“The Most Vivifying Influence:” Operation Delta in Preparing the Canadian Corps for the Hundred Days

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WILLIAM F. STEWART

The preparations for the projected “Delta” attack exercised the most vivifying influence on the training of the Canadian Corps.¹

—Arthur Currie, Interim Report, 1919

Abstract: Preparation and training for Operation Delta in May and June 1918 provided the Canadian Corps with vital experience for the types of operations conducted during the Hundred Days. Delta was a proposed attack on the southern portion of the Lys salient formed by the German April offensive in Flanders. The operation represented a clear break with the operational concepts employed in 1917 prior to Cambrai. It was a difference between seeing a play diagrammed on a blackboard and actually running it in conditions just short of combat. Having a concrete plan to prepare schemes against was an invaluable element in readying the corps for the strains of the Hundred Days. It helped in overcoming the challenges of ridding the corps of old thinking, mastering the new, and at an accelerated tempo. It was also a valuable rehearsal for the circumstances faced by the corps at Amiens. Finally, it demonstrated how the Canadian Corps differed from the British Army in creating and inculcating a corps level doctrine and the mechanisms used by the senior commanders and staff to disseminate, enforce, and practice it.

In the aftermath of the German 1918 spring offensives, Cy Peck, the rotund but combative commander of the 16th Canadian Scottish Battalion, shared an explosive secret with his company commanders.\(^2\) They were going to participate in a multi-corps surprise offensive to eliminate the threat to a strategically vital location.\(^3\) The enemy was in a salient, in improvised defences, exhausted, and at the end of a tenuous supply line. In a sharp departure from previous Canadian engagements, this attack would feature no preliminary bombardment nor prior gun registration. It would include masses of tanks and aircraft and a planned advance far greater than any ever attempted by the Canadian Corps. Further, it would secretly move to the sector and only enter the line shortly before zero hour to deceive the Germans. It even had its own codename—a first for the Canadians.\(^4\)

When was this meeting and for what operation? Not in August 1918 but on 8 May 1918, and not the prelude to the famous Amiens offensive but a never executed plan, codenamed Delta. It had a crucial role in the planning, preparation, and training of the Canadian Corps for the Hundred Days campaign. It was the essential step in transitioning the Canadians to the far different tempo, tactics, and practices of open warfare from the static conditions of 1917. As the commander of the 1st Division, Major-General A.C. Macdonell, later explained, the effect of it and the accompanying training on “efficiency of the corps cannot be over estimated.”\(^5\)

The paper’s intent is to examine the origin, purpose, course, and consequences of Delta. It also provides a lens through which to view how the corps translated the theoretical notions of doctrine embodied in manuals, instructions, and notes into practice prior to battle. The paper comprises three major sections. It starts by highlighting the stark differences between Canadian operations at Passchendaele and during the Hundred Days. It then examines the Delta plan and its inception, course, and afterlife. The final section analyzes the

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\(^2\) Cy Peck would win the Victoria Cross for his heroics in the attack on the Drocourt-Quéant line on 2 September 1918.

\(^3\) Cy Peck Diary, 6–9 May 1918, MG30 E134, Peck Fonds, Library and Archives Canada (LAC).

\(^4\) The only previous code name for a British attack was the 1917 cancelled landing on the Flanders shore during the Passchendaele offensive called Operation Hush.

doctrinal sources, the Canadian reaction to Delta, how it shaped their preparations for the Hundred Days, and its importance and influence. The paper’s basis are two sets of documents: the relevant war diaries in the Canadian Corps, at the First Army, and at GHQ and training instructions down to the battalion level. Appropriate scholarly publications and secondary sources were also consulted.
While often mentioned in histories of the Canadian Corps, there has never been a detailed description and analysis of this proposed operation and how it impacted the preparations for the Hundred Days. Tim Cook does not explicitly refer to Delta in his *Shock Troops*. But, he does provide an excellent overview of the shift to open warfare from the narrow confines and mental horizons of trench to trench attacks that were fostered by it. Shane Schreiber in his *Shock Army of the British Empire* does briefly discuss Delta, Currie’s quotation on its importance, and the training that set up the Canadians for the Hundred Days. Two authors, however, argue there was no great transformation in tactics and doctrine in 1918. David Campbell, in his thesis on the 2nd Division, does not see any fundamental change in the Canadian doctrine from 1917. The 1918 doctrine was just a modified or adapted version of the previous approach and that the corps had already employed infiltration tactics at Vimy. This view may be shaped by his natural focus on the 2nd Division, which was the one major unit that did not take part in the Delta preparations. Mark Humphries in his provocatively named article, “The Myth of the Learning Curve,” describes the training the 12th Brigade undertook for Delta as part of the piece. The article’s central premise is “that while combat became more complex and “all arms” oriented, the basic tactical concepts of 1916 essentially remained the same in

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10 Ibid., 408-10.
1918.” He has since backed away from this view. He now agrees that tactical changes did occur but were not as important as the decline in the combat capability of the German army in 1918 in explaining the allied success in the Hundred Days.12

PASSCHENDAEL AND AFTERMATH

Delta’s importance of lay in its role in helping the corps’ commanders, staff, and troops make the transition from the careful step-by-step deliberate pace of the attacks of 1917 to the torrid rates of 1918. It is therefore important to understand where they started. Meticulous preparation, days of bombardment and rehearsals, gathering detailed information on enemy positions, developing absolute firepower supremacy, and a measured pace characterized Passchendaele, along with the ubiquitous mud and terrible terrain conditions.13 It featured short advances, narrow frontages, and dense artillery support and assault formations. Table 1 illustrates these crucial differences. The speed of preparations at Passchendaele was in large part the result of the abysmal state of the line of communications, weather, and terrain conditions.

In the Hundred Days, frontages were two to three times wider than in 1917 and the advances ten times deeper. While the field artillery density was half, smoke was part of every barrage instead of an ancillary munition, there was no preliminary bombardment, and the artillery used predictive fire rather than registration.14 The corps took elaborate measures to ensure secrecy, something that was not possible in Flanders, and units entered the line only hours before an attack instead of days.15 There was no opportunity for exhaustive

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14 Smoke at Passchendaele was used to create a smoke screen on the corps flank, to signal the 18-pounder barrage had reached its final protective barrage line, and to create a smoke screen on a specific location to blind enemy observers. War Diary, GOCRA Canadian Corps, October 1917 Appendix H Frontages of Barrage, RG9 III-D-3 v4957, LAC; ibid., Artillery Order No.95, 28 October 1917; ibid., Artillery Order, No.101, 4 November 1917; ibid., Artillery Order, No.92, 23 October 1917.
15 Canadian Corps G.724/27-3, 20 November 1917, 85/8, RG9 III-C-1 v3859, LAC.
The tempo of the operations was at a blistering pace. The barrages lifts advanced at twice the rate as before. Rather than a four-day gap between attacks, or seven if there was a divisional relief, the corps launched assaults on successive days. At Arras, the corps launched division-scale operations within six and half hours of the order being issued. Finally, at Amiens the Canadian Corps employed four battalions of tanks amounting to 162 fighting vehicles versus none at Passchendaele.\textsuperscript{16} The contrast between the 1917 and 1918 engagements was dramatic.

\textsuperscript{16} Nicholson, \textit{CEF}, 396-7.

