

11-24-2017

“Our Artillery Would Smash It All Up:” Canadian Artillery During the Battle of the Somme, September-November 1916

Brendan Hogan

Recommended Citation

Hogan, Brendan (2017) “Our Artillery Would Smash It All Up:” Canadian Artillery During the Battle of the Somme, September-November 1916,” *Canadian Military History*: Vol. 26 : Iss. 2 , Article 4.
Available at: <http://scholars.wlu.ca/cmh/vol26/iss2/4>

This Article is brought to you for free and open access by Scholars Commons @ Laurier. It has been accepted for inclusion in Canadian Military History by an authorized editor of Scholars Commons @ Laurier. For more information, please contact scholarscommons@wlu.ca.

“Our Artillery Would Smash It All Up”

Canadian Artillery During the Battle of the Somme, September-November 1916

BRENDAN HOGAN

Abstract: The historiography of the First World War has produced no recent comprehensive study of the Canadian artillery, despite its importance on the battlefield. This article seeks to explain how Canadian artillery evolved on the Somme. The central conclusions of this article are that the Canadian artillery's performance during the battle was mixed, and that a number of technological, tactical, and organizational changes, not all of them Canadian, in the Canadian Corps that we recognize from the artillery of 1917-1918 were developed during, or as a result of, the Somme.

DESCRIBING the disastrous attack on Regina Trench on 25 October 1916, Private J. Robinson of the 44th (Manitoba) Battalion Canadian Expeditionary Force (CEF) noted:

[W]e were supposed to go over [the top] in the morning and we were told that this trench, we were told that our artillery would smash it all up and we got going over the top in the morning and there was nothing, you see, and they start falling around me like wheat and I lay in a shell hole all of one day with another fellow.... We got about 150 yards or so and the guys were dropping all around us. So we crawled into this trench and another guy crawled in and you know that by seven o'clock there was seven of us in there. They were wounded. They all died except he and I and he was wounded and we laid there all day with our nose

© Canadian Military History 2016

right to the ground and every time one of them jumped up to run back he'd be sniped and we lost about half the battalion.¹

Evidently, the artillery supporting the 44th Battalion's attack failed to provide effective fire support. The guns did not clear gaps in the barbed wire, neutralize German defensive strongpoints, or knock out German guns, so the infantry had to advance under withering machine gun and artillery fire. Consequently, no 44th Battalion soldiers even reached the German wire. However, not all battles during the Somme offensive (July–November 1916) transpired like the 44th Battalion's failed attack on Regina Trench. In a number of engagements, the artillery managed to provide effective fire support during the pre-battle bombardment, which cleared paths through the German wire obstacles, neutralized defensive strongpoints, and attempted to silence enemy guns. To cover the advance of the infantry, they fired piled up² and later creeping barrages and engaged targets in German rear areas to disrupt enemy communications, reinforcement, and resupply. While the Canadian infantrymen cleared the remaining Germans out of their trenches and dugouts, the gunners shot SOS missions to break up the inevitable German counterattacks and afford the infantry time to consolidate its new positions.

Although the Somme features prominently in British literature on the First World War, Canada's role on the Somme remains largely unaddressed in the historiography.³ This is unfortunate because the Somme was the second longest and second-most costly campaign fought by the Canadian Corps during the war.⁴ The 2nd Canadian

¹ J. Robinson, 44th Battalion, Vol. 13, Record Group (hereafter RG) 41, Library and Archives Canada (hereafter LAC); for a detailed description of the battle, see William Stewart, “When the Learning Curve Falls: The Ordeal of the 44th Battalion, 25 October 1916,” *British Journal of Military History* 20, 3 (July 2016): 24-46.

² Piled up barrages suppressed German defences by saturating the main defensive line with shellfire, thereby forcing German soldiers to seek shelter in their dugouts.

³ Amongst the best overviews of the Somme are A.H. Farrar-Hockley, *The Somme* (London: B.T. Batsford Ltd, 1964); Gary Sheffield, *The Somme: A New History* (London: Cassell Military Paperbacks, 2003); Robin Prior and Trevor Wilson, *The Somme* (New Haven and London: Yale University Press, 2005); Peter Hart, *The Somme: The Darkest Hour on the Western Front* (New York: Pegasus Books, 2008); and William Philpott, *Three Armies on the Somme: The First Battle of the Twentieth Century* (New York: Alfred A. Knopf, 2009).

⁴ The 4th Canadian Division spent most of its time on the Somme fighting with II Corps and only served briefly with the Canadian Corps.

Division performed much better on the Somme than it had during the fiasco at St. Eloi (17 March–16 April 1916). Its attack on Courcellette (15 September 1916) succeeded largely due to good staff work, training, rehearsals, and artillery preparations. The gunners shot an effective creeping barrage, and British tanks fought alongside the infantry for the first time. However, as the brutal actions at Thiepval Ridge (end-September) and the Ancre Heights (October–November) attest, Canadian commanders and staff, under pressure from their British superiors, continued to order assaults on German trenches and defensive strongpoints, often without adequate planning or sufficient artillery support. There were no easy battles in the First World War. Fighting incurred heavy casualties. However, commanders and staffs learned from these battles, especially during the Somme offensive. They disseminated these lessons across the British Expeditionary Force (BEF), the Canadian Corps included, and applied them during subsequent battles in 1917 and 1918. Although David Campbell, Tim Cook, Andrew McEwen, and Bill Rawling have made some significant contributions to our understanding of Canadian soldiers and their role during the offensive, many questions pertaining to artillery remain to be considered.⁵ Colonel G.W.L. Nicholson's *The Gunners of Canada: The History of the Royal Regiment of Canadian Artillery, Volume I, 1534-1919* provides a thorough overview of Canada's artillery, including the artillery's experience on the Somme, but it is generally

⁵ David Campbell, "A Forgotten Victory: Courcellette, 15 September 1916," *Canadian Military Journal* 16, 2 (Spring 2007): 27-48; Tim Cook, *At the Sharp End: Canadians Fighting the Great War, 1914-1916, Volume One* (Toronto: Penguin Canada, 2007); Andrew McEwen, "'A Useful Accessory to the Infantry, but Nothing More:' Tanks at the Battle of Flers-Courcellette, September 1916," *Canadian Military History* 20, 4 (Autumn 2011):7-22; and Bill Rawling, *Surviving Trench Warfare: Technology in the Canadian Corps, 1914-1918* (Toronto, Buffalo and London: University of Toronto Press, 1992).

descriptive rather than analytical.⁶ This article seeks to fill at least part of that gap in the historiography of the Canadian Corps and the First World War by explaining how Canadian artillery fought and evolved on the Somme.

During the First World War, the artillery conquered and the infantry occupied, as the saying goes, but the worn-out aphorism does not accurately describe how the two arms worked together on the battlefield. While the artillery did provide the necessary fire support to overcome the inherent strength of the defence, the infantry still had much fighting to do. German defenders who survived the artillery bombardments had to be cleared out of their dugouts and trenches with grenades and bayonets. The infantry did not win the battle on its own, but neither did the artillery. The 1909 *Field Service Regulations (FSRs)* state, “The function of the artillery is to assist the other arms [infantry and cavalry] in breaking down hostile opposition.”⁷ Furthermore, the *FSRs* clearly delineate the requirement for cooperation between the infantry and the artillery. “The object of artillery fire is to help the infantry to maintain its mobility and offensive power.... The artillery fire must be distributed according to requirements on all objectives from which effective fire is brought to bear on the attacking infantry.”⁸ Major Alan F. Brooke, later the Chief of the Imperial General Staff (CIGS) and titled Lord Alanbrooke, understood the relationship between the artillery and infantry.⁹ He aptly noted, “Operations can no doubt be carried out successfully with a deficiency of fire power, but only at the cost of

⁶ G.W.L. Nicholson, *The Gunners of Canada: The History of the Royal Regiment of Canadian Artillery, Volume I, 1534-1919* (Toronto and Montreal: McClelland and Stewart Limited, 1967). The history of the Royal Regiment of Artillery during the First World War has been addressed by numerous scholars. Notable amongst them are: Shelford Bidwell and Dominick Graham, *Fire-Power: British Army Weapons and Theories of War, 1904-1945* (Barnsley: Pen & Sword Military Classics, 1982); Sir Martin Farndale, *History of the Royal Regiment of Artillery: Western Front 1914-18* (London: Royal Artillery Institution, 1986); Jonathon Bailey, “British Artillery in the Great War,” in ed. Paddy Griffith, *British Fighting Methods in the Great War* (London and Portland: Frank Cass, 1996); William Sanders Marble, “‘The Infantry cannot do with a gun less’: the place of the artillery in the BEF, 1914-1918” (PhD diss., King’s College London, 1998).

⁷ War Office, *Field Service Regulations, Part I, Operations* (London: His Majesty’s Stationary Office, 1912), 15.

⁸ *Ibid.*, 135-36.

⁹ Brooke also served as staff officer to the general officer commanding Royal Artillery of the Canadian Corps from February 1917 until May 1918.



A heavy howitzer on the Somme. [Library and Archives Canada PA-000848]

exceptionally heavy casualties.”¹⁰ The heavy casualties sustained during the Battle of the Somme certainly validated Brooke’s claim.

During the Battle of the Somme, the Canadian artillery was organized like the rest of the artillery in the BEF. The smallest unit, a battery, was composed of four guns, either the 18-pounder or the 4.5-inch howitzer and commanded by a major. Three 18-pounder batteries, one 4.5-inch howitzer battery, and a headquarters section made up a field artillery brigade led by a lieutenant-colonel. The divisional artillery, directed by the commander Royal Artillery (CRA) – a brigadier-general, consisted of the headquarters, divisional ammunition column, and the four mixed field artillery brigades. These divisional artilleries could be grouped together and used to support the corps’ operations, if required. The general officer commanding Royal Artillery (GOC RA)—a major-general— controlled the guns at the corps level. The organization of the heavy artillery changed a number of times during the course of the war and, during the

¹⁰ Lieutenant-Colonel A.F. Brooke (later Alanbrooke), “Evolution of Artillery in the Great War, 1914-1918,” ALANBROOKE 3/10, Liddell Hart Centre of Military Archives (hereafter LHCMA), 470.



