

# Breaching the Ramparts: The 3<sup>rd</sup> Canadian Infantry Division's Capture of Boulogne in World War Two

A Monograph

By

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## **Abstract**

Breaching the Ramparts: The 3rd Canadian Infantry Division's Capture of Boulogne in World War Two, by Major Scott Simon Gerald LeBlanc, 50 pages.

The First Canadian Army's performance during the Normandy Campaign has received mixed criticisms by allies and historians alike. Montgomery, as commander of the British 21st Army Group, was very critical of the Canadian Army for what he perceived as a lack of speed and boldness. Despite these criticisms, the Canadian Army performed admirably in many cases. Its achievements, particularly in the months following the Normandy invasion, testified to its ability to learn and adapt. This was evident in its clearance operations along the English Channel coast, aimed at alleviating the Allies' supply problems and enabling Montgomery's pursuit across the Ruhr. Montgomery ordered Crerar to capture the port city of Boulogne, as it would provide one good Pas-de-Calais port.

Lieutenant-General Simonds, II Corps commander, assigned the 3rd Canadian Infantry Division to capture Boulogne, one of Hitler's coastal fortresses. The Germans defenders had a division-sized element, while the understrength 3rd Division only had two brigades available for its main assault. Notwithstanding their disadvantaged position, the Canadians achieved their mission. The aim of this monograph is to examine the effectiveness of the 3rd Division's performance by looking at three key elements: the commander's ability to adapt his understanding of the environment to an operational method, his ability to visualize an operational method based on his understanding of his mission, and his ability to describe and direct the operation. These elements will help determine whether the division's capture of Boulogne was due to pure chance or rather to its ability to effectively plan and execute a challenging operation.

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## Introduction

While Saint John, New Brunswick, and Boulogne, France may share some similarities in terms of their rocky shores, Captain Harold S. MacDonald, support company commander in the North Shore (New Brunswick) Regiment, surely felt far from his peaceful home during the onset of the assault on the city. Almost a week prior to the assault, MacDonald remembered how his commanding officer halted his regiment to the northeast of the fortified city. His regiment, a subordinate unit of the 3rd Canadian Infantry Division, had the mission of seizing a German strongpoint known as La Trésorerie during the assault phase of Operation Wellhit, which began on September 17, 1944. MacDonald described the fortifications as being so strong that the artillery shells “just bounced off them.” The enemy proved equally daunting. Despite the initial large-scale air attack, the North Shore Regiment faced an enemy who, in the words of MacDonald, had unleashed “Hell as soon as [they] recovered.”<sup>1</sup>

The Canadians captured Boulogne on September 22, following six days of fighting, in addition to the heavily defended towns of Wimille and Wimereux. When it was over, MacDonald reflected on his regiment’s accomplishments:

It's been a tough grind & our Bn has done seemingly superhuman work. The Hun had enough food, ammunition, & weapons to hold off for months & it was only sheer guts & tenacity that took these places. Thank God Monty put us on the beach in Normandy & not on this front. It would be humanly impossible to get in. Anyone who ever said the West Wall was a myth is a candidate for an asylum. My Heavens, it's unbelievable – the strongpoints, the supplies & resources & the guns they swung on us.<sup>2</sup>

This young officer’s account helps shed some light on the challenges that the Canadians faced during its task to clear key ports along the English Channel coastline, which does not

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<sup>1</sup> Captain Harold MacDonald and M.A. MacDonald, “Pursuit: The Letters of Captain Harold MacDonald, North Shore Regiment, from Normandy to the Scheldt,” *Canadian Military History* 11, no. 4 (Autumn 2002): 37-42, accessed October 4, 2015, <http://scholars.wlu.ca/cmh/vol11/iss4>.

<sup>2</sup> Ibid., 43-44.

receive much attention in most historical accounts. Canadian author Jack Granatstein, in *Canada's Army*, only makes a quick reference to the port clearance operations near Boulogne and Calais. In *Monty's Men*, while John Buckley draws attention to notable Canadian operations, he makes few references to the operations along the French coast.<sup>3</sup> Nonetheless, the captured ports served an important purpose. They would enable the flow of supplies and help alleviate the sustainment problems facing the Allied armies in the fall of 1944. While the seizure of ports lacked the flair of airborne operations, the complexity of the fighting that occurred at Boulogne and other coastal locations cannot be underestimated. Their capture was no small feat, especially for an army that suffered frequent criticism about its fighting ability. Though Buckley does not specifically mention operations along the French coast, he acknowledges that, by fall 1944, the Canadian forces' fighting capabilities were much more effective, helping to bolster the army's reputation.<sup>4</sup> The story of the battle for Boulogne highlights the capabilities of one of the Canadian Army's formations – the 3rd Infantry Division.<sup>5</sup> To appreciate the actions at Boulogne, it is important to describe the story of the how the Canadian Army found itself fighting on the coast.

The establishment and organization of Canadian forces in England provides context for some of the issues that affected the army and, by implication, the 3rd Infantry Division, during the Northwest Europe campaign. Canada's declaration of war on Germany on September 10, 1939 marked the beginning of the First Canadian Army's transformation. On the eve of the Second World War, the nation had a small army of only 4,500 soldiers. Nonetheless, by December 1939, the first group of Canadian forces arrived in England. By April 1942, General Andrew G.L. McNaughton assumed command over the newly established First Army, whose

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<sup>3</sup> J.L. Granatstein, *Canada's Army: Waging War and Keeping the Peace* (Toronto: University of Toronto Press, 2002); John Buckley, *Monty's Men: The British Army and the Liberation of Northwest Europe, 1944-5* (London: Yale University Press, 2013).

<sup>4</sup> Buckley, *Monty's Men*, 302.

<sup>5</sup> Unless otherwise noted, the nationality of all military formations is Canadian.

strength grew to over 250,000 in Britain by the end of 1943.<sup>6</sup> McNaughton, an artillery officer during World War One, quickly rose through the ranks. While historians portrayed him as a man of high intellect and personality, his abrasive character eroded relations with senior British and Canadian officers.<sup>7</sup> This led to his removal from army command effective December 26, 1943.<sup>8</sup> His replacement was General Harry D.G. Crerar, a capable artillery officer who had served alongside McNaughton during the previous conflict.<sup>9</sup> Notwithstanding his removal, McNaughton successfully oversaw the expanding organization that eventually became the First Army.

While the First Army possessed a robust organizational structure, consisting of multiple divisions and brigades, it also dealt with certain difficulties. As a subordinate of Field Marshal Bernard Montgomery's 21st Army Group, the First Army assumed a British structure. It consisted of a headquarters, two corps, two armored divisions, three infantry divisions, and two independent army tank brigades.<sup>10</sup> Training and equipment were initially poor and early training exercises revealed weaknesses in planning and execution. Fortunately, the Canadians improved, creating a well-trained force by the eve of the Normandy invasion. To further develop proficiency and gain combat experience, the government agreed to commit Canadian forces to Sicily,

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<sup>6</sup> C.P. Stacey, *The Canadian Army 1939-1945: An Official Historical Summary* (Ottawa: King's Printer, 1948), 1; J.L. Granatstein, "Canada's Army: Waging War and Keeping the Peace" (Toronto: University of Toronto Press), 175; John English, *The Canadian Army and the Normandy Campaign: A Study of Failure in High Command* (New York: Praeger, 1991), 69.

<sup>7</sup> John Nelson Rickard, *Lieutenant-General A.G.L. McNaughton and the Canadian Army, 1939-1943: The Politics of Command* (Toronto: University of Toronto Press, 2010), 34.

<sup>8</sup> Rickard, *The Politics of Command*, 216.

<sup>9</sup> Paul Douglas Dickson, *A Thoroughly Canadian General: A Biography of General H.D.G. Crerar* (Toronto: University of Toronto Press, 2007), 60.

<sup>10</sup> Stacey, *The Canadian Army 1939-45*, 92-94; Nigel Hamilton, *Monty: The Battles of Field Marshall Bernard Montgomery* (New York: Random House, 1981), 362. Montgomery and Crerar had a strained relationship throughout the war. In fact, Montgomery was overt in his skepticism of Crerar's leadership abilities, which he attributed to his lack of experience and confidence.

beginning in April 1943 with the 1st Infantry Division and 1st Armored Brigade. In October 1943, the Canadian government decided to augment its commitment to the Mediterranean theater by sending I Corps Headquarters, I Corps Troops, and 5th Armored Division. This left the First Army Headquarters, II Corps Headquarters, three divisions, and an armored brigade to fight in Northwest Europe. Exacerbating the personnel constraint was a poor replacement system that could not keep up with casualty rates. Canadian planners estimated replacement requirements on Britain's North African operations. This miscalculation had a direct effect on division operations as many infantry battalions went into battle below strength. Such shortfalls undoubtedly influenced the perception of the overly "cautious" approach during operations especially those of the 3rd Infantry Division during the clearance of the channel ports.<sup>11</sup>

With invasion plans for Europe underway, there remained the question of the scope of Canadian participation in the assault. In July 1943, Allied leaders agreed upon the general concept of the proposed invasion plan, known as Operation Overlord; however, the details concerning the composition of the assault force only emerged later in February 1944. From the Canadian perspective, the options for participating units were limited. With the 1st Infantry Division deployed in Italy and the 2nd Division recovering from the tragic 1942 Dieppe raid, McNaughton selected the 3rd Division, supported by the 2nd Armored Brigade, as the Canadian contribution for the assault. Tasked with such a significant endeavor, the division, commanded by Major-General Rod F.L. Keller, devoted the rest of its time conducting training in preparation for the invasion.<sup>12</sup> Keller served most of his time as an infantry officer with the Princess Patricia's

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<sup>11</sup> Rickard, *The Politics of Command*, 100; Stacey, *The Canadian Army 1939-45*, 93-96; Terry Copp, *Cinderella Army: The Canadians in Northwest Europe, 1944-1945* (Toronto: University of Toronto Press, 2007), 6; Stacey, *The Canadian Army 1939-45*, 247; Stephen Ashley Hart, *Montgomery and "Colossal Cracks": The 21st Army Group in Northwest Europe, 1944-45* (Westport, CT: Praeger, 2000), 61.

<sup>12</sup> C.P. Stacey, *The Victory Campaign: The Operations in North-West Europe, 1944-1945 – the Official History of the Canadian Army in the Second World War - Volume III*, 2<sup>nd</sup> ed. (Ottawa: Queen's Printer, 1960), 18-22. In January 1944, Montgomery worked the assault plan for Operation Overlord (the liberation of Northwest Europe) with the naval and air commanders-

Canadian Light Infantry.<sup>13</sup> As of December 1943, Keller's division fell under the command of Lieutenant-General J. T. Crocker's I British Corps, and focused on combined operations that included large-scale exercises with the Royal Navy and the Royal Air Force. Furthermore, to the benefit of the division, the costly lessons learned at Dieppe helped develop the assault techniques for the assault on the Normandy beaches.<sup>14</sup> While efforts to train and prepare the division for the invasion proved successful, the issue of leadership came under scrutiny as the campaign progressed.

Keller's role as the division commander became an issue for the senior Canadian and British leaders. General Crerar selected Keller based on the belief that he possessed the aggressiveness and competence to command the division in battle. However, following the assault in June, several senior British officers questioned Keller's performance based on his apparent inadequacy in managing the stresses of command and failure to inspire an offensive spirit.<sup>15</sup> Montgomery wanted Keller replaced.<sup>16</sup> In mid-July, the division came under the command of Lieutenant-General Guy Simonds' II Corps. Simonds was a highly competent commander who had won Montgomery's approval. Keller certainly faced difficulties as his division had been fighting continuously since June and had suffered 5,500 casualties. Although Simonds shared concerns regarding his subordinate division commander's command ability, he kept Keller in command, believing his removal would be detrimental to the division's morale.<sup>17</sup>

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in-chief. On February 1, the "Initial Joint Plan" (codenamed Neptune) emerged, outlining the details of the plan; Terry Copp, *Fields of Fire: The Canadians in Normandy* (Toronto: University of Toronto Press, 2003), 22; C.P. Stacey, *Six Years of War: The Army in Canada, Britain and the Pacific - the Official History of the Canadian Army in the Second World War - Volume I*, 3rd ed. (Ottawa: Queen's Printer, 1955), 251.

<sup>13</sup> Dickson, *A Thoroughly Canadian General*, 255.

<sup>14</sup> Stacey, *The Canadian Army, 1939-44*, 178-180.

<sup>15</sup> English, *The Canadian Army and the Normandy Campaign*, 189-190.

<sup>16</sup> Dickson, *A Thoroughly Canadian General*, 274.

However, in Clausewitzian fashion, the role of chance helped rectify the situation. Keller suffered a wound during Operation Totalize (August 1944) and Major-General Dan Spry assumed division command prior to the conduct of Operation Wellhit.<sup>18</sup>

During Keller's command tenure, the division's performance received mixed reviews. To his credit, on D-Day, the 3rd Division advanced further inland than any of the five Allied divisions. Unfortunately, the formation fell short of seizing its final objective – the Carpiquet airfield.<sup>19</sup> Canadian historian C.P. Stacey saw this as a failure, placing the blame on the division's lack of momentum. In response, author Marc Milner points out that the majority of historians measured success in terms of a unit's ability to gain ground.<sup>20</sup> The division's cautious approach was attributable to its training, which dictated seizing limited objectives and digging in to defend against counterattacks. These criticisms ignore the fact that Keller, in order to avoid exposing his flanks, had to wait for the British divisions to continue their advance against significant German opposition.<sup>21</sup> Milner argues that the division did achieve one of its key D-Day objectives – stopping a German Panzer counterattack aimed at defeating the Allied landings.<sup>22</sup> On

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<sup>17</sup> English, *The Canadian Army and the Normandy Campaign*, 251-52.