\textsuperscript{17} Large numbers of guns were not operational, hence the lower density

<table>
<thead>
<tr>
<th></th>
<th>Passchendaele</th>
<th>Hundred Days – Amiens / Second Battle of Arras</th>
</tr>
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<tbody>
<tr>
<td><strong>Space</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frontages</td>
<td>1,200-1,400 m/division</td>
<td>1,200-1,400 m/brigade</td>
</tr>
<tr>
<td>Depth of advance</td>
<td>600-1,000 m/day</td>
<td>14,000 m/day</td>
</tr>
<tr>
<td>Ground</td>
<td>Bottomless mud</td>
<td>Dry and fast</td>
</tr>
<tr>
<td>Defences</td>
<td>Prepared</td>
<td>Minimal at Amiens but deep and sophisticated at Second Battle of Arras</td>
</tr>
<tr>
<td><strong>Time</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barrage lifts</td>
<td>8 min/100 m</td>
<td>3-4 min/100 m</td>
</tr>
<tr>
<td>Cycle time between attacks</td>
<td>4 to 7 days</td>
<td>Hours</td>
</tr>
<tr>
<td>Time to relieve division</td>
<td>7 days</td>
<td>1 day</td>
</tr>
<tr>
<td>Time in line prior to attack</td>
<td>Two days</td>
<td>Hours</td>
</tr>
<tr>
<td><strong>Resources</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoke</td>
<td>Peripheral</td>
<td>Key</td>
</tr>
<tr>
<td>Artillery accuracy</td>
<td>Registration</td>
<td>Prediction</td>
</tr>
<tr>
<td>Density of field artillery barrage</td>
<td>9-10 m/gun although more likely 12-13 m/gun\textsuperscript{17}</td>
<td>Maximum of 25 m/gun</td>
</tr>
<tr>
<td>Counter-battery</td>
<td>Full panoply of techniques</td>
<td>Hastily arranged but effective</td>
</tr>
<tr>
<td>Preliminary bombardment</td>
<td>Prolonged</td>
<td>None except for wire cutting for attack on Drocourt-Quéant line</td>
</tr>
<tr>
<td>Rehearsals</td>
<td>Extensive</td>
<td>None</td>
</tr>
<tr>
<td>Tanks</td>
<td>None</td>
<td>Yes</td>
</tr>
<tr>
<td>Engineering work parties</td>
<td>Provided by infantry</td>
<td>Provided by engineers</td>
</tr>
<tr>
<td>Surprise</td>
<td>Not attempted</td>
<td>Key element</td>
</tr>
<tr>
<td>Intelligence</td>
<td>Detailed</td>
<td>Rudimentary</td>
</tr>
</tbody>
</table>

Table 1. Passchendaele and Hundred Days Comparison.
The Canadian Corps emerged from Passchendaele envisioning that its next offensive would be similar. As with the Somme campaign, the corps distributed a detailed questionnaire down to the battalion level posing multiple questions on tactics, organization, weapons, and munitions. Assuming that prolonged bombardments, meticulous preparation, dense defences, and a ponderous pace would characterize the next attack shaped both the questionnaire and its responses. This expectation carried over into the training that the commander of the Canadian Corps, Lieutenant-General Arthur Currie, ordered in the offensive’s aftermath. The corps issued Notes on Training on 27 November 1917, and these did not reflect the lessons of the revolutionary tactics of the Cambrai tank offensive launched on 20 November 1917. Currie hoped that the 1st and 2nd Divisions would have a month out of the line for training and these notes were to guide their instruction. Recent experience in Flanders clearly conditioned them. The focus was on defeating pillboxes and shell hole defences with section rushes protected by a slow barrage moving 100 metres every eight minutes. Open warfare was to be practiced only if time were available. It was to “bring home to Officers the necessity that arises in such circumstances for quick decisions and prompt issue of orders.” The instructions strongly indicated that the principles of trench and open warfare were essentially the same with the primary difference being the tempo. This changed significantly in the training conducted for Delta. The corps made efforts to provide opportunity for instruction in the first quarter of the year, but the success of the German offensive and Currie’s strenuous defensive measures meant little was carried out.

**OPERATION DELTA**

Operation Delta was a reaction to the German Lys offensive in April 1918 where its advance threatened the vital Béthune coal fields

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18 Canadian Corps GS War Diary, Canadian Corps G.116/3 - 93, 28 October 1917, RG9 III-D-3 v4816, LAC; 7th Brigade BMR 34/2, 28 November 1917, 34/2, RG9 III-C-3 v4154, LAC; 9th Brigade War Diary, RG9 III-D-3 v4188, LAC.
19 Canadian Corps G.882/14-3, 27 November 1917 and Canadian Corps Notes on Training, November 1917, 25/1, RG9 III-C-3 v4186, LAC.
that provided seventy percent of France’s remaining coal output.\footnote{Haig Diary, 12 April 1918, Part 1 No. 96, Haig’s Autograph Great War Diary, Haig Papers; NLS; David T. Zabecki, “Operational Art and the German 1918 Offensives,” PhD dissertation, Cranfield University, 2004, 348.} Codenamed Georgette, it was a scaled down version of a more ambitious plan. The losses suffered in the March offensive, resources absorbed in holding the massive salient it created, and the failure...
of the Mars offensive on the Arras front, forced the German high command to scale back their expectations. Instead of a knock-out blow as initially envisioned, they intended it to force the British to commit their remaining reserves to wear them down. The Germans skilfully disguised the size and scope of the offensive, and GHQ was unprepared for its success. Aiding the attackers, the spring conditions were dry, so the ground was firmer than normal. See Figure 2 German Operation Georgette, 9-29 April 1918 for more details.

The Germans attacked on 9 April with their customary ferocity and hit a weakly held sector. Of the six defending divisions, four had suffered heavily in the March offensive and so were shadows of their former effectiveness. Disastrously, the fifth was the 2nd Portuguese Division. A British unit was to relieve it that night because of British doubts as to its reliability. Doubts that were realized in the attack as it collapsed. By day’s end, the Germans had driven a 16 kilometre wide and 9 kilometre deep salient into the British line and, according to one historian, “scored a tactical success unparalleled on the Western Front.” Initially, GHQ underestimated the nature of the attack, believing it just a diversion to pull reserves from the Arras sector, but there were two bright spots for the British. The British 55th Division had stubbornly defended the southern hinge of the line and frustrated German plans to widen the attack. Secondly, the Germans were facing severe challenges in moving their artillery and supplies forward. Soft ground restricted wheeled traffic to badly torn up roadways, and they needed multiple bridges to cross the numerous watercourses.

In the following days, the Germans extended the attack front further north engulfing the Second Army. Resistance on the southern sector caused Germans to push the advance northwest rather than

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22 Ibid., 24.
purely west. Westward was a strategically more important direction, as it threatened vital British lines of communication.\textsuperscript{28} Still, they chewed up British formations and the First Army was breaking down into scattered pockets of resistance except where fresh divisions entered the line.\textsuperscript{29} The success of the offensive caused Haig to issue his famous ‘Backs to the Wall’ special order of the day.\textsuperscript{30} By 13 April, the Germans were within eight kilometres of Hazebrouck, a vital rail centre.\textsuperscript{31} They were on the cusp of a significant victory but reinforcements and the exhaustion of the thrusting German forward units denied them that success.\textsuperscript{32} They still made further gains and forced the Second Army to fall back from Passchendaele Ridge gained at so great a cost in 1917. The Germans renewed the attack on the southern sector to take Givenchy, Festubert, and Béthune on 18 April. The defenders decisively defeated this assault.\textsuperscript{33} The German high command stopped the offensive on 29 April, because of the exhaustion of their forces, heavy losses, set defences, and French reserves tipping the tide.

