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Not Glamorous, But Effective: The Canadian Corps and the Set-piece Attack, 1917-1918*

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Ian M. Brown

A common problem with the study of military history is a tendency amongst historians to misuse the terms tactics, operations, strategy, and politics. To borrow from *Military Effectiveness*, edited by Williamson Murray and Allan R. Millett: "Military activity takes place at four different levels: political, strategic, operational, and tactical. Each category overlaps others, but each is characterized by different actions, procedures, and goals."¹ This paper focuses on operations and the exercise of operational art by the Canadian Corps in 1917-18. That is, the planning, preparation and logistics involved in getting the Canadian Corps into a position where it could carry out the orders of army or theater commanders. The planning and execution of the 1917 attack on Hill 70 by the Canadian Corps is an example of operations. Strategy and politics are generally ignored in this paper as they were the prerogative of the senior British commander in the field, Field-Marshal Sir Douglas Haig, and his political superiors in London. Tactics are only considered insofar as they affected the operational doctrine of the Canadian Corps. The overriding theme of this paper will be a study of the evolution and effectiveness of this operational doctrine, the set-piece attack.

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1. Allan R. Millett and Williamson Murray, eds., *Military Effectiveness*, 3 vols. (London, 1988), 1: 3.

The term “set-piece attack,” which means a deliberate, closely timed attack under the cover of an intense rolling artillery barrage, usually conjures up unfavorable images in the minds of military historians. Nowhere is this more true than in the study of the First World War. The term brings to mind scenes of the Somme and Third Ypres fostered by the “mud and blood” image of that war. This, however, is an unfounded prejudice, for those campaigns were not set-piece in nature. They were initially conceived as breakthrough operations which then broke down into attrition campaigns. Both the Somme and Third Ypres saw the use and misuse of set-piece attacks, but failures in operational planning have often been the surrogate targets of criticism which should have focused on an intrinsically flawed strategic approach. Admittedly, neither campaign saw brilliance in the employment of operational art, but their failure was strategic—they attempted to achieve the impossible, a breakthrough. The battles which catch the minds of historians looking for success in the First World War are those waged by Lieutenant-General Ludendorff (the German Quartermaster-General) in 1918, later called the spring offensives. Indeed, the German Army is generally praised as the outstanding example of innovation during the war.

Such views have undertones of studies of the Second World War as well, in which the German method of lightning-war or blitzkrieg, attracts favorable evaluation. Indeed, blitzkrieg is probably the single word most often associated with the Second World War. What many forget, however, is that the blitzkrieg did not win that war, nor was it particularly successful after 1942, when the Allies learned how to limit its effectiveness. In a like fashion, infiltration and stormtroop tactics have won similar misguided praise, for neither did they win the war in which they were unveiled.² Conversely, during the course of the last hundred days of the First World War, the British Expeditionary Force (BEF) showed it could learn from mistakes. It used an effective all-arms and firepower doctrine and was supported by sound strategic decisions. Yet the praise deserved by the BEF is overshadowed by the failures of previous years and by the “mud and blood” view of the war, while we tend to remember German successes and forget their failures.

It is commonly held that, with the exception of tanks, such innovation as occurred on the ground in the First World War was largely confined to the German Army—the result of some inherent genius for war. This view is heavily influenced by the manoeuvre warfare school of thought

2. Bruce I. Gudmundsson, *Stormtroop Tactics: Innovation in the German Army, 1914-1918* (New York, 1989). In Chapter 6, Gudmundsson makes a distinction between stormtroop and infiltration tactics. Stormtroop tactics were designed to get German infantry across no-man's land to the enemy trenches. Infiltration tactics were designed to go the next step and penetrate defensive systems. Neither was a war-winning system.

regarding operational effectiveness. This school argues that an enemy should be placed, by means of movement, into a position of inferiority. Manoeuvre warfare proponents cite successful examples such as: “Jackson’s Valley Campaign in the American Civil War; German infiltration tactics in the offensive of 1918; [and] the World War II Blitzkrieg.”³ Many historians favor the study of battles such as these, the glamour side of warfare, and ignore or downplay the effectiveness of set-piece attacks.

It is only recently that the set-piece approach has been given serious scholarly attention. In *Fire-Power: British Army Weapons and Theories of War 1904-1945* (1982), Shelford Bidwell and Dominick Graham have argued convincingly that the British Army learned and profited from their failures in 1914-17. They argue that the success of the BEF in 1918 was the result of lessons learned in prior years which were given increased effect by the embrace of BEF technology. *Fire-Power* focuses on the Imperial formations of the BEF. This is perhaps understandable given the volume of information available, but the dearth of study of the Dominion Corps of the BEF, which began to see success well before Passchendaele, leaves unanswered questions. For example, if the BEF were at the leading edge of innovation, why did the Arras and Passchendaele campaigns fail at the moment when the Dominion Corps were beginning to see success? It seems evident that the Canadian and Australian Corps had an impact on innovation in the BEF, but this has not been evident in the historiography of the war.

Canadian writing on the First World War is of mixed quality with no single school of thought predominating, and does not recognize the importance of the set-piece attack. Without a completed Canadian Official History of the war, the study in Canada of the First World War has followed one of two main tracks. On the one hand, there are a number of excellent political studies of the war, notably Desmond Morton’s *A Peculiar Kind of Politics* (1982) and S. J. Harris’s *Canadian Brass* (1988). A great many works, such as John Swettenham’s *To Seize the Victory* (1965) and J. Granatstein and Desmond Morton’s *Marching to Armageddon* (1989), have been written with the general public in mind. These “big picture” works study the Canadian war effort in general, but very little Canadian historiography looks at the Canadian Corps from an operational perspective. William Rawling’s *Surviving Trench Warfare: Technology and the Canadian Corps, 1914-1918* (1992), gives the most current look at the evolution of tactics in the First World War, but Rawling does not seem to realize the importance of operations. He argues that tactics were one of three factors (the others being blockade and American manpower) that won the First World

3. William S. Lind, *Manoeuvre Warfare Handbook* (Boulder, Colo., 1985), 4.

War.⁴ This is too great a claim for tactics, but the work remains an excellent study of their evolution. Daniel Dancocks has completed *Legacy of Valour* (1986) and *Spearhead to Victory* (1987), one-year studies of the Canadian Corps, but also concentrates on tactics and the big picture, rather than operational doctrine. With the exception of A. M. J. Hyatt's *General Sir Arthur Currie: A Military Biography* (1987), the biographies of Currie also fail to study the evolution in doctrine which he spearheaded within the Corps, but even Hyatt's study does not deal with operations in 1918 in detail. While many authors have mentioned the Canadian Corps' focus on the set-piece attack, they have not understood its true significance—that it was the style of attack used in the BEF as a whole, that it was a war-winning system, and that it began to see use in early 1917.

