FEATURE

Canada's Most Decisive Victory

An Analysis of Canada's Role in the Hundred Days Offensive, 8 August - 11 November 1918

RYAN GOLDSWORTHY & J.L. GRANATSTEIN

Abstract: Of Canada's long military history, Vimy is the one battle that most Canadians will know. Some will be familiar with Passchendaele, D-Day or the disasters at Hong Kong and Dieppe. Canadians should know the Hundred Days because the battles that constitute that offensive were almost certainly the most important victories ever won by Canadian soldiers. This article analyses the various reasons for the stunning Canadian successes of that war-winning offensive: chiefly the Canadian experience and doctrine; the state of the enemy and the Allies; artillery and counter-battery fire (the most important tactical arm); and logistics and administration. Ultimately, as the Hundred Days' spearhead with replenishable manpower and with near unmatched firepower, experience, ingenuity, organisation, leadership, reputation and material resources, the Canadian Corps was the decisive war-winning formation on the Western Front.

THE CANADIAN VICTORY at Vimy Ridge in April 1917 is the sole Canadian military achievement that most Canadians will know.[1] In the context of the First World War, Passchendaele and Ypres

[1] A 2014 Ipsos poll indicated that 82 per cent of Canadian respondents could identify Vimy Ridge as a "famous battle in which Canadian troops fought bravely." "One in Five (18%) Canadians Don't Know What Vimy Ridge Is," Ipsos, 7 April 2014, https://www.ipsos.com/en-ca/one-five-18-canadians-dont-know-what-vimy-ridge.

will also be familiar to many Canadians.[2] From the Second World War, some will recall the disaster at Hong Kong in December 1941; more might know of the slaughter at Dieppe in August 1942 and the Canadian role in the D-Day landings of 6 June 1944.[3] What few will remember, however, is the Canadian Corps' extraordinary run of victories that stretched from 8 August 1918 through to the German surrender and the Armistice of 11 November 1918. Canadians should know of the Hundred Days because the battles at Amiens and the Drocourt-Quéant Line, the crossing of the Canal du Nord, the liberations of Cambrai and Valenciennes and the pursuit of a defeated enemy that ended at Mons, Belgium were almost certainly the most important victories ever won by Canadian soldiers.[4] There was no single formation that was more influential than the Canadian Corps in bringing the First World War to a victorious close in 1918.

The Canadians fought in Belgium and France from early 1915 through to the end of the war, their corps of four divisions learning how to fight in the trenches and earning a reputation as one of very finest formations in the British Expeditionary Force (BEF). Vimy

[2] A 2017 Ipsos poll indicated that 35 per cent of Canadian respondents correctly associated Passchendaele with the First World War. The same poll indicated that 49 per cent of Canadian respondents were aware of Vimy's centenary and association with the First World War. The Hundred Days were not included in any subsequent polls. "Awareness of Vimy Ridge Rises in Centenary Year; Passchendaele Less Well Known," Ipsos, 8 November 2017, https://www.ipsos.com/en-ca/news-polls/vimy-foundation-remembrance-day-2017.

[3] For the disproportionate focus placed on the defeats at Dieppe and Hong Kong in scholarship and public discourse, see Tim Cook, *The Fight for History: 75 Years of Forgetting, Remembering and Remaking Canada's Second World War* (Toronto: Penguin Random House, 2020), Chapter 9.

D-Day is certainly the Canadian victory of the Second World War with the widest acclaim. A 2010 Ipsos poll indicated that 54 per cent of Canadian respondents believe that D-Day/Invasion of Normandy was Canada's most significant moment in the Second World War. 6 June is widely commemorated and marked in Canada each year and the Juno Beach Centre serves as a dedicated museum to the Canadian role in that victory. "Three quarters (77%) of Canadians believe that the men and women who served in the Second World War deserve to be called 'the Greatest Generation'," Ipsos, 6 May 2010, https://www.ipsos.com/en-ca/three-quarters-77-canadians-believe-men-and-women-who-served-second-world-war-deserve-be-called.

[4] The Hundred Days did not receive similar centenary attention in Canada as Vimy or Passchendaele; no films or foundations have been commissioned and 8 August passes with little fanfare in Canada. See J.L. Granatstein, "This November 11th, remember Canada's heroic 100 days," *The National Post*, 8 November 2018, https://nationalpost.com/opinion/j-l-granatstein-this-nov-11-remember-canadas-heroic-100-days

solidified that reputation as did the later battles of 1917 at Hill 70 and at Passchendaele. Those famous battles did not end the war, but they established and affirmed the Corps' mighty reputation and provided the Canadians with a successful set-piece model which they would use in the war-winning offensive of 1918. By the summer of 1918 and the beginning of Canada's Hundred Days on 8 August, the experienced, well-rested and full-strength Canadian Corps—led by Lieutenant-General Sir Arthur Currie—had developed and refined a doctrine that incorporated military efficiency, superlative planning and logistics, deception, surprise and the use of overwhelming tactical firepower and combined arms in battle. The Germans, exhausted by four years of fighting and with their homeland suffering from food and materiel shortages, were soon on the verge of collapse and the Canadians with their allies would deliver the final blow. General Currie did not exaggerate much when he wrote that "We took care of 25 per cent" of the total German army on the Western Front, "leaving it to the American Army, the French Army, the Belgian Army and the rest of the British Army to look after the balance."[5] Indeed, during the Hundred Days, the Canadian Corps advanced eighty-six miles (outstripping all the previous years of Allied advances); liberated 500 square miles of territory and 228 cities, towns and villages; captured over 31,500 German prisoners, 623 guns (artillery) and 2,842 machine guns[6]—the Canadian Corps would not lose a single battle in those final months of the war. How did the Canadian Corps of four divisions with just over 103,000 officers and men accomplish all of this? This article will assess the different reasons for the Canadian successes of the war's final ninety-six days.

[5] Arthur Currie to Alistair Fraser, 7 December 1918, in *The Selected Papers of Sir Arthur Currie: Diaries, Letters and Report to the Ministry, 1917-1933*, Arthur Currie, ed. Mark Humphries (Waterloo: Wilfrid Laurier University Press, 2008), 156. Currie had sometimes been harsh in his comments on the British troops: Diary, 14 April 1918, in *Currie Selected Papers*, 94; so too was the Australian Corps commander, Lieutenant-General Sir John Monash. See John Monash to his wife, 11 September 1918, John Monash, *War Letters of General Monash* (Carlton, Australia: Black Inc., 2015), 266-269.

[6] Arthur Currie, *Canadian Corps Operations During the Year 1918: Interim Report* (Ottawa: Department of Militia and Defence, 1920), 84.

LEARNING HOW TO FIGHT AND WIN

The Canadians had begun the First World War as amateurs. The Permanent Force was tiny and the Canadian Militia was enthusiastic but largely untrained. Over three and a half years, however, this changed as the soldiers learned on the job.[7] The men had fought gallantly at Ypres in April 1915, suffered in further futile attacks in 1915 and at the bloodbaths of St Eloi and Mount Sorrel in 1916.[8] Those early battles were costly for the Canadian Corps, but hard lessons were learned which would be applied to later victories. In September 1916, as a part of the second phase of the wider Somme Offensive, the Canadians would win their first real taste of battlefield victory at Flers-Courcelette. Here, the Canadians successfully employed the creeping barrage for the first time. The creeping barrage was an artillery tactic which fired waves of shells directly in front of advancing friendly infantry, rolling forward at the infantry's walking pace, to suppress enemy fire. Courcelette also saw the introduction of tanks in warfare, where seven Mark I's were attached to the Canadian Corps' operation. Though the slow "land cruisers" were primitive, unreliable and difficult to manoeuvre, they provided a powerful psychological effect and some tactical successes in the advance.[9] The advantages of the creeping barrage, the introduction of tanks and more experienced infantry leadership contributed to the Canadian capture of Courcelette and the subsequent defeat of seventeen German counter attacks.[10] Moreover, the concerted attempt to employ artillery, tanks and infantry in unison served as a precursor to the combined arms operations which would typify the monumental successes of 1918.

In April 1917, with its four divisions together in a corps and well directed by Lieutenant-General Sir Julian Byng, the Canadians won a great victory at a major German stronghold, Vimy Ridge. Vimy's most impactful tactical legacy was that it provided the Canadians with an excellent model on how to prepare, plan and execute a set-

[7] Desmond Morton, *When Your Number's Up: The Canadian Solider in the First World War* (Toronto: Random House, 1993), 2-6. See also Chapters 3 and 4.
[8] Desmond Morton and J.L. Granatstein, *Marching to Armageddon: Canadians and the Great War 1914-1919* (Toronto: Lester & Orpen Dennys, 1989), 110-15.
[9] Tim Cook, *At the Sharp End: Canadians Fighting the Great War 1914-1916* (Toronto: Penguin Canada, 2007), 434-38 (creeping barrage), 459-63 (tanks).
[10] Cook, *Sharp End*, 461.

piece attack. In the context of the First World War, a set-piece was a deliberate attack that was planned, organised, strictly scheduled in advance then executed under the cover of a heavy, but precise, artillery barrage. Indeed, in the Canadian Corps operations of 1917 and 1918, Currie elected for the "set-piece attacking style which had proven effective at Vimy."[11] The Canadians became masters of the set-piece attack and the Corps' most decisive victories of the Hundred Days were all derivative of the set-piece style: Amiens, Drocourt-Quéant, Canal du Nord, Cambrai and Valenciennes.