**DELTA’S COURSE**

Even before the Germans had abandoned their Lys offensive, General Henry Horne, commander of the First Army, proposed a counterattack to drive back the threat to the vital Béthune coalfields. Horne’s army held the southern portion of the Lys salient as part of its front. He called a conference in mid-April with the commanders of the I and XI Corps to discuss a limited assault. It was intended to push back the Germans 2,000 to 2,500 metres—the limit of the 18-pounder field gun barrage—on the southern sector of the Lys salient. Both corps commanders argued against the plan as they contended the short advance did not justify the cost and loss of

\textsuperscript{28} Edmonds, *Military Operations, 1918 vol. 2*, 299.
\textsuperscript{29} Ibid., 224.
\textsuperscript{31} Senior, *Haking*, loc 4797.
\textsuperscript{32} Edmonds, *Military Operations, 1918 vol. 2*, 258.
\textsuperscript{33} Ibid., 357.
prepared positions. Horne accepted his subordinates’ objections and backed away from the operation.

On a visit to GHQ on 28 April, Haig likely pressured Horne to be more aggressive. That afternoon Horne met with his corps, tank, and RAF commanders to discuss a more ambitious scheme code-named Delta. This plan included the Canadian Corps then serving in the First Army on the Vimy front. Haig was planning to relieve the Canadians and place them into GHQ reserve. From there they could secretly move to take part in the offensive. In what would

34 First Army GS War Diary, Re: Offensive Action by I and XI Corps, 17 April 1918, WO 95/176/3, The National Archives (TNA); ibid., First Army GS 1160, 17 April 1918.
35 Ibid., WO 95/176/1 28 April 1918.
become a common occurrence, German actions or their threat forced a suspension of Delta the next day.36 The corps was to continue planning and preparations for the operation.37

In the hiatus after the German attack on the Lys sputtered out, a major concern for Marshal Ferdinand Foch, the Commander-in-Chief of Allied Armies, and Field Marshal Douglas Haig, the Commander-in-Chief of the British Expeditionary Force (BEF), was where the next blow would land. Haig believed it would be against the British Somme front while Foch argued for a German renewal of the Flanders offensive. In a letter to Haig on 3 May, he recommended that the best way to counter this was to attack the Lys salient with the Canadians. Haig replied that the preparations were already in progress, and he had withdrawn the Canadians for that purpose.38 At this point, the Germans had not picked up the start of the corps’ relief on their 4 May intelligence map. The 12 May one correctly showed it in the First Army’s rear.39 Haig thought it prudent though to delay the operation given the scale of the threat and the need for reserves.40

Horne suspended Delta until the end of May when it re-emerged as Delta A. Foch’s Directive No. 3 of 20 May tasked the French and British Commanders-in-Chief to prepare two operations. First, clear the Amiens-Paris railway and, second, free the Béthune coalfields from German shelling.41 This second task was effectively a version of Delta. The offensively minded Foch desired seizing the initiative after three weeks of quiet. In response, Haig directed Horne to consider an attack to clear away the Germans in this sector. Horne met with his corps commanders on 25 May where he likely raised the possibility of

36 First Army No GS 1185, 29 April 1918, 72/1, RG9 III-C-1 v3854, LAC.
37 First Army No GS 1195, 30 April 1918, 72/1, RG9 III-C-1 v3854, LAC.
38 Haig was stretching the truth on this point as only the 3rd Division was relieved, although the 1st and 4th had orders for their relief.
41 Ibid., 339.
carrying out a resuscitated Delta.\textsuperscript{42} The First Army issued a formal order two days later.\textsuperscript{43}

The situation, however, had changed in three important respects from its first incarnation. Now the Canadian Corps, with the 1st, 3rd, and 4th Divisions, was immediately available in \textit{GHQ} reserve. The 2nd Division was still in the line but the corps expected its relief shortly.\textsuperscript{44} Horne needed \textit{GHQ}'s permission to use the Canadians, but there would be none of the delays in getting them relieved. Secondly, the attack sector was a much tougher target. Six rested divisions, with improved defences and communications and reinforced by a full complement of field and heavy artillery, now defended the zone. As a result, Horne would marshal a force of fourteen divisions, with five of them comprising twelve battalions. This was a rarity in the British Army which had converted almost all its divisions to nine battalions.\textsuperscript{45}

Horne waffled considerably on whether to cancel Delta A. On 30 May, Horne’s corps commanders persuaded him that the plan was not suitable, and he informed \textit{GHQ}.\textsuperscript{46} He scrapped it because the plan would not bring the German communications at Estaires, in the rear of the current salient, in range of British guns. Also, it meant losing the advantages of having good observation over the rear areas and force artillery batteries to advance to more exposed positions. He recommended not proceeding but suggested a far more limited action on the southern flank of the salient.

Haig was unpersuaded, as he was under considerable pressure from Foch to attack, and he ordered Horne to continue. Horne met with his corps, tank, and air force commanders and their senior staff to discuss a revised Delta A again on 3 June.\textsuperscript{47} He chided them for their requests for quantities of guns and ammunition as if it were a 1917 trench to trench attack. He called for surprise and minimal preliminary bombardment as, “The enemy has taught us that such
prolonged bombardments ... are disadvantageous.” Following the German approach, a deluge of artillery would pound enemy batteries, headquarters, and strong points over a five-hour period. A key part of the plan was four battalions of 144 tanks. They comprised two echelons with forty percent assigned to the first one and sixty percent to the second echelon, when the artillery support was weaker. Overall, the intent was a fast tempo with only one 30-minute pause on the first objective line to allow units to leapfrog. Finally, the Canadian Corps would not enter the line until the last minute to surprise the Germans. Canadian presence in the sector would be a sure sign of an impending operation, given their reputation as storm troops. After the conference, Horne ordered the corps commanders to resubmit their proposals based on his new scheme.48

Both the Canadian Corps and the 3rd Division issued revised Delta A plans on 7 and 19 June.49 Then at some point after this the high command suspended operation. There are no records in the war diaries and available files of GHQ, First Army, or the Canadian Corps when it was formally suspended, but the 12th Brigade returned all its Delta materials to the 4th Division on 26 June.50 This strongly indicates the operation was definitely cancelled by this date.

While Delta never occurred, other smaller scale engagements took place in that sector. On 7 June, Foch requested Haig carry out minor operations north of the Somme supported by tanks to tie down enemy forces. Haig responded by ordering his armies to propose raids or attacks consisting of a handful of battalions. On the First Army front, the scope of a Delta-type operation was dramatically scaled back and two separate assaults occurred in later June. The British 3rd Division launched a three-battalion attack codenamed Delta B on the night of 14/15 June that resulted in a 1,000-metre gain on a 2,000-metre front.51 The British 5th and 31st Divisions launched another successful limited operation on 28 June.