In 1981 Timothy Lupfer published the influential *Dynamics of Doctrine* and helped to give the German Army of the First World War an aura of infallibility. Lupfer argued that the German Army had a staff system which was uniquely suited to the creation of effective tactical doctrine. He studied the evolution of the German elastic defense and infiltration tactics of 1918, but made no great effort to analyze the operational effectiveness of these methods.⁵ It must, therefore, have been assumed by many that such methods were effective and inherently better than Allied attempts to solve the problems of the war—this is certainly Lupfer's assumption. It is also an assumption inherent in Denis Winter's *Haig's Command* (1991), which also over-rates German successes in 1918.⁶

Manoeuvre warfare proponents, conversely, hold the set-piece style of attack to be costly and bloody-minded—attrition at its worst as emphasized by the battles of 1916–17. In contrast, the startling success of the Germans on 21 March 1918 made the efforts of previous years seem quite ineffective. But is this correct? The German Army's results in 1918 reflect the lessons of previous years, and the effect of large numbers of specially trained, elite troops spearheading the attack. For a fair comparison, one must look at the results obtained by the elite of the BEF during a similar period.

4. William Rawling, *Surviving Trench Warfare: Technology and the Canadian Corps, 1914–1918* (Toronto, 1992), 6.

5. T. Lupfer, *The Dynamics of Doctrine: The Changes in German Tactical Doctrine During the First World War* (Fort Leavenworth, Kans., 1981). While Lupfer states that he does “not intend to portray all German tactical efforts as inherently brilliant” (p. ix), this is how his work has been received. At the very least, there is an inherent assumption of superiority of German methods over all others.

6. Denis Winter, *Haig's Command: A Reassessment* (London, 1991). This assumption of German superiority is most evident in Chapters 11 and 12.

The Dominion Corps were in a unique position in regard to their capability. The Canadian Corps in 1917 was larger than any other Corps in the BEF, having four full-strength infantry divisions,⁷ and was also homogeneous—these same four divisions and their supporting arms trained and fought together as a permanent body. The merging of the five smaller Australian divisions in I and II Anzac Corps in early 1918 created an Australian Corps of similar size. The homogeneity of the Dominion Corps should not be overlooked. Their homogeneous nature allowed staffs at all levels to become familiar with each other, which led to a distinct efficiency advantage over nonhomogeneous corps.⁸ This allowed for planning at lower levels—down to battalion level in 1918. It also allowed for standardization and doctrinal innovation which was much more difficult for Imperial corps because Imperial divisions were sent to an Imperial corps during a battle and replaced with entirely new divisions as the battle wore on.

The standard view of the development of doctrine and styles of operations during 1917–18 in effect assumes that one side alone—the German Army—set the pace while all others followed in its wake. This view is wrong. There were multiple learning curves and at least one—that set by the Canadian Corps—progressed at a pace which left the German Army behind. Following Vimy,⁹ for example, which had been a great success in the midst of the inconclusive Arras offensive, the Canadian Corps began to refine its methods for dealing with the German counterattack-based defensive systems. They knew that after a successful assault, “within twenty-four hours German Reserve Battalions try to get back the position [and] within three days a fresh division is sent against it.”¹⁰ To counter this, an increased emphasis was placed on infantry

7. In 1918, the BEF coped with a manpower shortage by downsizing its infantry divisions. Currie opposed this in the Canadian Corps and succeeded in disbanding 5 and 6 Canadian divisions in Britain and filling out the four divisions in France by an additional one hundred men per battalion. The Canadian divisions in France in 1918 actually rivalled the big American divisions in size.

8. C. E. W. Bean, *The Australian Imperial Force in France 1917* (Sydney, 1934), 4: 947–48. Hereafter, Bean’s Australian Official History will be referred to as *A.O.H.*, followed by the volume number. Winter, *Haig’s Command*, 148. Winter sees this as a central feature behind the success of the Canadian and Australian Corps in 1918.

9. The battle of Vimy Ridge involved the preparation for attack and capture of that formidable German bastion by the Canadian Corps under the command of Lieutenant-General Sir Julian Byng. The battle was a bright spot of the Arras offensive of April 1917 and has become, to Canadians, the battle which led to the psychological separation from Britain and ultimately true sovereignty for Canada as a nation-state.

10. Odlum, “Attack, 1917,” Canadian Corps, 21 May 1917, page 2, MG30 E300, Volume 23, Brigadier General Victor Odlum Papers, National Archives of Canada (NAC). Hereafter “Attack,” Odlum Papers.

holding their own gains.¹¹ It was noted that, “[as] a rule the German, previous to his counter-stroke, endeavours to obliterate our front line—it is obviously advisable not to have our front line where he thinks it is, but in a row of shellholes, connected as far as possible, in front of the captured line.”¹² By recognizing German and Canadian tendencies, remedies and counters were undertaken by Corps Headquarters. As the counterattack was the hallmark of all German styles of defense, Canadian headquarters had begun to realize that heavy casualties might be inflicted on the Germans if assault troops were able to achieve their objectives in good condition and thus be prepared for, and capable of resisting, counterattacks.¹³ They also realized that the artillery could aid the infantry if objectives were limited while the former was pushed aggressively forward. This revival of the bite-and-hold idea of previous years proved feasible because of advances in artillery technology during 1916–17. Attacks would now be characterized by a remarkably tight integration of infantry and artillery. Objectives were limited so as not to outrun fire support, and every effort was made to bring firepower forward as quickly as possible to the new front. This approach was both more sophisticated and effective than the German practice, and, incidentally, was ideally suited to handle the central element of all German defensive systems—the immediate counterattack on an assault force before it could solidify its new defensive position. The first test of the new system came in mid-summer.

On 7 July 1917 Lieutenant-General Sir Arthur Currie, the new Canadian Corps Commander, was ordered to capture Lens, which GHQ considered strategically valuable due to the coalfields surrounding it.¹⁴ Currie delayed his attack and asked that he be allowed to assault Hill 70 instead, as he felt that this was the feature which dominated Lens.¹⁵ Currie was certain that once Hill 70 fell, Lens would follow. Additionally, “this objective was selected because it gave observation far into the German lines and its possession would be so intolerable to the enemy that he could not submit to it and must react.”¹⁶ This was reminiscent

11. McIntyre, *Diary*, 15 August 1917, MG30 E241, Volume 1, D. E. McIntyre Papers, NAC. Hereafter McIntyre, *Diary*. Also “Attack,” Odlum Papers.

12. “Attack,” Odlum Papers, NAC.

13. “1st Canadian Division Instructions for the Offensive, Passchendaele No.1,” 5, G.3–1, 23 October 1917, RG9 III C1 Volume 3853, Folder 68, File 1, NAC.

14. G. W. L. Nicholson, *Canadian Expeditionary Force 1914–1919* (Ottawa, 1964), 284. Hereafter *C.E.F.*

15. Currie, *Diary*, 10 July 1917, MG30 E100, Volume 43, File 94, Currie Papers, NAC. Hereafter Currie, *Diary*. Also *C.E.F.*, 285.

16. J. E. Edmonds, *Military Operations: France and Belgium 1917, Messines and Third Ypres (Passchendaele)*, vol. 11 (London, 1948), 219. Hereafter, Edmonds’s work, the British Official History, will be referred to as *B.O.H.*, followed by the volume number. Also *C.E.F.*, 285.

of the German plan for Verdun, but was successfully carried out because of the tight integration of artillery and infantry.