<sup>18</sup> Copp, *Cinderella Army*, 6.

<sup>19</sup> Mark Zuehlke, *Breakout from Juno: First Canadian Army and the Normandy Campaign, July 4-August 21, 1944* (Vancouver: Douglas and McIntyre, 2013), 19.

<sup>20</sup> Stacey, *The Victory Campaign*, 118; English, *The Canadian Army and the Normandy Campaign*, 203; Marc Milner, *Stopping The Panzers: The Untold Story of D-Day* (Kansas: University Press of Kansas, 2014), 17.

<sup>21</sup> Copp, *Fields of Fire*, 56-57; Hart, *Montgomery and 'Colossal Cracks*, 104-105. A key factor regarding the 3rd Division's prudent approach was Montgomery's doctrine of the set-piece battle, which emphasized detailed planning, concentration of forces, attrition by firepower, and caution.

<sup>22</sup> Milner, *Stopping The Panzers*, 7-8; Copp, *Cinderella Army*, 5. During Operation Overlord, the 3<sup>rd</sup> Division participated in all of the Canadian Army's five major operations: Operation Charnwood, the battle for Caen; Operation Atlantic, the Canadian phase of Operation Goodwood; Operation Spring, the holding attack at Verrières Ridge; and the two armored thrusts towards Falaise, Operation Totalize and Tractable.

July 3, when the division successfully seized Carpiquet, senior British officers scrutinized the division for not allocating necessary fire support resources to assist its units. Furthermore, Lieutenant-General Crocker accused the unit of lacking an offensive spirit, primarily because of Keller's weak leadership. Despite the division's capture of Caen on July 9, author John English points out several shortfalls: deficient urban fighting skills, and poor employment of armor and artillery.<sup>23</sup> While historian Terry Copp acknowledges that Canadian overall performance was a mix of success and failure, he also observes that it was "greatly underrated."<sup>24</sup> In light of the varying assessments, there is room for further examination concerning Canadian performance in Northwest Europe. How effective was the 3rd Canadian Infantry Division during its operation to capture the port city of Boulogne?

The 3rd Division's performance during the capture of Boulogne revealed that, despite some organizational challenges such as lack of reinforcements and resources, Spry's command successfully planned, executed, and achieved its operational objectives. As a planning methodology, Canadian commanders used the "appreciation" process. An appreciation consisted of a logical thought process that accounted for the desired end state, the factors that affected the attainment of the end state, the courses of action available, and the development of the plan. This process also enabled commanders to build an initial vision and method for solving the problem, which they could later transform into detailed orders.<sup>25</sup> Spry and his staff possessed a detailed understanding of the factors in the operational environment and its impact on achieving the

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<sup>23</sup> English, *The Canadian Army and the Normandy Campaign*, 112-117, 222.

<sup>24</sup> Copp, *Cinderella Army*, ix.

<sup>25</sup> War Office, *Operations, Military Training Pamphlet, No. 23 Part III - Appreciations, Orders, Intercommunications, and Movements 1939*, (Ottawa: His Majesty's Stationery Office, 1939), 1-6, accessed November 3, 2015, <http://wartimecanada.ca/document/world-war-ii/training-manuals/military-training-pamphlet-no-23-part-iii-appreciations>. For planners, the foundation of the appreciation process relied on having a correct definition of the "object" of the mission. In other words, the "object" referred to purpose or aim of the mission. The process also used the term "method", which referred to the set of actions required to achieve the object of the mission.

operation's goal. The commander was able to visualize a comprehensive operational method and describe his vision with which to achieve the desired end state. Furthermore, he directed his forces with clearly detailed and comprehensive orders.

### **Part 1. Understanding the Operational Environment**

As of early September, the Canadians did not have an accurate understanding of the enemy situation and intentions at Boulogne. From all accounts, the 3rd Division did not expect the Germans to put up a fight, as air reconnaissance reported that the Boulogne, Calais, and Dunkirk areas were deserted.<sup>26</sup> However, on the night of the September 4, the 7th Reconnaissance Regiment reconnoitered near Boulogne and found the position heavily defended. By first light, the regiment determined that "Boulogne was to be a tough nut to crack."<sup>27</sup> Having isolated the position with his brigades, Spry's immediate task was to "secure every scrap of information possible" about the enemy and the defenses with the view of understanding the operational environment.<sup>28</sup> To understand the operational environment, Spry needed to identify the various factors at Boulogne that could affect the employment of his forces and equipment, as well as his decisions.<sup>29</sup> As the "basis of all military preparations and plans must be good information,"<sup>30</sup> the success of Operation Wellhit hinged on the division's ability to accurately assess the situation. Canadian planning doctrine in 1939 not only emphasized the importance of understanding the operational aim and the factors, but it also stressed the importance of making sound deductions,

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<sup>26</sup> Stacey, *The Victory Campaign*, 326.

<sup>27</sup> Historical Section Canadian Military Headquarters, "Report No. 184, Canadian Participation in the Operations in North-West Europe 1944. Part V: Clearing the Channel Ports, 3 Sep 44-6 Feb 45" (Ottawa: Directorate of History National Defence Headquarters), 38.

<sup>28</sup> Historical Section Canadian Military Headquarters, "Report No. 184," 15.

<sup>29</sup> Army Doctrine Reference Publication (ADRP) 3-0, *Unified Land Operations* (Washington, DC: Government Printing Office, 2012), 1-1.

<sup>30</sup> War Office, *Field Service Regulations, Vol. III, Operations – Higher Formations 1935* (Ottawa: His Majesty's Stationery Office, 1942), 10.

to include ignoring factors that had negligible influence on planning.<sup>31</sup> In assessing the soundness of Spry's understanding, the focus will be on those factors that resulted not only in relevant deductions, but also in those that led to definite operational actions at Boulogne. Thus, his success during the operation emerged from his ability to adapt his operational plan to his understanding of the environment, consisting of four key factors: the mission, the enemy, the civil situation in Boulogne, and the 3<sup>rd</sup> Division's resource and personnel constraints.

The division's mission to capture Boulogne sought to alleviate the increasing Allied supply problems. By early September, as result of the rapid advance into Belgium, the port city at Antwerp was now in Allied possession.<sup>32</sup> However, they could not use the port for resupply because of the German defenses located along its approaches. Montgomery wanted to achieve a strategic blow against the withdrawing German forces with an advance to the Ruhr, the industrial heart of Germany.<sup>33</sup> A matter of most concern was how to address the ongoing Allied supply issue and its impact on future operations, stemming from extended supply lines.<sup>34</sup> For the 21st Army Group commander, the immediate solution to sustaining his rapid advance rested not with opening the port at Antwerp, but rather with the capture of "one good Pas de Calais port."<sup>35</sup> On August 26, 1944, Montgomery ordered the First Canadian Army to "proceed quickly with the

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<sup>31</sup> War Office, *Operations, Military Training Pamphlet*, 2.

<sup>32</sup> Stacey, *The Canadian Army, Army 1939-45*, 211

<sup>33</sup> Stacey, *The Victory Campaign*, 307.

<sup>34</sup> Ibid., 320; J.L. Moulton, *The Battle for Antwerp: The Liberation of the City and the Opening of the Scheldt 1944* (New York: Hippocrene Book, 1978), 73. Sustainment challenges arose once the Allies had broken out of the Normandy beachhead, the main supply hub. They calculated their logistic requirements based on estimates of where the respective armies would be at specific times during the campaign. However, they reached the Seine eleven days prior to initial estimates and liberated Paris fifty-five days ahead of schedule. While the estimated timeline for reaching the Rhine was May 1945, the Allies were within range by mid-September 1944.

<sup>35</sup> Stacey, *The Victory Campaign*, 310.

destruction of all enemy forces in the coastal belt up to Bruges” upon the crossing of the Seine River.<sup>36</sup> Thus, this was the basis for the 3rd Division’s mission to seize the French port city.

Spry’s appreciation of the difficult mission requirements enabled him to mitigate the effects of the various planning constraints and limitations. With both Simonds and Spry appreciating the need for a methodically planned operation, they crafted the mission to “capture Boulogne and destroy its garrison.”<sup>37</sup> While Boulogne was the priority, Spry also needed to contain the adjacent positions at Cap Gris Nez and Calais, whose coastal guns would impede the use of Boulogne’s port.<sup>38</sup> Therefore, prior to the assault, Spry decided to isolate Boulogne from both locations.<sup>39</sup> This was a significant endeavor, since Spry, with limited forces available, had to plan an attack on the adjacent objectives while preparing for the main assault at Boulogne. Intelligence reports estimated that Boulogne contained between 5,500 and 7,000 Germans.<sup>40</sup> At Calais, this figure was 7,000.<sup>41</sup> With only a division at his disposal, the commander possessed limited options for achieving his assigned mission. All other units within the First Army were committed elsewhere.<sup>42</sup> These limitations are noteworthy, considering that the entire I British

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<sup>36</sup> 21st Army Group, *General Operational Situation and Directive*, M520, Box 83 (Montgomery, Bernard), in Dwight D. Eisenhower: Pre-Presidential Papers, 1916-1952, Series I: Principal File, Eisenhower Presidential Library, Abilene, KS.

<sup>37</sup> Historical Section Canadian Military Headquarters, “3 Cdn Inf Div Op Order No. 2, 6 Sep 44,” AEF/3 Cdn Inf Div/C/I, Docket III (c): Operations Orders 235C3.016 (D15), Library and Archives Canada, Ottawa.

<sup>38</sup> Historical Section Canadian Military Headquarters, “Report No. 184,” 38.

<sup>39</sup> Ibid., 14.

<sup>40</sup> Stacey, *The Victory Campaign*, 337. This estimate was based on the 3<sup>rd</sup> Division’s Intelligence Summary No. 42. However, the division later confirmed the garrison strength as consisting of 10,000 Germans.

<sup>41</sup> Historical Section Canadian Military Headquarters, “Report No. 184,” 19.

<sup>42</sup> 21st Army Group, *General Operational Situation and Directive*, M525, Box 83 (Montgomery, Bernard), in Dwight D. Eisenhower: Pre-Presidential Papers, 1916-1952, Series I: Principal File, Eisenhower Presidential Library, Abilene, KS. The First Army tasks included completing the capture of Boulogne followed by Calais, masking Dunkirk, and advancing to

Corps executed the assault on Le Havre (Operation Astonia), whose strength was just over 11,000.<sup>43</sup> Moreover, with an unclear picture of the enemy and its defenses, intelligence gathering became a priority. In light of the constraints and limitations, it was evident that the assault on Boulogne required “a little more time...in order to ensure a decisive assault.”<sup>44</sup> Thus, in appreciation of his tasks, his own forces, and limited intelligence, he re-organized his brigades to begin isolating and defining the objective area for the pending assault.

Spry conducted a successful assault on Boulogne because of his ability to develop a detailed appreciation of the enemy’s disposition, strength, and capabilities. Understanding the enemy and the nature of the defenses enabled him to develop a methodical plan for approaching and assaulting the port city. Building an accurate depiction of the German defenses was perhaps the most challenging aspect in planning Operation Wellhit. After encountering strong defenses on September 5, the division commander assessed the need for a deliberate attack, especially since the Germans appeared intent on putting up a fight. Thus, the division’s immediate task was to collect as much information as possible regarding the defenses and the garrison.<sup>45</sup>

While the details concerning the defenses at Boulogne only emerged once the 3rd Division arrived in location, the complexity of Hitler’s coastal defensive network should not have surprised the Canadians. The ‘Atlantic Wall’ consisted of fourteen coastal fortresses, aimed at

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Antwerp to open the port. The First Army’s I British Corps HQ and the 49<sup>th</sup> (West Riding) Division were committed to the Antwerp area once the capture of Le Havre was completed. The I British Corps’ other division - the 51st (Highland) - remained grounded in Le Havre in order to provide transport support for Boulogne; Jeffery Williams, *The Long Left Flank*, 61. The 4th Canadian and 1st Polish Armored Division were responsible for clearing the coastal belt towards Bruges and Ghent. Meanwhile, the 2nd Division was responsible to clear Dunkirk and the rest of coast from Calais to Dutch border.

<sup>43</sup> Williams, *The Long Left Flank*, 57.

<sup>44</sup> Stacey, *The Victory Campaign*, 337.

<sup>45</sup> Historical Section Canadian Military Headquarters, “Report No. 184,” 14-15.

defending against an Allied invasion.<sup>46</sup> While the concept for these defenses emerged in late 1941, serious construction efforts only started in 1943.<sup>47</sup> The fortifications generally consisted of perimeter and strongpoint defenses, anti-tank ditches, wire obstacles, minefields, artillery positions protected by reinforced concrete bunkers, as well as anti-ship obstacles in the harbors.<sup>48</sup> In early September 1944, in light of growing Allied sustainment issues, Hitler believed he could halt the Allied advance by holding the ports and allowing supply problems to incapacitate the Allied armies.<sup>49</sup> On September 4, 1944, Hitler ordered the reinforcement of the fortresses at Boulogne and Dunkirk (the Calais defense area) with both personnel and ammunition.<sup>50</sup> Thus, understanding the nature of these defenses reinforces the set of challenges that the 3rd Division faced at Boulogne.