One of the roads to Baupame. [Library and Archives Canada PA-000884]

Battle of the Somme, there was an almost 100 per cent increase in the number of heavy artillery pieces in the Canadian Corps. The Canadians inherited the heavy guns from the 1st ANZAC Corps when they relieved the Australians, but most of the batteries were British, with a few Australian and Canadian batteries thrown in.¹¹ During the battle, the heavy artillery guns were grouped into batteries of four guns, which in turn were grouped into heavy artillery groups (HAGS) composed of a number of heavy and siege gun batteries and commanded by a lieutenant-colonel. The commander heavy artillery (CHA)—a brigadier general—wielded a number of HAGS at the corps level. The heavy artillery consisted of the 60-pounder and 4.7-inch guns. All other large artillery pieces, from the 6-inch howitzers and guns up to the 15-inch howitzers, were classified as siege artillery.

On the Somme, British gunners lacked effective point-detonating fuzes for their shells. The insensitive fuzes used by the gunners on

¹¹ War Diary (hereafter WD) Canadian Corps General Staff, 11 September 1916, File 7, Vol. 90, RG9-III-D-3, LAC.

their high explosive (HE) rounds often failed to detonate on contact with the wire obstacles or the ground. Usually, the HE shell buried itself a few feet into the soft mud before detonating, which inflicted little to no damage on the wire obstacles and cratered the battlefield.¹² Although gunners first used small quantities of the reliable point-detonating No. 106 Fuze in November 1916, it was not until 1917 that its use was widespread. The No. 106 Fuze greatly improved the efficiency of HE shells against defensive strongpoints and barbed wire.¹³ On the Somme, shrapnel was the shell of choice for wire cutting. To be effective, the timed fuze on the shrapnel shell had to be set to burst the shell close to the ground just in front of the wire. If the fuze setting was too short or too long, the shrapnel balls would do little damage to the wire obstacles. This haphazard process worked only 30 to 40 per cent of the time.¹⁴ Gas shells were also used on the Somme, principally to harass German gunners at nighttime.¹⁵

At the Chantilly conference in December 1915, General Joseph Joffre, Commander-in-Chief of French forces on the Western Front, proposed that the British and French armies launch a massive combined offensive on the Somme sector, where the two armies met, in coordination with offensives launched by the Russians and the Italians on the Eastern and Isonzo fronts, respectively. General Sir Douglas Haig, Commander-in-Chief of the BEF, initially wanted the offensive to be launched in Flanders, but he agreed to Joffre's proposal because the French would provide the majority of the troops for the attack.¹⁶ However, the Germans preempted the Allied offensive with their own attack against Verdun in February 1916. The French army had sustained enormous casualties, between February and June, defending and trying to recapture lost ground and could no longer provide the bulk of the troops for the Somme offensive.¹⁷ The British needed to attack to relieve some of the pressure on the embattled French army. With twenty-nine British and eight French divisions,

¹² Rawling, *Surviving Trench Warfare*, 71.

¹³ Brooke, "Evolution of Artillery in the Great War, 1914-1918," 43, 46.

¹⁴ Artillery Notes No. 5, Wire Cutting, June 1916, Stationery Service (SS) / Central Distribution Sections (CDS) Pamphlets Collection 98/5, Imperial War Museum.

¹⁵ For a thorough overview of the Canadian Corps' experience with gas warfare, see Tim Cook, *No Place to Run: The Canadian Corps and Gas Warfare in the First World War* (Vancouver and Toronto: UBC Press, 2009).

¹⁶ Philpott, *Three Armies on the Somme*, 71-72.

¹⁷ *Ibid.*, 11-12.

Haig intended to breach the German defences and exploit the breakthrough with cavalry.¹⁸ However, General Sir Henry Rawlinson, commander of the Fourth Army that was the principal attacking formation for the British, did not believe that breakthroughs were possible and favoured a slow, grinding battle of attrition based on limited objectives.¹⁹ But there were disagreements about subsequent stages of the battle. In the initial assault, both men agreed that, to avoid repeating the mistakes of the 1915 battles, which were launched on narrow fronts and easily contained by the Germans, that the attack had to be conducted on a broad front—and heavily supported by artillery.

The artillery had five principal tasks: saturating the infantry’s objective with fire to neutralize and suppress enemy emplacements, clearing gaps in the German barbed wire, targeting flanking defensive positions to prevent enfilading fire, interdicting enemy reinforcements and counterattacks, and conducting counter-battery shoots to suppress the German guns.²⁰ Before the infantrymen began their attack, the artillery fired a pre-battle bombardment. Bombardments required enormous amounts of ammunition, and gunners fired the majority of their shells during these types of fire missions. The bombardment was a vital task that preceded the barrages because the infantry depended on it to neutralize the German defences and to clear gaps in the barbed wire. While the gunners used their larger pieces to destroy the German defensive positions, they used their trench mortars and 18-pounders to blow gaps in the wire with shrapnel.²¹ To provide cover for the advancing infantry, the artillery fired piled up and, later, creeping barrages. Unlike the piled up barrages that only saturated the main defensive line with fire, the creeping barrages also suppressed German soldiers deployed in depth from their trenches, which the Germans started to do on 2 July 1916. It also had the added benefits of blinding enemy observation of the attacking troops and providing

¹⁸ Although an Allied operation, the French were not under Haig’s command and operated independently from the BEF for the duration of the Battle of the Somme. For an examination of Haig’s concept of operations for the Battle of the Somme, see Gary Sheffield, *The Chief: Douglas Haig and the British Army* (London: Aurum, 2011), 165-69.

¹⁹ For an overview of Rawlinson’s planning for 1 July, see Robin Prior and Trevor Wilson, *Command on the Western Front: The Military Career of Sir Henry Rawlinson, 1914-1918* (Barnsley: Pen & Sword Military Classics, 2004), 138-70.

²⁰ Brooke, “Evolution of Artillery in the Great War, 1914-1918,” 266.

²¹ Bailey, “British Artillery in the Great War,” 32.

a guide for the advancing infantry. At the conclusion of a barrage, the guns dwelled in front of the infantry's objectives to allow them to consolidate by hampering German efforts to assemble their troops for counterattack.²² When the Germans did launch counterattacks, the Canadian infantrymen would launch flares to call for a sos fire. Although ammunition intensive and inhibiting to deeper advance, sos fire assisted the Canadian infantry with defeating the German counterattacks. Finally, the artillery conducted some counter-battery shoots during the Battle of the Somme, although they were rarely a priority, and the results were often disappointing.

Before the guns could commence bombardments and barrages, however, they needed to be registered. Registration refers to the process whereby, firing the guns and observing the fall of shot, the necessary corrections to charge, elevation, and traverse could be made to compensate for the total effects of non-standard conditions (weather, equipment, ammunition, and survey errors). Preferably, a forward observation officer (FOO) would find a suitable vantage point that afforded him good observation to observe the fall of shot for the guns that he was tasked to register. Registration made the artillery more accurate, but it also signaled to the Germans that an attack was about to commence. If observation from the ground was not possible, aerial spotting provided by the Royal Flying Corps (RFC) could be used to register the guns. Major W.A. "Billy" Bishop, Canada's most famous ace of the First World War, described the process of aerial observation—in this particular instance a counter-battery shoot—in his wartime memoir *Winged Warfare*.²³

You fly on until you pick up the four mounds that indicate the German battery position. You fly rather low to get a good look at it. The Huns generally know what your coming means and take cover. You return a little way toward your own lines and signal to your battery to fire. In a moment you see the flash of a big gun. Then nothing seems to happen for an eternity. As a matter of fact twenty to thirty seconds elapse and then fifty yards beyond the German battery you see a spurt of grey-black earth spring from the ground. You signal a correction of the range. The next shot goes fifty yards short. In artillery language you

²² Bidwell and Graham, *Fire-Power*, 112.

²³ William A. Bishop, *Winged Warfare* (New York: George H. Doran Company, 1918).

have “bracketed” your target. You again signal a correction, giving a range just in between the first two shots. The next shell that goes over explodes in a gunpit.²⁴

However, aerial observation aircraft could not observe the fall of shot in bad weather or fog, and they were extremely vulnerable to enemy anti-aircraft fire. This is why many battles during the First World War were predicated on gaining observation from higher points of ground over the enemy’s lines, or denying the same to the enemy.

To support the attack on 1 July 1916, the Fourth Army had over 1,300 guns along its fifteen-mile front, which seems impressive, but it was not enough for the task at hand. Concentrated on just the front line, these 1,300 guns might have been sufficient to neutralize the German defences, but having to engage multiple defensive lines in depth meant that the artillery fire was too dispersed to accomplish all five artillery tasks, either simultaneously or in rapid succession, even if that was not clear to the attackers at the time. During the battle, British and Canadian gunners struggled to blow gaps in German barbed wire. During any assault, numerous breaches had to be made in the dense German wire obstacles, lest the assaulting infantry fall behind the barrage and have to fight their way through the German defences without any fire support. Destroying wire required enormous amounts of shells. In June 1916, III Corps staff officers determined that it would take, on average, 70,000 shells to clear all of the wire between the division’s start line and final objective.²⁵ Even if all of these shells were supplied, the divisional artillery staffs of the 8th, 19th (Western), and 34th Divisions, which were attached to III Corps in the summer of 1916, did not predict favourable results.²⁶ They were right. Patrols sent into no man’s land in advance of the 1 July assault confirmed that the intense seven-day preparatory bombardment had left the German wire largely intact and defensive positions unscathed.

General Headquarters (GHQ) and Fourth Army headquarters went ahead with the assault because they believed, incorrectly as it turned out, that they had enough guns and other support for a successful assault. The Battle of the Somme, like most First World

²⁴ Ibid, 27-28.