48 First Army No GS 1237/6, 4 June 1918, 72/2, RG9 III-C-1 v3854, LAC.
49 From internal evidence and the later corps plan, the 3rd Division plan was misdated to 7 April but should have been June. The Germans had not yet attacked on the Lys yet. See 3rd Canadian Division Instructions for Offensive Delta No. 1, 7 April [June] 1918 72/8, RG9 III-C-1 v3854, LAC; Canadian Corps G.626/2521-2, 19 June 1918, 72/4, RG9 III-C-3 v3854, LAC.
50 12th Brigade War Diary, 26 June, RG9 III-D-3 v4909, LAC.
51 First Army GS War Diary, Report on Operations Carried out by 3rd Division on 14/15 June 1918, TNA.
Borderlands, it was in the same region as the proposed Delta attack and better aligned the defensive systems of the First and Second Armies. These attacks were in response to Foch’s demand to tie down enemy forces.

**DELT A PLAN**

Low, flat, and open terrain but cut up by hedges and drainage canals characterized the Delta operations area. Often bordered by thick thorn hedges, the multiple canals in the area were generally too wide to jump and too muddy to wade across. The three major waterways, the Lys and Lawe Rivers and the La Basée canal, were all 15 metres wide and required bridging. The water table was so high that troops could only dig trenches to a depth of two-thirds of a metre, with the defenders to be largely protected by sandbag

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52 5th Division War Diary, 28 June 1918, WO 95/1516/4, TNA; 31st Division War Diary, 28 June 1918, WO 95/2343/5, TNA; Edmonds, *Military Operations, 1918*, vol. 3, 3, 195-7; Senior, *Haking*, loc 5134-5184.
breastworks. Furthermore, the ground, while dryer than usual, still restricted vehicle and gun movement to the roads. These terrain conditions were a key reason the sector had seen no offensive action since 1915.\textsuperscript{54}

The German defenders in early May had participated in the Lys operation and were understrength, with poor communications, and suffering from low morale. With such weak defences, Horne in his original Delta operation planned a surprise assault with five divisions, later six. As shown in Figure 5, he called for an advance to a depth

\textsuperscript{54} Topographical Notes on Locon-Merville Front, 3 May 1918, 72/7, RG9 III-C-3 v3854, LAC; Edmonds, \textit{Military Operations, 1918}, vol. 2, 258.
of 7,500 metres to bring the British line to the Lawe and Lys rivers; ideally with bridgeheads across both. There would be no preliminary bombardment, and the attack force would include a brigade of 108 tanks. The additional artillery was to move into position the night before, with the Canadian gunners taking over the already in-position guns. The corps was to advance through the forces already in line to shield the presence of the Canadians on this front. Unlike Amiens, however, the steps to ensure secrecy were far less stringent. There was no deception program and attack information reached down to company commanders prior to even setting a date for the offensive. At Amiens, junior officers did not learn about it until shortly before its start.

The Canadian attack would consist of three divisions advancing on a 12,000-metre front with a depth of advance of 5,500 to 7,500 metres. Four companies of tanks with forty-eight vehicles were to support the corps. The commander of the Canadian Corps’ artillery, Brigadier-General ‘Dinky’ Morrison, asked for twenty-one field artillery brigades and nine heavy artillery brigades split between counter-battery and infantry support missions. This would work out to 30 metres per 18-pounder gun. This was almost half the density of the barrage at the Battle of Courcelette on 15 September 1916 and a third of the Passchendaele plan. The field artillery would split into two-thirds positioned at the standard distances from the front to fire the rolling barrage to a depth of 2,500 metres, and the other third installed in silent positions within a kilometre of the line. This would extend the barrage to 3,500 metres. This meant the guns could only fully support the advance for one-third of its planned depth. When the rear batteries reached their range limits, they were to limber-up and advance to assist the later stages of the attack—a type of mobility impossible at Passchendaele. This presented a major challenge for the engineers. The cut-up nature of the terrain required careful advanced

55 First Army No. GS 1183/4, 3 May 1918, 72/1, RG9 III-C-3 v3854, LAC; Corps Commanders Conference, 1 May 1918, 72/10, RG9 III-C-3 v3854, LAC.
56 Peck Diary, 6-9 May 1918, LAC; 12th Brigade War Diary, 7 May 1918, LAC.
57 For instance, the 29th Battalion’s company commanders did not learn of the Amiens operation until 5 August 1918, see 29th Battalion War Diary, 5 August 1918, RG9 III-D-3 v4936, LAC.
planning to ensure they built sufficient bridges to span the numerous drainage ditches and repaired the roads and tracks.\(^5^9\)

Currie met with all his senior staff and the division commanders and staff of the 1st, 3rd, and 4th Divisions.\(^6^0\) The 2nd Division was still in line under command of the VI Corps and was unlikely to be relieved in time to serve in this attack. Its second-most senior general staff officer represented it. Currie introduced the plan and stressed the vital importance of secrecy. He put all the officers informed of the plan on their honour to not divulge any details. The battle would consist of a series of attacks on the defended localities with enemy visibility obscured by smoke. Units were to press on and not concern themselves with their flanks but only their assignments. Wire communications could not keep up with the proposed rapid advance. Thus, a far greater reliance on visual means and wireless was necessary, along with the usual runners and despatch riders. The senior staff then reviewed their responsibilities. There was a significant conflict between the artillery and tank plan.\(^6^1\) The gunners complained the tank plan would interfere with the artillery program while the tankers responded that the gunners’ proposal would put the tanks at peril. This was one symptom of the still nascent understanding of tank limitations and capabilities in relation to the other arms. Further, the draft scheme called for an advance by Whippet tanks (lighter and faster than the heavy ones) down the Locon-Lestrem Road running through the centre of the attack front to disrupt German defences.\(^6^2\) The fundamental issue was that the ground was not suitable for tanks, so they could only run on roads and this limited their effectiveness. Most of the roads in this sector ran at right angles to the advance axis. Currie ordered the gunners and tanks to work out their differences.\(^6^3\)

In an undated and unsigned memo, likely by a tank officer, the author recommended only committing the tanks to the later stages

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\(^{5^9}\) Artillery Appreciation, 2 May 1918, 72/5, RG9 III-C-1 v3854, LAC; Artillery Instructions with Reference to ‘Delta’ Operations. Undated [1-5 May1918], 32/1, RG9 III-C-1 v3909, LAC.

\(^{6^0}\) Corps Commanders Conference, 1 May 1918, LAC.

\(^{6^1}\) Likely the author was the commander of the 11th Tank Battalion, who was unnamed in the notes from the conference.


\(^{6^3}\) There was no documentation found on how or if they resolved this conundrum.
of the advance.\textsuperscript{64} The major threat to them was anti-tank defences usually located in the forward zone. Further, the artillery could not support the advance to its full depth. The solution was to commit the tanks later when the gunners were less effective and where the infantry had already overrun the anti-tank guns.\textsuperscript{65}

The First Army then issued a detailed explanation of Horne’s intent for the attack. He repeatedly emphasized this was not a trench to trench assault similar to those in 1917 but a surprise one with a rapid tempo. For instance, “The long pauses for consolidation of intermediate objectives and for passing through of reserves, to which we have become accustomed in our attacks on successive lines of trenches, are out of place.”\textsuperscript{66} The density of artillery support typically assigned in 1917 was unnecessary given the rudimentary German defences. Gunners would also have to be ready to advance after firing their initial barrage to assist the plan’s later stages. Horne suspended all preparations on 8 May in the expectation that the Germans were about to attack again.\textsuperscript{67} Somewhat surprisingly, the lower echelons did not learn of this postponement for another three days.\textsuperscript{68}

