British troops blinded by tear gas wait outside a dressing station

In early 1915, it was clear that throwing million-man armies into battle was leading nowhere. So the combatants began to explore other strategies. Germany launched a series of air raids on Britain and U-boat attacks on Allied and neutral shipping, including the notorious sinking of the British liner Lusitania *in May 1915, which killed 128 Americans and brought Germany into diplomatic confrontation with the United States. Britain countered with a naval blockade of German ports. In late May, the Germans broke through Russian lines at Gorlice-Tarnow, while the Allies were bolstered by Italy's declaration of war on Austria-Hungary. But still no breakthrough came in the west. Increasingly, both sides looked to scientists and technology to provide a solution.*

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CHAPTER EIGHT

SOMETHING AWFUL IN THE AIR

THE TRAGIC STORY OF THE INVENTORS OF POISON GAS

Walther Hermann Nernst and Fritz Haber were two of Germany's most distinguished scientists, in a golden age of German scientific research. Their peers included such luminaries as Albert Einstein and Max Planck, the father of modern quantum physics. Haber would win the 1918 Nobel Prize for Chemistry for developing a synthetic ammonia, which paved the way for cheap and abundant fertilizers, in turn raising crop yields and reducing world hunger. Nernst, a professor of both chemistry and physics at the University of Göttingen, would receive the 1920 Nobel Prize for Chemistry for identifying the third law of thermodynamics.

But at the start of World War I, the two men turned from basic research to focus on the war effort. They were motivated by a sense that Germany's glittering scientific achievement was threatened by the work of others whom the Germans considered less scientific and less advanced. Nernst was further motivated by the fact that he had two officer sons who had been called up in the general mobilization and were sure to be placed in harm's way—and needed his support, in whatever form it came.

Ultimately, the work of Nernst and Haber led to the most reviled and feared (although not the most deadly) weapons of war. The type of weapon they devised was to claim the lives of forty-two thousand people on both sides and disable more than a million others in a war that would also bring personal tragedy to both men. That weapon was poison gas.

THE FIRST EXPERIMENTS

The war had scarcely begun when Nernst volunteered—indeed pressed for acceptance—his ideas of gas warfare. The effects of various gases on humans had been discussed in German academic circles since the 1870s, and although the use of gas as a weapon had been denounced by the International Hague Convention of 1899, it had not been specifically outlawed. Nernst told the munitions office that adding a well-known irritant powder, dianasidine chlorosulfate, to an artillery shell would achieve a "lachrymatory effect" among enemy troops—in other words, it would disable the enemy by causing soldiers' eyes to stream—and induce coughing and retching. It was the forerunner of modern tear gas.

The German Great General Staff at first opposed the use of gas—not so much for moral reasons as for practical ones. How could one's own troops be protected once a wayward gas was released into the air and wafted about by drifting winds? But Nernst persisted and won over a slender majority. On the eastern front in January 1915, at the battle of Balimov, the Germans fired howitzer shells stoked with dianasidine chlorsulfate at the Russian lines. The prevailing wind and overcast sky seemed ideal for carrying the gas toward the enemy. But in the subfreezing temperatures the liquid failed to vaporize. The Russians scarcely noticed, and the battle went on as if nothing had happened. The military greeted the outcome with the derisive air of "we told you so." Gas harmed no one; its use was senseless. In a much-reported episode, the young officer son of the later Chief of the General Staff, Erich von Falkenhayn, won a case of champagne by betting he could stand in a tear-gas cloud for five minutes without noticeable effect. Nernst couldn't endure the resulting ridicule. He went back to his Göttingen laboratory and foreswore military research for the rest of the war.

A CLOUD WITH A LETHAL LINING

Enter Professor Haber. The use of gas itself wasn't at fault, he said; they had simply chosen the wrong gas. Instead of a rudimentary tear gas, he recommended a common chemical element, chlorine. Chlorine was an asphyxiant. Inhaled into the lungs, it would impair breathing by attacking the tiny, delicate air sacs where the circulating

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blood exchanged carbon dioxide for oxygen. Exposed soldiers would choke, cough, and vomit. In extreme cases, they would literally drown in their own blood. Chlorine was inexpensive, available, and had an unmistakable and easily detectable odor (as every swimming-pool owner has since learned). That would allow prewarned German soldiers to take protective measures as soon as they smelled the gas. Moreover, chlorine could be easily packaged into artillery shells, allowing it to disable the enemy from a distance.

On April 22, 1915, the German Fifth Army tested Haber's brainchild in the Second Battle of Ypres—with stunning results, if, ultimately, little gain. Facing French and Algerian troops, the Germans were determined to reduce what was known as the Ypres Salient, a ten-by-five-mile wedge of territory extending deep into German lines. The German offensive began with the firing of gas-armed shells amid other artillery missiles. Then, in a classic battlefield tactic, the Germans ceased firing to make way for infantry. When the French and Algerians emerged from their trenches to repel the attackers, they were met by a curious gray-green cloud hovering close to the ground and steadily creeping toward them. The first line of troops sniffed the air. Then, as Haber had foretold, they coughed, choked, began to throw up, fell—and panicked. Infantry and artillery combat was something they were used to; but this experience of men by the hundreds falling without being shot was something new, mysterious, and frightening. Many collapsed to their knees, gasping for air. Others lay prostrate, yet without a visible wound. The remainder, riven by fear and a feeling of doom, turned tail and ran. And ran. Within minutes, a huge hole, four miles wide, had opened in the French-Algerian lines.

This was precisely the kind of breakthrough the Germans had been hoping for since the war began. Now, having created a huge, inviting gap in the enemy ranks, big enough for a whole army, they could send in their cavalry, followed by the infantry, who would envelop the enemy from the rear, smash them in a pincer movement, and inflict a stunning and fatal defeat. The enemy would never recover. Soon the war would be over.

Except ... the Germans were as startled by the sudden opening and opportunity as the fleeing French. German field commanders,

accustomed to the inch-by-inch advances of trench warfare, were quite unprepared for the rapid melting of resistance and the massive advance now required. The cavalry was situated well behind the lines, and there was no real infantry reserve to throw into the gap. And the battlefield still reeked with this mysterious and alarming smell. Their own troops—indeed, the commanders themselves—hesitated to move forward and deliver the decisive blow. Finally, sufficient troops were mustered to push forward and advance the German line a few miles, but by then the French had rallied and their resistance had stiffened.

Important lessons had been learned, however—on both sides. As gas was used more widely, officers with a smattering of school chemistry recognized the smell of the chlorine. Recalling that chlorine was water-soluble, they taught troops to cover nose and mouth with a moistened handkerchief in the event of a gas attack; if no water was available, they should simply urinate on the cloth. Soon the opposing armies had developed crude and cumbersome protective masks, which the British first used in July 1915 at the battle of the Somme.

A MORE DEADLY COMBINATION

Throughout the remainder of 1915, both sides worked frantically to develop new gases. On the German side, the indefatigable Haber recognized that a gas less volatile than chlorine had to be devised. So he turned his Berlin laboratory into a gas-research institute and eventually came up with an alternative late in the year. The new gas was called phosgene, or carbonyl chloride. Unlike chlorine with its telltale greenish haze, phosgene was almost colorless, caused less choking and coughing, and emitted the innocent, sweet smell of new-mown hay. The result was that it was inhaled more deeply into the lungs, causing greater damage. The effects also lasted much longer. Those who survived the initial exposure sometimes collapsed forty-eight hours later.

To help disperse the gas, the laboratory combined chlorine and phosgene into a mixture called "White Star" mixture (a white star was painted on the canister as a means of identification), which would spread through the air more readily than phosgene alone. On January 31, 1916, Haber, who unlike Nernst sought to observe his weapons in action, went to the eastern front with a group of officers to witness the first test of the

Fritz Haber, pioneer of chemical warfare

new mixture. It succeeded beyond their wildest dreams. Though only tested on a small scale, its release panicked and demoralized a Russian position, allowing the German attackers to advance two miles before being stopped by Russian reinforcements. Exultantly, the German officers turned back to Haber's Berlin home to celebrate.