In attacking Hill 70 and Lens, Currie used the set-piece attacking style which had proven effective at Vimy. However, as aggressive counter-attacks were expected, it was hoped that the "full use of artillery power in all stages of the battle [would] reduce infantry casualties to a minimum."¹⁷ Indeed, the plan was for the artillery to catch and destroy the Germans in their assembly areas, thus paralysing their reaction.¹⁸ Hill 70 was successfully captured on 15 August. Successive German counterattacks were crippled by infantry, machine-gun, and artillery fire in the days following.¹⁹

Currie related that during the battle, "[our] casualties so far [are] about 5,600 but in my opinion the enemy casualties must be close to 20,000. Our gunners, machine-gunners and infantry never had such targets."²⁰ He noted that the Germans launched "no fewer than twenty-one counter-attacks" often using "very large forces and all [carried out] with great determination."²¹ The use of artillery as an operational tool, combined with better infantry tactics than were used at Vimy,²² turned the Germans' propensity to counterattack against them by creating a deliberate killing ground in front of the Allied positions, ensuring that counterattacks would be very costly.

Currie felt that the battle for Hill 70 in particular, "was altogether the hardest battle in which the Corps [had] participated."²³ During the assault, Currie committed fourteen battalions with two in reserve. In return the Germans were forced to commit sixteen reserve battalions, including two Guards divisions, to support their initial five battalions; all were badly mauled.²⁴ This success helped morale and confidence, as Brig.-Gen. Victor Odlum expressed to a friend on 23 August:

A Canadian soldier, Lieutenant-General Sir A. W. Currie, is now at its [the Corps'] head, and he has the confidence of all ranks. Commanded by a Canadian, gradually becoming staffed by

17. *B.O.H.*, 11: 221.

18. *C.E.F.*, 289.

19. *C.E.F.*, 289-91.

20. Currie, *Diary*, 15 August 1917. This figure is unconfirmed, but there is no doubt that the Germans suffered heavily in their counterattacks.

21. Currie, *Diary*, 15 August 1917.

22. For a study of the evolution of these tactics, see Rawling, *Surviving Trench Warfare*. Chapter 4, "Towards Vimy," describes the evolution of Canadian tactics from the close of the battle of the Somme to the opening of the battle for Vimy Ridge. Chapter 5, "Spring and Summer 1917: Developing Fire and Movement," takes his tactical study to the close of the Hill 70 battle.

23. Currie, *Diary*, 15 August 1917.

24. *B.O.H.*, 11: 230.

Canadians, and covered by Canadian guns, the Canadian Corps is today a very highly efficient military machine.²⁵

As a result of such successes, Haig used the Corps at Passchendaele, to relieve the Australians, who had suffered in the September mud.

The fact that the Canadian Corps had some degree of independence from British GHQ allowed Currie to get the time required for the capture of Passchendaele Ridge. The Canadian Corps mounted and launched four carefully coordinated and prepared attacks to capture Passchendaele Ridge. Currie wanted his artillery commanders to use as much ammunition as they could, since he recognized its importance in both supporting the infantry and denying the German troops in the battle area their logistic support. To support the infantry at Passchendaele, the Canadian artillery fired 1,453,056 shells, totalling 40,908 tons, between 17 October and 16 November.²⁶ This was 68 percent of the shells allotted to the Canadian Corps for the battle.²⁷ This corresponds almost exactly with the average percentage of artillery pieces in action per day during the battle, implying that, had the Corps been able to keep all of its guns in action for the duration of the battle, they would have exhausted their ammunition allotment.²⁸ The Artillery however, believed that it had not provided the support it could have, had ground conditions been better.²⁹ They estimated that the muddy conditions had forced a reduction of 25 percent in their firepower support for the Corps.³⁰ These conditions also hindered the Germans.³¹ Passchendaele is an excellent example of perseverance on both sides, but is a rather poor example of brilliant or decisive operational art. The Corps succeeded in the capture of the Ridge, at a cost of sixteen thousand casualties, and was then able to retire to winter quarters where the lessons of the previous year could be analyzed and changes made.

Following the Passchendaele battle, the Canadian divisions summarized their findings and operations for Corps headquarters. This "summary of operations" always included a section on "lessons and deductions" which was carefully studied by Corps headquarters. 1 Division had a number of suggestions following the battle. It asserted, for example,

25. Odlum to Greenway, 23 August 1917, Odlum Papers, Volume 20, NAC.

26. "Canadian Corps Ammunition Expenditure—Passchendaele," "Ammunition Allotted to Canadian Corps—Passchendaele," RG24, Volume 1831, GAQ 8-7. Also, same documents in RG9 III C1, Volume 3852, Folder 65, File 1, NAC.

27. *Ibid.*

28. *Ibid.*

29. "Canadian Corps Artillery Report on Passchendaele Operations Oct. 17th to Nov. 18th 1917," 2, RG9 III C1, Volume 3852, Folder 65, File 1, NAC. Hereafter Passchendaele Artillery Report.

30. *Ibid.*, 31.

31. *Ibid.*, 14.

that close interdivision liaison was vital for the success of reliefs and that junior officers and noncommissioned officers must be knowledgeable of the chain of command and ready to take over if necessary; this was apparently well done.³²

Currie, having read such divisional assessments, submitted his report to Second Army following the battle, and essentially laid out a number of features which benefitted a set-piece attack.³³ Firstly, Currie paid tribute to what he called the fighting spirit of the men, their *esprit de corps* and training. Indeed, captured German officers expressed great admiration “for the Canadians especially for their physique, a Battalion commander saying that with such men he [could] ‘go anywhere and do anything.’”³⁴ For that matter, throughout 1917–18 the Germans routinely viewed Dominion forces as by far the most formidable of all their foes.³⁵ Secondly, Currie emphasized that the preparation time he had been allowed was significant. It meant that his troops went into action supported by reasonably well supplied artillery and an intact logistics system. Thirdly, he stated that the roads and heavy tramlines built and operated by the Corps were vital in the supply of the artillery. Next, Currie felt that advance liaison and intelligence work carried out in cooperation with the heavy artillery helped to ensure that the artillery knew what it had to do. He felt that the practice of inserting assault troops into the lines twenty-four to thirty-six hours ahead of time increased the likelihood of success by familiarizing the attacking troops with the ground over which they would attack. Next, Currie noted that during the battle, the timely and correct use of reserves by commanders on the spot had helped greatly. Currie specifically noted that the attack on Bellevue on 26 October (part of the first attack towards Passchendaele) had failed until the Brigade reserve was committed and its commander, who was in touch with the battle developments, succeeded in seizing a foothold on the Bellevue Spur. Further, Currie noted that the Canadians had reinforced partial successes and hurt the enemy by so doing—a clear indication that officers in the Corps understood the tactical

32. Lessons and Deductions, “1st Canadian Division Report on the Passchendaele Ridge Operations November 4–12, 1917,” 29, RG9 III C1, Volume 3853, Folder 68, File 3, NAC. Hereafter Lessons and Deductions, Nov. 4–12.

33. Unless otherwise noted, all assessments of success which follow are taken from: “Canadian Corps G.724/27–3 to Second Army,” 20 November, 1917, RG9 III C1, Volume 3854, Folder 71, File 7, NAC.

