



Underground War

The storm of steel on the surface drove soldiers deep underground on the battlefields of the First World War. **Matt Leonard** explores the human experience.

The outbreak of the First World War heralded the chance for many young men to embark on an adventure beyond their wildest dreams. Most had no idea what they would face, even after the conflict began, for there was no embedded news coverage delivering a steady stream of images from the front. Photographs and film footage were tightly controlled, and although casualty figures were available in black and white every morning, the cold numbers were deliberately distanced from the visual and visceral realities they represented.

Before 1914, wars had, of course, been fought on a large scale, embracing all the technologies of the time. But this war was different: it was a global, industrial conflict which mechanically destroyed almost everything it came into contact with, whether man, machine, or landscape. Any notions of glory that new arrivals at the front may have had were soon overwhelmed by the inordinate quantities of matériel and the sheer magnitude of firepower deployed by both sides.

The ferocity of this new and dreadful type of warfare meant that men very quickly sought refuge within the earth. The decision to live below ground would see soldiers become more animal than human, as they dug themselves ever deeper into the earth – the same earth that was slowly being consumed by the new and insidious technologies of modern warfare.

Before long, all life at the front was lived underground, either in trenches or dugouts, or even deeper beneath the surface in caves, souterraines (medieval

Complex tunnel systems were designed to take the fight to the enemy in a deadly, troglodyte game of cat and mouse.

Left Carbon monoxide gas could be lethal deep underground, so gas doors were utilised to curb the effects of this silent killer.



Above Situated beneath the Chemin des Dames ridge, Maison Rouge was just one of the many souterraines utilised by the opposing armies.

Right A pump room discovered in the T21 German tunnel system beneath Vimy Ridge.



underground quarries), or complex tunnel systems designed to defend the frontlines from subterranean attack and then take the fight to the enemy in a deadly, troglodyte game of cat and mouse.

The weaponry employed was not confined to surface operations. The frontlines in Europe and elsewhere were soon underpinned by a subterranean battlefield which itself would become an essential part of the bloody business of trench warfare.

Trenches

On arrival at the front, soldiers were soon glad of the protection afforded by the trenches, places they came to regard as home. For, these narrow, muddy, filthy burrows provided some measure of safety from the zone of flying metal above, even if a direct hit could still dissolve a trench into the mudscape of no-man's-land.

Dugouts were soon excavated to provide improved living quarters for officers, and these could also serve as forward dressing stations or battlefield HQs. The frontlines of the war were not just single trenches facing the enemy; rather, they were a complex and intimate defensive system incorporating individually named trenches, of different depths and sizes, spreading out in all directions.

These many semi-subterranean passages allowed for communications back to the rear, the evacuation of

casualties, and the movement of fresh soldiers up to the forward positions. Smaller trenches were also dug into No Man's Land for observation or forward machine-gun posts, and 'Russian saps' were driven out into no-man's-land as jumping off points for raids or attacks.

By the time the lines settled down into stalemate, this sinister man-made spider's web stretched from one end of each theatre of conflict to the other.

In consequence, very little of the war could actually be seen from the frontlines, and often it was not easy even to tell how deep the enemy's defences were. One trench line would be crossed only for the attackers to realise that they had many more lines to conquer, stretching out over several kilometres. Thus, the central importance of aerial reconnaissance, systematic mapping of enemy trenches, and constant updating of intelligence.

A new world had been created, one that reconfigured man's previous relationship with his environment, and one that eventually gave rise to a new kind of soldiers' trench society – a 'conflict culture' of a kind never known before.

The underground domain

As trench lines developed, the defences were soon expanded into the many ancient quarries and caves that existed beneath the Western Front. For ▶

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centuries, the French had been mining their land in order to utilise the chalk to build towns and villages, leaving large voids deep in the bowels of the earth. The Royal Engineers, along with their Canadian, Australian, and French counterparts, as well as the German Pioneer battalions, began to develop these features into complex, multi-levelled systems that could accommodate vast numbers of men close to, and often right below, the frontlines.

Command-and-control centres, hospitals, dormitories, ammunition stores, and even cemeteries were constructed below ground in order to service a modern army at war. On the eve of the Battle of Arras in 1917, up to 24,000 men were stationed beneath the town, ready to be funnelled into the frontline trenches.

The Germans, their positions fixed and intended to be immovable, incorporated electricity and running water into their

underground spaces. They utilised wood, concrete, and metal to create spacious, dry, and almost homely defences, which not only offered greater security than the British and French positions, but also allowed for a more bearable existence in the shadow of the war's grisly determination to destroy.

As this new subterranean world took shape, soldiers of all sides began to adorn the walls of their new domain with thoughts, memories, hopes, and fears in the form of graffiti and intricate carvings. Graffiti ranged from basic inscriptions of name, rank, and number, to slogans, poetry, and reflections on life before the war.