To her husband's annoyance, Frau Clara Haber was a dedicated pacifist. At his insistence that celebratory night, she glumly joined the chattering group around her dinner table, reluctantly raising her glass to toast their triumph. Then she quietly slipped downstairs to her husband's study, took out his service revolver, and shot herself in the heart. She died in a Berlin hospital next morning. Haber took this casualty in the same stride as others. As his wife lay dying, he left for the front to witness the first use of the White Star gas in a major German offensive.

Gas now became a major weapon in every offensive strike, with neither side having a monopoly on its use. New and more lethal gases were introduced, most notably the fearsome mustard gas. Named for its odor rather than its ingredients and also known as Yperite, mustard gas was first synthesized at the giant German chemical firm of Bayer. It was soon being used on both sides. Mustard gas could penetrate protective clothing as well as lung structure and inflict enormous blisters both internally and externally. It also remained in the ground for weeks afterward, so that even after the enemy had been driven out, captured trenches remained lethal for weeks.

All told, poison gas accounted for one and a quarter million casualties in all armies, the greatest number—four hundred thousand—being in the Russian army, due primarily to poor or no gas protection. Of these, fewer than one hundred thousand were fatal. However, many of those exposed to poison gas suffered long-term effects,

BEWARE THE SMELL OF GERANIUMS

In 1925, international law prohibited the use of gas in warfare, but not its production. Most countries, including the United States, therefore continued to manufacture and, indeed, refine and stockpile chemical weapons. One of the main gases stockpiled for World War II, along with chlorine, phosgene, and mustard, was Lewisite. It was developed in the United States in the 1920s by American chemist Winford Lee Lewis and named for him. Like mustard gas, it is a blistering agent that can penetrate clothing and can also cause severe respiratory damage, potentially leading to death, if inhaled. American troops were trained to recognize its faint aroma, which resembles that of geraniums, but it was never used by either side in combat. Even today, armies and police forces around the world use various forms of tear gas for crowd control.

and gas victims made up a large proportion of the patients in veterans' hospitals after the war, including seventy thousand in the United States. Gas exposure, particularly to mustard gas, caused lasting change in the airways and bronchi in some veterans, resulting in chronic bronchitis and pulmonary disease; those exposed to mustard gas also had higher rates of cancers of the larynx, pharynx, and lungs. Mustard gas also caused lasting damage to small blood vessels, especially in the eye, often leading to blindness.

Horrifying and frightening though it was, gas warfare accounted for only three percent of fatalities, and some claimed that it was in fact the most humane form of warfare because it more often incapacitated combatants than killed them. Others rejected the moral argument against gas when soldiers were being killed and maimed by a range of other weapons. Haber himself said, "A death is a death."

A SORRY AFTERMATH

Following his early abandonment of weapons development, Nernst returned to his previous research. He developed an early electric

light bulb, which, however, lost out to one developed in America by a former student of Nernst, Irving Langmuir. He became increasingly bitter about the war, especially after both of his sons were killed. Far from protecting German science, he believed, the war had diminished it. He declared himself a pacifist and gave up weapons research, later devoting himself to hunting and breeding fish. A musician, he also invented an electric piano. He died in 1941 at the age of seventy-seven.

Haber continued to work for the military for the rest of the war. For a time, he concentrated on developing more sophisticated gas masks and other forms of protection against the weapons he had devised, but in 1918 turned his research toward the development of an even more lethal gas. Eventually, he came up with a cyanide derivative, but it was developed too late for use in World War I.

Postwar, he continued his research on nitrogen at the University of Berlin, where he attained an exalted professorial position by the time the Nazis came to power in 1933. But the fact that he was a Jew began to work against him, even though he had converted to Christianity from Judaism to make himself "more German" and despite the fact that the kaiser had decorated him for his service and given him the honorary rank of captain. Ultimately, for the Nazis, a Jew was a Jew. So what if he had developed weapons for the German military. Haber's weapons didn't bring victory, did they? Obviously he was one of those Jewish traitors who had fattened on others' contributions and backstabbed the German army and brought about its defeat. Despite his protestations of his patriotism, his "Germanness," his loyalty to the Fatherland, Haber was hounded out of the university in 1934, stripped of his honors, and driven into exile. A broken man, he fled with his second wife to Cambridge, England. He died of heart failure in a Swiss hotel on his way to a convalescent home in Italy in 1934, aged sixty-five.

There was also a sad and horrific footnote to Haber's story. Ten years after his death, most of his German Jewish relatives died in concentration camp gas chambers. Their last breaths were of vapors of Zyklon-B—the cyanide derivative Haber had developed toward the end of World War I.

An artist's impression of the Christmas Truce of 1914, between British and German troops in Flanders

After the battle of the Marne, the Germans fell back to the Aisne River, and both sides dug in for an extended campaign. Trenches soon stretched for three hundred miles from the Swiss frontier, along the Aisne, and north to the coast. Meanwhile, the war extended to the Pacific Ocean following Japan's declaration of war on Germany. Germany combined with Austria-Hungary to push Russia farther back in Galicia, and Turkey joined the Central Powers. In October and November, Belgian Flanders became the focus of attempts by both sides to break through the newly established western front, but a series of engagements, known as the First Battle of Ypres, ended in stalemate. By year's end, more than two hundred thousand German, three hundred thousand French, and thirty thousand British soldiers had become casualties.

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CHAPTER SIX

"DON'T SHOOT, WE'LL SEND BEER!"

THE EXTRAORDINARY CHRISTMAS TRUCE OF 1914

In the frosty Christmas Eve moonlight of 1914, in the British sector of the Flanders front, Captain Charles Stockwell of the Fifth Welsh Fusiliers peered over a trench parapet and saw a strange sight. The German parapet facing him, some one hundred yards away, was lined with flickering lights "like the footlights of a theatre." Then softly across the churned-up mud of no-man's-land floated a chorus of human voices, rising and falling to the Christmas carol "Stille Nacht" ("Silent Night"), beloved by both sides.

Sometimes, on a quiet night, the men in Stockwell's trenches would hear voices singing in the trenches opposite. The fusiliers occasionally sang, too. But this was different. The Germans were singing in a celebratory fashion, almost like they were in church. Stockwell's mind flashed back to Christmases at home, the joy of being surrounded by family and loved ones. He realized that the Germans were having the same kinds of thoughts.

Haltingly at first, then full-throated, Stockwell's fusiliers responded with "Joy to the World." "Merry Christmas," the Germans shouted in English, adding "Don't shoot! We'll send beer!" Now Stockwell and his men could see shadowy human forms scrambling over the German parapet. "Merry Christmas!" the voices shouted again, in unmistakable if accented English. Holding their hands above their heads to show they were unarmed, the Germans, members of the Sixth Westphalian

Regiment, advanced through the crisp night into the now-frozen mud. One even carried a candlelit Christmas tree to the British lines—the footlights Stockwell had seen.

Stockwell and his troops emerged, too. Men who had been trying to kill each other only hours before shook hands, smiled, and exchanged wishes for a "Merry Christmas" and "Fröhliche Weihnachten." Stockwell then met the German commander ("Count Something or Other. He seemed a very decent fellow.") and saluted. The two armies swapped candy and cigars. Together, they sang Christmas carols that both sides knew. Then Briton and German retired to the trenches. But the singing went on almost until dawn.

Thus began the so-called "Christmas Truce," one of the most extraordinary events of any war. Across the western front, and especially in the thirty-mile sector of Flanders where the British and Germans had confronted each other for more than three agonizing months, and where thousands of their comrades has lost their lives, war took a holiday as both sides set down their arms to celebrate the season of peace and goodwill—together.

LIVE AND LET LIVE

In the early days of the war, the men in the trenches established their own code of behavior toward the enemy—a code of "live and let live." It was an unwritten rule on both sides that you did not fire at the enemy during the dinner hour, nor when they might be having tea; you fired into the air, over the enemy's heads—except when an officer was watching; and you let rescuers carrying a white flag move into no-man's-land to bring in the wounded, and sometimes to bury the dead. Traditionally in Europe, combatants in war treated each other with respect and opposing forces had a sense of fellowship. Some of this endured in the trenches in 1914. The British and Germans especially felt that they had a shared heritage and were therefore sympathetic.

