over Verdun before stopping on 23 June .

Over the summer , the French slowly advanced . With the development of the rolling barrage , the French recaptured Fort Vaux in November , and by December 1916 they had pushed the Germans back 2 @. @ 1 kilometres (1 @. @ 3 mi) from Fort Douaumont , in the process rotating 42 divisions through the battle . The Battle of Verdun ? also known as the ' Mincing Machine of Verdun ' or ' Meuse Mill ' ? became a symbol of French determination and self @-@ sacrifice .

= = = Battle of the Somme = = =

In the spring Allied commanders had been concerned about the ability of the French army to withstand the enormous losses at Verdun . The original plans for an attack around the river Somme were modified to let the British make the main effort . This would serve to relieve pressure on the French , as well as the Russians who had also suffered great losses . On 1 July , after a week of heavy rain , British divisions in Picardy launched an attack around the river Somme , supported by five French divisions on their right flank . The attack had been preceded by seven days of heavy artillery bombardment . The experienced French forces were successful in advancing but the British artillery cover had neither blasted away barbed wire , nor destroyed German trenches as effectively as was planned . They suffered the greatest number of casualties (killed , wounded , and missing) in a single day in the history of the British army , about 57 @, @ 000 .

Having assessed the air combat over Verdun , the Allies had new aircraft designed by Citroën engineer Andrew Sywy , for the attack in the Somme valley . The Verdun lesson learnt , the Allies ' tactical aim became the achievement of air superiority and the German planes were , indeed , largely swept from the skies over the Somme . The success of the Allied air offensive caused a reorganisation of the German air arm , and both sides began using large formations of aircraft rather than relying on individual combat .

After regrouping , the battle continued throughout July and August , with some success for the British despite the reinforcement of the German lines . By August General Haig had concluded that a breakthrough was unlikely , and instead switched tactics to a series of small unit actions . The effect was to straighten out the front line , which was thought necessary in preparation for a massive artillery bombardment with a major push .

The final phase of the battle of the Somme saw the first use of the tank on the battlefield . The Allies prepared an attack that would involve 13 British and Imperial divisions and four French corps . The attack made early progress , advancing 3 @, @ 200 to 4 @, @ 100 metres (3 @, @ 500 to 4

@, @ 500 yd) in places , but the tanks had little effect due to their lack of numbers and mechanical unreliability . The final phase of the battle took place in October and early November , again producing limited gains with heavy loss of life . All told , the Somme battle had made penetrations of only 8 kilometres (5 mi) , and failed to reach the original objectives . The British had suffered about 420 @, @ 000 casualties and the French around 200 @, @ 000 . It is estimated that the Germans lost 465 @, @ 000 , although this figure is controversial .

The Somme led directly to major new developments in infantry organisation and tactics ; despite the terrible losses of 1 July , some divisions had managed to achieve their objectives with minimal casualties . In examining the reasons behind losses and achievements , the British , and the Colonial contingents , reintroduced the concept of the infantry platoon , following in the footsteps of the French and German armies who were already groping their way towards the use of small tactical units . At the time of the Somme , British senior commanders insisted that the company (120 men) was the smallest unit of manoeuvre ; less than a year later , the section of 10 men would be so .

= = = Hindenburg line = = =

In August 1916 the German leadership along the western front had changed as Falkenhayn resigned and was replaced by Generals Paul von Hindenburg and Erich Ludendorff . The new leaders soon recognised that the battles of Verdun and the Somme had depleted the offensive capabilities of the German army . They decided that the German army in the west would go over to the strategic defensive for most of 1917 , while the Central powers would attack elsewhere .

During the Somme battle and through the winter months , the Germans created a prepared defensive position behind a section of their front that would be called the Hindenburg Line using the defensive principles elaborated since the defensive battles of 1915 , including the use of Eingreif divisions . This was intended to shorten the German front , freeing 10 divisions for other duties . This line of fortifications ran from Arras south to St Quentin and shortened the front by about 50 kilometres (30 mi) . British long @-@ range reconnaissance aircraft first spotted the construction of the Hindenburg Line in November 1916 .

= = 1917 ? British offensives = =

The Hindenburg Line was built between two and 50 kilometres (30 mi) behind the German front line . On 9 February German forces retreated to the line and the withdrawal was completed 5 April , leaving behind a devastated territory to be occupied by the Allies . This withdrawal negated the French strategy of attacking both flanks of the Noyon salient , as it no longer existed . However , offensive advances by the British continued as the High Command claimed , with some justice , that this withdrawal resulted from the casualties the Germans received during the Battles of the Somme and Verdun , despite the Allies suffering greater losses .