One of the 3rd Division's problems was how to plan and conduct the penetration through an array of fortified defensive positions. The initial appreciation identified a series of German perimeter positions: Fort de la Crèche, La Trésorerie (including Wimereux), Bon Secours, St. Martin Boulogne, Mont Lambert, Herquelingue, Mont St. Etienne, Nocquet, and Le Portel. Fortunately, the division captured German documents prior to the assault and determined the general layout of the fixed installations, main fortifications, and minefields.<sup>51</sup> Most of the main defenses consisted of concrete gun emplacements, dugouts, minefields, and wire. While the fortifications were robust, complex terrain also added Spry's difficulties. High terrain features surrounding Boulogne enabled mutual support and permitted the defenders to command all the

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<sup>46</sup> Alan F. Wilt, *The Atlantic Wall: Hitler's Defenses in the West, 1941-1944* (Iowa: Iowa State University Press, 1975), 117.

<sup>47</sup> Ibid., 158-159.

<sup>48</sup> Ibid., 80-82.

<sup>49</sup> Moulton, *The Battle for Antwerp*, 45.

<sup>50</sup> Williams, *The Long Left Flank*, 42.

<sup>51</sup> Ibid., 1.

approaches to the city. The intelligence assessment indicated the positions at Mont Lambert and Herquelingue were key to the overall defense as they provided good observation and fields of fire to cover Boulogne from land approaches.<sup>52</sup> Therefore, the commander needed to consider how to carefully approach and penetrate the fortress defenses.

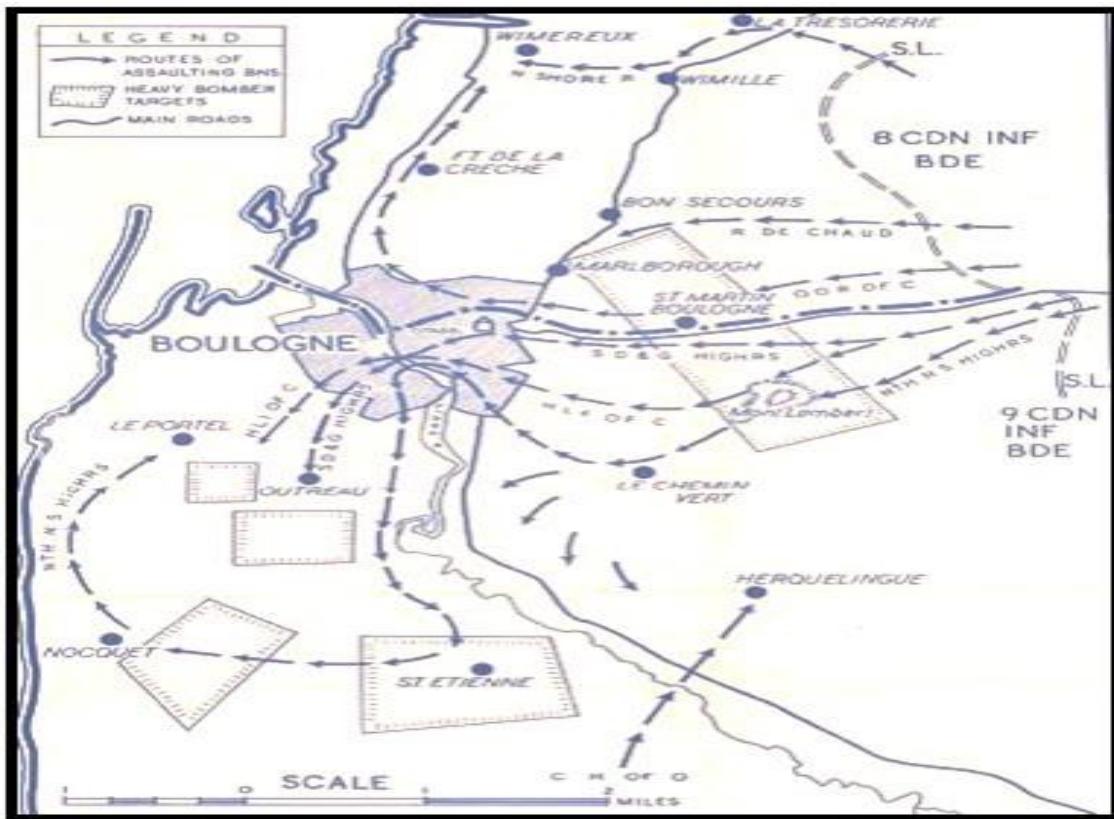


Figure 1. Location of enemy objectives at Boulogne.

*Source:* Historical Section Canadian Military Headquarters, “Report No. 184, Canadian Participation in the Operations in North-West Europe 1944. Part V: Clearing the Channel Ports, 3 Sep 44-6 Feb 45” (Ottawa: Directorate of History National Defence Headquarters), Map B.

Once Spry’s brigades achieved a penetration, their next task was to defeat the city’s inner defenses. The Germans emplaced concrete blocks, downed trees, bent rails, mines, and booby traps, all designed to cause significant delay once the Canadian forces finally gained lodgment

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<sup>52</sup> Historical Section Canadian Military Headquarters, “Operation Wellhit: Capture of Boulogne Fortress, 17-22 September 1944,” AEF/3 Cdn Inf Div/C/I, Docket V, 235C3.013 (D2), Library and Archives Canada, Ottawa, 1-4.

into the city. The Liane River, which cut through the city, was another significant obstruction, which the Germans sought to exploit by destroying the main bridges during the assault.<sup>53</sup> Thus, understanding the nature of both the perimeter and inner defenses shaped how Spry later planned his operation.

Regarding the enemy strength, the intelligence staff determined that the defenders at Boulogne lacked quality. These included a mix of army, naval, and air force personnel, some of whom had not been part of the original defending force. Many of these soldiers withdrew to Boulogne during the rapid Allied advance up the French coast. The initial Allied estimate for the size of the force in location was between 5,500 and 7,000.<sup>54</sup> Interrogation of German prisoners of war revealed the position was short of infantry, but maintained a large proportion of highly trained artillery and signals personnel. To mitigate the shortage of infantry, the German commander, Lieutenant-General Ferdinand Heim, augmented his defenses with the many communications soldiers present.<sup>55</sup> Heim was an experienced officer who previously served as a corps commander on the Russian front. While he had much combat experience, his troops did not.<sup>56</sup> Interestingly, the less highly trained mixed contingents (Germans and non-Germans) with lower morale were located on the outer defenses, while the better trained were concentrated on the coast in the areas of Wimereux, Fort de la Crèche, and Le Portel. These coastal forces were some of the few who fought it out “almost to the bitter end.” The lack of fighting spirit was not surprising since intelligence sources assessed the enemy as possessing low morale.<sup>57</sup> Regardless

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<sup>53</sup> Historical Section Canadian Military Headquarters, “Operation Wellhit: Capture of Boulogne Fortress,” 4.

<sup>54</sup> Roger Rowley, “The Attack on Boulogne,” *Canadian Military History* 3, no. 2 (March 26, 2012): 76, accessed October 5, 2015, <http://scholars.wlu.ca/cgi/viewcontent.cgi?article=1415&context=cmh>.

<sup>55</sup> Historical Section Canadian Military Headquarters, “Operation Wellhit: Capture of Boulogne Fortress,” 1.

<sup>56</sup> Williams, *The Long Left Flank*, 62.

of the low morale assessment, the garrison still posed an important threat based on its capabilities.

The Germans had an assortment of guns at their disposal, consisting of light and heavy anti-aircraft, naval, anti-tank, and artillery.<sup>58</sup> In total, there were more than ninety guns, whose heavy calibers ranged from 75 to 350 millimeters.<sup>59</sup> These weapons, including many of the naval guns, were capable of covering the land approaches, thereby endangering Spry's advancing infantry and armor forces. Meanwhile, the anti-aircraft guns not only posed a risk to the division's air support, but also to dismounted troops.<sup>60</sup> Thus, it is not surprising that the division placed great emphasis on heavy air and artillery support.

In addressing Spry's appreciation of the enemy, it is important to recognize the host of intelligence gathering activities the division performed. The intelligence staff utilized information gleaned from maps, air photographs, and from the diligent efforts of battalion scout platoons.<sup>61</sup> Most important was the intelligence gained through human sources, including the local French population, German prisoners of war, and the French Forces of the Interior.

The intelligence gained from the local French civilians and resistance organization enabled Spry to develop a comprehensive plan for its assault. Having lived amongst the German occupiers for several years, the French locals possessed an intimate knowledge of the terrain and of the enemy's disposition. Prior to Operation Wellhit, the Canadians interrogated over 300

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<sup>57</sup> Historical Section Canadian Military Headquarters, "Operation Wellhit: Capture of Boulogne Fortress," 2.

<sup>58</sup> Historical Section Canadian Military Headquarters, "Operation Wellhit: Capture of Boulogne Fortress," 2-4.

<sup>59</sup> Copp, *Cinderella Army*, 60.

<sup>60</sup> Historical Section Canadian Military Headquarters, "Operation Wellhit: Capture of Boulogne Fortress," 31. During the assault, the Germans used the 20 mm anti-aircraft guns as machine guns, which had a demoralizing effect on Spry's forces.

<sup>61</sup> Historical Section Canadian Military Headquarters, "Report No. 146, Operations of First Canadian Army in North-West Europe, 31 Jul-1 Oct 44," (Ottawa: Directorate of History National Defence Headquarters), 47.

civilians.<sup>62</sup> While intelligence gained from the locals was certainly of value, the French Forces of the Interior provided additional detailed information. They provided map references and identified enemy positions, which contributed to the division's fire planning. These fighters also gave details regarding the terrain, the location of minefields, and roadblocks. However, their assistance went far beyond the passage of information, as they provided guides to assist with Canadian patrolling activities and to help the entry of infantry and armored columns into the city during the actual assault.<sup>63</sup> This collaboration certainly contributed to the effective planning and conduct of Operation Wellhit's maneuver and fire plans.

The information provided by German prisoners of war helped Spry improve his appreciation for the morale and quality of the forces at Boulogne. Prior to the operation, the division's capture of enemy patrols provided some understanding of the mixed quality of soldiers. Upon capture, the Germans indicated they were operating in another unit's sector because the troops assigned to that area were untrained for such activities.<sup>64</sup> Additionally, the interrogation gave particular insights regarding morale within the fortress. One such indication came from a captured staff officer who revealed that morale was degraded, resulting in instances of defeatist talk and executions for desertion. While the Canadians estimated that the Germans suffered from low morale, they also believed that the formidable defensive position could mitigate the waning fighting spirit. However, such an insight into the psychological resolve of the defenders was something that the Canadians attempted to exploit. The division plan incorporated psychological warfare activities to compel the enemy to surrender.<sup>65</sup>

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<sup>62</sup> Historical Section Canadian Military Headquarters, "Report No. 184," 4.

<sup>63</sup> Historical Section Canadian Military Headquarters, "Operation Wellhit: Capture of Boulogne Fortress," 6-7.

<sup>64</sup> Historical Section Canadian Military Headquarters, "Report No. 184," 14.

<sup>65</sup> Historical Section Canadian Military Headquarters, "Operation Wellhit: Capture of Boulogne Fortress," 2.

Spry's understanding of the civil situation at Boulogne enabled him to prevent the disruption of his operation and reduce the risk of collateral damage. The city of Boulogne contained a large population, of approximately 10,000 civilians. The German commander saw them both as a burden and as a potential threat that not only used up a portion of the food and water supply, but exhibited hostility towards his forces. Aware that an assault was coming, on September 10, Heim decided to evacuate the entire civilian population with the aim of eliminating a possible source of trouble as well as causing an evacuation problem for his opponent.<sup>66</sup> While the evacuation could have proved problematic, the Canadians were ready.

The early recognition of the civil situation enabled staffs at both division and corps to develop an evacuation plan. Integral to this planning effort was the civil affairs staff, operating at the corps headquarters. On September 7, II Corps Civil Affairs began its planning efforts. The aim was to develop a plan to move and manage displaced civilians. The planning effort was a collaborative affair, as civil affairs staff coordinated with local French organizations (Volontaires Françaises and Secours National), with the mayors of neighboring municipalities, and with the 3rd Division's Assistant Adjutant and Quartermaster General. According to the plan, the military directed the French civilians to evacuation zones where they were processed and provided with food.<sup>67</sup> Division staff, in concert with civil affairs, warned all civilians to be out of Boulogne within thirty-six hours.<sup>68</sup> Ironically, Heim's decision to push the civilians out of the city actually facilitated Canadian efforts, as the division's role was simply to receive evacuees through control points and direct them to safe zones. By September 16, over 8,000 civilians departed Boulogne.<sup>69</sup>

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<sup>66</sup> Historical Section Canadian Military Headquarters, "Report No. 184," 17.

<sup>67</sup> Ibid., 11.

<sup>68</sup> Historical Section Canadian Military Headquarters, "Operation Wellhit: Capture of Boulogne Fortress," 6.

<sup>69</sup> Historical Section Canadian Military Headquarters, "Report No. 184," 18.

However, several thousand civilians refused to leave the city, adding an additional consideration for the air support plan.

Cognizant of the potential risk to civilians, the plan for the use of the air force appeared to be a leading factor in the limited number of civilian casualties.<sup>70</sup> The concern to avoid civilian casualties gained more attention because of the apparent indiscriminate nature of the bombing during the I British Corps assault on the port at Le Havre. In fact, by the war's end, that city earned the title of the most damaged city in France with civilian casualties estimated at 1,536 dead.<sup>71</sup> Therefore, the early appreciation for addressing the civil considerations at Boulogne was a crucial element to effective planning as it helped avoid disruptive effects and reduced the risk to the French citizens.