In the Delta A plan, the Canadian Corps would be responsible for its centre. Two divisions would advance on a 5,400-metre front with a planned penetration of 7,000 metres. The ground was now finally dry and, other than known soft spots, could support tanks. As a result, they were no longer restricted to roads. Currie issued the corps outline plan on 29 May. It was based on a two-division front supported by a tank battalion (thirty-six tanks) with one division in corps reserve and another in army reserve.\textsuperscript{69} With the increase in the strength of the defences, a short bombardment similar to those used by the Germans would precede the assault. It would be brief, intense, and featuring liberal amounts of gas. The artillery assessment, given the reduced frontage, called for twelve brigades of field artillery and three heavy artillery brigades for counter-battery missions and four

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\textsuperscript{64} The author was probably Brigadier-General C.D. Baker-Carr, commander of the 1st Tank Brigade assigned to the First Army.
\textsuperscript{65} Suggested Employment of Tanks, Undated [May 1918], 72/5, RG9 III-C-3 v3854, LAC.
\textsuperscript{66} First Army No GS 1183/5, 4 May 1918, 31/1, RG9 III-C-1 v3909, LAC.
\textsuperscript{67} First Army No GS 1182/11, 8 May 1918, 72/1, RG9 III-C-1 v3854, LAC; 11th Brigade War Diary, 9 May 1918, RG9 III-D-3 v4905, LAC; Haig Diary, 7 May 1918, NLS; Edmonds, \textit{Military Operations, 1918}, vol. 3, 19.
\textsuperscript{68} 12th Brigade War Diary, 11 May 1918, LAC.
\textsuperscript{69} Canadian Corps G.979/2521, 29 May 1918, 72/4, RG9 III-C-1 v3854, LAC.
more for supporting the infantry. This worked out to Morrison’s ideal of 25 metres per 18-pounder gun. The 1st Tank Brigade pointed out the changed conditions of dry ground, badly shelled roads, and additional German guns meant the planned use of tanks in the original Delta plan no longer applied. This planning process was an important step for the staff and commanders in converting from trench to trench attacks to the type practiced in the Hundred Days.

**SOURCES OF DOCTRINAL CHANGES**

There was a profound change in the ten months between Passchendaele and Amiens in the Canadian Corps. The training of the individual soldier and sections did not alter dramatically as firing a rifle or Lewis Gun was effectively the same with wave or infiltration tactics. The major changes were at the higher levels of command from battalion and above. Seven key doctrinal influences shaped this remarkable turnaround. These included the British success at Cambrai that featured many aspects of the later Amiens attack, such as massed tanks, surprise, predictive artillery fire with no preliminary bombardment, and a rapid, deep advance. The BEF’s offensive doctrine underwent significant modification. GHQ codified this in documents widely distributed such as *Infantry and Tank Co-operation and Training 1918*, *Training and Employment of Divisions 1918*, and a myriad of other instructional publications. The shock of the German success in their 1918 spring offensives demonstrated the effectiveness of infiltration tactics and surprise and that prolonged deliberate bombardments were unnecessary. “Well, we expected it [the German offensive] but were shocked at the advances made. They were so spectacular to anything that we had experienced before that we just couldn’t understand it,” was how Brigadier-General Alex Ross later described

70 Canadian Corps G.99/2521, 2 June 1918, 72/4, RG9 III-C-1 v3854, LAC; RA Canadian Corps 2297, 1 June 1918, 72/3, RG9 III-C-1 v3854, LAC.
71 1st Tank Brigade, MWS/101/12, 29 May 1918, 72/13, RG9 III-C-1 v3854, LAC.
72 Christopher Pugsley, “Haig and the Implementation of Tactical Doctrine on the Western Front” in *Sandhurst Occasional Papers*, (Sandhurst: Royal Military Academy, 2011), 42.
73 For instance, see Notes on Conference, LAC.
the attack’s impact. GHQ used captured German orders issued as *Notes on Recent Fighting* as a further means of inculcating changes in attitude and orientation to open warfare. The Canadians studied them closely, and according to Currie’s 1919 Interim Report they, “to a large extent, inspired our training.” For instance, he underlined text and made marginalia in his version of *Notes on Recent Fighting No. 14*. Currie ordered his generals to review that document and have battalion commanders run schemes based on its principles.

The Australian success at Hamel on 4 July removed any lingering doubts regarding the effectiveness of a tank-led offensive even if the advance was shallow. The Canadian Corps also issued its own guidance for training divisions in open warfare such as G.135/14-3 on 30 April. Its key point was that the object of attack was to “obtain superiority of fire.” Again, the Interim Report referred to the corps “laying down a definitive Corps tactical doctrine.” The commander of the 1st Division recorded spending 1 May reviewing this order.

The final influence was Delta and the training that accompanied it, which is discussed in greater detail below.

**DELTA TRAINING**

The 1st, 3rd, and 4th Divisions left the line starting on the 3 May 1918 and moved into the First Army’s rear areas. They spent the rest of May, June, and part of July in training. In some cases, units were on short notice to respond to a German attack which limited what

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74 B.G. Ross, CBC Interview, RG41 v21, Tape 3, 13, LAC.
75 See for instance, *Notes on Recent Fighting No. 14*, 7 June 1918, O-3-30, RG9 III-B-1 v2279, LAC.
77 *Notes on Recent Fighting No. 14* German Methods of Overcoming Machine Gun Defences, 19801226-273/58A 1 60.2, Currie Fonds, Canadian War Museum (CWM).
78 Currie to Lipsett, 23 June 1918, 2/3, RG9 III-C-3 v4187, LAC; 1st Division G.7-135, 24 June 1917, 167, MG30 E100 v37, Currie Fonds, LAC.
79 The advance at Hamel was the limit of the 18-pounder barrage, at 2,500 metres on a front of 6,000 metres expanding to 7,500 metres at the end of the advance. Notes Compiled by G.S. Fourth Army on the Operations by the Australian Corps against Hamel, Bois De Hamel, and Bois De Vaire, on 4th of July, 1918., RG24 v22018, LAC. See also Hammond, “Tank Cooperation,” 278-87.
80 Canadian Corps G.135/14-3, 30 April 1918, 13/4, RG9 III-C-3 v4201, LAC.
82 A.C. Macdonell Diary, 1 May 1918, MG30 E20 v1, A.C. Macdonell Fonds, LAC.
they could do. They also moved several times during this period. The 2nd Division had only two weeks out of the line for training in July.\textsuperscript{83} It spent May and June still at the front in the VI Corps. While the preparations for Delta were primarily in May, its influence reverberated throughout the training period.