34. “Canadian Corps Summary of Intelligence,” 7 November 1917, RG9 III D3, Volume 4816, NAC.

35. Winter, *Haig's Command*, 144. Winter is one of a number of authors who have made this point. Even so, he has not figured out what it was that made the Dominion troops so successful. He has not hit on the actual method of attack which led to their success.

importance of success on the battlefield, that it should be reinforced in order to increase its effect. Currie also emphasized the difficulties encountered in mopping up enemy positions—units detailed to mop up were often knocked out of action and that left German positions intact. He suggested that platoon and company commanders be given more time to manoeuvre behind the barrage so that they could arrange to deal with problems as they arose. In this, Currie was disagreeing with some of his subordinates;³⁶ furthermore, he was correct to do so as his view was more forward-thinking and flexible.

Finally, the Corps had discovered that a barrage pace of one hundred yards in eight minutes on the high ground was as fast as could be maintained in the conditions at Passchendaele. Currie advocated a short start for the barrage, however; the actual attacks were launched after only a two or three minute barrage on the German front lines—this allowed the infantry to get off to a flying start. A prisoner from a machine-gun company stated “that the Canadians came over practically in their own barrage and attacked so suddenly that they had [no] opportunity to use their machine-guns.”³⁷ Currie also advocated short pauses on intermediate objectives to minimize the attacking troops’ exposure to machine-gun fire, and to prevent the troops from stiffening up (physically). With the slow barrage rates, Currie felt there was time for follow-up troops to leapfrog the lead troops in the advance.

In late November 1917, the Canadian Corps moved to winter positions at Vimy where they analyzed the operations of the previous year and prepared for the coming year. While the learning process started during the Passchendaele attacks, the real lessons were learned after the battle and over the winter. By the end of October 1917, even before the capture of Passchendaele, Canadian Corps Headquarters was already pondering a more open style of warfare. A questionnaire dated 28 October asked many detailed and probing questions in preparation for drawing up the lessons of the year’s fighting.³⁸ Question number three asked the divisional commanders for their recommendations regarding getting troops through a defensive barrage, and for suggestions regarding tactics in trench-to-trench attacks and in semi-open warfare.³⁹ While disagreement resulted, the subject now was out in the open and being considered by many people. By 30 November, the Corps had analyzed the year’s operations and was ready to speculate that few changes would

36. Lessons and Deductions, Nov. 4-12.

37. Intelligence Summary, 7 November 1917.

38. G.116/3-23, 28 October 1917, RG9 III C1, Volume 3859, Folder 85, File 1, NAC.

39. G.116/3-23 and summary of answers to G.116/3-23, RG9 III C1, Volume 3859, Folder 85, File 3, NAC.

be made in German defensive methods. The Corps had recognized the German transition from a linear or semilinear style of defense to a defense-in-depth system.⁴⁰ They also noted the continued emphasis on the counterattack, and that the new system had not really been tested in 1917.⁴¹

By the summer of 1918, the Corps had settled on its offensive style of attack, and decided how best to defeat the German defensive system. Operational changes from 1917 were minimal. Tactical changes were, however, significant. The infantry had been trained to be more self-reliant, engineering and machine-gun policies had been devised which did not draw strength away from the infantry, and finally, elements of German tactics had been incorporated into training. These all combined to give the infantry more striking power in 1918 both on its own and when supported by machine-gunners, because it was familiar with the changes and could thus utilize them effectively. These changes augmented the operational system and made it more efficient by increasing the efficiency of its components. This efficiency was to be well tested in 1918.

Currie and Brig.-Gen. N. W. Webber (Brigadier-General, General Staff, Canadian Corps)⁴² first received word of Fourth Army's proposed Amiens attack on 20 July when Maj.-Gen. Davidson (General Staff Operations, GHQ) visited the Corps.⁴³ At a First Army Conference (Canadian Corps was a part of First Army at the time) the next day, Haig's desire for absolute secrecy was expressed since if he approved Fourth Army's proposal he wanted the attack to be as big a surprise as possible.⁴⁴ The next day, 22 July, at a Fourth Army Conference, General Rawlinson explained his plan for the capture of Amiens and Currie suggested that, since the Canadians were already planning for a proposed

40. This transition has been studied in Lupfer, *Dynamics*.

41. "Notes on the Enemy's Defensive Tactics Against the Canadian Corps—1917," 30 November 1917, RG9 III D3, Volume 4816, NAC.

42. The extent to which Currie was directed by his B.G.G.S. and staff is unclear due to a lack of records dealing directly with this subject. As the most extensive archival records on individuals tend to deal with Currie and other commanders, one will see a pro-Currie slant. However, it should also be noted that a general's staff will tend to reflect his style of command. The impression given by the Canadian Corps in such records as are available indicates that Currie gave his staff a non-restrictive environment in which to operate. It is also evident that he relied heavily on his senior staff officers. However, on important matters, Currie had the last word and made the final decisions.

43. Webber to Brutinel, 15 February 1919, "Amiens Narrative," RG9 III D2, Volume 4802, File 135, NAC. Also A. W. Currie, *Canadian Corps Operations During the Year 1918—Interim Report* (Ottawa, 1919), 27. Hereafter *Interim Report, 1918*.

44. Webber, "Amiens Narrative."

attack on "Orange Hill", if they continued planning for the "Orange Hill" attack, secrecy could be maintained regarding Amiens.⁴⁵ Planning proceeded on that premise, with members of Currie's staff being let in on the actual plan as need dictated. Currie's emphasis on artillery meant that on 23 July Maj.-Gen. E. W. B. Morrison (Currie's G.O.C., Royal Artillery) and Lt.-Col. A. G. L. McNaughton (Counter-Battery Staff Officer) were informed of the intended operations, so that they could begin to plan accordingly.⁴⁶

Orders for the Canadian Corps to begin a move to Second Army were received on 29 July.⁴⁷ These orders were part of the deception plan and, while some Canadian units moved north, the rest secretly moved south to Fourth Army.⁴⁸ At the same time, the rumor mill was set in motion.⁴⁹ It was not until 29 July that Canadian Divisional Commanders and their GSO1s were informed of the actual place of attack, and they did not reveal this to their Brigadiers until 1 August;⁵⁰ so the planning for Amiens had to be completed in very short order. When the Divisional commanders were informed of the attack they were also given a preliminary plan and requested to suggest the changes they needed.⁵¹ As early as 31 July, Maj.-Gen. H. E. Burstall (2 Division) requested changes, because he did not want to see his troops getting in each other's way during the attack.⁵² The planning proceeded rapidly once all commanders had been let in on the secret, with the Brigadiers and their Brigade-Majors doing much of the actual planning. In only seven days they had to ensure that their units were moved according to schedule, and find time to study the German defenses and suggest refinements. The general plan was in existence by 31 July, but the specific plans of attack for all units involved were developed between 1 and 7 August.

*L-C Instructions Number 1*⁵³ emphasized secrecy, the general objectives and plan of attack and the role of the Corps artillery. The attack was to be "a surprise attack supported by Tanks and carried out,

45. Webber, "Amiens Narrative," and *Interim Report, 1918*, 28.

46. *Ibid.*

47. *Interim Report, 1918*, 29.