²⁵ Report on Visit to III Corps, June 1916, appended to WD of the Heavy Artillery V Corps, June 1916, WO 95/757, Public Records Office, Kew.

²⁶ Ibid.

War offensives, was a firepower-intensive operation, and, on 1 July, it opened in a symphony of explosives.²⁷ From the air, shells rained down on the German positions at a rate of 3,500 each minute. Simultaneously, the Royal Engineers detonated a series of mines, under the German trenches, that they had dug and packed with explosives. Confident of success, Rawlinson decreed that “nothing could exist at the conclusion of the bombardment in the area covered by it.”²⁸ Unfortunately for the British infantrymen, most of the German defenders took shelter in their well-constructed dugouts where they remained during the bombardment, emerging unscathed to man their crew-served weapons and slaughter the attacking British. On the first day of the battle alone, the British army sustained 57,470 casualties.²⁹ To date, 1 July 1916 remains the costliest day in the history of the British army.

Although the bombardment on 1 July failed to provide effective fire support in most sectors, in some divisions, innovative commanders and staff officers had prepared artillery instructions that enabled the infantry to cross no man’s land and capture its objectives. The British formations closer to the French sector also fared better than the divisions attacking to the north due in part to what they learned about gunnery techniques and procedures from the French.³⁰ For instance, Major-General Ivor Maxse’s 18th (Eastern) Division used the creeping barrage to great effect on 1 July and secured all of its objectives.³¹ Major Alan F. Brooke, Brigade-Major Royal Artillery, prepared the fire plan for the 18th Division’s attack by adapting techniques he had learned from the French artillery fighting at Verdun.³² The manner by which Brooke issued his orders greatly contributed to the success of his artillery programme. He noted, “My method of issuing orders in the form of barrage maps was sufficiently perfected by then for me to issue barrage maps at the rate of one per battery showing the lane of fire of each battery, the successive

²⁷ The intensive pre-battle bombardment had begun on 24 June 1916.

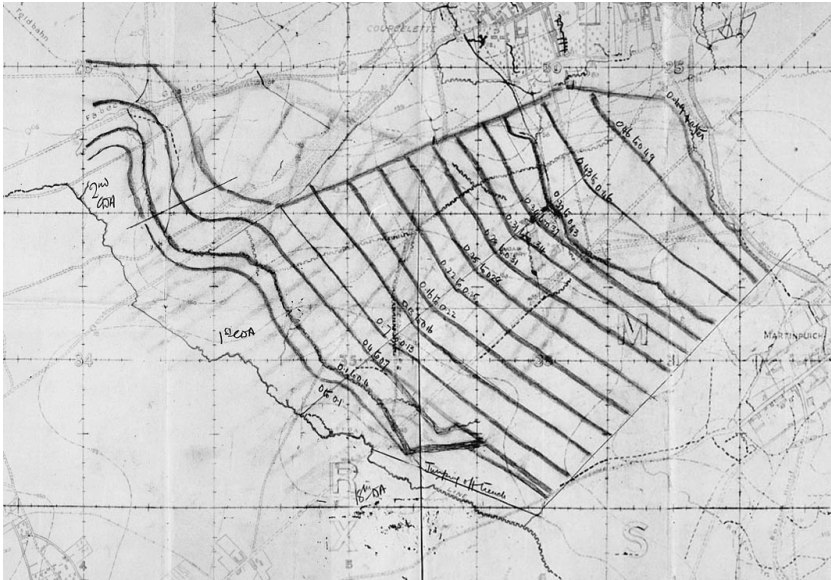
²⁸ Quoted in G.W.L. Nicholson, *Canadian Expeditionary Force, 1914-1919: Official History of the Canadian Army in the First World War* (Montreal, Kingston, London, and Chicago: McGill-Queen’s University Press, 2015), 168.

²⁹ Philpott, *Three Armies on the Somme*, 10.

³⁰ *Ibid.*, 173-79.

³¹ Birch’s Report on the Somme Bombardment, 9 July 1916, Rawlins Papers, 12A, Royal Artillery Institution (hereafter RAI).

³² Paul Strong and Sanders Marble, *Artillery in the Great War* (Barnsley: Pen & Sword Military, 2011), 93.



Battle of Courcellette Barrage Map, 15 September 1916. [Appended to War Diary GOC RA Canadian Corps, September 1916. Library and Archives Canada, RG9-III-D-3 Vol. 4958, File 505.]

lifts of fire, and the timings of lifts with their rates of fire.”³³ Brooke described the successful attack of the 18th Division on 1 July, which “ran like clock-work, every objective being gained on the Divisional front. We had advanced 1,500 yards on a 2,000 yard front...we had counted over 1,000 dead Germans ... and had captured some 600 [prisoners] and taken much equipment and about a dozen guns.”³⁴ Instead of attempting to knock out German machine-gun positions, the creeping barrage suppressed the German defenders, while the infantry crossed no man’s land. Lieutenant-Colonel Neil Fraser-Tytler, a British artillery officer, described the creeping barrage:

Just before Zero Hour everybody comes up to the Switch Trench. It makes a splendid grandstand; as the batteries have already all the endless lift and alterations of range, we at the OP [observation post] are simply spectators. I have seen many of these zero hours, and they get more stupendous each time. Often there is a lull during the last

³³ Field Marshal Viscount Alanbrooke, “Notes on My Life,” ALANBROOKE 5/2/13, LHCMA, 54.

³⁴ *Ibid.*

five minutes; then at the appointed second the whole world seems to explode. It is impossible to exaggerate what Hunland looks like on these occasions, erupting as it were in one vast volcano! The endless Hun SOS rockets ascend and down comes a Hun counter-barrage, followed by a period in which there is nothing to be seen except whirls of flame-stabbed smoke, incendiary shells bursting, and more rockets.³⁵

Creeping barrages allowed the infantry to advance across no man's land, but they did not win the battle. Despite Brooke's positive assessment of the division's performance on 1 July, the 18th Division still sustained approximately 30 per cent casualties capturing its objectives.³⁶

The need for enormous amounts of ordnance to launch successful offensives necessitated major changes to the organization and command of artillery. Divisions did not possess sufficient firepower from their own artillery brigades to conduct operations alone, so they required the guns of other divisions and higher formations.³⁷ During the Battle of the Somme, the Canadian Corps, like other corps in the BEF, pooled its divisional artilleries and assigned them to the control of Brigadier-General H.E. Burstall, GOC RA of the Canadian Corps, to be employed as he saw fit. Consequently, the divisional artilleries rarely supported their own divisions. For instance, the 2nd Canadian Divisional Artillery (CDA) never supported the 2nd Canadian Division during the Battle of the Somme. Even after the Canadian Corps, minus the 4th Canadian Division, left the Somme sector for Vimy in October 1916, the 1st, 2nd, and 3rd CDAs remained on the Somme and supported the operations of II Corps.³⁸ The need for clear command and control of the guns became painfully apparent after the bombardment of the first day of the offensive failed to provide effective fire support. On 29 July, Major-General Sir Noel Birch, the Major-General Royal Artillery (MGRA) of GHQ, noted, "It is high time that the 'bogey' dual control [between the general staff

³⁵ Neil Fraser-Tytler, *Field Guns in France* (London: Hutchison, 1922), 115.

³⁶ Strong and Marble, *Artillery in the Great War*, 93.

³⁷ Artillery Lessons Drawn from the Battle of the Somme, December 1916, MONTGOMERY-MASSINGBERD 7/3-4, LHCMA.

³⁸ Besides the need for additional pieces to support operations, moving guns, headquarters, and ammunition columns was a laborious task, to say nothing of the survey, bedding in, etc. that would have to be completed to occupy new gun positions.



Major-General Sir H. E. Burstall by Sir William Orpen. [National Gallery of Canada]

and the artillery] was knocked on the head. The Artillery Command throughout requires strengthening to prevent dual control in action, and to ensure rapid and efficient concentration of fire, efficient co-operation with aeroplanes, etc.”³⁹ At all formation levels in the BEF, the role of the artillery commander evolved during the war. Instead of merely acting as an advisor to the divisional commander on artillery

³⁹ Letter from Birch to Lieutenant-General Sir L.E. Kiggell, chief of staff BEF, 29 July 1916, Letters from Major-General Birch, June-July 1916, Uniacke Papers, U/III/13, RAI.

matters, the CRA, the senior gunner at the divisional level, became a commander in his own right to the same degree as the commanders of the infantry brigades in the division.⁴⁰

During set-piece operations, like the Somme, the corps, specifically the GOC RA and his staff, played an instrumental role in the planning and execution of the artillery programs.⁴¹ Before the war, the corps only had an artillery advisor serving on the staff. However, the need for centralized control of the guns prompted the creation of two artillery commander positions in the corps headquarters: the GOC RA, later named brigadier-general Royal Artillery (BGR A), and the CHA. Similar to the CRA, the GOC RA was responsible for “the co-ordination of the action of the artillery of the corps, and the executive command of such portions of it as the corps commander might direct from time to time.”⁴² The CHA had similar duties with respect to the corps’ heavy guns.⁴³ At the army level, the MGRA advised the army commander on artillery matters, issued fire plans to corps headquarters for large offensives conducted by the army, coordinated the efforts of the army and corps artillery units, and liaised with the RFC to ensure cooperation between the artillery and air units.⁴⁴ Before the Somme offensive, Major-General Sir C.E.D. Budworth, MGRA of the Fourth Army, issued the first army-wide artillery instruction, which established the priorities of fire for the corps and divisional artillery staffs.⁴⁵ Centralization of command and control of artillery fire greatly reduced confusion and ensured more efficient use of guns and ammunition.

The Canadian Corps joined the Battle of the Somme in the period that Haig later described in his dispatches as “the wearing-out battle.”⁴⁶ On 19 August, Haig announced that he intended to renew

⁴⁰ Brooke, “Evolution of Artillery in the Great War, 1914-1918,” 378.