Meanwhile , on 6 April the United States declared war on Germany . In early 1915 , following the sinking of the Lusitania , Germany had stopped its unrestricted submarine warfare in the Atlantic because of concerns of drawing the United States into the conflict . With the growing discontent of the German public due to the food shortages , however , the government resumed unrestricted submarine warfare in February 1917 . They had calculated that a successful submarine and warship siege of Britain would force that country out of the war within six months , while American forces would take a year to become a serious factor on the Western Front . The submarine and surface ships had a long period of success before Britain resorted to the convoy system , bringing a large reduction in shipping losses .

By 1916 ? 17 , the size of the British Army on the Western Front had grown to two @-@ thirds the total numbers in the French forces . In April 1917 the British Empire forces launched an attack starting the Battle of Arras . The Canadian Corps and the British 5th Division , attacked German lines at Vimy Ridge , capturing the heights . However , the rest of the offensive was halted with heavy losses . The Allied attack ended with the refusal to provide reinforcements to the region .

During the winter of 1916 ? 17 , German air tactics had been improved , a fighter training school

was opened at Valenciennes and better aircraft with twin guns were introduced . The result was near disastrous losses for Allied air power , particularly for the British , Portuguese , Belgians , and Australians who were struggling with outmoded aircraft , poor training and weak tactics . As a result , the Allied air successes over the Somme would not be repeated , and heavy losses were inflicted by the Germans . During their attack at Arras , the British lost 316 air crews and the Canadians lost 114 compared to 44 lost by the Germans . This became known to the RFC as Bloody April .

= = = French mutinies = = =

The same month , French General Robert Nivelle ordered a new offensive against the German trenches , promising that it would end the war within 48 hours . The 16 April attack , dubbed the Nivelle Offensive (also known as Chemin des Dames , after the area where the offensive took place) , would be 1 @. @ 2 million men strong , to be preceded by a week @- @ long artillery bombardment and accompanied by tanks . However , the operation proceeded poorly as the French troops , with the help of two Russian brigades , had to negotiate rough , upward @- @ sloping terrain . In addition , detailed planning had been dislocated by the voluntary German withdrawal to the Hindenburg Line , secrecy had been compromised , and German planes gained control of the sky making reconnaissance difficult . This allowed the creeping barrage to move too far ahead of the advancing troops . Within a week 100 @, @ 000 French troops were dead . Despite the heavy casualties and his promise to halt the offensive if it did not produce a breakthrough , Nivelle ordered the attack continued into May .

On 3 May the weary French 2nd Colonial Division , veterans of the Battle of Verdun , refused their orders , arriving drunk and without their weapons . Lacking the means to punish an entire division , the officers of the division did not immediately implement harsh measures against the mutineers . Thereupon mutinies afflicted 54 French divisions and saw 20 @, @ 000 men desert . Other Allied forces attacked but suffered massive casualties . Appeals to patriotism and duty followed , as did mass arrests and trials . The French soldiers returned to defend their trenches , but refused to participate in further offensive action . On 15 May Nivelle was removed from command , replaced by General Philippe Pétain who immediately suspended large @- @ scale attacks . The French would go on the defensive for the following months to avoid high casualties and to restore confidence in the French High Command .

= = = British offensives , American troops arrive = = =

On 7 June a British offensive was launched on Messines Ridge , south of Ypres , to retake the ground lost in the First and Second Battles of Ypres in 1914 . Since 1915 specialist Royal Engineer tunnelling companies had been digging tunnels under the ridge , and about 500 tonnes (roughly 500 @, @ 000 kg) of explosives had been planted in 21 mines under the enemy lines . Following four days of heavy bombardment , the explosives in 19 of these mines were detonated , resulting in the deaths of 10 @, @ 000 Germans . The offensive that followed again relied on heavy bombardment which allowed the British infantry to capture the ridge in one day . The limited offensive was a great success , all German counter @- @ attacks were defeated and the southern flank of the Gheluvelt plateau protected from German observation .