The 3rd Division's successful planning of Operation Wellhit also hinged upon its ability to effectively anticipate supply requirements and coordinate the re-distribution of assets. With the bulk of the First Army's resources supporting I British Corps, Spry understood the requirement for a well-coordinated logistics plan in order to meet the needs of Operation Wellhit. One of the immediate planning considerations was how to build up the necessary ammunition for the assault. A significant administrative concern was the time and distance involved in establishing sufficient supplies, as some munitions came from the main supply area in Normandy. Movement from the beaches to Boulogne involved a seven-day round trip. Some munitions also came from Dieppe, which was a three-day round trip. Careful planning facilitated the forward movement of approximately 8,500 tons of ammunition in support of Operation Wellhit.<sup>72</sup>

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<sup>70</sup> Terry Copp and Michelle Fowler, "Heavy Bombers and Civil Affairs," *Canadian Military History* 22, no. 2 (April 17, 2015): 12, accessed November 1, 2015, <http://scholars.wlu.ca/cgi/viewcontent.cgi?article=1685&context=cmh>.

<sup>71</sup> Copp and Fowler, "Heavy Bombers and Civil Affairs," 9.

<sup>72</sup> Historical Section Canadian Military Headquarters, "Report No. 184," 16.

The effective re-distribution of artillery batteries and specialized tank units was a critical component to the operational plan. In appreciation of the complexity of the Boulogne defenses, as well as the ongoing commitment of resources at Le Havre, the assault could not commence until the arrival of the much-needed indirect fire and armor capabilities. In fact, the majority of the First Army's heavy and medium artillery, and specialized armor supported I British Corps at Le Havre.<sup>73</sup> Ultimately, the fire plan for Operation Wellhit involved over 400 identified targets, including every possible strongpoint, gun position, and infantry position. Meanwhile, Spry deemed the incorporation of specialized armor assets as indispensable. This equipment belonged to British Major-General Sir Percy Hobart's 79th Armored Division. The 3rd Division recognized that the assault required support from Crocodiles (flamethrower tanks), Assault Vehicles Royal Engineers (mortar tanks), Flails (mine clearing tanks), and Kangaroos (armored personnel carriers). Thus, the allocation of transportation requirements placed the movement of specialized armor as a top priority.<sup>74</sup> The larger issue involved how to develop an effective transportation plan.

An effective transport plan facilitated the successful re-distribution of units, equipment, and supplies. The coordination for the movement of artillery and armor began well prior to the operation at Le Havre, occurring as early as September 8.<sup>75</sup> With I Corps capturing Le Havre on September 12, time was crucial to begin the rapid movement of resources. While temporarily halted at Le Havre, the 51st (Highland) Division provided its limited transportation resources to facilitate forward movement of artillery and armor.<sup>76</sup> The immediate administrative problem was

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<sup>73</sup> Williams, *The Long Left Flank*, 61.

<sup>74</sup> Historical Section Canadian Military Headquarters, "Report No. 184," 16-21.

<sup>75</sup> Copp, *Cinderella Army*, 63.

<sup>76</sup> Historical Section Canadian Military Headquarters, "Report No. 183, Canadian Participation in the Operations in North-West Europe 1944. Part IV: First Canadian Army in the Pursuit, 23 Aug-30 Sep," (Ottawa: Directorate of History National Defence Headquarters), 199-206.

finding a way to move 119 pieces of equipment with only sixty-three transport vehicles. The solution involved an ambitious plan that required all available trucks to conduct two trips to Boulogne in four days. This task required the continuous movement of trucks, supported by adequate numbers of relief drivers.<sup>77</sup> The division initially forecasted Operation Wellhit to begin on either September 15 or 16.<sup>78</sup> Therefore, time was at a premium to make the 200-mile move from Le Havre to Boulogne. In fact, due to delays in the arrival of the specialized armor, Spry postponed his attack until September 17.<sup>79</sup> Thus, had the 3<sup>rd</sup> Division failed to adapt its plan according to its understanding of the resource constraints, the operation would have been much more difficult.

Spry's appreciation of his personnel constraints helped shape the planning to mitigate against his numerical inferiority during Operation Wellhit. While this author has been unable to determine the 3rd Division's exact operational strength prior to Wellhit, other sources allow for the drawing of certain conclusions. The first factor to consider is the structure of the division under optimal conditions. While an infantry division's strength was over 17,000, its actual frontline fighting strength was much less, consisting of only 5,400 men.<sup>80</sup> The second factor to consider is the widespread manpower shortages within the Canadian Army.<sup>81</sup> On the day before the attack, the division was 713 men under authorized strength.<sup>82</sup> Therefore, the estimated strength of Spry's forces was 4,687. According to doctrine, defeating an enemy force in a

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<sup>77</sup> Copp, *Cinderella Army*, 64.

<sup>78</sup> Historical Section Canadian Military Headquarters, "Report No. 184," 24.

<sup>79</sup> Terry Copp, "Canadian Operational Art: The Siege of Boulogne and Calais," *Canadian Army Journal* 9, no. 1 (Spring 2006): 33, accessed October 18, 2015, <http://publications.gc.ca/collections/Collection/D12-11-9-1E.pdf>.

<sup>80</sup> Bercuson, *The Maple Leaf Against the Axis*, 240.

<sup>81</sup> Dickson, *A Thoroughly Canadian General*, 337.

<sup>82</sup> Copp, *Cinderella Army*, Appendix A.

prepared defense required an ideal ratio of 3:1.<sup>83</sup> Based on the initial assessments, German strength was between 5,500 and 7,000. This placed the Canadians at a disadvantage, as the enemy outnumbered them.<sup>84</sup> Thus, in light of such considerations, Spry ensured that his plan for Operation Wellhit mitigated the impact of numerical inferiority through the wise use of ground, air, and artillery.

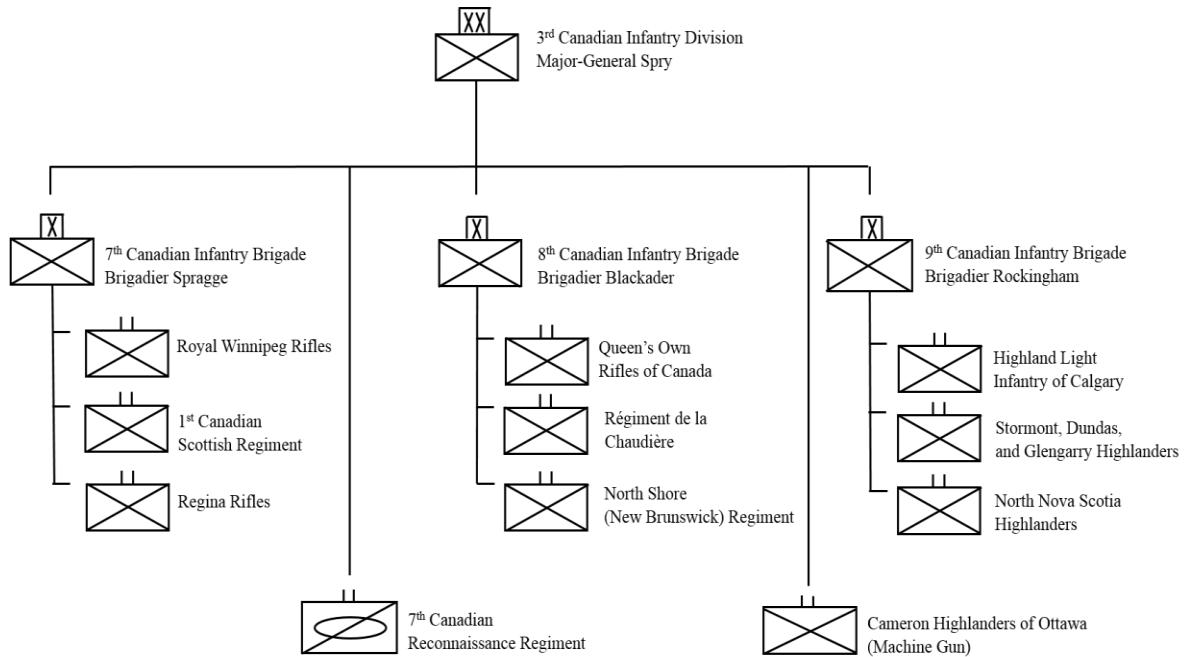


Figure 2. Order of Battle for Operation Wellhit.

*Source:* Created by author. Based on operational reports.

Spry's understanding of the key influential factors within the operational environment established the foundation for further detailed and accurate planning. With an appreciation of the object of the mission, with its constraints and limitations, Spry took immediate actions in terms of isolating and defining the enemy objective. He needed to determine how to achieve the mission especially in light of his limited forces and assigned tasks. His knowledge of the enemy with its formidable defenses was an essential element in how to develop his ground maneuver and fire

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<sup>83</sup> Copp, *Fields of Fire*, 20.

<sup>84</sup> Copp, *Cinderella Army*, 64.

support plans. Fortunately, with the evacuation of civilians from Boulogne, Spry eliminated a significant planning limitation. With the reduced likelihood of civilian collateral damage, there were less impediments in developing the air and artillery fire plans. The commander's recognition of the resource challenges enabled him to take early actions to set the conditions for building sufficient combat power for Operation Wellhit.<sup>85</sup> The recognition of personnel constraints shaped how the 3rd Division later developed the plan with which to effectively employ and support its forces. Thus, Spry's thorough appreciation for the factors affecting Operation Wellhit was instrumental in designing an effective plan with which to achieve mission success.

## **Part 2: Visualizing an Operational Method**

With an appreciation for the operational environment, Spry's next task was to develop a viable solution to achieve success at Boulogne. Having recently taken command from Keller, Spry was not well acquainted with his subordinates. On September 3, he gathered his staff officers and subordinate commanders to discuss both the problems and opportunities that they faced at Boulogne. To exploit success and mitigate risk, Spry stressed to his brigade commanders the importance of “read[ing] the battle and employ[ing] their resources to influence the outcome.”<sup>86</sup> Through this dialogue and exchange of ideas, Spry deepened his understanding and developed his vision for achieving his mission. In essence, this vision provided a mental picture for the broad military actions required to solve the problem at Boulogne. At that time, the Canadian Army used the “appreciation” process to aid with planning. The 1939 *Military Training Pamphlet No. 23*, described this process as “a review of a military problem or situation based on all available information and culminating in a plan of the action to be taken to meet the situation.” Thus, the appreciation process enabled a commander to transform his understanding of a situation

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<sup>85</sup> ADRP 3-0, 3-1. Combat power is the total means of destructive, constructive, and information capabilities that a military unit or formation can apply at a given time.

<sup>86</sup> Copp, *Cinderella Army*, 62.

into a vision for an operational “method”, the doctrinal term used at that time that referred to the set of military actions required to achieve the aim of the mission.<sup>87</sup>

The planning for Operation Wellhit was unique when compared to previous Canadian-led operations because the division played a more prominent role in planning. As of early September 1944, both Crerar and Simonds saw the necessity for “another set-piece attack built around the heavy bombers, medium artillery, and armoured carriers,” similar to what the British I Corps had executed at Le Havre. They believed that such an attack would replicate the British I Corps’ rapid success, defined by a relatively low number of British casualties.<sup>88</sup> However, the deaths of over 1,500 civilians, resulting from the heavy air bombardment at Le Havre, tarnished the success.<sup>89</sup> As such, the use of heavy bombers at Boulogne would be limited to targeting the perimeter defenses. With his corps commander’s guidance in hand, Spry proceeded to plan the forthcoming operation.<sup>90</sup> This is where Operation Wellhit was unique. Simonds penchant for centralized command meant that he maintained strict control over all planning.<sup>91</sup> However, his large task to clear the ports and approaches to Antwerp left him no choice but to let Spry play a greater role in planning.<sup>92</sup> Appreciating Simonds’ desire for a set-piece attack helped Spry envision how to capture Boulogne. Success during Operation Wellhit was due, in part, to Spry’s ability to transform his understanding of the situation into a vision for an operational method, which

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<sup>87</sup> War Office, *Operations, Military Training Pamphlet*, 1-6.

<sup>88</sup> Dickson, *A Thoroughly Canadian General*, 339.

<sup>89</sup> Andrew Knapp, “The Destruction and Liberation of Le Havre in Modern Memory,” *War in History* 14 no. 4 (2007): 477, accessed January 15, 2015, ProQuest.

<sup>90</sup> Copp, *Cinderella Army*, 60.

<sup>91</sup> Angelo Caravaggio, “A Re-evaluation of Generalship: Lieutenant-General Guy Simonds and Major-General George Kitching in Normandy 1944,” *Canadian Military History* 11, no. 4 (2002): 8-9, accessed October 2, 2015, <http://scholars.wlu.ca/cmh/vol11/iss4/2>.

<sup>92</sup> Copp, “Canadian Operational Art: The Siege of Boulogne and Calais,” 32.

incorporated the application of three key principles of war: surprise, concentration of force, and economy of force.