After the victory at Vimy, Byng was promoted to command the British Third Army, leaving his most able division commander, Arthur Currie, as his successor. Currie was highly intelligent, a clever tactician careful with his soldiers' lives and a man determined that his corps should play an important role in defeating the enemy. He closely examined/studied how the French had learned to fight on the battlefield, why the British had suffered on the Somme and German infiltration and defensive tactics.[12] Four months after Vimy, Currie faced his first battlefield test as Corps Commander near Lens, at Hill 70, and what he would then describe as "the hardest battle in which the corps has participated."[13] Like Vimy, the set-piece victory at Hill 70 reaffirmed the importance of thorough preparation, well-defined objectives and operation-learned soldiers.[14]

At Passchendaele in the autumn of 1917, the Canadians, again proving their mettle and reliability, had taken the remnants of the village which had eluded the BEF and supporting French divisions since July. Though the capture of Passchendaele came at fearful cost, it was also the Corps' last major engagement for some months. Fortuitously, the Germans' offensives of spring 1918 had not fallen on the Canadian positions around Lens and Vimy and, although some of Currie's divisions were shifted temporarily to help the BEF counter the enemy offensive, the casualties, while heavy, could be and were

[11] Ian Brown, "Not Glamorous, But Effective: The Canadian Corps and the Set-piece Attack, 1917-1918," *The Journal of Military History* 58, 3 (1994): 422, 427.
[12] A.M.J. Hyatt, *General Sir Arthur Currie: A Military Biography* (Toronto: University of Toronto Press, 1987), 110-11; and Matthew Barrett and Robert Engen, *Through Their Eyes: A Graphic History of Hill 70 and Canada's First World War* (Montreal and Kingston: McGill-Queen's University Press, 2022), 88-89.
[13] Diary, 15-18 August 1917, in *Currie Selected Papers*, 48.
[14] Barrett and Engen, *Through Their Eyes*, 88; and Currie, *Currie Selected Papers*, 50.

From left to right, Prince Arthur of Connaught, Generals Arthur Currie, Victor Odlum, and David Watson, watching a practice attack near Passchendaele, October 1917. [LAC Item ID 3522037]

soon replaced.[15] Conscripts from Canada and men from the broken-up Fifth Division in England were available and the Canadian Corps was quickly at full strength again.[16] The Canadian Corps was large by British or Australian standards of 1918; Canadian divisions were 21,000-strong compared to 15,000 in a British division.[17] Historian Rob Thompson has pointed to the fact that at Amiens the Australian Corps of four divisions fielded less than half the strength of Currie's Corps and the Canadians had 8,500 yards of an approximately

[15] On casualties, see G.W.L. Nicholson, *Canadian Expeditionary Force 1914-1919* (Ottawa: Queen's Printer, 1962), Appendix C, 548.
[16] On the conscripts' role, see Patrick Dennis, *Reluctant Warriors: Canadian Conscripts and the Great War* (Vancouver: University of British Columbia Press, 2017).
[17] Nicholson, *Canadian Expeditionary Force 1914-1919*, 232.

20,000-yard front to cover, much more than the Australian, British and French formations involved.[18]

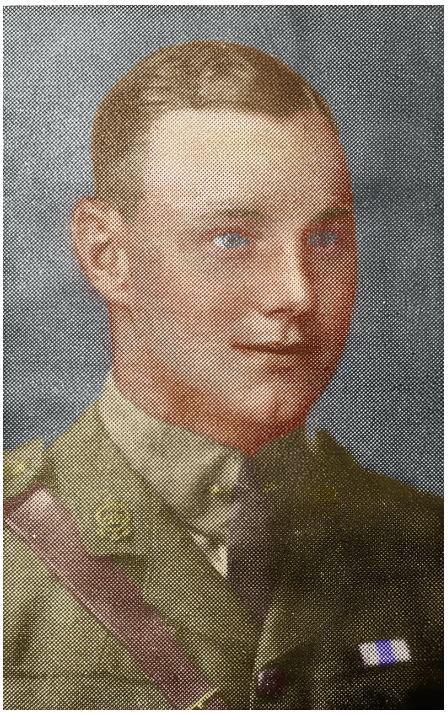
EXPERIENCE AND DOCTRINE

By mid-1918, the Canadian Corps, its commanders, staff and soldiers were a skilled, experienced formation. Even the Fourth Division, the last to join the Corps in the autumn of 1916, had almost two years of battle experience; the First, Second and Third Divisions had more time in action and such experience was essential in shaping doctrine, organisation, equipment and battlefield skill. That the Canadian divisions fought together, believed they could not be beaten and that they were the best formation in the BEF (and in the world!) was of inestimable importance. During the Canadian offensive at Passchendaele, Lieutenant (later Captain) Alfred Hannaford, a Vimy Military Cross recipient in the 87th Battalion (Canadian Grenadier Guards), would write proudly to his father in Montreal: "You know, the Canadians have a great name over here. Consider[ed] the best attacking troops in the British Army, and consequently we get lots of work."[19] Hannaford was a brave and highly respected company officer in the Canadian Corps. As a fellow soldier wrote about Hannaford's actions at Vimy, "At hill 145 […] his daring and bravery on that occasion [won] him the admiration of his superiors and of his men."[20] The Germans too considered the Canadians to be extremely effective and whenever their intelligence reported that the Canadians were in the lines, they came to expect an attack. One German intelligence document, captured in the spring of 1918, reaffirmed this: "The

[18] Rob Thompson, "'Delivering the Goods': Operation Landovery [*sic*] Castle: A Logistical and Administrative Analysis of Canadian Corps Preparations for the Battle of Amiens 8-11 August 1918," in *Changing War: The British Army, The Hundred Days Campaign and the Birth of the Royal Air Force, 1918*, ed. Gary Sheffield and Peter Gray (London: Bloomsbury, 2018); Edward Morrison, *Morrison: The Long-Lost Memoir of Canada's Artillery Commander in the Great War,* ed. Susan Raby-Dunne (Vancouver: University of British Columbia Press, 2017), 197; and Diary, 5 May 1918, in *The War Diaries of General David Watson,* David Watson, ed. Geoffrey Jackson (Waterloo: Wilfrid Laurier University Press, 2021), 265.

[19] Letter, Alfred C. Hannaford to father, 29 October 1917, Royal Canadian Military Institute [RCMI] Collection.

[20] Letter, Unattributed (Army R03) to Mrs. A Hannaford, 11 June 1917, RCMI Collection.



Captain Alfred C. Hannaford portrait 1917/1918 (see the Military Cross ribbon on his chest). Colour by Ben Buchanan. [RCMI Collection]

Canadian Corps, magnificently equipped and highly trained in storm tactics, may be expected to appear shortly in offensive operations."[21] The secrecy and extraordinary precautions taken by Currie's troops as they moved to Amiens in August 1918 demonstrated the necessity of concealing the Corps' presence.

By the spring of 1918, while the German offensives continued, Currie's soldiers had begun training for open warfare. As Charles Savage, a junior officer serving in the 5th Canadian Mounted Rifles, later recalled:

> I have always wondered whether our training in open warfare was ordered by someone sufficiently far-seeing to envisage the Amiens, Arras and Cambrai offensives and the fighting on the road to Mons, or whether we were being prepared to meet the Germans after they had

[21] James McWilliams and R. James Steel, *The Suicide Battalion: One Remarkable Battalion's Journey Through the First World War* (reprint, Leeds: Sapere Books, 2020), 162.

> triumphantly broken the Allies' line. It was the proper training for either contingency, so whoever ordered it was betting on a sure thing. And did we train? Day and night battles all over the place: tanks, airplanes, cavalry, artillery: they were all there [...] It was exactly what we needed to shake us out of the habits acquired by years in the trenches.[22]

In exercise after exercise, the soldiers practised what came to be called combined arms warfare, putting together infantry, artillery, armour and air power in ways that had never been exploited before. Moreover, initiative now was prized and blindly following orders was no more. Lieutenant-Colonel Hugh Urquhart of the 43rd Battalion put it this way:

> These were tactics which called for an exceptional degree of daring and resource in the infantry. Front line men not only had to close with the enemy in circumstances of comparative isolation—that is, without the moral support of the old close order formation—but they had to think and co-operate skilfully with the other troops engaged alongside them; there could be no more blind charging.[23]

A young artillery officer, John Scratcherd, wrote home after the Amiens victory that "By noon it had developed into the kind of war that I have always dreamt about. Open country with no trenches or barbed wire, and no artillery fire; cavalry dashing all over the place rounding up the parties of Hun and armoured cars rushing about."[24] To Scratcherd, it must have seemed much like the training regimen of spring and early summer 1918. Unfortunately for him, however, there were costly set-piece battles yet to come and he would be killed in action on 3 September in the next phase of the Hundred Days.

In the winter of 1916-1917, Julian Byng had the Corps adopt cutting-edge infantry tactics developed by General Launcelot Kiggell, Haig's Chief of Staff. Kiggell, who had intimately studied the infantry

[22] Charles Henry Savage, unpublished memoir, 1936, Canadian Letters and Images Project, https://canadianletters.ca/document-11654. See also: Diary, 16-17 May 1918, in *Watson War Diaries*, 266. Watson watched a 3rd Brigade exercise and grumbled that "They were only fair at this open warfare work."

[23] As quoted in Tim Cook, *Shock Troops: Canadians Fighting the Great War 1917-1918* (Toronto: Penguin Random House, 2008), 404.

[24] As quoted in Matthew Bellamy, "The Labatt War Legacy," *Legion* 98, 4 (July-August 2013): 49.

tactics at the Somme and Verdun, refined the linear movements and spacing of the infantry and offered battalion commanders more flexibility to make major decisions as the battle was ongoing—the Canadians soon found great success with these new tactics.[25] Canadian infantry battalions were composed of four companies and each company was composed of four platoons. At the more basic level of the infantry platoon, the new Canadian tactics also stressed the use of fire and movement to neutralise German strongpoints. Canadian infantry companies and platoons were further reorganised to make this practical. Led by an empowered junior officer, each platoon added a second Lewis gun, increasing the number of machine guns to thirty-two in each battalion. Selected officers and other ranks were trained at "Lewis gun school" and experienced men like Captain Hannaford taught tactics, schemes and "the qualities of the gun."[26] Lewis guns were more reliable and user-friendly than the M1914 Colt machine guns used by Canadians in the early war years. Unlike the Colt, the lighter air-cooled Lewis could be effectively operated and moved by a single man; a factor which was a gamechanger on the field when in a pinch.[27] Platoons maintained two Lewis gun sections and two rifle sections grouped into two half-platoons of roughly twenty men each. The soldiers also had rifle grenades and new phosphorous bombs to create smoke, making each half-platoon capable of suppressing and assaulting an enemy strongpoint.