Many senior officers and planners visited the proposed attack front, and this influenced the exercises. For instance, 1st Division commander, Major-General Macdonell, met Major-General David Watson, the 4th Division commander, at British 3rd Division headquarters while he was surveying the situation at the front for Delta.\textsuperscript{84} So many visited that the 12th Brigade issued a warning not to show maps or have too many officers in view of the Germans on the Hinges-Mt Bernenchon Ridge.\textsuperscript{85} The visits helped inform the preparations, and how the authorities laid out the schemes. For instance, the 3rd Brigade’s instructions for a manoeuvre on 23 May stated, “The scheme has been made to conform as closely as possible to the DELTA Scheme. The locations of strong points have been chosen with this end in view.”\textsuperscript{86}

At its core, the open warfare training involved explaining the new doctrine to all ranks and then practicing it in schemes at the platoon and up to division level. Initially, it was done slowly so that it was understood, and then later at battle speed. The instructional focus was on infiltration tactics, penetrating machine gun defences by fire, use of ground, support of nearby platoons, cooperation with tanks, forward artillery and light and medium trench mortars, and exploiting smoke.\textsuperscript{87} Most schemes included combinations of all these weapon systems and often aircraft to practice combined arms. The exercises involved far wider frontages and deeper advances than had ever before been attempted by the Canadians. For instance, the 2nd Brigade scheme for 15 May practiced an advance of 3,800 metres with German defences consisting of non-continuous strongpoints.\textsuperscript{88}

\textsuperscript{83} 2nd Division GS War Diary, July 1918, RG9 III-D-3 v4846, LAC.
\textsuperscript{84} Macdonell Diary, 6 May 1918, LAC.
\textsuperscript{85} See for instance, 12th Brigade (Delta) Instruction No. 1, 7 May 1918, 30/3, RG9 III-C-3 v4234, LAC.
\textsuperscript{86} 3rd Brigade War Diary, 3rd Brigade Instructions for Practice Attack, 20 May 1918, RG9 III-D-3 v4878, LAC.
\textsuperscript{87} Canadian Corps GS War Diary, Canadian Corps Exercise No. 4, 29 June 1918, RG9 III-D-3 v4817, LAC.
\textsuperscript{88} 2nd Brigade War Diary, 23 May 1918, RG9 III-D-3 v4873, LAC.
Currie emphasized the importance of challenging long route marches to harden the men and prepare them for extended advances. The 102nd Battalion history declared, “In short, nothing was neglected which might serve to harden the troops and fit them or long marching under the severest conditions.” The effect was to make the troops well prepared for the demands of battle. “I’d give anything if you can only have a look at this battalion as it is at

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89 Canadian Corps G.135/14-3, 30 April 1918, LAC.
present. I’ve never seen it in such fine shape physically before. The men are all as hard as nails,” boasted Major Ian Sinclair of the 13th Battalion in June 1918.91

Initially, the training was intense, but with the first postponement, units switched to devoting the afternoons to sports to keep the men engaged, develop unit cohesion, and develop physical fitness.92 As Major Sinclair phrased it in a letter home, “The Canucks have never seen any rest like this before and we’re certainly making the best of it. We train hard every day up till about 1 PM—they put in the rest of the day at sports.”93

It was not just the infantry that underwent this intense instruction, but all the arms to ensure they could deal with open warfare. The artillery and signals were part of the schemes as well as training on their own.94 The instruction was as hard and demanding as that of the infantry. As Lieutenant Selwyn Wilson wrote in the battery diary after a day of open warfare training, “Very hard day.”95 It, however, had the advantage of a major break from holding the line and spending time in surroundings not savaged by war. “Practicing going into action with speed and advancing and keeping communications up with visual signalling was all a pleasant change from the recent dug-out life,” was how the history of the 66th Battery described it.96 The engineers were in the process of a major reorganization into three battalions per division, which consumed much of their time.97 But, they did do some open warfare training.98

91 Sinclair to Dad, 22 June 1918, MG30 E153 v1, Sinclair Fonds, LAC.
92 For example, JBB [John Beswick Bailey], Cinquante-Quatre; Being a Short History of the 54th Canadian Infantry Battalion, (1919), 22; 3rd Brigade War Diary, May 1918, LAC; Edgar Stanford Russenholt, Six Thousand Canadian Men: Being the History of the 44th Battalion Canadian Infantry 1914-1919, (Winnipeg: De Montfort Press, 1932), 150.
93 Sinclair to Rob, 3 July 1918, MG30 E153 v1, Sinclair Fonds, LAC.
94 See for instance, 1st Division Artillery War Diary, 1 Division Artillery, G.2-2640, 3 May 1918, RG9 III-D-3 v4959, LAC; 3rd Division G.89, 12 June 1918, 15/4, RG9 III-C-3 v4192, LAC.
95 The Diary of the 13th Battery, Canadian Field Artillery 1914-1919, 21 May 1918, MG30 E345, Selwyn Wilson Fonds, LAC.
97 See for instance, GOC Royal Engineers War Diary, May, June 1918, RG9 III-D-3 v4989, LAC.
98 2nd Brigade Canadian Engineers War Diary, July 1918, RG9 III-D-3 v4989, LAC.
One of the great advantages of the Canadian Corps was the ability to develop but also instil a common doctrine. It followed the British precept of command authority where a unit’s commander was ultimately responsible for training and the conduct of operations. Thus, it was not a hard and fast set of rules but rather a starting point for a shared approach of a theme with many variations. In the British army this was not possible with divisions transferred repeatedly between corps. Jonathan Boff in his work on the Third Army in the Hundred Days wrote,

Doctrine played a role, but units also adapted their method according to need or just their commander’s preference. Even within divisions they sometimes responded to similar problems in different ways. This applies not only to frontages and formations, but, more importantly, to the application of small-unit combined arms warfare employing fire and movement. At least a significant minority of units were unwilling, or unable, to utilise such an approach. This would apply to the Canadian Corps, but not to the same degree given the prolonged and rigorous training conducted by all but the 2nd Division, and the corps’ multiple control methods.

These control techniques were the mechanism by which the corps would instill the doctrine and Currie’s intent in all ranks. A concrete plan as the basis of the exercises and the attendance by senior officers and staff, such as Currie and the division commanders, ensured the rooting out of outmoded approaches. Typically, umpires at the end of the exercise would discuss their findings and the senior officers would summarize the results and what needed addressing. For example in July, the 7th Battalion demonstrated the penetration of the ‘Machine Gun Defence Zone’ attended by senior officers from all three divisions. “After the demonstration, the Corps Commander held a Conference at which the problems of getting through this Zone


100 Ibid., 135.

101 2nd Brigade War Diary, 15 May 1918, LAC; ibid., 2nd Brigade OO No. 23. 13 May 1918; Currie to Lipsett, 23 June 1918, LAC; 3rd Division GS War Diary, 20, 27 May 1918, RG5 III-D-3 v4855, LAC; 12th Brigade War Diary, 21 May1918, LAC.

102 See for instance, 3rd Brigade War Diary, 22 May 1918, LAC.
and other ‘open warfare’ questions were discussed.” By the end of June, Currie was satisfied that his division and brigade generals had sufficient practice in open warfare conditions. He wanted units to concentrate on company and platoon training, but it was important that his commanders monitor these exercises to ensure proper adherence to doctrine. Another way to foster a consistent approach was through platoon competitions that set an open warfare problem where senior officers could highlight and communicate both errors and successes to a larger audience. First run at the battalion level, the competitions ran at each level up to the division. Finally, Currie closely inspected troops and questioned subalterns about infantry regulations and asked them to draw a map of the current location. This was an impetus for field-grade officers to ensure their subordinates were up to speed or risk a sharp check from him. Thus, the corps did not just hand-out doctrinal statements to the subordinate formations, but took an active role in monitoring and enforcing it.

**DELTA BENEFITS**

The key benefits of Delta were two-fold. It provided a template of a planned operation to guide the doctrine and preparation of training exercises. Repeated references to Delta in the documents prove it was the basis for multiple tactical schemes. This gave greater verisimilitude than a generic exercise and ensured the troops would treat the training with more gravity. The history of the 13th Battalion referred to how units entered brigade manoeuvres with a spirit of competition and stratagems to gain the advantage.