In one area of the British front near Ypres, where the trenches were only sixty yards apart, the two sides had grown so "pally," as one soldier wrote home, that they regularly tossed newspapers weighted with a stone to each other and sometimes threw cigarettes or a ration tin. They shouted remarks to each other, "sometimes rude ones," one

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As the war stalemated and troops dug in, no one foresaw that their supposedly "temporary" entrenchments might become their homes for the next four years, and that they would develop their own lifestyle. Nor that trench life would devolve into an often-boring routine punctuated by episodes of sheer horror and death.

With the horrific fall rains in 1914, trenches quickly became mudholes, almost canals. Troops waded in muddy water up their thighs. Many suffered from "trench foot" as a result of wearing mudsoaked boots, or "trench fever," which was spread by the bite of the ubiquitous body lice. "The two things infantry feared most," one soldier said, "were cold rain and lice. Cannon only came third."

In time, a permanent trench network developed, with supporting trenches for rest areas, supply stations, and first aid, and dugouts for additional shelter. Each army developed its own approach to building trenches. The French regarded trenches as minimum waystops, temporary ditches from which they would arise to drive their enemies back across the border, and invested little work in them. To keep their soldiers focused on attack, they didn't even issue entrenching tools. The Germans, on the other hand, regarded trenches as long-term defensive bastions, and often reinforced them with concrete and installed electric lights. Troops improvised their own home improvements. One German soldier wrote home that he had shoveled out a private bunk space and equipped it with a curtain and lamp so he could read at night.

The British had learned about trenches during the Boer War, where their enemies quickly dug in at the first sound of artillery fire. British trenches were dug according to strict rules and part of each day was spent maintaining trenches. The British were careful to include sheltered areas where they could socialize, write letters, and make tea. Even in the mud of Flanders one man wrote his wife: "It isn't a bad life."

infantryman said, "but with less venom than a couple of London cabbies after a mild collision." Once, a German threw a boot that landed in a British trench. To their surprise, the British found it was not a bomb, but was filled with sausages and chocolate.

Such sentiments became more widespread with the approach of Christmas. To Germans and Britons alike, this was the most festive holiday of the year. It was the Germans who had developed the custom of bringing an evergreen tree indoors and decorating it, and had cultivated the legend of the gift-giving Saint Nicholas, or Santa Claus. Both traditions had been introduced to Britain by Queen Victoria's German-born Prince Consort, Albert.

The British and German governments showered the troops with Christmas goodies—Cadbury chocolates, Callard and Bowser butterscotch, and plum puddings for the BEF Tommies, packed in a "Princess Mary" tin bearing the image of the king's daughter; a meerschaum pipe from the kaiser for German enlisted men, and Christmas cigars for the officers. The German Crown Prince Wilhelm, commanding the German Fifth Army in the Argonne, ordered the import of "thousands" of trees plus candles. "Little Willy," as the kaiser's son was known, also engaged tenor Walter Kirchkoff from the Berlin Imperial Opera to perch on a parapet and sing Christmas songs for the troops on Christmas Eve.

With the beginning of the cold midwinter weather, there was a lull in the fighting, and Britons and Germans went side by side into the fields to collect straw with which to line the soggy trenches. There was so much back-and-forth between the supposed enemies in early December that British General Horace Smith-Dorrien of the BEF's II Corps felt compelled to warn, "Friendly intercourse with the enemy, unofficial armistices and the exchange of tobacco and other comforts, however tempting and occasionally amusing they may be, are absolutely prohibited."

Just over a week before Christmas, a group of Germans in an area held by Saxon regiments near Messines, holding their arms up to show they were unarmed, came out into no-man's-land to bring in wounded. Seeing them, the British troops went out, too, and brought in their wounded; then the two sides chatted, exchanged cigarettes, and helped each other bury their dead. "They seemed extraordinarily fine men," one Tommy wrote home. "It seemed too ironical for words. The night before, we had been having a terrific battle and the morning after, there we were, they smoking our cigarettes and we smoking theirs."

A few days afterward, near Armentières, the Germans somehow managed to smuggle a "delicious" chocolate cake into the British lines, along with an invitation: "We propose having a concert tonight as it is our captain's birthday, and cordially invite you to attend—provided as guests you agree to cease all hostilities between 7:30 and 8:30." The concert began promptly at 7:30 p.m., with the British seated on the parapets, and then both sides joined together to sing "God Save the King" and the German patriotic song "Die Wacht am Rhein" ("The Watch on the Rhine").

As Christmas Eve approached, senior commanders became concerned. "It is thought possible that the enemy may be contemplating an attack during Christmas or New Year. Special vigilance will be maintained during those periods," warned a Christmas Eve message from General Sir John French, the British commander in chief.

But officers farther down the chain of command felt otherwise. "I have ordered my troops that, if at all avoidable, no shot shall be fired from our side either today or on Christmas Eve or the two pursuant Christmas holidays," declared a German lieutenant, Kurt Zehmisch of the 134th Saxons. Another officer summed up the German attitude succinctly: "A *Tannenbaum* [Christmas tree] is more important than a war."

THE VISITING TENOR

"No shoot tonight! Sing tonight! Just sing tonight!" one German soldier shouted near midnight across no-man's-land in a sector of Flanders held by the Scots Guards. And sing both sides did, their songs punctuated by harmonica solos, a cornet solo, and a violinist who performed Handel's "Largo." At midnight a church bell rang from a village close to the lines, and the favorite French carol "Cantique de Noël" ("Oh, Holy Night"), sung by the renowned French opera singer Victor Granier, rang across the shattered, hushed Belgian landscape. Mixed in with the sacred music were sentimental ballads and bawdy beer-hall songs, even "It's a Long Way to Tipperary." "Like most of my men, I stayed awake the entire night listening to the singing," Lieutenant Zehmisch of the Saxons recalled, "and it was a wonderful night."

At dawn on Christmas morning, at Ploegstreet Wood near Ypres, Lieutenant Bill Bairnsfather of the British First Warwickshires (later to become famous for his "Ole Bill" war cartoons) awoke to find the trenches empty. He could, though, hear the hum of voices. Rousing himself to peer over the parapets, he saw, in no-man's-land, little groups of men in gray and khaki chatting comfortably together, smoking, sipping tea, exchanging cigarettes, showing each other pictures of wives and sweethearts, swapping uniform buttons as souvenirs, and even making arrangements to meet again after the war.

Soon, more men emerged, clambered over the barbed wire, and joined them, until hundreds were milling about, even laughing together. "It looked like a village fair," one French soldier said. A startled rabbit suddenly darted out into the crowd; Germans and Britons alike gave chase and the Germans finally cornered it. One German officer returned to a British officer a Victoria Cross and letters taken from a lieutenant who had fallen dead into a German trench. Some made an effort to demonstrate kinship as well. "We are Saxons, you are Anglo-Saxons," a German infantryman of the Twenty-Fourth Saxons said. "We are brothers."

The chewed-up landscape between the trenches was strewn with the dead of both sides. In one area west of Lille, the ostensible enemies helped each other separate the corpses, and worked together to dig graves in the frozen ground. The British infantrymen produced a pile of wooden crosses. Then a Scottish chaplain, J. Esselmont Adams, gathered both sides together for a solemn service. As best they could, following his lead, they recited the Twenty-third Psalm in English: "The Lord is my shepherd. I shall not want," they intoned together. The Germans followed with "Vater Unser, Du bist du Himmel."

The Germans and British had another shared interest: soccer. "No troops travel without a football [soccer ball]," General Sir Douglas Haig, later to be commander in chief of the BEF, had said, and, indeed, the troops had brought their love of the game to France with them. A few had even brought balls or improvised them out of wads of cloth, ration tins, or tied-up newspapers. Now, on Christmas morning, at various points along the Flanders front, British and German soldiers started to organize games. It was mostly "kickabout," without real rules

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or competition, just men from both sides scrambling after the "ball," trying to get a foot on it. The terrain was too torn and uneven for proper games, but in a few smoother places Germans and Britons organized teams, and played spiritedly. The Third London Rifles challenged a team of Saxons, chose a referee, and actually kept score. The Saxons won, 3–2.