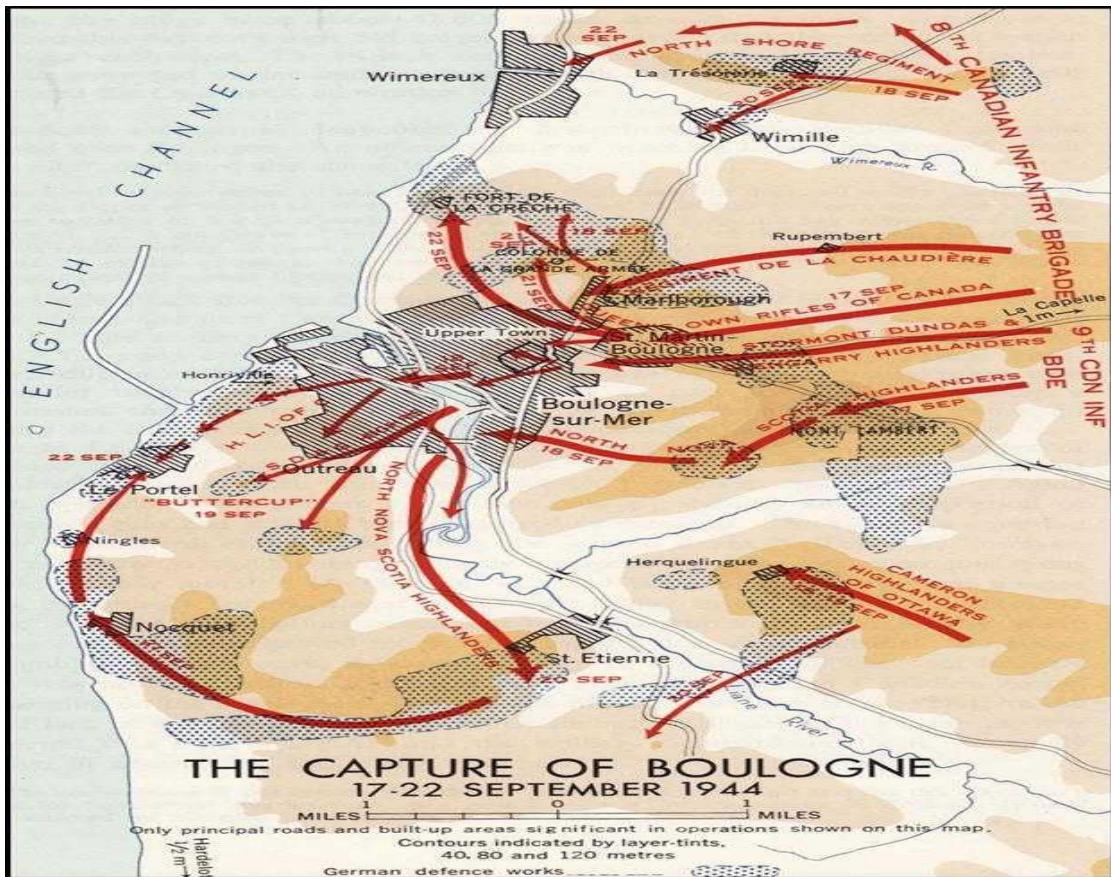


Figure 3. The 3rd Division's assault for the capture of Boulogne

*Source: C.P. Stacey, The Victory Campaign: The Operations in North-West Europe, 1944-1945 – the Official History of the Canadian Army in the Second World War - Volume III, 2<sup>nd</sup> ed. (Ottawa: Queen's Printer, 1960), Map 7.*

Canadian planning doctrine in World War Two incorporated the principles of war as a way to guide actions in operations. The 1935 *Field Service Regulations* described surprise as a way to create a situation for which the enemy was unprepared. By emphasizing surprise, a military force attempted to mislead the enemy either by “an unexpected rapidity of movement or by action in an unsuspected place.” Doctrine defined the concentration of force as the application of “the greatest possible force—moral, physical, and material—[to] be employed at the decisive time and place in attaining the selected aim or objective.” Meanwhile, the principle of economy

of force implied that a commander ensured that less vital points could be secured with sufficient forces “large enough to fulfil their object, but not so large as to weaken unduly the force engaged on the main aim.”<sup>93</sup>

Spry’s first element for visualizing his operational method was through the principle of surprise. By achieving surprise, Spry sought to conceal his unit’s true intentions and disposition from the enemy, creating a degree of uncertainty for the German defenders. That it was able to attain some degree of surprise was an achievement in itself. As Clausewitz noted in *On War*, “while the wish to achieve surprise is common...in practice it is often held up by the friction.”<sup>94</sup> Spry achieved this by using two deceptive measures: concealing the strength and disposition of his forces and masking the quantity and location of his artillery.

The first deceptive measure sought to conceal the strength and disposition of his division. Spry wanted to position his forces so they would seem strong along the entire perimeter. This first required the isolation of Boulogne and the containment of the German batteries at Cap Gris Nez and Calais to the north of the city. The isolation of the city eliminated support from the adjacent German positions. It also prevented the German guns at Cap Gris Nez and Calais from interfering with the assault. To achieve this task, the 7th Brigade secured the high ground north-east of Boulogne, near Gris Nez, and the 7th Reconnaissance Regiment occupied the area south of Calais.<sup>95</sup> The first assaulting brigade - the 8th Brigade - isolated Boulogne from the east and north-east. The second assaulting brigade - the 9th Brigade - occupied positions covering the southern approaches to Boulogne from Courcollette on the western edge of the Forêt de Boulogne, all the way to Hardelot on the coast. Spry wanted to make the Germans think the

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<sup>93</sup> War Office, *Field Service Regulations*, 6-8.

<sup>94</sup> Michael Howard and Peter Paret, *Carl von Clausewitz: On War* (New Jersey: Princeton University Press, 1976), 198.

<sup>95</sup> Historical Section Canadian Military Headquarters, “Report No. 146,” 47.

southern flank was as strongly held as that of the 8<sup>th</sup> Brigade located to farther to the north.<sup>96</sup> However, Spry also realized additional forces were required along the southern flank, since the most obvious approach to Boulogne was along the Liane River from the south.<sup>97</sup> If this flank did not appear sufficiently strong, the enemy would be able to deduce that it was not the likely axis of advance for the main assault.

Spry created a “dummy brigade” to deceive the enemy regarding the strength and location of his main attack. This brigade consisted of his machine-gun battalion and the headquarters element from his anti-tank, anti-aircraft, and one of his engineer units.<sup>98</sup> This ad hoc organization, based on the Cameron Highlanders of Ottawa (Machine Gun), would cover the southern flank for the main assault forces.<sup>99</sup> Masking the 3rd Division’s true intentions for the main assault was especially important since the positions at Mont Lambert and Herquelingue dominated the division’s main axis of advance. Through these deceptive measures, Spry wanted to keep the enemy dispersed along three flanks. Had the Germans been able to determine the true disposition and intentions of the division, they may have shifted their forces and presented a much greater dilemma for the upcoming assault.

Spry’s second deceptive measure aimed at concealing the quantity and location of his artillery. He believed capturing the well-prepared enemy positions required heavy artillery support. With the majority of the artillery still committed at Le Havre, Spry wanted to protect his limited artillery by masking its movement. The Forêt de Boulogne provided a natural terrain feature with which he could conceal the massing of his indirect fire units. The division possessed its own artillery, consisting of three field regiments, an anti-tank regiment, and a light ant-aircraft

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<sup>96</sup> Historical Section Canadian Military Headquarters, “Report No. 184,” 14-15.

<sup>97</sup> Copp, “Canadian Operational Art: The Siege of Boulogne and Calais,” 31.

<sup>98</sup> Williams, *The Long Left Flank*, 63.

<sup>99</sup> Historical Section Canadian Military Headquarters, “Report No. 146,” 46-47.

regiment.<sup>100</sup> Meanwhile, additional support would come from the divisional artillery of the British 51st (Highlander) Division, the 2nd Canadian and 9th British Artillery Group Royal Artillery.<sup>101</sup> While he awaited this additional artillery from Le Havre, Spry wanted to convince the Germans that he already had significant fire support in position. Thus, this would help create the perception that the Germans were facing a powerful adversary.

To deceive the enemy regarding his artillery, Spry employed a method known as “roving commissions.” For several days before the assault, the division employed several roving medium troops, which would fire from various locations near Boulogne.<sup>102</sup> In doing so, Spry sought to achieve three objectives that would reinforce his overall attempt at achieving surprise. First, by moving from one position to another, he wanted to give the impression that there were significant artillery resources already positioned in the area. Secondly, he wanted to compel the Germans to reveal the location of their guns. On September 6, Spry directed the artillery regiments fire a series of concentrated fire plans and a smoke screen, making the Germans think that an attack was imminent. The aim was to encourage the Germans to execute their defensive fire plan, giving away their gun positions to the Canadians. However, the Germans did not react and did not disclose the location of their artillery. His third objective governing the use of roving commissions was to mislead the Germans as to the location and number of Canadian guns. In fact, he later proved effective in this regard as the captured German artillery commander later

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<sup>100</sup> Williams, *The Long Left Flank*, 312.

<sup>101</sup> Historical Section Canadian Military Headquarters, “Report No. 184,” 20; Buckley, *Monty’s Men*, 309. An Artillery Group Royal Artillery formation consisted of approximately 4,400 troops along with one heavy and three medium regiments. In some cases, it was reinforced with one or more field regiments.

<sup>102</sup> Historical Section Canadian Military Headquarters, “Operation Wellhit: Capture of Boulogne Fortress,” 8-9; “Royal Canadian Artillery Organization,” Juno Beach Centre, accessed February 1, 2016, <https://www.junobeach.org/canada-in-wwii/articles/artillery/royal-canadian-artillery-organization>. By 1942, British and Canadian artillery regiments consisted of three eight-guns batteries. A battery had two troops, composed of four guns each.

admitted, “he had no idea of how many guns were opposing him...[and was] unable to plot the whereabouts of the guns.”<sup>103</sup> Spry’s efforts to mislead the Germans as to the strength and disposition of both his forces and his artillery showed his creativity to apply to the principle of surprise to his operational method.

Spry’s second element for visualizing his operational method was through the principle of concentration of force. The application of this principle enabled his division to defeat numerically superior German forces and their robust fortifications. He had to neutralize the German artillery, breach the enemy defensive line, and assault into the heart of Boulogne. In order to do this, Spry concentrated his force with three key elements: air, artillery, and armor-infantry cooperation.

The employment of air support was the first element Spry used to achieve concentration of force. The aim of the air effort was to destroy the German artillery positions and infantry strongpoints, enabling the Canadians to penetrate the defenses and assault into Boulogne. For approximately a week before the start of Operation Wellhit, he employed medium bombers to target German strongpoints in the objective area. Following their commitment at Le Havre, the heavy bombers joined in the air effort, focused on targeting German fortified infantry positions and artillery units. Meanwhile, fighter aircraft, known as Rocket Projectile Typhoons, sought to engage targets of opportunity.<sup>104</sup> Immediately prior to the ground assault, the air bombardment shifted its focus on the destruction of forward strong points and gun positions, particularly around the Mont Lambert sector. Once the ground assault started, Spry wanted air support to neutralize enemy guns in depth, enabling the brigades to penetrate and advance to their objectives. Cognizant of the destruction at Le Havre, the bombers only engaged clearly defined targets along the perimeter defenses at Boulogne. To both tighten control and enable heavy bombers to

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<sup>103</sup> Historical Section Canadian Military Headquarters, “Report No. 184,” 17.

<sup>104</sup> Historical Section Canadian Military Headquarters, “Operation Wellhit: Capture of Boulogne Fortress,” 9.

concentrate effects at the right time and place, a Royal Air Force officer was assigned to the 9th Brigade, the division's main effort. Furthermore, a forward control post was co-located with division headquarters, facilitating the control of close air support by Typhoons.<sup>105</sup> Meanwhile, air observation posts overhead would help locate batteries during the course of the operation.<sup>106</sup> From a planning perspective, Spry's concentration of air assets on clearly defined locations with clear purposes reflected his ability to adapt his understanding of the enemy into an operational method, which would enable the ground forces to capture their objectives.

Spry's employment of artillery was the second element with which he achieved concentration of force. He used artillery to complement the effects of the air bombardment. In support of Operation Wellhit, Spry had 368 guns at his disposal.<sup>107</sup> His initial focus for artillery was the destruction and neutralization of the German batteries. To enable cooperation between the air and ground forces, II Corps, assisted by the division, developed a counter-battery plan aimed at neutralizing the enemy anti-aircraft threat facing the heavy bombers. Furthermore, Spry ensured that his artillery covered any gaps in air support, particularly as aircraft dropped their last bombs prior the ground assault. One of the aims was to convince the enemy that he was still under heavy air bombardment, thereby eroding enemy morale.<sup>108</sup> Once the ground assault started, artillery support would remain on call to deal with unanticipated threats.<sup>109</sup> To assist with the concentration of artillery effects, air observation posts were available to enable the correction of over 400 identified targets.<sup>110</sup> Though naval support at Boulogne would be limited, the Royal

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<sup>105</sup> Copp, "Canadian Operational Art: The Siege of Boulogne and Calais," 32.

<sup>106</sup> Copp, "Montgomery's Scientists," 7.

<sup>107</sup> Historical Section Canadian Military Headquarters, "Report No. 184," 20.

<sup>108</sup> Terry Copp, *Guy Simonds and the Art of Command* (Kingston: Canadian Defence Academy Press, 2007), 37.

<sup>109</sup> Historical Section Canadian Military Headquarters, "Report No. 146," 47.

<sup>110</sup> Copp, "Canadian Operational Art: The Siege of Boulogne and Calais," 32.

Navy would use its 14 and 15-inch coastal guns at Dover to help suppress the batteries in the Calais-Cap Gris Nez areas.<sup>111</sup> Overall, the division commander's employment and concentration of artillery was well-conceived because it considered all aspects of the enemy threat and emphasized responsiveness, thus enabling the brigades in their mission.