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103 4th Division War Diary, 5 July, RG9 III-D-3 v4861, LAC.
104 Canadian Corps G.691/14-44, 21 June 1918, 10/23, RG9 III-C-4 v4348, LAC.
105 10th Canadian Infantry Battalion Platoon Competition Results, 23 May 1918, 6/6, RG9 III-C-3 v4213, LAC; 10th Brigade War Diary, G-84-1, 21 May 1918, RG9 III-D-3 v4903, LAC; 3rd Brigade War Diary, 13 June 1918, LAC; 2nd Brigade War Diary, 5 June 1918, LAC.
106 The detailed instructions for Currie’s formal inspection indicate how exacting he was, see 1st Division G.369-11, 9 May 1918, 7/3, RG9 III-C-3 v4025, LAC.
107 2nd CMR War Diary, 8 May, 25 May 1918, and Appendix 2, RG9 III-D-3 v4947, LAC; 2nd Brigade War Diary, 7-8 May 1918, LAC.
An exercise order for the 2nd Canadian Mounted Rifles (CMR) stipulated, “As there are Sunken Roads, Hedges and Quarries in the terrain to be occupied, Company and Platoon Commanders must be prepared to deal promptly and intelligently with ‘Strong Points’ and isolated ‘M-G Nests’.” Brigadier-General Victor Odlum stressed in his Delta training instructions all ranks were to know the situation “is a special one and that a special effort will be required of them.”

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Second, a key reason the corps so capably conducted the Amiens operation with little preparation was Delta and the training carried out from May. With the need for secrecy and limited time to assemble in position, the Canadian Corps did not rehearse Amiens. This was very much contrary to its practice of 1917. But, it had in effect been already rehearsing the attack with the schemes and instruction shaped by the Delta plan. It was in many respects similar to the battle fought in August. As highlighted in Table 2, it mirrored the Amiens plan and so provided the corps a template for this later offensive. When the commander of the 2nd Battalion outlined the Amiens plan, “it resembled closely the exercises to which the unit

Table 2. Delta and Amiens Comparison.

<table>
<thead>
<tr>
<th></th>
<th>Delta</th>
<th>Amiens</th>
</tr>
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<tbody>
<tr>
<td>Artillery accuracy</td>
<td>Predicted</td>
<td>Predicted</td>
</tr>
<tr>
<td>Counter-battery</td>
<td>Half of heavy artillery</td>
<td>Half of heavy artillery</td>
</tr>
<tr>
<td>Preliminary barrage</td>
<td>None/short for Delta A</td>
<td>None</td>
</tr>
<tr>
<td>Depth of advance</td>
<td>7,500 m but limited by river crossing at end of advance</td>
<td>14,000 m</td>
</tr>
<tr>
<td>Speed of advance</td>
<td>Equivalent</td>
<td>Equivalent</td>
</tr>
<tr>
<td>Water crossings</td>
<td>Multiple required</td>
<td>Luce River</td>
</tr>
<tr>
<td>Defenders</td>
<td>Weak morale</td>
<td>Weak morale</td>
</tr>
<tr>
<td>Defences</td>
<td>Non-continuous, based on strongpoints</td>
<td>Three lines of trenches but poorly wired, based on strongpoints</td>
</tr>
<tr>
<td>Surprise</td>
<td>Yes</td>
<td>Yes, with more stringent precautions</td>
</tr>
<tr>
<td>Entry into Line</td>
<td>Hours before attack</td>
<td>Hours before attack</td>
</tr>
<tr>
<td>Tanks</td>
<td>48</td>
<td>162</td>
</tr>
<tr>
<td>Artillery Support</td>
<td>Equivalent on a per division basis</td>
<td>Equivalent on a per division basis</td>
</tr>
<tr>
<td>Artillery decentralization</td>
<td>Significant down to 18-pounder sections to battalions</td>
<td>Significant down to 18-pounder sections to battalions</td>
</tr>
</tbody>
</table>

109 11th Brigade War Diary, 11th Brigade Training Instructions, 6 May 1918, LAC.
The Most Vivifying Influence

had devoted the past few months."\textsuperscript{110} According to Ken Radley in his history of the 1st Division, “Much of the Delta concept came to pass at Amiens: large numbers of tanks, surprise the key factor, rapid infantry advance and special fire planning.”\textsuperscript{111}

Delta provided the opportunity to crystallize the multiple doctrinal sources available in May into concrete policies that the corps practiced throughout May, June, and part of July. Issuing these was an important step, but they were theoretical and evanescent until put into action. The training for Delta and in the following months allowed all the formation levels and arms to rehearse the new doctrine, refine it, comprehend it, and gain confidence in it.

Three key challenges faced the corps if it were to effectively implement the doctrine. First, it had to unlearn many bitter lessons and abandon an approach used so successfully at Vimy, Hill 70, and Passchendaele—always a difficult task. According to Macdonell, the effects of trench warfare hung around the necks of the officers ‘like a millstone’ of whom only a scant handful had prewar training relevant to open warfare.\textsuperscript{112} As Lieutenant Charles Henry (5th \textit{cmr}) put the need for this instruction, it was exactly what we needed to shake us out of the habits acquired by years in the trenches; and there seems no reason to doubt but that some small part at least of our success in the fighting during the last three months of the war was due to our training in the Bomy area.\textsuperscript{113}

Concerns over a lack of aggressiveness and unwillingness to assist forces on the flanks were a common complaint of exercises. These were a product of the limited horizons of static warfare.\textsuperscript{114} The history of the British 17th Division framed this as:

\begin{itemize}
\item \textsuperscript{110} W. W. Murray, \textit{The History of the 2nd Canadian Battalion (East. Ontario Regiment), Canadian Expeditionary Force, in the Great War, 1914-1919}, (Ottawa: Published for the Historical Committee, 2nd Canadian Battalion, C.E.F., 1947), 256.
\item \textsuperscript{111} Radley, \textit{We Lead, Others Follow}, 325.
\item \textsuperscript{112} Macdonell, “Old Red Patch 1,” 389.
\item \textsuperscript{113} Bomy was one of the areas in the First Army rear devoted to training. See “Savage, Charles Henry Memoir: 1936,” \textit{The Canadian Letters and Images Project}, http://www.canadianletters.ca/content/document-8359, (24 September 2017).
\item \textsuperscript{114} See for instance, 2nd Brigade War Diary, Appendix 6 Notes on Instructional Exercises Carried out By The the 7th C.I. Battn, on June 27th, 1918, LAC; Remarks of Officer Commanding on Tactical Operations Carried out by the 78th Battalion, May 17th, 8/17, RG9 III-C-3 v4239, LAC.
\end{itemize}
For years they had acted under elaborate and detailed schemes and orders that defined even the movement of a small group of trench raiders, and set forth the targets of every gun brought into action to cover the operation. Their leaders had always had elaborate maps of every foot of ground, and had often rehearsed every movement even of a platoon.\textsuperscript{115}

Issues in shifting the mind set were wide ranging. This included matters as mundane as ensuring to include the time of issue on orders—something that had gone into abeyance during static warfare conditions.\textsuperscript{116} The gunners had a major challenge as they had to adopt open warfare techniques. It had to be far more mobile and decentralized with field artillery brigades breaking down to batteries and even sections assigned to forward forces.\textsuperscript{117} Without registration, the gunners had to ensure they fully understood the dictates of predicted fire and become proficient at it.\textsuperscript{118} The signal service and those who relied on it had to renounce the dependence on a lavish system of wired communications and learn to rely on visual, wireless, runners, and despatch riders.