By Christmas afternoon the unofficial armistice had spread across almost the entire British sector. In many places, fraternization continued into the traditional British Boxing Day holiday, December 26. But by then, alarmed commanders were making efforts to call a halt to what they saw as a disciplinary breakdown. Although the French had participated less than the British, some of their commanders were outraged. "If they won't go back [into the trenches], fire over their heads!" one French officer commanded. French artillery actually fired seventy-five-caliber shells into the air near Cappy in Picardy, but to little effect.

British General Smith-Dorrien of II Corps reminded the ranks of his previous order, and threatened, "On the strictest orders, on no account is intercourse to be allowed between the opposing troops. To finish this war quickly, we must keep up the fighting spirit and do all we can to discourage friendly intercourse. I am calling for particulars as to names of officers and units who took part in this Christmas gathering, with a view to disciplinary action." Some frontline units that had participated in the truce suddenly found themselves relieved by fresh troops who had not yet been "contaminated" by the air of goodwill.

British soldiers, Christmas 1914

On both sides, there were also ordinary soldiers who objected to the Christmas armistice. "This evening I am being told to sing songs with those blighters who killed my friends this afternoon," one British officer said angrily. "It is a bad show, disrespectful of our dead."

"Such a thing should not happen in wartime!" a German chided his comrades. "Have you no sense of German honor left at all?"

THE WAR STARTS AGAIN

Captain Stockwell of the Fifth Welsh Fusiliers arranged with "Count Something or Other" that hostilities would resume on the morning of December 27. Promptly at 9 a.m., he stepped from the trench and fired three shots into the air. The opposing officer replied with his own gunfire, and for them and others the war resumed. Their shots had hardly died away when snow began to fall, which then changed into a heavy, driving rain. No-man's-land became a quagmire. Men on both sides were soon too busy trying to keep dry and to bail out the muddy trenches to think about fraternization.

Yet in places some form of truce continued over the following days, and in a few places went on until New Year. A few days after Christmas, near Messines, a Saxon unit arose in near-mutiny when ordered to fire at the British trenches opposite. "We can't. They are good fellows," the Saxons said. "We don't want to hurt them." "Shoot or we will," their officer threatened. "We spent that day and night wasting ammunition, trying to shoot stars down from the sky," one Saxon wrote home. Another unit tossed a note with a rock to the British trenches. "Be on guard tomorrow," the note read. "A general is coming. We shall have to fire our weapons. If forced to, we will fire high. But keep down please."

All through the Christmas Truce, British and German soldiers had been writing home about "this wonderful day." Yet it took some time for the story to make it into any newspaper. The French army enforced strict and total censorship. In Britain, editors felt that publication of the story would be seen as unpatriotic; it would impugn the military by implying that soldiers did not wish to fight. It was the *New York Times* that broke the news on New Year's Day, under the headline "Foes in Trenches Exchange Pies for Wine." British papers then felt it safe to publish, and soldiers' letters about the "wonderful day" began to appear in the papers.

However, the Christmas Truce was never to be repeated on such a scale. To discourage further occurrences, the high command ordered

artillery bombardments for Christmas Eve and Christmas Day of 1915, thereby ensuring that the men would remain in their trenches. Only a few feeble attempts at a truce were made in December 1915 and December 1916. In January 1916, two British officers were court-martialed for having negotiated an unauthorized Christmas ceasefire to allow both sides to bury their dead. One was acquitted. The other was convicted and received a reprimand—the lowest possible penalty.

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CHAPTER FIVE

TAXI! TAXI!

HOW GENERAL GALLIENI SAVED PARIS

"Madam, you must leave this taxi!" the Paris gendarme shouted at the female passenger firmly fixed in the rear seat. "This taxi is needed to save France!" The lady protested volubly. She was en route to visit her daughter outside the war zone, she was hurrying to a train, she would be late, this was unfair. No matter, said the gendarme. She must get out—now! He unceremoniously dumped her luggage on the sidewalk, helped the woman out of the car, then ordered the baffled and protesting driver to proceed posthaste to the Invalides. There was to be no arguing, for this was an emphatic, direct order from the military governor, the forceful General Joseph Simon Gallieni, the newly appointed guardian of Paris.

All over Paris on September 6, 1914, this scene was being replicated. Businessmen en route to appointments, women hurrying to rendezvous with lovers, students homeward bound from lessons—all were forced to yield their cabs and find other ways to their destinations. Under stern police order, taxi drivers were directed to unload passengers, turn about, and head for the square known as the Invalides, which soon descended into a chaos of noisy engines, shouted imprecations, and noxious fumes. Then, in a steady if somewhat imprecise procession, a line of high-backed taxis, each one now carrying five soldiers and their equipment, tooled north through cheering crowds on a courageous and unorthodox mission to save France. Thus began the "Miracle of the Marne,"

a masterstroke that was to win General Gallieni the title of "Savior of Paris" and to give the French army its first success after a month of losses.

VETERAN OF THE COLONIES

Tall, spare, and stern, General Joseph Gallieni—"an imposing example of powerful humanity," as French President Raymond Poincaré called him—had agreed to come out of retirement a few days after the war began to help the country face the imminent threat from the approaching German army. If anyone could save Paris, it was said, it was Gallieni.

Born in 1849 in the French Pyrenees, Gallieni had been destined for a military career from the start: his father, though of Italian descent, was a French army captain. Fresh out of military school, he fought in the Franco-Prussian War of 1870–71, becoming a prisoner of war. Afterward, he opted for colonial service—what fellow officers jeeringly called *le tourisme*. A dry, precise man who disliked politics, he rose rapidly through the ranks. Having helped put down a rebellion in Indochina, he was assigned to deal with similar rebellions on the island of Madagascar and set up its civil administration. There, he developed the much-admired *tache d'huile* (oil-stain) anti-insurgency strategy, which involved taking military control of a central point, then, through political and social policies, gradually extending influence outward. Gallieni also put down insurrections in French colonial Africa, and in the French West Indies.

He became known for thinking outside the box. He was one of the first to recommend using aircraft for reconnaissance, even though the conventional wisdom, as expressed by General Ferdinand Foch, was "L'avion, c'est zero!" ("The aeroplane is nothing!"). Gallieni proved his point in the French army's 1911 maneuvers, when he landed a balloon and captured a colonel of the supreme command and his entire staff, winning the mock war for his side. By then he was the leading candidate for the position of commander in chief of the French armies. But, pleading illness and advancing age, he stepped aside to give the position to Joseph Joffre, who had once been his second-in-command. After Joffre's installation, Gallieni retired.

When the war began, Gallieni was sixty-five, but his reputation as France's most distinguished colonial soldier was still formidable.

Accordingly, War Minister Adolphe Messimy pleaded with him to leave retirement and defend Paris. Though ill with prostatitis, and grieving from the recent death of his wife, Gallieni felt he could not refuse. After analysing the situation, he gave Messimy the bad news first: the German army advancing on Paris numbered 250,000, the Paris garrison—a raggle-taggle bunch of reserves and untrained recruits—only 150,000, less than a handful of whom were in fighting trim. He would need three army corps for a successful defense.

But he was determined that Paris must not fall. He denounced strategists (including Joffre) who considered Paris "a mere geographical expression, just like any other town." Paris was the "heart and brain" of France, he said. It must be held for both military and moral reasons. Losing Paris would be a devastating blow to France.

TAKING STRONG MEASURES

August is traditionally the tourist month in Paris, when Parisians flee the city and turn it over to visitors. August and early September of 1914 were very different. The streets, museums, and shops were empty of sightseers. Few locals were to be seen, either. What were very visible, however, were cattle—entire herds of cattle. In the bright August sun, they were browsing in Paris parks, nibbling on grass and shrubs where sunbathers and lunching office workers normally sprawled, or rambling onto the footpaths where walkers usually strolled. They were lowing and ruminating in squares, too, even in the infields of racetracks.

This was one of Gallieni's first initiatives. He remembered angrily the humiliating six-month-long Prussian siege that strangled Paris in 1870–71, when famished citizens were forced to slaughter horses, dogs, cats, and even rats and zoo animals for sustenance. He resolved that nothing so awful would happen to Paris again. He would make sure Parisians could eat.