The platoon's various sections now advanced in rushes and spread out across the battlefield to reduce casualties from enemy fire. A section would attack, its movement supported by the Lewis guns, rifles and bombs of the other sections. Then, when the attackers could go no further, the other sections would move forward, again supported

[25] See Mark Osbourne Humphries, "Old Wine in New Bottles," in *Vimy Ridge: A Canadian Reassessment*, ed. Geoffrey Hayes, Andrew Iarocci and Mike Bechthold (Waterloo: Wilfrid Laurier University Press, 2007), 72-74; and Patrick Brennan, "Julian Byng and Leadership of the Canadian Corps," in *Vimy Ridge: A Canadian Reassessment*, ed. Hayes, Iarocci and Bechthold, 92-93.

[26] Letter on "Lewis Gun School" stationary, Alfred Hannaford to mother, 2 February 1918, RCMI Collection.

[27] See, for instance, the medal citations of: Joseph Kaeble, VC (June 1918), "Cpl. Kaeble jumped over the parapet, and holding his Lewis gun at the hip, emptied one magazine after another into the advancing enemy" *The London Gazette*, 16 September 1918; Hugh Cairns, VC (November 1918), "Cairns seized a Lewis gun and single-handed… rushed the post," *The London Gazette*, 28 January 1919; and Alfred Hannaford, MC (April 1917), "he consolidated a position, operating a Lewis Gun himself… under heavy fire," RCMI Collection.

Canadian soldier avoiding sniper fire during the advance, east of Arras in October 1918. Note his Lewis gun (without the drum magazine) rested against the tree. [LAC Item ID 3522298]

by the fire of the rest of the platoon. Infiltration, adopted from the enemy's tactics, was another principle: moving around strongpoints where possible, bypassing them to preserve forward momentum and leaving them for follow-on units to clean up. Canadian battalions, and the companies, platoons and sections within, contained far more firepower or "punch" than either their German or British counterparts.[28] All this, of course, depended on company and platoon leadership, the junior officers and non-commissioned officers (NCOs) now carrying much more responsibility. Many of these junior officers and NCOs had been privates only a year or two before. They had risen on merit and were experienced and empowered enough to lead

[28] J.L. Granatstein, "Conscription in the Great War," in *Canada and the Great War: Essays in Honour of Robert Craig Brown*, ed. David Mackenzie (Toronto: University of Toronto Press, 2005), 73-74.

their men in action.[29] Captain Hannaford, who enlisted as a private in January 1915 and received his battlefield commission in November 1916, was widely lauded for the impact of his leadership on his company's success. For Hannaford's actions on 2-3 September 1918, his Bar to Military Cross citation recorded that "owing to [Captain] Hannaford's cool handling of his Company, and his rapid advance [...] the [battalion] casualties were not heavier than they were [...] his action carried the whole battalion advance on rapidly."[30]

Simultaneously, the tactics of battalions and brigades also evolved. Brigades now advanced with an assault group, a mopping-up group and a consolidation/support group with skirmishers or scouts leading each battalion. These men spotted the enemy strongpoints and then guided the assaulting infantry and the accompanying tanks to them. From half-platoon to brigade, the infantry employed fire and movement to outflank and destroy enemy positions.

The Canadians also trained with tanks, now available in much greater numbers and better armed than at Courcelette but still mechanically unreliable and not yet the war-winning weapon they would become two decades later.[31] Canadian tank battalions would not be fully trained until late-1918, but the Canadian Corps was allotted four British tank battalions with Mark IVs and Vs—a total of 162 tanks—for the start of the Hundred Days.[32] The noisy armour attracted enemy fire, but the infantrymen could see the tanks' great utility both as a psychological weapon, terrifying the

[29] Alex D. Haynes, "The Development of Infantry Doctrine in the Canadian Expeditionary Force: 1914-1918," *Canadian Military Journal* 8, 3 (2007): 63-72; and Shane B. Schreiber, *Shock Army of the British Empire: The Canadian Corps in the Last 100 Days of the Great War* (St. Catherines: Vanwell, 1997), Chapter 2.

[30] Citation, Bar to Military Cross for Alfred Crawford Hannaford, 12 November 1918, RCMI Collection.

[31] Dean Chappelle, "The Canadian Attack at Amiens, 8-11 August 1918," *Canadian Military History* 2, 2 (1993): 92-93. See also Roger Blaber, "Tanks in the 'Hundred Days' 1918—A Diminishing Resource," *British Journal of Military History* 2, 1 (2015): 104-122; and Watson, *Watson War Diaries*, 269-75.

[32] The 1st and 2nd Canadian Tank Battalions arrived in England for training in June and October 1918 respectively. Neither battalion deployed to France prior to the end of the war, though many Canadians served in British tank crews. The creation of these Canadian tank battalions speaks to the evolving emphasis placed on armour as a distinctive arm of warfare. The RCMI collection maintains the only extant example of a 2nd Canadian Tank Battalion cap badge. For tanks attached to the Canadian Corps in August 1918, see Nicholson, *Canadian Expeditionary Force 1914-1919*, 396-97.

German defenders, and as a tactical weapon, knocking out skilled, stubborn machine gunners and crushing barbed wire entanglements. The Royal Air Force (RAF), also directly involved in the soldiers' training, had improved its ability to communicate with troops on the ground; this was of great value in reconnaissance, attacks on enemy positions and in directing and correcting the aim of the artillery. As the Canadian official historian puts it in his account of the air force role at Amiens, "the RAF was required to fly contact patrols with infantry, cavalry, and tanks, co-ordinate artillery shoots, provide an unprecedented degree of close ground support for the assault troops, neutralise enemy aircraft, and interdict the battlefield."[33] Much of this had been practised during the Canadians' training.

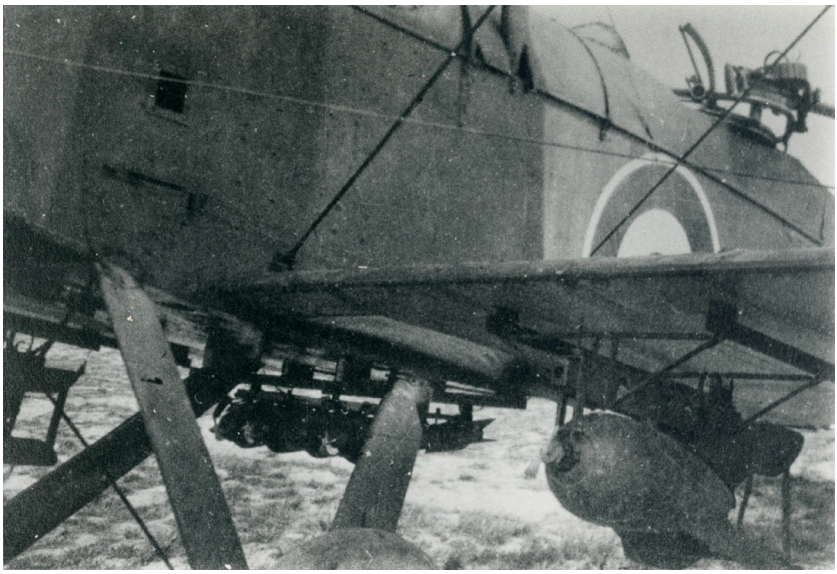
In addition, the Canadian Corps became very capable at signals intelligence, easily surpassing comparable British efforts. The Canadians, historian John Ferris observes, had twice as many wireless units per capita than the British forces, monitoring enemy and some Allied plain language transmissions. This helped greatly in their offensives of the Hundred Days and put them "a generation ahead of any other army."[34]

The Canadians had also learned that the Germans almost always counterattacked any Allied advance very quickly, usually with success. The Canadian troops had been pushed back by such rapid moves in the past and they had figured out how best to meet them: advancing fresh men forward quickly to reinforce and relieve those who had taken the enemy positions; have them arrive with machine guns, ammunition, grenades and barbed wire; and give them artillery support. If this could be done promptly the Germans could be stopped cold. This worked, but it depended on good planning and leadership at battalion, brigade, division and corps headquarters.

These headquarters were now smoothly operating machines (though, despite efforts at "Canadianisation," still staffed with some excellent British staff officers, such as Brigadier-General J.G. Farmar,

[33] S.F. Wise, *Canadian Airmen and the First World War*, Vol. 1: *The Official History of the Royal Canadian Air Force* (Toronto: University of Toronto Press, 1980), 523. See also the essays on air power in Sheffield and Gray, eds., *Changing War*.

[34] John Ferris, *Behind the Enigma: The Authorized History of GCHQ, Britain's Secret Cyber-Intelligence Agency* (London: Bloomsbury Publishing, 2020), 55; and Major W.A. Steel, "Wireless Telegraphy in the Canadian Corps in France," *Canadian Defence Quarterly*, Volumes 6 to 9 (1928-1931).



Royal Flying Corps/RAF DH-4 bomber. See the bomber's many armaments including a 112-pound bomb mounted under the wing and a Lewis gun (aircraft variant) mounted on top of the fuselage. By the end of the war, approximately half of all RAF bomber crews were Canadian. [RCMI Collection]

the Deputy Adjutant and Quartermaster General).[35] It had taken the headquarters staffs weeks to prepare the forty-five-page tactical and administrative orders for the attack on Vimy Ridge in April 1917, but by mid-1918 they were now able to devise complex plans in days. Major Maurice Pope, a staff officer in the Fourth Division, wrote home in early September 1918 of the critical attack on the Drocourt-Quéant Line: "Four days ago I knew nothing of this affair and the job is at the very least of equal magnitude" to Vimy.[36] Gone were the bulky plans—at Amiens the 1st Infantry Brigade's orders covered only two pages.

The Corps' doctrine, one it shared with the best of the British and Dominion divisions, was no longer that of the static warfare of 1917. Now it planned for open warfare, using sudden artillery bombardment

[35] Douglas Delaney, "Mentoring the Canadian Corps: Imperial Officers and the Canadian Expeditionary Force, 1914-1918," *Journal of Military History* 77, 3 (2013): 946.

[36] Maurice Pope, *Letters from the Front, 1914-1919,* ed. Joseph Pope (Toronto: Pope & Company, 1993), 132.

and tanks, cooperating with supporting aircraft, determining how best to use the indirect fire of machine guns, fire and movement at the platoon level, battalions leapfrogging one after the other in their brigade and whenever possible relying on deception and tactical surprise. This was the very beginning of combined arms and mobile warfare and Currie's Canadians were at the forefront of a revolution.