Armor-infantry cooperation was the third element whereby Spry sought to achieve concentration of force. Armor-infantry cooperation helped the brigades concentrate effects through mobility, firepower, and mutual support. However, prior to Boulogne, such cooperation was difficult. First, limitations in armor normally kept tanks at a distance from the objectives, reducing the support provided to the dismounted infantry. Secondly, a lack of infantry mobility prevented dismounted units from keeping up with advancing armor.<sup>112</sup> Under such constraints, it is not surprising that seventy-six percent of all Canadian casualties came from infantry units in August 1944.<sup>113</sup> Fortunately, Canadian innovation, led by Simonds, found a solution to alleviate one of the issues regarding armor-infantry cooperation. By converting, the "Priest" self-propelled guns into infantry carriers, later renamed "Kangaroos", infantry units gained both mobility and protection, giving them the ability to keep up with armor and approach their objectives under protection from their carriers.<sup>114</sup>

Spry recognized the advantages of integrating significant armor resources within the infantry units, particularly those of the main assault brigades. To the 9th Brigade, the division main effort, he provided all available Kangaroos, which helped concentrate his infantry rapidly

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<sup>111</sup> Dickson, *A Thoroughly Canadian General*, 345.

<sup>112</sup> Buckley, *Monty's Men*, 132.

<sup>113</sup> Stacey, *The Victory Campaign*, 284

<sup>114</sup> John R. Grodzinski, "'Kangaroos at War': The History of the 1<sup>st</sup> Canadian Armoured Personnel Carrier Regiment," *Canadian Military History* 4, no. 2: 43, accessed November 15, 2015, <http://scholars.wlu.ca/cgi/viewcontent.cgi?article=1034&context=cmh>. The conversion of "Priests" into infantry carriers consisted of the removal of the 105 mm gun, the modification of the engine, and the addition of armor plates.

onto their objectives. To facilitate close cooperation between the armor and infantry, Spry assigned each assaulting brigade a squadron of tanks from the 10th Armored Regiment. Due to the complex defenses within the area of the main assault, both the 8th and 9th Brigades were also supported by special armor consisting of flail tanks, Assault Vehicles Royal Engineers, and Crocodiles.<sup>115</sup> The mine-clearing flail tanks helped the armor and infantry units advance through minefields. To help demolish enemy fortifications, the mortar tanks used their 40-pound Petard projectiles.<sup>116</sup> The Crocodiles, whose flame-thrower could reach 100 meters, provided an additional form of close support for the assaulting infantry.<sup>117</sup> By understanding both the enemy and his own forces, Spry exploited the strengths of armor-infantry cooperation to overcome the German defenses. However, in concentrating his forces, he also needed to consider how best to allocate them amongst the various tasks.

Spry's third element for visualizing his operational method was through the principle of economy of force. His task was to find a way to apply sufficient force for the main assault while maintaining enough force to secure his flanks and contain the adjacent objectives near Gris Nez and Calais. With only three infantry brigades, a reconnaissance regiment, as well as supporting armor and engineers, Spry had to balance his forces to support both the main assault and the flank security tasks.

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<sup>115</sup> Canadian Military Headquarters, "Operation Wellhit: Capture of Boulogne Fortress," 12.

<sup>116</sup> Major Michael J. Daniels, "Innovation in the Face of Adversity: Major-General Sir Percy Hobart and the 79th Armoured Division (British)," (Master of Military Art and Science, US Army Command and General Staff College, 2003), 19; Terry Copp, ed., "Montgomery's Scientists: Operational Research in Northwest Europe, The Work of No. 2 Operational Research Section with 21 Army Group June 1944 to July 1945," (Waterloo: The Laurier Centre for Military Strategic and Disarmament Studies), 118. The actual destructive effects from the Assault Vehicles Royal Engineers were limited due to the strength of the German fortifications. In many cases, they fired only one or two rounds before the enemy came out and surrendered.

<sup>117</sup> Daniels, "Innovation in the Face of Adversity," 21.

For the main assault, the division commander sought a balanced allocation of resources between the two assaulting brigades. Spry considered the nature of the enemy threat and ways to mitigate risks in the respective brigade areas. As the Mont Lambert sector was a key component of the German defenses, he determined that it should be the location of his main effort; Mont Lambert's capture would enable his forces to maneuver into the heart of Boulogne's defenses. As such, he ensured that the 9th Brigade possessed the full complement of infantry carriers. However, he still appreciated the significant objectives to the north in 8th Brigade's area. Therefore, while it did not enjoy the support of troop-carrying vehicles, Spry augmented the 8th Brigade with both regular and specialized armor.<sup>118</sup> To ensure that the main assault did not stall due to the many obstacles, he provided each of his assaulting brigades with bulldozer resources. Appreciating the nature of the complex defenses, the commander held a number of these vehicles in reserve, ensuring his ability to respond to unforeseen circumstances.<sup>119</sup>

For the units supporting along the flanks, Spry provided sufficient force without compromising the requirements for the main assault. To the north, he determined that the 7th Brigade and 7th Reconnaissance Regiment possessed adequate forces to deal with their assigned tasks of containing the enemy positions at Cap Gris Nez and Calais. As such, he detached the 1st Canadian Scottish Regiment from the 7th Brigade in order to form his division reserve.<sup>120</sup> Meanwhile to the south, Spry displayed great creativity in the formation of his "dummy brigade." Spry's emphasis on economy of force undoubtedly assisted him in achieving the right balance of forces and set the conditions for a successful operation. Moreover, the integration of

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<sup>118</sup> Historical Section Canadian Military Headquarters, "3 Cdn Inf Div Op Order No. 5, 13 Sep 44," AEF/3 Cdn Inf Div/C/I, Docket III (c): Operations Orders 235C3.016 (D15), Library and Archives Canada, Ottawa.

<sup>119</sup> Historical Section Canadian Military Headquarters, "Operation Wellhit: Capture of Boulogne Fortress," 13.

<sup>120</sup> Historical Section Canadian Military Headquarters, "Report No. 146," 47.

all three principles of war not only helped him develop a comprehensive operational method, but facilitated detailed planning for the assault on Boulogne.

### **Part 3: Describing and Directing Operation Wellhit**

Spry's division began its assault on September 17. At 8:35 a.m., the first elements of 690 heavy bombers appeared over Boulogne. One officer described the display of air power in vicinity of Mont Lambert as such "an awesome sight" that it was difficult to believe that anyone could survive.<sup>121</sup> Once the eighty-minute air bombardment ceased, the assaulting brigades crossed their start lines. Meanwhile, at 9:25 a.m., following thirty minutes of artillery preparatory fires, the 8th Brigade's North Shore (New Brunswick) Regiment advanced towards their first objectives near La Trésorerie and Wimille. These northern strongpoints posed a potential threat to the main attack to the south. The North Shores were overly optimistic in their belief that they could defeat their objectives in thirty minutes. The Germans' elaborate defenses at these two positions, protected by minefields and artillery, slowed the North Shores' advance such that it took two days to capture the objectives. Nevertheless, they accomplished their task of preventing the Germans in their sector from interfering with the main attack.<sup>122</sup> While fighting outnumbered, the regiment used its limited infantry and armor resources to defeat an enemy "capable of bringing large volumes of direct and indirect fire to the battlefield."<sup>123</sup> The unit's commanding officer, Lieutenant-Colonel J.E. Anderson, attributed success to the fact that his unit was given adequate time to appreciate its assigned mission in detail.<sup>124</sup> The opening stage of the assault illustrates how coordinated efforts and preparation played a role in the plan to defeat the Germans.

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<sup>121</sup> Stacey, *The Canadian Army, 1939-1945*, 227.

<sup>122</sup> Stacey, *The Victory Campaign*, 340.

<sup>123</sup> Copp, *Cinderella Army*, 64-67.

<sup>124</sup> J.E. Anderson, "Account of Operations in the Boulogne Area," *Canadian Military History* 3, no. 2 (April 26, 2012): 87, accessed October 6, 2015, <http://scholars.wlu.ca/cgi/viewcontent.cgi?article=1416&context=cmh>.

On September 13, Spry issued his order for Operation Wellhit, describing the method and details for the coming assault. With significant support from air and artillery such that “a sudden heavy blow might induce [the Germans] to give in,” he believed that the brigades could capture all their objectives rapidly. Unfortunately, the attack on Boulogne lasted until September 22, defying the two-day estimate for its capture. As the North Shores’ experience showed, the division had to adapt to the battlefield conditions, characterized by numerous obstacles and persistent artillery fire. Despite suffering 600 casualties from enemy artillery, the units still gained ground and captured their objectives, using all weapons and equipment at their disposal.<sup>125</sup> The failure of friendly air and artillery to silence the enemy guns, both prior to and during the assault, was a primary element of the “friction” that emerged during Wellhit.<sup>126</sup> As well, the craters caused by the heavy bombers hindered the forward movement of armor on several occasions. Fortunately, the brigades clearly understood both their division commander’s description of the operational method and the details for its execution, and were able to overcome the friction of combat. It is evident the division commander issued a clear and detailed plan, setting the conditions for the division’s capture of Boulogne. Two key factors contributed to Spry’s well-developed and successful plan: clear and timely orders prior to execution and the synchronization of effects during the assault.

Spry’s clear and timely orders prior to execution contributed to success at Boulogne by giving the brigades adequate time to both plan and prepare. They understood their tasks, planned their own detailed orders, and prepared their respective units for accomplishing the forthcoming operation. The division commander’s effectiveness in describing his method for the assault and in

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<sup>125</sup> Historical Section Canadian Military Headquarters, “Report No. 184,” 115-116. Regarding the division’s casualty estimates, there are varying reports. According to C.P. Stacey, the number of losses was 634 killed, wounded, and missing, Stacey, *The Victory Campaign*, 343.

<sup>126</sup> Clausewitz described friction as a force that can make “the apparently easy so difficult,” Clausewitz, *On War*, 121.

directing his subordinates' actions involved two primary considerations. The first consideration involved his ability to build and maintain shared understanding, defined as the exchange of information between the division and brigade headquarters with which to establish a common picture of the environment and enable planning. The second consideration involved the comprehensiveness of the 8th and 9th Brigades' orders, indicating their understanding of their commander's guidance. Overcoming the complex defenses and resulting friction at Boulogne required deliberate and detailed planning as well as understanding by staff and subordinate commanders.

The first consideration regarding the effectiveness of Spry's orders and direction to his subordinates concerned shared understanding. Cognizant that the capture of Boulogne required detailed and deliberate planning, Spry issued the first of a series of orders on September 6. The intent of the initial order was to seize key terrain, re-position forces, emplace obstacles to close off any gaps between the brigades, and continue developing the intelligence picture. The second order of September 10 contained a much clearer picture of the enemy and terrain. Spry also refined the details for the anticipated tasks, including the allocation of units for the main assault, the assignment of reconnaissance tasks, and the provision of the general plan for the assault. Furthermore, the provision of air photos and detailed maps of the objective area permitted the brigades to contemplate the conduct of their own operations. Once Spry confirmed the details regarding air and artillery support, he issued his third order on September 12. With the required support available, Spry decided to assault on a much wider frontage, enabling him to secure more objectives simultaneously. The next day he issued the completed plan for Operation Wellhit.<sup>127</sup> By this time, the units had studied the problem at Boulogne for nine days, enhancing their

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<sup>127</sup> Historical Section Canadian Military Headquarters, "3 Cdn Inf Div Op Order No. 5, 13 Sep 44."

appreciation of the mission requirements. Therefore, with a sound understanding of their environment and with clear direction, the brigades proceeded with their own planning.

The second consideration in assessing the effectiveness of Spry's orders and direction involved the comprehensiveness of the brigade orders. Overall, both the 8th and 9th Brigade's orders left no doubt about what they needed to accomplish or how they would execute the operation, particularly in terms of sequencing the capture of objectives in accordance with the division plan. Both orders also accounted for contingencies, which enabled the units to adapt when things did not go according to plan.<sup>128</sup> This reflected the brigade commanders' understanding of Spry's operational method and his emphasis on "reading the battle", which implied having the flexibility to react to changing circumstances. In fact, it was observed that "[a]s with the 8<sup>th</sup> Brigade, the [9<sup>th</sup> Brigade's] operation order was comprehensive and the operation planned with alternatives up to the conclusion... 'O' [Orders] Groups were obviated and all COs were always fully in the picture and were able to plan for the future according to the way things were going."<sup>129</sup> This would not have been the case if Spry had provided ambiguous direction.

The 9th Brigade's emphasis on the rapid seizure of the bridges at the Liane River provides an example of how Major-General Rockingham, the brigade commander, understood his higher commander's intent. The division order stressed the importance of seizing the bridges intact, which enabled the advance towards follow-on objectives to the west of the river. In order to accomplish his higher commander's intent, Rockingham made the bold decision to use only one battalion, the North Nova Scotia Highlanders, to assault the heavily defended Mont Lambert. Another battalion, the Stormont, Dundas, and Glengarry Highlanders, would advance rapidly to

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<sup>128</sup> Historical Section Canadian Military Headquarters, "Operation Wellhit: Capture of Boulogne Fortress," Annex W, X.

<sup>129</sup> Ibid., 16.

the city and seize the river crossing sites. Meanwhile, the third battalion, the Hamilton Light Infantry, formed the brigade reserve.<sup>130</sup> By assigning only one battalion at Mont Lambert, Rockingham assumed some risk. However, even as a battalion commander in Normandy, he never shied away from audacious decision-making.<sup>131</sup> As the Stormont, Dundas, and Glengarry Highlanders was still fighting the enemy near the city, the brigade commander tasked his reserve to seize the critical bridges. That Rockingham understood Spry's intent and was able to adapt to changing circumstances indicates the effectiveness of both the division and brigade-level orders.