Gallieni insisted on a free hand. When, at the beginning of September, a nervous French cabinet voted to move the government to Bordeaux, from where they might be more easily evacuated if necessary, Gallieni encouraged them to go (although he later commented waspishly, "Perhaps one or two ministers should have remained, for appearance's sake"). Then he had a proclamation posted on walls around Paris:

TO THE ARMY OF PARIS AND THE POPULATION OF PARIS:
The members of the Government of the Republic have left
Paris in order to give a new impulse to the national defense. I have
received the order to defend Paris against the invader.
This order I shall fulfill to the end.
—GALLIENI

THEY OFFER THEIR FLANK

Gallieni believed that the battle to save Paris must be fought outside Paris. He rounded up every workman he could locate, and sent them outside the city walls to dig rifle pits, repair the old fortifications, erect barricades, and clear fields to allow for direct shots at the enemy, turning Paris into what he called "an entrenched camp." He also began to forge the garrison into a cohesive army, led by his able general, Michel-Joseph Maunoury, a sixty-six-year-old veteran. And he sent his squadron of nine rickety aircraft aloft to monitor the Germans' progress.

But it turned out that the Germans weren't planning to attack the city—at least not immediately. Rather than swing his forces round the city in a giant arc as dictated by the Schlieffen Plan, the German commander General Alexander von Kluck had concluded that his more important mission was to destroy the French army. Cities could wait. So, instead of continuing his southward advance, he turned his troops east, to trap the French forces there and confront the armies from eastern France that had been hurrying to reinforce the decimated troops outside Paris.

Gallieni had been following the German advance on a huge map in his headquarters, moving large pins to mark the position of each German army. On September 3, the pins showed unmistakably that the Germans were headed in a straight line east, rather than south. "They offer us their flank!" exclaimed Gallieni's chief of staff, General Clergerie. Gallieni immediately saw his chance.

A flank attack on an enemy's rear or flank which is "in the air"—that is, not anchored to another army, nor to a topographical feature like a river or mountain ridge—is every strategist's dream. It allows the attacking army to strike the enemy from the side or from a wide-open rear instead of frontally. Gallieni leaped at this opportunity to strike a decisive blow in what had been until then a dispiriting month for

General

France. He also saw the need to strike quickly. Nursing their battered and weary armies, the French commander in chief, Joffre, and the commander of the British Expeditionary Force (BEF), Sir John French, had been planning to retreat behind the Seine River and then attempt a counterattack. Gallieni saw that they must drop this plan, and instead attack at once, while the Germans were vulnerable.

In a wild auto ride over shell-torn roads, he paid a midnight visit to the BEF headquarters, then insistently phoned Joffre. Initially, the French generalissimo, who mistrusted telephones, refused to answer, but eventually he agreed to talk. He listened to Gallieni's arguments that he must halt his retreat, turn his armies about, support Gallieni's flank, and attack and fight in the valley of the Marne River, thirty miles north of Paris, rather than behind the Seine. And finally he gave in.

On the morning of September 6, Gallieni sent his air squadron aloft once again. They found the German flank still exposed. Gallieni sent General Maunoury forward with his undermanned and pieced-together force, now called the French Sixth Army, to attack. Maunoury was a tenacious and resolute fighter and his swift stroke caught the Germans off guard, just as Gallieni had predicted, driving them backward. But the enemy force was too large for Maunoury's outnumbered and inexperienced army. His men dug in but were clearly in danger of being overwhelmed. He sent a frantic SOS to Gallieni for more troops.

General Joseph Gallieni, "savior of Paris"

Gallieni had stripped the Paris garrison of every last man and had none to send. Then—a godsend!—a train full of troops arrived from the Mediterranean coast. Resplendent in their Zouave uniforms, the Forty-fifth Algerian Division from French North Africa had been heading for eastern France. Military Governor Gallieni countermanded their orders and conscripted them for the fight on the Marne.

But how would they get them to Maunoury and the front, General Clergerie asked. The railways were bereft of rolling stock. Truck transport was scanty. Much of it was disabled and the few available trucks had already been pressed into service.

"Taxis," Gallieni said. "Send them in taxis."

STOP THAT CAB!

Taxis? Who had ever heard of sending troops to battle in taxis? It was certainly not in the textbook of military tactics. But then the resourceful Gallieni, who had fought unconventionally in the colonies, had never felt constrained by what he had learned in the military academy. The troops were desperately needed at the front. Paris streets were full of taxis. They were a ready, quick means of getting the Zouaves to the battlefront. What was the problem? The taxi drivers had already been notified that they were subject to military command.

DRESSING FOR WAR

While other troops dressed themselves in dull, inconspicuous gray, light blue, green, or khaki tones, at the beginning of the war the French army went resolutely into battle in a glorious parade-ground uniform little changed since Napoleon's day. It consisted of a bright blue tunic, red pillbox cap with visor, and flamboyant, ballooning red trousers. No matter that the colors made them an eyecatching target for snipers. When voices—including that of General Gallieni—suggested that wearing something less spectacular might save lives, traditionalists were outraged. "Les pantalons rouge, c'est la France!" ("Red trousers are France!"), cried a hyperpatriotic former war minister in the National Assembly when the change was proposed in 1913—and soundly defeated. But after the French had seen 350,000 brightly clad men killed or wounded in the first three months of the war, it was quietly decided that a more subdued attire might be a good idea. By the spring of 1915, French soldiers were dressed in a more somber color, called "field blue."

Gallieni immediately passed the order to the prefect of police and the military's transport division. All taxis were to be stopped, emptied of passengers, sent to their garages for refueling, and then diverted to the Invalides. To the cheers of the crowds packing the streets, the Zouaves marched along the Paris boulevards from the railway station to the Invalides and the cabs began to converge. Gallieni bounced from his headquarters in a nearby girls' school (he had abandoned the traditional military command center as too big, too fusty, and too bogged down in tradition) to supervise the loading. He pushed troops here and there, thrusting five into every cab—three in back, two on jumpseats. Some did not even have rifles. Never mind. They could get equipment at the front.

Should they charge by the trip or "on the clock," one driver wanted to know. "On the clock," he was told. "France will pay you." Gallieni went from cab to cab, encouraging the drivers. "Are you scared of gunfire?" he asked one grizzled driver. The old man saluted. "*Mon général*, we will go anywhere we are asked."

The cabs straggled into line, and Gallieni waved them off. Midway to the front, the strange procession paused to regroup, fix flat tires, cool overheated engines, and obtain further orders. Then it headed north again to Maunoury's staging area. The fresh men were quickly thrust into the line. Kluck's army, which had been marching and fighting without letup for six weeks, began to fall back. Joffre's Third and Fourth Armies and the BEF then followed up on Gallieni's thrust. For four days the fighting continued across the Marne basin, each side parrying for a breakthrough, until the German forces fell back, acknowledging the stalemate and endeavoring to repair their overstretched supply lines. Paris had been saved, almost on its very doorstep.

Joffre, as the overall commander, received credit for the stalwart defensive action. But it was agreed that Gallieni's ingenuity had saved the day, and that the commandeered taxis were the turning point. "There was only one man who in defiance of all the rules would have ventured an attack so far from his base," Kluck said ruefully after the Armistice. "Unfortunately for me, that man was Gallieni."

As a last stroke, Gallieni made sure that the cab drivers were paid. They received twenty-seven percent of the meter total—the standard rate for three or more passengers, plus luggage.

CHAPTER SIXTEEN

THE LENIN EXPRESS

RUSSIA'S EXIT FROM THE WAR

The train eased gently out of the station, picking up speed as it rolled along the tracks. A trackman waved his lantern amiably as the cars passed, but no answering wave came from within the hurrying train. The coach doors were locked tight, blinds were drawn. No lights escaped from the darkened windows, and the few stragglers on the platform could not see inside.

Within the coach, a short, stocky man with a squarish beard and a fierce stare alternately sat, paced, and fulminated to the two women and twenty-five men who accompanied him. His true name was Vladimir Ilich Ulyanov, but he had adopted another name: Lenin. His week-long ride across Europe in April 1917 was to change the course of the war and the tides of history.