The new ways of fighting were not without their difficulties, however. Pressure on the enemy had to be maintained and attacks were sometimes launched hurriedly without adequate reconnaissance and without well-planned artillery, armour and air support. Casualties rose in such circumstances and even Currie's Corps could not keep its ranks completely full in the set-piece attacks of late August and early September; moreover, some commanders complained that the reinforcements they received were not adequately trained.[37] For his part, Currie always sought time to prepare properly which, before the advance to the heavily fortified Drocourt-Quéant Line, led Currie's First Army commander, General Sir Henry Horne, to complain grumpily to Field Marshal Douglas Haig that the Canadian was "a little 'sticky.'"[38] Haig, however, knew that the Canadian Corps was the most powerful formation in the BEF.[39] Indeed, Haig and the BEF would rely heavily on the Canadian formation in the final push for victory.

THE ENEMY AND THE ALLIES

In addition to the Canadian Corps' development into one of the finest fighting formations on the Western Front, we must also put their enemy and Canada's allies into perspective. In early 1918, Lenin's Bolshevik government in Russia sued for peace. Now able to move a half million men from the Eastern Front to the west in their effort to win the war before fresh divisions from the United States had time to play a major role, the Germans launched huge attacks from late March into mid-July 1918. Using specially trained

[37] Tim Travers, *How the War Was Won: Command and Technology in the British Army on the Western Front, 1917-1918* (London: Routledge, 2014), 172.
[38] Don Farr, *The Silent General: Horne of the First Army* (Warwick, UK: Helion, 2007), 200; and Gary Sheffield, *The Chief: Douglas Haig and the British Army* (London: Aurum, 2012), 308-309.
[39] Schreiber, *Shock Army of the British Empire*, 72.

stormtroopers who infiltrated past strong points, they pushed the British Fifth Army's lines back, killing and capturing thousands.

In late May and early June, the Germans came within ninety kilometres of Paris. But they had not radically altered the strategic balance, captured critical transportation hubs or completely shattered Allied morale. Furthermore, the Germans could not replace the huge losses—almost one million killed, wounded or captured—of their best troops. From mid-July through to the Armistice, the enemy lost as many as a million more men.[40] Though the Canadian Corps was relatively unscathed during these spring offensives, the sinking of the hospital ship *Llandovery Castle* in late June 1918 by a German U-boat and the deliberate killing of survivors, including fourteen Canadian nursing sisters, disturbed and motivated Canadian troops for the battles to come.[41] It was not a coincidence that the Canadian Corps' codename for the Amiens attack was Llandovery Castle.

The ultimate failure of the German offensives in 1918 demoralised the German military at all levels. At the same time, civilian morale in Germany (and in its allies of the Austro-Hungarian Empire, Bulgaria and the Ottoman Empire) continued to weaken as food shortages increased thanks to the tight British naval blockade, crop failures, labour unrest and corruption. The suffering and near-starvation of their families at home added to the weakening morale of the soldiers at the front.[42] Indeed, by 1917, the best estimates tell us that the average German citizen was subsisting on a meagre 1,200 calories a day and the soldiers were surviving on little more than that. In contrast, the Canadian soldier officially had a diet of 4,300 calories a day and the BEF was the best fed army on the Western Front.[43] We cannot overlook the importance of a man's nutrition to his physical and mental wellbeing.

Now under Marshal Ferdinand Foch as the Generalissimo of the Allied Armies, the French struck back hard at the enemy in a surprise attack at the Marne on 18 July and in the second week of August the

[40] Travers, *How the War Was Won*, 108.

[41] Jay Doucet et al., "Massacre of Canadian Army Medical Corps personnel after the sinking of HMHS Llandovery Castle and the evolution of modern war crime jurisprudence," *Canadian Journal of Surgery* 61, 3 (2018): 155. See also Charles Yale Harrison, *Generals Die in Bed* (reprint, Toronto: Annick Press, 2007), 245-47.

[42] Alexander Watson, *Ring of Steel: Germany and Austria-Hungary at War, 1914-1918* (New York: Basic Books, 2014), especially Chapter 13.

[43] Morton, *When your Number's Up*, 142.

Canadians, Australians, British and French hammered the Germans near Amiens. At Amiens, the German troops were suffering from exhaustion and influenza and understrength units were stretched thin and experienced deteriorating discipline. Indeed, some German units, in the line for more than fifty days without reprieve, were "utterly burnt out," shattering the nerves of even the steeliest veterans.[44] Thereafter, the Canadians formed the spearhead of BEF attacks. The Australians, just as capable as the Canadians, had largely exhausted their reinforcement stream and soon had to hold back. Australia, unlike Canada, did not institute national conscription and therefore could not as readily replace their heavy casualties. The French were exhausted, for they had been bled white at Verdun in 1916, suffered through the poorly planned Nivelle Offensive and the subsequent mutinies of 1917 and sustained an additional half-million casualties in the desperate defence and counterattacks during the spring offensives and at the Second Battle of the Marne in 1918.[45] In August, the French attacked the Germans south of the Somme, but it was the British Empire forces which would take the leading role in the offensive.[46] The British government, however, was worried about the political effect of more casualties. As a result, Haig, under intense public scrutiny, had been warned by the British War Cabinet that continued losses would jeopardise his role as commander-in-chief.[47] With each British casualty, domestic political pressure mounted for Haig's removal and therefore "in the stark terms of political capital, Canadian lives were, for Haig, cheaper than British lives."[48]

The other North American formation, the American Expeditionary Force (AEF), arrived at the front only late in the war. Though the numbers of American troops increased daily, they were inexperienced and expected to become effective only in 1919. Even though the AEF was six-times the size of the Canadian Corps, the Canadians ultimately outstripped the AEF on every single tactical level in the

[44] Thilo von Bose, *The Catastrophe of 8 August 1918*, trans. David Pearson et al. (Moss Vale, Australia: Big Sky Publishing, 2019), 2-3, 78-88.
[45] John Keegan, *The First World War* (New York: Knopf, 1998), 329-32, 422; and Winston Churchill, *World Crisis 1911-1918*, Abridged and Revised Edition (New York: Free Press, 2005), 558.
[46] David Stevenson, *Cataclysm: The First World War as Political Tragedy* (New York: Basic Books, 2004), 348-49.
[47] John Swettenham, *To Seize the Victory: The Canadian Corps in World War I* (Toronto: Ryerson Press, 1965), 216.
[48] Schreiber, *Shock Army of the British Empire*, 19.

war's final offensive.[49] The overall state of the Allies in August 1918 left the Canadians to carry a disproportionate weight in the great offensives of the Hundred Days. The Canadians, so reliable, were also the only Allied formation not to lose a battle in the final two years of the war. More victories were to come and Currie's soldiers would play their full part.

ARTILLERY AND COUNTER BATTERY

Perhaps the single most important tactical arm driving the Canadians to their run of dramatic victories in 1918 was the artillery. Writing in 1920, the commander of the Australian Corps during the Hundred Days, Lieutenant-General John Monash, went so far as to emphasise the correlation between artillery and the success of battle as follows: "When the artillery programme is ended the battle is either completely won, or to all intents and purposes completely lost."[50] Approximately 60 to 70 per cent of all First World War casualties were caused by the artillery; the war was often referred to as the "gunners' war" for good reason. The men on the ground recognised the grave threat posed by enemy artillery, as Captain Hannaford remarked after Hill 70, "We have to fight and fight hard for our gains. It is only the artillery [...] holding us back."[51] Allied infantry and tanks, despite improved tactics and doctrine, could not successfully move across the field without the artillery's close support. More specifically, the artillery was crucial in suppressing enemy infantry, neutralising enemy batteries and dismantling physical obstacles such as barbed wire.

The Canadians were ingenious in their approach to artillery tactics and methodology. Many of the artillery tactics, which had been successfully implemented at Vimy, were later used and improved upon during the Hundred Days. Much has been said of

[49] In the final three months of the war, the inexperienced Americans suffered an average of 2,170 casualties per German Division defeated, while the Canadians accrued 975 per division defeated; the Americans advanced a total of 34 miles and captured 16,000 prisoners, while the Canadians advanced 86 miles and captured 31,537 prisoners. See Swettenham, *To Seize the Victory*, 216.

[50] John Monash, *The Australian Victories in France in 1918* (1920; reprint, Collingwood, Australia: Black Inc., 2015), 227.

[51] Letter, Alfred Hannaford to mother and father, 25 August 1917, RCMI Collection.

1917-1918 BEF/CEF (Royal Field Artillery/Canadian Field Artillery) 18-pounder quick firing gun shell carrier. The 18-pounder was the workhorse of the CFA. [RCMI Collection]

the importance of the creeping barrage, a tactic successfully tested at Courcelette and decisively employed at Vimy. The effectiveness of this tactic at Vimy, and later in the Hundred Days, was proven not only by the relative swiftness of victory on the battlefield and the limitation of infantry casualties compared to previous offensives at the same locations, but by the feelings of the soldiers who felt more at ease "walking into shells that were retreating ahead of us."[52] Similarly, of the infantry's advance behind the barrage at Amiens, Private Wilfred Harold Stephenson Macklin of the 19th Battalion later recalled, "the shells came over our heads with an appalling shriek in the fog ahead and we simply lit our cigarettes, shouldered our rifles and walked off after the shells, and this is what we did until we reached the objective."[53]

While the field artillery's creeping barrages suppressed enemy infantry, mortar and small-arms fire, the Counter Battery Staff

[52] Tim Cook, "The Gunners at Vimy: We are Hammering Fritz to Pieces," in *Vimy Ridge: A Canadian Reassessment*, ed. Hayes, Iarocci and Bechthold, 114.
[53] As quoted in Daniel Dancocks, *Spearhead to Victory: Canada and the Great War* (Edmonton: Hurtig, 1987), 40. Macklin would be a Canadian general in the Second World War and beyond.