New world, lost worlds

At Maison Blanche, for instance, a souterraine near the village of Neuville St Vasst, Private Lacey, who would not survive the war, drew pictures on the bare chalk walls of the animals on his

family farm back home in Canada, a link to an idyllic past which was forever shattered by a global industrial war.

Commonly, crude headstones would be carved, remembering comrades who had died in combat, reflecting the appalling casualty rate of the war. At the Froidmont souterraine, on the Chemin des Dames, is one of these unique memory objects, listing the names of six men and asking that they may 'Rest in Peace'. Yet, strangely, none of these men died during the war. Perhaps it was carved as a last testament, something that would remember them if they perished, or perhaps it was a way of confronting fate. It is one of the many examples of the deeply ambiguous nature of the First World War's material culture.

As well as graffiti, men left far more detailed and personal carvings in the chalk walls of their underworlds. Most were not professional soldiers. They had either signed up to fight or been



LIVING UNDERGROUND

CLOCKWISE FROM BOTOM LEFT

A tunnel beneath the Loos battlefield showing tool marks and the soot made by one of the candles that provided illumination; An example of the many thoughts and musings that line the walls of the subterranean world beneath the Western Front; Carved into the walls of the Maison Blanche Southeraine at Neuville St Vaast, this object provided a tangible link with home.; Often carvings and inscriptions portray national and regimental pride along with religious beliefs and thoughts of life and death; A carving depicting one of the ships that brought the AEF to France.

conscripted, and they brought with them skills honed in former lives. Artisans, such as stonemasons, carpenters, and painters, used their talents to leave their mark, depositing their thoughts and feelings in the underground landscapes of France and elsewhere.

Incredible carvings of regimental badges, symbols of national identity and personal objects that linked the soldiers with their far-off homes, can be found in the troglodyte spaces that still exist all along the Western Front. At Maison Blanche, there is a large letterbox carved into the souterraine's walls, a physical and emotional link to the soldier's previous lives. Beneath the Chemin des Dames can be found carvings of the ships that brought the American Expeditionary Force to France, and at the Confrécourt caves, beneath the Soissonais region of France, are large murals that depict national emblems, religious icons, and regimental badges, linking man, war, God, and landscape together in the most striking manner.

These varied and enigmatic objects

together represent some of the finest material culture from the conflict. With much of the surface traces of the war now disappeared, the subterranean worlds beneath the old frontlines are some of the last remaining archaeological and anthropological vestiges that can still provide tangible evidence of the soldier's life at war.

“On the eve of the Battle of Arras, up to 24,000 men were stationed beneath the town, ready to be funnelled into the frontline trenches.”

Mine warfare

In no time at all the trench lines of the Western Front ran from the sea in the north to the borders of Switzerland in the south. Flanking the enemy's lines was out of the question and the business of advancing over no-man's-land involved massive casualties. So both sides sought other avenues of attack.

It was not long before digging and tunnelling began on the same scale as trench building on the surface. Firstly, a network of tunnels was created, going ever-deeper underground, in order to protect the lines from the enemy's similar intentions. In the Ypres Salient, tunnels were driven into the sodden clay and reinforced with timber, requiring an inordinately high degree of engineering prowess. Along much of the rest of the Western Front, they were dug into the harder chalk, a medium that proved ideal for the construction of tunnels.

As early as October 1914, the French had begun mining operations in the Argonne region of France, and the Germans were quick to follow suit. By ▶

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the end of November 1914, both sides had conducted mining operations against the other.

Once the defensive constructions were complete, offensive mining began on an impressive scale. Today, at certain places along the old frontlines, the remains of this clandestine war can still be seen. The vast Lochnagar crater at La Boisselle on the Somme, the Spanbroekmolen at Messines, and the butchered landscape of Vauquois near Verdun all hint at the effectiveness of this type of warfare.

Tunnels, with a large chamber at the end, would be dug under the enemy's lines, packed with explosives, and then blocked off – or 'tamped' – in order to contain the explosion. When detonated, these mines would atomise the defenders and annihilate their fortifications, allowing the infantry above to advance over no-man's-land without the usual devastating casualties.

Below The Spangbroekmolen was one of the huge mines detonated to signal the start of the Battle of Messines, in 1917.

Inset Once tunnels beneath the enemy's line had been successfully dug, explosives were laid and then detonated, obliterating defences in an instant.

Cemeteries of the underground war

Large mines greatly aided full-scale infantry attacks, but smaller mines, or camouflaged, were also used to collapse the enemy's tunnels. A great number of miners, on both sides, were to lose their lives in this manner, blown to pieces or buried alive beneath the battlefields, where many of them still lie today.