THE PRODIGAL SON COMES HOME

The story of the "sealed train" that whisked the exiled Lenin back to Russia has become the stuff of legend. The passenger list was a Who's Who of the Bolshevik movement in exile, including Lenin's wife, Nadezhda Krupskaya, and Inessa Armand, an energetic and vehement revolutionary, as well as Lev Kamenev, Karl Radek, and Grigori Zinoviev. These last three would play a prominent role in the tumultuous events of the next months and die in Stalin's purges of the 1930s. Most of the other travelers were members of the fiercely

radical wing of the Social Democratic Labor Party (SDLP), headed back to Russia after years in exile, and chomping at the bit for action now that Czar Nicholas II had given way to a provisional government.

Lenin himself had been sent to Siberia in 1895 and, except for brief interludes, had lived abroad since, most recently in Zurich. A lawyer by training, he had completely dedicated himself to revolutionary causes after the execution of his elder brother for alleged complicity in a plot to assassinate the czar. He had produced a relentless stream of books and polemics exhorting the Russians to overthrow the repressive czarist monarchy and replace it with a workers' government. In 1903, he had helped to organize the Bolshevik wing of the SDLP, and quickly maneuvered himself into the position of primary leader and string-puller, even while in exile. When war broke out, he became an implacable foe of the Russian monarchy. The war, he said, had nothing to do with the people but was a struggle among capitalist nations for markets, raw material, and cheap labor, and all socialists should fight against it.

That kind of rhetoric from a Russian was music to German ears. They wanted nothing so much as to get Russia out of the war, one way or another, so that they could concentrate their armies against the Allies on the western front. At the same time, they were faced with their own breed of radicals, and worried that letting an inflammatory Lenin loose on the world might inflame Germans as well as Russians.

NOW, HERE'S MY PLAN

The train trip was the crafty Lenin's idea. The Russian provisional government that had replaced the czar was composed of squabbling factions, but still supported the war and even pressed for offensive action, notwithstanding army and navy mutinies and peace demonstrations in the ranks. Lenin believed that a hard shove by a strong leader and organized party devoted to revolution would topple the shaky structure, replace it with a workers' party, and take Russia out of the war. With his fiery speeches and intense beliefs, he considered himself the man to do it.

The other Bolsheviks in exile had wanted to return home, too, after the fall of the czar, but they had opted for the traditional route of applying for visas and waiting for approval. Lenin had no time for such legal folderol. He approached the German government head-on, using the

secretary of the Swiss Socialist Party, Fritz Platten, as go-between. Platten went to the German legation in Berne, which put him in touch with the German foreign office, which in turn arranged for a Russian émigré, Dr. Alexander Helphand, to talk directly to the German high command. Helphand argued before the commander in chief, Erich Ludendorff, that sending Lenin to Russia would mobilize Russian radicals and antiwar groups, and bring pressure on the government to take Russia out of the war. Ludendorff was willing to take the gamble and gave his approval. Kaiser Wilhelm approved, too, seeing a potential dual benefit: it might result in not only bringing the war to an end, but also sideline Lenin and silence his infectious calls for worker revolution in Germany.

Now that he had a German go-ahead, Lenin outlined his terms. He could have returned to Russia via Allied territory, crossing France from Switzerland by train and then traveling to Russia by ship, but he feared that the Allied nations, desperate to keep their shaky ally fighting, might arrest him en route. He could have flown, but the plane might have been shot down. So he requested a train to take him and his party to Sweden, from where they would travel through Finland to Russia. But not a normal, scheduled train. He asked for a train that would cross Germany with extraterritorial rights, making it immune to baggage or passport inspections, like a foreign embassy on wheels. This train would make no stops, and no German official would be allowed to set foot on it. The foreign office agreed to every demand. The sealed train was on its way.

ON BOARD THE SEALED TRAIN

The traveling party first went by train from Zurich to the tiny village of Gottmadingen on the German border. Each paid his or her own fare, as Lenin had insisted. The sealed train was waiting for them. It wasn't much of a train, certainly not luxurious. It consisted of a baggage coach and a single green-sided German Railway second- and third-class passenger coach, divided into eight compartments. The single men occupied the hard wooden third-class benches, leaving the upholstered second-class seats to the women and those traveling with families. There was just one toilet, to be used by all. All external doors were locked, and only Platten, in charge of the trip, was permitted to talk

to the guards who accompanied them. A chalk line was drawn between the soldiers' rear compartment and that of the revolutionaries, representing a "border" between German and Russian territory.

By common consent Lenin and his wife occupied the forward second-class compartment, so that he could work. He spent the journey wrestling with a new formation of Bolshevik doctrine, which he announced to the others en route. Instead of a two-stage takeover of power, the Bolsheviks would now seek a direct and forceful move toward a socialist state.

As Lenin worked, Inessa Armand wrote to her children, whom she had been forced to leave in Russia when sent into exile. The others talked, argued politics, read, sang the "Marseillaise," and cracked jokes. Several times, an angry Lenin came out of his cabin to quieten them.

The entire trip took nine days, the train following a circuitous route due to the fact that the main lines were reserved for troop movements. It was sidetracked in Berlin for twenty-four hours, then given priority for the rest of its journey, even holding up the train of Crown Prince Wilhelm for two hours. It arrived at Sassnitz on the Baltic Sea on April 12, where the group boarded a ferry to Sweden, then took an overnight train to Stockholm. After a grandiose welcome from Swedish socialists, they took another train to the Finnish border, traveling the last miles by horse-drawn sledge over the frozen Tornio River.

A RAPTUROUS WELCOME

Fellow Bolsheviks in Russia had been alerted to Lenin's journey, and the word quickly spread through political circles and the government. The provisional government reacted in a way understandable in a society whose government had long been riddled with intrigue and deception: it spread the word that Lenin had sold out to the Germans, that he was carrying bags of gold, and was to serve as a German agent.

The government could have stopped Lenin at the Russian border, but in a fatal lapse of judgment, allowed him to enter, convinced that he would be denounced as a German spy and they would score a major propaganda victory. Instead, Lenin arrived on April 16 to a tumultuous welcome. He was greeted in the ornate private waiting room of the former czar with bouquets of roses, champagne, and a brass band.

One of Lenin's first acts was to publish a new tract, *April Theses*, listing all the reasons the provisional government must be brought down and peace sought with Germany. Over the next days, he went from street corner to street corner calling for an end to the war. "What do you get from war?" he shouted at the crowds. "Only wounds, starvation, and death!"

Despite strident opposition from Lenin and his fellow Bolsheviks, the government, dominated by Alexander Kerensky, chose to launch one more offensive against the Austrians on June 18. It went spectacularly well at first. Forty-five divisions under General Aleksey Brusilov attacked on a wide front and advanced twenty miles on the first day. But then the weary Russian army simply quit. Imbued with revolutionary zeal, many refused to fight. Whole divisions threw down their arms and went home, or simply disappeared. A second attack aimed at German troops was halted and thrown back. Again the Russian army melted away.

Some of Lenin's fellow Bolsheviks then decided that enough was enough. It was time to get the war over with, once and for all. In July, they surreptitiously goaded the Petrograd garrison to rise up and overthrow the provisional government. But Prime Minister Kerensky was still popular. He cracked down hard on the rebels, and a roundup of Bolsheviks followed. Lenin went into hiding again, this time in Finland. But he remained the Bolsheviks' moving spirit.