⁴¹ Bailey, “British Artillery in the Great War,” 44-45.

⁴² Letter from Birch to Kiggell, 8 June 1916, Letters from Major-General Birch, June-July 1916, Uniacke Papers, U/III/13, RAI; and Brooke, “Evolution of Artillery in the Great War, 1914-1918,” 378.

⁴³ Report on Visit to III Corps, June 1916.

⁴⁴ Brooke, “Evolution of Artillery in the Great War, 1914-1918,” 379; and Letter from Birch to Kiggell, 29 July 1916.

⁴⁵ Strong and Marble, *Artillery in the Great War*, 90.

⁴⁶ Haig viewed the entire Somme offensive as a large attritional battle that was a necessary precursor to eventual victory. Lieutenant-Colonel J.H. Boraston, ed., *Sir Douglas Haig’s Despatches, December 1915-April 1919* (London and Toronto: J.M. Dent & Sons Ltd., 1919), 19-59.

Division, attacking on the left flank, to provide flank security.⁵¹ General Sir Hubert Gough's Reserve Army, of which the Canadian Corps was a part, needed to capture these features to protect the left flank of the Fourth Army.⁵² Burstall, commander of the corps artillery, and his staff prepared a sophisticated, yet effective, artillery instruction to support the attack on Courcellette. Burstall assembled 234 field guns and sixty-four heavy pieces to support the attack.⁵³ British and Indian divisional artillery, including Brooke's 18th Division, supplied many of these guns, and it was the largest concentration of guns to support an operation conducted by the Canadian Corps to that point in the war.⁵⁴ An intense five-day bombardment preceded the battle. For example, the artillery instruction called for every 10 yards of German trench to be saturated with fifteen rounds of heavy, twenty rounds of medium, and forty-five rounds of 4.5-inch howitzer shells during the two days 13 and 14 September.⁵⁵

Positioned nearly wheel-to-wheel in valleys south of Pozières, the Canadian gunners suffered grievously from the German counter-battery shoots but continued to fire shell after shell into the German positions.⁵⁶ Sergeant Reginald Grant, a gun detachment commander, noted, "I had the firm conviction that death would come when it would come and not till then, and I went about my work absolutely careless of any possible hurt."⁵⁷ Lieutenant J.M. Walton, an artillery officer wrote, "We have the preponderance in artillery and everything else, in fact, and we give them twenty shells to their one. How they live through our terrific bombardments is a wonder to me."⁵⁸ The Canadians were also fortunate that their positions atop Pozières ridge afforded them an unobstructed view of the German defences, which

⁵¹ Nicholson, *Canadian Expeditionary Force, 1914-1919*, 169.

⁵² Campbell, "A Forgotten Victory," 29.

⁵³ Nicholson, *The Gunners of Canada*, 261-62.

⁵⁴ H.M. Jackson, *The Royal Regiment of Artillery, Ottawa, 1855-1952: A History* (Montreal: Industrial School for the Deaf, 1952), 108; and Nicholson, *The Gunners of Canada*, 262.

⁵⁵ Artillery Instructions No. 25 by GOC RA Canadian Corps, 12 September 1916, appended to WD GOC RA Canadian Corps, September 1916, File 503, Vol. 4957, RG9-III-D-3, LAC.

⁵⁶ Cook, *At the Sharp End*, 441.

⁵⁷ Quoted in *Ibid.*

⁵⁸ Charles Lyons Foster and William S. Duthie, eds., *Letters from the Front: Being a Record of the Role Played by Officers of the Bank in the Great War, 1914-1919* (Toronto and Montreal: Southam Press Limited, 1920), 172.

“show up beautifully in the chalk soil.”⁵⁹ This enabled the Canadians to register their guns without having to rely heavily on the RFC.

Burstall ordered his 18-pounders to fire shrapnel shells at zero-hour, 50 yards in front of the German trenches.⁶⁰ The fire plan dictated that each gun fire four rounds for the first minute, before the fire would be adjusted to target the first German trench line for three minutes. To continue providing the advancing infantry with fire support, each gun fired two rounds per minute, and the barrage moved forward 100 yards every three minutes, until the infantry reached their final objective—a depth of 1,000 yards. Once the infantrymen reached their final objective, the gun fire dwelled on line forward of the consolidating soldiers and returned to the original rate of fire for six minutes. This formed a protective barrier several hundred metres in front of the infantry’s final objectives. The heavier guns, which belonged to Brigadier-General A.C. Currie’s corps heavy artillery and which had already bombarded the German defences for three days, continued to bombard the German trenches to suppress them while the infantry advanced.⁶¹ Once the creeping barrage fired by the 18-pounders got within 500 yards of the bombardment, the heavy guns adjusted their fire to targets further in the German rear and dwelled on them until the creeping barrage got within 500 yards again and so on. Not all of the artillery assigned to the corps participated in the creeping barrage. A number of batteries were “superimposed,” meaning their fires could be brought to bear on contingency targets.⁶² For instance, the 10th Field Battery, 3rd Brigade Canadian Field Artillery (CFA), received orders to “engage targets of opportunity reported by the R.F.C.,” which it did on numerous occasions throughout the battle.⁶³

The attack on 15 September got off to a successful start, largely because of sound artillery preparation. At 0620, the creeping barrage started 50 metres in front of the German trenches to knock out

⁵⁹ WD 1st Brigade Canadian Field Artillery (CFA), 31 August 1916, File 527, Vol. 4964, RG9-III-D-3, LAC.

⁶⁰ Operation Order No. 26 by GOC RA Canadian Corps, 13 September 1916, appended to WD GOC RA Canadian Corps, September 1916.

⁶¹ Ibid.

⁶² Bailey, “British Artillery in the Great War,” 33.

⁶³ Quoted in R. James Steel, *The Battery: The History of the 10th (St. Catherines) Field Battery, Royal Canadian Artillery* (St. Catherines: 10th Field Battery Association, 1996), 88.

advance outposts and forced the Germans to seek cover in their dugouts. Brooke described the effects of the bombardment. “Along the Pozières Ridge ... the surface is literally ploughed up by shell, not a square foot anywhere that has not been churned up. Everything broken and smashed, not a tree, bush or house left. A scene of absolute desolation and destruction. Broken debris everywhere.”⁶⁴ That effect was the result of extremely tough work on the gun line:

The gunners back in their rough splinter-proof gun pits had become temporarily stone deaf, while blood oozed from their ears and noses. Orders were passed in writing; the noise was too terrific for words. Field gun batteries were firing four rounds per minute, ceasing for a few seconds to lift the range as the barrage crept forward in front of our infantry.⁶⁵

Not everything ran like clockwork. At 0623, the barrage lifted and the Canadians began their assault. However, the infantry had not reached the German trenches when the barrage lifted 90 metres forward, so the Canadian infantry had to fight the remaining 100 yards forward under heavy German machine-gun fire. They would never have made it that far without the well-executed barrage, and they did make it to their objectives, more or less intact.⁶⁶ The thorough planning and preparations for the attack paid off. Within ten minutes of zero-hour, all of the battalions in the 2nd Canadian Division secured their first objectives.

After the battalions had secured their final objectives, Byng, under pressure from Gough, ordered his divisional commanders to exploit their successes and execute a follow-on attack to secure Courcellette and the Fabeck Graben.⁶⁷ This was a new operation and only ordered late in the morning. Gough had explicitly ruled it out during the pre-battle planning, and Haig only ordered it late at night on 14 September.⁶⁸ That British and Canadian gunners were able to put together effective bombardments and barrages in such tight time constraints speaks to their flexibility and proficiency. At

⁶⁴ Alanbrooke, “Notes on My Life,” 56.

⁶⁵ Quoted in Nicholson, *The Gunners of Canada*, 265.

⁶⁶ Cook, *At the Sharp End*, 449.

⁶⁷ WD Canadian Corps General Staff, 15 September 1916.

⁶⁸ *Ibid.*, 14 September 1916.



Courcelette being shelled during attack by Canadians. [Library and Archives Canada PA-000807]

1800 on 15 September, the guns commenced firing another creeping barrage to cover the attack by the 22nd (French Canadian) and 25th (Nova Scotia Rifles) Battalions to capture the village of Courcelette.⁶⁹ Although the creeping barrage suppressed German machine-gun fire, most enemy guns, largely unmolested by Anglo-Canadian counter-battery fire, remained in action throughout the battle and inflicted significant casualties upon the advancing infantry, although not enough to halt their attack. An after-action report written by the commanding officer of the 25th Battalion noted, “As we started our advance we came under artillery fire almost immediately but this did not in the slightest degree check or confuse our men. They marched that distance of 2200 yards as though they were on a General Inspection Parade.”⁷⁰ In a few instances, Canadian gunners working with the RFC pinpointed the location of German batteries and neutralized them before the infantry attack began.⁷¹ But it was

⁶⁹ Cook, *At the Sharp End*, 459.

⁷⁰ Lieutenant-Colonel E. Williams’ Report on the 25th Battalion’s Capture of Courcelette, 25 September 1916, appended to WD 25th Battalion, September 1916, File 417, Vol. 4933, RG9-III-D-3, LAC.

⁷¹ Jackson, *The Royal Regiment of Artillery, Ottawa, 1855-1952*, 108.

the rapid and deep advance of the Canadian infantry, not the counter-battery shoot, that silenced the German guns, which had to move further to the rear because the Canadian assaulters were getting too close.

The Battle of Flers-Courcelette was a much needed victory for the BEF. Along the 6-mile attack front, British and Canadian soldiers advanced approximately 1 mile.⁷² In his dispatches, Haig cheerfully reported, “The result of the fighting on the 15th September and following days was a gain more considerable than any which had attended our arms in the course of a single operation since the commencement of the offensive.”⁷³ The week’s fighting to seize and hold Courcelette cost the Canadian Corps 7,230 casualties.