On 11 July 1917 during this battle , the Germans introduced a new weapon into the war when they fired gas shells delivered by artillery . The limited size of an artillery shell required that a more potent gas be deployed , and so the Germans employed mustard gas , a powerful blistering agent . The artillery deployment allowed heavy concentrations of the gas to be used on selected targets . Mustard gas was also a persistent agent , which could linger for up to several days at a site , an additional demoralising factor for their opponents . Along with phosgene , mustard gas would be used extensively by both German and Allied forces in later battles , as the Allies also began to increase production of gas for chemical warfare .

On 25 June the first US troops began to arrive in France , forming the American Expeditionary Force . However , the American units did not enter the trenches in divisional strength until October .

The incoming troops required training and equipment before they could join in the effort , and for several months American units were relegated to support efforts . In spite of this , however , their presence provided a much @-@ needed boost to Allied morale .

Beginning on 31 July and continuing to 10 November the struggle around Ypres was renewed with the Battle of Passchendaele (technically the Third Battle of Ypres , of which Passchendaele was the final phase) . The battle had the original aim of capturing the ridges east of Ypres then advancing to Roulers and Thourout to close the main rail line supplying the German garrisons of the Western front and the Belgian coast then capturing the German submarine bases on the Belgian coast , but was later restricted to advancing the British Army onto the ridges around Ypres , as the unusually wet weather slowed British progress . Canadian veterans from the Battle of Vimy Ridge and the Battle of Hill 70 relieved the two ANZAC Corps and other British forces and took the village of Passchendaele on 6 November , despite extremely heavy rain and casualties . The offensive produced large numbers of casualties on both sides for relatively little gain of ground against dogged German resistance , yet that captured was of great tactical importance and the British made inexorable gains during periods of drier weather . The ground was generally muddy and pocked by shell craters , making supply missions and further advancement very difficult .

Both sides lost a combined total of over a half million men during this offensive . The battle has become a byword among some British historians for bloody and futile slaughter , whilst the Germans called Passchendaele " the greatest martyrdom of the War " . It is one of the two battles (the other is the Battle of the Somme) which have done most to earn British Field Marshal Sir Douglas Haig his controversial reputation .

= = Battle of Cambrai = =

On 20 November the British launched the first massed tank attack during the Battle of Cambrai . The Allies attacked with 324 tanks , with one @-@ third held in reserve , and twelve divisions , against two German divisions . To maintain surprise , there was no preparatory bombardment ; only a curtain of smoke was laid down before the tanks . The machines carried fascines on their fronts to bridge trenches and 4 @-@ metre @-@ wide (13 ft) German tank traps . Special " grapnel tanks " towed hooks to pull away the German barbed wire . The initial attack was a success for the British . The British forces penetrated further in six hours than had been achieved at the Third Ypres in four months , and at a cost of only 4 @, @ 000 British casualties .

However , the advance produced an awkward salient and a surprise German counteroffensive on 30 November drove the British back to their starting lines . Despite the reversal , the attack had been seen as a success by the Allies and Germans as it proved that tanks could overcome trench defences . The battle had also seen the first massed use of German stossgruppen on the Western front , who used infantry infiltration tactics to successfully penetrate the Allied lines , bypassing resistance and quickly advancing into the enemy 's rear .

= = 1918 ? Final offensives = =

Following the successful Allied attack and penetration of the German defences at Cambrai , Ludendorff and Hindenburg determined that the only opportunity for German victory now lay in a decisive attack along the Western front during the spring , before American manpower became a significant presence . On 3 March 1918 , the Treaty of Brest @-@ Litovsk was signed , and Russia withdrew from the war . This would now have a dramatic effect on the conflict as 33 divisions were now released from the Eastern Front for deployment to the West . However , the Germans occupied almost as much Russian territory under the provisions of the Treaty of Brest @-@ Litovsk as they did in the Second World War : this considerably restricted their troop redeployment . Nonetheless , they still had an advantage of 192 divisions to the Allied 178 divisions , which allowed Germany to pull veteran units from the line and retrain them as sturmtruppen . In contrast , the Allies still lacked a unified command and suffered from morale and manpower problems : the British and French armies were sorely depleted , and American troops had not yet transitioned into a combat role .

Ludendorff 's strategy would be to launch a massive offensive against the British and Commonwealth designed to separate them from the French and her allies , then drive them back to the channel ports . The attack would combine the new storm troop tactics with ground attack aircraft , tanks , and a carefully planned artillery barrage that would include gas attacks .