When the new chief of the general staff, General Lavr Georgievich Kornilov, attempted a coup, marching on the Petrograd Soviet on August 25 in an effort to take power, the troops refused to follow him. Rattled, Kerensky decided to make peace with the Bolsheviks, and Lenin came back to town. The Bolsheviks won majorities in both the Petrograd and Moscow Soviets, the locally elected assemblies of workers, soldiers, and tradespeople. Officially, these groups were to "advise" the provisional government, but because they had directed the strikes and protests that brought down the czar, they had become increasingly powerful. With the Bolsheviks in control of the two largest Soviets in the nation, Kerensky agreed to share power in a five-man directorate. Lenin's colleague, and later military commissar, Leon Trotsky, presided over the constituent assembly of Soviets. The Bolshevik Party called for an All-Russian Congress of Soviets, a gathering of representatives from regional Soviets, to reinforce its position. Before it could be assembled, the

LENIN'S LADIES

The two women in the sealed train both had close ties to Lenin but were quite different in appearance, personality, and revolutionary ardor. Nadezhda Krupskaya, known as Nadya, married Lenin in 1898, while both were in exile. A dowdy woman, she was described by the writer Maxim Gorky as "not very bright" and "psychologically not very sound." Although a member of the Bolshevik ladership, she would play only a minor role in the party after returning to Russia.

Inessa Armand, known widely but not publicly as Lenin's mistress, was of very different stock. She was a striking woman, as early photos show, born in Paris to an actor father, but brought up by an aunt in Moscow. She became an idealistic reformer, starting a school for peasant children and a charity to help destitute women. When the czarist government frustrated her causes, she joined the illegal SDLP and was given two years in Siberia for distributing illegal propaganda. On release, she joined the Bolsheviks in Paris, met Lenin, and stayed at his side thereafter. Following her return to Russia, she championed women's causes and chaired the First International Conference of Communist Women in 1920. She died of cholera in 1921, aged forty-six. At her graveside, it is said, a tearful Lenin broke down—the only time he was ever seen to show public emotion.

troops in Petrograd announced they would no longer obey Kerensky's government. "The Petrograd Soviet is our government," they declared.

Lenin saw his golden opportunity. Without waiting for the congress, he called for immediate revolt. The Soviets poured thousands of their supporters onto the streets, where they were joined by the garrison troops and sailors from the port. In "ten days that shook the world," the title of the famous sympathetic volume written by American John Reed, the Bolsheviks completely took over the Russian government by shouting down opposition in Parliament and installing their own leadership. On November 8, 1917, Lenin was unanimously acclaimed chairman of the Council of Peoples' Commissars by the Soviet Congress. In one of his first speeches as chairman he called for negotiations on

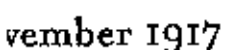
seeking a "just and democratic peace," without annexation of territories or payment of indemnities. His listeners were ecstatic. "The war is ended! The war is ended!" they shouted.

PEACE AT ANY PRICE

But ending the war and gaining peace was not that simple. Die-hard Bolsheviks wanted to keep fighting. They hoped that prolonging the fighting would foment revolution among the working class in Germany, already forced to rummage through garbage for scraps of food. Lenin simply rode them down. He immediately approached the German high command to start peace talks. To the alarmed Allies, he simply said, "We don't want a separate peace. But peace we must have, and if we can't seek it together, the blame is on you." The people who had brought Lenin to power were demanding an end to the war, and Lenin urgently needed to consolidate Bolshevik control. Peace it had to be.

Leon Trotsky was named chief negotiator. His slogan was "No War, No Peace," meaning that the hostilities should end without territorial gains or reparations. But the Germans held all the cards. They asked for huge slices of Russian territory. When Trotsky refused, they blithely announced that the war was on again. Lenin sent Trotsky back, telling him, "Your way has been tried and it has failed. Now it's a question of saving the revolution. You must go back there and sign a treaty of peace." The humiliating Treaty of Brest-Litovsk was signed on March 3, 1918. It gave Germany everything asked for—and more. In a supplementary agreement approved in August 1918, Lenin's government was forced to pay Germany 120 million rubles in gold for "reparations" for damage to German property. For the Germans, the outlay on a private train for a crowd of expatriate revolutionaries was recovered many times over.

Nadezhda Krupskaya in 1930



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CHAPTER NINETEEN

THE COMING OF THE TANKS

THE ADVENT OF MACHINE WARFARE ON THE WESTERN FRONT

One gray dawn in November 1917, the men of the German Second Army felt the ground tremble and were shaken awake by a deafening roar. They looked at each other: this was different from the customary pre-attack artillery bombardment. Peering over the parapets of the Hindenburg Line trenches, they were met by a strange and frightening sight. Heading directly toward them came a line of head-high "mysterious monsters," as the Germans later described them, rumbling and rocking, and ripping easily through the entanglements of barbed wire. "The devil is coming!" one young man shouted. No one waited to see or hear more. Every one of the soldiers climbed out of the trench and took to his heels, fleeing the unearthly "devil's coaches."

Thus came the tanks, which were to change warfare forever. In the next four hours, the inexorable machines, grinding relentlessly along at a mere four miles per hour, penetrated five miles deep into the German position near the important rail junction of Cambrai, and carved out a salient five miles wide. They climbed over the Hindenburg Line's trenches with ease, tore out machine-gun nests, and knocked down fortified houses. Behind them came the British infantry. The Germans were so panicked that eight thousand surrendered before noon. The Germans reclaimed much of the captured ground a week later, but a breakthrough had been achieved and the success was such that London church bells rang out for the first time since the start of the war.

THE VISIONARIES

The breakthrough at Cambrai was more than a simple victory for the tanks and the newly formed BEF Tank Corps; it was also a triumph for a small handful of determined visionaries who had early on seen the potential of armed, armored vehicles and had fought a valiant battle against obstinate opponents in the British high command. There they had been met with constant skepticism. Tanks? What was wrong with cavalry? The gentlemanly way to fight a war was on horseback, with sabers, or at least with foot-soldiers wielding bayonets. That was the way wars had always been won. Motorized vehicles had no role to play.

Not surprisingly, one of the rebellious forward-thinkers was Winston Churchill. As First Lord of the Admiralty, Churchill oversaw the Royal Navy, which, in the early days of the war, was responsible for the Royal Flying Corps, the forerunner of the Royal Air Force. As the Flying Corps' supporting flights over Flanders escalated, many pilots were being shot down or forced to crash-land. New planes could be manufactured, but trained pilots were more difficult to replace. So the navy established the Dunkirk Armoured Car Force in October 1914, consisting of high-wheeled, high-speed (for the time and terrain) Rolls Royce vehicles that could rush to a downed plane and rescue the pilot. The rescue service was initially successful, but the cars were vulnerable to ground fire. So the navy added boilerplate steel to the sides of the cars. When it was pointed out that the open cars were subject to overhead fire from snipers, they added an armored roof, too.

One of those who saw the potential of the armored cars was Lieutenant Colonel Ernest Swinton. An up-and-coming engineering officer, Swinton had been assigned to General Headquarters (GHQ) as the army's official spokesman, writing press-releases about the progress of the war. He noticed that the armored cars worked fine on roads, but bogged down when they had to traverse muddy fields or shell holes, as they often did to pick up wounded airmen. During a visit to the United States, Swinton had seen tractors that traveled on tracks. A rescue vehicle with tractor tracks would be more flexible, and would save more pilots. But Swinton also saw something else. An armored vehicle propelled by tractor tracks and equipped with firepower could be a devastating weapon. In December 1914, Swinton put his idea on paper and

submitted it to Lord Hankey, his superior at the Committee for Imperial Defence. Hankey was intrigued by the idea, and gave it to his staff to follow up, whereupon it promptly languished in the nearest pigeonhole.

ANCESTORS OF THE TANK

An armored fighting vehicle was hardly a new idea. That Renaissance genius, Leonardo da Vinci, had designed one in the sixteenth century. During the Crimean War in 1855, a steam-powered vehicle was designed, but it, too, was opposed by traditionalists and in any case the war ended before it was developed. A prototype armored vehicle was displayed in 1851 at Crystal Palace in London, but nothing came of it. In 1903, H. G. Wells published a short story, "The Land Ironclads," describing a fictional vehicle one hundred feet long with huge wheels that would allow it to cross trenches and climb walls. The story attracted attention at the time but was then quickly forgotten.

Swinton was persistent, however. At his urging, Lord Hankey passed the memo on to Churchill, appropriately since the armored car idea had begun with the navy. Churchill forwarded Swinton's proposal to Prime Minister Herbert Asquith. The hybrid vehicle might overcome trench warfare, he argued. Asquith turned it over to the War Office. The reaction was lukewarm, to say the least. Lord Kitchener, the war minister, dismissed it out of hand. "An armed caterpillar would immediately be shot up by the guns," he said.