Office (CBSO) simultaneously suppressed the enemy artillery. Counter battery, or the targeted destruction of enemy artillery, was the gunners' seminal contribution to winning the Hundred Days and the war. The Canadian CBSO, formed in January 1917, coordinated counter-battery work to the end of the war. Lieutenant-Colonel (later Brigadier-General) Andrew McNaughton was appointed the Counter Battery Staff Officer and he and his staff developed complex mathematical equations for better calculating the fall-of-shot of their guns—known as artillery or counter-battery science. In addition to this science, the Canadians refined "sound ranging" and "flash spotting" techniques which helped discover the location of German batteries on the field. The Canadian CBSO also worked closely with RAF squadrons to compose updated maps which plotted enemy batteries and defensive positions. A staggering 90 per cent of all counter-battery fire was directed from the air power's reconnaissance by 1917.[54] By August 1918, McNaughton, taking the artillery-air power cooperation even further, had squadrons of light bombers under his command; the first time in the war that an army officer would direct air assets from the ground—a revolutionary development.[55] The further integration of air power with the artillery provided the CBSO with a much longer "reach" in gathering intelligence and striking enemy batteries. As historian Lee Kennett argues, by the Hundred Days the aircraft bomber had "be[come] an extension of the artillery."[56]

The key role of the artillery is exemplified through three pivotal set-piece battles of the Hundred Days: Amiens, Canal du Nord and Valenciennes. In the lead-up to Amiens, the Royal Engineers mapped all enemy batteries and subsequently advised on the firing positions and ranges of the 128 Canadian and Australian batteries in the sector.[57] Of the 200,000 total maps that were produced by the engineers, the "barrage maps" sent to the artillery were created from the latest intelligence and were of the best quality. Each carefully located Germany battery, discovered by extensive aerial and ground reconnaissance, was smothered by 200 well-placed Canadian and

[54] Wise, *Canadian Airmen*, 572.
[55] John Swettenham, *McNaughton*, Volume I: *1887-1939* (Toronto: Ryerson, 1965), 149-50.
[56] Lee Kennett, *The First Air War* (New York: Free Press, 1999), 48. Note that by the end of the war, approximately half of the RAF bomber crews were Canadian.
[57] James McWilliams and R. James Steel, *Amiens: Dawn of Victory* (Toronto: Dundurn Press, 2001), 29.

BGen Andrew McNaughton, Commander, Canadian Corps Heavy Artillery. [LAC Item ID 3357570]

Australian shells. The opening artillery bombardment on 8 August decimated the German outposts, all their forward defences and was so effective that "the German artillery batteries were [...] wiped from the face of battle."[58] McNaughton would later cheekily report on the events at Amiens: "little hostile reaction. It appears we have swamped his batteries."[59] In his official Victory Despatch, Field Marshal Haig attributed the success at Amiens to the counter-battery work, writing that "our massed artillery" had "completely [crushed] the enemy's batteries, some of which never succeeded in coming into action."[60] The enemy guns had been located and entirely neutralised and the Allies had thereby robbed the Germans of any immediate answer to the rapid Allied advance of 8 August and the "black day of the German Army." As an ultimate supporting statistic to the effectiveness of the counter-battery work in supporting the infantry, most of the casualties of the British Fourth Army (to which the Canadians were attached) were caused by small arms (70 per cent) as opposed to artillery fire (27 per cent), a striking contrast to previous offensives.

The most successful single-day advance by the Allies on 8 August (thirteen kilometres) was made possible by the support of the artillery and the diminishing advances in the days that followed directly correlated to the infantry's increasing distance from effective guns. The Allied batteries moving behind the infantry's advance faced great difficulty keeping pace with the rapidity of the offensive. Many of the guns that did eventually arrive were reportedly employed cautiously or not at all—fire orders were often not given or not received. This problem was exacerbated by communications breakdowns as in-ground field telephone wires were constantly disrupted by horses and tanks smashing over them.[61] Moreover, the heavy guns had been moved forward under the control of the infantry, who were so focused on their own advance that they could not comprehend the heavies' usefulness in exploiting the German retreat. McNaughton later lamented: "never again would I not have guns under [my] command at all phases of an attack."[62] Unsurprisingly, the Allied gains were most impressive in the wake of their opening artillery barrage and counter-

[58] Schreiber, *Shock Army of the British Empire*, 44-47.
[59] As quoted in Dancocks, *Spearhead,* 40.
[60] Douglas Haig, *Sir Douglas Haig's Despatches: December 1915 – April 1919,* ed. J.H. Boraston (London: J.M. Dent, 1919), 260.
[61] McWilliams and Steel, *Amiens,* 194-95.
[62] Swettenham, *McNaughton*, Vol. I, 145.

battery work and the advance faltered as the batteries experienced movement and communication obstacles.

The excellence of the Canadians' artillery and counter-battery work, and their contribution to the success of the offensive, continued throughout the Hundred Days. On 27 September 1918, at the Canal du Nord, the Canadians relied on their artillery to enable the Corps' most daring tactical manoeuvre of the entire war. Currie had determined that the Canadians would cross a narrow unfinished canal in a defile formation, thereby avoiding German strongpoints, but simultaneously massing the infantry into a vulnerable bottleneck. A single well-placed German bombardment had the potential to wipe out the entire Canadian advance. At zero hour on 27 September, the Canadian artillery unleashed an onslaught on the German batteries, silencing, or at least harassing with explosives and gas, most of the enemy guns within the opening minutes.[63] The intense and precise opening barrage, which also employed the heavy artillery, allowed the advancing infantry to successfully cross the canal on time and with limited casualties. Using the heavies in the barrage was important because most of the field guns were constantly on the move to stay in range of the advancing infantry—an improvement over Amiens. Gunner Harold Henry Simpson of the 2nd Brigade, Canadian Garrison Artillery wrote: "believe me it was some barrage [...] it was a grand sight [...] we could see our troops advancing steadily behind our barrage [...] It was a great day."[64]

In a further innovative tactic at the canal, the Canadian Field Artillery (CFA) advanced field guns with the infantry to snipe any German machine gun nests. A report from the 1st Battery, assigned to this task, noted that "infantry were greatly impressed and the risk incurred [...] was quite compensated."[65] Though German artillery remained the gravest challenge to the advance, machine gun emplacements could also wreak havoc on the infantry and their prospects—the effort to use field guns to knock them out was inspired.

The careful plotting and neutralisation of the active German batteries at the Canal du Nord was arguably the most important and

[63] Travers, *How the War Was Won*, 160-61.
[64] Harold Henry Simpson to Mother, 16 November 1918, Canadian Letters and Images Project, https://canadianletters.ca/document-11965
[65] As quoted in Arthur Bick, *Diary of an Artillery Officer*: *The 1st Canadian Divisional Artillery on the Western Front*, ed. Peter Bick (Stroud, UK: Amberley, 2011), 143.

impressive action by the Canadian CBSO in the entire Hundred Days and perhaps the war. In recognising the excellence of the counter-battery work, Currie would write "the Boche artillery reply was not as heavy as expected."[66] One of his artillery officers, Major Arthur Bick, also wrote, "[German] retaliation light [...] [their] scattered shelling [...] died away in half hour [...] Canal is apparently no great obstacle."[67] Later historians have concurred with these sentiments, arguing that the German artillery response of 27 September 1918 was "almost non-existent. This was due to the brilliance of the Canadian counter-battery fire."[68]

While the Canadian barrage was very effective overall, its importance to the success of the operation is also demonstrated by the results in the few areas where it was not as consistent. In an instance where the artillery had failed to clear a section of barbed wire and the barrage had gotten away from the infantry, the 13th Battalion (Royal Highlanders of Canada) reported that "as the barrage had passed well in advance of the company, the German gunners were able to shoot down many of our men [...] field guns could have cleared this situation at once." As a result, the 13th was unable to capture its objective and lost 225 officers and men in the battle.[69] Without the consistent cover of the barrage in all areas, infantry advances stalled, casualties were high and objectives were threatened.

The attack on Valenciennes (1-2 November 1918) was the last major Canadian operation of the war and what McNaughton would later describe as "one of the best examples of the employment of masses of artillery in the intimate support of infantry."[70] Believing that the war was nearing its end, Currie informed McNaughton, now the commander of the Canadian Corps heavy artillery, that the assault on Valenciennes would likely be the final major artillery bombardment. In essence, any former restrictions on the rationing of war materiel had ended and the Canadians would devise an attack centred on completely overpowering the enemy with their artillery. At Valenciennes, the guns would unleash the most intense barrage

[66] Diary, 27 September 1918, in *Currie Selected Papers*, 118.
[67] Bick, *Diary of an Artillery Officer*, 141.
[68] Dancocks, *Spearhead*, 136.
[69] Bill Rawling, *Surviving Trench Warfare*: *Technology and the Canadian Corps, 1914-1919* (Toronto: University of Toronto Press, 1992), 212.
[70] A.G.L. McNaughton, "The Capture of Valenciennes: A Study in Co-ordination" *Canadian Defence Quarterly* 10, 3 (April 1933): 279.

The 38th Canadian Battalion (the most-probable unit seen here) assaulting Valenciennes on 1 November 1918–a rare candid shot of the Canadians in combat. [LAC Item ID 3194823]

supporting a Canadian Corps operation in the entire war, firing on the German defenders from overhead, oblique, enfilade and reverse angles.[71] Indeed, the Canadians leaned mightily on their artillery, purposefully limiting their assaulting infantry numbers to only what was necessary—Currie sought to avoid wasting his men's lives in the waning days of the war. For the initial assault, Currie employed only the 10th Brigade, consisting of four understrength infantry battalions (44th, 46th, 47th and 50th), or about 1,400 men.[72]

In the lead-up to battle, the Canadian artillery fired 4,280 tonnes of ammunition across eight brigades of field artillery and six brigades of heavy artillery (for a total of 256 guns and howitzers) on a front of only 2,000 yards with a depth of 4,000 yards. A barrage supported by these resources on a front of that size equated to one tonne of shells for each yard of front and three tonnes for each infantryman in the

[71] McNaughton, "The Capture of Valenciennes," 282.
[72] Cook, *Shock Troops*, 558; and Brian Pascas "Pursuit to Valenciennes 1918: The Fate of Soldiers at the Point of Capture," *Canadian Military History* 31, 2 (2022): 33.

first wave. The massive barrage would destroy nearly all the defences the Germans had built in their years occupying that ground.[73] The subsequent creeping barrage supporting the 10th Brigade was particularly effective and because the Canadian artillery had the extra tonnage at its disposal, they slowed the barrage to 100 yards per four or five minutes.[74] This more deliberate barrage speed all but ensured that the infantry could readily keep pace with the barrage and that there would be additional time for the guns to pound enemy strong points and defensive works in the infantry's path.