Spry's successful plan incorporated a second planning factor, consisting of the synchronization of activities and effects. The division plan accounted for the synchronization of air and artillery support, the ground maneuver plan, and psychological warfare activities. Synchronization refers to the act of coordinating actions or events so they occur at the same time or rate. While the 1935 *Field Service Regulations* did not refer specifically to the term, the publication implied its use as a planning consideration. Its emphasis on a commander's wise use of limited resources to achieve "maximum results" by employing his "force in combination" spoke to the concept of synchronization. Spry's two-brigade attack required the coordination of well-planned and controlled fires (air and artillery) to support ground maneuver, especially since the 8th Brigade needed to mitigate some of the threats in its sector prior to the main assault. Therefore, Spry ensured that his plan for execution provided the right effects at the right times.

The first aspect requiring synchronization included air and artillery support. The division's air and artillery resources had to be well-coordinated and mutually supporting in order to provide adequate coverage for the assaulting brigades. While the air and artillery planning was generally well-conceived, several elements of friction emerged. First, there were instances where the inaccurate identification of gun positions led to inefficiencies in targeting. A second source of

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<sup>130</sup> Historical Section Canadian Military Headquarters, "Operation Wellhit: Capture of Boulogne Fortress," 15.

<sup>131</sup> Williams, *The Long Left Flank*, 63-64.

friction included the strength of the fortifications, which only direct hits could destroy.<sup>132</sup> Lastly, as mentioned previously, the heavy bombing produced craters, which occasionally impeded the advance of armor vehicles, especially the mine-clearing flail tanks.<sup>133</sup> Luckily, the resourceful brigade engineers cleared minefields by hand when the flail tanks were unavailable.<sup>134</sup>

Despite these sources of friction, the effects of synchronized artillery and air support helped the brigades achieve their mission. While the poor identification of enemy guns prevented neutralization by counter-battery fires, the division's guns still managed to provide good effects when used properly. When used in close support to assaulting infantry, the artillery not only neutralized enemy positions, but also helped degrade the enemy's morale.<sup>135</sup> In fact, the Canadian Army recognized that air and artillery effects had considerable impact on enemy morale.<sup>136</sup> However, when the assault began, it was evident that air support had achieved limited destructive effects. Nonetheless, its synchronization was particularly effective when the infantry quickly advanced following the bombardment, capitalizing on the temporary neutralization effects.<sup>137</sup> While there was friction related to air and artillery, there were also several examples where synchronization enabled the infantry reach their objectives.

The Queen's Own Rifles assault on Fort de la Crèche on September 21 provides an example of effective synchronization of air support. During this attack, the coordinated actions of medium bombers and M10 self-propelled anti-tank guns enabled the unit to capture its objective

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<sup>132</sup> Copp, "Montgomery's Scientists," 110-112.

<sup>133</sup> Copp, "Montgomery's Scientists," 117-118.

<sup>134</sup> Historical Section Canadian Military Headquarters, "Report No. 184," 25.

<sup>135</sup> Historical Section Canadian Military Headquarters "Operation Wellhit: Capture of Boulogne Fortress," 31, Appendix E.

<sup>136</sup> Copp, *Guy Simonds and the Art of Command*, 37. As early as July 1944, Simonds observed that the effect of bombardment whether from aircraft or from guns was 90% moral.

<sup>137</sup> Copp, "Montgomery's Scientists," 107-108.

and force the surrender of 500 Germans.<sup>138</sup> The infantry were able to maneuver rapidly towards their objective, exploiting the effects of synchronized air and ground movement. An example illustrating the synchronization of artillery was the Stormont, Dundas, and Glengarry Highlanders assault on September 19 at Outreau, west of the Liane River. The effective synchronization of artillery and ground maneuver permitted the infantry to stay within 250 yards from the shelling. As a result, the Highlanders were able to defeat the Germans, capture an artillery battery, and seize 185 prisoners.<sup>139</sup> Despite the limited physical effects from air and artillery, the synchronized efforts, especially when used in close support, helped neutralize the enemy objectives and degrade morale.<sup>140</sup> Therefore, the division's ability to overcome friction was a reflection of its sound planning and intelligent execution.

A second element requiring synchronization included the ground maneuver plan. Spry coordinated the advance of the assaulting brigades so that they crossed their start lines at the same time. The 8th Brigade's initial objective was St. Martin Boulogne, located just to the north of the defenses at Mont Lambert. The key to enabling this attack was to first deal with the enemy positions near La Trésorerie and Wimille, whose guns possessed enough range to interfere with the brigade's operations to the south. As a result, the North Shore Regiment assaulted these positions thirty minutes prior to the main assault. Even though the unit took longer than anticipated, it prevented enemy interference with the ongoing operations to the south.<sup>141</sup> The early start of the regiment's attack also ensured that the 9th Brigade's right flank was covered by the 8th Brigade's advance. If Spry had stuck to his initial plan, the North Shores' attack would have started at the same time as the main assault, possibly impeding the 8th Brigade's advance and

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<sup>138</sup> Copp, "Canadian Operational Art: The Siege of Boulogne and Calais," 37.

<sup>139</sup> Historical Section Canadian Military Headquarters, "Report No. 184," 31.

<sup>140</sup> Historical Section Canadian Military Headquarters, "Operation Wellhit: Capture of Boulogne Fortress," 14.

<sup>141</sup> Ibid., 10-11.

forcing the 9th Brigade to assault on its own. Thus, the North Shores' efforts to the north permitted the brigades to cross their start lines simultaneously and assault en masse, providing a greater concentration of firepower along the enemy front.<sup>142</sup>

Spry's second means of synchronizing ground maneuver involved the proper phasing for capturing objectives. The coordinated seizure of objectives helped him achieve some symmetry between his advancing brigades, minimizing threats along their flanks. The division commander conducted his assault on Boulogne in four phases. The first included the main assault against the general area of Mont Lambert by both the 8th and 9th Brigades. The second phase included the two brigades securing the center of the built-up area near the heart of Boulogne and seizing a crossing site over the Liane River. During the third phase, once at the river, the 8th Brigade would break out to the north towards Fort de la Crèche, while the 9<sup>th</sup> Brigade would advance eastward towards the objectives at Outreau and Herquelingue. In the last phase, the 9th Brigade would capture the remaining objectives near Nocquet and St. Etienne.<sup>143</sup> Despite slow progress, each of the brigades achieved their objectives generally in accordance with Spry's operational method. The only exception was the 9th Brigade's objective at Herquelingue. Since Rockingham committed his reserve, he no longer had forces available to deal with the objective on his southern flank. Therefore, Spry directed the Cameron Highlanders of Ottawa to capture Herquelingue, which finally fell on September 19.<sup>144</sup> By September 22, the division captured the last remaining objectives. The final blow came at Le Portel when Rockingham launched a two-battalion attack, which quickly resulted in Lieutenant-General Heim's surrender. Although, his loudspeaker message to Heim to "surrender or die from flames" appeared to have been the added

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<sup>142</sup> Historical Section Canadian Military Headquarters, "Report No. 184," 24.

<sup>143</sup> Stacey, *The Victory Campaign*, 337.

<sup>144</sup> Historical Section Canadian Military Headquarters, "Report No. 184," 31.

incentive that compelled the surrender.<sup>145</sup> Thus, Spry's emphasis on synchronized maneuver helped set the conditions for the division to capture all of its assigned objectives.

The third element that required synchronization included psychological warfare activities. By combining these activities with the effects of air, artillery, and ground maneuver, Spry believed he could induce the enemy to surrender. He assessed that the Germans were particularly vulnerable to psychological warfare due to the threat of physical destruction and their existing state of low morale. The first actions took place several days prior to Wellhit when medium bombers dropped approximately 420,000 leaflets aimed at compelling the enemy to surrender.<sup>146</sup> Secondly, scout cars, equipped with loudspeakers, broadcast messages urging the enemy's surrender. During the period of September 18-22, the division synchronized these messaging activities with the effects of air, artillery, and ground maneuver, resulting in the surrender of 900 Germans. In fact, several German prisoners of war stated that the physical and psychological effects produced by air, artillery, and ground forces were instrumental in encouraging their surrender.<sup>147</sup> Believing he could exploit these effects, Spry coordinated his messaging activities to encourage the enemy's surrender. Thus, from a psychological warfare perspective, Spry's emphasis on synchronizing the physical and moral effects contributed to Wellhit's success.

The 3rd Division successfully captured Boulogne because staff and subordinate commanders understood Spry's operational method and detailed orders. Despite the friction resulting from the lackluster physical effects from air and artillery, the division commander's efforts helped the brigades accomplish their mission. He ensured that his subordinates understood

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<sup>145</sup> Historical Section Canadian Military Headquarters, "Report No. 184," 35-36. The last objectives to fall included Le Portel in the 9th Brigade sector and Fort de la Crèche and Wimereux in the 8th Brigade sector.

<sup>146</sup> Historical Section Canadian Military Headquarters, "Report No. 146," 48.

<sup>147</sup> 21st Army Group, "Report No. 16, Air and Ground Support in the Assault on Boulogne," Box 39, in Supreme Headquarters, Allied Expeditionary Force: Selected Records, 1943-45, Eisenhower Presidential Library, Abilene KS.

the operational method for the assault. Spry also demanded shared understanding across the division. As the brigades received new information, they planned, prepared, and anticipated their future requirements. From the outset, the division's dilemma was how to defeat a numerically superior enemy, defending from complex fortifications protected by artillery, minefields, and mutually supporting positions. Through a methodical and synchronized approach, Spry defeated his opponent after six days of fighting. The fact that most of the Canadian casualties came from enemy artillery testifies to the division's effectiveness in overcoming the enemy defenses. Had Spry failed to provide thorough guidance and direction, Operation Wellhit would have been a more costly affair, even against an already demoralized enemy.

### **Conclusion**

The 3rd Division's capture of Boulogne on September 22 produced mixed results. From a tactical perspective, Spry's division successfully achieved its mission and defeated the German garrison. However, this success did not translate operationally into the provision of immediate relief for Montgomery's supply problems, which were hindering his operation. Several days following the end of fighting, the returning citizens of Boulogne began to restore their city. Yet, the more strategically important issue was the opening of the port and this proved a much slower endeavor. On September 23, a port construction and repair group, along with army engineers, began working to clear its debris. As sunken ships and mines obstructed the harbor, the engineers only managed to open part of it by October 12. Meanwhile, the division had no time to reflect on its victory at the fortress. The day following the German surrender, it proceeded north to prepare for the capture of Calais and Cap Gris Nez.<sup>148</sup> While it may be easy to negate the division's achievements in light of the continuing supply issues, such a perspective must be viewed in the

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<sup>148</sup> Copp, *Cinderella Army*, 75.

context of Montgomery's insistence that he could conduct his advance across the Ruhr "without Antwerp."<sup>149</sup> If the opening of this large port had been prioritized from the outset, the Allied supply situation would have likely been alleviated much sooner. Nevertheless, the purpose of this monograph was to not to assess the effectiveness of Montgomery's strategy, but rather the division's effectiveness in accomplishing its mission.

As indicated in the introduction, this study's aim was to evaluate how effective the 3rd Canadian Infantry Division was during its operation to seize Boulogne. In presenting the story of Spry's understrength division in its operation, the emphasis has been on assessing how he was able to bring about the German defeat. Assessing the outcome through the lens of the commander's ability to understand, visualize, describe, and direct provides a thorough framework for this evaluation. Based on this holistic evaluation, the 3rd Division's operation was effectively planned and executed.

In terms of understanding, Spry's success in defeating the Germans emerged from his ability to develop an operational method that integrated his understanding of the mission, the enemy, the civil situation, and the resource and personnel constraints. In achieving the mission to capture the city and defeat the Germans, he had to consider how to concurrently deal with Calais and Cap Gris Nez, particularly with understrength brigades. Understanding the complex defenses manned by an overwhelming number of enemy troops was an issue of great importance. The division commander exploited all resources available to refine his understanding of the enemy he was about to face. While the intelligence gathered from the French Forces of the Interior provided clarity to the enemy disposition, it is evident that not all information was as accurate as initially believed, especially in terms of enemy battery locations. Nevertheless, Spry's picture of the enemy and his morale proved useful in planning as seen in his emphasis on conducting psychological warfare activities during the execution stage. At the same time, based on his

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<sup>149</sup> Copp, *Cinderella Army*, 149.

understanding of the civil situation, Spry developed an evacuation plan that helped avoid a repeat of the civilian collateral damage at Le Havre. Lastly, the division's resource and personnel constraints became key planning considerations. The movement of artillery and armor assets was an integral part of Spry's plan, with which he mitigated the risks posed by his numerically inferior force.

In developing his visualization, Spry proved effective in transforming his understanding into an operational method. In appreciating his combat environment, Spry focused on a method that emphasized the use of surprise, concentration of force, and economy of force. Through surprise, he sought to conceal his strength and disposition, making it more difficult for the enemy to locate his main assault as well as his artillery. While there exists no direct evidence confirming the effective concealment of the main assault, Canadian intelligence reports show that the use of roving guns masked the location of the division's artillery. Spry's concentration of force, particularly in terms of armor-infantry cooperation, proved critical in his success. In fact, Heim even admitted that he was "most impressed by the tactics of attack and the close co-operation of all arms to rout out position after position."<sup>150</sup> Finally, the division commander's focus on economizing his forces proved effective in achieving a balanced employment of his limited forces and resources, as seen by the minimal amount of re-positioning required during the execution stage. The success at Boulogne reinforces the positive assessment of the commander's ability in visualizing his operational method, influenced largely from his understanding of the operational environment.