48. First Army, Number 1337/2, 29 July 1918, RG9 III D3, Volume 4817, NAC.

49. Webber, "Amiens Narrative."

50. Watson, Diary, 29 July and 1 August (misdated as 1 July) 1918. Also *Interim Report, 1918*, 32.

51. This was evidently G.940/25-22.

52. Burstall to Webber, 31 July 1918, RG9 III C1, Volume 3855, Folder 74, File 7, NAC.

53. L-C was short for Llandovery Castle, the code name for the attack.

in the early stages, under cover of a Rolling Artillery Barrage.”⁵⁴ The Corps would attack with 1, 2, and 3 Divisions in line and 4 Division in reserve. Secrecy was heavily stressed to all ranks, and anyone who discussed the plans with any person not directly involved in the attack was to be severely dealt with.⁵⁵

The Canadian Corps identified objective lines by color codes. Generally, solid colors indicated all intermediate and final objective lines for the set-piece portion of an attack, while dotted lines indicated potential exploitation lines which might be reached following the conclusion of the set-piece program. At Amiens, the assault divisions were to capture and hold the Red Line (an intermediate objective)⁵⁶ except for the left of the 2d Division front where the Blue (final objective) Line was included as an objective.⁵⁷ This was to be the minimum advance of the Corps. The orders for 1 and 2 Divisions also called for the capture of the Blue Dotted Line (line of potential exploitation) if they had “sufficient troops available on the first day after completing their tasks.”⁵⁸ 4 Division was to follow the assault divisions to the Red Line and pass through at that point to assist the Cavalry in capturing the Blue Dotted Line.⁵⁹ The commanders of the assault divisions were to use their own discretion in deciding if their infantry were capable of advancing to the Blue Dotted Line.⁶⁰ One of the keys to the plan was that after the Blue Dotted Line had been reached, that line would be consolidated into a defensive position in preparation for German counterattacks.⁶¹ As with all Canadian Corps attacks under Currie, the artillery received a crucial role.

At zero hour, with the exception of one Field Artillery Brigade per Division, all artillery in the Corps was to be under Corps control.⁶² Canadian artillery fire was coordinated by Corps headquarters until the end of the set-piece portion of the attack. This undoubtedly allowed for more complete control to be exercised in the placement and timing of

54. Canadian Corps War Diary, *L-C Instructions No.1*, Part 3(a), RG9 III D3, Volume 4817, NAC. Hereafter *L-C No.1*.

55. *L-C No.1*, 3(b).

56. At Amiens, the GREEN Line was the intermediate objective, the RED Line was the final objective for the set-piece portion of the attack, and the BLUE DOTTED Line was the proposed line of exploitation. At Bourlon Wood (27 September), the two intermediate lines were RED and GREEN, the limit of the set-piece attack was the BLUE Line and the BLUE DOTTED Line was the proposed line of exploitation.

57. *L-C No.1*, 4(a)(i).

58. *L-C No.1*, 4(a)(ii).

59. *L-C No.1*, 4(c)(i, ii, iii).

60. *L-C No.1*, 4(d).

61. *L-C No.1*, 5(a).

62. *L-C No.1*, 6(c)(i, ii, iii, iv, v).

the barrage. However, 1 Divisional Artillery was to follow the infantry at zero hour so as to be in position to cover 1st Canadian Infantry Brigade in the capture of the final objectives.⁶³ This would also put them in position to fire on German counterattacks as they materialized. Further instructions dealt largely with the administrative details for the attack.

*L-C Instructions No.2*⁶⁴ was primarily the logistics plan for the Corps with the notable exceptions of smoke and machine-guns. Machine-gun barrages were to be left to the discretion of each divisional commander and fairly extensive use of smoke was planned for screening purposes.⁶⁵ *L-C Instructions No.3* contained further refinements of the basic plan. A great deal of the planning focused on the use of various roads and bridges and the timing thereof so as to avoid confusion and congestion during the attack. The final set of orders, *L-C Instructions No.6*, focused on the likelihood of the battle developing further in the event of initial success.⁶⁶ As a result it contained contingency plans primarily involving the probable release of 32 Imperial Division to the Corps.

Currie's style of command—he ran his Corps like a business executive, encouraging input and discussion from below, listening to it all, but reserving the final decision for himself—is evident in the Amiens attack, but it is confined primarily to the planning stages. Currie notified his artillery early-on as to the true nature of the attack, so that they could be well prepared for the morning of the eighth. Further, the general plan of attack seems to have been Currie's doing, likely with considerable help from his Brigadier-General, General Staff. Once the general plan was drawn up, Currie played an organizational role similar to that at Passchendaele, wherein he ensured that plans were drawn up on time and that they made sense. The general plan was flexible enough to allow battalion commanders to request modifications based on their tactical needs⁶⁷—indeed, the parallel between this approach and that usually ascribed to the Germans is striking. Further, as with all major operations in 1918, the bulk of the Canadian Artillery came under Corps control until the limits of the set-piece attack were reached, whereupon each Artillery Brigade reverted to the normal control of its parent formation. There was great emphasis on consolidating the final objective to stop the inevitable German counterattack. Currie realized

63. "Preliminary Planning," 1st Canadian Division, 31 July 1918, RG9 III C1, Volume 3855, Folder 74, File 6, NAC.

64. These instructions were issued on a daily basis from 4 August (*L-C No.2*) to 7 August (*L-C No.5* and *L-C No.6*).

65. *L-C No.2*, parts 11 and 12.

66. *L-C No.6*, 5(b).

67. "1 Division Report on Amiens," 5, Parsons Papers, Volume 1, File 4, NAC.

that he would have to rely on his subordinates to actually run the battle, and that his input was confined to the planning stage.

The Amiens attack was a complete operational success and was eminently successful on the opening day.⁶⁸ It was the opinion of German military critics and of Ludendorff himself that fog, surprise, tanks, the lack of prepared positions, and insufficient artillery support were behind the German defeat.⁶⁹ It is evident that tanks supplied considerable assistance to the assaulting infantry on the opening day of the Amiens battle. 7 Canadian Infantry Brigade noted that “the great moral effect of the tanks both upon the enemy and our own men quite justified their use in itself,” and 5th Canadian Mounted Rifles were also complimentary.⁷⁰ The Royal Air Force (RAF) also saw action at Amiens, and was active in every major battle of 1918. Its role was limited to harassment, contact patrols, aggressive counterair action, and most importantly, the artillery spotting which led to the effective use of artillery. Prior to the attack, the RAF was also tasked with reconnaissance over Allied lines, to see that the attack preparations were not obvious from the air. On the whole, however, the impact of the RAF on the course of the battle was not as significant as that of the tanks, which were a tool the infantry could use tactically during the advance; rather, its significance came operationally, prior to the battle through increasing the effectiveness of the artillery’s firing plan. As for the artillery, it was evident that it had done its job. The rolling barrage “was reported from all sources as most successful,” in spite of the fact that it had not been preregistered—meaning that the guns had done no firing prior to the barrage and the barrage was fired from map coordinates for maximum surprise.⁷¹ The heavy artillery had also succeeded in its counterbattery work as “not only was the artillery retaliation very weak throughout the advance, but also on reaching the line of enemy guns the effect of our counter-battery work was conclusively evident.”⁷² This all combined

68. “Intelligence—Canadian Corps Battlefronts, Period—Aug. 8th to Nov. 11th, 1918,” 9, Currie Papers, Volume 38, File 170, NAC. Hereafter, Battlefront Intelligence.