In the two-day battle, the Canadians suffered a total of 501 casualties with only 60 killed, while the Germans sustained 2,254 casualties with 800 killed—4.5 times higher than the Canadian casualties. One German company commander lamented that, because of the intensity of the multi-directional Canadian bombardment, "it was impossible to see or even know from which direction the attackers were coming."[75] The Canadian artillery had adhered to Currie's ultimate order of paying for this victory in shells and not in life. The victory at Valenciennes was so successful that it was surely the type of operation that the Allies would have attempted into 1919 had the war continued past the date of the armistice. It is no surprise that the two commanders of the First Canadian Army in the Second World War, McNaughton and Harry Crerar, were senior artillery officers in the First World War.[76]

The artillery's success was dependent on heavy logistical support—their tactics demanded it. In the years prior to Vimy, Canadian and BEF gunners were plagued by a shortage of ammunition and improper or inadequate fuses which undermined operational capability and gunner proficiency. At Vimy, the Canadians were better supplied with artillery logistics than in any previous operation of the war. In April 1917, the Canadian Corps had a daily allotment of 2,500 tonnes of shells and an initial stockpile of 42,500 tonnes; in all 1.6 million

[73] Nick Lloyd, *Hundred Days: The End of the Great War* (Toronto: Penguin Random House, 2013), 242-43.
[74] McNaughton, "The Capture of Valenciennes," 282.
[75] Cook, *Shock Troops*, 564.
[76] John Nelson Rickard, *The Politics of Command: Lieutenant-General A.G.L. McNaughton and the Canadian Army 1939-1943* (Toronto: University of Toronto Press, 2010), 19, 70-71, 111, 205.

shells were allotted to the Corps for Vimy.[77] With the proven success there, the Canadians henceforth adopted a material-heavy doctrine with the rationale that expending maximum material would save lives and win objectives. McNaughton would later write that it was "always the object of the Canadian Corps to exploit gun power to the limit for the purpose of saving lives of our infantry." Indeed, under its material-heavy doctrine, the Canadian Corps fired a total of 3.3 million shells during the Hundred Days or 313 shells per day per 1,000 soldiers. No other formation in the entire war was able to produce as high a ratio of shells to soldiers as the Canadian Corps.[78] Ultimately, Canadian operations which wholly relied on close and overwhelming artillery support could not have been carried out successfully without an equally substantial supply of munitions and guns.

LOGISTICS AND ADMINISTRATION

Finally, to understand the success of the Canadian Corps during the Hundred Days, we must look to the Corps' administrative and logistical achievements. Six months prior to the ultimate offensive of the war, the vaunted Canadian Corps had nearly been undone, not by the enemy but by dreadful administrative propositions. In early 1917, Sir Sam Hughes and some of his supporters in Parliament and among senior officers in Britain sought to impose a Fifth Division upon the Canadian Corps—a development which would surely dilute the strength of its existing divisions. Currie, of course, was opposed to any measure which was not "in the best interests of Canada's fighting forces."[79] The Canadian Corps did not have a surplus of trained and experienced officers to spare for the newly formed Fifth Division. Manpower was dire to the point where leave was rarely granted even to company officers. As Captain Hannaford wrote, "it is very hard to get away from France [even] on compassionate grounds."[80] Indeed, in early 1918 the existing divisions desperately

[77] Jack Sheldon and Nigel Cave, *The Battle for Vimy Ridge—1917* (Barnsley, UK: Pen and Sword, 2007), 29; and Cook, "The Gunners at Vimy," 113.
[78] A.G.L. McNaughton, "Development of Artillery in the Great War" *The Field Artillery Journal* 10, 3 (May-June 1930): 261-69.
[79] Hyatt, *General Sir Arthur Currie*, 100-01.
[80] Letter, Alfred Hannaford to father, 8 March 1918, RCMI Collection.

needed trained personnel to replace the 16,000 casualties sustained at Passchendaele.

With great support from the Overseas Ministry and its minister, Sir Edward Kemp, Currie was able to secure the breakup of the Fifth Division for reinforcements and maintain the operational structure of the Corps in February 1918.[81] By doing so, Currie prevented his own promotion (and that of others) to command an Army of two corps as the British had suggested; he simply did not have a personal agenda. The 12,000 trained and healthy reinforcements secured from the Fifth, starkly contrasted to the teenagers and poorly trained recruits entering the BEF at this late stage, would be instrumental in the tactical successes of the Hundred Days.[82] As a result of rapidly declining voluntary enlistments and the slow arrival of conscripts, the men of the Fifth kept the over-strength Canadian divisions consistently manned in the lead-up to and in the early stages of the Hundred Days.[83]

The four Canadian Divisions were fully manned and resourced for the final offensive of 1918, but this advantage required monumental logistical preparation and manoeuvring. The logistics of moving the Canadian Corps' men and resources, both in the lead-up to battle and as the fighting was ongoing, was a constant concern that was paramount to the success or failure of an operation. The speed at which the overall offensive was advancing necessitated an equally fast and supportive logistical supply line. Currie often referred to the "great difficulties of [transporting] the supplies of ammunition, bridging material, etc." and the "difficulties of moving and supplying a large number of men."[84] Under Currie, the Canadian Corps would not launch its set-piece battles until adequate logistical support had been established, something at which Brigadier-General George Farmar excelled. At both Cambrai in October and Valenciennes in November, for instance, Currie insisted upon delaying combat for

[81] For a comprehensive analysis of the Overseas Ministry's contribution to Currie and the Hundred Days, see Desmond Morton, *A Peculiar Kind of Politics: Canada's Overseas Ministry in the First World War* (Toronto: University of Toronto Press, 1982), 155-79.

[82] Tim Cook, *The Madman and the Butcher: The Sensational Wars of Sam Hughes and General Arthur Currie* (Toronto: Penguin Random House, 2010), 232-33.

[83] Granatstein, "Conscription in the Great War," 72.

[84] Currie, *Canadian Corps Operations*, 78, 83.

several days until the Corps had firmly reinforced its supply lines and assembled enough munitions, guns and supplies at the front.[85]

The Canadian Corps was a master of logistical preparation. "Thorough preparation must lead to success. Neglect nothing" was Currie's *modus operandi*. On preparation, Brigadier-General Victor Odlum, commanding the 11th Canadian Infantry Brigade, concluded that "our fights are won or lost before we go into them."[86] In the months leading up to Vimy, the Corps' engineers and railway troops built and maintained forty kilometres of roads, an underground subway and a massive light railway network; these were unprecedented feats carried out in record time. As a direct result of their victory at Vimy, the Canadians henceforth carried out all light railway construction and maintenance on the British front for the remainder of the war. The Canadian Expeditionary Force (CEF) possessed many experienced railway personnel because of Canada's creation and maintenance of long railways tying the Dominion together. The Canadian Railway Troops (CRT) were composed primarily of former employees of the Canadian Pacific Railway, the Grand Trunk and the Canadian Northern.[87] From April 1917 to the end of 1918, the Canadians laid 4,140 kilometres of various railway tracks on the Western Front.[88] These were invaluable to the entire supply line of the British front during the Hundred Days and their construction and maintenance was a Canadian achievement.

Like the railways, the Corps logistics had similarly been revamped into a smoother running organisation under General Farmar. In the lead-up to Amiens, the Corps was faced with the monumental logistical challenge of moving its men and other resources to the front while maintaining the ever-important secrecy of the "surprise attack." Of course, if the enemy detected the Canadians moving to the front *en masse*, then the secrecy of the attack would be compromised because the Germans associated the presence of the Canadians near the front with an impending Allied attack. Under Farmar's authority,

[85] Ryan Goldsworthy, "Measuring the Success of Canada's Wars: The Hundred Days Offensive as a Case Study," *Canadian Military Journal* 13, 2 (2013): 50; and Currie, *Canadian Corps Operations*, 76.
[86] Cook, *Shock Troops*, 79.
[87] For more on the Canadian Railway Troops, see Ryan Goldsworthy, "The Exquisite Uniform of a First World War Canadian Trainman," Toronto Railway Museum, 27 October 2022, torontorailwaymuseum.com/?p=2863.
[88] Nicholson, *Canadian Expeditionary Force 1914-1919*, 489.

Canadian Railway Troops repairing a railway turn-table near Lens in December 1917. [LAC Item ID 3405545]

the Corps had twenty-four hours to plan and arrange the movement of no less than 50,000 men. Even under the short timeline, the Corps' logistics officers were able to successfully coordinate and conceal the movement of the Canadian infantry via rail and road into the cover of the wooded area near Amiens by early August 1918.

In addition to the movement of men, the Corps also had thousands of horses, donkeys and mules to move, feed and water in daylight—the use of the heavily wooded area near Amiens concealed the animals too. The equine beasts were vital to the operation, not only as labour for the movement of resources, but for the cavalry units. The cavalry, armed with Hotchkiss machine gun sections, found renewed importance in the final year of the war. Cavalry were employed effectively to rapidly consolidate ground and to press the Allied advances further and faster. Haig later highlighted the cavalry's role in the Amiens mission: "Without the rapid advance of the Cavalry, the effect of the surprise attack on the 8th would have been much less [...] the Amiens outer defence line would not have been gained [...]