Still, Churchill was a cabinet minister, and with pressure from such high places, something had to be done. The idea went next to Major General von Donop, Master General of Ordnance. Von Donop had opposed the idea from the first, but now grudgingly agreed that a trial should be held in January 1915, using a farm tractor bought from the Caterpillar Tractor company in the United States.

The trial was a disaster for Swinton and his allies. It was conducted in a driving rain over an obstacle course set up by the War Office. The tractor was to pull a truck loaded with five thousand pounds of sandbags to represent the weight of armor and armaments that would be carried into battle. It handily broke through the barbed-wire barrier, but quickly foundered in the thick mud and eventually had to be pulled out. With a smug air of "we told you so," the War

Office declared that the vehicle had failed its trial. Quite clearly, it was an impractical idea and a waste of everyone's time.

But that didn't stop the indomitable Churchill. Using his heft as a minister, he established a "Landships Committee" headed by the Royal Navy's director of construction. And then entered Albert G. Stern.

Stern was a retired banker without a military or technical background, but he had heard about the proposed machine and the idea appealed to him. He went to Churchill and offered to underwrite the cost of developing and building such a vehicle. He also volunteered to serve as an unpaid administrator. Churchill named him Secretary of the Landships Committee, with the temporary rank of lieutenant, in May 1915. Swinton then called on Stern and they pooled their energies.

Swinton drafted another memo describing how an armored vehicle could wipe out machine-gun nests. Since the BEF's 1915 spring offensive had been torn apart by machine-guns (which the general staff had once disparaged as useless weapons), GHQ grasped at it and pressed the War Office for a quick go-ahead. In July 1915, a joint naval and military committee was set up to oversee development. Within six weeks, construction had begun on the first British tank, using off-the-shelf hardware. It was nicknamed "Little Willie," and it worked.

The indomitable Winston Churchill

"Little Willie" was succeeded by "Big Willie." It was designed around a revolutionary idea, the brainchild of a navy engineer, W. G. Wilson. Wilson conceived of a loop of tracks that wrapped around the body of the huge vehicle—a design that was to be standard for years to come. Also known affectionately as "Mother," Big Willie was thirty-five feet long, eight feet high, and eight feet wide. It carried a six-pound cannon on each side, two machine-gun turrets, and a crew of eight.

The project was conducted in secrecy, and it was important that no

news leaked out. Designating it a "landship" or "landcruiser" project was too much of a giveaway. So someone suggested "tank" as a short, descriptive, memorable, and ambiguous label, and the name stuck.

THE TANKS' BIG TEST

Big Willie faced its first big test in January 1916. Before a skeptical War Office audience, it passed with flying colors every test prepared for it: climbing a parapet, crossing a trench, and moving over dugouts, shell craters, muddy streams, and marshes. A few days later it passed a second test; the spectators included Lord Kitchener, David Lloyd George, then minister of munitions, and other ministers. The cabinet ministers went for a ride on the tank and all declared that money would be appropriated to develop and build it. To the elation of Swinton and his team, even King George V had a test ride and pronounced Big Willie a great asset that should be built in great numbers.

But the opposition did not give up that easily. Kitchener was still unconvinced; he saw the tank as a kind of toy that had no place on the battlefield. When Rear Admiral Sir Murray Sueter, the naval officer who had led the Dunkirk Armoured Car Force, commented to Swinton that "three thousand of these should be ordered at once," a top general angrily burst out, "What's it got to do with this damned navy man? Who says we want three thousand tanks?" Even after the successful tests and proponents' arguments that hundreds of massed tanks could achieve the long-sought breakthrough in France, the War Office ordered only forty. After Swinton's pleading, the order was increased to one hundred. At Lloyd George's insistence, it was then upped to 150. But that was still far fewer than tank proponents advocated.

Hurry-up construction began, along with training of a hand-picked tank corps. By midsummer the military had most of its hundred tanks, but was still waiting for training to be completed. Swinton wrote a new memorandum, suggesting that the tanks be withheld until they had enough fully manned vehicles for a surprise attack in overwhelming numbers. The BEF commander, Sir Douglas Haig, endorsed the proposal. But then came the battle of the Somme. After that disastrous loss, Haig flip-flopped. He needed tanks now. Even a few tanks, he said, could make the difference in the giant

offensive he was planning for fall. Swinton protested. So did Churchill. But two units of fifty tanks each were dispatched to France.

In the new phase of his Somme offensive, in mid-September, Haig ignored Swinton's suggestions. Instead of organizing a massed attack, he spread the tanks thinly. Rather than taking the enemy by surprise, he prepared the way with three days of bombardment, which alerted the Germans that an attack was coming. Then the surprise was completely given away when a solitary tank pushed forward to clean out a pocket of resistance. Still, the effect on the Germans was devastating. Seeing the ponderous machines, even in small numbers, bearing down on them, seasoned troops panicked, threw away their weapons, and headed for the rear. Some of the tanks broke down, some were ditched, some were shattered by shellfire. But they led a drive across a six-mile front that drove the Germans back a mile and captured four thousand prisoners.

The tank attack counted as a success in Haig's eyes, but not in those of some of his staff, who felt their resources could be put to better use. When Swinton visited GHQ after the battle, Haig asked that a thousand more tanks be built. But Haig's chief of staff, Lieutenant General Sir Lancelot Kiggell, one of the most vociferous tank opponents, immediately canceled the order. "This cancelation came as a thunderbolt," Stern said. He hurried over to Lloyd George, by then the war minister and president of the Army Council. Lloyd George called Sir William Robertson, chief of the Imperial General Staff, on the carpet. The order for one thousand tanks was restored at once.

TRIUMPH AT CAMBRAI

It was a full year, however, before the tanks could finally be employed in sufficient numbers—at the battle of Cambrai in November 1917. There, under the greatest secrecy, 476 tanks with trained crews were assembled. This time there was no massive bombardment to announce the attack. And the ground was ideal for tank warfare as Swinton had described it in his memos: dry, firm, rolling grassland. With the new Tank Corps commander, General Sir Hugh Elles, standing up in the turret of the lead tank, nicknamed "Hilda," the tanks formed a massed wall directed at a single point. The Germans had never seen anything like it and had no way to combat it. The British rolled them back five miles.

TANKS? GIVE US GUNS!

The French built tanks, too, and by 1918 had one thousand "Schneider" models, some mounted by seventy-five-millimeter guns. The skeptical Germans built only twenty, however, culminating in a slow-moving monster that weighed fifty tons and required a crew of twelve. Instead, they focused on bigger and better artillery weapons and refined tactics for using them, beginning with the 420-millimeter "Big Bertha" used against the supposedly impregnable Belgian fortresses at Liège and Namur in August 1914, and climaxing with the long-distance "Paris Gun." Tucked into a wooded area seventy-five miles from the French capital and capable of firing a man-high projectile twelve miles into the upper atmosphere at a speed of a mile per second, the Paris Gun was designed not to destroy armies or fortresses, but to terrorize civilians, and at first it succeeded. The first shells fell on early-morning crowds in Paris on March 25, 1918. Five days later, a projectile ripped through the roof of the Church of St. Gervais during Good Friday services, collapsing the stone pillars onto the kneeling worshippers. Eighty-eight were killed and sixty-eight seriously wounded. However, the French batteries soon located the gun's position and destroyed it, and the last Paris Guns were disabled by July 1918.

Swinton foresaw the army's failure to build on this initial advance. "I bet the GHQ were just as surprised by our success as the Germans, and quite unready to exploit it," he said. So they were. The cavalry, which was supposed to sweep in and envelop the Germans from the rear, was too far away to do so. The force's early gains were negated.

Nevertheless, the tanks had finally justified their visionaries' faith and had demonstrated their ability to achieve the breakthrough the Allies had long prayed for. They also paved the way for a new form of fighting, effectively ending trench warfare, as World War II was to prove.

After Cambrai, the pro-tank group was finally given credit for its vision. Swinton was promoted to colonel, and Stern, the temporary lieutenant, became a lieutenant colonel. And the success was yet another feather in Churchill's cap.