Next, the corps had to train all ranks and arms to execute the new tactics, including ones that were rarely, if ever, previously practiced. The daily training schedule included novel activities such as open warfare advances under platoon command, house-to-house fighting, manoeuvring in smoke, and battalions advancing with attached field artillery sections.\textsuperscript{119} The troops, staff, and commanders had to carry out these tactics confident in their abilities and those of their peers, superiors, and subordinates. As Urquhart in his 16th Battalion regimental history explained, “These were tactics which called for an exceptional degree of daring and resource in the infantry.”\textsuperscript{120} The artillery had to instill the techniques of predicted fire requiring precision and calculation of multiple complex factors far beyond what


\textsuperscript{116} Canadian Corps G.595/29-22, 18 June 1918, 11/10, RG9 III-C-3 v4201, LAC.


\textsuperscript{119} 2nd CMR W.D., 8 May, 25 May and Appendix 2 1918, LAC.

\textsuperscript{120} H. M. Urquhart, \textit{The History of the 16th Battalion (the Canadian Scottish)}, (Toronto: MacMillan, 1932), 262-3.
as attempted before. Engineers had to rapidly repair and extend the lines of communications to keep up with the advance.

Finally, not only did all levels have to perform the new doctrine but to do so at a brisk tempo of a different order than before. Rather than days to prepare for an attack, every echelon had hours, which placed a particular pressure on intermediate commanders and their staffs. As Macdonell wrote, “The Drocourt-Quéant operations and fighting for the jump-off line were all carried out in a much shorter time than would have been considered necessary for preparation for a trench raid the preceding winter.”

Units did not have time to generate multi-page tomes for an action and plan for every eventuality. The 12th Brigade order for the Drocourt-Quéant attack on 2 September 1918 was two pages, while its order for Vimy was fifteen with another eight of administrative instructions. This accelerated pace meant more responsibility pushed down to the lower echelons. This made greater demands on them and required a higher standard of training and experience than before. As the 1st Division post-Arras report claimed, actions were often rapid without time for thorough explanations so commanders had to rely on the experience and training of subordinates. This was in line with the instructions in *S.S. 135 The Training and Employment of Divisions 1918* that in open warfare conditions:

...it is necessary that commanders of all grades should be trained to grasp quickly the essential features of a tactical situation, and to issue orders dealing with it. It is equally important that the troops should be trained to put these orders into immediate execution.

The 2nd Division did not have this opportunity for extended training prior to the Hundred Days. David Campbell asserts that the division still conducted much training while it was in the line and that its aggressive raid policy ensured it was ready. It was not, however,
able to run battalion and brigade manoeuvres like the other three divisions.\textsuperscript{126} Campbell admits, referring to the 6th Brigade, that “many officers and other ranks appear have been slow to translate theory into effective practice.”\textsuperscript{127} It also did not get the same chance to physically harden its troops as evidenced by complaints of too many men falling out during route marches.\textsuperscript{128} Further, it ran its raids only after extensive planning and rehearsals, which did not prepare it for the faster tempo of the Hundred Days. This manifested itself in a slower response time to operations during the Battle of the Scarpe where its follow-on attacks on 27 and 28 August lagged that of the 3rd Division by hours.\textsuperscript{129}

Delta and its schemes played a crucial role in addressing all three challenges. The repeated schemes, exercises, and manoeuvres based on an actual plan highlighted the vestiges of the old thinking and identified who needed correction. They were also beneficial in engraining the new tactics in all the ranks. Once the training program had inculcated the basics, the exercise tempo accelerated to reflect the timing and expected velocity of Delta. An actual operational plan allowed them to mimic the pace and details to make the exercise more realistic. It assisted in developing the sped-up cadence of the new doctrine.

CONCLUSION

Units and commanders recognized the importance of the prolonged training period. There were multiple references in post-action reports of the value of the extended instruction in open warfare training

\textsuperscript{126} For instance, the 5th Brigade was only able to conduct platoon and company level training while the 2nd Division was in the line. 5th Brigade War Diary, May and June 1918, RG9 III-D-3 v4886, LAC.

\textsuperscript{127} Campbell, “The Divisional Experience,” 379.

\textsuperscript{128} 6th Brigade G.5/833, 16 July 1918 and 27th Battalion A.1738, 17 July 1918, 25/1, RG9 III-C-3 v4186, LAC.

\textsuperscript{129} The British Official History ascribes the later start on 27 August to fitting in with the neighbouring British division’s zero hour. The 2nd Division battle narrative states the delay was at the request of its 5th Brigade which could not reach the jump-off line in time. J.E. Edmonds, \textit{Military Operations: France and Belgium, 1918, vol. 4: 8th August-26th September}, (London: Macmillan and co., 1947), 327; 2nd Canadian Division: Narrative of Operations from March 13th to Nov. 11th, 1918, RG9 III-D-2 v4795, LAC, 8-9.
afforded the Canadians. Three examples should suffice. The 9th Brigade in its post-Arras report stated: “Initiative and resolution as taught in practice in the Bomy Area were the great factors in success.”  

The 1st Battalion agreed: “the fundament principles of an “Open Warfare” offensive had been so thoroughly rehearsed that their adoption was absolutely automatic, with the result that the Battalion escaped with very few casualties,” referring to its success at Amiens. As ‘Tommy’ Burns, a staff officer and later a Second World War corps commander, explained in his autobiography, it was during this period that the concept of fighting changed from waves to fire and movement.

While Delta was not executed, it provided vital experience in preparing and planning for the types of operations conducted during the Hundred Days. It represented a clear break with the operational concepts employed in 1917 prior to Cambrai. It was a difference between seeing a play diagrammed on a blackboard and actually running it in conditions just short of combat. Having a concrete plan to prepare schemes against was an invaluable element in readying the corps for the strains of the Hundred Days. It helped in overcoming all three challenges faced in ridding the corps of old thinking, mastering the new, and at an accelerated tempo. It was also a valuable rehearsal for the situation faced by the corps at Amiens. Finally, it demonstrated how the Canadian Corps differed from the British Army in creating and inculcating a corps level doctrine and the mechanisms used by the senior commanders and staff to disseminate, enforce, and practice it.

Lance-Corporal Ken Foster (2nd Battalion) an old soldier who endured this prolonged training experience should have the final word to summarize Delta’s value. He remarked that by the middle of July 1918:

We were pretty well fed up with attacking hay-stacks and windmills. It all seemed so un-necessary to us who had been through the same thing too often. On the contrary, it came in very useful when a little later

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130 9th Brigade War Diary, Narrative of Operations from 25th to 30th August 1918, 15 September 1918, RG9 III-D-3 v4900, LAC.

131 1st Battalion War Diary, 1st Battalion Report on Operations on 9 August 1918, 13 August 1918, RG9 III-D-3 v4913, LAC.

on we came in contact with conditions such as we had been rehearsing, even to the extent of wheatfields, windmills and haystacks.133

ABOUT THE AUTHOR

William F. Stewart earned his PhD from the University of Birmingham in 2012 under Professor Gary Sheffield after a thirty-year career in senior management positions in high-tech. His research focus is on the tactics, operations, and administration of the Canadian Expeditionary Force. He has published two books entitled The Embattled General: Sir Richard Turner and the First World War and Canadians on the Somme 1916: The Neglected Campaign. He is the author of ten articles in academic publications and regularly presents at conferences on the First World War. He lives in Ottawa, Ontario, Canada.