Canadian artillery horses being watered in November 1916. [LAC Item ID 3395219]

so soon or so cheaply."[89] Leading up to the 8th, and to conceal their movements further, the Canadians also staged false and purposefully noisy moves during the day and they created a decoy concentration area thirty-two kilometres northwest of Arras.[90] As a result of these false manoeuvres, German intelligence reports incorrectly indicated that the Canadians were in Flanders and therefore no Allied offensive was imminent in the Amiens sector.[91]

With only two main supply routes and three nights to accomplish it all, the Canadians had to move and camouflage ten million rounds of small arms ammunition, hundreds of bulky artillery pieces and 300,000 heavy shells. The Canadian Army Service Corps (CASC) was highly effective at transporting the requisite ammunition and shells to the front. Unlike other Allied formations, the CASC's

[89] Saul David, *100 Days to Victory: How the Great War was Fought and Won* (London: Hodder, 2014), 448.
[90] Nicholson, *Canadian Expeditionary Force 1914-1919*, 390.
[91] McWilliams and Steel, *Amiens*, 92-93.

transport companies were almost entirely motorised by 1918 and they made efficient use of their large fleet of vehicles. The CASC's advanced motorisation was a direct result of the breakup of the 5th Division which gave the Canadians two additional mechanical transport companies, 100 more trucks and more mechanics than a British corps—including an additional medium ordnance workshop—thus facilitating more mobility.[92] In seventy-two hours, the CASC coordinated the movement of over 2,000 truckloads of artillery shells from ammo dumps to the front, which was such a great distance that each truck could only make one trip per day. Trucks bearing ammunition were constantly running, driven in shifts, which was also testament to the skill and dedication of Canadian drivers, mechanics and to the supply line bringing extravagant amounts of fuel by truck and rail for more than fifty kilometres.[93]

In addition to the trucks, the Canadian logistical system utilised an average of six Mark IV supply tanks per Canadian division for transporting munitions and supplies from the front to advancing forward units.[94] Unlike the beasts of burden and the trucks which required useable roads, the armoured supply tanks had substantial and viable success while operating in the desolation of the hot zone. Though the supply tanks at Amiens were slow moving (3.2km/h), each could carry eight tonnes of material and their creative use in a supply role and maintaining the advance was "profound."[95] All this motorised transport required a Herculean effort which all but ensured that the Canadians would be adequately supplied in time.

In the days prior to 8 August, the Canadians moved to the front, most often in the cover of darkness in shorter summer nights and without alerting the watchful enemy of the impending attack. Though the movement of the artillery's assets leading up to Amiens was occasionally sloppy and not well policed, the Germans failed to notice or capitalise on these oversights and the Canadians were able to maintain secrecy and successfully move all their resources into position in time for zero hour. Haig boasted in his despatches

[92] John Conrad, "Canadian Corps Logistics during the Last Hundred Days, August-November 1918," *Canadian Army Journal* 8, 2 (2005): 4.
[93] Schreiber, *Shock Army of the British Empire*, 38-40.
[94] Supplies included drinking water, spools of barbed wire and hand tools. See Nicholson, *Canadian Expeditionary Force 1914-1919*, 397.
[95] Conrad, "Canadian Corps Logistics during the Last Hundred Days," 5.

that "The enemy was taken completely by surprise."[96] One German officer, taken prisoner at Amiens, reportedly exclaimed to his captors "You Canadians have no business down here! We were told you were in Flanders; how I would like to hang our fools of Intelligence officers!"[97] Commenting on the operational level of the German Army at Amiens, German Major Thilo von Bose wrote in his semi-official history that "it should not have happened that the German command was so completely surprised by the enemy attack."[98] The ultimate success of the Amiens operation depended on maintaining secrecy; had the Canadian movements been recognised by the Germans, it is likely that the attack would have turned out differently—if still with victory, then certainly a more costly and muted one. Indeed, the report of Farmar's logistics staff following the battle read that "it is recognised that the whole success of the operation was due to the secrecy [with] which the operations were arranged."[99] Moreover, if artillery was to be the most important tactical arm of the victory at Amiens, then its undiscovered movement and arrival to the front by zero hour was rendered even more important to the success of the operation.

Unlike before Vimy, the Canadian Corps would not have months to prepare for each battle of the Hundred Days. The Canal du Nord crossing, for instance, proved to be one of the greatest logistical challenges for the Canadian Corps during the Hundred Days. Assembling and moving the Corps' resources and manpower across a narrow 2,600-yard passage before fanning out into a 15,000-yard front—almost double the size of the front at Amiens—with areas of cratered morass was a monumental task. By late September, the Corps (including attached troops) consisted of 118,194 men[100] and approximately 50,000 of them would be crossing the narrow canal and through some areas flooded by heavy rainfall the night prior to the operation. The artillery alone had amassed an overwhelming arsenal to carry out the operation, including twenty-two brigades of field artillery and seven brigades of heavy artillery, for a total

[96] Boraston, *Haig's Despatches*, 261.
[97] J.F.B. Livesay, *Canada's Hundred Days: With the Canadian Corps from Amiens to Mons, Aug 8 1918 – Nov 11 1918* (Toronto: Thomas Allen, 1919), 28.
[98] Bose, *Catastrophe*, 430.
[99] Schreiber, *Shock Army of the British Empire*, 39.
[100] Rawling, *Surviving Trench Warfare*, 242.

of 785 guns and over 37,000 gunners and staff.[101] Considering the limited 7,000-yard range of the Canadian field artillery and that each 18-pounder gun weighed nearly 3,000 pounds, the task of constantly moving these guns and munitions forward as the battle continued would be a difficult task.

The great challenges of movement as the battle progressed would be solved through feats of combat engineering. Currie had digested the lessons of Passchendaele and he had come to recognise the value of engineers in getting the infantry and artillery over obstacles and across rivers. In July 1918, Currie had finalised a reorganisation of the Canadian Engineers, where each infantry division would henceforth have an engineer brigade at its disposal. Each of these newly formed robust brigades also included former 5th Division Engineers field companies, tunnelling companies and pioneer battalions. Currie's 3,200-man engineer brigades had three battalions and a bridging section, along with specialised units under the Corps headquarters. "[T]his organization," Currie said, "is so necessary that I would prefer to do without infantry than to do without Engineers."[102] At the Canal du Nord, all the Canadian Corps' engineering resources, including the sappers and pioneers of the 11th British Division, were committed to maintaining transportation routes and bridging the canal as fast as possible since the operation's success was dependent on how many men and resources could physically cross in time.[103] The engineers provided the highest possible mobility for the Corps' resources by constructing seventeen major bridges, ten for the artillery and seven for the infantry. They also prepared and repaired roads, advanced light railways and constructed pontoons and floating foot bridges so that men, guns and munitions could expeditiously move across the canal and into the wider front under the stress of battle.[104] Quickly advancing supply and transportation lines was crucial to consolidating the newly captured ground and the lifting of mines and the elimination of booby traps helped to facilitate the infantry's continuous advance.

[101] Cook, *Shock Troops*, 510.
[102] William F. Stewart, "Attack Doctrine in the Canadian Corps, 1916-1918" (MA thesis, University of New Brunswick, 1982), 142.
[103] Nicholson, *Canadian Expeditionary Force 1914-1919*, 444; and Brown, "Not Glamorous, But Effective," 440.
[104] Currie, *Canadian Corps Operations*, 53-58.

Canadian engineers building a corduroy road through a captured village during the advance, east of Arras in September 1918. [LAC Item ID 3405430]

Furthermore, while the engineers concentrated on construction and labour, the Canadian infantry was mostly spared from the heavy workload and were therefore better rested for the fighting operations. Earlier in the war, and in other formations, the infantry was often called on to undertake gruelling tasks prior to battle. The reorganisation and rededication of engineering resources for each division worked brilliantly. Currie wrote that "much of the success of the Canadian Corps in the final 100 days was due to the fact that they had sufficient engineers to do the engineering work and that in those closing battles we did not employ the infantry in that kind of work."[105] The result of the engineers' dedicated labour and expertise established the foundation for one of the Corps most decisive victories of the Hundred Days. Though the Canal du Nord was perhaps the greatest logistical challenge overcome by the Canadians, the engineers continued their successful construction campaign throughout the offensive. In the immediate postwar, Currie praised their contribution to the Hundred Days: "The initiative and resourcefulness displayed

[105] Currie to Mr. McGillicuddy, 27 February 1918, MG30, E100, Volume 27, File 7, Library and Archives Canada.

by the Engineers contributed materially to the depth and rapidity of our advances."[106]

Of course, even with the combined efforts of the CASC, CRT and engineers, the offensive outpaced the speed at which the supply line could deliver in the pursuit to Valenciennes and Mons during the final month of the war. By mid-October 1918, with the enemy in retreat and the tired Canadians in relentless pursuit, Currie lamented that "getting forward of supplies is becoming very difficult, owing to the distance away of railheads. Our higher authorities do not seem [...] organized to push their railheads forward fast enough."[107] The importance of railways to the Allied supply line has been established, but the retreating Germans were also destroying their own rails so that the Canadians could not use them. Advancing new rails required time. The offensive had transitioned into highly mobile warfare and supply lines could not cope with such rapid forward movement. Lead units that outran the supply lines bringing food and ammunition forward were forced to wait hours or even days to continue their pursuit.[108] In his incredible memoir, Corporal Will Bird of the 42nd Battalion shared his experience while outside of Mons on the evening of 9 November: "we were footsore and very hungry [...] we were nearing the fighting again." During the hurried attack on Mons the following day (of which the men had little prior warning), Bird lamented: "I had no more grenades and did not know how far I had come."[109] Weary men surviving on meagre tinned rations and insufficient ammunition while close to the enemy were caught in a precarious and demoralising position; the success at the sharp end was dependent on a functioning supply line at the back end.

The retreating enemy also destroyed bridges and roads which added to the workload of the engineers as otherwise armoured cars, horses and supply trucks could not pass through the flooded and cratered morass.[110] During the advance to Mons, the roads were rendered

[106] Currie, *Canadian Corps Operations*, 85.
[107] Daniel Dancocks, *Sir Arthur Currie: A Biography* (Toronto: Methuen, 1985), 169-70.
[108] J.L. Granatstein. *The Greatest Victory: Canada's One Hundred Days, 1918* (Don Mills: Oxford, 2014), 162-63.
[109] Will R. Bird, *And We Go On*: *A Memoir of the Great War* (1930; reprint, Montreal and Kingston: McGill-Queen's Press, 2014), 211, 217. Bird, a prolific postwar writer and an important voice for Canadian veterans, won a Military Medal for his actions at Mons.
[110] Livesay, *Canada's Hundred Days*, 342.

Presentation of Canadian 18-pounder field guns to the city of Mons, Belgium in May 1919. LCol Wilfrid Bovey writes a chalk inscription on one of the guns. Canada liberated the city on the last day of the war. [LAC Item ID 3394791]

all but impassable by mines, shell holes and carnage to anything larger than a man on foot—though even the troops were hindered by such desolation. As a result of the conditions, the Canadians could not fully exploit their advantage and the war dragged on for weeks longer than necessary. Indeed, the Canadian assault had approached Valenciennes by 25 October, but with ammunition "still very far to the rear"[111] and the enemy holding a defensible position, the offensive could not continue for another week until supply arrangements could be made. Though the Canadians captured the highly symbolic prize of Mons on the day of the armistice, the rapid warfare and a destructive retreating enemy impeded the Allied supply lines and the otherwise limitless Canadian pursuit and final victory. A healthy supply line and the overall success of the Hundred Days were inextricably linked.