The outcome at Boulogne could have been different had the division not firmly grasped the operational method and the details for its execution. By describing his method, Spry presented a clear vision for how he and his brigade commanders saw the operation unfolding. Empowered by shared understanding and detailed orders, the brigades were able to properly plan and adapt to

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<sup>150</sup> Historical Section Canadian Military Headquarters, "Report No. 184," 37.

the emerging friction during the assault. The synchronization of supporting fire, ground maneuver, and psychological warfare activities set the conditions through which the units were able to respond to the challenges posed at the port city. The combined and synchronized effects produced an effect that eventually led to the German defeat. Although the operation took longer than anticipated, the division's methodical approach in the use of all available assets ultimately accomplished his task. It managed to defeat 10,000 German defenders with two understrength brigades, while suffering only 600 casualties. One Canadian historical report, produced shortly after Operation Wellhit, characterized the success as the "effective employment of a great force of supporting arms of all kinds in a skillfully conceived and boldly executed plan, and the lack of the enemy's will to resist...brought about mainly by the isolation imposed upon the garrison."<sup>151</sup> Success at Boulogne was a testament to the effectiveness with which Spry described and directed the operation. Furthermore, it reinforced his competence in transforming his understanding of the environment into a sound plan. That even Montgomery acknowledged the solid Canadian performance at Boulogne is a noteworthy evaluation. In a letter written to the British War Office in 1945, the 21<sup>st</sup> Army Group commander reported:

The attack on Boulogne is thought to be a good example of a deliberate operation against an isolated and strong enemy fortress...despite the proved lack of material effect of ground or air bombardment on the defences, in the opinion of formation commanders concerned[,] both the [Royal Air Force] and the artillery bombardment were extremely effective in neutralizing the enemy defences. It is considered that this is borne out by the fact that these defences, constructed over a matter of years and manned by some 10,000 German troops, were overcome in six days, at the cost of less than 700 Canadians...Provided that this aspect is borne in mind whilst reading the report, it is thought that considerable value can be derived from it.<sup>152</sup>

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<sup>151</sup> Historical Section Canadian Military Headquarters, "Report No. 146," 49-50.

<sup>152</sup> Field Marshal Montgomery correspondence to the Under Secretary of State, The War Office, dated April 26, 1945, Box 39, in Supreme Headquarters, Allied Expeditionary Force: Selected Records, 1943-45, Eisenhower Presidential Library, Abilene KS.

The value in reviewing the accounts of Operation Wellhit continues even seventy years later. The evaluation methodology used in assessing the Canadian approach to planning, preparing, and executing operations in World War Two resembles the approach known as the *operations process*, currently used by the United States Army.<sup>153</sup> While the Canadian Army did not possess a similarly formalized doctrinal process, it did employ related concepts. Through methodical planning and execution, the 3rd Division was able to breach the ramparts of “Fortress Boulogne” and defeat its defenders, thus accomplishing its difficult mission.

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<sup>153</sup> Army Doctrine Reference Publication (ADRP) 5-0, *The Operations Process* (Washington, DC: Government Printing Office, 2012), 1-2. The operations process refers to the major mission command activities performed during operations: planning, preparing, executing, and continuously assessing the operation. Commanders, supported by their staffs, use the operations process to drive the conceptual and detailed planning necessary to understand, visualize, and describe their operational environment; make and articulate decisions; and direct, lead, and assess military operations.

## Bibliography

- 21st Army Group, "Report No. 16, Air and Ground Support in the Assault on Boulogne," Box 39, in Supreme Headquarters, Allied Expeditionary Force: Selected Records, 1943-45, Eisenhower Presidential Library, Abilene KS.
- 21st Army Group, *General Operational Situation and Directive* M520, Box 83 (Montgomery, Bernard), in Dwight D. Eisenhower: Pre-Presidential Papers, 1916-1952, Series I: Principal File, Eisenhower Presidential Library, Abilene, KS.
- \_\_\_\_\_. *General Operational Situation and Directive*, M525, Box 83 (Montgomery, Bernard) Dwight D. Eisenhower: Pre-Presidential Papers, 1916-1952, Series I: Principal File, Eisenhower Presidential Library, Abilene, KS.
- Army Doctrine Reference Publication (ADRP) 3-0, *Unified Land Operations*. Washington, DC: Government Printing Office, 2012.
- Army Doctrine Reference Publication (ADRP) 5-0, *The Operations Process*. Washington, DC: Government Printing Office, 2012.
- Anderson, J.E. "Account of Operations in the Boulogne Area." *Canadian Military History* 3, no. 2 (April 26, 2012): 84-88. Accessed October 6, 2015.  
<http://scholars.wlu.ca/cgi/viewcontent.cgi?article=1416&context=cmh>.
- Bercuson, David J. *Maple Leaf Against the Axis: Canada's Second World War*. Toronto: Stoddart, 1995.
- Bennett, Ralph. *Ultra in the West: The Normandy Campaign, 1944-5*. New York: Charles Scribner's Sons, 1979.
- Brooks, Victor. *The Normandy Campaign: From D-Day to the Liberation of Paris*. Cambridge, MA: Da Capo Press, 2002.
- Buckley, John. *British Armor in the Normandy Campaign 1944*. London: Frank Cass, 2004.
- \_\_\_\_\_. *Monty's Men: The British Army and the Liberation of Northwest Europe, 1944-45*. London: Yale University Press, 2013.
- Caravaggio, Angelo. "A Re-evaluation of Generalship: Lieutenant-General Guy Simonds and Major-General George Kitching in Normandy 1944." *Canadian Military History* 11, no. 4 (2002): 5-19. Accessed October 2, 2015. <http://scholars.wlu.ca/cmh/vol11/iss4/2>.
- Copp, Terry. "Canadian Operational Art: The Siege of Boulogne and Calais." *Canadian Army Journal* 9, no. 1 (Spring 2006): 29-49. Accessed October 18, 2015.  
<http://publications.gc.ca/collections /Collection/D12-11-9-1E.pdf>.

- Copp, Terry. *Cinderella Army: The Canadians in Northwest Europe, 1944-1945*. Toronto: University of Toronto Press, 2007.
- \_\_\_\_\_. *Fields of Fire: The Canadians in Normandy*. Toronto: University of Toronto Press, 2003.
- \_\_\_\_\_. *Guy Simonds and the Art of Command*. Kingston: Canadian Defence Academy Press, 2007.
- Copp, Terry and Michelle Fowler. "Heavy Bombers and Civil Affairs." *Canadian Military History* 22, no. 2 (April 17, 2015): 12. Accessed November 1, 2015.  
<http://scholars.wlu.ca/cgi/viewcontent.cgi?article=1685&context=cmh>.
- Copp, Terry and Robert Vogel, *Maple Leaf Route: Antwerp*. Alma, Ontario: Maple Leaf Route, 1984.
- Copp, Terry, ed. *Montgomery's Scientists: Operational Research in Northwest Europe; the Work of No. 2 Operational Research Section with 21 Army Group, June 1944 to July 1945*. Waterloo: Wilfrid Laurier University Press, 2000.
- Daniels, Major Michael J. "Innovation in the Face of Adversity: Major-General Sir Percy Hobart and the 79<sup>th</sup> Armoured Division (British)." Master of Military Art and Science, U.S. Army Command and General Staff College, 2003.
- D'Este, Carlo. *Decision in Normandy*. London: William Collins & Sons Co., 1983.
- Dickson, Paul Douglas. *A Thoroughly Canadian General: A Biography of General H.D.G. Crerar*. Toronto: University of Toronto Press, 2007.
- Engen, Robert. *Canadians under Fire: Infantry Effectiveness in the Second World War*. Montreal: McGill Queens University Press, 2009.
- English, John. *The Canadian Army and the Normandy Campaign: A Study of Failure in High Command*. New York: Praeger, 1991.
- Granatstein, J.L. *Canada's Army: Waging War and Keeping the Peace*. Toronto: University of Toronto Press, 2002.
- Grodzinski, John R. "'Kangaroos at War': The History of the 1<sup>st</sup> Canadian Armoured Personnel Carrier Regiment." *Canadian Military History* 4, no. 2: 43-50. Accessed November 15, 2015. <http://scholars.wlu.ca/cgi/viewcontent.cgi?article=1034&context=cmh>.
- Hamilton, Nigel. *Monty: The Battles of Field Marshall Bernard Montgomery*. New York: Random House, 1981.
- Hart, Stephen Ashley. *Montgomery and "Colossal Cracks": The 21st Army Group in Northwest Europe, 1944-45*. Westport, CT: Praeger, 2000.
- Hastings, Max. *Armageddon: The Battle for Germany 1944-1945*. New York: Alfred A. Knopf, 2004.

Historical Section Canadian Military Headquarters, “3 Cdn Inf Div Op Order No. 2, 6 Sep 44,” AEF/3 Cdn Inf Div/C/I, Docket III (c): Operations Orders 235C3.016 (D15), Library and Archives Canada, Ottawa.

- \_\_\_\_\_. “3 Cdn Inf Div Op Order No. 5, 13 Sep 44,” AEF/3 Cdn Inf Div/C/I, Docket III (c): Operations Orders 235C3.016 (D15), Library and Archives Canada, Ottawa.
- \_\_\_\_\_. “Operation Wellhit: Capture of Boulogne Fortress, 17-22 September 1944,” AEF/3 Cdn Inf Div/C/I, Docket V, 235C3.013 (D2): 1-4, Library and Archives Canada, Ottawa.
- \_\_\_\_\_. “Report No. 146, Operations of First Canadian Army in North-West Europe, 31 Jul-1 Oct 44.” Ottawa: Directorate of History National Defence Headquarters.
- \_\_\_\_\_. “Report No. 183, Canadian Participation in the Operations in North-West Europe 1944. Part IV: First Canadian Army in the Pursuit, 23 Aug-30 Sep,” Ottawa, 199-206.
- \_\_\_\_\_. “Report No. 184, Canadian Participation in the Operations in North-West Europe 1944. Part V: Clearing the Channel Ports, 3 Sep 44-6 Feb 45.” Ottawa: Directorate of History National Defence Headquarters.

Horne, Alistair, and David Montgomery. *The Lonely Leader: Monty, 1944-1945*. 3rd ed. London: Macmillan, 1994.

Howard, Michael and Peter Paret, eds., *Carl von Clausewitz: On War*. New Jersey: Princeton University Press, 1976.

Keegan, John. *Six Armies in Normandy: From D-Day to the Liberation of Paris, June 6th-August 25th, 1944*. New York: The Viking Press, 1982.

Knapp, Andrew. “The Destruction and Liberation of Le Havre in Modern Memory,” *War in History* 14 no. 4 (2007): 476-498. Accessed January 15, 2015. ProQuest.

MacDonald, Captain Harold and M.A. MacDonald, “Pursuit: The Letters of Captain Harold MacDonald, North Shore Regiment, from Normandy to the Scheldt.” *Canadian Military History* 11, no. 4 (Autumn 2002): 37-51. Accessed October 4, 2015.  
<http://scholars.wlu.ca/cmh/vol11/iss4>.

Milner, Marc. *Stopping The Panzers: The Untold Story of D-Day*. Kansas: University Press of Kansas, 2014.

Moulton, J.L. *The Battle for Antwerp: The Liberation of the City and the Opening of the Scheldt 1944*. New York: Hippocrene Book, 1978.

Rickard, John Nelson. *Lieutenant-General A.G.L. McNaughton and the Canadian Army, 1939-1943: The Politics of Command*. Toronto: University of Toronto Press, 2010.

Rowley, Roger. “The Attack on Boulogne.” *Canadian Military History* 3, no. 2 (March 26, 2012): 76. Accessed October 5, 2015. <http://scholars.wlu.ca/cgi/viewcontent.cgi?article=1415&context=cmh>.

- Stacey, C.P. *Canada's Battle in Normandy: The Canadian Army's Share in the Operations 6 June-1 September 1944*. Ottawa: King's Printer, 1946.
- \_\_\_\_\_. *The Canadian Army, 1939-1945: An Official Historical Summary*. Ottawa: King's Printer, 1948.
- \_\_\_\_\_. *Six Years of War: The Army in Canada, Britain and the Pacific - the Official History of the Canadian Army in the Second World War - Volume I*, 3<sup>rd</sup> ed. Ottawa: Queen's Printer, 1955.
- \_\_\_\_\_. *The Victory Campaign: The Operations in North-West Europe, 1944-1945 – the Official History of the Canadian Army in the Second World War - Volume III*, 2<sup>nd</sup> ed. Ottawa: Queen's Printer, 1960.
- War Office, *Field Service Regulations, Vol. III, Operations – Higher Formations 1935*. Ottawa: His Majesty's Stationary Office, 1942.
- War Office, *Operations, Military Training Pamphlet, No. 23 Part III - Appreciations, Orders, Intercommunications, and Movements 1939*. Ottawa: His Majesty's Stationary Office, 1939. Accessed November 3, 2015, <http://wartimecanada.ca/document/world-war-ii/training-manuals/military-training-pamphlet-no-23-part-iii-appreciations>.
- Williams, Jeffery. *The Long Left Flank: Hard-Fought Way to the Reich, 1944-45*. London: Pen and Sword Books, 1988.
- Williams, Major Paul. "The Rough Road to Antwerp: The First Canadian Army's Operations Along the Channel Coast." School of Advanced Military Studies, Fort Leavenworth, KS, 2014.
- Wilmot, Chester. *The Struggle for Europe*. New York: Harper and Brothers Publishers, 1952.
- Wilt, Alan F. *The Atlantic Wall: Hitler's Defenses in the West, 1941-1944*. Iowa: Iowa State University Press, 1975.
- Zuehlke, Mark. *Breakout from Juno: First Canadian Army and the Normandy Campaign, July 4-August 21, 1944*. Vancouver: Douglas and McIntyre, 2013.