69. Historical Division, Department of the Army, *United States Army in the World War, 1917-1919: Military Operations of the American Expeditionary Forces* (Washington, 1948), 13:15-16, “Translation of Ludendorff to GHQ, 11 August 1918” in the “Final Report of Assistant Chief of Staff G-2, 15 June 1919.” Also press clippings from *Frankfurter Zeitung* (10 August 1918) and *Berliner Tageblatt* (10 August 1918) in Battlefront Intelligence, 19.

70. “Report on the Canadian Corps 1918-1919,” 7, 54, and an untitled report on Amiens, MG30 E414, Volume 1, File 2, Brutinel Papers, NAC.

71. “Attack by Canadian Corps, August 8th, 1918, 2nd Canadian Divisional Artillery, Report on Operations,” 2, RG9 III C1, Volume 3910, Folder 36, File 3, NAC. Also G.O.C.R.A. Fourth Army (Budworth) to Morrison, 12 August 1918, Morrison Papers, Volume 11, File 3, NAC.

72. *Ibid.*

with good small unit tactics to ensure the success of the all-arms attack.

All-arms cooperation worked as well at Amiens as it had for the Australians at Hamel. The Canadian Corps captured most of the Blue Dotted Line and the Australians on their left did equally well. The Canadian Corps completely overran two German divisions and two further regiments during the advance to the first intermediate objective and did not encounter German reserve battalions until after the advance to the second intermediate objective (Red Line) was underway.⁷³ The attack was continued throughout the next few days with decreasing success, the general objective being the capture of as much territory as possible.

As successive days passed, German resistance stiffened as reserves were thrown into the battle. By 13 August, it was becoming clear to Currie and to Lieut.-Gen. Sir John Monash (G.O.C., Australian Corps),⁷⁴ that the attack should be broken off. The battle had already cost the Canadian Corps most of the 13,808 casualties it was to suffer, and the casualties would have increased unacceptably if the advance had been pressed further.⁷⁵ In a letter to Fourth Army on that date, Currie argued that the attack was reaching the area of the old Somme battles and that the wire was going to be thick and heavy, and more important, the Germans would be retiring into prepared defenses where they could look up old charts for the ranging of their guns. As a result, Currie felt it would be unwise to proceed immediately.⁷⁶ He offered two alternatives that he was prepared to undertake. The first was to pause and regroup prior to a further attack into the same area, so that further planning could be undertaken and the element of operational surprise possibly regained.⁷⁷ The second, which Currie preferred, was to pull the Canadian Corps out of line and send it elsewhere to resume attacking on a different front.⁷⁸

This is where the 1918 strategy of the BEF differed markedly from that of the Germans. During the spring offensives, the Germans continued attacking after exhaustion and casualties had begun to seriously hinder the efficiency of assault divisions. German infiltration tactics, which

73. *Battlefront Intelligence*, 3.

74. Monash was, like Currie, Ivor Maxse, Aylmer Haldane, and Claude Jacob, another highly skilled Allied commander. It is a fallacy that the BEF was led by donkeys. Such "lions" as Currie, Maxse, Haldane, Jacob, and Monash prove this not to have been the case.

75. "Casualties. Battle of Amiens—Commencing August 8th 1918," MG30 E5, Volume 1, File 3, Bovey Papers, NAC.

76. Currie to Fourth Army, 13 August 1918, RG9 III C1, Volume 3854, Folder 73, File 5, NAC. Hereafter Amiens Letter.

77. Currie, Amiens Letter.

78. *Ibid.*

worked well, were inadequately supported by sound strategic thought or clearly thought out operational methods. The Germans, in fact, were trying to do the impossible—for in 1918 tactical breakthrough was relatively easy to achieve but deep exploitation was impossible. In contrast, Haig acceded to Currie's request. The Canadians were pulled out of the Amiens area and resumed operations in the Arras-Cambrai vicinity. Here the Corps attacked successfully and continuously until they paused in early September on the line of the Canal du Nord.

During this period (August and early September), the Canadian Corps fine-tuned its style of attack. The G.O.C. of 1st Canadian Infantry Brigade (Brig.-Gen. Griesbach) gave a good description of this style. He felt that each of the battles the Canadians had fought until the end of August 1918 was composed of three distinct phases. The first phase was the set-piece phase "carried out under the well understood principles regarding trench warfare and may be described as the attack made under and to the limit of the Field Gun Barrage."⁷⁹ This opening phase was standard for the Canadian Corps in the opening of all major battles during 1918. The second phase was a transitional phase simply defined by Griesbach as the "attack between the limit of the Field Gun Barrage and the limit of the Heavy Howitzers."⁸⁰ This stage of the battle lacked the intense field gun barrage, but continued to use the heavy howitzers in a set program. The final phase was the open warfare portion of the battle where the infantry had outpaced their artillery support and relied on their own initiative. However, unlike the Germans in 1918, this third phase was *limited* by the operational plans. Following this third phase, the Canadian Corps would again be in defensive positions with enough artillery and machine-gun support to deal with German counterattacks.

What the Canadian Corps had developed by late 1918 was an all-arms set-piece style of attack that was effective and efficient in the conditions faced in World War One. As an ex-artilleryman, Currie was sensitive to the need for the best artillery support possible. He no doubt recognized that as artillery was the most dangerous arm of the war, the correct and efficient use of this weapon was vital. Additionally, the infantry, using good small-unit tactics, were well supported by the machine-gun doctrine of the Corps, which had been in place since the spring of 1918. This allowed for the planning of complex operations unthinkable earlier in the war.

An example of this kind of complex operation occurred in September 1918. When First Army paused in front of the Canal du Nord in early September 1918, it was faced with a formidable barrier averaging 100

79. 1st CIB to 1 Division, G.434-8, 24 August 1918, MG30 E15, Volume 2, File 14, NAC.

80. *Ibid.*

feet wide and fifteen feet deep filled either with some eight feet of water or heavily wired.⁸¹ The Canadian Corps paused on a 6,800-yard frontage of the Canal with some dry canal on the southern portion.⁸² Currie realized that the Canal was a formidable obstacle and that an attack across it would be very difficult.⁸³ The Canadians took over the 2,600 yards of dry canal on the First Army front and were given the task of crossing.