During the conflict, 181 British and Dominion tunnelling officers lost their lives underground, and although there are no official figures for the enlisted men, it is estimated that at least 1,500 were killed. The old battlefields are now their cemeteries and should be treated as such.

June 1916 saw mining reach its peak along the British frontlines in France and Belgium, with 101 mines and

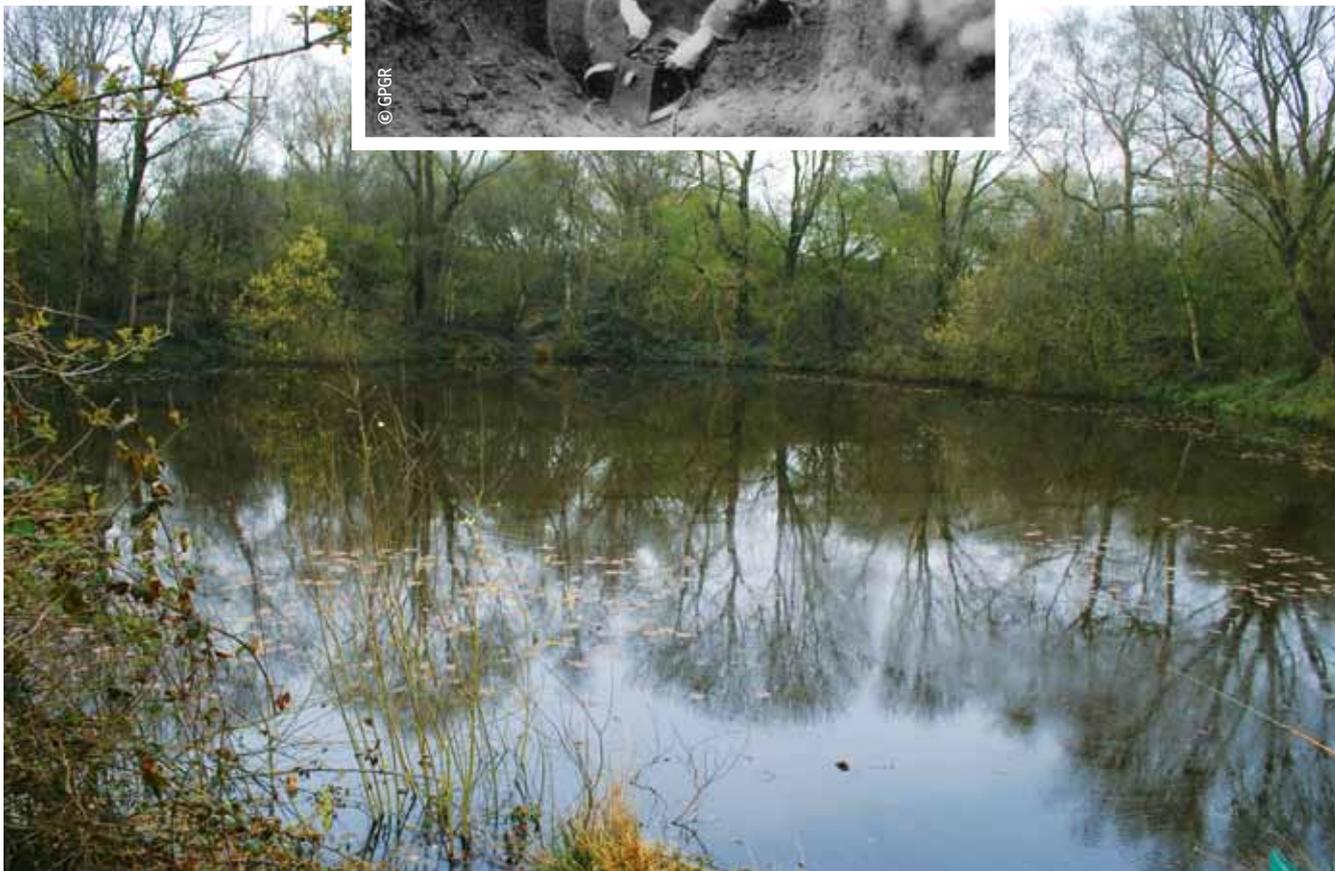
camouflaged exploded by the British and 126 by the Germans in a single month. Tunnels were now regularly dug to a depth of 100 feet or more. At Messines, on 7 June 1917, a shocking example of the effectiveness of this kind of warfare was displayed.

That morning, on a front of just over 14 kilometres, the British charged 19 huge mines, totalling 937,450 lbs of explosive, which were detonated in sequence beneath the German lines, signalling the start of the Battle of Messines.