[111] Livesay, *Canada's Hundred Days*, 355-56.

CONCLUSION

The Allied victory at Amiens on 8 August 1918, the "black day of the German Army," shattered the already fragile nerves of the First Quartermaster General Erich Ludendorff, the de facto commander of the enemy forces. The German defeat at Amiens led Kaiser Wilhelm to recognise the inevitability of the ultimate Allied victory in the war and it soon forced the political leadership in Berlin to begin seriously to seek an armistice.[112] As for Germany's allies, the Bulgarians, defeated in the Salonika campaign, sued for peace at the end of September. The Ottoman Turks surrendered on 30 October and the Austro-Hungarians, with their empire on the verge of collapse, did the same four days later. The restive Poles, Czechs, Slovaks and Hungarians each seized their chance and grasped independence from Vienna. Many front-line soldiers in the German army had begun to put up white flags and surrender in large numbers at Amiens; others, however, would continue to fight, sometimes with extraordinary skill and stubbornness as at the Drocourt-Quéant Line and the Canal du Nord on the way to Cambrai. On 1 October 1918, Currie noted that the enemy "have fought us here very, very hard" and he remarked on strong counterattacks and courageous machine gunners as late as 10 November.[113]

The steady liberation of much of northern France and parts of Belgium by the Canadian Corps exposed the harsh German treatment of civilians. The retreating enemy burned farms and homes, destroyed roads and bridges, planted booby traps that maimed soldiers and civilians alike, deliberately wrecked the economy and looted everything of value. Ordinary men, women and children had lived under an often-brutal military government and martial law and the letters of Canadian soldiers after they encountered French and Belgian civilians showed their anger and contempt for the enemy.[114]

At the final major operation at Valenciennes in early November, the Canadians captured the town under a furious barrage. In the face of German atrocities and four and a half years of vicious fighting with countless good men lost, the Canadian resentment for their enemy

[112] Bose, *Catastrophe*, 1-2, 424-26. See also "Final Observations."
[113] Travers, *How the War Was Won*, 156; Diary, 1 October and 10 November 1918, in *Currie Selected Papers*, 121, 137.
[114] Granatstein, *Greatest Victory,* 164.

spilled over and hundreds of surrendering Germans were killed in the assault. Currie noted the killings in his diary, attributing it to the anger of his troops at German actions against French civilians; the CEF official history, published in 1962, also acknowledged the killings in a non-censorious way.[115] Canadians had already acquired a reputation for killing German prisoners,[116] but no action appears to have been taken against perpetrators at any time and certainly not after Valenciennes.[117]

At heavy cost to the Allies, the Germans had been pushed out of their skillfully prepared and fortress-like defence lines through decisive set-piece battles and then routed in the open warfare that followed. By early November, the enemy, now in full retreat under the pressure of the Allies' relentless pursuit doctrine, had reeled back to Mons, Belgium, where the "Old Contemptibles" of the BEF had first encountered the Germans in August 1914. Canada liberated Mons on 11 November and after fifty months of German occupation, it was there that the Canadian Corps fired the final shots of the First World War. The state of the other Allies in August 1918, through attrition, exhaustion or inexperience, had thrust the ever-reliable, experienced and well-led Canadian formation into the role of spearhead for the war's climactic campaign.

And why had the Canadians been so successful in their decisive role as spearhead? The Canadian experiences in the battles of 1915 to 1917 served as a brutalising learning curve on how to fight and win against the German Army on the Western Front. In the years prior to the summer of 1918, Currie's Canadian Corps learned how to successfully plan, prepare and execute a set-piece attack; it had begun to train with and successfully employ combined arms operations; it had best refined and maintained its unit organisation, equipment and doctrine; and it had cultivated (through meritocracy, experience and training) perhaps the finest leadership structure on the Western

[115] Diary, 1 November 1918, in *Currie Selected Papers*, 131-32; and Nicholson, *Canadian Expeditionary Force,* 474-75.
[116] See, for example, Robert Graves, *Goodbye to All That* (reprint, New York: Penguin, 1998), 187.
[117] Pascas, "Pursuit to Valenciennes 1918."

Front.[118] Tactically, the Canadian infantry, machine gunners, cavalry, tanks and armoured cars were ultimately supported by an advanced and powerful artillery which largely crushed the enemy from the opening barrage at Amiens through to the armistice. The artillery, in turn, was empowered by its intimate and revolutionary relationship with the air power in 1918. At the back end, the logistics and engineers provided the fighting arm of the CEF with requisite material and movement—there could be no victory without the robust supply line and the feats of combat engineering.

Of course, the downside to the major set-pieces and the open-warfare style waged during much of the latter part of the Hundred Days was the terrible casualties suffered by the soldiers. The war in the trenches had been costly enough, but the trenches did provide some shelter from enemy weapons. Open warfare provided none, other than the features of the terrain being fought over. The set-piece assaults on the Drocourt-Quéant Line were directed at formidable bunkers, trench lines, wire and strong enemy forces; the attack over the Canal du Nord and at the city of Cambrai similarly encountered strong defensive positions. Once those barriers had been overcome with heavy casualties, most of the last six weeks of warfare against a retreating enemy were fought in the open, very often against stubborn German machine gunners and strafing aircraft; on at least one occasion, German tanks attacked Canadian troops.

It was, however, the men on the ground who ultimately delivered the final victory; their bravery, resourcefulness, tenacity and other intangible human qualities seized the day. For their leading role in the offensive, the Canadian casualties of the Hundred Days amounted to 45,835 or 18.7 per cent of all those suffered by the Canadians in the First World War—the highest casualty rate in the nation's military history. Among the Canadian war dead was Captain Alfred Hannaford, who died of his wounds near Cambrai only a month before the armistice. Following his death, the Commanding Officer of the 87th Battalion, Lieutenant-Colonel F.S. Meighen, wrote

[118] In the days of victory and for some years after, Arthur Currie did not receive the adulation he richly deserved as one of the war's ablest generals. To many of his men, he sounded pompous; he harped on small points of discipline and, because he understood that winning required heavy pounding, the casualties suffered were high. Nonetheless, there can be no doubt that Currie was unquestionably Canada's greatest soldier and among the greatest of First World War commanders. He deserves to be remembered as such.

The grave of Captain Alfred C. Hannaford in Bucquoy Road Cemetery (France). [Photo courtesy of Ryan Goldsworthy]

to Hannaford's father, "There was no more beloved officer in the Canadian Corps."[119] The losses, as always falling most heavily on the infantry, almost equalled the total nominal strength of the Corps' forty-eight battalions. The casualties suffered by junior officers, likely because of the need for initiative and directive leadership at the platoon level, were even higher—5.15 per cent of all casualties compared to 3.86 per cent at Passchendaele.[120] Unlike the fighting at Vimy and Passchendaele, however, the results of the offensive were unquestionably meaningful in bringing about the ultimate German capitulation in 1918.

[119] Letter, F.S. Meighen to Mr. A. Hannaford, 27 October 1918, RCMI collection.
[120] Travers, *How the War Was Won*, 181.

Captain Hannaford's medal set (left to right: Military Cross and Bar, 1914-1915 Star, British War Medal, Victory Medal, Memorial Cross). [From the RCMI Collection. Photo courtesy of Ryan Goldsworthy]

In the war's waning months, the German Army feverishly resisted the Allied advance at every major strongpoint and defensive line in its retreat to Mons, but it suffered unsustainable casualties in those hard-fought battles and subsequent defeats. With German civilians starved by the British blockade and desperate for an end to the war, and with the army in full retreat, the German General Staff forced the Kaiser to abdicate in November and Wilhelm sought refuge in the Netherlands. Contrary to the postwar claims of the Kaiser and extremists of a "stab in the back" by Socialist politicians and Jews, the German Army and public had lost all faith in an eventual victory and their army had been decisively defeated in the field. As the final Allied offensive's spearhead with replenishable manpower and with near unmatched firepower, experience, ingenuity, organisation, leadership, reputation and material resources, the Canadian Corps was the decisive war-winning formation on the Western Front. It was exactly as Major-General David Watson, the General Officer Commanding the Fourth Canadian Division, wrote in his diary on 11 November: "after four years of war, we gained complete victory over the enemy."[121]

[121] Diary, 11 November 1918, in *Watson War Diaries*, 309.

Currie and the Allies knew they had beaten the enemy in battle and at a terrible cost in lives. Many soldiers took a measure of pride and solace in victory, including Major Georges Vanier of the 22nd Battalion and a future Governor General of Canada who wrote from hospital five days after the armistice, "what a tremendous reward and consolation to see the goal of all our ambitions … and to feel that the efforts and the sacrifices of years have not been in vain."[122] The Canadian Corps had played its full part in gaining the ultimate victory and Currie's boast that his soldiers had defeated a quarter of the German Army was not mere braggadocio. Canada's Hundred Days were the nation's greatest and most decisive military victory.

◆ ◆ ◆ ◆

ABOUT THE AUTHORS

Ryan Goldsworthy is a military historian and material history expert from Toronto. He is currently the Museum Director & Curator at the Royal Canadian Military Institute (RCMI). At RCMI, he has amassed the most diverse and complete collection of Canadian First World War uniforms. He was formerly an Educator and a First World War historian at The Military Museums of Calgary (TMM). He has served on several museum committees and boards of directors.

J.L. Granatstein served in the Canadian Army then taught Canadian history for thirty years. He was Director and CEO of the Canadian War Museum, and writes on Canadian military history, politics, foreign and defence policy, and public policy. Among his many publications are *The Generals*, *Canada's Army*, *The Oxford Companion to Canadian Military History*, and *The Greatest Victory: Canada's Hundred Days, 1918*.

[122] Georges Vanier, *Georges Vanier: Soldier – the Wartime Letters and Diaries 1915-1919*, ed. Deborah Cowley (Toronto: Dundurn, 2000), 273.