As was the case with all major Canadian Corps operations, Currie and his BGGs devised a general plan for the operations which, in this case, were to involve the crossing of the Canal, the capture of Bourlon Wood, and the eventual push on Cambrai. In this case, Currie was especially daring, for he proposed to throw the whole Corps across the narrow dry portion of the Canal and expand rapidly outward from there. In this, he would be taking a huge risk, for if the Germans could bring down an effective defensive barrage, Currie might lose the better part of two divisions in the canal bed. He was, however, confident enough in the plan to put it to his divisional G.O.C.s who then passed it down as far as their battalions for input.⁸⁴ The plan was initially opposed by General Horne (G.O.C., First Army) as too dangerous. On 21 September he and Haig visited Currie and gave reluctant assent to the plan. Horne apparently almost changed his mind that day, but was talked out of it by Maj.-Gen. Hastings Anderson, his Major-General, General Staff.⁸⁵ It was not until after Horne asked Byng to talk to Currie and Byng was also convinced of the plan's chances, that Horne finally dropped his reservations.⁸⁶

Despite the difficult start line, the Bourlon Wood battle, which involved the crossing of the Canal du Nord and the capture of Bourlon Wood, was typical of the Currie style of command and the Canadian style of attack. It was to begin as a set-piece attack under a Corps coordinated creeping barrage to the Blue (final objective) Line.⁸⁷ Bourlon Wood itself was to be enveloped, "leaving the center of the Wood to be

81. Major-General Sir W. H. Anderson, "The Crossing of the Canal du Nord by First Army, 27th September, 1918," *Canadian Defence Quarterly* 2 (October 1924): 65.

82. Lt.-Gen. Sir Archibald C. Macdonnell, "'The Old Red Patch': The First Division at the Breaking of the Canal du Nord Line," *Canadian Defence Quarterly* 9 (October 1931): 11.

83. Currie, *Diary*, 4 September 1918.

84. Cf. various messages between Brig.-Gen. Griesbach and his battalion commanders, File 14, Griesbach Papers, Volume 2, NAC.

85. Urquhart, *Currie*, 252.

86. *Ibid.*, 253.

87. *B.W. Instructions No. 1*, part 6, RG9 III D3, Volume 4817, NAC.

mopped up later.”⁸⁸ Once the Blue Line was reached, the protective barrage was to be carried out for fifteen minutes by each battery involved due to the varying times at which the infantry was likely to reach this objective.⁸⁹ This was to allow for exploitation beyond the Blue Line whenever opportunities existed to the limits of the planned final exploitation line. Given that exact timings could not be worked out in the Bourslon Wood operation, exploitation was left to each commander’s discretion.⁹⁰ If resistance was heavy at the Blue Line, the assault troops were to consolidate on it, otherwise it was Currie’s intention “to gain as much ground as possible beyond the BLUE Line on Z day, provided that enemy resistance is not more than can be overcome by open warfare tactics, i.e., by manoeuvre, supported by a limited amount of artillery.”⁹¹ Each division was given general instructions for the exploitation beyond the Blue Line based upon a guess of what each might face, and all were given a number of points to remember. For example, 3 Division was told to remember that, as the Canadian Corps was protecting Third Army’s flank, they were to keep in touch with 57 Imperial Division on their right and conform to that division’s movements.⁹² Brig.-Gen. Brutinel’s Motorized Machine-Gun Brigade was given the opportunity to exploit along the Cambrai-Valenciennes road, and was free to operate on any suitable road as long as the Brigade didn’t hold up the supply of artillery ammunition.⁹³

Due to the narrow nature of the initial front of attack, logistics were of vital concern. The whole of the Canadian Corps engineer resources were committed to bridging the Canal as rapidly as possible since the success of the operation beyond the Blue Line depended on how much materiel could be pushed across the Canal.⁹⁴ *B.W. Instructions No.2*⁹⁵ for example, issued on 25 September, was *solely* devoted to the logistical planning for the attack.

A number of measures were adopted to aid the attack. Prior to the battle, First Army carried out active patrolling and wire cutting in other areas of the front in an effort to deceive the Germans about the location of the next attack. To that end they were aided by “the enemy’s firm belief in the fondness of the British Army for frontal attacks on impassable obstacles.”⁹⁶ Additionally, the Canadian Corps was to receive fire support

88. *Ibid.*, part 6.

89. *Ibid.*, part 7.

90. *Ibid.*

91. *Ibid.*, part 9.

92. *Ibid.*, part 10, v.

93. *Ibid.*, part 17, ii, iv.

94. *Ibid.*, *B.W. Instructions No.2*, part 27, i, ii.

95. B.W. was short for Bourslon Wood.

96. Anderson, “Canal du Nord,” 66.

from the guns of the adjacent XXII Corps and the assistance of 11 Imperial Division and 169th Brigade of 56 Imperial Division to the north of the Canadian attack.⁹⁷ This attack was an all-arms set-piece attack. Tanks were used to aid the infantry with wire; smoke was used to screen forward assembly areas and the attack itself; and the machine-gunners and engineers had important roles in assisting the infantry, although the artillery was absolutely vital.⁹⁸ The artillery was to be in defensive positions by evening to help defeat counterattacks—the continued emphasis on consolidation of gains.⁹⁹

The attack was a considerable success. By nightfall on Z Day, the Canal du Nord had been forced on a nine mile front to a depth of some five miles or more.¹⁰⁰ During that night, “the bulk of the Canadian Corps field artillery and a large portion of the heavy artillery crossed the canal and moved into position to support the further advance which was resumed at 6 a.m. on the 28th of September.”¹⁰¹ Casualties were heavy—some 13,500 total during the overall battle—but when the difficulty of the operation is considered, this was perhaps to be expected. The return for the casualties was a foothold across the Canal thus unhinging yet another powerful German position, the defeat of five German divisions on 27 September and thirteen by 1 October, as well as the capture of some five thousand prisoners and 150 guns.¹⁰²

The Bourlon Wood battle was based on a sound, daring, general plan of attack into which subordinate commanders could fit changes, depending on their tactical requirements. The Corps artillery was, as always, under Corps control in the early, set-piece stage of the attack, later reverting to the normal control of parent divisions and artillery brigades.¹⁰³ This allowed for the most efficient use of artillery fire-power. The Bourlon Wood operation is an example of the kind of complex and daring operation that a well-planned and executed set-piece attack could be. Further, in the Bourlon Wood case, the chances of losing the gains were minimized by the Canadian Corps’ emphasis on consolidation of gains.

The basic Canadian style of attack was settled in 1917 at roughly the same time the Germans were settling their methods. The spring of

97. *Ibid.*, 67.

98. Macdonell, “The Old Red Patch,” 12, 14, 24.

99. “Bourlon Wood Operational Instructions #1,” 1st Canadian Division, G.3-91/1, 17 September 1918, RG9 III C1, Volume 3856, Folder 77, File 1, NAC.

100. Anderson, “Canal du Nord,” 73.

101. *Ibid.*, 73.

102. *Ibid.*, 73-74. Also Currie, *Diary*, 1 October 1918.

103. This policy was codified on 20 September 1918 with the publishing of “Policy as to Command of Artillery Units During Offensive Operations,” G.558/3-15G, RG9 III D3, Volume 4817, NAC.