The explosions ripped along the front in the space of about 30 seconds, and many Germans could do nothing but stand and watch as the apocalyptic destruction approached them. Their lines had been packed with men in order to repel the inevitable British attack, but

they had not expected it to come in such monstrous form. So unprepared were they that several of the mines had been in situ beneath their lines for months, with little suspicion that they were there.

The explosions were so loud that the noise was heard in London and Paris. It is estimated that as many as 10,000 Germans were killed instantly, and within an hour



one of the most fortified positions on the Western Front had been taken.

After the war, one survivor of the attack on the Messines Ridge recalled how chunks of debris ‘the size of houses’ had rained down from the sky after the massive detonation of the Spanbroekmolen. Never before in the history of warfare had such destruction and violence been unleashed on such a mammoth scale.

The beginning and the end

The undermining of enemy fortifications was not a new concept in 1914. It can be traced back to Biblical times and was employed right through the Middle Ages and up to the great conflicts of the 19th century. It has been utilised in more modern conflicts as well, such as during the Vietnam War and most recently by the Taliban in the Tora Bora cave complex in Afghanistan. Should the need arise, it could still be used as a means of waging war in the future. But it was during the First World War that it was adopted on an industrial scale, and then repeated up and down the lines, right across the many theatres of the war.

Different nationalities had their own unique ways of digging tunnels and undermining their enemy. The British tended to dig long, defensive, lateral tunnels, which would run parallel to the frontline trench, and from where they would then drive fighting tunnels into no-man’s-land. The French would usually dig smaller, shallower, more direct tunnels, preferring to minimise their exposure. The Germans often drove their shafts the deepest and then lined the tunnels with timber, even if they were dug into the hard chalk.

The British use of tunnels and mining operations can be largely attributed to the tireless efforts of Major (later Lieutenant-Colonel) Sir John Norton Griffiths, an MP and friend of Lord Kitchener. It was he who tirelessly lobbied for miners and sewer constructors – known as ‘clay-kickers’ (whose methods were better suited to the sodden clay of Flanders) – to be used on the Western Front.

Many of these men had no military training at all, but from the humble beginnings of 170 Tunnelling Company would spring 33 British and Dominion tunnelling companies, just on the Western Front, totalling, at their peak in June 1916, almost 40,000 men of the British Expeditionary Force



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alone. When the German, French, and other nationalities’ figures are added together, it is estimated that approximately 120,000 men were involved in underground warfare, at its peak, beneath the Western Front.

The science of death from below

As the underground war continued apace, the science of explosives was perfected, allowing for different types of mines to be used, which could be controlled with incredible accuracy. By 1915, both sides were mainly using ammonal explosives, but other types were also utilised.

Many technological innovations also occurred: special breathing equipment, termed ‘proto-apparatus’, was developed, and men were specially trained in its use, allowing for underground rescue ▶

Above The Durand mine charge, located beneath Vimy Ridge. Note the use of bags to contain the explosive ammonal.

Griffiths lobbied for miners and sewer constructors – known as ‘clay-kickers’ – to be used on the Western Front.

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to become more effective. Sophisticated listening devices, such as geophones, were employed to detect the approach of enemy pioneers. But old, tried and tested technology was also embraced: it was commonplace, for example, for canaries to be taken into tunnels to detect for gas.

The use of underground systems for both defence and attack was standard practice on the Western Front, as it was

in other theatres of conflict, such as at Gallipoli. But, as the war entered its final phases in 1918, fewer and fewer mines were charged or tunnels dug, and many of the mining companies were utilised for other duties, such as building roads and bridges, or investigating the enemy's underground workings – often defusing booby traps and delay mines left behind by the retreating Germans.

As the conflict finally opened up,



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Above A listening officer using geophones to guard against the approach of enemy. Many such technologies were employed in this clandestine war.

Left A French Sapper utilising listening equipment. Keeping noise to a minimum was of paramount importance underground.

Further information

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and the war of movement that had been dreamed of since 1914 became a lumbering reality, defensive tunnel systems were no longer required.

The enormous size and variety of the underground workings, the complexity of mining the enemy's trenches, and the strategic realisation of the effectiveness of this type of warfare show that military high commands were not simply sending men to pointless slaughter on the surface: they were actively searching for ways to overcome trench-war stalemate by experimenting with new ways of war.

As well as this, on the walls of innumerable dark, claustrophobic tunnels and deep, cavernous souterrains are inscribed thousands of objects that reflect the thoughts of the men that fought in the conflict. The underground war was no mere sideshow. It was the foundation of a complex and multi-dimensional world, an intrinsic part of trench warfare, and the habitat of a conflict culture involving millions of men. And today it survives largely intact as a unique and multi-vocal landscape that offers perhaps the truest reflection of life and conflict during the Great War. 🏠

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