= = = German spring offensives = = =

Operation Michael , the first of the German Spring Offensives , very nearly succeeded in driving the Allied armies apart , advancing about 60 kilometres (40 mi) during the first eight days and moving the front lines more than 100 kilometres (60 mi) west , within shelling distance of Paris for the first time since 1914 .

As a result of the battle , the Allies finally agreed on a unified system of command . General Ferdinand Foch was appointed commander of all Allied forces in France . The unified Allies were now better able to respond to each of the German drives , and the offensive turned into a battle of attrition .

In May , the American divisions also began to play an increasing role , winning their first victory in the Battle of Cantigny . By summer , 300 @,@ 000 American soldiers were arriving every month . A total of 2 @.@ 1 million American troops would be deployed on this front before the war came to an end . The rapidly increasing American presence served as a counter for the large numbers of redeployed German forces .

= = = Final allied counter @-@ offensives = = =

In July , Foch initiated a counter @-@ offensive against the Marne salient produced during the German attacks , eliminating the salient by August . A second major offensive was launched two days after the first , ending at Amiens to the north . This attack included Franco @-@ British forces , and was spearheaded by Australian and Canadian troops , along with 600 tanks and supported by 800 aircraft . The assault proved highly successful , leading Hindenburg to name 8 August as the " Black Day of the German Army " . The Italian 2nd Army Corps , commanded by general Alberico Albricci , also participated in the operations around Reims .

The German army 's manpower had been severely depleted after four years of war , and its economy and society were under great internal strain . The Entente now fielded a total of 216 divisions against 197 understrength German divisions . The Hundred Days Offensive beginning in August proved the final straw , and following this string of military defeats , German troops began to surrender in large numbers . As the Allied forces broke the German lines , Prince Maximilian of Baden was appointed as Chancellor of Germany in October to negotiate an armistice . Because of his opposition to the peace feelers , Ludendorff was forced to step aside and he fled to Sweden . Fighting was still continuing , but the German armies were in retreat when the German Revolution put a new government in power . An armistice was quickly signed , that stopped all fighting on the Western Front on Armistice Day (11 November 1918) . The German Imperial Monarchy collapsed as General Groener (Ludendorff 's successor) backed the moderate Social Democratic Government under Friedrich Ebert , rather than face the possibility of a revolution like that in Russia the previous year .

= = = Consequences = = =

The war along the Western Front led the German government and its allies to sue for peace in spite of German success elsewhere . As a result , the terms of the peace were dictated by France , Britain and the United States , during the 1919 Paris Peace Conference . The result was the Treaty of Versailles , signed in June 1919 by a delegation of the new German government .

The terms of the treaty would effectively cripple Germany as an economic and military power . The Versailles treaty returned the border provinces of Alsace @-@ Lorraine to France , thus limiting the coal required by German industry . The Saar , which formed the west bank of the Rhine , would be

demilitarised and controlled by Britain and France , while the Kiel Canal opened to international traffic . The treaty also drastically reshaped Eastern Europe . It severely limited the German armed forces by restricting the size of the army to 100 000 and disallowing a navy or air force . The navy was sailed to Scapa Flow under the terms of surrender but was later scuttled , under the order of German admirals , as a reaction to the treaty .

Germany in 1919 was bankrupt , the people living in a state of semi starvation and having no commerce with the remainder of the world . The Allies occupied the Rhine cities of Cologne , Koblenz and Mainz , with restoration dependent on payment of reparations . Among the German populace , the myth arose ? openly cultivated by the Army Chief of Staff Hindenburg ? that the defeat was not the fault of the ' good core ' of the army but due to certain left wing groups within Germany ; this would later be exploited by Nazi party propaganda to partly justify the overthrow of the Weimar Republic . See Stab in the back legend .

France suffered heavy damage in the war . In addition to losing more casualties relative to its population than any other great power , the industrial north east of the country had been devastated by the war . The provinces overrun by Germany had produced 40 % of the nation 's coal and 58 percent of its steel output . Once it was clear that Germany was going to be defeated , Ludendorff had ordered the destruction of the mines in France and Belgium . His goal was to cripple the industries of Germany 's main European rival . To prevent similar German attacks in the future , France later built a massive series of fortifications along the German border known as the Maginot Line .

The war in the trenches of the Western Front had left a generation of maimed soldiers and war widows . The unprecedented loss of life had a lasting effect on popular attitudes toward war , resulting later in an Allied reluctance to pursue an aggressive policy toward Adolf Hitler (a decorated veteran of the war) .

= = Dramatisations = =