Still, no breakthrough had been achieved, so Gough ordered Byng’s Canadian Corps and the British II Corps to seize Thiepval Ridge, a gentle slope a few hundred yards past Courcelette, and the gunners got back to work. After the Battle of Courcelette, preparations began immediately to build the infrastructure to move the guns forward. Sergeant J.A. Brice wrote in a letter home, “As quickly as a few hundred yards’ advance is made, big working parties make new roads (and good ones, too), all running in the one direction. Before the road is half-done the guns have been brought up to new positions and the stream of ammunition wagons soon becomes unbroken.”⁷⁴ Over 800 guns and mortars were moved forward and assembled to support the attacks on Thiepval Ridge by the Canadian and British II Corps on 26 September.⁷⁵ By 24 September, the gunners had occupied their new positions and began registering their guns in preparation for the attack to seize Thiepval Ridge.⁷⁶ To soften the German defences before the attack began, the artillery fired gas shells and conducted numerous harassing fire shoots.⁷⁷ Lieutenant Allen Oliver, a FOO for the 26th Field Battery, wrote “the general idea seems to be to get revenge on the enemy for the five months pounding which he gave us in the [Ypres] salient.”⁷⁸ At 1235 on 26 September, the artillery commenced its barrage. While the heavy guns concentrated on destroying the

⁷² Boraston, ed., *Sir Douglas Haig’s Despatches*, 42.

⁷³ *Ibid.*

⁷⁴ Foster and Duthie, eds., *Letters from the Front*, 166.

⁷⁵ Nicholson, *Canadian Expeditionary Force, 1914-1919*, 176.

⁷⁶ WD 1st CDA, 24 September 1916; and WD 2nd CDA, 24 September 1916.

⁷⁷ WD 1st CDA, 23 September 1916.

⁷⁸ Quoted in Cook, *At the Sharp End*, 472.

22 ∴ "Our Artillery Would Smash It All Up"

TIME TABLE FOR ATTACK ON SEPT--- 1916.			
NATURE.	TIME.	OBJECTIVE.	RATE OF FIRE.
18 prs. of 1st & 2nd C.D.A. and	0 to 0.1	Barrage D. 100 yards short of Barrage E. except between R.29.a.5.7. and R.29.a.6.7. and from H.29.d.3.3. to the right, where it coincides with Barrage E.	4 rds. per gun per min.
	0.1 to 0.11	Barrage D. along COLLIER GRABIN from R.28.a.3.6 to R.28.a.6.7. thence to new trench R.28.d.2.1. to E. c. 2.9.2. thence following German front trench to K.29.a.0.8., thence as arranged.	1 rd. per gun. per minute.
	0.11 to 0.14	d i t t o.	4 rds. P-G-P-M.
	0.14 to 0.25	Barrage F. Lift 150 yards on R. & I - Enlarge SUBURBY Trench in centre.	2 rds. P-G-P-M.
	0.25 to 0.32	Barrages G.H.J. & K. Four lifts of 100 yds. each on left and right; G.H. & K. respectively 50 yds. short of, coinciding with, and 50 yds. over HESSIAN trench, except for its rear-most 200 yds., where K coincides with it. Two mins. on each lift.	2 rds. per gun per minute.
	0.32 to 0.39	Barrage L. Lift 200 yds. beyond Barrage K. on left to 150 yds. beyond in centre, to 100 yds. beyond on R. From R.22.d.8.3. to R. barrage is 50 yds. short of REGINA Trench.	
	0.39 to 0.45	Barrages M.N.O. respectively 50 yds. short of, coinciding with, and 50 yds. over REGINA Trench, from L. as far as E. as R.22.d.8.3., where M. coincides with it, as far as E. as COURCHETTES Trench and N. is 50 yds. over.	

TIME TABLE FOR ATTACK ON SEPT. ---1916.			
NATURE.	TIME.	OBJECTIVE.	RATE OF FIRE.
16 prs. 1st and 2nd C.D.A. and LAHORE & 16th D.I.	0.45 to 1 hr. 15	Final Barrage. R.16.c.7.9. in a straight line R.16.g.3.5., thence S. along COURCHETTES Trench to R.16.d.4.0. thence E. for 100 yds. curving S. to R.20.g.7.0. - thence due S.	2 rds. per gun per min. until 1 hour, 1 rds. P-G-P-M. after
4.5 Hocs. of 2nd C.D.A.	0 till 0.25	HESSIAN Trench between Corps boundary and GRANDCOURT Road.	Foster's consistent with care of equipment and accuracy.
	0.25 till 0.35		
ditto.	0.35 till 1 hr 15	Search Sunken Road from R.16.a.2.0. to GRANDCOURT Trench.	1 rd. P-G-P-M. till 1 hour, then slowing to 1 rd. per battery per min.

Fire Plan for the Attack on Thiepval Ridge, 24 September 1916. [Appended to War Diary 2nd Canadian Divisional Artillery, September 1916. Library and Archives Canada RG9-III-D-3, Vol 4959, File 510.]

German trenches, the field artillery laid down a blanket of shrapnel for the infantry of the 1st and 2nd Canadian Divisions to advance behind.⁷⁹ Although the barrage suppressed the front-line trenches, the Germans sited many of their machine guns in craters in no man's land, so the bombardment left them unscathed. These machine guns, sited with enfilading fields of fire, inflicted heavy casualties on the advancing troops.⁸⁰ The attack continued for two days, and

⁷⁹ Artillery Instructions No. 32 by GOC RA Canadian Corps, 24 September 1916, appended to WD GOC RA Canadian Corps, September 1916.

⁸⁰ WD 3rd Canadian Infantry Brigade, 26 September 1916, File 220, Vol. 4876, RG9-III-D-3, LAC; and Brigadier-General H.D.B. Ketchen's Report on operations from the 24th to 28th September, 30 September 1916, appended to WD 6th Canadian Infantry Brigade, September 1916, File 263, Vol. 4888, RG9-III-D-3, LAC.

the infantry did secure Zollern and Hessian Trenches; however, after repeated attempts, they were “unable to make a lodgment” in Regina Trench.⁸¹ The effectiveness of artillery support during the Battle of the Somme was far from uniform.

Incessant fighting and BEF artillery bombardments and barrages forced the Germans to adjust their defensive doctrine. A German government official noted, “The unprecedented English artillery fire on the Somme is filling the hospitals more than ever, all those on the Rhine being over-filled, so that the wounded are being transported straight from the Western Front to the Tempelhofer Hospital in Berlin.”⁸² Realizing that filling the frontline trenches with troops only provided the Allied gunners with good targets, the Germans evolved their defensive doctrine to avoid cramming men into forward trenches by employing an elastic defence system.⁸³ They dug their main defensive positions on reverse slopes, where Allied artillery observers could not see them. Only a few troops held the frontline trenches. Most were held in reserve for counterattacks to regain any lost ground after the Allied attack began to stall. Additionally, the Germans sited their machine guns away from their trenches and had their artillery register defensive fire targets.

German readjustments to their defences made attacking difficult and costly. During the battles to seize Regina Trench on 1 and 8 October, the British and Canadian artillery could neither clear gaps in the German wire obstacles nor could they neutralize enemy machine guns. German wire remained largely intact because, as discussed earlier, shrapnel was not very effective for this task, with deadly consequences. The 18-pounders from the 1st Canadian, 2nd Canadian, and Lahore Divisional Artilleries bombarded the German wire with shrapnel for more than a week in advance of the 8 October attack, for example, but the wire obstacles remained intact. German machine guns were difficult to neutralize because they were so difficult to locate. The Germans built the Regina Trench position on the reverse slope of a spur on Thierval Ridge, making it difficult for FOOs to observe fire and necessitating aerial observation, which was hampered by the poor weather conditions. A corps intelligence report compiled immediately after the 1 October assault, indicated

⁸¹ WD 1st CDA, 29 September 1916.

⁸² Quoted in Strong and Marble, *Artillery in the Great War*, 97.

⁸³ *Ibid.*, 95.



Junction of Regina and Kenora trenches. [Library and Archives Canada C-014151]

that while Regina Trench was “considerably damaged in parts by our Artillery, it is still very strong.”⁸⁴ Strong it was. Defensive positions with wire obstacles that can hold attackers up, machine gunners who can see their targets, and guns that can fire on registered targets will always be able to inflict damage on anyone who tries to attack them. The Canadians suffered 962 casualties on 1 October and still failed to capture Regina Trench.⁸⁵ Canon Frederick Scott, senior chaplain of the 1st Canadian Division, recalled one horrific incident: “One man told me that he had counted three hundred bodies hanging on the wire which we had failed to cut in preparation for the attack.”⁸⁶ The attack on 8 October by 1st and 3rd Canadian Divisions piled up

⁸⁴ Intelligence Report on Regina Trench, 4 October 1916, appended to WD Canadian Corps General Staff, October 1916.

⁸⁵ Brigadier-General J.H. Elmsley’s Report on Operations from September 27th to October 3rd, 1916, appended to WD 8th Canadian Infantry Brigade, October 1916, File 287, Vol. 4895, RG9-III-D-3, LAC.

⁸⁶ Canon Frederick George Scott, *The Great War as I Saw It* (Toronto: F.D. Goodchild Company, 1922), 139.

another 1,364 casualties, and still failed to force the Germans from the position.⁸⁷ Major Agar Adamson, acting commanding officer of the Princess Patricia's Canadian Light Infantry, observed:

The Army had become too sanguine and gave us [7th Canadian Infantry Brigade] a job that was almost impossible to carry out and did not give us enough support and in many cases, though not in ours, the Artillery had not cut the wire, the men being shot to pieces trying to get through it.... The R.C.R. [Royal Canadian Regiment] lost every officer, killed, wounded, or taken prisoner, they sent in, except the C.O. and Adjutant.⁸⁸

Attacks could not go on like this.