1918 saw a tactical evolution, begun in 1917 and aided by the study of German tactics in 1918, and doctrinal changes which augmented this basic style of attack. The attacks of 1918 differed from those of the previous year in scope. Whereas most attacks in 1917 had not pushed past the field artillery range, in 1918 they had. Indeed, 1918's pattern followed the three-phase system laid out earlier, where an intermediate phase under the protection of the heavy artillery set the stage for a third, or open warfare, phase. Like 1917, the operational system still relied on firepower and the set-piece attack to get underway. However, in 1918 the tactics used under the artillery umbrella, which included the new machine-gun policy, fire and movement principles for the infantry, infantry-tank cooperation, and close artillery support, were brought to a high state of efficiency.¹⁰⁴

By the summer of 1918, the Canadian Corps was able to develop an attacking style that was cost-efficient and reliant upon firepower. In the words of Brig.-Gen. McNaughton (G.O.C., Heavy Artillery), Currie always looked "to pay the price of victory, so far as possible, in shells and not in the lives of men."¹⁰⁵ The summer counteroffensives saw the refinement and fine-tuning of tactics and some operational methods, such as artillery fire-control, which culminated in the success of the complex and daring Bourlon Wood attack.

The Canadian Corps style of attack in 1918 stemmed from Currie and his willingness to make changes within the Corps structure, and from the Corps' homogeneous nature. Currie's willingness to let commanders on the spot make tactical decisions and participate in the planning of attacks, his strong belief in the value of firepower, and his meticulous planning all led to success. Likewise, the homogeneous nature of the Corps allowed for the smooth implementation of the changes which Currie's style brought about.

The crossing of the Canal du Nord and capture of Bourlon Wood was the last major Canadian set-piece attack of the war. It helps to illustrate how a complex plan could be executed by troops that understood how to fight a set-piece attack. Following this success the German army changed from attempts to stop the Allies, to the fighting of a rear-guard action to merely slow down the prospect of defeat. This meant a defense based on machine-guns and artillery with a very low troop density. The Canadian Corps responded by lowering its troop density in attack so as to limit casualties as the advance became the

104. This is essentially what Rawling has argued in *Surviving Trench Warfare*. Rawling, however, has not placed this efficiency in the broader context of operational art.

105. A. G. L. McNaughton, "The Capture of Valenciennes, A Study in Coordination," *Canadian Defence Quarterly* 10 (April 1933): 279.

pursuit of a defeated enemy, and set-piece attacks were used only when the Germans chose to stand and fight.

In contrast, German storm troop/infiltration methods were innovative, but ultimately they failed. In essence, Germany's 1918 spring offensives failed because they were tactical offensives with strategic goals.¹⁰⁶ German infiltration tactics subsumed the artillery to the infantry at an operational level, unlike the set-piece operational plan where the converse was the case. German spearhead troops were to advance as fast and as far as possible and there was inadequate provision for their relief.¹⁰⁷ The artillery was responsible for the initial barrage and then it was on its own—to keep up with the infantry if it could.¹⁰⁸ Indeed, as Bruce Gudmundsson relates, “For most of March 22, the German infantry were in the unenviable position of having pushed too far for their own artillery to support them but not far enough to deny the British the use of their own guns.”¹⁰⁹ This, naturally, led to increased casualties and, therefore, less efficiency. And, despite the idea that the barrage was to be in depth and aid the attacking infantry,¹¹⁰ in actuality the creeping portion of the barrage lifted from objective to objective and allowed British machine-guns sufficient time to come into action before the attacking infantry reached each objective.¹¹¹ Also, while the elite troops learned the new tactics, large numbers of trench divisions reverted to the massed wave tactics of 1914–16¹¹²—hardly an innovation. The Germans were seeking an unlimited breakthrough success which was simply impossible at that time. What they developed was an infantry-dominated tactical plan designed to use tactical manoeuvre for operational and strategic success. Artillery was given nothing more than an initial role in creating the opportunity for advance, and insufficient use was made of its killing power.

The fighting of late 1918 should be placed in the context of German morale, which was on the decline. German morale began to suffer following the failure of the spring offensives and this problem was noticeable in late August when the line troops were not fighting well,

106. See H. H. Herwig's “Dynamics of Necessity: German Military Policy During the First World War,” in Millett and Murray, *Military Effectiveness*, Volume I, for a discussion of why the spring offensives can be considered tactical offensives.

107. *B.O.H.*, 13: 149, indicates this indirectly.

108. Lupfer, *Dynamics of Doctrine*, 42.

109. Gudmundsson, *Stormtroop Tactics*, 165.

110. *Ibid.*, 41–42.

111. “Notes on Present Operations,” 1–2, attached to “Notes on the Recent Fighting—No.7,” 24 April 1918, RG 9 III, Volume 948, File I-8-3, NAC.

112. First Army No.1888(G), 30 March 1918, RG9 III C1, Volume 3859, Folder 86, File 5, NAC.

although the elite troops fought well until the end of the war.¹¹³ However, by October, there was a serious problem with German morale. This was blamed by some German commanders on the elastic defensive system they were using which led their troops to “believe that the ground is of no value,” resulting in rapid retirement when attacked.¹¹⁴ There were other signs of breaking morale—rioting by the troops, and desertion. It is estimated that between August and October 1918 the German armies lost 750,000 to 1,000,000 men to desertion; this was nearly one-fifth of the total German Army available in the spring.¹¹⁵ To this can be added 1.25 to 1.6 million battle casualties during 1918.¹¹⁶ It should be no surprise, then, that by 11 November it was estimated that the Germans could field only four “fit” divisions—fit divisions being those that were rested and fresh, out of the 186 nominally available.¹¹⁷ Such a loss of men severely hindered the capability of the German Army to halt the Allied counteroffensives.

The German spring offensives of 1918 proved that a more open style of warfare was possible. The apparent German successes led the Canadians to consider adopting German methods as their own. In the end, however, the Canadian Corps realized that German methods were far from perfect. What the Canadians settled on by mid-1918 was the adoption of some German tactical methods, such as less concentrated infantry formations and even greater infantry self-reliance, which were then integrated into the Canadian system. The winter of 1917 and spring of 1918 must be seen as a period where the Corps made a number of *tactical changes* (specifically the new engineering structure, the machine-gun policy, infantry-tank cooperation, and better fire-and-movement infantry tactics based on the German example), that *augmented* their operational system, which remained essentially unchanged. Indeed, the only visible sign of an operational change that was not present in 1917 was in the emphasis on the limited exploitation of gains in 1918.

The point is not simply that the Canadian style of offensive operations was better than that of the Germans—it is that the conventional idea that manoeuvre warfare was the best solution to the Western Front is wrong. The set-piece style of attack was more efficient and effective

113. Battlefront Intelligence, 15. Also, “1a/55622—Change in the Discipline of the German Army (1918),” 2, 3, Erlebach Papers, Volume 1, File 3, NAC.

114. 3rd Canadian Division Report on Cambrai Battle, 18.

115. Deist, W., “Der Militärische Zusammenbruch des Kaiserreiches. Zur Realität der ‘Dolchstoßlegende,’” in U. Büttner, ed., *Das Unrechtsregime* (Hamburg, 1986), 105, 117.

116. *Ibid.*, 112, 113, 118.

117. Battlefront Intelligence, Conclusion, NAC.

when facing strong defensive systems; and strong defensive systems are impossible to avoid, at least much of the time, when fighting against a tough adversary. While manoeuvre is valuable, this is not true in every battlefield circumstance, and the set-piece assault is an equally valuable military tool. It allowed the Canadian Corps to achieve considerable success against formidable defenses such as the Hindenburg Line at minimal cost in lives. It is less glamorous than manoeuvre, but at certain times in warfare, the set-piece attack is vital to success.