To combat the new German defensive doctrine, British and Canadian gunners now had to fire on a far greater depth than before, even if this diluted the concentration of fire across the entire front. The artillery needed to target shell holes in no man's land that the Germans converted into machine gun nests and the rear areas where the guns were and where the Germans would likely form-up to launch counterattacks.⁸⁹ The 21 October attack by 4th Major General David Watson's 4th Canadian Division, as part of Lieutenant-General Sir Claude Jacob's II Corps incorporated many of the artillery lessons learned during the difficult battles of September and early October. The Canadian Corps had left the Somme on 17 October for Vimy Ridge, but nearly all of its artillery remained behind in support of the ongoing operations.⁹⁰ Supplied with an enormous quantity of shells, the gunners supporting the II Corps attack received orders to blast Regina Trench. The order stated, "No limit to number of rounds fired on each spot, except that each section of trench must be completely obliterated."⁹¹ The gunners did that. After firing over tens of thousands of HE shells at Regina Trench, they literally erased it from the map.⁹²

⁸⁷ Nicholson, *Canadian Expeditionary Force, 1914-1919*, 186.

⁸⁸ Norm Christie, ed., *Letters of Agar Adamson, 1914 to 1919: Lieutenant-Colonel, Princess Patricia's Canadian Light Infantry* (Nepean: CEF Books, 1997), 223.

⁸⁹ Bidwell and Graham, *Fire-Power*, 112; and Artillery Lessons Drawn from the Battle of the Somme.

⁹⁰ The three CDAs remained in II Corps when the Canadian Corps left for Vimy on 17 October. They did not return until late in November. Nicholson, *The Gunners of Canada*, 272.

⁹¹ Artillery Instructions No. 42 by GOC RA Canadian Corps, 10 October 1916, appended to WD GOC RA Canadian Corps, October 1916.

⁹² *Ibid.*, 515.

They also prevented the Germans from repairing their damaged defences by continually shelling the German wire obstacles.⁹³ Once the assault started, machine guns joined in the barrage and fired over 500,000 bullets over the heads of the infantry to disrupt the movement of reinforcements and break up German counterattacks.⁹⁴ The fire support provided for the attack by Brigadier-General Victor Odlum’s 11th Canadian Infantry Brigade on 21 October proved effective. Within three hours, the brigade had secured a portion of the trench, repulsed a number of German counterattacks with the help of sos fire, and captured 160 prisoners while sustaining 468 casualties.⁹⁵ That is how it worked when there was sufficient time to find and register targets and sufficient ammunition to cut wire, destroy enemy defences, neutralize enemy weapons and break up enemy counterattacks.

Rushed operations rarely turned out well, as Watson found out a few days later. Seeking to replicate Odlum’s success, Watson ordered Brigadier-General William St. Pierre Hughes, commander of the 10th Canadian Infantry Brigade and brother of the infamous Minister of Militia Sir Sam Hughes, to direct his 44th Battalion to capture the remainder of Regina Trench on 25 October. However, the German defenders remained resolute and the artillery fire support was ragged. A FOO from the 10th Brigade CFA recollected the barrage was “absolutely insufficient to keep down enemy machine-gun fire, there being not enough guns on the zone and the rate of fire was too slow.”⁹⁶ St. Pierre Hughes later informed Sir George Perley, Minister of Overseas Military Forces, that the guns took too long to deploy forward and most had to fire without registering.⁹⁷ Hughes’s point was a valid one. Rain had turned the battlefield into a bog and hindered mobility. To continue supporting the advance of the infantry, the gunners needed to deploy their guns in forward positions. However, the deep mud made finding a suitable gun position nearly impossible. As

⁹³ Reserve Army Orders & Instructions S.G. 20/10/338, 11 October 1916, appended to WD Canadian Corps General Staff, October 1916.

⁹⁴ Cook, *At the Sharp End*, 513.

⁹⁵ Report on operation conducted on the 21st October, 21 October 1916, appended to WD 11th Canadian Infantry Brigade, October 1916, File 314, Vol. 4903, RG9-III-D-3, LAC.

⁹⁶ Intelligence Report 10th Brigade CFA, 25 October 1916, appended to WD 10th Brigade CFA, October 1916, File 549, Vol. 4970, RG9-III-D-3, LAC.

⁹⁷ Nicholson, *The Gunners of Canada*, 269.



Pack horses transporting ammunition to the 20th Battery, Canadian Field Artillery. [Library and Archives Canada PA-001231]

Gunner Reginald Grant complained, “Mud under me, water around me and hell above me.”⁹⁸ The gunners often had to manhandle their guns into position and ammunition and rations had to be carried up to the forward batteries on pack mules and horses.⁹⁹ Adding to their misery, German gunners regularly fired shrapnel and gas shells at the Canadian gun positions.¹⁰⁰ Making matters worse, in their rushed battle preparations, the artillery did not have sufficient time to register the guns, which made their fire woefully inaccurate. With limited intelligence, the gunners did not target enemy positions on the boundaries of the attack, which is where the Germans sited most of their machine guns.¹⁰¹ The results should have been predictable. At zero-hour on 25 October, the troops of 44th Battalion climbed out

⁹⁸ Quoted in Cook, *At the Sharp End*, 497.

⁹⁹ WD 1st CDA, 31 October 1916; and WD 4th Canadian Division, 28 October 1916, File 156-157, Vol. 4859, RG9-III-D-3, LAC.

¹⁰⁰ Cook, *No Place to Run*, 85.

¹⁰¹ Intelligence Report 10th Canadian Infantry Brigade, 26 October 1916, appended to WD 10th Canadian Infantry Brigade, October 1916, File 304, Vol. 4901, RG9-III-D-3, LAC.



Troops of the Royal Garrison Artillery setting fuses of 6 inch howitzer shells in front of Montauban, July 1916.. [© IWM (Q 4035)]

of their trenches and advanced towards Regina Trench. The German artillery and machine gunners mowed them down, inflicting over 200 casualties in a matter of minutes.¹⁰²

The technical reasons for the ineffectiveness of the artillery fire on 25 October or any other failed attack did not matter to the infantrymen fighting in the trenches, but the reasons were not imagined. Many of them dammed the artillery for failing to target the German defensive strongpoints and clear gaps in the wire. Lieutenant-Colonel W.A. Griesbach, Commanding Officer of the 49th Battalion, wrote, “Our field artillery is, in my opinion, quite useless for wire cutting and the destruction of the enemy’s works.”¹⁰³ Unfortunately, he was right. Inherent inaccuracies of the guns and instruments, errors by the gunners, inconsistencies of the ammunition, and meteorological

¹⁰² WD 44th Canadian Infantry Battalion, 25 October 1916, File 435, Vol. 4939, RG9-III-D-3, LAC.

¹⁰³ *Ibid*, 502.

conditions meant that a shell fired from the same gun with the same bearing, fuze setting, and elevation would not land in exactly the same spot. This is known as probable error in range and probable error in deflection. Together, they form an elongated oval in which it can be reasonably assumed that the majority of rounds will burst. Barrel wear, inconsistencies with ammunition, and human error increased the probable error in range and deflection. Less accurate fire not only meant that rounds could drop short, it also meant that more ammunition was necessary to achieve the same destructive or neutralizing effect.

Unreliable fuzes and barrel wear greatly hindered the ability of the artillery to accomplish its five tasks. The artillery had the means to destroy the German wire—with high explosive—but the gunners had no faith in the ordnance. Without the No. 106 fuze, HE tended to throw wire in the air but not cut it. Consequently, the wire would land back on the ground intact, creating a new obstacle, but with craters to slow down the already encumbered infantry's advance.¹⁰⁴ Despite the pleas of infantry officers to blow gaps in the wire, the guns continued to use shrapnel shells against the wire with poor results. Furthermore, many of the guns could not fire all of the shells supplied to them. After shooting 20,000 rounds the barrel on an 18-pounder gun was supposed to be replaced. Shortages of new barrels meant that, by the middle of the Somme offensive, most guns had already fired between 40,000 to 60,000 rounds without replacing the barrels.¹⁰⁵ The overuse of the 18-pounders is but one example. Canadian gunners appreciated the effect of barrel wear on the guns and, on 14 October, the diarist of the Canadian Corps Heavy Artillery noted, “unable without putting guns out of action to fire the amount of ammunition received.”¹⁰⁶ To the detriment of Canadian infantrymen, barrel wear greatly affected ballistics by reducing obturation and causing rounds to drop short. The consequences of short rounds could be great. For instance, the 5th Canadian Infantry Brigade sustained a number of casualties due to Canadian shells that dropped short. The war diary of the 25th Battalion notes that the

¹⁰⁴ Artillery Notes No. 5, Wire Cutting, June 1916; and Nicholson, *The Gunners of Canada*, 267.

¹⁰⁵ Cook, *At the Sharp End*, 493.

¹⁰⁶ WD Canadian Corps Heavy Artillery, 14 October 1916, File 561, Vol. 4973, RG9-III-D-3, LAC.

battalion sustained over one hundred casualties to Canadian shellfire between 29 and 30 September.¹⁰⁷

Without the ability to amend the artillery programme, the infantry had to keep pace with the creeping barrage for it to be effective. Many FOOs and battery commanders felt utterly helpless once a creeping barrage started because they could not alter the timings or issue corrections. Artillery staff officers pre-planned barrages, and it took hours to modify them. During the attack on Regina Trench on 21 October, Captain Henry Hutton Scott of the 87th (Canadian Grenadier Guards) Battalion, Frederick Scott's son, died while leading his troops behind a creeping barrage.¹⁰⁸ His troops hesitated when a machine gun bullet struck him, and they fell behind schedule. When another officer finally ordered them to continue advancing, German machine guns inflicted heavy casualties on the advancing troops.¹⁰⁹ In instances when the troops kept pace with the barrage, the infantry usually managed to secure their objectives quickly and with fewer casualties. After-action reports from July and August identified the need to mark start-lines as well as sign-post approach routes to avoid confusion and delays while crossing no man's land.¹¹⁰ Barrages also had to be fired perpendicular to the direction of the attack to prevent the infantry from wandering off course following the barrage. Making it easier for the infantry to navigate across no man's land enabled them to keep pace with the barrage.

FOOs played a critical role in ensuring effective fire support for the infantry. By observing the fall of shot, they sought to ensure the infantry received effective fire support and that the guns achieved good effects on target. Since the Germans sited their trenches and wire obstacles on reverse slopes, FOOs could not observe the impact of the shells or provide corrections to the guns to destroy or neutralize the German positions. When the target was out of sight, the artillery had to rely on aerial observation from the RFC to observe their shooting. Being a FOO was an incredibly dangerous job. In June 1916, GHQ issued a note to all artillery units on wire cutting and specified, “The observing officer should be as close as possible

¹⁰⁷ WD 5th Canadian Infantry Brigade, 29-30 September 1916, File 249, Vol. 4884, RG9-III-D-3, LAC.

¹⁰⁸ Scott, *The Great War as I Saw It*, 148.

¹⁰⁹ *Ibid.*

¹¹⁰ Griffith, *Battle Tactics of the Western Front*, 76.

to the wire.”¹¹¹ During the engagements in late October and early November, some FOOS established their observation posts less than 100 yards away from their targets.¹¹² After receiving the Military Cross for bravery in an earlier attempt to capture Regina Trench, Lieutenant Allen Oliver was killed while crawling forward through the mud and snow to observe the fall of shot on Desire Trench on 18 November.¹¹³ Despite the poor weather conditions and a breakdown in communications, the attack of the 11th Canadian Infantry Brigade on Desire Trench succeeded with relatively few casualties. Supported by all of II Corps’ heavy guns, the 11th Divisional Artillery, and the three CDAs, the creeping barrage allowed the infantry to cross no man’s land, make its way through the German wire, and begin clearing the remaining Germans out of the trench.¹¹⁴ The brigade took 625 Germans prisoner, and some German troops refused to launch seemingly futile counterattacks.¹¹⁵

Without communications to ensure fire was applied where needed, the potential destructive effect that the artillery could inflict was minimized. Abysmal communications meant barrages and bombardments had to be preplanned, making the artillery inflexible. Consequently, the infantry had to follow the artillery’s course. During the Battle of the Somme, the infantry and FOOS used various methods of communication to inform higher headquarters and guns of their position. To mark their positions and call for SOS fire, the standard procedure called for infantrymen to use flares.¹¹⁶ To prevent the Germans from falsely initiating an SOS mission, the infantry used different colours of flares that would be specified in the operation order.¹¹⁷ Besides flares, signalers also used wire, signaling lamps, and runners to communicate. Even at the end of the war, the artillery depended upon signalers laying communications wire and maintaining it, since wireless communication remained in its infancy.¹¹⁸ To maintain communications between the FOOS, guns, and

¹¹¹ Artillery Notes No. 5, Wire Cutting, June 1916.

¹¹² Nicholson, *The Gunners of Canada*, 270.

¹¹³ Cook, *At the Sharp End*, 516.

¹¹⁴ Nicholson, *The Gunners of Canada*, 271.

¹¹⁵ WD 4th Canadian Division, 18 November 1916.

¹¹⁶ Report on Visit to III Corps, June 1916.

¹¹⁷ Canadian infantrymen greatly disliked the British flare system because they believed that it was cumbersome and prone to failure.

¹¹⁸ Brooke, “Evolution of Artillery in the Great War, 1914-1918,” 48; Report on Visit to III Corps, June 1916; and Artillery Lessons Drawn from the Battle of the Somme.

headquarters, signalers routinely exposed themselves to enemy fire to lay wire and repair it. Sergeant R.B. Gibson, a signaler in the 8th Canadian Infantry Brigade, testified to the hazardous nature of their job in a 2 November letter:

My job is to see that telephone communication is kept up between the front line and brigade headquarters – a job that sounds much easier than it actually is. I remember one day in particular we had a stretch of line that was rather worse than usual. We had forty-three breaks in that small 300 yards in a day, and when anybody went out to fix same it was the last we expected to see of him.... I assure you repairing lines on that front was hardly what one would call safe. Linemen work practically sixteen hours a day and are under the most intense shell-fire during that period. But telephone communication had go to be kept up, for on it rests the success and co-operation of the whole attack.¹¹⁹

The Somme clearly highlighted the shortcomings with communications, and signalers worked tirelessly to develop new technology to facilitate the transmission of information. The radios and signaling devices they developed improved communication and went a long in ensuring fire was brought to bear against the enemy where and when it was needed.

Staff officers also played in the effectiveness of the artillery. In addition to preparing orders and directing operations, they planned and coordinated the forward movement of guns and ammunition, no minor task considering the enormous number of guns and shells.¹²⁰ Artillery orders and barrage maps needed to be clear and precise so that all firing units could adhere to the fire plan. The destructive and neutralizing effects these orders called for required massive amounts of ammunition, so staffs also had to coordinate the construction of roads and railways to keep the guns supplied with shells.¹²¹ The destruction caused by heavy HE shelling coupled with the muddy conditions made resupply extremely difficult. The inability to supply the guns with the ammunition they needed to prepare the battlefield is largely responsible for the delays in attacks in late October

¹¹⁹ Foster and Duthie, eds., *Letters from the Front*, 175-76.

¹²⁰ Report on Visit to III Corps, June 1916.

¹²¹ Artillery Lessons Drawn from the Battle of the Somme.

and November.¹²² Furthermore, the aggressive operational tempo demanded by Haig and Gough often left insufficient time for the staffs to conduct appreciations, draft orders, and coordinate with flanking formations. This in turn limited the time available for the artillery to prepare for the battle, which nearly always resulted in reduced effectiveness.

Artillery commanders and staffs desperately sought better ways of fighting. Following the Somme offensive, staff officers across the BEF studied numerous after-action reports and determined that during an initial fire-plan guns had to be controlled at the army and corps level.¹²³ Centralizing command of the guns at the corps level, like the Canadian Corps did during its time on the Somme, ensured a more efficient transmission of orders, which afforded subordinate formations and units “ample time to study and work out their tasks in detail.”¹²⁴ The counter-battery offices, which proved vital in knocking out German guns in 1917 and 1918, also formed a critical part of the corps staffs.¹²⁵ The emergence of corps artillery staffs was a remarkable evolution for an organization that began the war “with no higher artillery commander than the C.R.A. of the Division ... [who] only exercised direct command over his artillery brigades in exceptional circumstances.”¹²⁶ Brooke noted that during the Somme the BEF “had made great progress in the co-ordinated control of artillery ... to obtain the massed effect of artillery fire.”¹²⁷ However, after the initial artillery programme had been executed, control over the guns had to be devolved down to the divisional level or lower to allow for the most effective engagements of targets of opportunity and troublesome German defensive strongpoints.¹²⁸ This devolution of control of the guns characterized British operations in the later years of the war.

¹²² WD 1st CDA, 24 October 1916; and WD 4th Canadian Division, 28 October 1916

¹²³ Artillery Lessons Drawn from the Battle of the Somme; and Brooke, “Evolution of Artillery in the Great War, 1914-1918,” 373. For a thorough examination of the necessary role of the corps during the First World War, see Andy Simpson, *Directing Operations: British Corps Command on the Western Front, 1914-18* (Stroud: Spellmount, 2006).

¹²⁴ Artillery Lessons Drawn from the Battle of the Somme.

¹²⁵ For an examination of the development and effectiveness of the Royal Artillery’s counter-battery capability, see Albert P. Palazzo, “The British Army’s Counter-Battery Staff Office and Control of the Enemy in World War I,” *Journal of Military History* Vol. 63, no. 1 (January 1999): 55-74.

¹²⁶ Brooke, “Evolution of Artillery in the Great War, 1914-1918,” 261.

¹²⁷ Alanbrooke, “Notes on My Life,” 57.

¹²⁸ Bidwell and Graham, *Fire-Power*, 114-15.

For the artillery to provide effective fire support, the fire needed to be accurate, the fire plan had to be simple, the rate of movement of the creeping barrage had to match the rate of advance of the infantry, and the infantry had to advance according to schedule—simple in concept, difficult in coordination and execution.¹²⁹

Throughout the Battle of the Somme, the effectiveness of the artillery continued to be undermined by unreliable point-detonating fuzes, inaccurate gun-laying, the impact of deep mud on the deployment of guns and ammunition resupply, and the insufficient training in, or unfamiliarity with, indirect fire procedures.¹³⁰ Furthermore, many of the 18-pounders had weak recuperator systems, and the shortage of gas and smoke shells had not yet been rectified.¹³¹ By 1917, gunners in the Canadian Corps, and indeed the entire BEF, became increasingly technically proficient and no longer dismissed the theory of indirect fire as “siege gunner fandoodle.”¹³² To solve the problem of indirect fire, they insisted upon “large scale accurate maps ... [i]ncreased knowledge of survey by artillery personnel, accurate methods of calibration, meteorological reports, and systematic sorting of propellants.”¹³³ Although the War Office issued two pamphlets in December 1915 and June 1916, both of which noted the haphazard nature of gunnery, neither the War Office, GHQ, or army headquarters provided explicit instruction on calculating the correction of the moment.¹³⁴ Largely, innovative officers serving on corps and divisional staffs—like Brooke—deserve the credit for improved gunnery practices.¹³⁵ Before the Battle of Flers-Courcelette began, the CRA of the 1st Canadian Division, Brigadier-General H.C. Thacker, dispatched this order to his brigade commanders: “C.R.A. wishes battery commanders to be reminded of the importance of making corrections for temperature

¹²⁹ Artillery Lessons Drawn from the Battle of the Somme.

¹³⁰ Griffith, *Battle Tactics of the Western Front*, 67; and Rawling, *Surviving Trench Warfare*, 71.

¹³¹ Brooke, “Evolution of Artillery in the Great War, 1914-1918,” 38; and Bidwell and Graham, *Fire-Power*, 111.

¹³² Quoted in Desmond Morton, *When Your Number’s Up: The Canadian Soldier in the Great War* (Toronto: Vintage Books, 1993), 167; and Nicholson, *The Gunners of Canada*, 273.

¹³³ Brooke, “Evolution of Artillery in the Great War, 1914-1918,” 372.

¹³⁴ Nicholson, *The Gunners of Canada*, 262.

¹³⁵ Letter from Birch to Kiggell, 29 July 1916; and Nicholson, *The Gunners of Canada*, 262.



General Morrison. [Library and Archives Canada PA-002198]

of charge and for general climatic conditions.”¹³⁶ Although many Canadian gunners proudly boasted they led this transformation, the adoption of scientific gunnery principles occurred throughout the BEF.¹³⁷ To instruct artillery officers in cooperation between the artillery and RFC, meteorological work, and the theory of indirect fire, the British established the Chapperton Down Artillery School on 30

¹³⁶ Message No. 65 from Headquarters 1st Canadian Division Artillery to Headquarters 1st Brigade CFA, 14 September 1916, appended to WD 1st Brigade CFA, September 1916.

¹³⁷ In a speech to the Canadian Club in Hamilton, Major-General Sir E.W.B. Morrison, GOC RA of the Canadian Corps, praised the “exceptional” capabilities and innovation of Canadian gunners during the war, see Morrison’s Speech at Canadian Club in Hamilton, “The Canadian Artillery in the Great War” E.W.B. Morrison Papers, File Notes and Pamphlets, Vol. 2, MG 8-E81, LAC. When John Swettenham wrote General Andrew McNaughton’s biography, he wrote Alanbrooke and others out of the story so that his subject could reap the credit. For instance, he attributes the success of the artillery during the Battle of Vimy Ridge to Canadian officers, such as Morrison and McNaughton, rather than their British colleagues. Since counter-battery was still in its infancy during the Battle of the Somme, no specific reference is made to Canadian artillery officers performing better than their British counterparts during the battle. John Swettenham, *McNaughton*, Vol. 1 (Toronto: Ryerson Press, 1968), 85.

September 1916.¹³⁸ By the end of 1916, metrological sections collected data and distributed it to all artillery units numerous times daily, so they could calculate the correction of the moment.¹³⁹ Training, accurate maps, battery survey, calibration, meteorological reports, sorting of propellants, and scientific computation of firing data made direct fire much more accurate. Furthermore, predict fire—shooting unobserved and unregistered—became practical and somewhat accurate for the first time.¹⁴⁰

Although staff officers and gunners identified the need to eliminate German guns during the Somme offensive, they lacked the technology and expertise.¹⁴¹ By 1915, the engineers began to establish observation posts to observe the muzzle flashes of German guns and locate them by intersection.¹⁴² Similarly, the artillery attempted to locate German guns by a primitive method of sound ranging using officers equipped with synchronized stop watches at various points along the frontline.¹⁴³ These haphazard methods rarely proved effective. The GOC RA had to balance the requirement to knock out enemy guns through counter-battery shoots with the need for heavy guns to carry out bombardment tasks. Since counter-battery was still in its infancy and rarely achieved the desired effects, many GOC RAs preferred tasking the majority of their guns with suppressing German defensive positions.¹⁴⁴ It was not until 1917 that officers specializing in counter-battery had the necessary technology and skill to conduct effective counter-battery shoots.¹⁴⁵ During the Battle of the

¹³⁸ Farndale, *History of the Royal Regiment of Artillery*, 370.

¹³⁹ Brooke, “Evolution of Artillery in the Great War, 1914-1918,” 50; and Artillery Lessons Drawn from the Battle of the Somme.

¹⁴⁰ Marble, “The Infantry cannot do with a gun less,” 91.

¹⁴¹ Rawling, *Surviving Trench Warfare*, 78; Brooke, “Evolution of Artillery in the Great War, 1914-1918,” 261; and Artillery Lessons Drawn from the Battle of the Somme.

¹⁴² Brooke, “Evolution of Artillery in the Great War, 1914-1918,” 49.

¹⁴³ *Ibid.*

¹⁴⁴ Bidwell and Graham, *Fire-Power*, 111.

¹⁴⁵ Strong and Marble, *Artillery in the Great War*, 100. Even in 1917, counter-battery was still in its infancy, and its claimed effectiveness is at the least suspect. High casualties from indirect fire and operational research conducted by No. 2 Operational Research Section of the 21st Army Group, during the Second World War, suggests that most German guns survived British counter-battery shoots and remained in action. Terry Copp, ed., *Montgomery's Scientists: Operational Research in Northwest Europe The Work of No. 2 Operational Research Section with 21 Army Group June 1944 to July 1945* (Waterloo: Laurier Centre for Military Strategic and Disarmament Studies, 2000), 295-350.

Somme, rarely, if ever, did the Canadian artillery silence the enemy guns. Almost inevitably, counter-battery missions were assigned to neighbouring corps, and they would only fire for a few minutes. For instance, during the attack on Thiepval Ridge on 26 September, counter-battery was relegated to guns from II and V Corps.¹⁴⁶ As a result, German artillery fire was rarely silenced. However, when the 4th Canadian Division served in II Corps, counter-battery work was more effective. Arguably, Canadian and British gunners silenced German guns on 21 October and 18 November since German artillery did not “retaliate strongly.”¹⁴⁷ The gunners were becoming masters of their craft.

The Somme marked the beginning of a significant shift in British artillery doctrine and tactics. Staffs noted that inflexible fire plans—necessarily so due to the abysmal communications and lengthy planning process—usually advanced too quickly and left the infantry to advance through German shellfire, barbed wire, and machine-gun fire without fire support.¹⁴⁸ Brooke noted that gunners “had still to learn that predicted artillery fire was possible, without previous registration, and that the main advantages to be derived from artillery fire was in its power of neutralising the hostile rifle, machine gun and artillery fire, as opposed to the destruction of trenches and obstacles.”¹⁴⁹ In January 1929, Major-General A.G.L. McNaughton, former Canadian Corps Counter-Battery Staff Officer (27 January 1917 – 10 November 1918), observed that during the Battle of the Somme:

There was not that happy combination in the employment of the artillery in support of the other arms which leads to easy success in battle.... Many of our battery officers and higher commanders were inexperienced; they could not be otherwise; our artillery intelligence was in its infancy; the methods of co-operation between aircraft and the military command was rudimentary; the type of shell was in many instances unsuitable for the task to be performed.¹⁵⁰

¹⁴⁶ Artillery Instructions No. 32 by GOC RA, 24 September 1916, appended to WD GOC RA Canadian Corps, September 1916.

¹⁴⁷ WD 4th Canadian Division, 21 October and 18 November 1916.

¹⁴⁸ Morton, *When Your Number's Up*, 167.

¹⁴⁹ Alanbrooke, “Notes on My Life,” 57.

¹⁵⁰ Quoted in Nicholson, *The Gunners of Canada*, 274.

Gunners noted that they could not destroy every defensive strongpoint and suggested that artillery fire “should be concentrated on the destruction of those parts which constitute the principal obstacles to the Infantry advance.”¹⁵¹ Following the Somme offensive, the artillery no longer sought to “destroy” the enemy’s defensive positions, which it had attempted to do throughout the battle. Rather, it sought to “neutralize” by suppressing the German machine guns and artillery. However, these lessons came at a high price. The Canadian Corps sustained 24,029 casualties fighting on the Somme between September and November 1916.¹⁵²

The evolutions that improved the subsequent effectiveness of the British and Canadian artillery were many and varied. After 1916, the artillery changed its tactics and sought to “neutralize” German defences, rather than attempting to “destroy” them. The widespread use of the No. 106 Fuze on HE shells facilitated wire cutting, while the use of gas and smoke shells made neutralizing German gun batteries possible without destroying the pieces or killing the crews. Accounting for weather, equipment, ammunition, and survey errors made predicted fire practical. Staffs became proficient at conducting appreciations and drafting orders with tight time constraints, and they also became adept at resupplying guns despite battlefield conditions. Improved communications made modifications to artillery programmes possible and ensured that fire could be brought to bear against the enemy where and when it was needed. Battle-hardened gunners and artillery officers, improved training and understanding of indirect fire procedures, and more focus on intelligence also contributed to the success of the Canadian Corps’ artillery in the battles of 1917 and 1918. With a concerted effort applied to intelligence gathering, the necessary organizational apparatus provided by the CBSO, and innovative technologies, the artillery acquired the ability to destroy or neutralize the majority of the German guns before the infantry began their attacks.

During the Battle of the Somme, the infantry depended on the guns to clear gaps in the barbed wire and knock out German defensive strongpoints. Otherwise, the infantry had to advance through uncut wire under withering machine-gun and artillery fire. In a number of engagements, the artillery managed to provide effective fire support.

¹⁵¹ Artillery Lessons Drawn from the Battle of the Somme.

¹⁵² Nicholson, *Canadian Expeditionary Force, 1914-1919*, 198.

However, the effectiveness of the Canadian artillery cooperation during the Battle of the Somme was far from uniform. The contrast between the Battle of Flers-Courcelette and the slugging match for Regina Trench clearly demonstrates that a number of factors impeded the performance of the artillery during the offensive, including insufficient time for the staff to plan and the artillery to prepare the battlefield, poor communications, deplorable conditions, inexperience, and unfamiliarity with indirect fire procedures. Commanders, staffs, and gunners learned from these battles during the Somme offensive, and they disseminated these lessons across the BEF and applied them during subsequent battles in 1917 and 1918, when the artillery truly did “smash it all up.”



ABOUT THE AUTHOR

Brendan Hogan is a graduate of the Royal Military College of Canada and a serving Regular Force artillery officer in The Royal Regiment of Canadian Artillery. He currently serves as a Troop Commander in W Battery, The Royal Regiment of Canadian Artillery School.

The author wishes to thank Dr. Douglas E. Delaney and Major Stephen R. Paish for their helpful comments and revisions as well as the reviewers for their feedback and suggestions.